Where There Is No Doctor
a village health care handbook

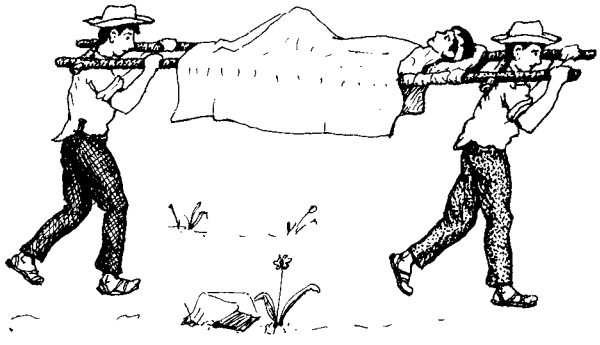
~ revised edition ~

by

David Werner

with

Carol Thuman and Jane Maxwell



with drawings by David Werner

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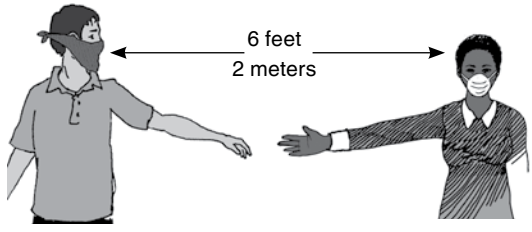
Thanks to the work and dedication of many groups and individuals around the world, ***Where There Is No Doctor*** and other Hesperian Health Guide resources have been translated into almost 100 languages and are used by people all over the world. Many of these different language resources are available from Hesperian – as print copies, as downloadable PDFs, or in our online HealthWiki. Please contact us or visit our website to find health information in the language you need. Or contact us about translating materials into your language.



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Coronavirus – COVID-19

The COVID-19 pandemic has wreaked havoc all around the world, infecting and killing people in every country. Now there are vaccines that can prevent COVID-19 and medicines and treatments that can save the lives of people who get infected. But these medicines and treatments are not available to all equally, causing unnecessary illness and death for people in countries with fewer resources in Asia, Africa and Latin America. The wealthy countries of North America and Europe and the big pharmaceutical companies must stop profiteering from people's misery and make vaccines and the ability to produce them available to all. Until they do, we must continue to care for each other.



Keeping a safe distance from others and wearing a mask protects you. When everyone wears masks, fewer people will get sick with COVID-19.

- COVID-19 — Coronavirus
- COVID-19: Is your sickness COVID-19?
- COVID-19: Staying well in the time of coronavirus
- COVID-19: Caring for a sick person at home
- COVID-19: Breathing
- COVID-19: Health Protection and Security for Protest Marches
- COVID-19: How to make masks, face shields, hand-wash stations, hand sanitizer and soap
- COVID-19: Managing stress and anger
- COVID-19: Vaccines
- COVID-19: Vaccine Management

Hesperian has produced 10 Fact Sheets about different aspects of COVID-19, available for free in many languages on our website. Please use the QR Code below or go to: https://en.hesperian.org/hhg/Coronavirus

You can also find a summary of information about COVID-19 on the next page.

COVID-19

COVID-19 is caused by the coronavirus that spreads easily between people. Most people who become infected recover without needing medical treatment, but some become dangerously ill. COVID-19 can cause pneumonia (a serious lung infection), can damage the heart and other organs, and in severe cases can lead to death.



COVID-19 enters the body through the mouth, nose, and eyes when an infected person breathes, talks, coughs, or sneezes near you or on surfaces you touch, and you then touch your eyes, nose or mouth.

Most people start feeling sick about 5 days after getting infected, but COVID-19 can live in the body for 2 to 14 days before signs of illness appear. Some people, especially children, can be infected but have no signs of illness. People who do not know they have COVID-19 can still pass the virus to others.

Signs:

- dry cough
- fever
- body aches
- some people also have shortness of breath, loss of taste or smell, and sore throat.

Danger signs:

- high fever (39°C/102°F) that does not lower
- breathing so shallow, fast or difficult that the lips or face turns blue or the person cannot walk across the room
- chest pain or pressure in the chest that will not go away
- the person acts very confused or cannot be woken up

Anyone with danger signs should get emergency help, especially adults over 55, anyone with heart disease, respiratory disease, diabetes or cancer. Talk with a health worker, perhaps by phone, to arrange testing and treatment. If you are very ill, you may need oxygen and a ventilator to keep breathing.

Vaccination:

There are several vaccines for COVID-19. All prevent serious illness or death and all are safe. The sooner you get vaccinated with any of them, the sooner you will be protected and the sooner the disease will stop spreading. After 6 to 8 months, you will also need to get a vaccine "booster" injection to strengthen your resistance to COVID-19.

Prevention:

Getting vaccinated is the best way to prevent COVID-19 infection. Until vaccines are available to everyone, you can take steps to protect yourself and others.

Wear a mask: Because COVID-19 spreads through the air, a clean and dry mask that covers your mouth and nose completely can protect you. Wash cloth masks regularly. If caring for a person with COVID-19, N95 respirator masks give the best protection.

Avoid close contact: Keep 2 meters (6 feet) away from people outside your household.

Avoid crowds and places with poor ventilation: If you must be indoors, open windows and doors to bring in fresh air, and minimize the number of people you are with and for how long.

Wash your hands frequently: Use soap and water or an alcohol-based hand-rub.

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Introduction

This handbook has been written primarily for those who live far from medical centers, in places where there is no doctor. But even where there are doctors, people can and should take the lead in their own health care. So this book is for everyone who cares. It has been written in the belief that:

1. **Health care is not only everyone's right, but everyone's responsibility.**
2. **Informed self-care should be the main goal of any health program or activity.**
3. **Ordinary people provided with clear, simple information can prevent and treat most common health problems in their own homes—earlier, cheaper, and often better than can doctors.**
4. **Medical knowledge should not be the guarded secret of a select few, but should be freely shared by everyone.**
5. **People with little formal education can be trusted as much as those with a lot. And they are just as smart.**
6. **Basic health care should not be delivered, but encouraged.**

Clearly, a part of informed self-care is knowing one's own limits. Therefore guidelines are included not only for **what to do**, but for **when to seek help.** The book points out those cases when it is important to see or get advice from a health worker or doctor. But because doctors or health workers are not always nearby, the book also suggests **what to do in the meantime**—even for very serious problems.

This book has been written in fairly basic English, so that persons without much formal education (or whose first language is not English) can understand it. The language used is simple but, I hope, not childish. A few more difficult words have been used where they are appropriate or fit well. Usually they are used in ways that their meanings can be easily guessed. This way, those who read this book have a chance to increase their language skills as well as their medical skills.

Important words the reader may not understand are explained in a word list or *vocabulary* at the end of the book. The first time a word listed in the vocabulary is mentioned in a chapter it is usually written in *italics.*

Where There Is No Doctor was first written in Spanish for farm people in the mountains of Mexico where, years ago, the author helped form a health care network now run by the villagers themselves. *Where There Is No Doctor* has been translated into more than 80 languages and is used by village health workers in over 100 countries.

The first English edition was the result of many requests to adapt it for use in Africa and Asia. I received help and suggestions from persons with experience in many parts of the world. But the English edition seems to have lost much of the flavor and usefulness of the original Spanish edition, which was written for a specific area, and for people who have for years been my neighbors and friends. In rewriting the book to serve people in many parts of the world, it has in some ways become too general.

To be fully useful, this book should be adapted by persons familiar with the health needs, customs, special ways of healing, and local language of specific areas.

———— • ————

Persons or programs who wish to use this book, or portions of it, in preparing their own manuals and activities for villagers or health workers are encouraged to do so. We often grant permission at no charge, provided the parts reproduced are distributed free or at cost—not for profit. Please see the explanation online at www.hesperian.org/about/open-copyright, or contact us at permissions@hesperian.org to answer any questions. Our goal is to help you design a program that works for you, not to make money.

For local or regional health programs that do not have the resources for revising this book or preparing their own manuals, it is strongly suggested that if the present edition is used, leaflets or inserts be supplied with the book to provide additional information as needed.

In the **Green Pages** (the Uses, Dosage, and Precautions for Medicines) blank spaces have been left to write in common brand names and prices of medicines. Once again, local programs or organizations distributing the book would do well to make up a list of generic or low-cost brand names and prices, to be included with each copy of the book.

———— • ————

This book was written for anyone who wants to do something about his or her own and other people's health. However, it has been widely used as a training and work manual for community health workers. For this reason, an introductory section has been added for the health worker, making clear that **the health worker's first job is to share her knowledge and help educate people.**

Today in over-developed as well as under-developed countries, existing health care systems are in a state of crisis. Often, human needs are not being well met. There is too little fairness. Too much is in the hands of too few.

Let us hope that through a more generous sharing of knowledge, and through learning to use what is best in both traditional and modern ways of healing, people everywhere will develop a kinder, more sensible approach to caring—for their own health, and for each other.

—D.W.

Note about this New Edition

In this revised edition of ***Where There is No Doctor***, we have added new information and updated old information, based on the latest scientific knowledge. Health care specialists from many parts of the world have generously given advice and suggestions.

When it would fit without having to change page numbers, we have added new information to the main part of the book. (This way, the numbering stays the same, so that page references in our other books, such as ***Helping Health Workers Learn***, will still be correct.)

The **Additional Information** section at the end of the book (p. 401) has information about health problems of growing or special concern: HIV and AIDS, sores on the genitals, leishmaniasis, complications from abortion, guinea worm, and others. Here also are topics such as measuring blood pressure, misuse of pesticides, drug addiction, and a method of caring for early and underweight babies.

New ideas and information can be found throughout the book—medical knowledge is always changing! For example:

- **Nutrition** advice has changed. Experts used to tell mothers to give children more foods rich in proteins. But it is now known that what most poorly nourished children need is more energy-rich foods, especially whole grains, which provide enough protein *if the child eats enough of them*. Finding ways to give enough healthy foods while avoiding "junk" and highly processed foods, is now emphasized (Chapter 11).

- Advice for treatment of **stomach ulcer** is different nowadays. For years doctors recommended drinking lots of milk. But according to recent studies, it is better to drink lots of water, not milk (p. 129).

- Knowledge about **special drinks for diarrhea** (oral rehydration therapy) has also changed. Not long ago experts thought that drinks made with sugar were best. But we now know that drinks made with cereals do more to prevent water loss, slow down diarrhea, and combat malnutrition than do sugar-based drinks or "ORS" packets (p. 152).

- A section has been added on **sterilizing equipment**. This is important to prevent the spread of certain diseases, such as HIV (p. 74).

- We have also added sections on **mosquito-borne illnesses** (p. 187), **sickle cell disease** (p. 321), **contraceptive implants** (p. 290), and using **birth control pills for emergency contraception** (p. 395).

- Page 105 contains revised information about **treatment of snakebite**.

- Page 139 has details on building the fly-killing **VIP latrine.**

If you have suggestions for improving this book, please let us know. Your ideas are very important to us!

The **Green Pages** now include additional medicines, including **anti-retrovirals** for treating HIV. Some diseases have become resistant to the medicines used in the past, so it is now harder to give simple medical advice for certain diseases—especially malaria, tuberculosis, typhoid, and sexually spread infections. Often we give several possibilities for treatment. **For many infectious diseases you will need local advice** about which medicines are available and effective in your area.

In updating the information on medicines, we mostly include only those on the World Health Organization's List of Essential Medicines. (However we also discuss some widely used but dangerous medicines to give warnings and to discourage their use—see also pages 50 to 53.) In trying to cover health needs and variations in many parts of the world, we have listed more medicines than will be needed for any one area. To persons preparing adaptations of this book, we strongly suggest that the Green Pages be shortened and modified to meet the specific needs and treatment patterns in your country.

In this new edition of *Where There Is No Doctor* we continue to stress the value of traditional forms of healing, and have added some more "home remedies." However, since many folk remedies depend on local plants and customs, we have added only a few which use commonly found items such as garlic. We hope those adapting this book will add home remedies useful to their area.

Community action is emphasized throughout this book. For example, today it is often not enough to explain to mothers that "breast is best." Communities must organize to make sure that mothers are able to breastfeed their babies at work. Likewise, problems such as misuse of pesticides (p. 414), drug abuse (p. 418), and unsafe abortions (p. 416) are best solved by people working together to make their communities safer, healthier, and more fair.



"Health for all" can be achieved only through the organized demand by people for greater equality in terms of land, wages, services, and basic rights. More power to the people!

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THANKS

This revision of ***Where There Is No Doctor*** has been a cooperative effort. We thank the many users of the book around the world who have written us over the years with comments and suggestions—these have guided us in updating this information.

David Werner is the author of the original Spanish and English versions of the book. His vision, caring, and commitment are present on every page. Carol Thuman and Jane Maxwell share credit for most of the research, writing, and preparation of this revised version. We are deeply grateful for their excellent and very careful work.

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Artwork for this book was created by David Werner, Kyle Craven, Susan Klein, Regina Doyle, Sandy Frank, Kathleen Tandy, Fiona Thomson, Lihua Wang, and Mary Ann Zapalac. We also thank the following persons and groups for permission to use their artwork: Dale Crosby, Carl Werner, Macmillan Publishers (for some of Felicity Shepherd's drawings in the African edition of this book), the "New Internationalist" (for the picture of the VIP latrine), James Ogwang (for the drawings on page 417), and McGraw-Hill (for drawings appearing on pages 85 and 104 taken from *Emergency Medical Guide* by John Henderson, illustrated by Neil Hardy).

The fine work of those who helped create the original version is still reflected on nearly every page. Our thanks to Val Price, Al Hotti, Max Capestany, Rudolf Bock, Kent Benedict, Alfonzo Darricades, Carlos Felipe Soto Miller, Paul Quintana, David Morley, Bill Bower, Allison Orozco, Susan Klein, Greg Troll, Carol Westburg, Lynn Gordon, Myra Polinger, Trude Bock, Roger Bunch, Lynne Coen, George Kent, Jack May, Oliver Bock, Bill Gonda, Ray Bleicher, and Jesús Manjárrez.

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Words to the Village Health Worker

Who is the village health worker?

A village health worker is a person who helps lead family and neighbors toward better health. Often he or she has been selected by the other villagers as someone who is especially able and kind.

Some village health workers receive training and help from an organized program, perhaps the Ministry of Health. Others have no official position, but are simply members of the community whom people respect as healers or leaders in matters of health. Often they learn by watching, helping, and studying on their own.

In the larger sense, **a village health worker is anyone who takes part in making his or her village a healthier place to live.**

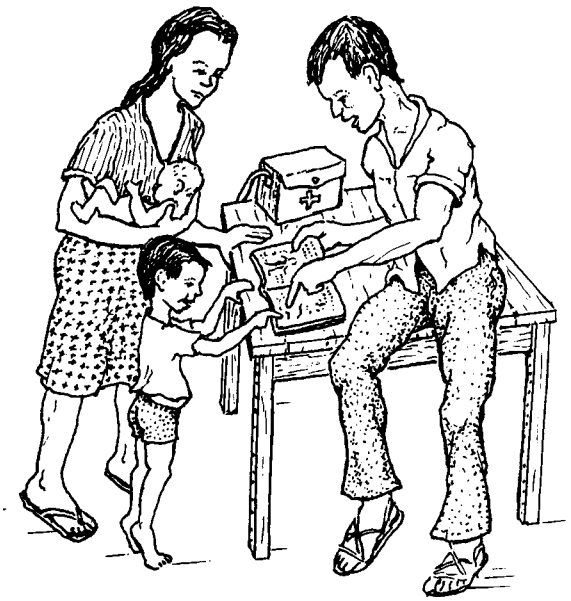
This means almost everyone can and should be a health worker:

- Mothers and fathers can show their children how to keep clean.
- Farm people can work together to help their land produce more food.
- Teachers can teach schoolchildren how to prevent and treat many common sicknesses and injuries.
- Schoolchildren can share what they learn with their parents.
- Shopkeepers can find out about the correct use of medicines they sell and give sensible advice and warning to buyers (p. 338).
- Midwives can counsel parents about the importance of eating well during pregnancy, breastfeeding, and family planning.

This book was written for the health worker in the larger sense. It is for anyone who wants to know and do more for his own, his family's or his people's well-being.

If you are a community health worker, an auxiliary nurse, or even a doctor, remember: this book is not just for you. It is for **all the people.** Share it!

Use this book to help explain what you know to others. Perhaps you can get small groups together to read a chapter at a time and discuss it.



THE VILLAGE HEALTH WORKER LIVES AND WORKS AT THE LEVEL OF HIS PEOPLE. HIS FIRST JOB IS TO SHARE HIS KNOWLEDGE.

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Dear Village Health Worker,

This book is mostly about people's **health needs**. But to help your village be a healthy place to live, you must also be in touch with their **human needs**. Your understanding and concern for people are just as important as your knowledge of medicine and sanitation.

Here are some suggestions that may help you serve your people's human needs as well as health needs:

1. BE KIND. A friendly word, a smile, a hand on the shoulder, or some other sign of caring often means more than anything else you can do. **Treat others as your equals.** Even when you are hurried or worried, try to remember the feelings and needs of others. Often it helps to ask yourself, "What would I do if this were a member of my own family?"

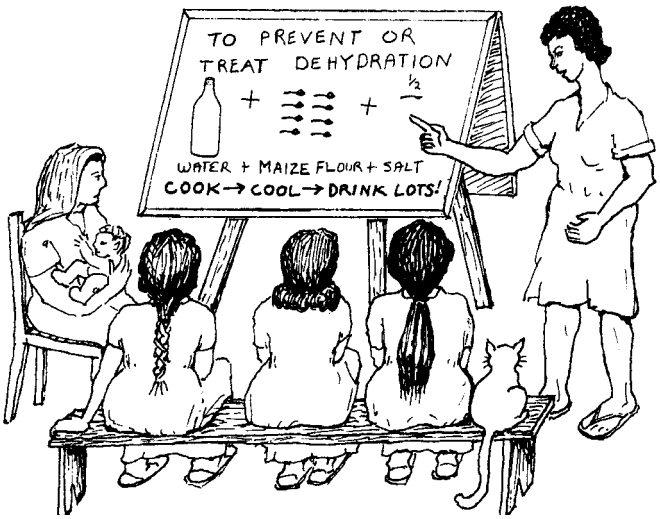
Treat the sick as people. Be especially kind to those who are very sick or dying. And be kind to their families. Let them see that you care.



HAVE COMPASSION.

Kindness often helps more than medicine. Never be afraid to show you care.

2. SHARE YOUR KNOWLEDGE. As a health worker, your first job is to teach. This means helping people learn more about how to keep from getting sick. It also means helping people learn how to recognize and manage their illnesses—including the sensible use of home remedies and common medicines.



LOOK FOR WAYS TO SHARE YOUR KNOWLEDGE.

There is nothing you have learned that, if carefully explained, should be of danger to anyone. Some doctors talk about **self-care** as if it were dangerous, perhaps because they like people to depend on their costly services. But in truth, **most common health problems could be handled earlier and better by people in their own homes.**

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3. RESPECT YOUR PEOPLE'S TRADITIONS AND IDEAS.

Because you learn something about modern medicine does not mean you should no longer appreciate the customs and ways of healing of your people. Too often the human touch in the art of healing is lost when medical science moves in. This is too bad, because. . .

If you can use what is best in modern medicine, together with what is best in traditional healing, the combination may be better than either one alone.

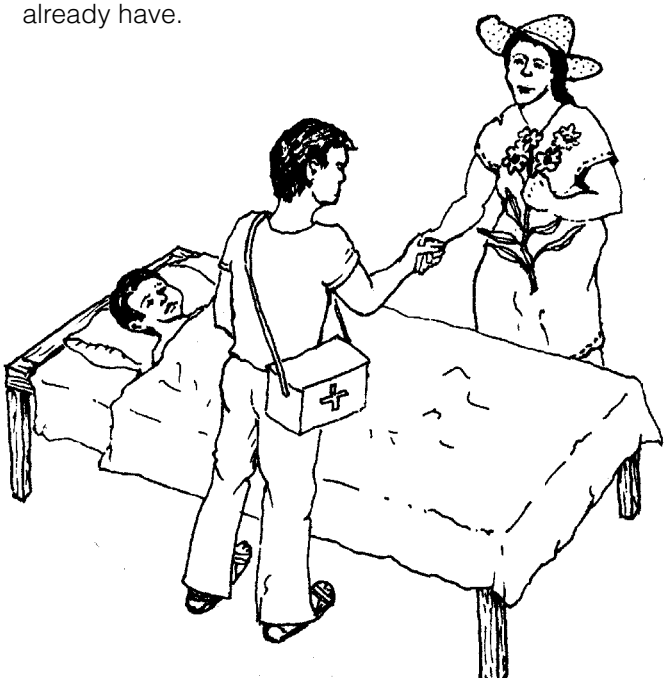
In this way, you will be adding to your people's culture, not taking away.

Of course, if you see that some of the home cures or customs are harmful (for example, putting excrement on the freshly cut cord of a newborn baby), you will want to do something to change this. But do so carefully, with respect for those who believe in such things. Never just tell people they are wrong. Try to help them understand WHY they should do something differently.

People are slow to change their attitudes and traditions, and with good reason. They are true to what they feel is right. And this we must respect.

Modern medicine does not have all the answers either. It has helped solve some problems, yet has led to other, sometimes even bigger ones. People quickly come to depend too much on modern medicine and its experts, to overuse medicines, and to forget how to care for themselves and each other.

So go slow—and always keep a deep respect for your people, their traditions, and their human dignity. Help them build on the knowledge and skills they already have.



WORK WITH TRADITIONAL HEALERS AND MIDWIVES—NOT AGAINST THEM.

Learn from them and encourage them to learn from you.

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4. KNOW YOUR OWN LIMITS.

No matter how great or small your knowledge and skills, you can do a good job as long as you know and work within your limits. This means: **Do what you know how to do**. Do not try things you have not learned about or have not had enough experience doing, if they might harm or endanger someone.

But use your judgment.

Often, what you decide to do or not do will depend on how far you have to go to get more expert help.

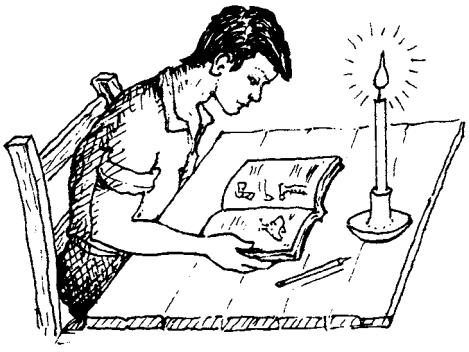
For example, a mother has just given birth and is bleeding more than you think she should. If you are only half an hour away from a medical center, it may be wise to take her there right away. But if the mother is bleeding very heavily and you are a long way from the health center, you may decide to massage her womb (p. 265) or inject a medicine to control bleeding (p. 266) even if you were not taught this.



KNOW YOUR LIMITS.

Do not take unnecessary chances. But when the danger is clearly greater if you do nothing, do not be afraid to try something you feel reasonably sure will help.

Know your limits—but also use your head. Always do your best to protect the sick person rather than yourself.



KEEP LEARNING—Do not let anyone tell you there are things you should not learn or know.

5. KEEP LEARNING.

Use every chance you have to learn more. Study whatever books or information you can lay your hands on that will help you be a better worker, teacher, or person.

Always be ready to ask questions of doctors, sanitation officers, agriculture experts, or anyone else you can learn from.

Never pass up the chance to take refresher courses or get additional training.

Your first job is to teach, and unless you keep learning more, soon you will not have anything new to teach others.

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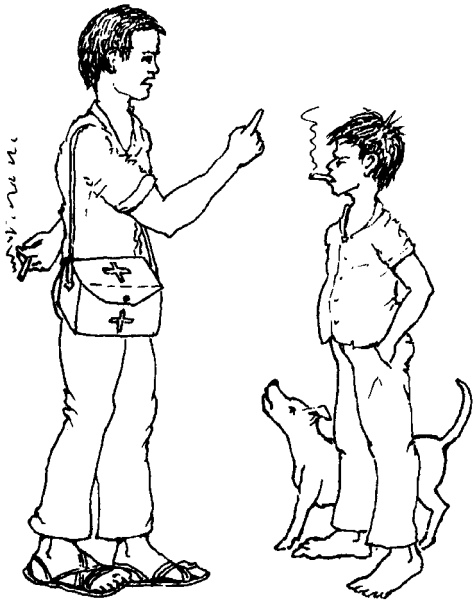
6. PRACTICE WHAT YOU TEACH.

People are more likely to pay attention to what you do than what you say. As a health worker, you want to take special care in your personal life and habits, so as to set a good example for your neighbors.

Before you ask people to make latrines, be sure your own family has one.

Also, if you help organize a work group—for example, to dig a common garbage hole—be sure you work and sweat as hard as everyone else.

Good leaders do not tell people what to do. They set the example.



PRACTICE WHAT YOU TEACH.
(Or who will listen to you?)

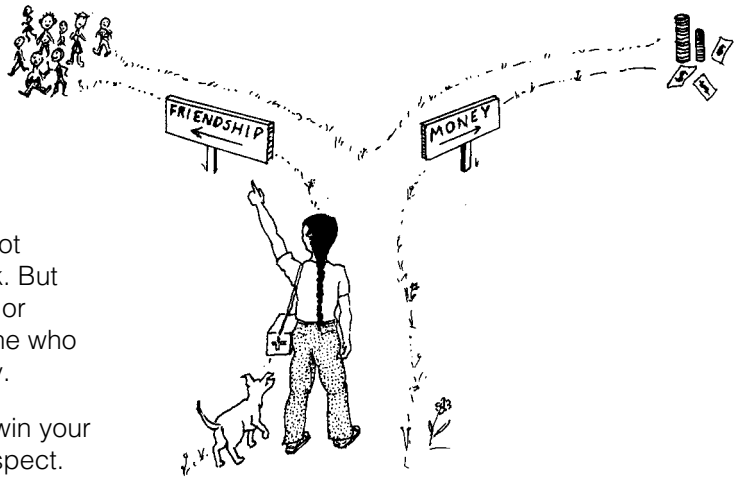
7. WORK FOR THE JOY OF IT.

If you want other people to take part in improving their village and caring for their health, you must enjoy such activity yourself. If not, who will want to follow your example?

Try to make community work projects fun. For example, fencing off the public water hole to keep animals away from where people take water can be hard work. But if the whole village helps do it as a "work festival"—perhaps with refreshments and music—the job will be done quickly and can be fun. Children will work hard and enjoy it, if they can turn work into play.

You may or may not be paid for your work. But never refuse to care, or care less, for someone who is poor or cannot pay.

This way you will win your people's love and respect. These are worth far more than money.



WORK FIRST FOR THE PEOPLE—NOT THE MONEY.
(People are worth more.)

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8. LOOK AHEAD—AND HELP OTHERS TO LOOK AHEAD.

A responsible health worker does not wait for people to get sick. She tries to stop sickness before it starts. She encourages people to take action **now** to protect their health and well-being in the future.

Many sicknesses can be prevented. Your job, then, is to help your people understand the causes of their health problems and do something about them.

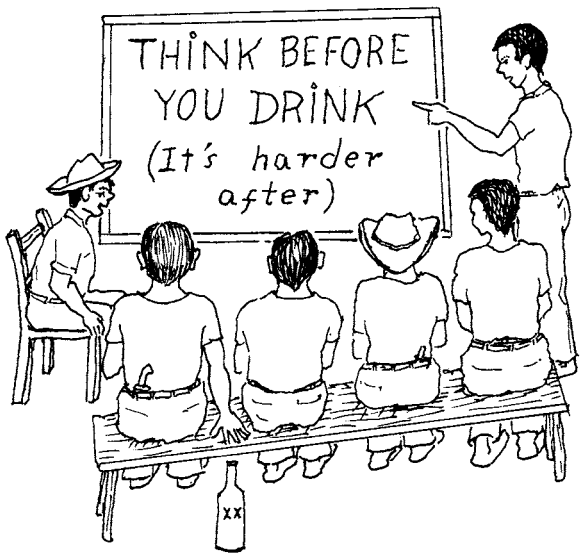
Most health problems have many causes, one leading to another. To correct the problem in a lasting way, you must look for and deal with the **underlying causes.** You must get to the root of the problem.

For example, in many villages diarrhea is the most common cause of death in small children. The spread of diarrhea is caused in part by lack of cleanliness (poor *sanitation* and *hygiene*). You can do something to correct this by digging latrines and teaching basic guidelines of cleanliness (p. 133).

But the children who suffer and die most often from diarrhea are those who are poorly nourished. Their bodies do not have strength to fight the infections. So to prevent death from diarrhea we must also prevent poor nutrition.

And why do so many children suffer from poor nutrition?

- Is it because mothers do not realize what foods are most important (for example, breast milk)?
- Is it because the family does not have enough money or land to produce the food it needs?
- Is it because a few rich persons control most of the land and the wealth?
- Is it because the poor do not make the best use of land or money they have?
- Is it because parents have more children than they can provide for, and keep having more?
- Is it because fathers lose hope and spend the little money they have on drink?
- Is it because people do not look or plan ahead? Because they do not realize that by working together and sharing they can change the conditions under which they live and die?



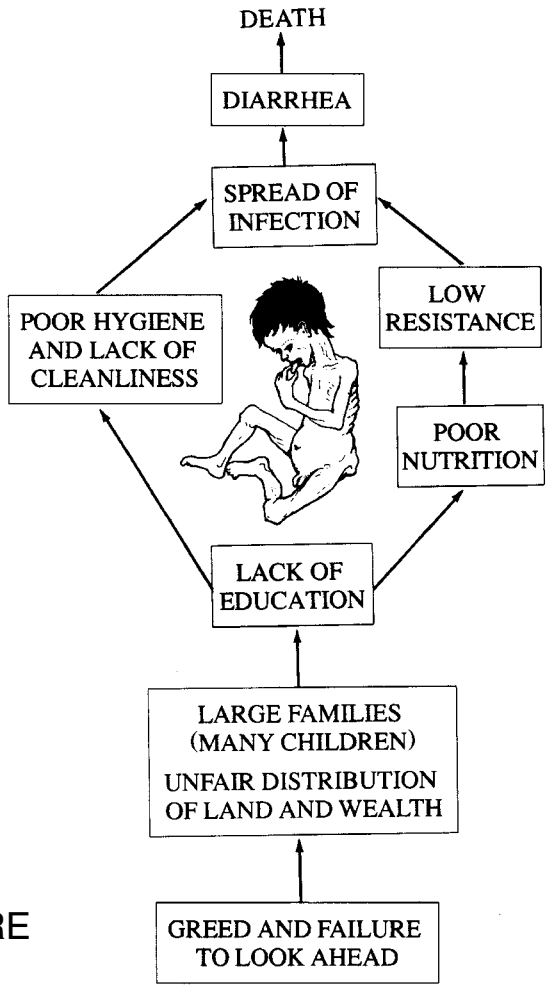
HELP OTHERS TO LOOK AHEAD.

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You may find that many, if not all, of these things lie behind infant deaths in your area. You will, no doubt, find other causes as well. As a health worker it is your job to help people understand and do something about as many of these causes as you can.

But remember: to prevent frequent deaths from diarrhea will take far more than latrines, pure water, and a special oral rehydration drink. You may find that child spacing, better land use, and fairer distribution of wealth, land, and power are more important in the long run.

The causes that lie behind much sickness and human suffering are short-sightedness and greed. If your interest is your people's well-being, you must help them learn to share, to work together, and to look ahead.



The chain of causes leading to death from diarrhea.

MANY THINGS RELATE TO HEALTH CARE

We have looked at some of the causes that underlie diarrhea and poor nutrition. Likewise, you will find that such things as **food production, land distribution, education, and the way people treat or mistreat each other** lie behind many different health problems.

If you are interested in the long-term welfare of your whole community, you must help your people look for answers to these larger questions.

Health is more than not being sick. It is well-being: in body, mind, and community. People live best in healthy surroundings, in a place where they can trust each other, work together to meet daily needs, share in times of difficulty and plenty, and help each other learn and grow and live, each as fully as he or she can.

Do your best to solve day-to-day problems. But remember that your greatest job is to help your community become a more healthy and more human place to live.

You as a health worker have a big responsibility.

Where should you begin?

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TAKE A GOOD LOOK AT YOUR COMMUNITY

Because you have grown up in your community and know your people well, you are already familiar with many of their health problems. You have an inside view. But in order to see the whole picture, you will need to look carefully at your community from many points of view.

As a village health worker, your concern is for the well-being of **all the people**—not just those you know well or who come to you. Go to your people. Visit their homes, fields, gathering places, and schools. Understand their joys and concerns. Examine with them their habits, the things in their daily lives that bring about good health, and those that may lead to sickness or injury.

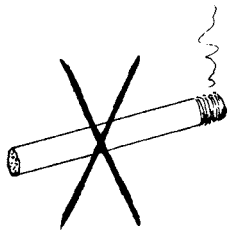
Before you and your community attempt any project or activity, carefully think about what it will require and how likely it is to work. To do this, you must consider **all** the following:

1. **Felt needs**—what people feel are their biggest problems.
2. **Real needs**—steps people can take to correct these problems in a lasting way.
3. **Willingness**—or readiness of people to plan and take the needed steps.
4. **Resources**—the persons, skills, materials, and/or money needed to carry out the activities decided upon.

As a simple example of how each of these things can be important, let us suppose that a man who smokes a lot comes to you complaining of a cough that has steadily been getting worse.



1. His **felt need** is to get rid of his cough.



2. His **real need** (to correct the problem) is to give up smoking.



3. To get rid of his cough will require his **willingness** to give up smoking. For this he must understand how much it really matters.



4. One **resource** that may help him give up smoking is information about the harm it can do him and his family (p. 149). Another is the support and encouragement of his family, his friends, and you.

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Finding Out the Needs

As a health worker, you will first want to find out your people's most important health problems and their biggest concerns. To gather the information necessary to decide what the greatest needs and concerns really are, it may help to make up a list of questions.

On the next 2 pages are samples of the kinds of things you may want to ask. But think of questions that are important **in your area.** Ask questions that not only help you get information, but that get others asking important questions themselves.

Do not make your list of questions too long or complicated—especially a list you take from house to house. Remember, **people are not numbers** and do not like to be looked at as numbers. As you gather information, be sure your first interest is always in what individuals want and feel. It may be better not even to carry a list of questions. But in considering the needs of your community, you should keep certain basic questions in mind.



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Sample Lists of Questions

To Help Determine Community Health Needs
and at the Same Time Get People Thinking



FELT NEEDS

What things in your people's daily lives (living conditions, ways of doing things, beliefs, etc.) do they feel help them to be healthy?

What do people feel to be their major problems, concerns, and needs—not only those related to health, but in general?



HOUSING AND SANITATION



What are different houses made of? Walls? Floors? Are the houses kept clean? Is cooking done on the floor or where? How does smoke get out? On what do people sleep?

Are flies, fleas, bedbugs, rats, or other pests a problem? In what way? What do people do to control them? What else could be done?

Is food protected? How could it be better protected?

What animals (dogs, chickens, pigs, etc.), if any, are allowed in the house? What problems do they cause?

What are the common diseases of animals? How do they affect people's health? What is being done about these diseases?

Where do families get their water? Is it safe to drink? What precautions are taken?

How many families have latrines? How many use them properly?
Is the village clean? Where do people put garbage? Why?



POPULATION



How many people live in the community? How many are under 15 years old?

How many can read and write? What good is schooling? Does it teach children what they need to know? How else do children learn?

How many babies were born this year? How many people died? Of what? At what ages? Could their deaths have been prevented? How?

Is the population (number of people) getting larger or smaller? Does this cause any problems?

How often were different persons sick in the past year? How many days was each sick? What sickness or injuries did each have? Why?

How many people have chronic (long-term) illnesses? What are they?

How many children do most parents have? How many children died? Of what? At what ages? What were some of the **underlying** causes?

How many parents are interested in not having any more children or in not having them so often? For what reasons? (See Family Planning, p. 283.)

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NUTRITION



How many mothers breast feed their babies? For how long? Are these babies healthier than those who are not breastfed? Why?

What are the main foods people eat? Where do they come from?

Do people make good use of all foods available?

How many children are underweight (p. 109) or show signs of poor nutrition? How much do parents and school children know about nutritional needs?

How many people smoke a lot? How many drink alcoholic or soft drinks very often? What effect does this have on their own and their families' health?
See pages 148 to 150.

LAND AND FOOD



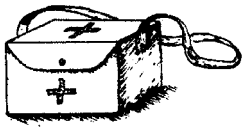
Does the land provide enough food for each family?
How long will it continue to produce enough food if families keep growing?

How is farm land distributed? How many people own their land?

What efforts are being made to help the land produce more?

How are crops and food stored? Is there much damage or loss? Why?

HEALING, HEALTH



What role do local midwives and healers play in health care?

What traditional ways of healing and medicines are used?
Which are of greatest value? Are any harmful or dangerous?

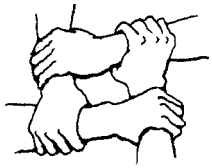
What health services are nearby? How good are they? What do they cost? How much are they used?

How many children have been vaccinated? Against what sicknesses?

What other preventive measures are being taken? What others might be taken?

How important are they?

SELF-HELP



What are the most important things that affect your people's health and well-being—now and in the future?

How many of their common health problems can people care for themselves? How much must they rely on outside help and medication?

Are people interested in finding ways of making self-care safer, more effective and more complete? Why? How can they learn more? What stands in the way?

What are the rights of rich people? Of poor people? Of men? Of women? Of children? How is each of these groups treated? Why? Is this fair? What needs to be changed? By whom? How?

Do people work together to meet common needs? Do they share or help each other when needs are great?

What can be done to make your village a better, healthier place to live? Where might you and your people begin?

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USING LOCAL RESOURCES TO MEET NEEDS

How you deal with a problem will depend upon what resources are available.

Some activities require outside resources (materials, money, or people from somewhere else). For example, a vaccination program is possible only if vaccines are brought in—often from another country.

Other activities can be carried out completely with local resources. A family or a group of neighbors can fence off a water hole or build simple latrines using materials close at hand.

Some outside resources, such as vaccines and a few important medicines, can make a big difference in people's health. You should do your best to get them. But as a general rule, it is in the best interest of your people to

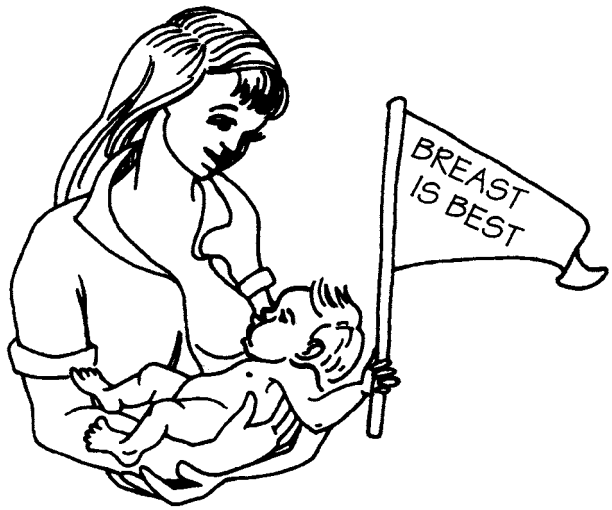
Use local resources whenever possible.

The more you and your people can do for yourselves, and the less you have to depend on outside assistance and supplies, the healthier and stronger your community will become.

Not only can you count on local resources to be on hand when you need them, but often they do the best job at the lowest cost. For example, if you can encourage mothers to breastfeed their babies, this will build self-reliance through a top quality local resource—breast milk! It will also prevent needless sickness and death of many babies.

In your health work always remember:

Encourage people to make the most of local resources.



BREAST MILK—A TOP QUALITY LOCAL RESOURCE—BETTER THAN ANYTHING MONEY CAN BUY!

The most valuable resource for the health of the people is the people themselves.

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DECIDING WHAT TO DO AND WHERE TO BEGIN

After taking a careful look at needs and resources, you and your people must decide which things are more important and which to do first. You can do many different things to help people be healthy. Some are important immediately. Others will help determine the future well-being of individuals or the whole community.

In a lot of villages, poor nutrition plays a part in other health problems. **People cannot be healthy unless there is enough to eat.** Whatever other problems you decide to work with, if people are hungry or children are poorly nourished, better nutrition must be your first concern.

There are many different ways to approach the problem of poor nutrition, for many different things join to cause it. You and your community must consider the possible actions you might take and decide which are most likely to work.

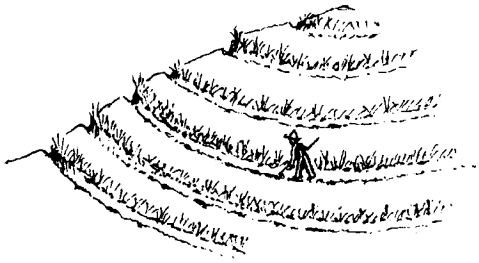
Here are a few examples of ways some people have helped meet their needs for better nutrition. Some actions bring quick results. Others work over a longer time. You and your people must decide what is most likely to work in your area.

POSSIBLE WAYS TO WORK TOWARD BETTER NUTRITION

FAMILY GARDENS



CONTOUR DITCHES
to prevent soil from
washing away

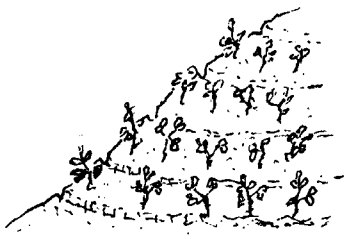


ROTATION OF CROPS

Every other planting season plant a crop that returns strength to the soil—like beans, peas, lentils, alfalfa, peanuts or some other plant with seed in pods (legumes).



This year **maize**

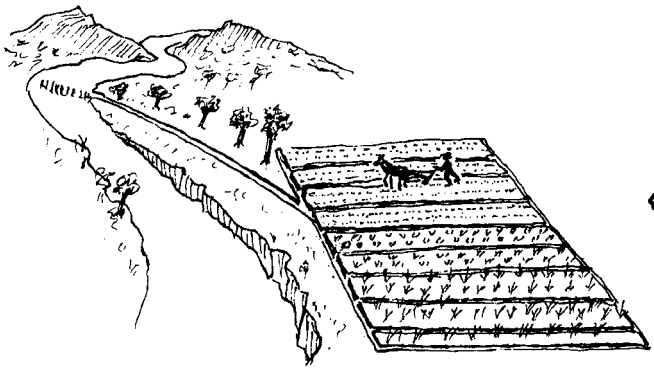


Next year **beans**

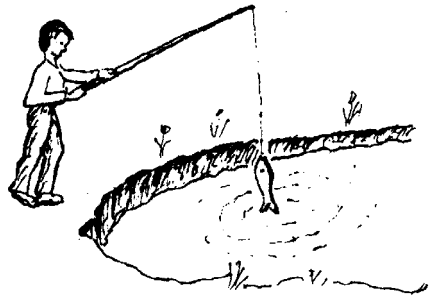
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MORE WAYS TO WORK TOWARD BETTER NUTRITION

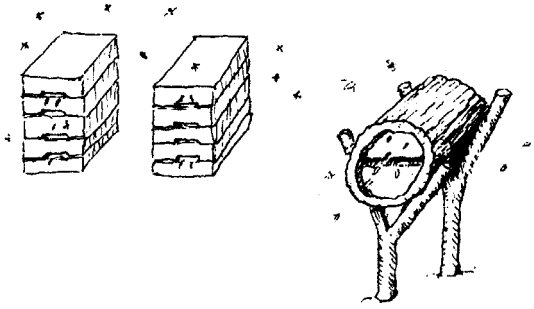
IRRIGATION OF LAND



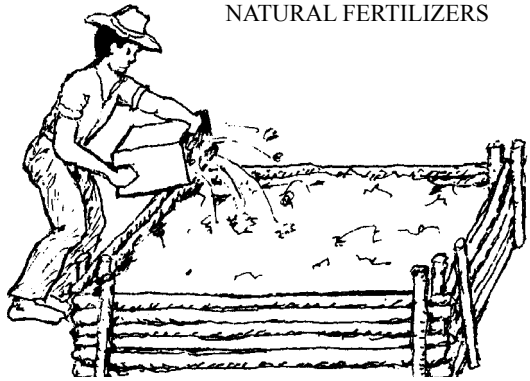
FISH BREEDING



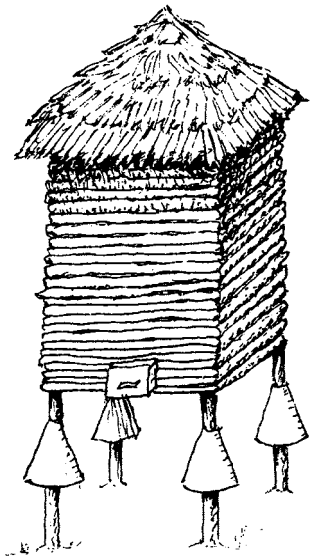
BEEKEEPING



NATURAL FERTILIZERS



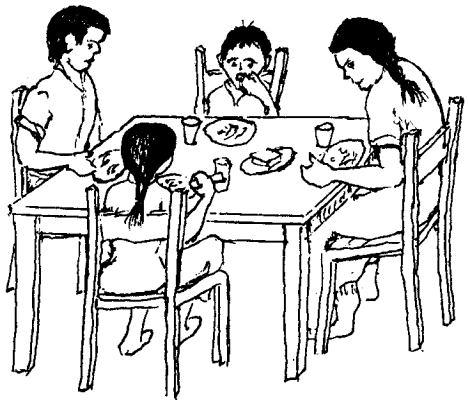
Compost pile



BETTER FOOD STORAGE

Metal sleeves to keep out rats

SMALLER FAMILIES THROUGH FAMILY PLANNING (p. 283)



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TRYING A NEW IDEA

Not all the suggestions on the last pages are likely to work in your area. Perhaps some will work if changed for your particular situation and resources at hand. Often you can only know whether something will work or not by trying it. That is, by experiment.



Start small

When you try out a new idea, **always start small.** If you start small and the experiment fails, or something has to be done differently, you will not lose much. If it works, people will see that it works and can begin to apply it in a bigger way.

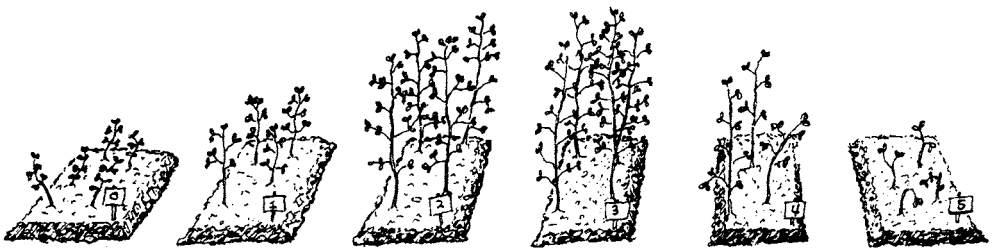
Do not be discouraged if an experiment does not work. Perhaps you can try again with certain changes. You can learn as much from your failures as your successes. But start small.

Here is an example of experimenting with a new idea.

> You learn that a certain kind of bean, such as soya, is an excellent body-building food. But will it grow in your area? And if it grows, will people eat it?
>
> Start by planting a small patch—or 2 or 3 small patches in different conditions of soil or water. If the beans do well, try preparing them in different ways, and see if people will eat them. If so, try planting more beans in the conditions where you found they grew best. But try out still other conditions in more small patches to see if you can get an even better crop.

There may be several conditions you want to try changing. For example, type of soil, addition of fertilizer, amount of water, or different varieties of seed. To best understand what helps and what does not, be sure to change only **one** condition at a time and keep all the rest the same.

> For example, to find out if animal fertilizer (manure) helps the beans grow, and how much to use, plant several small bean patches side by side, under the same conditions of water and sunlight, and using the same seed. But before you plant, mix each patch with a different amount of manure, something like this:



This experiment shows that a certain amount of manure helps, but that too much can harm the plants. This is only an example. Your experiments may give different results. Try for yourself!

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WORKING TOWARD A BALANCE BETWEEN PEOPLE AND LAND

Health depends on many things, but above all it depends on whether people have enough to eat.

Most food comes from the land. Land that is used well can produce more food. A health worker needs to know ways to help the land better feed the people—now and in the future. But even the best used piece of land can only feed a certain number of people. And today, **many of the people who farm do not have enough land to meet their needs or to stay healthy.**

In many parts of the world, the situation is getting worse, not better. Parents often have many children, so year by year there are more mouths to feed on the limited land that the poor are permitted to use.

Many health programs try to work toward a balance between people and land through family planning, or helping people have only the number of children they want. Smaller families, they reason, will mean more land and food to go around. But family planning by itself has little effect. As long as people are very poor, they often want many children. Children help with work without having to be paid, and as they get bigger may even bring home a little money. When the parents grow old, some of their children—or grandchildren—will perhaps be able to help care for them.

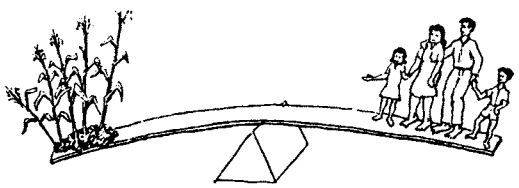
For a poor country to have many children may be an economic disaster. But for a poor family to have many children is often an economic necessity—especially when many die young. In the world today, **for most people, having many children is the surest form of social security they can hope for.**

Some groups and programs take a different approach. They recognize that hunger exists not because there is too little land to feed everyone, but because most of the land is in the hands of a few selfish persons. The balance they seek is a fairer distribution of land and wealth. They work to help people gain greater control over their health, land, and lives.

It has been shown that, where land and wealth are shared more fairly and people gain greater economic security, they usually choose to have smaller families. Family planning helps when it is truly the people's choice. A balance between people and land can more likely be gained through helping people work toward fairer distribution and social justice than through family planning alone.

It has been said that the social meaning of love is justice. The health worker who loves her people should help them work toward a balance based on a more just distribution of land and wealth.

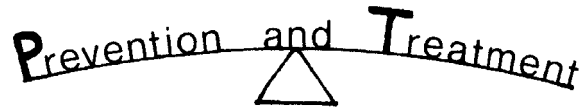
A LIMITED AMOUNT OF LAND CAN ONLY SUPPORT A LIMITED NUMBER OF PEOPLE.



A LASTING BALANCE BETWEEN PEOPLE AND LAND MUST BE BASED ON FAIR DISTRIBUTION.

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WORKING TOWARD A BALANCE BETWEEN



A balance between treatment and prevention often comes down to a balance between immediate needs and long-term needs.

As a health worker you must go to your people, work with them on their terms, and help them find answers to the needs they feel most. People's first concern is often to find relief for the sick and suffering. Therefore, **one of your first concerns must be to help with healing.**

But also look ahead. While caring for people's immediate felt needs, also help them look to the future. Help them realize that much sickness and suffering can be prevented and that they themselves can take preventive actions.

But be careful! Sometimes health planners and workers go too far. In their eagerness to prevent future ills, they may show too little concern for the sickness and suffering that already exist. By failing to respond to people's present needs, they may fail to gain their cooperation. And so they fail in much of their preventive work as well.

Treatment and prevention go hand in hand. Early treatment often prevents mild illness from becoming serious. If you help people to recognize many of their common health problems and to treat them early, in their own homes, much needless suffering can be prevented.

Early treatment is a form of preventive medicine.

If you want their cooperation, **start where your people are**. Work toward a balance between prevention and treatment that is acceptable to them. Such a balance will be largely determined by people's present attitudes toward sickness, healing, and health. As you help them look farther ahead, as their attitudes change, and as more diseases are controlled, you may find that the balance shifts naturally in favor of prevention.

You cannot tell the mother whose child is ill that prevention is more important than cure. Not if you want her to listen. But you can tell her, while you help her care for her child, that prevention is equally important.

Work toward prevention—do not force it.

Use treatment as a doorway to prevention. One of the best times to talk to people about prevention is when they come for treatment. For example, if a mother brings a child with worms, carefully explain to her how to treat him. But also take time to explain to both the mother and child how the worms are spread and the different things they can do to prevent this from happening (see Chapter 12). Visit their home from time to time, not to find fault, but to help the family toward more effective self-care.

Use treatment as a chance to teach prevention.

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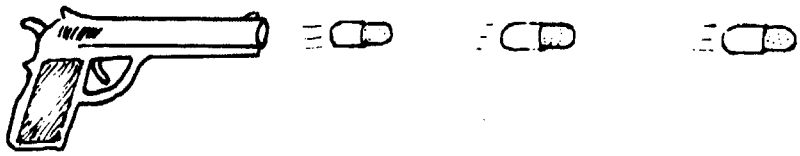
SENSIBLE AND LIMITED USE OF MEDICINES

One of the most difficult and important parts of preventive care is to educate your people in the sensible and limited use of medicines. A few modern medicines are very important and can save lives. But **for most sicknesses no medicine is needed.** The body itself can usually fight off sickness with rest, good food, drinking lots of liquid, and perhaps some simple home remedies.

People may come to you asking for medicine when they do not need any. You may be tempted to give them some medicine just to please. But if you do, when they get well, they will think that you and the medicine cured them. Really their bodies cured themselves.

Instead of teaching people to depend on medicines they do not need, take time to explain **why** they should not be used. Also tell people **what they can do themselves** to get well.

This way you are helping people to rely on local resources (themselves), rather than on an outside resource (medicine). Also, you are protecting their health, for **there is no medicine that does not have some risk in its use.**



REMEMBER: *MEDICINES CAN KILL*

Three common health problems for which people too often request medicines they do not need are (1) the common cold, (2) minor cough, and (3) diarrhea.

The **common cold** is best treated by resting, drinking lots of liquids, and at the most taking aspirin, acetaminophen, or ibuprofen (pages 380 to 381). Penicillin, tetracycline, and other antibiotics do not help at all (p. 163).

For **minor coughs,** or even more severe coughs with thick mucus or *phlegm*, drinking a lot of water will loosen mucus and ease the cough faster and better than cough syrup. Breathing warm water vapor brings even greater relief (p. 168). Do not make people dependent on cough syrup or other medicines they do not need.

For most **diarrhea** of children, medicines do not make them get well. Many commonly used medicines (neomycin, streptomycin, kaolin-pectin, *Lomotil*, chloramphenicol) may even be harmful. **What is most important is that the child get** *lots of liquids* **and** *enough food* (pages 155 to 156). **The key to the child's recovery is the mother, not the medicine.** If you can help mothers understand this and learn what to do, many children's lives can be saved.

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Medicines are often used too much, both by doctors and by ordinary people. This is unfortunate for many reasons:

- It is wasteful. Most money spent on medicine would be better spent on food.
- It makes people depend on something they do not need (and often cannot afford).
- Every medicine has some risk in its use. There is always a chance that an unneeded medicine may actually do the person harm.
- What is more, when some medicines are used too often for minor problems, they lose their power to fight dangerous sicknesses.

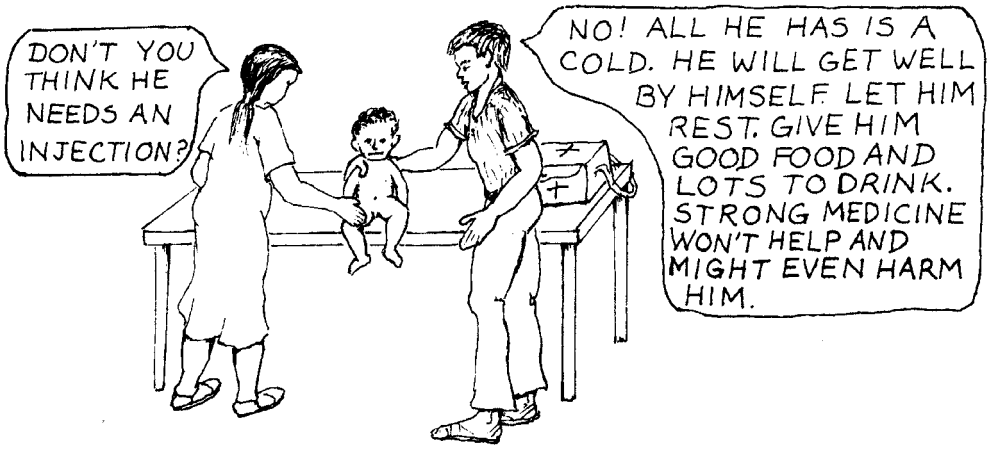
An example of a medicine losing its power is chloramphenicol. The extreme overuse of this important but risky antibiotic for minor infections has meant that in some parts of the world chloramphenicol no longer works against typhoid fever, a very dangerous infection. Frequent overuse of chloramphenicol has allowed typhoid to become ***resistant*** to it (p. 58).

For all the above reasons the use of medicines should be limited.

But how? Neither rigid rules and restrictions nor permitting only highly trained persons to decide about the use of medicines has prevented overuse. Only when the people themselves are better informed will the limited and careful use of medicines be common.

To educate people about sensible and limited use of medicines is one of the important jobs of the health worker.

This is especially true in areas where modern medicines are already in great use.



WHEN MEDICINES ARE NOT NEEDED, TAKE TIME TO EXPLAIN WHY.

For more information about the use and misuse of medicines, see Chapter 6, page 49. For the use and misuse of injections, see Chapter 9, page 65. For sensible use of home remedies, see Chapter 1.

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FINDING OUT WHAT PROGRESS HAS BEEN MADE (EVALUATION)

From time to time in your health work, it helps to take a careful look at **what** and **how much** you and your people have succeeded in doing. What changes, if any, have been made to improve health and well-being in your community?

You may want to record each month or year the health activities that can be measured. For example:

- How many families have put in latrines?
- How many farmers take part in activities to improve their land and crops?
- How many mothers and children take part in an *Under-Fives Program* (regular check-ups and learning)?

This kind of question will help you measure **action taken.** But to find out the result or **impact** of these activities on health, you will need to answer other questions such as:

- How many children had diarrhea or signs of worms in the past month or year—as compared to before there were latrines?
- How much was harvested this season (corn, beans, or other crops)—as compared to before improved methods were used?
- How many children show typical weight and weight gain on their Child Health Charts (p. 297)—as compared to when the Under-Fives Program was started?
- Do fewer children die now than before?

To be able to judge the success of any activity you need to collect certain information both before and after. For example, if you want to teach mothers how important it is to breastfeed their babies, first take a count of how many mothers are doing so. Then begin the teaching program and each year take another count. This way you can get a good idea as to how much effect your teaching has had.

You may want to set goals. For example, you and the health committee may hope that 80% of the families have latrines by the end of one year. Every month you take a count. If, by the end of six months, only one-third of the families have latrines, you know you will have to work harder to meet the goal you set for yourselves.

Setting goals often helps people work harder and get more done.

To evaluate the results of your health activities it helps to count and measure certain things **before, during,** and **after.**

But remember: **The most important part of your health work cannot be measured.** It has to do with the way you and other people relate to each other; with people learning and working together; with the growth of kindness, responsibility, sharing, and hope. It depends on the growing strength and unity of the people to stand up for their basic rights. You cannot measure these things. But weigh them well when you consider what changes have been made.

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TEACHING AND LEARNING TOGETHER— THE HEALTH WORKER AS AN EDUCATOR

As you come to realize how many things affect health, you may think the health worker has an impossibly large job. And true, you will never get much done if you try to deliver health care by yourself.

Only when the people themselves become actively responsible for their own and their community's health, can important changes take place.

Your community's well-being depends on the involvement not of one person, but of nearly everyone. For this to happen, responsibility and knowledge must be shared.

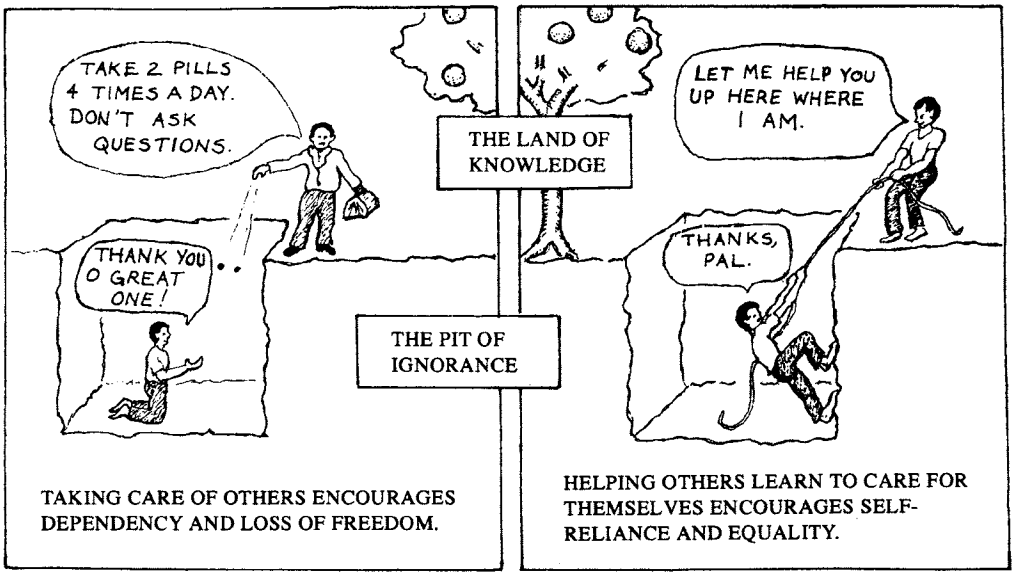
This is why **your first job as a health worker is to teach**—to teach children, parents, farmers, schoolteachers, other health workers—everyone you can.

The art of teaching is the most important skill a person can learn. To teach is to help others grow, and to grow with them. **A good teacher is not someone who puts ideas into other people's heads; he or she is someone who helps others build on their own ideas, to make new discoveries for themselves.**

Teaching and learning should not be limited to the schoolhouse or health post. They should take place in the home and in the fields and on the road. As a health worker one of your best chances to teach will probably be when you treat the sick. But you should look for every opportunity to exchange ideas, to share, to show, and to help your people think and work together.

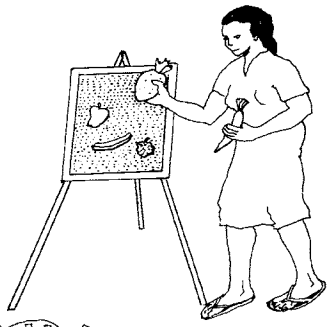
On the next few pages are some ideas that may help you do this. They are only suggestions. You will have many other ideas yourself.

TWO APPROACHES TO HEALTH CARE



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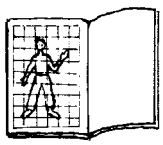
Tools for Teaching



Flannelboards are good for talking with groups because you can keep making new pictures. Cover a square board or piece of cardboard with a flannel cloth. You can place different cutout drawings or photos on it. Strips of sandpaper or flannel glued to the backs of cutouts help them stick to the flannelboard.



Posters and displays. "A picture is worth a thousand words." Simple drawings, with or without a few words of information, can be hung in the health post or anywhere that people will look at them. You can copy some of the pictures from this book.



If you have trouble getting sizes and shapes right, draw light, even squares in pencil over the picture you want to copy.

Now draw the same number of squares lightly, but larger, on the poster paper or cardboard. Then copy the drawing, square for square.

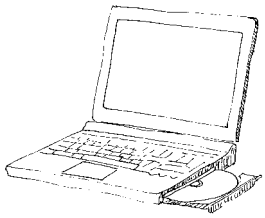


If possible, ask village artists to draw or paint posters. Or have children make posters on different subjects.

Models and demonstrations help get ideas across. For example, if you want to talk with mothers and midwives about care in cutting the cord of a newborn child, you can make a doll for the baby. Pin a cloth cord to its belly. Experienced midwives can demonstrate to others.



Videos on tapes, DVDs, and on the internet are available on different health subjects for many parts of the world. Battery-operated projectors are also available. But technology can never take the place of a good educator.



A list of addresses where you can send for teaching materials to use for health education in your village can be found on pages 431 to 434.

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Other Ways to Get Ideas Across

Story telling. When you have a hard time explaining something, a story, especially a true one, will help make your point.

For example, if I tell you that sometimes a village worker can make a better diagnosis than a doctor, you may not believe me. But if I tell you about a village health worker called Irene, who runs a small nutrition center in Central America, you may understand.

> One day a small sickly child arrived at the nutrition center. He had been sent by the doctor at a nearby health center because he was badly malnourished. The child also had a cough, and the doctor had prescribed a cough medicine. Irene was worried about the child. She knew he came from a very poor family and that an older brother had died a few weeks before. She went to visit the family and learned that the older brother had been very sick for a long time and had coughed blood. Irene went to the health center and told the doctor she was afraid the child had tuberculosis. Tests were made, and it turned out that Irene was right. . . . So you see, the health worker spotted the real problem before the doctor—because she knew her people and visited their homes.

Stories also make learning more interesting. It helps if health workers are good story tellers.

Play acting. Stories that make important points can reach people with even more force if they are acted out. Perhaps you, the schoolteacher, or someone on the health committee can plan short plays or skits with the schoolchildren.

For example, to make the point that food should be protected from flies to prevent the spread of disease, several small children could dress up as flies and buzz around food. The flies dirty the food that has not been covered. Then children eat this food and get sick. But the flies cannot get at food in a box with a wire screen front. So the children who eat this food stay well.



The more ways you can find to share ideas, the more people will understand and remember.

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Working and Learning Together for the Common Good

There are many ways to interest and involve people in working together to meet their common needs. Here are a few ideas:

1. **A village health committee.** A group of able, interested persons can be chosen by the village to help plan and lead activities relating to the well-being of the community—for example, digging garbage pits or latrines. The health worker can and should share much of his responsibility with other persons.

2. **Group discussions.** Mothers, fathers, schoolchildren, young people, folk healers, or other groups can discuss needs and problems that affect health. Their chief purpose can be to help people share ideas and build on what they already know.

3. **Work festivals.** Community projects such as putting in a water system or cleaning up the village go quickly and can be fun if everybody helps. Games, races, refreshments, and simple prizes help turn work into play. Use imagination.

4. **Cooperatives.** People can help keep prices down by sharing tools, storage, and perhaps land. Group cooperation can have a big influence on people's well-being.



CHILDREN CAN DO AN AMAZING AMOUNT OF WORK WHEN IT IS TURNED INTO A GAME!

5. **Classroom visits.** Work with the village schoolteacher to encourage health-related activities, through demonstrations and play acting. Also invite small groups of students to come to the health center. Children not only learn quickly, but they can help out in many ways. If you give children a chance, they gladly become a valuable resource.

6. **Mother and child health meetings.** It is especially important that pregnant women and mothers of small children (under five years old) be well informed about their own and their babies' health needs. Regular visits to the health post are opportunities for both check-ups and learning. Have mothers keep their children's health records and bring them each month to have their children's growth recorded (see the Child Health Chart, p. 297). Mothers who understand the chart often take pride in making sure their children are eating and growing well. They can learn to understand these charts even if they cannot read. Perhaps you can help train interested mothers to organize and lead these activities.

7. **Home visits.** Make friendly visits to people's homes, especially homes of families who have special problems, who do not come often to the health post, or who do not take part in group activities. But respect people's privacy. If your visit cannot be friendly, do not make it—unless children or defenseless persons are in danger.

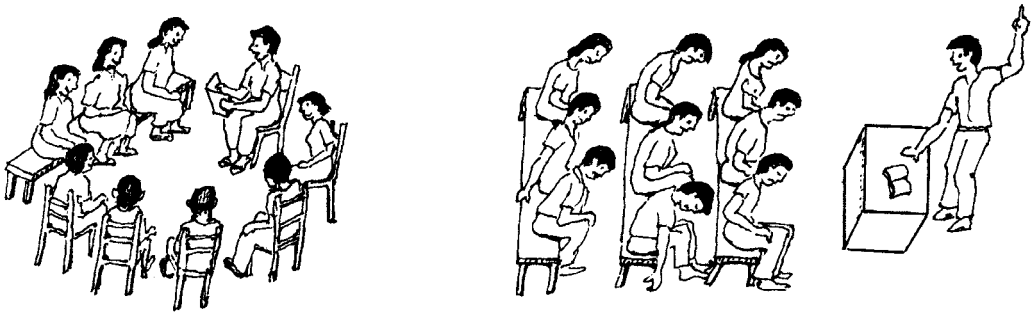
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Ways to Share and Exchange Ideas in a Group

As a health worker you will find that the success you have in improving your people's health will depend far more on your skills as a teacher than on your medical or technical knowledge. For only when the whole community is involved and works together can big problems be overcome.

People do not learn much from what they are told. They learn from what they think, feel, discuss, see, and do together.

So the good teacher does not sit behind a desk and talk **at** people. He talks and works **with** them. He helps his people to think clearly about their needs and to find suitable ways to meet them. He looks for every opportunity to share ideas in an open and friendly way.



TALK WITH PEOPLE . . . . . NOT AT THEM

Perhaps the most important thing you can do as a health worker is to awaken your people to their own possibilities. . . to help them gain confidence in themselves. Sometimes villagers do not change things they do not like because they do not try. Too often they may think of themselves as ignorant and powerless. But they are not. Most villagers, including those who cannot read or write, have remarkable knowledge and skills. They already make great changes in their surroundings with the tools they use, the land they farm, and the things they build. They can do many important things that people with a lot of schooling cannot.

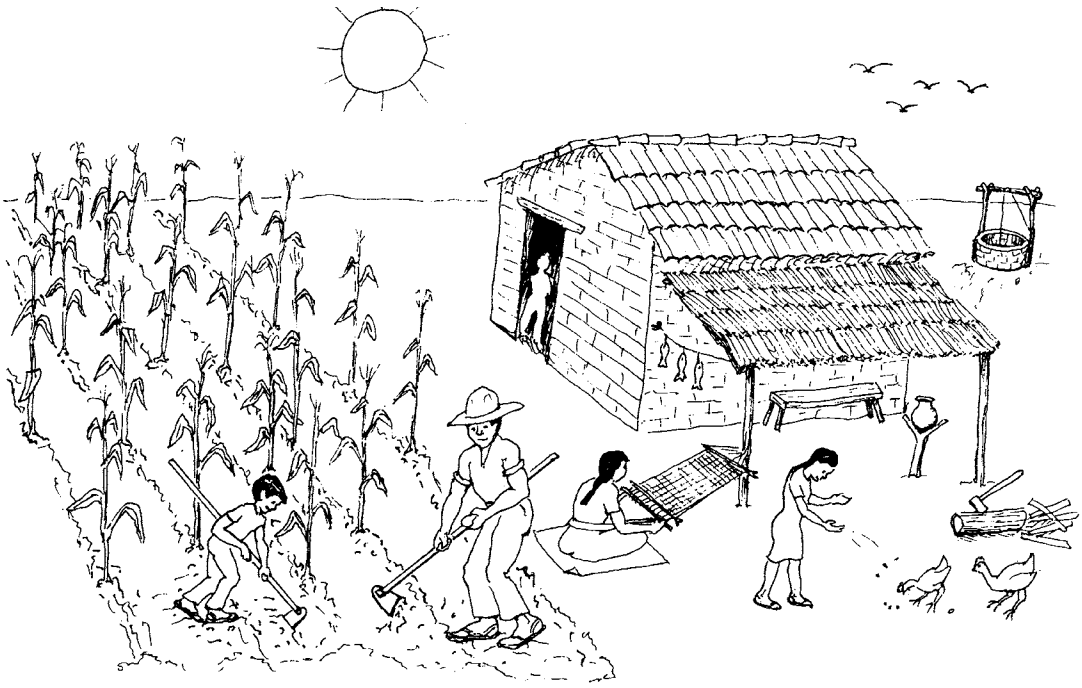
If you can help people realize how much they already know and have done to change their surroundings, they may also realize that they can learn and do even more. By working together it is within their power to bring about even bigger changes for their health and well-being.

Then how do you tell people these things?

Often you cannot! But you can help them find out some of these things for themselves—by bringing them together for discussions. Say little yourself, but start the discussion by asking certain questions. Simple pictures like the drawing on the next page of a farm family in Central America may help. You will want to draw your own picture, with buildings, people, animals, and crops that look as much as possible like those in your area.

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USE PICTURES TO GET PEOPLE TALKING AND THINKING TOGETHER



Show a group of people a picture similar to this and ask them to discuss it. Ask questions that get people talking about what they know and can do. Here are some sample questions:

- Who are the people in the picture and how do they live?
- What was this land like before the people came?
- In what ways have they changed their surroundings?
- How do these changes affect their health and well-being?
- What other changes could these people make? What else could they learn to do? What is stopping them? How could they learn more?
- How did they learn to farm? Who taught them?
- If a doctor or a lawyer moved onto this land with no more money or tools than these people, could he farm it as well? Why or why not?
- In what ways are these people like ourselves?

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This kind of group discussion helps build people's confidence in themselves and in their ability to change things. It can also make them feel more involved in their community.

At first you may find that people are slow to speak out and say what they think. But after a while they will usually begin to talk more freely and ask important questions themselves. Encourage everyone to say what he or she feels and to speak up without fear. Ask those who talk most to give a chance to those who are slower to speak up.

You can think of many other drawings and questions to start discussions that can help people look more clearly at problems, their causes, and possible solutions.

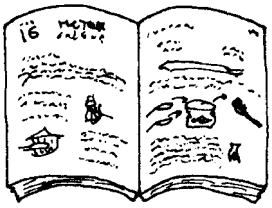
What questions can you ask to get people thinking about the different things that lead to the condition of the child in the following picture?



Try to think of questions that lead to others and get people asking for themselves. How many of the causes underlying death from diarrhea (p. w7) will your people think of when they discuss a picture like this?

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MAKING THE BEST USE OF THIS BOOK



Anyone who knows how to read can use this book in her own home. Even those who do not read can learn from the pictures. But to make the fullest and best use of the book, people often need some instruction. This can be done in several ways.

A health worker or anyone who gives out the book should make sure that people understand how to use the list of Contents, the Index, the Green Pages, and the Vocabulary. Take special care to give examples of **how to look things up.** Urge each person to carefully read the sections of the book that will help her understand **what may be helpful to do, what could be harmful or dangerous,** and **when it is important to get help** (see especially Chapters 1, 2, 6, and 8, and also the SIGNS OF DANGEROUS ILLNESS, p. 42). Point out how important it is to **prevent sickness** before it starts. Encourage people to pay special attention to Chapters 11 and 12, which deal with **eating right** (nutrition) and **keeping clean** (hygiene and sanitation).

Also **show and mark the pages that tell about the most common problems in your area.** For example, you can mark the pages on **diarrhea** and be sure mothers with small children understand about about **special oral rehydration drink** (p. 152). Many problems and needs can be explained briefly. But the more time you spend with people **discussing** how to use the book or **reading and using it together,** the more everyone will get out of it.

You as a health worker might encourage people to get together in **small groups** to read through the book, discussing one chapter at a time. Look at the biggest problems in your area—what to do about health problems that already exist and how to prevent similar problems in the future. Try to get people looking ahead.

Perhaps interested persons can get together for a **short class** using this book (or others) as a text. Members of the group could discuss how to recognize, treat, and prevent different problems. They could take turns teaching and explaining things to each other.

To help learning be fun in these classes you can **act out situations.** For example, someone can act as if he has a particular sickness and can explain what he feels. Others then ask questions and examine him (Chapter 3). Use the book to try to find out what his problem is and what can be done about it. The group should remember to involve the "sick" person in learning more about his own sickness—and should end up by discussing with him ways of preventing the sickness in the future. All this can be acted out in class.

Exciting and effective ways to teach about health care are in the book ***Helping Health Workers Learn,*** also available from Hesperian.

As a health worker, one of the best ways you can help people use this book correctly is this: When persons come to you for treatment, have them look up their own or their child's problem in the book and find out how to treat it. This takes more time, but helps much more than doing it for them. Only when someone makes a mistake or misses something important do you need to step in and help him learn how to do it better. In this way, **even sickness gives a chance to help people learn.**

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Dear village health worker—whoever and wherever you are, whether you have a title or official position, or are simply someone, like myself, with an interest in the well-being of others—make good use of this book. It is for you and for everyone.

But remember, the most important part of health care you will not find in this book or any other. The key to good health lies within you and your people, in the care, the concern, and appreciation you have for each other. If you want to see your community be healthy, build on these.

Caring and sharing are the key to health.

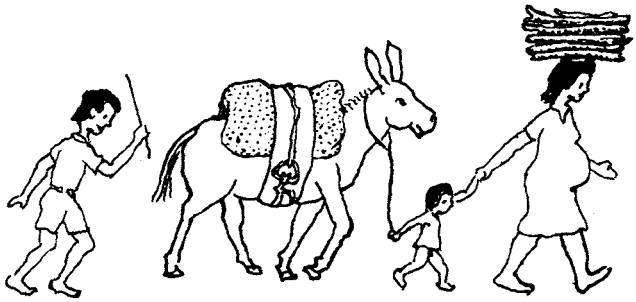
Yours truly,

David

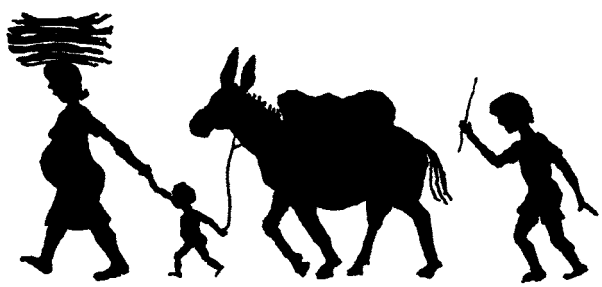
David Werner



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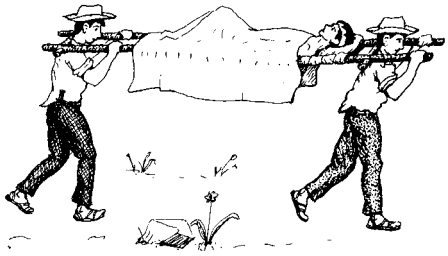
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NOTICE

This book is to help people meet most of their common health needs for and by themselves. But it does not have all the answers. In case of serious illness or if you are uncertain about how to handle a health problem, get advice from a health worker or doctor whenever possible.



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CHAPTER

1 Home Cures and Popular Beliefs

Everywhere on earth people use home remedies. In some places, the older or *traditional* ways of healing have been passed down from parents to children for hundreds of years.

Many home remedies have great value. Others have less. And some may be risky or harmful. Home remedies, like modern medicines, must be used with caution.

Try to do no harm.
Only use remedies if you are sure they are safe and know exactly how to use them.

HOME CURES THAT HELP

For many sicknesses, time-tested home remedies work as well as modern medicines—or even **better.** They are often **cheaper.** And in some cases they are **safer**.

For example, many of the herbal teas people use for home treatment of coughs and colds do more good and cause fewer problems than cough syrups and strong medicines some doctors prescribe.

Also, the rice water, teas, or sweetened drinks that many mothers give to babies with diarrhea are often safer and do more good than any modern medicine. What matters most is that a baby with diarrhea get plenty of liquids (p. 151).



FOR COUGHS, COLDS, AND COMMON DIARRHEA, HERBAL TEAS ARE OFTEN *BETTER*, *CHEAPER*, AND *SAFER* THAN MODERN MEDICINES.

The Limitations of Home Remedies

Some diseases are helped by home remedies. Others can be treated better with modern medicine. This is true for most serious infections. Sicknesses like pneumonia, tetanus, typhoid, tuberculosis, appendicitis, diseases caused by sexual contact, and fever after giving birth should be treated with modern medicines as soon as possible. For these diseases, do not lose time trying to treat them first with home remedies only.

It is sometimes hard to be sure which home remedies work well and which do not. More careful studies are needed. For this reason:

It is often safer to treat very serious illnesses with modern medicine—following the advice of a health worker if possible.

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Old Ways and New

Some modern ways of meeting health needs work better than old ones. But at times the older, traditional ways are best. For example, traditional ways of caring for children or old people are often kinder and work better than some newer, less personal ways.

Not too long ago everyone thought that breast milk was the best food for a young baby. They were right! Then the big companies that make canned and artificial milk began to tell mothers that bottle feeding was better. This is not true, but many mothers believed them and started to bottle feed their babies. As a result, thousands of babies have suffered and died needlessly from infection or hunger. For the reasons **breast is best**, see page 271.

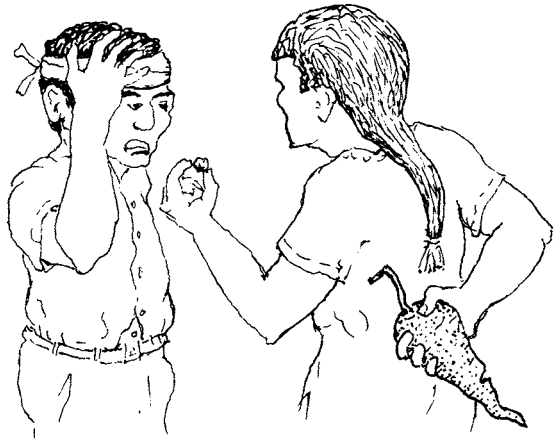
Respect your people's traditions and build on them.

For more ideas for building on local traditions, see *Helping Health Workers Learn*, Chapter 7.

BELIEFS THAT CAN MAKE PEOPLE WELL

Some home remedies have a direct effect on the body. Others seem to work only because people believe in them. **The healing power of belief can be very strong.**

For example, I once saw a man who suffered from a very bad headache. To cure him, a woman gave him a small piece of yam, or sweet potato. She told him it was a strong painkiller. He believed her—and the pain went away quickly.



It was his faith in her treatment, and not the yam itself, that made him feel better.

Many home remedies work in this way. They help largely because people have faith in them. For this reason, they are **especially useful to cure illnesses that are partly in people's minds, or those caused in part by a person's beliefs, worry, or fears.**

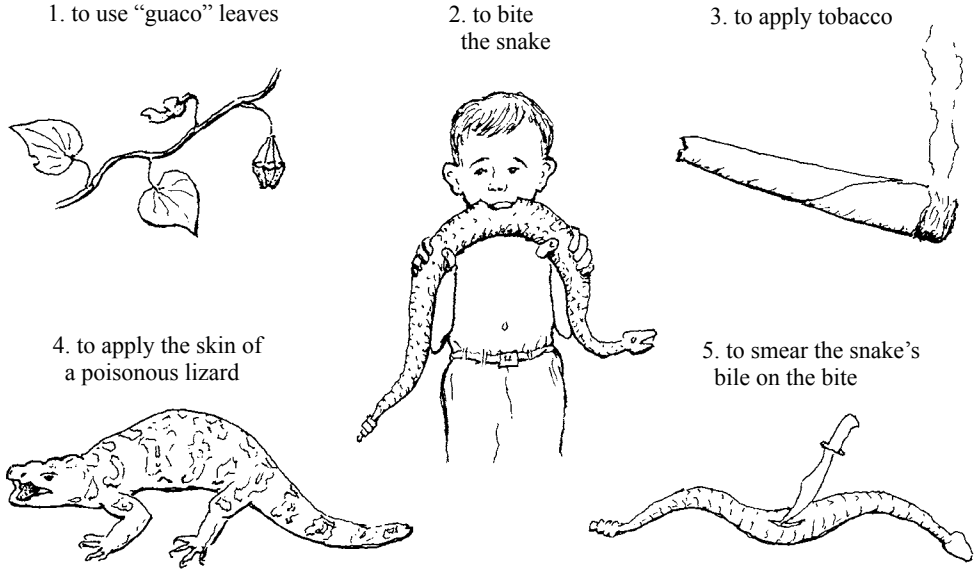
Included in this group of sicknesses are: bewitchment or hexing, unreasonable or hysterical fear, uncertain "aches and pains" (especially in persons going through stressful times), and anxiety or nervous worry. Also included are some cases of asthma, hiccups, indigestion, stomach ulcers, migraine headaches, and even warts.

For all of these problems, **the manner or "touch" of the healer can be very important**. What it often comes down to is showing you care, helping the sick person believe he will get well, or simply helping him relax.

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Sometimes a person's belief in a remedy can help with problems that have completely physical causes.

For example, Mexican villagers have the following home cures for poisonous snakebite:



In other lands people have their own snakebite remedies—often many different ones. As far as we know, **none of these home remedies has any direct effect against snake poison**. The person who says that a home remedy kept a snake's poison from harming him at all was probably bitten by a non-poisonous snake!

Yet any of these home remedies may do some good if a person believes in it. If it makes him less afraid, his pulse will slow down, he will move and tremble less, and as a result, the poison will spread through his body more slowly. So there is less danger!

But the benefit of these home remedies for snakebite is limited. In spite of their common use, many people still become very ill or die. As far as we know:

No home cure for poisonous bites (whether from snakes, scorpions, spiders, or other poisonous animals) has much effect beyond that of the healing power of belief.

For snakebite it is usually better to use modern treatment. Be prepared: obtain antitoxins (also called *antivenoms* or "serums") for poisonous bites **before** you need them (p. 389). Do not wait until it is too late.

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BELIEFS THAT CAN MAKE PEOPLE SICK

The power of belief can help heal people. But it can also harm them. If a person believes strongly enough that something will hurt him, his own fear can make him sick. For example:



Once I was called to see a woman who had just had a *miscarriage* and was still bleeding a little. There was an orange tree near her house. So I suggested she drink a glass of orange juice. (Oranges have vitamin C which helps strengthen blood vessels.) She drank it—even though she was afraid it would harm her.

Her fear was so great that soon she became very ill. I examined her, but could find nothing physically wrong. I tried to comfort her, telling her she was not in danger. But she said she was going to die. At last I gave her an injection of distilled (completely pure) water. Distilled water has no medical effect. But since she had great faith in injections, she quickly got better.

Actually, the juice did not harm her. What harmed her was her **belief that it would make her sick.** And what made her well was her faith in injections!

In this same way, many persons go on believing false ideas about witchcraft, injections, diet, and many other things. Much needless suffering is the result.

Perhaps, in a way, I had helped this woman. But the more I thought about it, the more I realized I had also wronged her; I had led her to believe things that were not true.

I wanted to set this right. So a few days later, when she was completely well, I went to her home and apologized for what I had done. I tried to help her understand that not the orange juice, but her **fear** had made her so sick. And that not the injection of water, but her **freedom from fear** had helped her get well.

By understanding the truth about the orange, the injection, and the tricks of her own mind, perhaps this woman and her family will become freer from fear and better able to care for their health in the future. For **health** is closely related to **understanding** and **freedom from fear.**

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Many things do harm only because people believe they are harmful.

WITCHCRAFT—BLACK MAGIC—AND THE EVIL EYE

If a person believes strongly enough that someone has the power to harm him, he may actually become ill. Anyone who believes he is bewitched or has been given the ***evil eye*** is really the victim of his own fears (see *Susto*, p. 24).

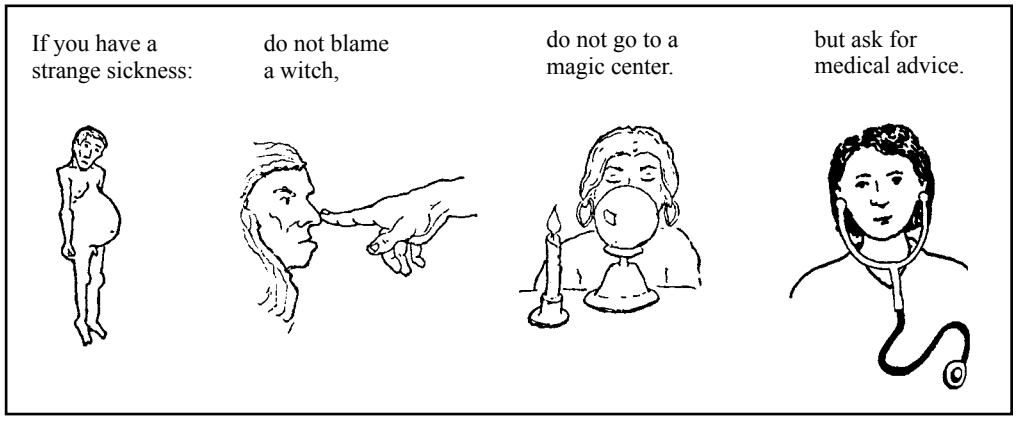
A "witch" has no power over other people, except for her ability to make them believe that she has. For this reason:

It is impossible to bewitch a person who does not believe in witchcraft.



Some people think that they are "bewitched" when they have strange or frightening illnesses (such as *tumors* of the *genitals* or cirrhosis of the liver, p. 328). Such sicknesses have nothing to do with witchcraft or black magic. Their causes are natural.

Do not waste your money at "magic centers" that claim to cure witchcraft. And do not seek revenge against a witch, because it will not solve anything. If you are seriously ill, go for medical help.

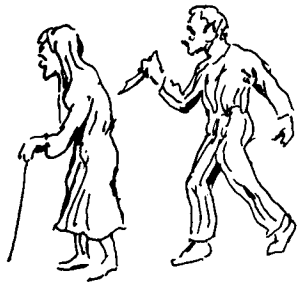


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QUESTIONS AND ANSWERS ON SOME FOLK BELIEFS AND HOME REMEDIES

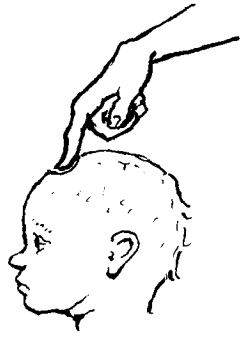
These examples are from the mountains of Mexico, the area that I know best. Perhaps some of the beliefs of your people are similar. Think about ways to learn which beliefs in your area lead to better health and which do not.

When people think someone is bewitched, is it true that he will get well if his relatives harm or kill the witch?



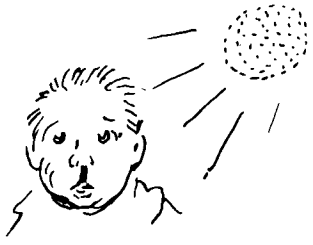
FALSE! No one is ever helped by harming someone else.

Is it true that when the soft spot on top of a baby's head sinks inward this means the baby will die of diarrhea unless he gets special treatment?



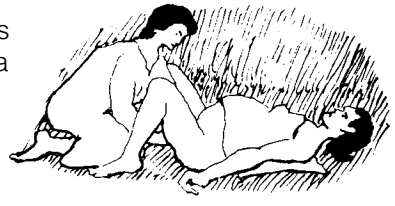
This is often true. The soft spot sinks because the baby has lost too much liquid (p. 151). Unless he gets more liquid soon, he may die (p. 152).

Is it true that if the light of the eclipsing moon falls on a pregnant mother, her child will be born with disabilities?



This is not true! But children may have disabilities present at birth if the mother does not use iodized salt, if she takes certain medicines, or for other reasons (p. 318).

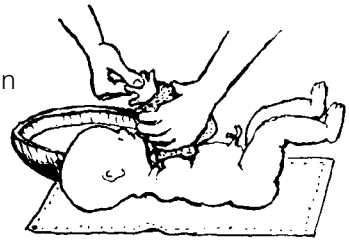
Is it true that mothers should give birth in a darkened room?



It is true that soft light is easier on the eyes of both the mother and the newborn child. But there should be enough light for the midwife to see what she is doing.

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Is it true that a newborn baby should not be bathed until the cord falls off?



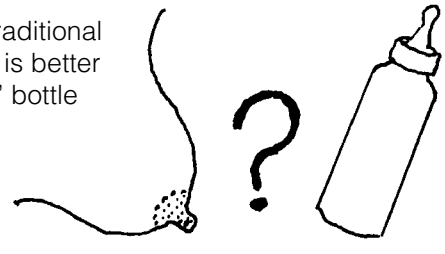
True! The stump of the cord should be kept dry until it falls off. But the baby can be gently cleaned with a clean, soft, damp cloth.

How many days after giving birth should a mother wait before she bathes?



A mother should wash with warm water the **day after giving birth**. The custom of not bathing for weeks following birth can lead to infections.

Is it true that traditional breastfeeding is better than "modern" bottle feeding?



TRUE! Breast milk is better food and also helps protect the baby against infection.

What foods should women avoid in the first few weeks after giving birth?



In the weeks following birth, women should not avoid any nutritious foods. Instead, they should eat plenty of fruit, vegetables, meat, milk, eggs, whole grains, and beans (p. 276).

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Is it a good idea to bathe a sick person, or will it do him harm?



It is a good idea. Sick people should be bathed in warm water every day.

Is it true that oranges, guavas, and other fruits are harmful when one has a cold or a fever?



NO! All fruits and juices are helpful when one has a cold or fever. They do not cause congestion or harm of any kind.

Is it true that when a person has a high fever, he should be wrapped up so that the air will not harm him?



NO! When a person has a high fever, take off all covers and clothing. Let the air reach his body. This will help the fever go down (p. 76).

Is it true that tea made from willow bark will help bring fever down and stop pain?



True. It helps. Willow bark has a natural medicine in it very much like aspirin.

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SUNKEN FONTANEL OR SOFT SPOT



The fontanel is the soft spot on the top of a newborn baby's head. It is where the bones of his skull have not formed completely. It usually takes a year to a year and a half for the soft spot to close completely.

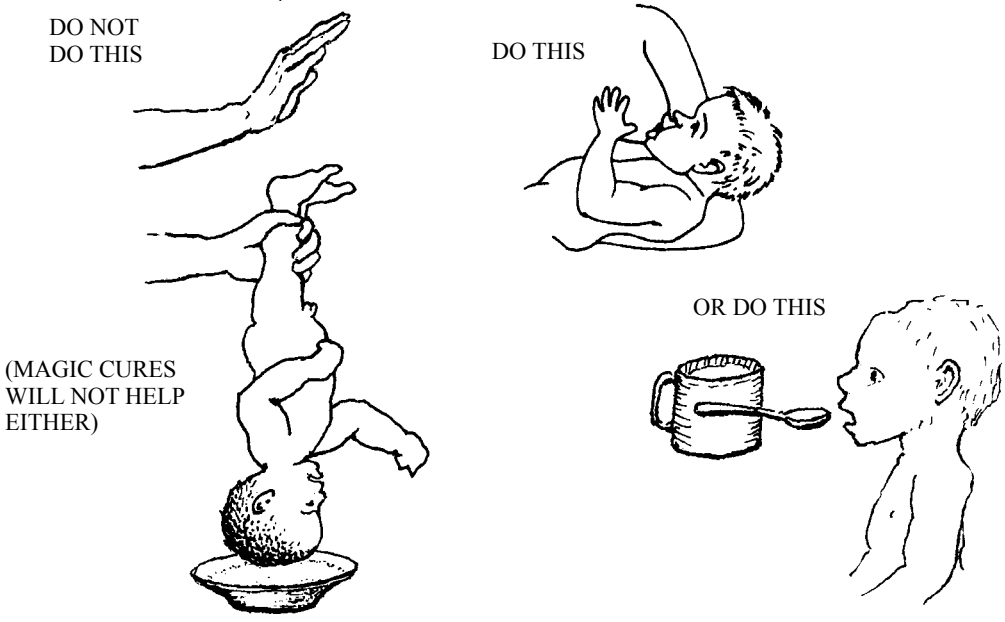
Mothers in different lands realize that when the soft spot sinks inward their babies are in danger. They have many beliefs to explain this. In Latin America mothers think the baby's brains have slipped downward. They try to correct this by sucking on the soft spot, by pushing up on the roof of the mouth, or by holding the baby upside down and slapping his feet. This does not help because… **A sunken soft spot is really caused by dehydration** (p. 151).

This means **the child is losing more liquid than he is drinking**. He is too dry—usually because he has diarrhea, or diarrhea with vomiting.

Treatment:

1. Give the child plenty of liquid: Rehydration Drink (p. 152), breast milk, or boiled water.
2. If necessary, treat the causes of the diarrhea and vomiting (pages 152 to 161). For most diarrheas, medicine is not needed, and may do more harm than good.

TO CURE A SUNKEN SOFT SPOT.



Note: If the soft spot is swollen or bulges **upward**, this may be a sign of meningitis. Begin treatment at once (p. 185), and get medical help.

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WAYS TO TELL IF A HOME REMEDY WORKS

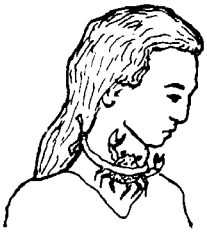
Because a lot of people use a home cure does not necessarily mean it works well or is safe. It is often hard to know which remedies are helpful and which may be harmful. Careful study is needed to be sure. Here are four rules to help tell which remedies are least likely to work, or are dangerous. (Examples are from Mexican villages.)

1. THE MORE REMEDIES THERE ARE FOR ANY ONE ILLNESS, THE LESS LIKELY IT IS THAT ANY OF THEM WORKS.

For example: In rural Mexico there are **many** home remedies for goiter, **none** of which does any real good. Here are some of them:

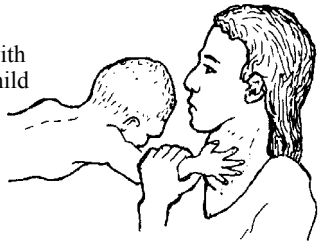
1. to tie a crab on the goiter

DON'T



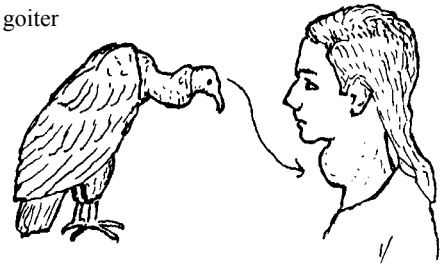
2. to rub the goiter with the hand of a dead child

DON'T



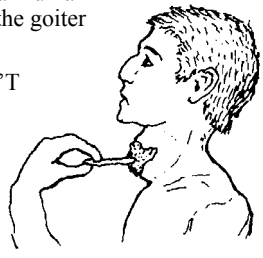
3. to smear the brains of a vulture on the goiter

DON'T



4. to smear human feces on the goiter

DON'T



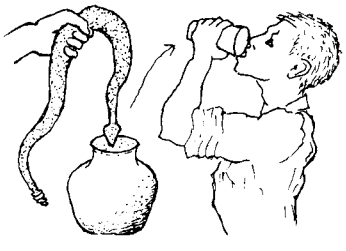
Not one of these many remedies works. If it did, the others would not be needed. **When a sickness has just one popular cure, it is more likely to be a good one**. For prevention and treatment of goiter use iodized salt (p. 130).

2. FOUL OR DISGUSTING REMEDIES ARE NOT LIKELY TO HELP—AND ARE OFTEN HARMFUL.

For example:

1. the idea that leprosy can be cured by a drink made of rotting snakes

DON'T



2. the idea that syphilis can be cured by eating a vulture



DON'T

These two remedies do not help at all. The first one can cause dangerous infections. Belief in remedies like these sometimes causes delay in getting proper medical care.

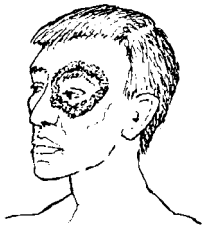
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3. REMEDIES THAT USE ANIMAL OR HUMAN WASTE DO NO GOOD AND CAN CAUSE DANGEROUS INFECTIONS. NEVER USE THEM.

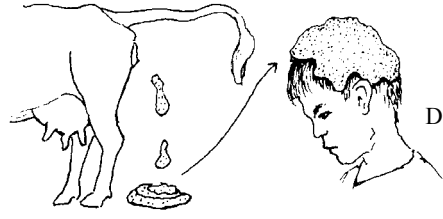
Examples:

1. Putting human feces around the eye does not cure blurred vision and can cause infections.

DON'T!



2. Smearing cow dung on the head to fight ringworm can cause tetanus and other dangerous infections.



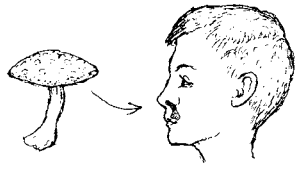
DON'T!

Also, the droppings of rabbits or other animals do not help heal burns. To use them is very dangerous. Cow dung, held in the hand, cannot help control seizures. Teas made from human, pig, or any other animal feces do not cure anything. They can make people sicker. **Never** put feces on the navel of a newborn baby. This can cause tetanus.

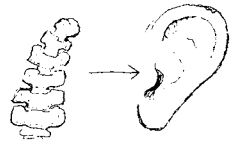
4. THE MORE A REMEDY RESEMBLES THE SICKNESS IT IS SAID TO CURE, THE MORE LIKELY ITS BENEFITS COME ONLY FROM THE POWER OF BELIEF.

The association between each of the following illnesses and its remedy is clear in these examples from Mexico:

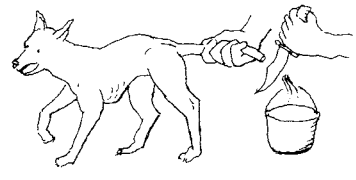
1. for a nosebleed, using *yesca* (a bright red mushroom)



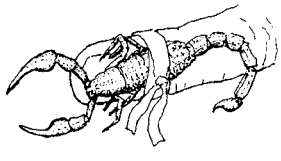
2. for deafness, putting powdered rattlesnake's rattle in the ear



3. for dog bite, drink tea made from the dog's tail



4. for scorpion sting, tying a scorpion against the stung finger



5. to prevent diarrhea when a child is teething, putting a necklace of snake's fangs around the baby's neck



6. to "bring out" the rash of measles, making tea from kapok bark



These remedies, and many other similar ones, have no curative value in themselves. They may be of some benefit if people believe in them. But for serious problems, be sure their use does not delay more effective treatment.

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MEDICINAL PLANTS

Many plants have curative powers. Some of the best modern medicines are made from wild herbs.

Nevertheless, not all curative herbs people use have medical value... and those that have are sometimes used the wrong way. Try to learn about the herbs in your area and find out which ones are worthwhile.



CAUTION: Some medicinal herbs are very poisonous if taken in more than the recommended dose. For this reason it is often safer to use modern medicine, since the dosage is easier to control.

Here are a few examples of plants that can be useful if used correctly:

ANGEL'S TRUMPET *(Brugmansia arborea)*



The leaves of this and certain other members of the nightshade family contain a drug that helps to calm intestinal cramps, stomach-aches, and even gallbladder pain.

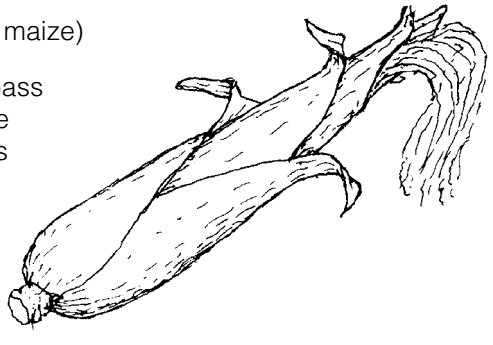
Grind up 1 or 2 leaves of Angel's Trumpet and soak them for a day in 7 tablespoons (100 ml) of water.

Dosage: Between 10 and 15 drops every 4 hours (adults only).



WARNING: Angel's Trumpet is very poisonous if you take more than the recommended dose.

CORN SILK (the tassels or "silk" from an ear of maize)



A tea made from corn silk makes a person pass more urine. This can help reduce swelling of the feet—especially in pregnant women (see pages 176 and 248).

Boil a large handful of corn silk in water and drink 1 or 2 glasses. It is not dangerous.

GARLIC

A drink made from garlic may help get rid of pinworms.



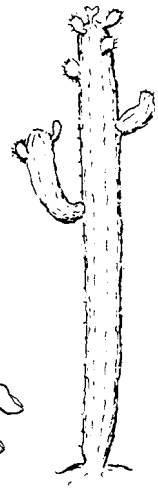
Chop finely, or crush, 4 cloves of garlic and mix with 1 glass of liquid (water, juice, or milk).

Dosage: Drink 1 glass daily for 3 weeks.

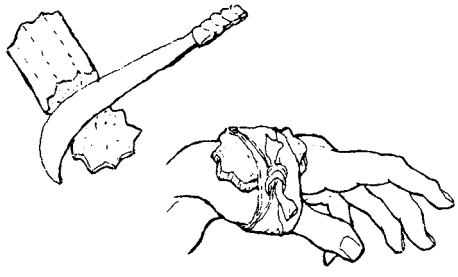
To treat vaginal infections with garlic, see pages 241 and 242.

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CARDON CACTUS *(Pachycereus pecten-aboriginum)*



Cactus juice can be used to clean wounds when there is no boiled water and no way to get any. Cardon cactus also helps stop a wound from bleeding, because the juice makes the cut blood vessels squeeze shut.



Cut a piece of the cactus with a clean knife and press it firmly against the wound.

When the bleeding is under control, tie a piece of the cactus to the wound with a strip of cloth.

After 2 or 3 hours, take off the cactus and clean the wound with boiled water and soap. There are more instructions on how to care for wounds and control bleeding on pages 82 to 87.

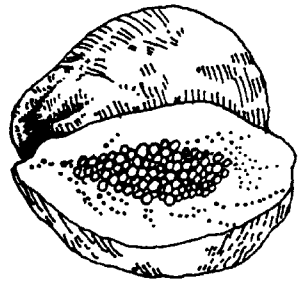
ALOE VERA *(Sabila)*



Aloe vera can be used to treat minor burns and wounds. The thick, slimy juice inside the plant calms pain and itching, aids healing, and helps prevent infection. Cut off a piece of the plant, peel back the outer layer, and apply the fleshy leaf or juice directly to the burn or wound.

Aloe can also help treat stomach ulcers and gastritis. Chop the spongy leaves into small pieces, soak them in water overnight, and then drink one glass of the slimy, bitter liquid every 2 hours.

PAPAYA



Ripe papayas are rich in vitamins and also aid digestion. Eating them is especially helpful for weak or old people who complain of upset stomach when they eat meat, chicken, or eggs. Papaya makes these foods easier to digest.

Papaya can also help get rid of intestinal worms, although modern medicines work better. Collect 3 or 4 teaspoons (15-20 ml) of the "milk" that comes out when the green fruit or trunk of the tree is cut. Mix this with an equal amount of sugar or honey and stir it into a cup of hot water. If possible, drink along with a laxative.

Even better, dry and crush to a powder the papaya seeds. Take 3 teaspoons mixed with 1 glass water or some honey 3 times a day for 7 days.

Papayas can also be used for treating pressure sores. The fruit contains chemicals that help soften and make dead flesh easier to remove. First clean and wash out a pressure sore that has dead flesh in it. Then soak a sterile cloth or gauze with "milk" from the trunk or green fruit of a papaya plant and pack this into the sore. Repeat cleaning and repacking 3 times a day.

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HOMEMADE CASTS TO KEEP BROKEN BONES IN PLACE

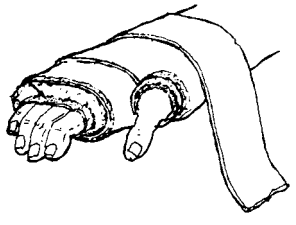
In Mexico several different plants such as ***tepeguaje*** (a tree of the bean family) and ***solda con solda*** (a huge, tree-climbing arum lily) are used to make casts. However, any plant will do if a syrup can be made from it that will dry hard and firm and will not irritate the skin. In India, traditional bone-setters make casts using a mixture of egg whites and herbs instead of a syrup made from plant juices. But the method is similar. Try out different plants in your area.



For a cast using tepeguaje: Put 1 kilogram of the bark into 5 liters of water and boil until only 2 liters are left. Strain and boil until a thick syrup is formed. Dip strips of flannel or clean sheet in the syrup and carefully use as follows.

Make sure the bones are in a good position (p. 98).

Do **not** put the cast directly against the skin.

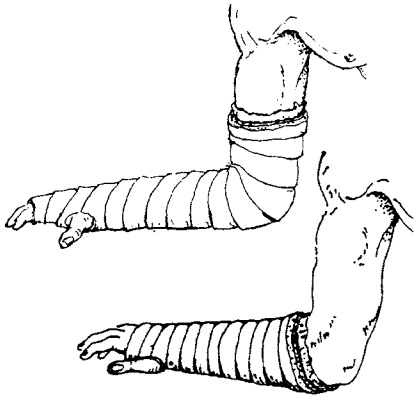


Wrap the arm or leg in a soft cloth.

Then follow with a layer of cotton or wild kapok.

Finally, put on the wet cloth strips so that they form a cast that is firm but not too tight.

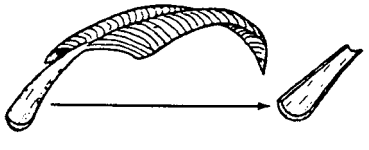
Most doctors recommend that the cast cover the joint above and the joint below the break, to keep the broken bones from moving.



This would mean that, for a broken wrist, the cast should cover almost the whole arm, like this:

Leave the finger tips uncovered so that you can see if they keep a good color.

However, traditional bone-setters in China and Latin America use a short cast on a simple break of the arm saying that a little movement of the bone-ends speeds healing. Recent scientific studies have proven this to be true.



A temporary leg or arm splint can be made of cardboard, folded paper, or the thick curved stem of dried banana leaf, or palm leaf.

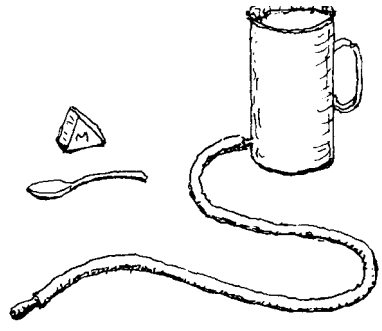
CAUTION: Even if the cast is not very tight when you put it on, the broken limb may swell up later. If the person complains that the cast is too tight, or if his fingers or toes become cold, white, or blue, take the cast off and put on a new, looser one.

Never put on a cast over a cut or a wound.

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ENEMAS, LAXATIVES, AND PURGES: WHEN TO USE THEM AND WHEN NOT TO

Many people give enemas and take laxatives far too often. The "urge to purge" is worldwide.



Enemas and purges are very popular home cures. And they are often very harmful. Many people believe fever and diarrhea can be "washed out" by giving an **enema** (running water into the gut through the anus) or by using a ***purge***, or strong laxative. Unfortunately, such efforts to clean or purge the sick body often cause more injury to the already damaged gut.

Rarely do enemas or laxatives do any good at all.
Often they are dangerous—especially strong laxatives.

CASES IN WHICH IT IS DANGEROUS TO USE ENEMAS OR LAXATIVES

Never use an enema or laxative if a person has a severe stomach-ache or any other sign of appendicitis or acute abdomen (p. 93), even if he passes days without a bowel movement.

Never give an enema or laxative to a person with a bullet wound or other injury to the gut.

Never give a strong laxative to a weak or sick person. It will weaken him more.

Never give an enema or purge to a baby less than 2 years old.

Never give a laxative or purge to a child with high fever, vomiting, diarrhea or signs of dehydration (p. 151). It can increase dehydration and kill the child.

Do not make a habit of using laxatives often (see "Constipation," p. 126).

THE CORRECT USES OF ENEMAS

1. Simple enemas can help relieve constipation (dry, hard, difficult stools). Use warm water only.

2. When a person with severe vomiting is dehydrated, you can try replacing water by giving an enema of Rehydration Drink **very slowly** (p. 152).

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PURGES AND LAXATIVES THAT ARE OFTEN USED

CASTOR OIL SENNA LEAF CASCARA (cascara sagrada)	These are irritating purges that often do more harm than good. It is better not to use them.
MAGNESIUM HYDROXIDE MILK OF MAGNESIA EPSOM SALTS (magnesium sulfate, p. 382)	These are salt purges. Use them only in low doses, as laxative for constipation. Do not use them often and **never when there is pain in the belly.**
MINERAL OIL (p. 382)	This is sometimes used for constipation in persons with piles...but it is like passing greased rocks. Not recommended.

CORRECT USES OF LAXATIVES

Laxatives are like purges but weaker. All the products listed above are laxatives when taken in small doses and purges when taken in large doses. Laxatives soften and hurry the bowel movement; purges cause diarrhea. Purges are always harmful, but laxatives can sometimes be used to relieve constipation.

One can use milk of magnesia or other magnesium salts in small doses, as laxatives, in some cases of constipation. People with ***hemorrhoids*** (piles, p. 175) who have constipation can take mineral oil but this only makes their stools slippery, not soft. The dose for mineral oil is 3 to 6 teaspoons at bedtime (never with a meal because the oil will rob the body of important vitamins in the food). This is not the best way.

Suppositories, or bullet-shaped pills that can be pushed up the rectum, can also be used to relieve constipation or piles (pages 175, 384, and 393).

A BETTER WAY

The healthiest and most gentle way to have softer, more frequent stools is to drink a lot of water and to eat more foods with lots of natural fiber, or “roughage” like cassava, yam, or bran (wheat husks) and other whole grain cereals (p. 126). Eating plenty of fruits and vegetables also helps.

People who traditionally eat lots of food with natural fiber suffer much less from piles, constipation, and cancer of the gut than do people who eat a lot of refined “modern” foods. For better bowel habits, avoid refined foods and eat foods prepared from unpolished or unrefined grains.

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CHAPTER

2

Sicknesses that Are Often Confused

WHAT CAUSES SICKNESS?

Persons from different countries or backgrounds have different ways to explain what causes sickness.

A baby gets diarrhea. But why?



People in small villages may say it is because the parents did something wrong, or perhaps because they made a god or spirit angry.

A doctor may say it is because the child has an infection.

A public health officer may say it is because the villagers do not have a good water system or use latrines.

A social reformer may say the unhealthy conditions that lead to frequent childhood diarrhea are caused by an unfair distribution of land and wealth.

A teacher may place the blame on lack of education.

People see the cause of sickness in terms of their own experience and point of view. Who then is right about the cause? Possibly everyone is right, or partly right. This is because…

Sickness usually results from a combination of causes.



"Why my child?"

Each of the causes suggested above may be a part of the reason why a baby gets diarrhea.

To prevent and treat sickness successfully, it helps to have as full an understanding as possible about the common sicknesses in your area and the combination of things that causes them.

In this book, different sicknesses are discussed mostly according to the systems and terms of modern or scientific medicine.

To make good use of this book, and safe use of the medicines it recommends, you will need some understanding of sicknesses and their causes according to medical science. Reading this chapter may help.

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DIFFERENT KINDS OF SICKNESSES AND THEIR CAUSES

When considering how to prevent or treat different sicknesses, it helps to think of them in two groups: infectious and non-infectious.

Infectious diseases are those that spread from one person to another. Healthy persons must be protected from people with these sicknesses.

Non-Infectious diseases do not spread from person to person. They have other causes. Therefore, it is important to know which sicknesses are infectious and which are not.

Non-infectious Diseases

Non-infectious diseases have many different causes. But they are never caused by germs, bacteria, or other living organisms that attack the body. They never spread from one person to another. It is important to realize that ***antibiotics***, or medicines that fight germs (p. 55), do not help cure non-infectious diseases.

Remember: **Antibiotics are of no use for non-infectious diseases.**

EXAMPLES OF NON-INFECTIOUS DISEASES

Problems caused by something that wears out or goes wrong within the body:	**Problems caused by something from outside that harms or troubles the body:**	**Problems caused by a lack of something the body needs:**
rheumatism heart attack epileptic seizures stroke migraine headaches cataract cancer	allergies asthma poisons snakebite cough from smoking cancer	malnutrition anemia pellagra night blindness and xerophthalmia goiter and hypothyroidism cirrhosis of the liver (part of the cause)

Problems people are born with:		**Problems that begin in the mind (mental health problems):**
cleft lip or cleft palate eyes that point in different directions other disabilities	epilepsy (some kinds) cognitive delay birthmarks	fear that something is harmful when it is not (paranoia) nervous worry (anxiety) uncontrolled fear (hysteria)

Infectious Diseases

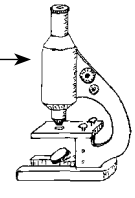
Infectious diseases are caused by bacteria and other ***organisms*** (living things) that harm the body. They are spread in many ways. Here are some of the most important kinds of organisms that cause infections and examples of sicknesses they cause:

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EXAMPLES OF INFECTIOUS DISEASES

Organism that causes the sickness	**Name of the sickness**	**How it is spread or enters the body**	**Principal medicine**
bacteria (microbes or germs)	tuberculosis	through the air (coughing)	different antibiotics for different bacterial infections
	tetanus	dirty wounds	
	some diarrhea	dirty fingers, water, flies	
	pneumonia (some kinds)	through the air (coughing)	
	gonorrhea, chlamydia, and syphilis	sexual contact	
	earache	with a cold	
	infected wounds	contact with dirty things	
	sores with pus	direct contact (by touch)	
virus (germs smaller than bacteria)	colds, flu, measles, mumps, chickenpox, infantile paralysis, virus diarrhea	from someone who is sick, through the air, by coughing. flies, etc.	acetaminophen and other painkillers
	rabies	animal bites	Vaccinations prevent some virus infections.
	warts, HPV	skin contact	
	HIV	body fluids of someone infected get inside another person´s body	Antiretroviral medicines fight HIV.
fungus	ringworm athlete's foot jock itch yeast infection	by touch or from clothing	nystatin, clotrimazole, gentian violet, ointments with undecylenic, benzoic, or salicylic acid
internal parasites (harmful animals living in the body)	In the gut: worms amebas (dysentery)	feces-to-mouth lack of cleanliness	different specific medicines
	In the blood: malaria	mosquito bite	a combination of malaria medicines
external parasites (harmful animals living on the body)	lice fleas bedbugs scabies	by contact with infected persons or their clothes	permethrin, keeping very clean

Bacteria, like many of the organisms that cause infections, are so small you cannot see them without a microscope—an instrument that makes tiny things look bigger. Viruses are even smaller than bacteria.



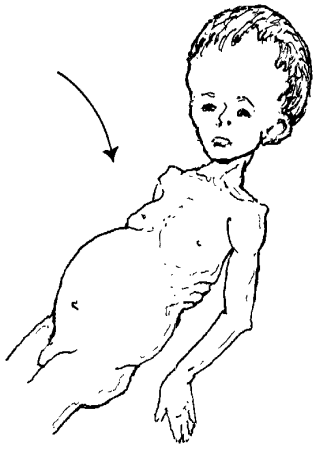
Antibiotics (penicillin, tetracycline, etc.) are medicines that help cure certain illnesses caused by bacteria. **Antibiotics have no effect on illnesses caused by viruses**, such as colds, flu, mumps, and chickenpox. **Do not treat virus infections with antibiotics**. They will not help and may be harmful (see **antibiotics,** p. 55).

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SICKNESSES THAT ARE HARD TO TELL APART

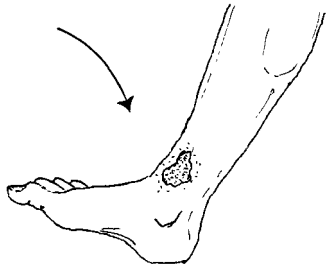
Sometimes diseases that have different causes and require different treatment result in problems that look very much alike. For example:

1. **A child who slowly becomes thin and wasted, while his belly gets more and more swollen, could have any (or several) of the following problems:**



- malnutrition (p. 112)
- a lot of roundworms (p. 140), usually together with malnutrition
- advanced tuberculosis (p. 179)
- a long-term severe urinary infection (p. 234)
- any of several problems of the liver or spleen
- leukemia (cancer of the blood)
- HIV (p. 401)

2. **An older person with a big, open, slowly growing sore on the ankle could have:**



- bad circulation that results from varicose veins or other causes (p. 213)
- diabetes (p. 127)
- infection of the bone (osteomyelitis)
- leprosy (p. 191)
- tuberculosis of the skin (p. 212)
- advanced syphilis (p. 237)

The medical treatment for each of these diseases is different, so to treat them correctly it is important to tell them apart.

Many illnesses at first seem very similar. But if you ask the right questions and know what to look for, you can often learn information and see certain signs that will help tell you what illness a person has.

This book describes the typical history and signs for many illnesses. But be careful! Diseases do not always show the signs described for them—or the signs may be confusing. **For difficult cases, the help of a skilled health worker or doctor is often needed.** Sometimes special tests or analyses are necessary.

Work within your limits!

In using this book, remember it is easy to make mistakes.

Never pretend you know something you do not.

If you are not fairly sure what an illness is and how to treat it, or if the illness is very serious—get medical help.

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SICKNESSES THAT ARE OFTEN CONFUSED OR GIVEN THE SAME NAME

Many of the common names people use for their sicknesses were first used long before anyone knew about germs or bacteria or the medicines that fight them. Different diseases that caused more or less similar problems—such as high fever or "pain in the side"—were often given a single name. In many parts of the world, these common names are still used. City-trained doctors often neither know nor use these names. For this reason, people sometimes think they apply to "sicknesses doctors do not treat." So they treat these **home sicknesses** with herbs or home remedies.

Actually, most of these home sicknesses or "folk diseases" are the same ones known to medical science. Only the names are different.

For many sicknesses, home remedies work well. But for some sicknesses, treatment with modern medicine works much better and may be life-saving. This is especially true for dangerous infections like pneumonia, typhoid, tuberculosis, or infections after giving birth.

To know which sicknesses definitely require modern medicines and to decide what medicine to use, it is important that you try to **find out what the disease is in the terms used by trained health workers and in this book.**

If you cannot find the sickness you are looking for in this book, look for it under a different name or in the chapter that covers the same sort of problem.

Use the list of CONTENTS and the INDEX.

If you are unsure what the sickness is—especially if it seems serious—try to get medical help.

The rest of this chapter gives examples of common or *traditional* names people use for various sicknesses. Often a single name is given to diseases that are different according to medical science.

Examples cannot be given for each country or area where this book may be used. Therefore, I have kept those from the Spanish edition, with names used by villagers in western Mexico. They will not be the same names you use. However, people in many parts of the world see and speak of their illnesses in a similar way. So the examples may help you think about how people name diseases in your area.

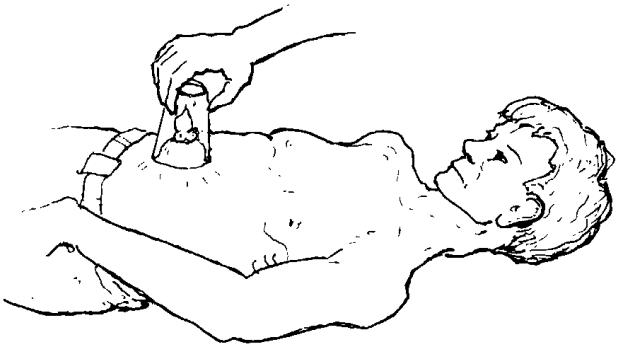
Can you think of a name your people use for the following "folk diseases"? If you can, write it in after the Spanish name, where it says,

Name in Your Area: _____

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EXAMPLES OF LOCAL NAMES FOR SICKNESSES

Spanish Name: ***EMPACHO*** (STOPPED-UP GUT) Name in Your Area: _____



In medical terms ***empacho*** (impaction) means that the gut is stopped up or ***obstructed*** (p. 94). But in Mexican villages any illness causing stomach-ache or diarrhea may be called ***empacho***. It is said that a ball of hair or something else blocks a part of the gut. People put the blame on witches or evil spirits, and treat with magic cures and ***cupping*** (see picture). Sometimes folk healers pretend to take a ball of hair and thorns out of the gut by sucking on the belly.

Different illnesses that cause stomach pain or discomfort and are sometimes called ***empacho*** are:

- diarrhea or dysentery with cramps (p. 153)
- worms (p. 140)
- swollen stomach due to malnutrition (p. 112)
- indigestion or stomach ulcer (p. 128)
- and rarely, true gut obstruction or appendicitis (p. 94)

Most of these problems are not helped much by magic cures or cupping. To treat ***empacho,*** try to identify and treat the sickness that causes it.

Spanish Name: ***DOLOR DE IJAR*** (SIDE PAINS) Name in Your Area: _____

This name is used for any pain women get in one side of their belly. Often the pain goes around to the mid or lower back. Possible causes of this kind of pain include:

- an infection of the urinary system (the kidneys, the bladder, or the tubes that join them, p. 234)
- cramps or gas pains (see diarrhea, p. 153)
- menstrual pains (p. 245)
- appendicitis (p. 94)
- an infection, cyst, or tumor in the womb or ovaries (p. 243) or an ectopic pregnancy (p. 280)

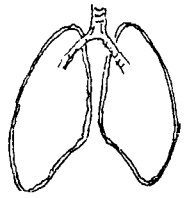
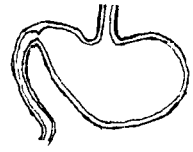


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Spanish Name: *LA CONGESTIÓN* (CONGESTION) Name in Your Area: _____

Any sudden upset or illness that causes great distress is called ***la congestión*** by Mexican villagers. People speak of ***congestión*** of:

the head, the chest, the stomach, or the whole body.


It is said that ***la congestión*** strikes persons who break "the diet" (p. 123), by eating foods that are forbidden or ***taboo*** after giving birth, while taking a medicine, or when they have a cold or cough. Although **these foods usually cause no harm** and are sometimes just what their bodies need, many people will not touch them because they are so afraid of getting ***la congestión.***

Different illnesses that are sometimes called ***la congestión*** are:

- Food poisoning, from eating spoiled food. This causes sudden vomiting followed by diarrhea, cramps, and weakness (p. 135).
- A severe allergic reaction, in allergic persons after they eat certain foods (shellfish, chocolate, etc,), take certain medicines, or are injected with penicillin. This may cause vomiting, diarrhea, cold sweat, breathing trouble, itchy rash, and severe distress (p. 166).
- Any sudden upset of the stomach or gut. See diarrhea (p. 153), vomiting (p. 161), and acute abdomen (p. 93).
- Sudden or severe difficulty breathing. This can be caused by asthma (p. 167), pneumonia (p. 171), or something stuck in the throat (p. 79).
- Illnesses that cause seizures, convulsions, or paralysis. See seizures (p. 178), tetanus (p. 182), meningitis (p. 185), polio (p. 314), and stroke (p. 327).
- Heart attacks, mostly in older persons (p. 325).

Spanish Name: *LATIDO* (PULSING) Name in Your Area: _____

Latido is a name used in Latin America for a pulsing or "jumping" in the pit of the stomach. It is really the pulse ***of the aorta*** or big blood vessel coming from the heart. This pulse can be seen and felt on a person who is very thin and hungry. ***Latido*** is often a sign of malnutrition (p. 112)—or hunger! Eating enough good food is the only real treatment (pages 110 and 111).

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Spanish Name: ***SUSTO*** (HYSTERIA, FRIGHT) Name in Your Area: _____

According to Mexican villagers, ***susto*** is caused by a sudden fright a person has had, or by witchcraft, black magic, or evil spirits. A person with ***susto*** is very nervous and afraid. He may shake, behave strangely, not be able to sleep, lose weight, or even die.

Possible medical explanations for *susto:*

1. In many people, ***susto*** is a state of fear or ***hysteria***, perhaps caused by the power of belief (p. 4). For example, a woman who is afraid someone will hex her becomes nervous and does not eat or sleep well. She begins to grow weak and lose weight. She takes this as a sign she has been hexed, so she becomes still more nervous and frightened. Her ***susto*** gets worse and worse.

2. In babies or small children, ***susto*** is usually very different. Bad dreams may cause a child to cry out in his sleep or wake up frightened. High fevers from any illness can cause very strange speech and behavior ***(delirium)***. A child that often looks and acts worried may be malnourished (p. 112). Sometimes early signs of tetanus (p. 182) or meningitis (p. 185) are also called ***susto***.

Treatment:

When the ***susto*** is caused by a specific illness, treat the illness. Help the person understand its cause. Ask for medical advice, if needed.

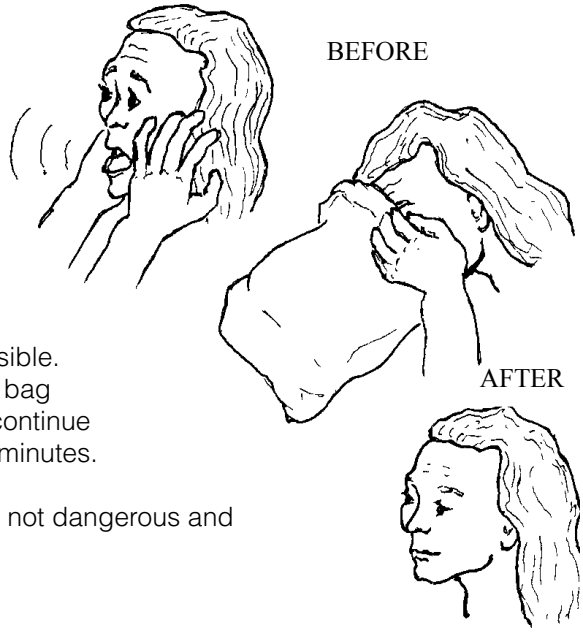
When the ***susto*** is caused by fright, try to comfort the person and help him understand that his fear itself is the cause of his problem. Magic cures and home remedies sometimes help.

If the frightened person is breathing very hard and fast, his body may be getting too much air—which may be part of the problem:

EXTREME FRIGHT OR HYSTERIA WITH FAST HEAVY BREATHING (HYPERVENTILATION)

Signs:

- person very frightened
- breathing fast and deep
- fast, pounding heartbeat
- numbness or tingling of face, hands, or feet
- muscle cramps



Treatment:

- ♦ Keep the person as quiet as possible.
- ♦ Have her put her face in a paper bag and breathe slowly. She should continue breathing the same air for 2 or 3 minutes. This will usually calm her down.
- ♦ Explain to her that the problem is not dangerous and she will soon be all right.

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MISUNDERSTANDINGS DUE TO CONFUSION OF NAMES

This page shows 2 examples of misunderstandings that can result when certain names like "cancer" and "leprosy" mean one thing to medical workers and something else to villagers. In talking with health workers-and in using this book:

Avoid misunderstanding—go by the signs and history of a person's sickness, not the name people give it!

Spanish Name: *CÁNCER* (CANCER) Name in Your Area: _____

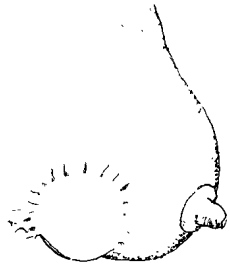
Mexican villagers use the word ***cáncer*** for any severe infection of the skin, especially badly infected wounds (p. 88) or gangrene (p. 213).

In modern medical language, cancer is not an infection, but an abnormal growth or lump in any part of the body. Common types of cancer that you should watch out for are:

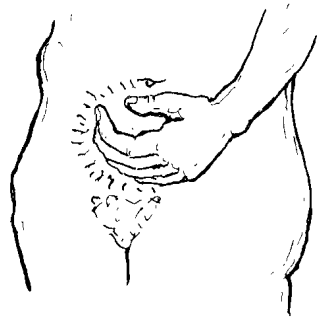
cancer of the skin (p. 211)



breast cancer (p 279)



cancer of the womb or ovaries (p. 280)



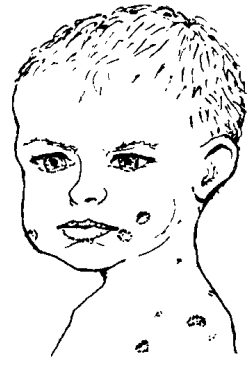
Any hard, painless, slowly growing lump in any part of your body may be cancer. Cancer is often dangerous and may need surgery.

At the first suspicion of cancer seek medical help.

Spanish Name: *LEPRA* (LEPROSY) Name in Your Area: _____

Mexican villagers call any open spreading sore ***lepra***. This leads to confusion, because medical workers use this term only for true leprosy (Hansen's disease, p. 191). Sores commonly called ***lepra*** are:

- impetigo and other skin infections (p. 202)
- sores that come from insect bites or scabies (p. 199)
- chronic sores or skin ulcers such as those caused by poor circulation (p. 213)
- skin cancer (p. 211)
- less commonly, leprosy (p. 191) or tuberculosis of the skin (p. 212)

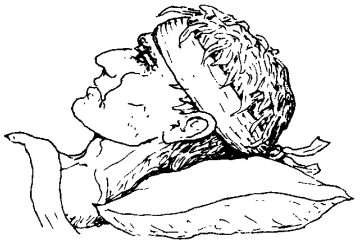


This child has impetigo, not leprosy.

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CONFUSION BETWEEN DIFFERENT ILLNESSES THAT CAUSE FEVER

Spanish Name: *LA FIEBRE* (THE FEVER) Name in Your Area: _____



Correctly speaking, a *fever* is a **body temperature higher than normal**. But in Latin America, a number of serious illnesses that cause high temperatures are all called ***la fiebre***—or "the fever."

To prevent or treat these diseases successfully, it is important to know how to tell one from another.

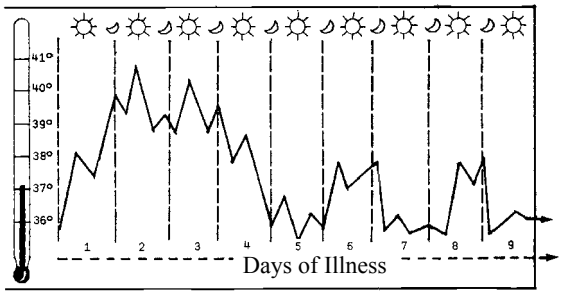
Here are some of the important acute illnesses in which fever is an outstanding sign. The drawings show the **fever pattern** (rise and fall of temperature) that is typical for each disease.

Malaria (p. 186):

Begins with weakness, chills and fever. Fever may come and go for a few days, with shivering (chills) as the temperature rises, and sweating as it falls. Then, fever may come for a few hours every second or third day. On other days, the person may feel more or less well.

MALARIA — TYPICAL FEVER PATTERN

The solid line shows the rise and fall of temperature.

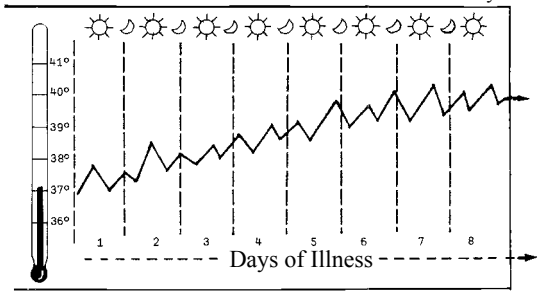


Typhoid (p. 188):

Begins like a cold. Temperature goes up a little more each day. Pulse relatively slow. Sometimes diarrhea and dehydration. Trembling or delirium (mind wanders). Person very ill.

TYPHOID — TYPICAL FEVER PATTERN

The fever goes up a little each day.



Typhus (p. 190):

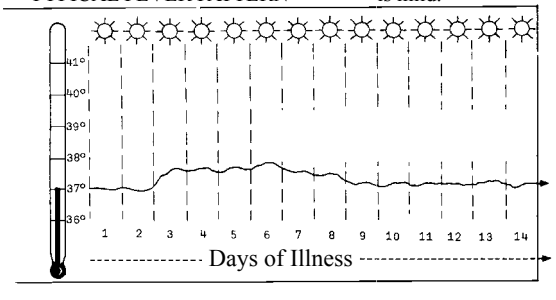
Similar to typhoid. Rash similar to that of measles, with tiny bruises.

Hepatitis (p. 172):

Person loses appetite. Does not wish to eat or smoke. Wants to vomit (nausea). Eyes and skin turn yellow; urine orange or brown; stools whitish. Sometimes liver becomes large, tender. Mild fever. Person very weak.

HEPATITIS— TYPICAL FEVER PATTERN

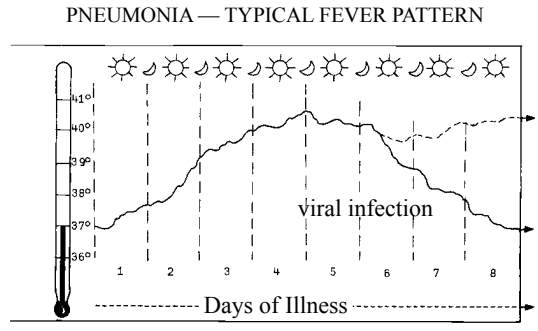
Usually the fever is mild.



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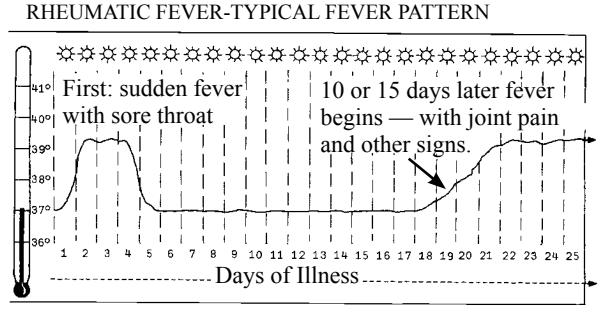
Pneumonia (p. 171):

Fast, shallow breathing. Temperature rises quickly. Cough with green, yellow, or bloody mucus. May be pain in chest. Person very ill.



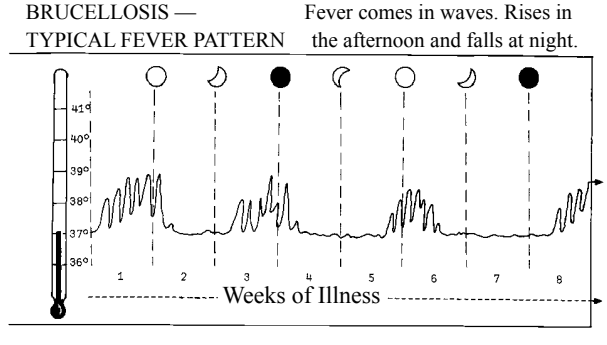
Rheumatic fever (p. 310):

Most common in children and teenagers. Pain in joints. High fever. Often comes after a sore throat. May be pain in the chest with shortness of breath. Or uncontrolled movements of arms and legs.



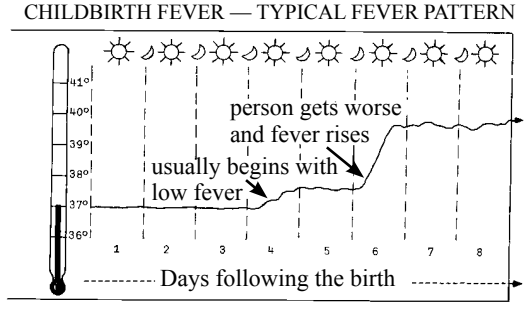
Brucellosis (undulant fever, Malta fever, p. 188):

Begins slowly with tiredness, headache, and pains in the bones. Fever and sweating most common at night. Fever disappears for a few days only to come back again. This may go on for months or years.



Childbirth fever (p. 276):

Begins a day or more after giving birth. Starts with a slight fever, which often rises later. Foul-smelling vaginal *discharge.* Pain and sometimes bleeding.



All of these illnesses can be dangerous. In addition to those shown here, there are many other diseases that may cause similar signs and fever. For example, fevers that last for more than 1 month, or night sweats, may be caused by HIV infection (p. 399). When possible, seek medical help.

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CHAPTER

3

How to Examine a Sick Person

To find out the needs of a sick person, first you must ask important questions and then examine him carefully. You should look for ***signs*** and ***symptoms*** that help you tell how ill the person is and what kind of sickness he may have.

Always examine the person where there is good light, preferably in the sunlight — **never** in a dark room.

There are certain basic things to ask and to look for in anyone who is sick. These include things the sick person feels or reports (symptoms), as well as things **you** notice on examining him (signs). These signs can be especially important in babies and persons unable to talk. In this book the word "signs" is used for both symptoms and signs.

When you examine a sick person, write down your findings and keep them for the health worker in case he is needed (p. 44).

QUESTIONS

Start by asking the person about her sickness. Be sure to ask the following:



What bothers you most right now?

What makes you feel better or worse?

How and when did your sickness begin?

Have you had this same trouble before, or has anyone else in your family or neighborhood had it?

Continue with other questions in order to learn the details of the illness.

For example, if the sick person has a pain, ask her:

Where does it hurt? (Ask her to point to the exact place with one finger.)

Does it hurt all the time, or off and on?

What is the pain like? (sharp? dull? burning?)

Can you sleep with the pain?

If the sick person is a baby who still does not talk, look for signs of pain. Notice his movements and how he cries. (For example, a child with an earache sometimes rubs the side of his head or pulls at his ear.)

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GENERAL CONDITION OF HEALTH

Before touching the sick person, look at him carefully. Observe how ill or weak he looks, the way he moves, how he breathes, and how clear his mind seems. Look for signs of dehydration (p. 151) and shock (p. 77).

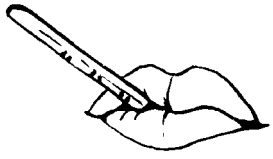
Notice whether the person looks well nourished or poorly nourished. Has he been losing weight? When a person has lost weight slowly over a long period of time, he may have a ***chronic illness*** (one that lasts a long time).

Also note the color of the skin and eyes. These sometimes change when a person is sick. (Dark skin can hide color changes. So look at parts of the body where the skin is pale, such as palms of the hands or soles of the feet, the fingernails, or the insides of the lips and eyelids.)

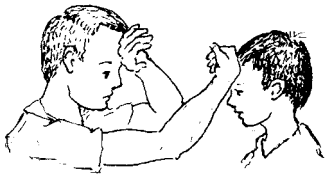
- Paleness, especially of the lips and inside the eyelids, is a sign of anemia (p. 124). Skin may also go lighter as a result of tuberculosis (p. 179), or kwashiorkor (p. 113).
- Darkening of the skin may be a sign of starvation (p. 112).
- Bluish skin, especially blueness or darkness of the lips and fingernails, may mean serious problems with breathing (pages 79, 167, and 313) or with the heart (p. 325). Blue-gray color in an unconscious child may be a sign of severe malaria (p. 186).
- A gray-white coloring, with cool moist skin, often means a person is in shock (p. 77).
- Yellow color (jaundice) of the skin and eyes may result from disease in the liver (hepatitis, p. 172, cirrhosis, p. 328, or amebic abscess, p. 145) or gallbladder (p. 329). It may also occur in newborn babies (p. 274), and in children born with sickle cell disease (p. 321).

Look also at the skin when a light is shining across it from one side. This can show the earliest sign of measles rash on the face of a feverish child (p. 311).

TEMPERATURE



It is often wise to take a sick person's temperature, even if he does not seem to have a fever. If the person is very sick, take the temperature at least 4 times each day and write it down.



If there is no thermometer, you can get an idea of the temperature by putting the back of one hand on the sick person's forehead and the other on your own or that of another healthy person. If the sick person has a fever, you should feel the difference.

It is important to find out when and how the fever comes, how long it lasts, and how it goes away. This may help you identify the disease. Not every fever is malaria, though in some countries it is often treated as such. Remember other possible causes. For example:

- Common cold, and other virus infections (p. 163). The fever is usually mild.
- Typhoid causes a fever that goes on rising for 5 days. Malaria medicine does not help.
- Tuberculosis sometimes causes a mild fever in the afternoon. At night the person often sweats, and the fever goes down.

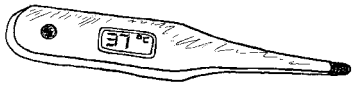
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How to Use a Thermometer

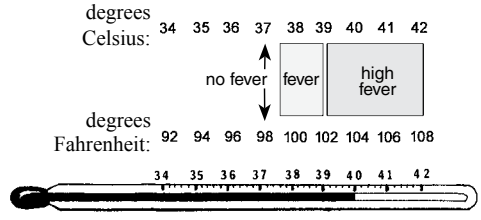
Every family should have a thermometer. Take the temperature of a sick person 4 times a day and always write it down (p. 462).

How to check the temperature

Glass thermometers are filled with mercury, a very poisonous liquid metal. Get a digital thermometer if you can.

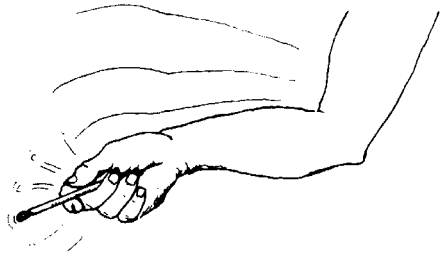


digital thermometer



How to take the temperature:

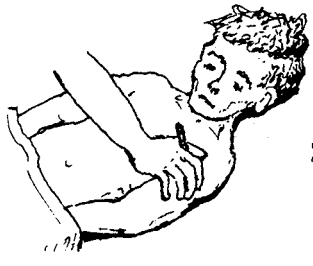
1. Clean the thermometer well with soap and water or alcohol. If it is digital, press the button to turn it on. If it is glass, shake it until it reads less than 36°C.

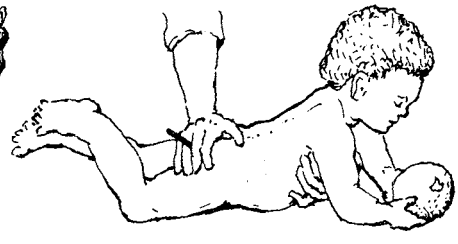


2. Put the thermometer…

under the tongue (keeping the mouth shut) — or — in the armpit if there is danger of biting the thermometer — or — carefully, in the anus of a small child (wet or grease it first)







3. Leave it there for 3 or 4 minutes or until it "beeps."

4. Read it. (An armpit temperature will read a little lower than a mouth reading; in the anus it will read a little higher.)

5. Wash the thermometer well with soap and water.

Note: In newborn babies a temperature that is unusually high **or unusually low** (below 36°C) may mean a serious infection (p. 275).

- To learn about other fever patterns, see pages 26 to 27.
- To learn what to do for a fever, see page 75.

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BREATHING (RESPIRATION)

Pay special attention to the way the sick person breathes—the depth (deep or shallow), rate (how often breaths are taken), and difficulty. Notice if both sides of the chest move equally when she breathes.

If you have a watch or simple timer, count the number of breaths per minute (when the person is quiet). Between 12 and 20 breaths a minute is typical for adults and older children. Up to 30 breaths a minute is typical for younger children, and 40 for babies. People with a high fever or serious respiratory illness breathe more quickly than usual. For example, more than 30 **shallow** breaths a minute in an adult usually means pneumonia, as does 60 breaths a minute for a newborn baby.

Listen carefully to the sound of the breaths. For example:

- A whistle or wheeze and difficulty breathing out can mean asthma (p. 167).
- A gurgling or snoring noise and difficult breathing in an unconscious person may mean the tongue, mucus (slime), or something else is stuck in the throat and does not let enough air get through.

Look for sucking in of the skin between ribs and at the angle of the neck (behind the collar bone) when the person breathes in. This means air has trouble getting through. Consider the possibility of something stuck in the throat (p. 79), pneumonia (p. 171), asthma (p. 167), or bronchitis (mild sucking in, p. 170).

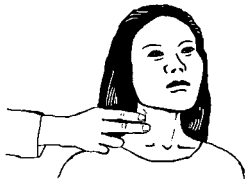
If the person has a cough, ask if it keeps her from sleeping. Find out if she coughs up mucus, how much, its color, and if there is blood in it.

PULSE (HEARTBEAT)

To take the person's pulse, put your fingers on the wrist as shown. (Do not use your thumb to feel for the pulse.)



If you cannot find the pulse in the wrist, feel for it in the side of the neck, under the corner of the jaw.



Or put your ear directly or the chest and listen for the heartbeat (or use a stethoscope if you have one).



Pay attention to the strength, the rate, and the regularity of the pulse. If you have a watch or timer, count the pulses per minute.

TYPICAL PULSE FOR PEOPLE AT REST

adults . . . . . from 60 to 80 beats per minute

children. . . . . 80 to 100 beats per minute

babies. . . . . 100 to 140 beats per minute

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The pulse gets much faster with exercise and when a person is nervous, frightened, dehydrated, or has a fever. As a general rule, the pulse increases 20 beats per minute for each degree (°C) rise in fever.

When a person is very ill, take the pulse often and write it down along with the temperature and rate of breathing.

It is important to notice changes in the pulse rate. For example:

- A weak, rapid pulse can mean a state of shock (p. 77).
- A very rapid, very slow, or irregular pulse could mean heart trouble (p. 325).
- A relatively slow pulse in a person with a high fever may be a sign of typhoid (p. 188).

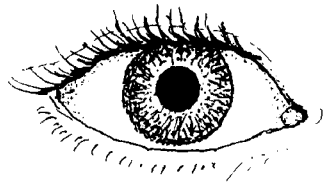
EYES

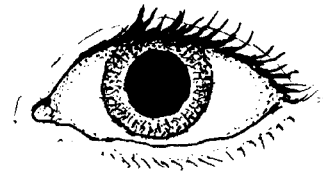
Look at the color of the white part of the eyes. Is it white, red (p. 219), or yellow? Also note any changes in the sick person's vision.

Have the person slowly move her eyes up and down and from side to side. Jerking or uneven movement may be a sign of brain injury.

Pay attention to the size and color of the ***pupils*** (the black "window" in the center of the eye). If they are very large, it can mean a state of shock (p. 77). If they are very large, or very small, it can mean poison or the effect of certain drugs. If there is a white glow, it can mean cataracts (p. 225) or cancer.

Look at both eyes and note any difference between the two, especially in the size of the pupils:





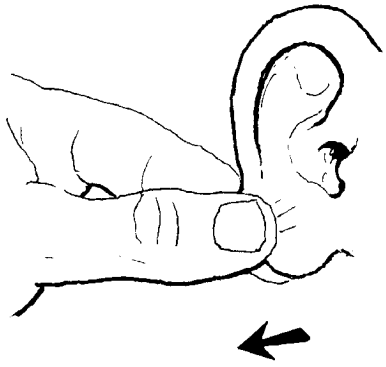
A big difference in the size of the pupils is almost always a medical emergency.

- If the eye with the larger pupil hurts so badly it causes vomiting, the person probably has acute glaucoma (p. 222).
- If the eye with the smaller pupil hurts a great deal, the person may have iritis, a very serious problem (p. 221).
- Difference in the size of the pupils of an unconscious person or a person who has had a recent head injury may mean brain injury. It may also mean stroke (p. 327).

Always compare the pupils of a person who is unconscious or has had a head injury.

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EARS, THROAT, AND NOSE



Ears: Always check for signs of pain and infection in the ears-especially in a child with fever or a cold. A baby who cries a lot or pulls at his ear may have an ear infection (p. 309).

Pull the ear gently. If this increases pain, the infection is probably in the tube of the ear (ear canal). Also look for redness or pus inside the ear. A small flashlight or penlight will help. But never put a stick, wire, or other hard object inside the ear.

Find out if the person hears well, or if one side is more deaf than the other. Rub your thumb and fingers together near the person's ear to see if he can hear it. For deafness and ringing of the ears see page 327.

Throat and Mouth: With a torch (flashlight) or sunlight examine the mouth and throat. To do this hold down tongue with a spoon handle or have the person say "Ahhhh..." Notice if the throat is red and if the tonsils (2 lumps at the back of the throat) are swollen or have spots with pus (p. 309). Also examine the mouth for sores, inflamed gums, sore tongue, rotten or abscessed teeth and other problems. (Read Chapter 17.)

Nose: Is the nose runny or plugged? (Notice if and how a baby breathes through his nose.) Shine a light inside and look for mucus, pus, blood; also look for redness, swelling, or bad smell. Check for signs of sinus trouble or hay fever (p. 165).

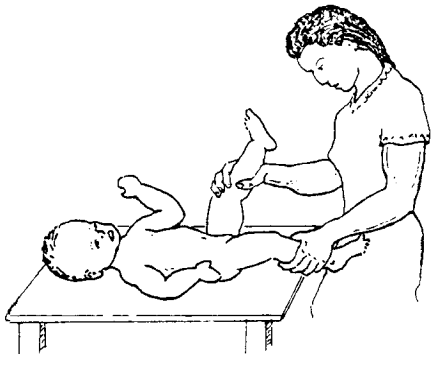
SKIN

It is important to examine the sick person's whole body, no matter how mild the sickness may seem. Babies and children should be undressed completely. Look carefully for anything that is unusual, including:

- sores, wounds, or splinters
- rashes or welts
- spots, patches, or any unusual markings
- *inflammation* (sign of infection with redness, heat, pain and swelling)
- swelling or puffiness
- swollen *lymph nodes* (little lumps in the neck, the armpits, or the groin, p. 88)
- new lumps or masses
- unusual thinning or loss of hair, or loss of its color or shine (p. 112)
- loss of eyebrows (can be a sign of leprosy, see p. 191)

Always examine little children between the buttocks, in the genital area, between the fingers and toes, behind the ears, and in the hair (for lice, scabies, ringworm, rashes, and sores).

For identification of different skin problems, see pages 196 to198.



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THE BELLY (ABDOMEN)

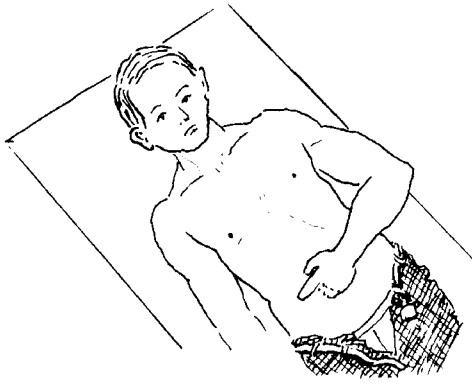
If a person has pain in the belly, try to find out exactly where it hurts.

Learn whether the pain is steady or whether it suddenly comes and goes, like cramps or ***colic.***

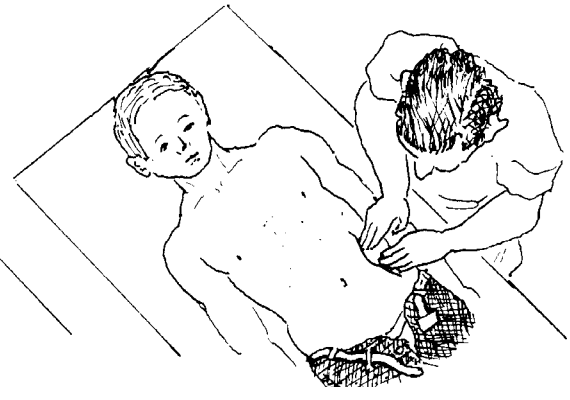
When you examine the belly, first look at it for any unusual swelling or lumps.

The location of the pain often gives a clue to the cause (see the following page).

First, ask the person to point with one finger where it hurts.



Then, beginning on the opposite side from the spot where he has pointed, press gently on different parts of the belly to see where it hurts most.

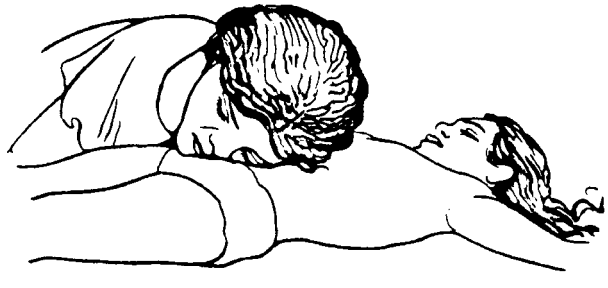


See if the belly is soft or hard and whether the person can relax his stomach muscles. A very hard belly could mean an acute abdomen—perhaps appendicitis or peritonitis (p. 94).

If you suspect peritonitis or appendicitis, do the test for ***rebound pain*** described on page 95.

Feel for any new lumps and hardened areas in the belly.

If the person has a constant pain in the stomach, with nausea, and has not been able to move her bowels, put an ear (or stethoscope) on the belly, like this:



Listen for gurgles in the intestines. If you hear nothing after about 2 minutes, this is a danger sign. See "Emergency Problems of the Gut," page 93.

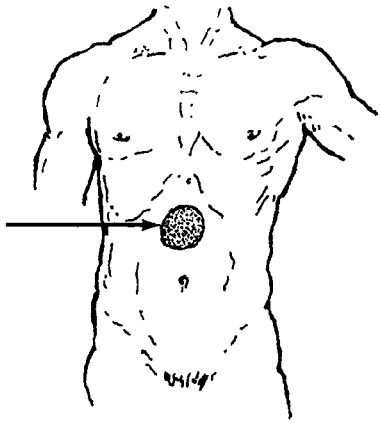
A silent belly is like a silent dog. Beware!

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These pictures show the areas of the belly that usually hurt when a person has the following problems:

Ulcer
(p. 128)

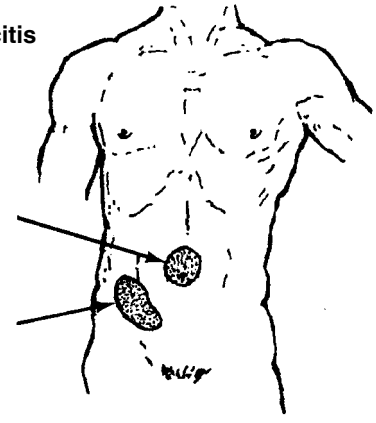
pain in the "pit of the stomach"



Appendicitis
(p. 94)

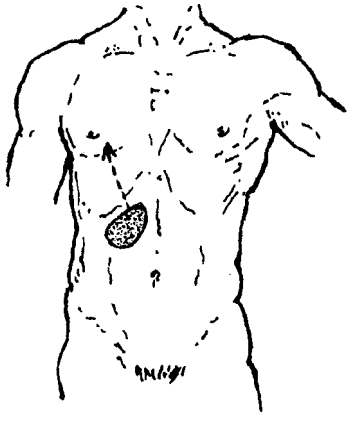
first it hurts here

later it hurts here



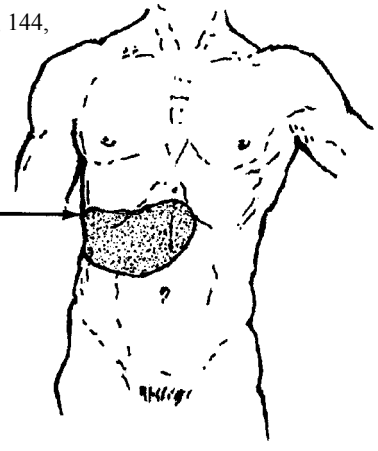
Gallbladder
(p. 329)

the pain often reaches to the back

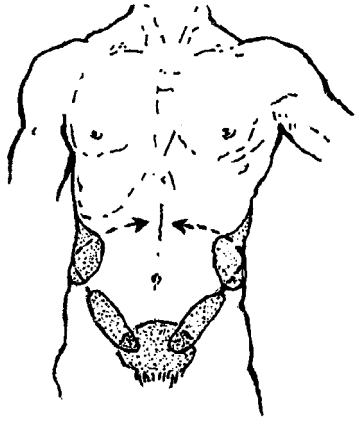


Liver
(pages 172, 144, and 328)

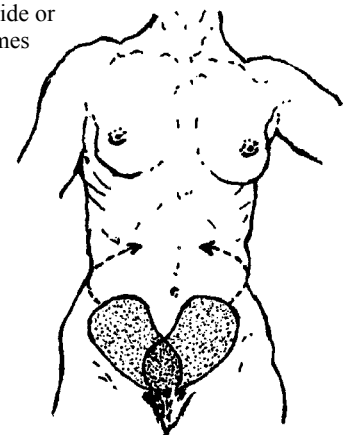
pain here, at times it spreads to the chest



Urinary system
(p. 234)
mid or low back pain, often goes around the waist to the lower part of the belly



Ectopic pregnancy
(p. 280)
pain on one side or both, sometimes with pain in the shoulder or neck



Note: For different causes of back pain, see page 173.

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MUSCLES AND NERVES

If a person complains of numbness, weakness, or loss of control in part of his body, or you want to test it: notice the way he walks and moves. Have him stand, sit, or lie completely straight, and carefully compare both sides of his body.

Face: Have him smile, frown, open his eyes wide, and squeeze them shut. Notice any drooping or weakness on one side.



If the problem began more or less suddenly, think of a head injury (p. 91), stroke (p. 327), or Bell's palsy (p. 327).

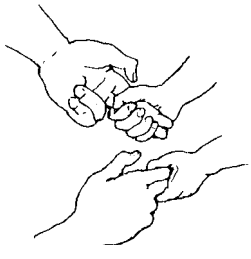
If it came slowly, it may be a brain tumor. Get medical advice.

Also check for regular eye movement, size of pupils (p. 217), and how well he can see.

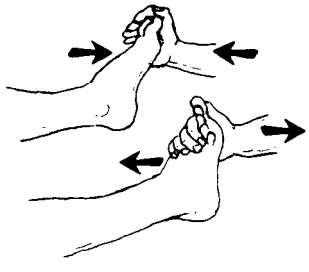
Arms and legs: Look for loss of muscle. Notice—or measure—difference in thickness of arms or legs.

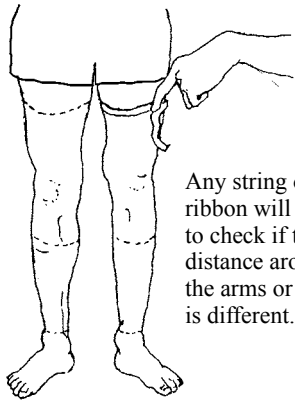
Watch how he moves and walks. If muscle loss or weakness affects the whole body, suspect malnutrition (p. 112) or a chronic (long-term) illness like tuberculosis.

Have him squeeze your fingers to compare strength in his hands



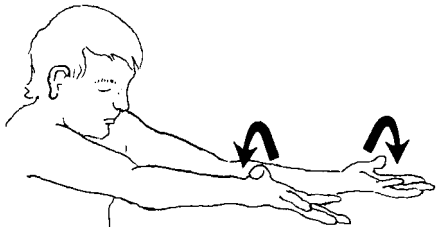
and push and pull with his feet against your hand.





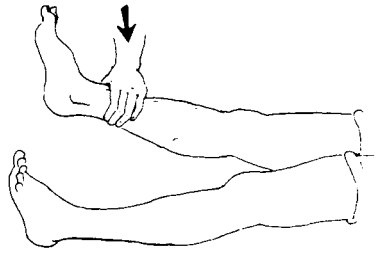
Any string or ribbon will do to check if the distance around the arms or legs is different.

Also have him hold his arms straight out and turn his hands up and down.



Note any weakness or trembling.

Have him lie down and lift one leg and then the other.



If muscle loss and weakness is uneven or worse on one side, in children, think first of polio (p. 314); in adults, think of a back problem, a back or head injury, or stroke.

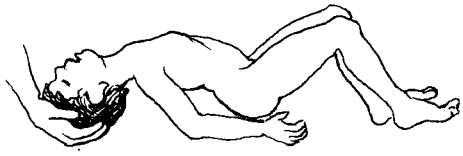
For more information on muscle testing and physical examination of people with disabilities, see ***Disabled Village Children***, Chapter 4.

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Check for stiffness or tightness of different muscles:

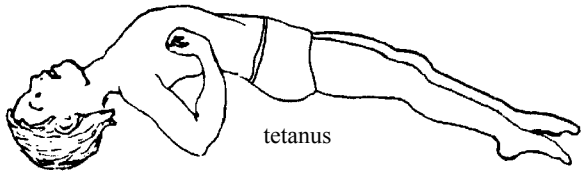


- If the jaw is stiff or will not open, suspect tetanus (p. 182) or a severe infection of the throat (p. 309) or of a tooth (p. 231). If the problem began after he yawned or was hit in the jaw, he may have a dislocated jaw.
- If the neck or back is stiff and bent backwards, in a very sick child, suspect meningitis. If the head will not bend forward or cannot be put between the knees, meningitis is likely (p. 185).



meningitis

- If a child always has some stiff muscles and makes strange or jerky movements, he may have cerebral palsy (p. 320).
- If strange or jerky movements come suddenly, with loss of consciousness, he may have seizures (p. 178). If seizures happen often, think of epilepsy. If they happen when he is ill, the cause may be high fever (p. 76) or dehydration (p. 151) or tetanus (p. 182) or meningitis (p. 185).



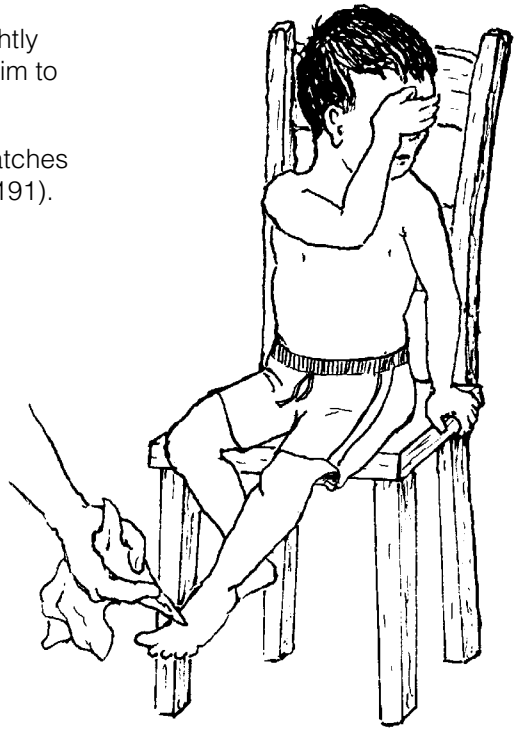
tetanus

To test a person's reflexes when you suspect tetanus, see page 183.

To check for loss of feeling in the hands, feet, or other parts of the body:

Have the person cover his eyes. Lightly touch the skin in different places. Ask him to say "Yes" when he feels it.

- Loss of feeling in or near spots or patches on the body is probably leprosy (p. 191).
- Loss of feeling in both hands or feet may be due to diabetes (p. 127) or leprosy.
- Loss of feeling on one side only could come from a back problem (p. 174) or injury.



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CHAPTER 4

How to Take Care of a Sick Person

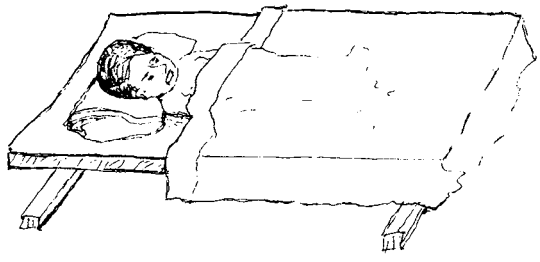
Sickness weakens the body. To gain strength and get well quickly, special care is needed.

The care a sick person receives is frequently the most important part of his treatment.

Medicines are often not necessary. But good care is always important. The following are the basis of good care:

1. The Comfort of the Sick Person

A person who is sick should rest in a quiet, comfortable place with plenty of fresh air and light. He should keep from getting too hot or cold. If the air is cold or the person is chilled, cover him with a sheet or blanket. But if the weather is hot or the person has a fever, do not cover him at all (p. 75).



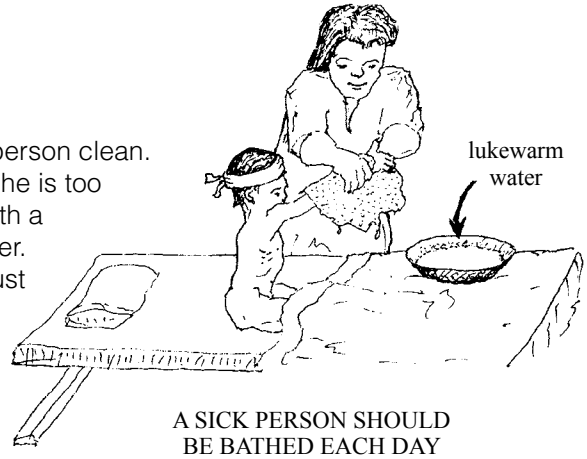
2. Liquids



In nearly every sickness, especially when there is fever or diarrhea, the sick person should drink plenty of liquids: water, tea, juices, broths, etc.

3. Personal Cleanliness

It is important to keep the sick person clean. He should be bathed every day. If he is too sick to get out of bed, wash him with a sponge or cloth and lukewarm water. His clothes, sheets, and covers must also be kept clean. Take care to keep crumbs and bits of food out of the bed.



A SICK PERSON SHOULD BE BATHED EACH DAY

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4. Good Food



If the sick person feels like eating, let him. Most sicknesses do not require special diets.

A sick person should drink plenty of liquids and eat a lot of nourishing food (see Chapter 11).

If the person is very weak, give him as much nourishing food as he can eat, many times a day. If necessary, mash the foods, or make them into soups or juices.

Energy foods are especially important—for example, porridges of rice, wheat, oatmeal, potato, or cassava. Adding a little sugar and vegetable oil will increase the energy. Also encourage the sick person to drink plenty of sweetened drinks, especially if he will not eat much.

A few problems do require special diets. These are explained on the following pages:

anemia . . . . . p. 124
stomach ulcers and heartburn . . . . . p. 128
appendicitis, gut obstruction, acute abdomen (in these cases take no food at all) . . . . p. 93
diabetes . . . . . p. 127
heart problems . . . . . p. 325
gallbladder problems . . . . . p. 329
high blood pressure . . . . . p. 125



SPECIAL CARE FOR A PERSON WHO IS VERY ILL

1. Liquids

It is extremely important that a very sick person drink enough liquid. If he only can drink a little at a time, give him small amounts often. If he can barely swallow, give him sips every 5 or 10 minutes.

Measure the amount of liquids the person drinks each day. An adult needs to drink 2 liters or more every day and should urinate at least a cup (240 ml) of urine 3 or 4 times daily. If the person is not drinking or urinating enough, or if he begins to show signs of dehydration (p. 151), encourage him to drink more. He should drink ***nutritious*** liquids, usually with a little salt added. If he will not drink these, give him a Rehydration Drink (p. 152). If he cannot drink enough of this, and develops signs of ***dehydration***, a health worker may be able to give him intravenous solution. But the need for this can usually be avoided if the person is urged to take small sips often.

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2. Food

If the person is too sick to eat solid foods, give her soups, milk, juices, broths, and other nutritious liquids (see Chapter 11). A porridge of cornmeal, oatmeal, or rice is also good, but should be given together with body-building foods. Soups can be made with egg, beans, or well-chopped meat, fish, or chicken. If the person can eat only a little at a time, she should eat several small meals each day.

3. Cleanliness

Personal cleanliness is very important for a seriously ill person. She should be bathed every day with warm water.

Change the bed clothes daily and each time they become dirty. Soiled or bloodstained clothes, bedding, and towels of a person with an infectious disease should be handled with care. To kill any viruses or germs, wash these in hot soapy water, or add some chlorine bleach.

4. Changing Position in Bed

A person who is very weak and cannot turn over alone should be helped to change position in bed many times each day. This helps prevent bed sores (p. 214).

A child who is sick for a long time should be held often on her mother's lap.

Frequent changing of the person's position also helps to prevent pneumonia, a constant danger for anyone who is very weak or ill and must stay in bed for a long time. If the person has a fever, begins to cough, and breathes with fast, shallow breaths, she probably has pneumonia (p. 171).

5. Watching for Changes

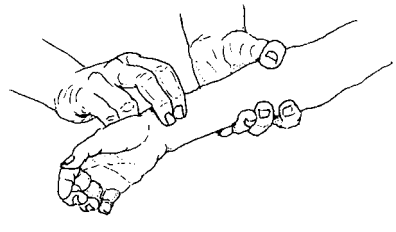
You should watch for any change in the sick person's condition that may tell you whether he is getting better or worse. Keep a record of his vital signs. Write down the following facts 4 times a day:

Also write down the amount of liquids the person drinks and how many times

temperature
(how many degrees)



pulse
(beats per minute)



breathing
(breaths per minute)

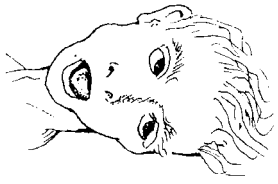


a day he urinates and has a bowel movement. Save this information for the health worker or doctor.

It is very important to look for signs that warn you that the person's sickness is serious or dangerous. A list of **Signs of Dangerous Illness** is on the next page. If the person shows any of these signs, **seek medical help immediately.**

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SIGNS OF DANGEROUS ILLNESS



A person who has one or more of the following signs is probably too sick to be treated at home without skilled medical help. His life may be in danger. **Seek medical help as soon as possible**. Until help comes, follow the instructions on the pages indicated.

page

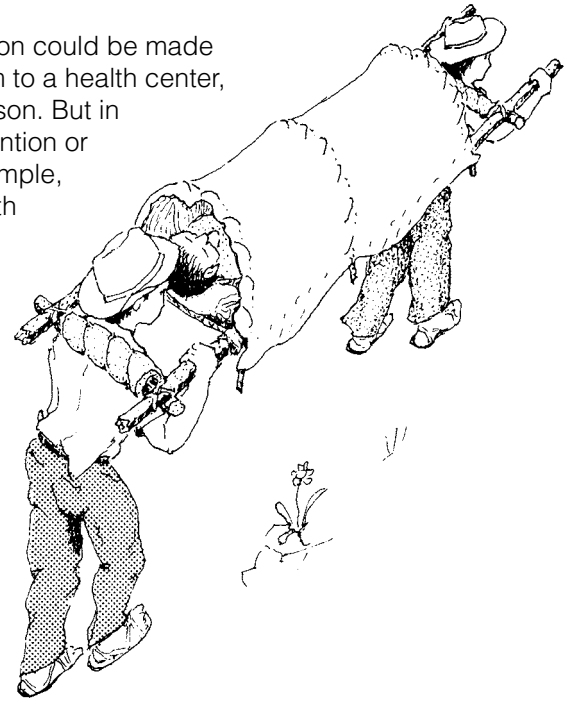
1. Loss of large amounts of blood from anywhere in the body 82, 264, 281
2. Coughing up blood 179
3. Marked blueness of lips and nails (if it is new) 30
4. Great difficulty in breathing; does not improve with rest 167, 325
5. The person cannot be wakened (coma) 78
6. The person is so weak he faints when he stands up 325
7. Twelve hours or more without being able to urinate 234
8. A day or more without being able to drink any liquids 151
9. Heavy vomiting or severe diarrhea that lasts for more than one day or more than a few hours in babies 151
10. Black stools like tar, or vomit with blood or feces 128
11. Strong, continuous stomach pains with vomiting in a person who does not have diarrhea or cannot have a bowel movement 93
12. Any strong continuous pain that lasts for more than 3 days . . . . . 29 to 38
13. Stiff neck with arched back, with or without a stiff jaw 182, 185
14. More than one seizure (fit) in someone with fever or serious illness 76, 185
15. High fever (above 39°C) that cannot be brought down or that lasts more than 4 or 5 days 75
16. Weight loss over an extended time 20, 400
17. Blood in the urine 146, 234
18. Sores that keep growing and do not go away with treatment . 191, 196, 211, 212
19. A lump in any part of the body that keeps getting bigger 196, 280
20. Very high blood pressure (180/110 or greater) 327
21. Problems with pregnancy and birth:
    - any bleeding during pregnancy 249, 281
    - high blood pressure (140/90 or greater) 249
    - long delay once the waters have broken and labor has begun 267
    - severe bleeding 264

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WHEN AND HOW TO LOOK FOR MEDICAL HELP

Seek medical help at the first sign of a dangerous illness. Do not wait until the person is so sick that it becomes difficult or impossible to take him to a health center or hospital.

If a sick or injured person's condition could be made worse by the difficulties in moving him to a health center, try to bring a health worker to the person. But in an emergency when very special attention or an operation may be needed (for example, appendicitis), do not wait for the health worker. Take the person to the health center or the hospital at once.



When you need to carry a person on a stretcher, make sure he is as comfortable as possible and cannot fall out. If he has any broken bones, splint them before moving him (p. 99). If the sun is very strong, rig a sheet over the stretcher to give shade yet allow fresh air to pass underneath.

WHAT TO TELL THE HEALTH WORKER

For a health worker or doctor to recommend treatment or prescribe medicine wisely, she should see the sick person. If the sick person cannot be moved, have the health worker come to him. If this is not possible, send a responsible person who knows the details of the illness. Never send a young child or someone who cannot explain the problem.

Before sending for medical help, examine the sick person carefully and completely. Then write down the details of his disease and general condition (see Chapter 3).

On the next page is a form on which you can make a PATIENT REPORT. Several copies of this form are at the end of this book. Tear out one of these forms and carefully complete the report, giving all the details you can.

When you send someone for medical help, always send a completed information form with him.

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PATIENT REPORT

TO USE WHEN SENDING FOR MEDICAL HELP

Name of the sick person: _____ Age: _____

Male _____ Female_____ Where is he (she)? _____

What is the main sickness or problem right now?_____

_____

_____

When did it begin? _____

How did it begin? _____

Has the person had the same problem before? _____ When? _____

Is there fever? _____ How high?_____°

When and for how long? _____

Pain? _____ Where? _____ What kind? _____

What is wrong or different from usual in any of the following?

Skin:_____ **Ears:**_____

Eyes: _____ **Mouth and throat:** _____

Genitals: _____

Urine: Much or little? _____ Color? _____ Trouble urinating?_____

Describe: _____ Times in 24 hours: _____ Times at night: _____

Stools: Color?___ Blood or mucus? _____ Diarrhea? _____

Number of times a day: _____ Cramps? _____ Dehydration?_____

Mild or severe? _____ Worms? _____ What kind?_____

Breathing: Breaths per minute:_____ Deep, shallow, or regular?_____

Difficulty breathing (describe): _____

Cough (describe): _____

Wheezing? _____ Mucus? _____ With blood?_____

Does the person have any of the SIGNS OF DANGEROUS ILLNESS listed on page 42? _____ Which? (give details) _____

Other signs:

Is the person taking medicine? _____ What?_____

Has the person ever used medicine that has caused a rash, hives (or bumps)_____

with itching, or other allergic reactions?_____ What? _____

The state of the sick person is: Not very serious: _____ Serious: _____

Very serious: _____

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CHAPTER 5

Healing Without Medicines

For most sicknesses no medicines are needed. Our bodies have their own defenses, or ways to resist and fight disease. In most cases, these natural defenses are far more important to our health than are medicines.

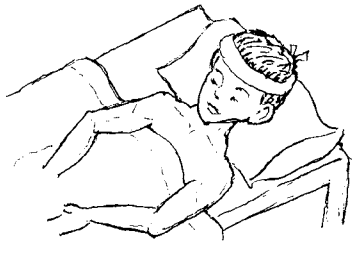
People will get well from many sicknesses —including the common cold and flu—by themselves, without need for medicines.

To help the body fight off or overcome a sickness, often all that is needed is to:

keep clean



get plenty of rest



eat well and drink a lot of liquid



Even in a case of more serious illness, when a medicine may be needed, **it is the body that must overcome the disease;** the medicine only helps. Cleanliness, rest, nutritious food, and lots of water are still very important.

Much of the art of health care does not—and should not—depend on use of medications. Even if you live in an area where there are no modern medicines, there is a great deal you can do to prevent and treat most common sicknesses—if you learn how.

Many sicknesses can be prevented or treated without medicines.

If more people had access to enough clean water, this alone might do more to prevent and cure illnesses than all the medicines they now use. . .and misuse.

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PREVENTING AND TREATING ILLNESS WITH WATER

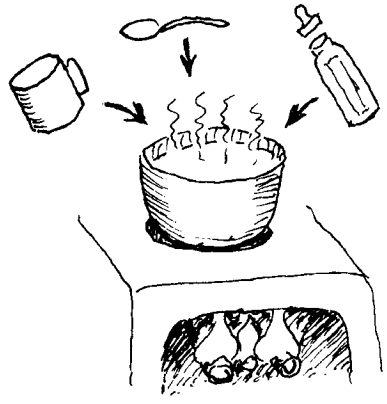
Most of us could live without medicines. But no one can live without water. In fact, over half (57%) of the human body is water. If everyone living in farms and villages made the best use of water, the amount of sickness and death—especially of children—could be reduced.

For example, correct use of water is basic both in the prevention and treatment of diarrhea. In many areas diarrhea is the most common cause of sickness and death in small children. ***Contaminated*** (unclean) water is often part of the cause.

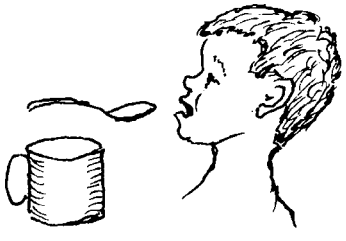
An important part of the prevention of diarrhea and many other illnesses is to make sure that drinking water is safe. Protect wells and springs from dirt and animals by putting fences or walls around them. Use cement or rock to provide good drainage around the well or spring, so that rain or spilled water runs away from it.

PREVENTION

Where water may be contaminated, an important part of the prevention of diarrhea is to boil or filter the water used for drinking or for preparing foods. This is especially important for babies. Babies' bottles and eating utensils should also be boiled. If regular boiling of bottles is not possible, it is safer to use a cup and water spoon. Washing hands with soap and water after a bowel movement (shitting) and before eating or handling foods is also important.



TREATMENT



A common cause of death in children with diarrhea is severe ***dehydration***, or loss of too much water from the body (p. 151). By giving a child with diarrhea plenty of water (best with sugar or cereal and salt), dehydration can often be prevented or corrected (see "Rehydration Drink," p. 152).

Giving lots of liquids to a child with diarrhea is more important than any medicine. In fact, if enough liquid is given, no medicine is usually needed in the treatment of diarrhea.

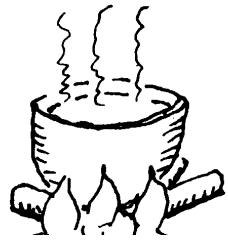
On the next 2 pages are a number of other situations in which **it is often more important to use water correctly than to use medicines.**

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Times When the Right Use of Water May Do More Good than Medicines

PREVENTION

to help prevent	**use water**	**see page**
1. diarrhea, worms, gut infections	boil or filter drinking water, wash hands, etc.	135
2. skin infections	bathe often	133
3. wounds becoming infected; tetanus	wash wounds well with soap and clean water	84, 89

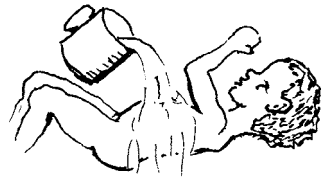


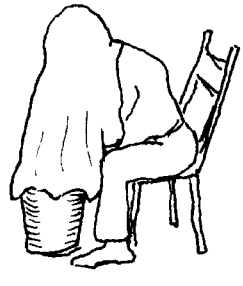


TREATMENT

to treat	**use water**	**see page**
1. diarrhea, dehydration	drink plenty of liquids	152
2. illnesses with fever	drink plenty of liquids	75, 76
3. high fever	remove clothing and soak body with water	76
4. minor urinary infections (common in women)	drink plenty of water	235
5. cough, asthma, bronchitis, pneumonia	drink a lot of water and breathe hot water vapors (to loosen mucus)	168



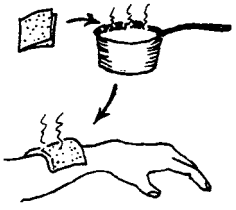


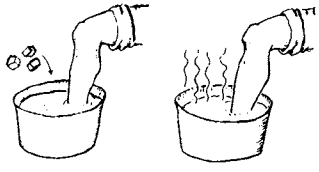


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to treat	use water	see page
6. sores, impetigo, ringworm of skin or scalp, cradle cap, pimples	scrub with soap and clean water	201, 202, 205, 211, 215
7. infected wounds, abscesses, boils	hot soaks or compresses	88, 202
8. stiff, sore muscles and joints	hot compresses	102, 173, 174
9. strains and sprains	the first day: soak joint in cold water; then use hot soaks	102
10. itching, burning, or weeping irritations of the skin	cold compresses	193,194
11. minor burns	hold in cold water at once	96
12. sore throat or tonsillitis	gargle with warm salt water	309
13. acid, lye, dirt, or irritating substance in eye	flood eye with cool water at once, and continue for 15 to 30 minutes	219
14. stuffed up nose	sniff salt water	164
15. constipation, hard stools	drink lots of water (also, enemas are safer than laxatives, but do not overuse)	15, 126
16. cold sores or fever blisters	hold ice on blister for several minutes at first sign	232















In each of the above cases (except pneumonia) when water is used correctly, often medicines are not needed. In this book you will find many suggestions for ways of healing without need for medicine. **Use medicines only when absolutely necessary.**

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CHAPTER 6

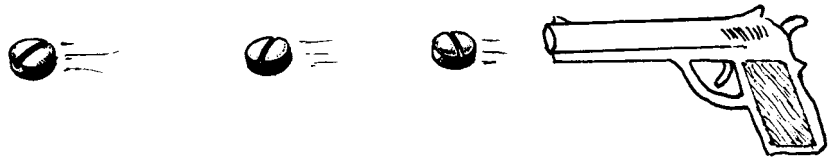
Right and Wrong Uses of Modern Medicines

Medicines can treat dangerous illnesses, manage health conditions, and save lives, but only when people can get them and use them correctly. When medicines are sold that do not work, or when useful medicines are used the wrong way, medicines can do more harm than good.

Some doctors and health workers recommend or prescribe incorrect medicines or medicines when they are not needed. This can harm a person immediately and it can make a medicine work less well in the future.

There is some danger in the use of any medicine.

Some medicines are much more dangerous than others. Unfortunately, people sometimes use very dangerous medicines for mild sicknesses. Instead of curing an illness, this may even cause death. Never use a dangerous medicine for a mild illness. (For more about using medicines, see the Brown Pages w18 and w19.)



REMEMBER: *MEDICINES CAN KILL*

Guidelines for the use of medicine:

1. Use medicines only when necessary.
2. Know the correct use and precautions for any medicine you use (see the Green Pages).
3. Be sure to use the right dose.
4. If the medicine does not help, or causes problems, stop using it.
5. When in doubt, seek the advice of a health worker.

Note: One of the reasons some health workers and doctors give medicine when none is needed is because they think patients expect medicine and will not be satisfied until they get some. Tell your doctor or health worker you only want medicine if it is definitely needed. This will save you money and be safer for your health.

Only use a medicine when you are sure it is needed and when you are sure how to use it.

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THE MOST DANGEROUS MISUSE OF MEDICINE

Here are some dangerous errors people make in using modern medicines. The improper use of the following medicines causes many deaths each year. BE CAREFUL!



1. Chloramphenicol *(Chloromycetin)* (p. 356)

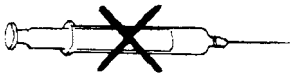
The popular use of this medicine for simple diarrhea and other mild sicknesses is extremely unfortunate, because it is so risky. Use chloramphenicol only for very severe illnesses, like typhoid (p. 188). Never give it to babies younger than 1 month old.



2. Oxytocin *(Pitocin)***, ergometrine** *(Ergotrate),* and **misoprostol** *(Cytotec)* (p. 392-393)

While these medicines are lifesaving drugs when used to stop heavy bleeding **after** birth (p. 266), they are often misused **before** birth. Only use them to strengthen labor if you have been trained to do so and are in a medical center in case something goes wrong. They can cause the womb to burst, which could kill both the baby and the person giving birth.

3. Injections of any medicine



The belief that injections are usually better than medicine taken by mouth is not true. Many times medicines taken by mouth work as well as or better than injections. Also, most medicine is more dangerous injected than when taken by mouth. Use of injections should be very limited (read Chapter 9 carefully).

4. Penicillin (p. 350)

Penicillin works only against certain types of ***infections***. As a general rule, injuries that do not break the skin, even if they make large bruises, have no danger of infection; they do not need to be treated with penicillin or any other antibiotic. Neither penicillin nor other antibiotics helps colds (p. 163).

Penicillin can cause a dangerous reaction called allergic shock in some people. Before using it, know its risks and the precautions you must take—see pages 70 and 350.

5. Gentamicin *(Garamycin)* (p. 358)

Too much use of this antibiotic for babies has caused permanent hearing loss (deafness) in millions of babies. Give to babies only for life-threatening infections. For many infections of the newborn, ampicillin works as well and is much less dangerous.

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6. Anti-diarrhea medicines with hydroxyquinolines (Clioquinol, di-iodohydroxyquinoline, halquinol, broxyquinoline: *Diodoquin, Enteroquinol, Amicline, Quogyl,* and many other brand names)

In the past **clioquinols** were widely used to treat diarrhea. These dangerous medicines are now prohibited in many countries—but in others are still sold. They can cause permanent paralysis, blindness, and even death. For treatment of diarrhea, see Chapter 13.

7. Cortisone and corticosteroids (Prednisolone, dexamethasone, and others)

These are powerful anti-inflammatory drugs that are needed for severe attacks of asthma, arthritis, or severe allergic reactions. But in many countries, steroids are prescribed for minor aches and pains because they often give quick results. This is a big mistake. Steroids cause serious or dangerous side effects—especially if used in high doses or for more than a few days. They lower a person's defenses against infection. They can make tuberculosis much worse, cause bleeding of stomach ulcers, and make bones so weak that they break easily.

8. Anabolic steroids (Nandrolone decanoate, *Durabolin, Deca-Durabolin, Orabolin;* **stanozolol,** *Cetabon;* **oxymetholone,** *Anapolon;* **ethylestrenol,** *Organaboral.* There are many other brand names.)

Anabolic steroids are made from male hormones and are mistakenly used in tonics to help children gain weight and grow. At first the child may grow faster, but he will stop growing sooner and end up shorter than he would have if he had not taken the medicine. Anabolic steroids cause very dangerous side effects. Girls grow hair on their faces like boys, which does not go away, even when the child stops taking the medicine. **Do not give growth tonics to children.** Instead, to help your child grow, use the money to buy food.

9. Arthritis medicines (Butazones: oxyphenbutazone, *Amidozone;* **and phenylbutazone,** *Butazolidin***)**

These medicines for joint pain (arthritis) can cause a dangerous, sometimes deadly, blood disease (agranulocytosis). They can also damage the stomach, liver, and kidneys. **Do not use these dangerous medicines.** For arthritis, aspirin or ibuprofen (pages 380 to 381) is much safer and cheaper. For pain and fever only, acetaminophen (p. 380) can be used.

10. Vitamin B_{12}, liver extract, and iron injections (p. 394)



Vitamin B_{12} and liver extract do not help anemia or weakness except in rare cases. Also, they have certain risks when injected. They should only be used when a specialist has prescribed them **after testing the blood.** Also, avoid injectable iron, such as *Imferon*. To combat anemia, iron pills are safer and work as well (p. 124).

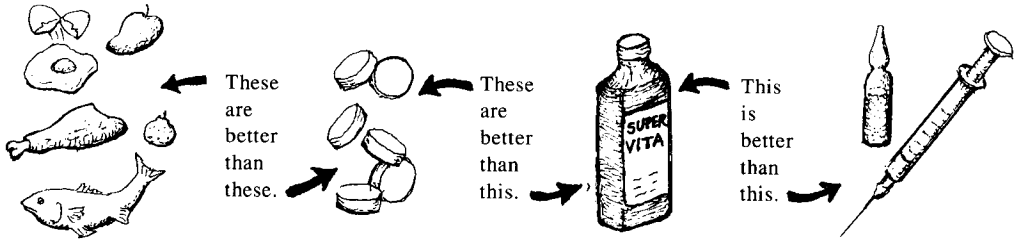
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11. Other vitamins (p. 393)

Avoid buying vitamins or nutrition supplements unless you need them to treat a specific condition such as anemia (p. 124) or you are pregnant (p. 248). Syrups and tonics with vitamins, sometimes sold without the most important vitamins, are especially a waste of money (p. 118). It is better to buy more and better food. Body-building and protective foods like beans, eggs, meat, fruit, vegetables, and whole grains are rich in vitamins and other nutrients (p. 111). People can usually get enough vitamins and minerals by eating a variety of nutritious foods and this costs less.

A person who eats well does not need extra vitamins.

THE BEST WAY TO GET VITAMINS:



For more information about vitamins, when they are necessary, and the foods that have them, read Chapter 11, especially pages 111 and 118.

12. Combination medicines

Medicines for some illnesses, such as HIV and malaria, come as combination pills because they must be taken together and are easier to take this way (p. 399).

But much of the time combination medicines contain medicines you do not need. Using them can be a waste of money and may cause harm. If you need both medicines, ask a pharmacist or health worker if it would cost less to buy them separately.

Some common combination medicines that should be **avoided** are:

- **cough medicines** which contain medicines both to suppress a cough and also to get rid of mucus (cough medicines are almost always useless and a waste of money, whether or not they combine medicines)
- **antibiotics** combined with **anti-diarrhea medicine**
- **antacids** to treat stomach ulcers together with medicine to prevent stomach cramps
- 2 or more **pain medicines** (aspirin with acetaminophen—sometimes also with caffeine)

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13. Calcium

Injecting calcium into a vein can be extremely dangerous. It can quickly kill someone if not injected **very slowly.** Injecting calcium into the buttocks sometimes causes very serious abscesses or infections.



Never inject calcium without first seeking medical advice!

Note: In Mexico and other countries where people eat a lot of corn tortillas or other foods prepared with lime ("cal", not the fruit), it is foolish to use calcium injections or tonics (as is often done to "give strength" or "help children grow"). The body gets all the calcium it needs from the lime.

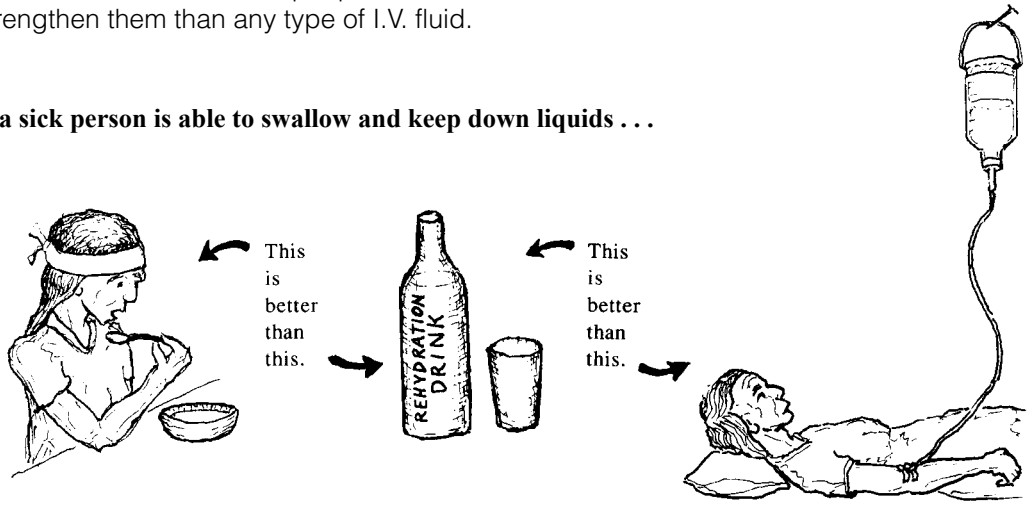
14. "Feeding" through the veins

In some areas, persons who are anemic or very weak spend their last penny to have a liter of solution put into their veins (intravenous or "I.V."). They believe that this will make them stronger or their blood richer. But these liquids are nothing more than water with some salt or sugar in it. They give less energy than a large candy bar and make the blood thinner, not richer. They do not help anemia or make the weak person stronger. Intravenous (I.V.) solutions are needed only when a person has severe dehydration and cannot swallow or keep down liquids.

Only someone who is well trained should give I.V. solutions. Otherwise, there is danger of an infection entering the blood. This can kill the sick person.

If the sick person can swallow, give her a liter of water with sugar (or cereal) and salt (see Rehydration Drink, p. 152). It will do more for her than injecting a liter of I.V. solution. For people who are able to eat, nutritious foods do more to strengthen them than any type of I.V. fluid.

If a sick person is able to swallow and keep down liquids . . .



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WHEN SHOULD MEDICINE NOT BE TAKEN?

Many people have beliefs about things they should not do or eat when taking medicines. For this reason they may stop taking a medicine they need. In truth, no medicine causes harm just because it is taken with certain foods—whether pork, chili pepper, guava, oranges, or any other food. But foods with lots of grease or spices can make problems of the stomach or gut worse—whether or not any medicine is being taken (p. 128). Certain medicines will cause bad reactions if a person drinks alcohol (see "metronidazole," p. 370).

There are situations when special care should be taken when using medicines:

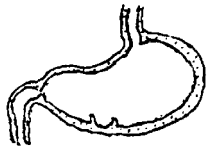


1. Always check before taking medicines during pregnancy and breastfeeding because many can cause harm to the baby. But some medicines, such as those for treating HIV, are especially important in pregnancy to protect the health of mother and baby (p. 400). Also take vitamin pills during pregnancy because this is when the body needs extra vitamins and minerals like iron and folic acid.



2. With newborn children, be very careful when using medicines. Whenever possible look for medical help before giving them any type of medicine. Be sure not to give too much.

3. A person who has ever had any sort of allergic reaction—***hives,*** itching, etc.—after taking penicillin, ampicillin, a sulfonamide, or another medicine **should stop taking it and never take it again**, even if the reaction was mild (see Dangerous reactions from injections of certain medicines, p. 70).



4. Persons who have stomach ulcers or heartburn should avoid medicines that contain aspirin or ibuprofen. Most painkillers and all steroids (p. 51) make ulcers and acid indigestion worse. One painkiller that does not irritate the stomach is acetaminophen (paracetamol, p. 380).

5. There are some medicines that are harmful or dangerous to take when you have a specific illness. For example, persons with long-term liver disease like hepatitis should not be treated with certain certain medicines, including some antibiotics, because when the liver is not working well, the medicine may build up and poison the body (p. 172).

6. Persons who are dehydrated or have long-term kidney disease must be careful when taking certain medicines, because their kidneys are less able to remove medicines from the body, which can cause them to build up. For some medicines, including aspirin, some anti-seizure drugs, and certain antibiotics, this can poison the body. Do not give more than one dose of a medicine that could poison the body unless the person is urinating normally.

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CHAPTER 7

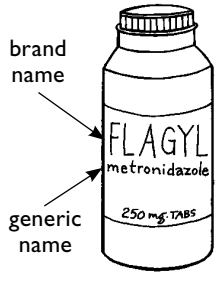
Antibiotics: What They Are and How to Use Them

When used correctly, antibiotics are extremely useful and important medicines. They fight certain infections and diseases caused by ***bacteria.*** Some well-known antibiotics are penicillin, tetracycline, erythromycin, cotrimoxazole, and ciprofloxacin.

The different antibiotics work in different ways against specific infections. All antibiotics have dangers in their use, but some are far more dangerous than others. Take great care in choosing and using antibiotics.

There are many kinds of antibiotics, and each kind is sold under several brand names. This can be confusing. However, the most important antibiotics fall into a few major groups:

antibiotic group (generic name)	**examples of brand names**	**brand names in your area** *(write in)*	**see page**
PENICILLINS (penicillin, ampicillin, amoxicillin)	*Pen-VK*	_____	350
MACROLIDES (erythromycin)	*Erythrocin*	_____	354
TETRACYCLINES (tetracycline, doxycycline)	*Terramycin*	_____	355
CHLORAMPHENICOL	*Chloromycetin*	_____	356
SULFAS (SULFONAMIDES) (cotrimoxazole, sulfisoxazole)	*Bactrim, Gantrisin*	_____	356
AMINOGLYCOSIDES (gentamicin)	*Garamycin*	_____	357
CEPHALOSPORINS (ceftriaxone, cephalexin)	*Keflex*	_____	357
QUINOLONES (ciprofloxacin)	*Cipro*	_____	358



If you have a brand-name antibiotic and do not know to which group it belongs, read the fine print on the bottle or box. For example: Your health worker told you to take *Flagyl*, but the pharmacy does not have it. Ask the pharmacist what the generic name is for *Flagyl*—it is usually printed on the label, box, or package. The generic name medicine is the same as the brand name medicine and often costs less. Or ask for another brand that has the same generic name.

Never use an antibiotic unless you know to what group it belongs, what diseases it fights, and the precautions you must take to use it safely.

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Information on the uses, dosage, risks, and precautions for the antibiotics recommended in this book can be found in the Green Pages. Look for the brand name or generic name of the medicine in the alphabetical list at the beginning of those pages.

GUIDELINES FOR THE USE OF ALL ANTIBIOTICS

1. If you do not know exactly how to use the antibiotic and what infections it can be used for, do not use it.

2. Use only an antibiotic that is recommended for the infection you wish to treat. (Look for the illness in this book.)

3. Know the risks in using the antibiotic and take all the recommended precautions (see the Green Pages).

4. Use the antibiotic only in the recommended dose—no more, no less. The dose depends on the illness and the age or weight of the sick person.

5. Never use injections of antibiotics if taking them by mouth is likely to work as well. Inject only when absolutely necessary.

6. Antibiotics must be taken for their full course. Stopping before you have finished all the days of treatment, even if you feel better, can make the infection return in a form that is even harder to cure. (Some illnesses, like tuberculosis and leprosy, need to be treated for many months or years after the person feels better. Follow the instructions for each illness.)

7. If the antibiotic causes a skin rash, itching, difficult breathing, or any serious reactions, the person must stop using it and **never use it again** (p. 70).

8. **Only use antibiotics when they are necessary** to cure the infection you have. When antibiotics are used too much they begin not to work as well.

GUIDELINES FOR THE USE OF *CERTAIN* ANTIBIOTICS

1. Before you inject penicillin or ampicillin, always have ready ampules of epinephrine (adrenaline) to control an allergic reaction if one occurs (p. 70).

2. For persons who are allergic to penicillin, use another antibiotic such as erythromycin (p. 354) or cotrimoxazole (p. 357).

3. Do not use tetracycline, ampicillin, or another ***broad spectrum*** antibiotic for an illness that can probably be controlled with penicillin or another ***narrow spectrum*** antibiotic (p. 58). Broad spectrum antibiotics attack many more kinds of bacteria than narrow spectrum antibiotics.

4. Use chloramphenicol only for certain severe or life-threatening illnesses, such as typhoid, when no other effective medicine is available. It is a dangerous drug. Never use it for mild illness (p. 313).

5. Do not give tetracycline or doxycycline (p. 355) to pregnant women or to children under 8 years old. It can damage new teeth and bones.

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6. Use streptomycin only for tuberculosis—and always together with other anti-tuberculosis medicines (p. 361).

7. All medicines in the aminoglycoside group (including kanamycin and gentamicin) are quite toxic (poisonous). Too often they are prescribed for mild infections where they may do more harm than good. Use only for very serious infections for which these medicines are recommended.

8. Eating yogurt or curdled milk helps to replace helpful bacteria killed by antibiotics and to return the body to normal (see next page).

WHAT TO DO IF AN ANTIBIOTIC DOES NOT SEEM TO HELP

For most common infections antibiotics begin to bring improvement in a day or two. If the antibiotic you are using does not seem to help, it is possible that:

1. The illness is not what you think. You may be using the wrong medicine. Try to find out more exactly what the illness is—and use the right medicine.

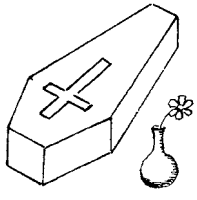
2. The dose of the antibiotic is not correct. Check it.

3. The bacteria have become ***resistant*** to this antibiotic (they no longer are harmed by it). Try another one of the antibiotics recommended for that illness.

4. You may not know enough to cure the illness. Get medical help, especially if the condition is serious or getting worse.

These three children had a cold...

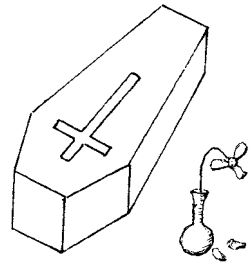
What was the villain?



Penicillin!

(see Allergic Shock, p. 70)

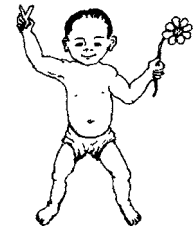
What took the toll?



Chloramphenicol!

(see risks and precautions for this drug, p. 356)

Why did this child get well again?



He got no risky medicine—

just fruit juice, good food, and rest.

Antibiotics do no good for the common cold.
Use antibiotics only for infections they are known to help.

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IMPORTANCE OF LIMITED USE OF ANTIBIOTICS

The use of all medicines should be limited. But this is especially true of antibiotics, for the following reasons:

1. **Poisoning and reactions.** Antibiotics not only kill bacteria, they can also harm the body, either by poisoning it or by causing allergic reactions. Many people die each year because they take antibiotics they do not need.

2. **Some bacteria help the body.** Not all bacteria in the body are harmful. Some are necessary for the body to function. Antibiotics kill the good bacteria along with the harmful ones.

People who take ampicillin and other ***broad-spectrum*** antibiotics for several days often develop diarrhea. Antibiotics kill some kinds of bacteria necessary for digestion, upsetting the way the gut works.

3. **Resistance to treatment.** In the long run, the most important reason the use of antibiotics should be limited is that when antibiotics are used too much, they become less effective.

When an antibiotic is used too often, the bacteria will get used to it instead of being killed by it. They become ***resistant*** to the antibiotic. For this reason, certain dangerous diseases like typhoid are becoming more difficult to treat than they were a few years ago.

In some places, typhoid has become resistant to chloramphenicol, which is often the best medicine for treating it. Chloramphenicol has been used to treat infections for which other antibiotics would be safer and work as well, or for conditions where no antibiotic at all is needed.

Throughout the world important diseases are becoming resistant to antibiotics—largely because antibiotics are used too often for minor infections. If antibiotics are to continue to save lives, their use must be much more limited than it is at present. This will depend on their wise use by doctors, health workers, and the people themselves.

For most minor infections antibiotics are not needed and should not be used. Minor skin infections can usually be successfully treated with mild soap and water, or hot soaks. Minor respiratory infections are best treated by drinking lots of liquids, eating good food, and getting plenty of rest. For most diarrheas, antibiotics are not necessary and may even be harmful. What is most important is to drink lots of liquids (p. 155), and provide enough food as soon as the child will eat.

Do not use antibiotics for infections the body can fight successfully by itself. Save them for when they are most needed.

For more information on learning to use antibiotics sensibly, see ***Helping Health Workers Learn,*** Chapter 19.

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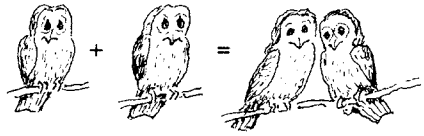
CHAPTER 8

How to Measure and Give Medicine

SYMBOLS:

= means: **is equal to** or **is the same as**

\+ means: **and** or **plus**



1 + 1 = 2

One plus one equals two.

HOW FRACTIONS ARE SOMETIMES WRITTEN:

1 tablet = one whole tablet =

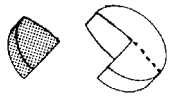
½ tablet = half of a tablet =



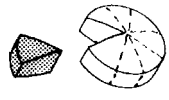
1 ½ tablet = one and one-half tablets =



¼ tablet = one quarter, or one-fourth of a tablet =



⅛ tablet = one-eighth of a tablet (dividing it into 8 equal pieces and taking 1 piece) =



MEASURING

The amount of medicine in each tablet or capsule is usually given as grams (g), milligrams (mg), or micrograms (mcg).

1 g = 1000 mg — 1 gram has 1000 milligrams

1 mg = 0.001 g } This means a milligram is much smaller than a gram.

1000 mcg = 1 mg } It takes 1000 milligrams to make 1 gram.

Examples:



One regular aspirin tablet contains 300 milligrams of aspirin.

.3 g
0.3 g
0.300 g
300 mg

} All these are different ways of saying 300 milligrams.



One low-dose aspirin contains 75 milligrams of aspirin.

.075 g
0.075 g
75.0 mg
75 mg

} All these are different ways of saying 75 milligrams.

Note: Where medicines are still weighed in grains (gr), 1 gr = 65 mg. This means a 5 gr aspirin tablet has about the same amount of aspirin as a 300 mg tablet.

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Many times it is important to know how many grams or milligrams are in a medicine.

For example, if you want to give a low-dose aspirin to a pregnant person to prevent pre-eclampsia but only have regular aspirin, **read the small print on the labels of each.**

On the regular aspirin it says:
aspirin (acetylsalicylic acid) 0.3 g

On the low-dose aspirin it says:
aspirin (acetylsalicylic acid) 0.075 g



0.3 g = 300 mg and 0.075 g = 75 mg. So one regular aspirin has 4 times as much medicine as one low-dose aspirin.

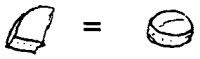
75 mg 
75 mg 
75 mg 
75 mg 

} 4 low-dose aspirins add up to

300 mg  1 regular aspirin

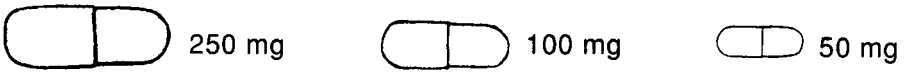
If you cut the regular aspirin into 4 equal pieces, each quarter = one low-dose aspirin





So if you cut a regular aspirin into 4 pieces, you can give the pregnant person 1 piece in place of a low-dose aspirin. Both are equal, and the piece of regular aspirin costs less.

CAUTION: Many medicines, especially antibiotics, come in different strengths and sizes. For example, tetracycline may come in 3 sizes of capsules:

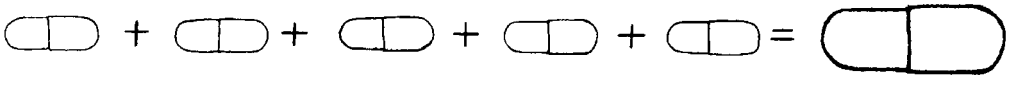


Be careful to only give medicine in the recommended amounts. It is very important to check how many grams or milligrams the medicine contains.

For example: if the prescription says: Take tetracycline, 1 capsule of 250 mg 4 times a day, and you have only 50 mg capsules, you have to take five 50 mg capsules 4 times a day (20 capsules a day).

MEASURING PENICILLIN

50 mg + 50 mg + 50 mg + 50 mg + 50 mg = 250 mg



Penicillin is often measured in units.

U = unit 1,600,000 U = 1 g or 1,000 mg

Many forms of penicillin (pills and injections) come in doses of 400,000 U.

400,000 U = 250 mg

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MEDICINE IN LIQUID FORM

Syrups, suspensions, tonics, and other liquid medicines are measured in milliliters:

ml = milliliter 1 liter = 1000 ml

Often liquid medicines are prescribed in tablespoons or teaspoons:

1 teaspoon (tsp) = 5 ml 1 tablespoon (Tbs) = 15 ml



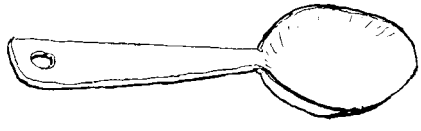
3 teaspoons = 1 tablespoon

When instructions for a medicine say: Take 1 tsp, this means take 5 ml.

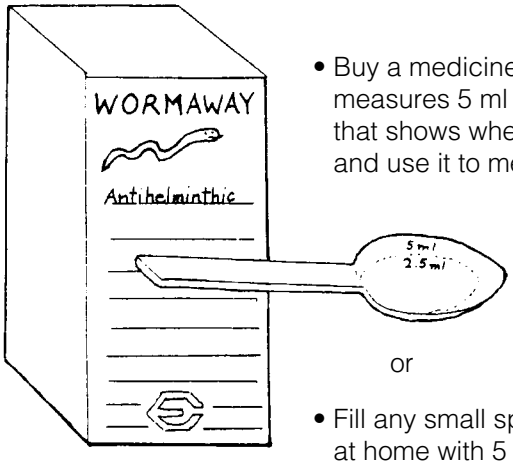
Spoons that people use at home are often called "teaspoons" but they may be smaller or bigger than a teaspoon used for measuring medicines. When using a teaspoon to give medicine, it is important that it measure 5 ml.

How to Make Sure that the Teaspoon Used for Medicine Measures 5 ml

- Buy a 5 ml measuring spoon.



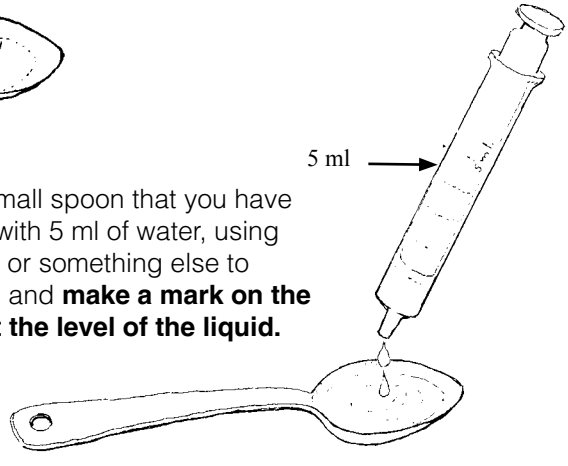
or



- Buy a medicine that comes with a plastic spoon. This measures 5 ml when it is full and may also have a line that shows when it is half full (2.5 ml). Save this spoon and use it to measure other medicines.

or

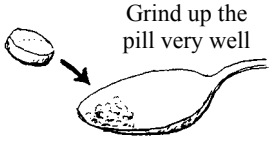
- Fill any small spoon that you have at home with 5 ml of water, using a syringe or something else to measure, and **make a mark on the spoon at the level of the liquid.**

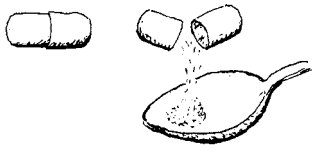


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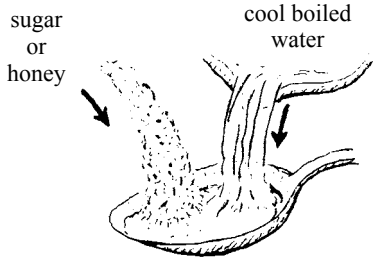
HOW TO GIVE MEDICINES TO SMALL CHILDREN

Many medicines that come as pills or capsules also come in syrups or ***suspensions*** (special liquid form) for children. If you compare the amount of medicine you get, the syrups may be more expensive than pills or capsules. If there are no syrups or to save money, you can make your own syrup:





and mix the powder with boiled water (that has cooled) and sugar or honey.



You must add lots of sugar or honey when the medicine is very bitter (tetracycline or chloroquine).

When making syrups for children from pills or capsules, be very careful not to give too much medicine. Also, do not give honey to babies under 1 year of age. Though it is rare, some babies can have a dangerous reaction.

CAUTION: To prevent choking, do not give medicines to a child while she is lying on her back, or if her head is pressed back. Always make sure she is sitting up or that her head is lifted forward. Never give medicines by mouth to a child while she is having a seizure, or while she is asleep or unconscious.

HOW MUCH MEDICINE SHOULD YOU GIVE TO CHILDREN WHEN YOU ONLY HAVE THE INSTRUCTIONS FOR ADULTS?

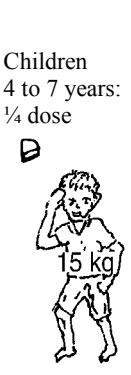
Generally, the smaller the child, the less medicine he needs. Giving more than needed can be dangerous. If you have information about the doses for children, follow it carefully. If you do not know the dose, figure it out by using the weight or age of the child. Children should generally be given the following portions of the adult dose:



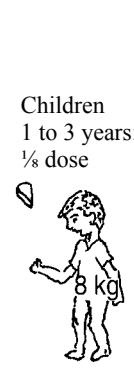
132 lbs



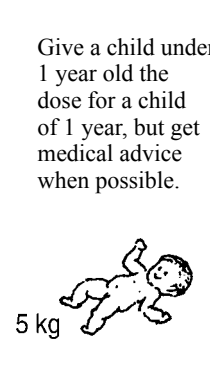
66 lbs



33 lbs



17.6 lbs

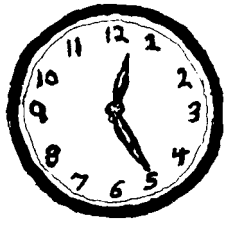


11 lbs

1 kilogram (kg, kilo) = 2.2 pounds (lbs)

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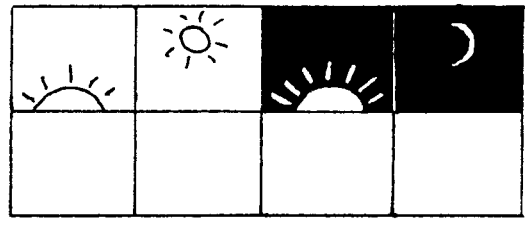
HOW OFTEN TO TAKE MEDICINES



It is important to take medicines as close as you can to the times recommended. Some medicines should be taken only once a day, but others must be taken more often. If you do not have a clock, there are other ways you can do this. If the directions say "1 pill every 8 hours," take 3 a day: one early in the morning, one in the afternoon, and one at night. If they say "1 pill every 6 hours," take 4 each day: one in the morning, one at midday, one in the afternoon, and one at night. If the directions are "1 every 4 hours," take 6 a day, allowing about the same time between pills.

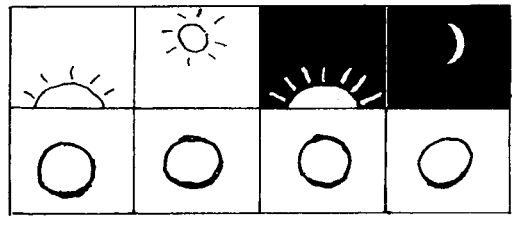
Whenever you give a medicine to someone else, it is a good idea to write the instructions and also to have the person repeat to you how and when to take the medicine. Make very sure he understands.

To remind people who cannot read well when to take their medicine, you can give them a note like this →

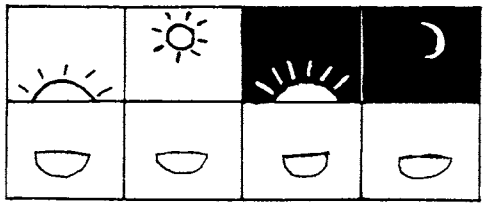


In the blanks at the bottom draw the amount of medicine they should take and carefully explain what it means. →

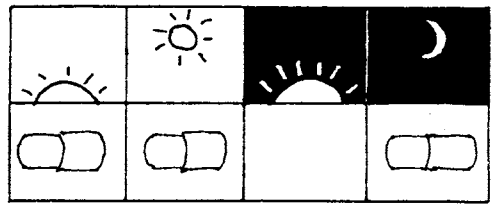
For example:
This means 1 tablet 4 times a day, →
1 early in the morning, 1 at midday,
1 in the afternoon, and 1 late at night.



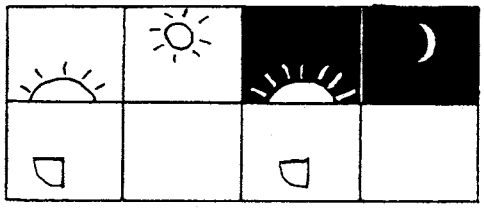
This means ½ tablet 4 times a day.



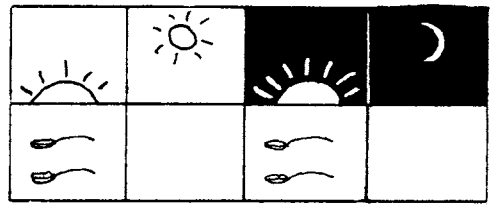
This means 1 capsule 3 times a day.



This means ¼ tablet twice a day.



This means 2 teaspoons twice a day.

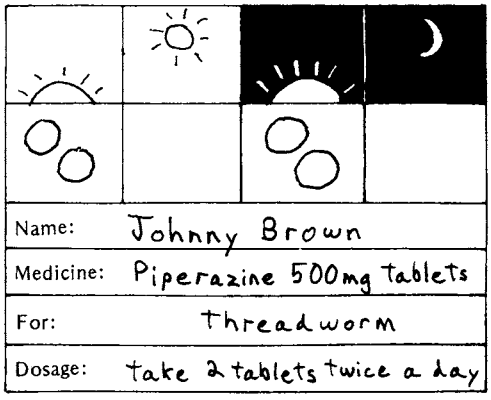


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WHEN YOU GIVE MEDICINES TO ANYONE . . .

Always write all the following information on the note with the medicine—even if the person cannot read:

- the person's name →
- the name and strength of the medicine →
- what it is for →
- the dosage →



This information can be put on the same note as the drawing for dosage.

A page of these dosage blanks is included at the end of the book. Cut them out and make extra copies to use as needed. You can also draw these yourself.

When you give medicine to someone, it is a good idea to keep a record of this same information. If possible, keep a complete Patient Report (p. 44).

TAKING MEDICINES ON A FULL OR EMPTY STOMACH

Some medicines work best when you take them when the stomach is empty—that is, one hour before meals or at least 2 hours after a meal.

Other medicines are less likely to cause upset stomach or heartburn (chest pain) when taken along with a meal or right afterwards.

Take these medicines
1 hour before or 2 hours after meals:

- penicillin
- ampicillin
- doxycycline
- tetracycline

It is better not to drink milk or take antacids 2 hours before or after taking doxycycline or tetracycline.

Take these medicines together with or soon after meals (or with a lot of water):

- aspirin and medicines that contain aspirin
- ibuprofen
- iron (ferrous sulfate)
- vitamins
- erythromycin

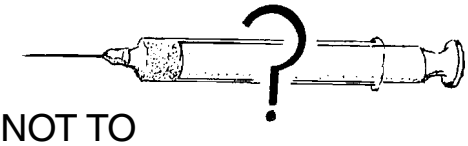
Antacids do the most good if you take them when the stomach is empty, 1 or 2 hours after meals and at bedtime.

Note: It is best to take medicines while you are standing or sitting up. Also, try to drink a glass of water each time you take a medicine. If you are taking a sulfa medicine, it is important to drink lots of water, at least 8 glasses a day, to prevent harm to the kidneys.

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CHAPTER 9

Instructions and Precautions for Injections



WHEN TO INJECT AND WHEN NOT TO

Injections are not needed often. Most sicknesses that require medical treatment can be treated as well or better with medicines taken by mouth. Each year, millions of people—especially children—become ill or injured, or die as a result of unnecessary injections. Combating misuse and overuse of medicines is as important to good health as vaccination, clean water, or the correct use of latrines. As a general rule:

It is more dangerous to inject medicine than to take it by mouth.

Injections should be used only when absolutely necessary. Except in emergencies, they should be given only by health workers or persons trained in their use.

The only times medicines should be injected are:

1. When the recommended medicine does not come in a form that can be taken by mouth.
2. When the person vomits often, cannot swallow, or is unconscious.
3. In certain unusual emergencies and special cases (see the next page).

WHAT TO DO WHEN THE DOCTOR RECOMMENDS INJECTIONS

Doctors and other health workers sometimes use injections when they are not needed. After all, they can charge more money for injections. They forget the problems and dangers of giving injections in rural areas.

1. If a health worker or healer wants to give you an injection, be sure the medicine is ***appropriate*** and that she takes all the necessary precautions.
2. If a doctor recommends injections, explain that you live where no one is well trained to give injections and ask if it would be possible to prescribe a medicine to take by mouth.
3. If a doctor wants to give injections of vitamins, liver extract, or vitamin B_{12}, but has not had your blood tested, tell him you would prefer to see another doctor.

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WHEN IT IS IMPORTANT TO GIVE INJECTIONS

In case of the following sicknesses, get medical help as fast as you can. If there will be any delay in getting help or in taking the sick person to a health center, inject the appropriate medicine as soon as possible. For details of the doses, consult the pages listed below. Before injecting, know the possible side effects and take the needed precautions (see the Green Pages).

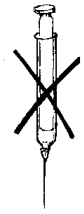
↓ **For these sicknesses**	↓ **Inject these medicines**
Severe pneumonia (p. 171) Gangrene (p. 213)	benzylpenicillin (p. 352)
Infections after giving birth (p. 276)	ampicillin (p. 352) and gentamicin (p.358) taken with metronidazole by mouth (p. 370).
Tetanus (p. 182)	antitetanus immunoglobulin (p. 389) with metronidazole taken by mouth (p. 370)
Appendicitis or Peritonitis (p. 93-94)	ampicillin (p. 352) OR ciprofloxacin (p. 356) OR ceftriaxone (p. 358) with metronidazole taken by mouth (p. 370)
Poisonous snakebite (p. 105) Scorpion sting (in children, p. 106)	antitoxins and antivenom (p. 388)
Meningitis (p. 185) when you do not suspect tuberculosis	ampicillin (p. 352) and ceftriaxone (p. 358) OR gentamicin (p. 358)
Meningitis (p. 185) when you suspect tuberculosis	ampicillin together with streptomycin (p. 353) and, if possible, other TB medicines (p. 359)
Vomiting (p. 161) when it cannot be controlled	antihistamines, for example, promethazine (p. 387)
Severe allergic reaction and allergic shock (p. 70)	epinephrine (adrenaline, p. 386) and, if possible, diphenhydramine (***Benadryl***, p. 388).

The following chronic illnesses may require injections, but they are rarely emergencies. It is best to consult a health worker for treatment.

Tuberculosis (p. 179 and 180)	streptomycin (p. 361) together with other TB medicines taken by mouth (p. 359)
Syphilis (p. 238)	benzathine benzylpenicillin (pages 238 and 352)
Gonorrhea (p. 236)	ceftriaxone (p. 359) OR spectinomycin (p. 359) with other medicines taken by mouth (p. 359)

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WHEN NOT TO INJECT:



Never give injections if you can get medical help quickly.
Never give an injection for a sickness that is not serious.
Never give injections for a cold or the flu.
Never inject a medicine that is not recommended for the illness you want to treat.
Never give an injection unless your needle has been boiled or sterilized.
Never inject a medicine unless you know and take all the recommended precautions.

MEDICINES **NOT** TO INJECT

In general, it is better **never** to inject the following:

1. Vitamins. Rarely are injected vitamins any better than vitamins taken by mouth. Injections are more expensive and more dangerous. Use vitamin pills or syrups rather than injections. Better still, eat foods rich in vitamins (p. 111).

2. Liver extract, vitamin B_{12}, and iron injections (such as *Imferon*). Injecting these can cause abscesses or dangerous reactions (shock, p. 70). Ferrous sulfate pills will do more good for almost all cases of anemia (p. 394).

3. Calcium. Injected into a vein calcium is extremely dangerous, if not given **very slowly.** An injection in the buttock may cause a large ***abscess.*** Untrained people should never inject calcium.

4. Penicillin. Nearly all infections that require penicillin can be effectively treated with penicillin taken by mouth. Penicillin is more dangerous when injected. **Use injectable penicillin only for dangerous infections.**

5. Chloramphenicol or tetracycline. These medicines do as much or more good when taken by mouth. Use capsules or syrups rather than injections (pages 355 and 356).

6. Intravenous (I.V.) solutions. These should be used only for severe dehydration and given only by someone who is well trained. When not given correctly they can cause dangerous infections or death (p. 53).

7. Intravenous medicines. There is so much danger in injecting any medicine in the vein that only well trained health workers should do it. However, never inject into a muscle (the buttock) medicine that says “for intravenous use only.” Also, never inject in the vein medicine that says “for intramuscular use only.”

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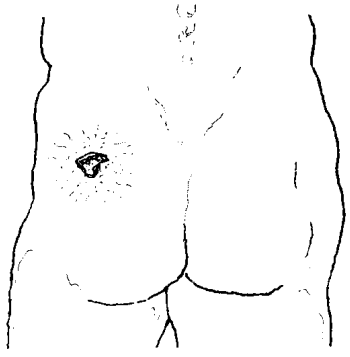
RISKS AND PRECAUTIONS

The risks of injecting any medicines are (1) infection caused by germs entering with the needle and (2) allergic or poisonous reactions caused by the medicine.

1. To lower the chance of infection when injecting, take great care that everything is clean and sterile. For information on cleaning and sterilizing equipment, see page 74.

Never use the same needle and syringe to inject more than one person without sterilizing it again first. Carefully follow all of the instructions for injecting (see following pages).

Be sure to **wash your hands well** before preparing or giving injections.

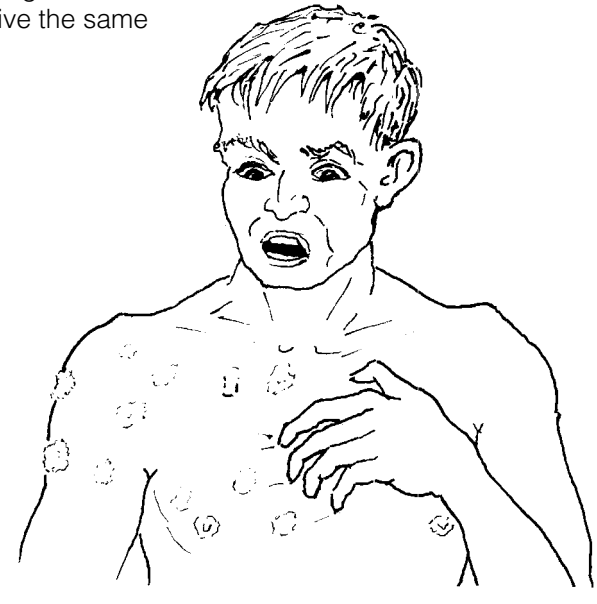


An abscess like this one comes from injecting with a needle that is not sterile (completely germ free).

2. It is very important to know what reactions a medicine can produce and to take the recommended precautions before injecting.

If any of the following signs of allergic or poisonous reaction appear, never give the same or similar medicine again:

- *hives* (patchy swellings on skin) or a rash with itching
- swelling anywhere
- difficulty breathing
- signs of shock (p. 70)
- dizzy spells with nausea (wanting to vomit)
- problems with vision
- ringing in the ears or deafness
- severe back pain
- difficulty urinating



Hives, or a rash with itching, can appear a few hours or up to several days after getting an injection. If the same medicine is given to the person again, it may cause a very severe reaction or even death (p. 70).

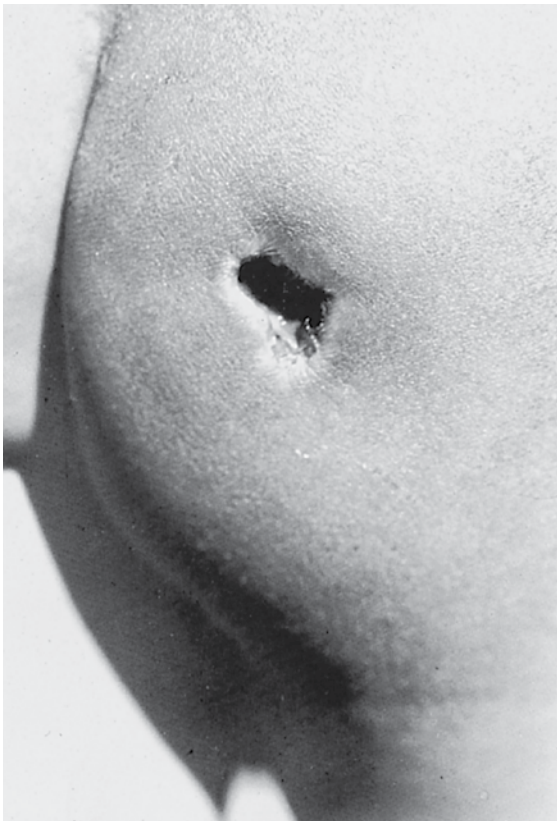
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This child was injected with a needle that was not ***sterile*** (completely free of germs).

The dirty needle caused an infection that produced a large, painful abscess (pocket of pus) and gave the child a fever. Finally, the abscess burst as shown in the picture below.

This child was injected for a cold. It would have been far better to give him no medicine at all. Rather than doing good, the injection caused the child suffering and harm.

CAUTION: **If possible, always give medicine by mouth instead of by injection especially to children**.





To avoid problems like these:

- give medicines only when they are needed and safe to use.
- use only the medicine recommended for the illness and be sure it is still in good condition and not spoiled.
- give medicines by injection only when they cannot be given by mouth.
- use a sterile syringe and needle when an injection is necessary. For information on sterilizing tools, see page 74.
- give the injection in a safe place on the body when an injection is necessary. Do not inject infants and small children in the buttocks. Instead, inject them in the upper, outer part of the thigh. (Notice that this child was injected too low on the buttock, where it is possible to injure the nerve.)

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DANGEROUS REACTIONS FROM INJECTING CERTAIN MEDICINES

The following groups of medicines sometimes produce a dangerous reaction called ALLERGIC SHOCK a short time after injection:

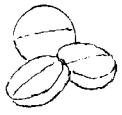
- penicillins (including ampicillin)
- antitoxins that are made from horse serum { scorpion antivenom / snake antivenom



The risk of a serious reaction is greater in a person who has previously been injected with one of these medicines or with another medicine of the same group. This risk is especially great if the medicine caused an allergic reaction (***hives***, rash, itching, swelling, or trouble breathing) a few hours or days after the injection was given.



Rarely, ALLERGIC SHOCK may result from the sting of a wasp or bee or from medicine taken by mouth.



To prevent a serious reaction from an injection:

1. Use injections only when necessary and only with a sterile needle and syringe.

2. Before injecting one of the medicines listed above, always have ready 2 ampules of epinephrine (adrenaline, p. 386). You may want to also have an ampule of an antihistamine like promethazine (*Phenergan*, p. 387) or diphenhydramine (*Benadryl*, p. 388).

3. Before injecting, always ask if at any other time a similar injection caused itching or other reactions. If the person says yes, do not use this medicine or any other medicine of the same group, either injected or taken by mouth.

4. In very serious cases, like scorpion or snakebite, if there is a good chance that the antitoxin might produce an allergic reaction (if the person suffers from allergies or asthma or has had horse serum before), inject promethazine or diphenhydramine (p. 388) 15 minutes before giving the antitoxin: adults, 25 to 50 mg; children, 10 to 25 mg, depending on their size.

5. After injecting any medicine, always stay with the person for 30 minutes to watch for any of the following signs of ALLERGIC SHOCK:

- cool, moist, pale, gray skin (cold sweat)
- weak, rapid pulse or heartbeat
- difficulty breathing
- loss of consciousness

6. If these signs appear, immediately inject epinephrine (adrenaline): adults, ½ ml; children, ⅓ to ¼ ml, depending on their size. Treat the person for shock (p. 77). You can also give a dose of antihistimine to treat symptoms such itch and rash.

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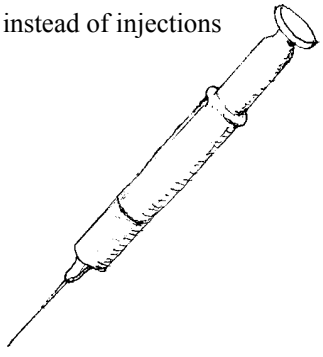
How to Avoid Serious Reactions to a Penicillin Injection

1. For mild to moderate infections:

give penicillin pills

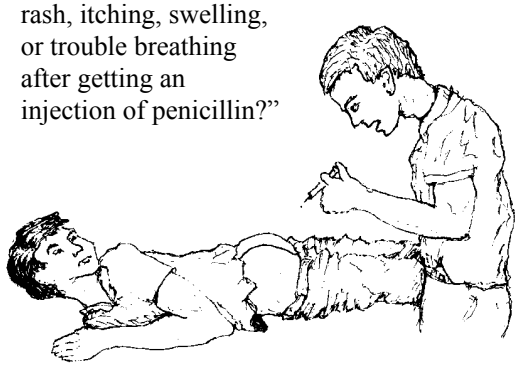


instead of injections



2. Before injecting ask the person:

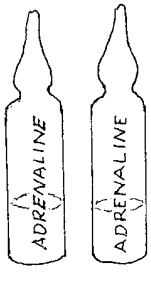
"Have you ever had a rash, itching, swelling, or trouble breathing after getting an injection of penicillin?"



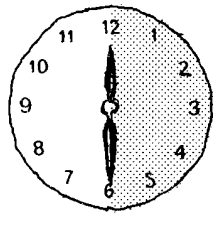
If the answer is yes, do not use penicillin, ampicillin, or amoxicillin. Use another antibiotic like erythromycin (p. 354) or a sulfonamide (p. 356).

3. Before injecting penicillin:

always have ampules of epinephrine (adrenaline) ready.

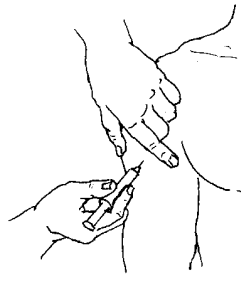


4. After injecting:



stay with the person for at least 30 minutes.

5. If the person becomes very pale, his heart beats very fast, he has difficulty breathing, or he starts to faint, immediately inject into a muscle (or just under the skin) half an ampule of epinephrine (adrenaline, a quarter of an ampule in small children) and repeat in 10 minutes if necessary.

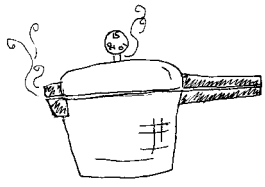


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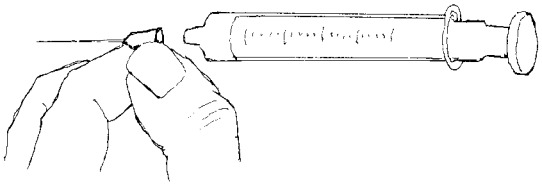
HOW TO PREPARE A SYRINGE FOR INJECTION

Before preparing a syringe, **wash hands with soap and water**.

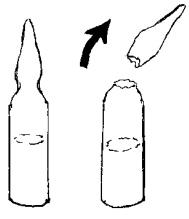
1. If you have a glass syringe, take the syringe apart and bake or pressure steam it and the needle (p. 74). -OR- If it is plastic, carefully remove it from its sterile packaging. Remove the needle guard when you are ready for step 4.



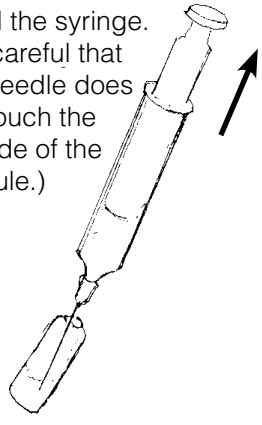
2. Put the needle and the syringe together, touching only the base of the needle and the button of the plunger.



3. Wipe the ampule clean with a cloth or with alcohol, then break off the top.



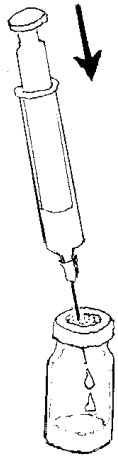
4. Fill the syringe. (Be careful that the needle does not touch the outside of the ampule.)



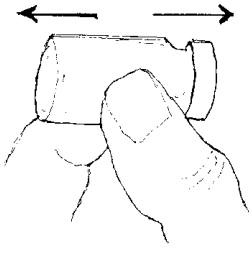
5. Rub the rubber of the bottle with clean cloth wet with alcohol or boiled water.



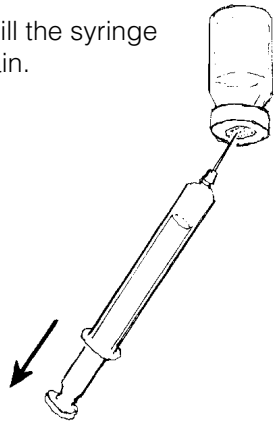
6. Inject the distilled water into the bottle with the powdered medicine.



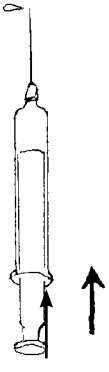
7. Shake until the medicine dissolves.



8. Fill the syringe again.



9. Remove all air from the syringe.



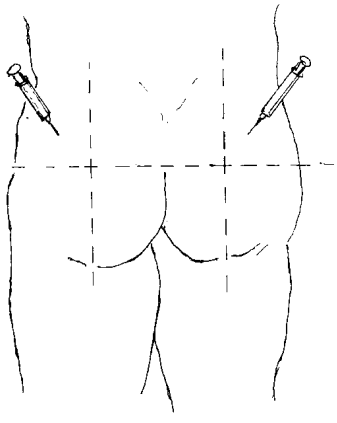
Be very careful not to touch the needle with anything—not even the cotton with alcohol. If by chance the needle touches your finger or something else, sterilize it again or get a new sterile needle.

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WHERE TO GIVE AN INJECTION

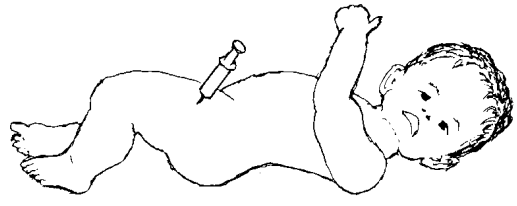
Before injecting, **wash hands with soap and water.**

It is preferable to inject in the muscle of the buttocks, always in the **upper outer** quarter.



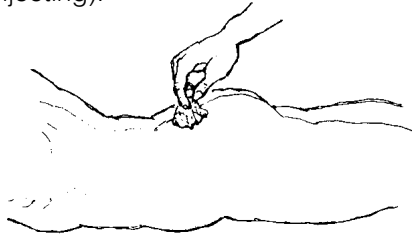
WARNING: Do not inject into an area of skin that is infected or has a rash.

Do not inject infants and small children in the buttock. Inject them in the **upper outer** part of the thigh.

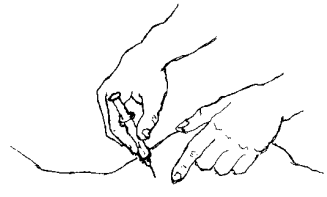


HOW TO INJECT

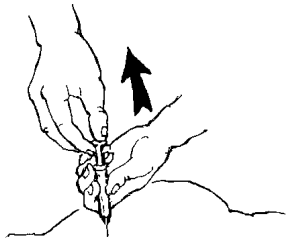
1. Clean the skin with soap and water (or alcohol—but to prevent severe pain, be sure the alcohol is dry before injecting).



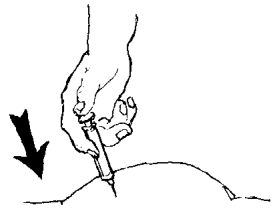
2. Put the needle straight in, all the way. (If it is done with one quick movement, it hurts less.)



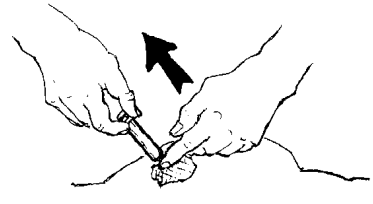
3. Before injecting, pull back on the plunger. (If blood enters the syringe, take the needle out and put it in somewhere else).



4. If no blood enters, inject the medicine slowly.



5. Remove the needle and clean the skin again.



6. After injecting, rinse the syringe and needle at once. If it is glass, squirt water through the needle and then take the syringe apart and wash it. Boil before using again.

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HOW INJECTIONS CAN BE HARMFUL

Some injected medicines, when given safely and used correctly, protect health and prevent disability. These include vaccines that prevent illnesses. But injections given with needles or syringes that are not sterile can cause serious infections. Unsterilized needles and syringes can spread germs that cause hepatitis or HIV. They can also cause infections that lead to spinal cord injury or paralysis. **Never use the same needle or syringe to inject more than one person without sterilizing it again first.**

For more information on using medicines safely and on giving injections safely, see *Disabled Village Children,* Chapter 3.

For ideas on teaching people about the danger of unnecessary injections, see *Helping Health Workers Learn,* Chapters 18, 19, and 27.

HOW TO CLEAN AND STERILIZE EQUIPMENT

The germs that cause many infections and illnesses, such as HIV (p. 401), hepatitis (p. 172), and tetanus (p. 182), can spread through the use of syringes, needles, and other tools that have not been sterilized. This includes tools used for piercing ears, acupuncture, tattoos, or circumcision. Any time the skin is cut or pierced, it should be done only with equipment that has been sterilized.

To clean and sterilize tools:

1. **Take apart your tools** so all their surfaces can be cleaned and then sterilized.

2. **Clean your tools** with clean water, soap or detergent, and a brush to remove any blood, mucus, or dirt. Wear gloves to protect your hands from cuts and from detergent.

3. **Sterilize your tools** to remove germs. To sterilize, bake your tools at 170°C (305°F) or higher for 2½ hours. Or pressure steam your tools at 15 to 20 pounds of pressure at 121°C (250°F) for 20 minutes.



For more information about cleaning and sterilizing tools, see Chapter 5 of *A Book for Midwives*.

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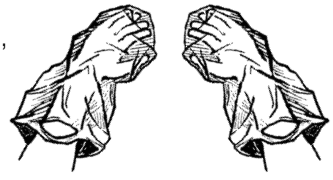
CHAPTER 10

First Aid

BASIC CLEANLINESS AND PROTECTION

When a person is hurt, the most important thing is to help. But you also must protect yourself from HIV and other blood-borne diseases. When someone is bleeding:

1. If possible, show the injured person how to stop the bleeding themselves, by applying direct pressure on the wound.
2. If they cannot do this, keep the blood off yourself by wearing gloves or a clean plastic bag on your hands, and placing a clean, thick cloth directly over the wound before applying pressure.



Avoid objects soiled with blood. Be careful not to prick yourself with needles or other sharp objects around the person you are helping. Cover cuts or other wounds with dry, clean bandages to protect them.

Be especially careful when you have to provide first aid where there are many people wounded from an accident or fighting.

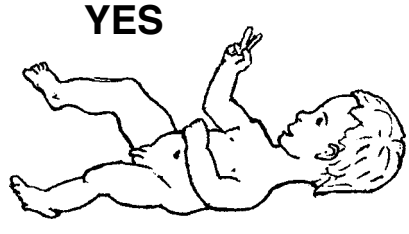
If you do get blood or other body fluids on you, wash your hands with soap and water as soon as possible. If other parts of your body were touched by body fluids (especially your eyes), wash them thoroughly with lots of water.

FEVER

When a person's body temperature is too hot, he has a *fever*. Fever is not a sickness, but a sign of many different sicknesses. A **high fever (over 39°C or over 102°F) can be a sign of a dangerous problem, especially in a small child.**

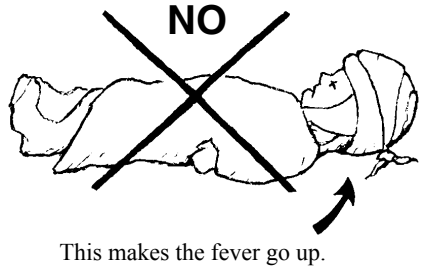
When a person has a fever:

1. Uncover him completely. Small children should be undressed completely and left naked until the fever goes down.



This helps the fever go down.

Never wrap the child in clothing or blankets. **To wrap up a child with fever is dangerous.**



This makes the fever go up.

Fresh air or a breeze will not harm a person with fever. On the contrary, a fresh breeze helps lower the fever.

2. Also take aspirin to lower fever (p. 380). For children, it is safer to give acetaminophen (paracetamol, p. 380). Be careful not to give too much.

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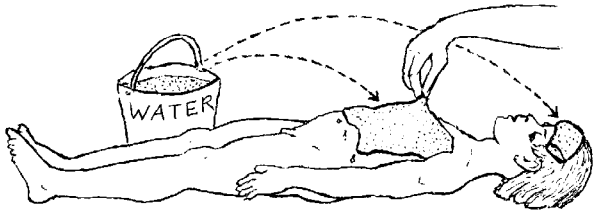
3. Anyone who has a fever should **drink lots of water,** juices, or other liquids. For small children, especially babies, drinking water should be boiled first (and then cooled). Make sure the child passes urine regularly. If she does not pass much urine, or the urine is dark, give a lot more water.
4. When possible, find and treat the cause of the fever.

Very High Fevers

A very high fever can be a sign of a dangerous illness. Bring the fever down as soon as you can and treat the cause of the fever, if possible. High fever can cause seizures (convulsions) and is most dangerous for small children.

When a fever goes very high (over 40°C), it must be lowered at once:

1. Put the person in a cool place.
2. Remove all clothing.
3. Fan him.
4. Pour water over him, or put cloths soaked in cool water on his chest and forehead. Fan the cloths and change them often to keep them cool. Continue to do this until the fever goes down (below 38°C).



5. Give him plenty of cool (not cold) water to drink.
6. Give a medicine to bring down fever. Aspirin or acetaminophen works well, **but for children under 12 years old it is safer to use acetaminophen.**

Dosage for acetaminophen (using 500 mg adult tablets):

Persons over 12 years: 2 tablets every 4 to 6 hours

Children 8 to 12 years: ¾ tablet every 4 to 6 hours

Children 3 to 8 years: ½ tablet every 4 to 6 hours

Children 1 to 3 years: ¼ tablet every 4 to 6 hours

Children under 1 year: ⅛ tablet every 4 to 6 hour

Do not give more than 8 tablets in 24 hours.

If a person with fever cannot swallow the tablets, grind them up, mix the powder with some water, and put it up the anus as an *enema* or with a syringe without the needle.

If a high fever does not go down soon, if the person is unconscious, or if seizures (convulsions) begin, continue cooling with water and seek medical help at once.

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SHOCK

Shock is a life threatening condition that can result from a large burn, losing a lot of blood, severe illnesses, dehydration, or severe allergic reaction. Heavy bleeding inside the body—although not seen—can also cause shock.

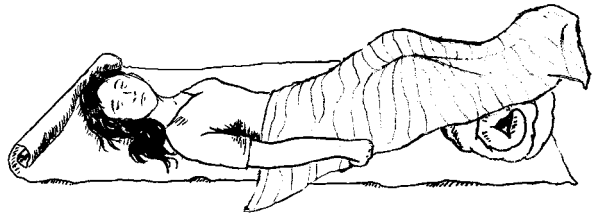
Signs of shock:

- weak, rapid pulse (more than 100 beats per minute for an adult, more than 140 beats per minute for a child over 2 years old, and more than 190 beats per minute for a baby)
- "cold sweat": pale, cold, damp skin
- blood pressure drops dangerously low
- mental confusion, weakness, or loss of consciousness.

What to do to prevent or treat shock:

At the first sign of shock, or if there is risk of shock:

- ♦ loosen any belts or tight clothing the person may be wearing.
- ♦ have the person lie down with his feet a little higher than his head. However, if he has a severe head injury, put him in a half sitting position (p. 91).



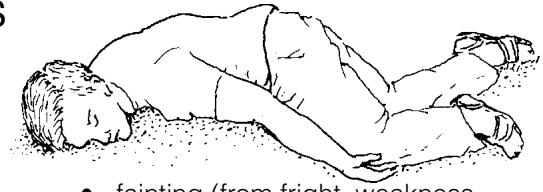
- ♦ stop any bleeding. Use gloves or a plastic bag to keep the blood off your hands.
- ♦ if the person feels cold, cover him with a blanket.
- ♦ if he is conscious and able to drink, give him sips of water or other drinks. If he looks dehydrated, give a lot of liquid, and Rehydration Drink (p. 152). If he does not respond quickly, give intravenous fluids if you know how.
- ♦ treat his wounds, if he has any.
- ♦ if he is in pain, give him aspirin or another pain medicine (p. 380)—but not one with a ***sedative*** such as codeine.
- ♦ keep calm, reassure the person, and seek medical help.

If the person is unconscious:

- ♦ lay him on his side with his head low.
- ♦ if he has vomited, clear his mouth immediately. Be sure his head is low, tilted back, and to one side (see above) so he does not breathe vomit into his lungs. If he has a neck or spine injury, do not tilt his head or move his back.
- ♦ do no give him anything by mouth until he becomes conscious.
- ♦ if you or someone nearby knows how, give intravenous solution (normal saline) at a fast drip.
- ♦ seek medical help fast.

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LOSS OF CONSCIOUSNESS



Common causes of loss of consciousness are:

- heavy use of drugs or alcohol
- a hit on the head (getting knocked out)
- shock (p. 77)
- seizures (p. 178)
- poisoning (p. 103)
- fainting (from fright, weakness, low blood sugar, etc.)
- heat stroke (p. 81)
- stroke (p. 327)
- heart attack (p. 325)

If a person is unconscious and you do not know why, **immediately check each of the following:**

1. Is he **breathing** well? If not, tilt his head way back and pull the jaw and tongue forward. If something is stuck in his throat, pull it out. If he is not breathing, use mouth-to-mouth breathing at once (p. 80).

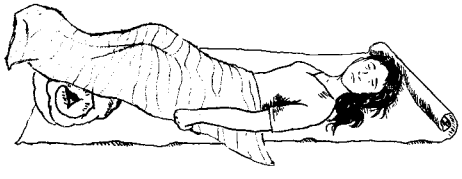
2. Is he **losing a lot of blood?** If so, control the bleeding (p. 82).

3. Is he in **shock** (moist, pale skin; weak, rapid pulse)? If so, lay him with his head lower than his feet and loosen his clothing (p. 77).

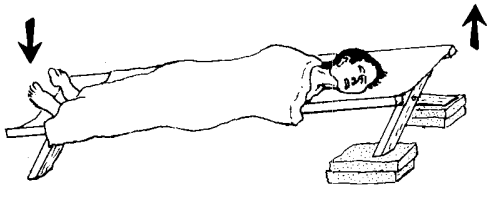
4. Could it be **heat stroke** (no sweat, high fever, hot, red skin)? If so, shade him from the sun, keep his head higher than his feet, and soak him with cold water (ice water if possible) and fan him (p. 81).

How to position an unconscious person:

very pale skin:
(shock, fainting, etc.)



red or normal skin:
(heat stroke, stroke, heart problems, head injury)



If there is any chance that the unconscious person is badly injured:

It is best not to move him until he becomes conscious. If you have to move him, do so with great care, because if his neck or back is broken, any change of position may cause greater injury (p. 100).

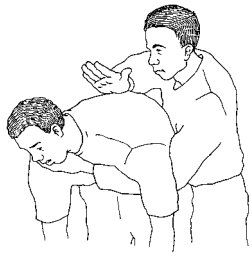
Look for wounds or broken bones, but move the person as little as possible. Do not bend his back or neck.

Never give anything by mouth to a person who is unconscious.

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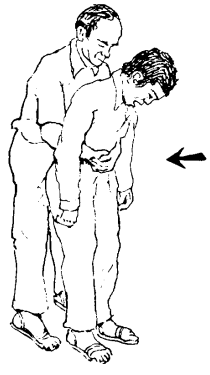
WHEN SOMETHING GETS STUCK IN THE THROAT

When food or something else sticks in a person's throat and he cannot breathe, **quickly** do this:



- Bend him over at the waist.
- Use the palm of your hand to give 5 firm blows on the middle of the back.

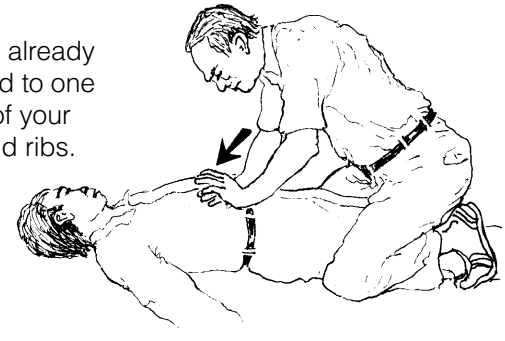
If this does not work:



- Stand behind him and wrap your arms around his waist.
- Put your fist against his belly above the navel and below the ribs.
- Press into his belly with a **sudden** strong upward jerk. This forces the air from his lungs and should free his throat. Repeat several times if necessary.

  (For fat persons, pregnant women, persons in wheelchairs, or small children, place hands on the chest, not the belly.)

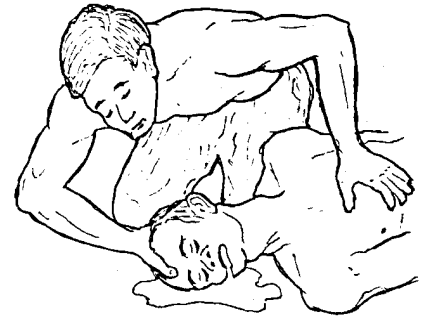
If the person is a lot bigger than you, or is already unconscious, lay him on his back, tilt his head to one side, and sit over him like this, with the heel of your lower hand on his belly between his navel and ribs. Make a quick, strong upward push. Repeat several times if necessary. If he still cannot breathe, try **mouth-to-mouth breathing** (see next page).



DROWNING

A person who has stopped breathing has only 4 minutes to live! **Act fast!**

Start mouth-to-mouth breathing at once (see next page)—if possible, even before the drowning person is out of the water, as soon as it is shallow enough to stand.



ALWAYS START MOUTH-TO-MOUTH BREATHING AT ONCE.

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WHAT TO DO WHEN BREATHING STOPS: MOUTH-TO-MOUTH BREATHING

Common causes for breathing to stop are:

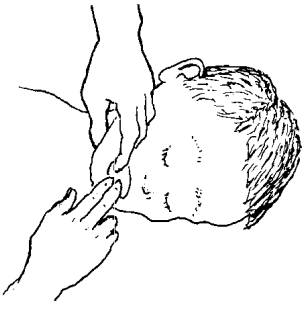
- something stuck in the throat
- the tongue or thick mucus blocking the throat of an unconscious person
- drowning, choking on smoke, or poisoning
- a strong blow to the head or chest
- a heart attack

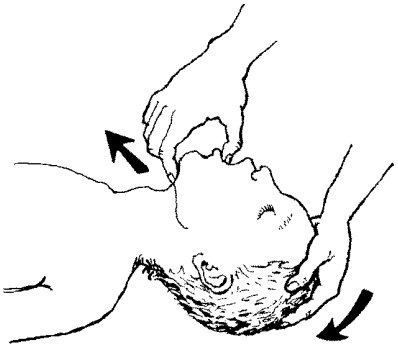
A person can die within 4 minutes if he does not breathe.

If a person stops breathing,
begin mouth-to-mouth breathing IMMEDIATELY.

Do all of the following as quickly as you can:

Step 1: Quickly use a finger to remove anything stuck in the mouth or throat.





Step 2: Quickly but gently lay the person face up. Gently tilt his head back, and pull his jaw forward.



Step 3: Pinch his nostrils closed with your fingers, open his mouth wide, cover his mouth with yours, and blow strongly into his lungs so that his chest rises. Pause to let the air come back out and blow again. Repeat about once every 5 seconds. With babies and small children, cover the nose and mouth with your mouth and breathe **very gently** about once every 3 seconds.

Continue **mouth-to-mouth breathing** until the person can breathe by himself, or until there is no doubt he is dead. Sometimes you must keep trying for an hour or more.

Note: Unless there is an open sore or bleeding in the mouth, it is not possible to give or get hepatitis or HIV from mouth-to-mouth breathing.

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EMERGENCIES CAUSED BY HEAT



Heat Cramps

In hot weather people who work hard and sweat a lot sometimes get painful cramps in their legs, arms, or stomach. These occur because the body lacks salt.

Treatment: Put a teaspoon of salt in a liter of boiled water and drink it or give Rehydration Drink (p. 152). Repeat once every hour until the cramps are gone. Have the person sit or lie down in a cool place and gently massage the painful areas.

Heat Exhaustion

Signs: A person who works and sweats a lot in hot weather may become very pale, weak, and nauseous, and perhaps feel faint. The skin is cool and moist. The pulse is rapid and weak. The temperature of the body may rise but is usually unchanged (p. 31).

Treatment: Have the person lie down in a cool place, raise his feet, and rub his legs. Give salt water to drink: ½ teaspoon of salt in a liter of water or give Rehydration Drink. (Give nothing by mouth if a person is unconscious.)

Heat Stroke

Heat stroke is not common, but is very dangerous. People who are very young or very old, who are pregnant, who have certain medical conditions like heart disease or diabetes, or who drink large amounts of alcohol are more likely to develop heat stroke during hot weather.

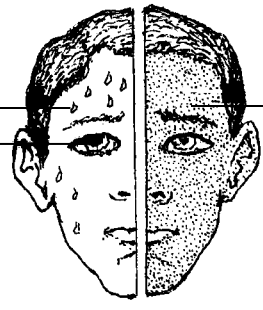
Signs: The skin is red, very hot, and dry. Not even the armpits are moist. The person has a very high fever, sometimes more than 42°C, and a rapid heartbeat. Often he is unconscious.

Treatment: **The body temperature must be lowered immediately.** Put the person in the shade. Soak him with cold water (ice water if possible) and fan him. Continue until the fever drops. Seek medical help.

DIFFERENCES BETWEEN HEAT EXHAUSTION AND HEAT STROKE:

HEAT EXHAUSTION

- sweaty, pale, cool skin
- large pupils
- headache
- thirst
- weakness



HEAT STROKE

- dry, red, hot skin
- high fever
- fast pulse, fast breathing
- the person is very ill or unconscious

For emergencies caused by cold, see pages 410 and 411.

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HOW TO CONTROL BLEEDING FROM A WOUND

1. Raise the injured part.

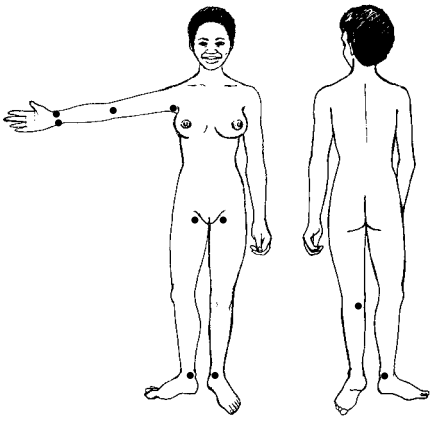


2. With a clean thick cloth (or your hand if there is no cloth) press directly on the wound. Keep pressing until the bleeding stops. This may take 20 minutes or sometimes an hour or more. This type of **direct pressure** will stop the bleeding of nearly all wounds—sometimes even when a part of the body has been cut off.

Occasionally direct pressure will not control bleeding, especially when the wound is very large or an arm or leg has been cut off. If this happens:

- keep pressing on the wound.
- keep the wounded part as high as possible.
- maintain pressure by binding the wound tightly with a bandage or a piece of clean clothing.
- squeeze at pressure points on the artery that brings blood to that part of the body. Pressure points are where, using the flat part of your fingers, you can push the artery against a bone to shut off or slow down the flow of blood.

PRESSURE POINTS





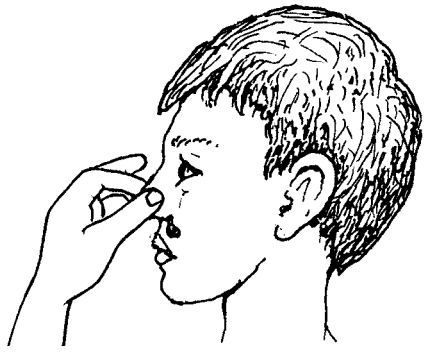
- keep pressing for 20 minutes before looking to see if the bleeding has stopped. Keep pressing with your other hand on the wound itself. Applying pressure is hard work—do not give up!

PRECAUTIONS:

- Using a tourniquet to stop the bleeding usually results in total loss of the arm or leg. Only use a tourniquet if you have no other option. Never use a string or wire. It can cut right through the skin.
- **Never** use dirt, kerosene, or lime to stop bleeding.
- When bleeding or injury is severe, raise the feet and lower the head to prevent shock (p. 77).
- Keep blood from getting into any cuts or sores on your skin (p. 75).

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HOW TO STOP NOSEBLEEDS



1. Sit quietly and upright.

2. Blow the nose gently to remove mucus and blood.

3. Have the person pinch the nose firmly for 10 minutes or until the bleeding has stopped.

If this does not control the bleeding . . .



Pack the nostril with a wad of cotton, leaving part of it outside the nose. If possible, first wet the cotton with ***Vaseline*** or lidocaine with epinephrine (p. 381).



Then pinch the nose firmly again. Do not let go for 10 minutes or more. Do not tip the head back.

Leave the cotton in place for a few hours after the bleeding stops; then take it out very carefully.



In older persons especially, bleeding may come from the back part of the nose and cannot be stopped by pinching it. In this case, have the person hold a cork, corn cob, or other similar object between his teeth and, leaning forward, sit quietly and try not to swallow until the bleeding stops. (The cork helps keep him from swallowing, and that gives the blood a chance to clot.)

Prevention:

If a person's nose bleeds often, smear a little petroleum jelly *(Vaseline)* inside the nostrils twice a day. Or sniff water with a little salt in it (p. 164).

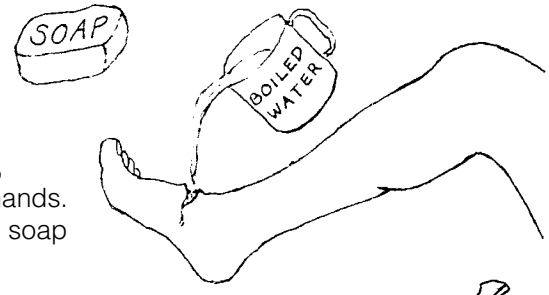
Eating oranges, tomatoes, and other fruits may help to strengthen the blood vessels so that the nose bleeds less.

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CUTS, SCRAPES, AND SMALL WOUNDS

Cleanliness is of first importance in preventing infection and helping wounds to heal.

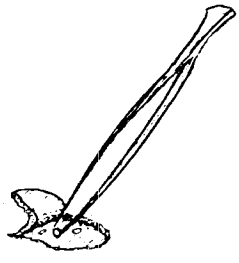
To treat a wound:



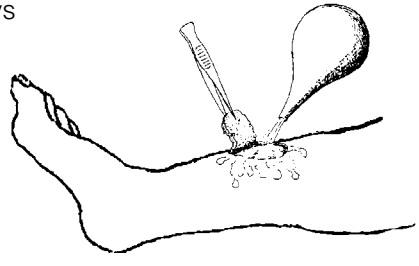
First, wash your hands very well with soap and water.

If the wound is bleeding or oozing, wear gloves or plastic bags on your hands. Wash the skin around the wound with soap and cool, boiled water.

Now wash the wound well with cool, boiled water (and soap, if the wound has a lot of dirt in it. Soap helps clean but can damage the flesh).



When cleaning the wound, be careful to clean out all the dirt. Lift up and clean under any flaps of skin. You can use clean tweezers, or a clean cloth or gauze, to remove bits of dirt, but always boil them first to be sure they are sterile.



If possible, squirt out the wound with cool boiled water in a syringe or suction bulb.

Any bit of dirt that is left in a wound can cause an infection.

After the wound has been cleaned, apply a thin layer of antibiotic cream like *Neosporin* if you have it. Then place a piece of clean gauze or cloth over the top. It should be light enough so that the air can get to the wound and help it to heal. Change the gauze or cloth every day and look for signs of infection (p. 88).

If you have a dirty wound or a puncture wound, and have never had a tetanus immunization (p. 390), get one within 2 days.

NEVER put animal or human feces or mud on a wound. These can cause dangerous infections, such as tetanus.

NEVER put alcohol, tincture of iodine, or *Merthiolate* directly into a wound; doing so will damage the flesh and make healing slower.

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LARGE CUTS: HOW TO CLOSE THEM

A recent cut that is very clean will heal faster if you bring the edges together so the cut stays closed.

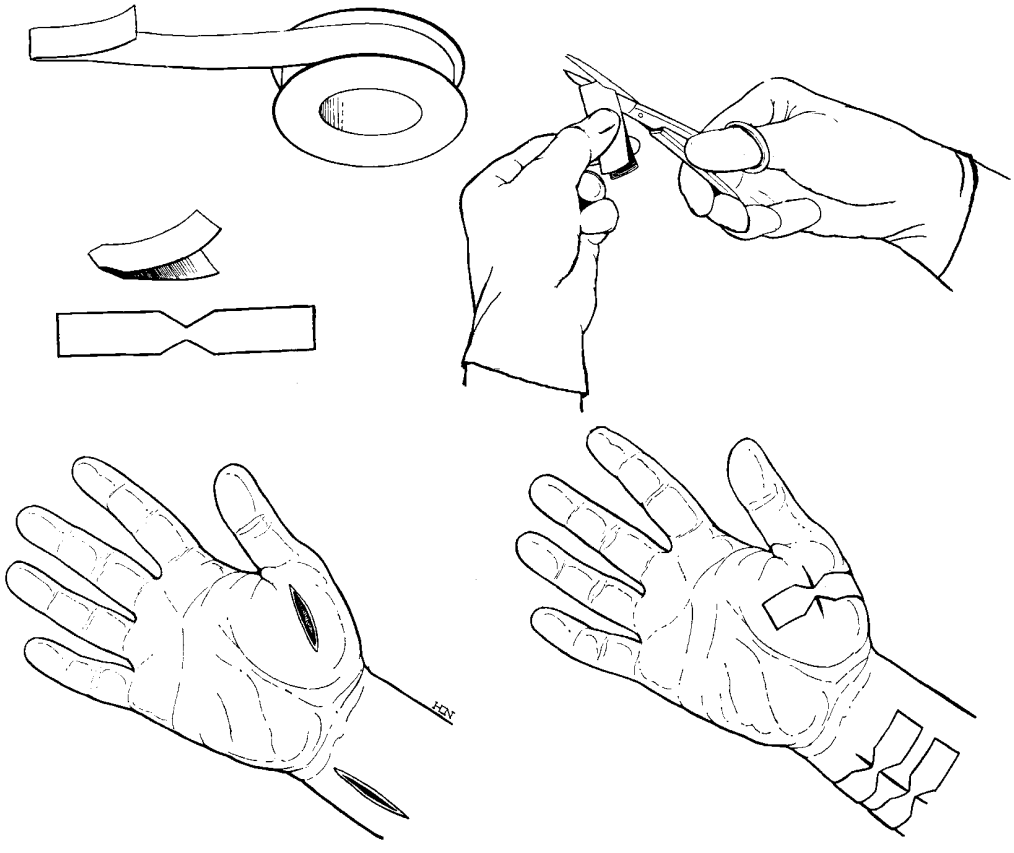
Close a deep cut only if all of the following are true:

- the cut is less than 12 hours old,
- the cut is very clean, and
- it is impossible to get a health worker to close it the same day.

Before closing the cut, wash it very well with cool, boiled water (and soap, if the wound is dirty). If possible, squirt it out with a syringe and water. Be absolutely sure that no dirt or soap is left hidden in the cut.

There are two methods to close a cut:

BUTTERFLY BANDAGES OF ADHESIVE TAPE



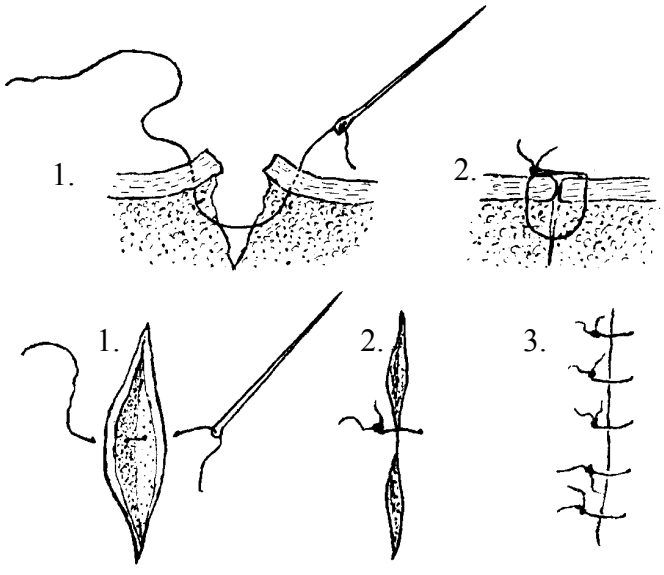
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STITCHES OR SUTURES WITH THREAD

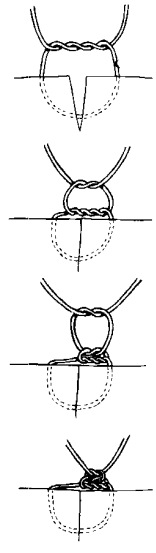
To find out if a cut needs stitches see if the edges of the skin come together by themselves. If they do, usually no stitches are needed.

To stitch a wound:

- ♦ Boil a sewing needle and a thin thread (nylon or silk is best) for 20 minutes.
- ♦ Wash the wound with cool, boiled water, as has been described.
- ♦ Wash your hands very well with boiled water and soap.
- ♦ Sew the wound like this:



HOW TO TIE A GOOD KNOT



Make the first stitch in the middle of the cut, and tie it closed (1. and 2.).

If the skin is tough, hold the needle with a pair of pliers (or needle holder) that has been boiled.

Make enough other stitches to close the whole cut (3.).

Leave the stitches in place for 5 to 14 days (on the face 5 days; the body 10 days; the hand or foot 14 days). Then remove the stitches: cut the thread on one side of the knot and pull the knot until the thread comes out.

WARNING: Only close wounds that are very clean and less than 12 hours old. Old, dirty, or infected wounds must be left open. Bites from people, dogs, pigs, or other animals should also be left open. Closing these can cause dangerous infections.

If the wound that has been closed shows any signs of infection, remove the stitches immediately and leave the wound open (p. 88).

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BANDAGES

Bandages are used to help keep wounds clean. For this reason, bandages or pieces of cloth used to cover wounds must always be clean themselves. Cloth used for bandages should be washed and then dried with an iron or in the sun, in a clean, dust free place.

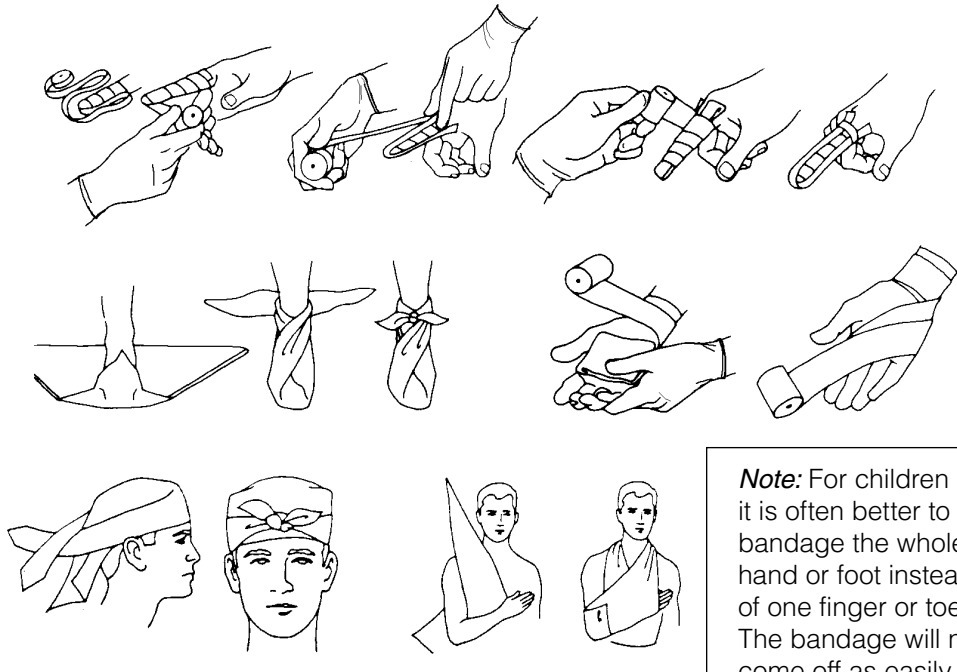
Make sure the wound has first been cleaned, as shown on p. 84. If possible, cover the wound with a sterile gauze pad before bandaging. These pads are often sold in sealed envelopes in pharmacies.

Or prepare your own sterile gauze or cloth. Wrap it in thick paper, seal it with tape, and bake it for 20 minutes in an oven. Putting a pan of water in the oven under the cloth will keep it from charring.

If a bandage gets wet or dirt gets under it, take the bandage off, wash the cut again, and put on a clean bandage. Change the bandage every day.

It is better to have no bandage at all than one that is dirty or wet.

EXAMPLES OF BANDAGES:



Note: For children it is often better to bandage the whole hand or foot instead of one finger or toe. The bandage will not come off as easily.

CAUTION: Be careful that a bandage that goes around a limb is not so tight it cuts off the flow of blood.

Many small scrapes and cuts do not need bandages. They heal best if washed with soap and water and left open to the air. The most important thing is to **keep them clean.**

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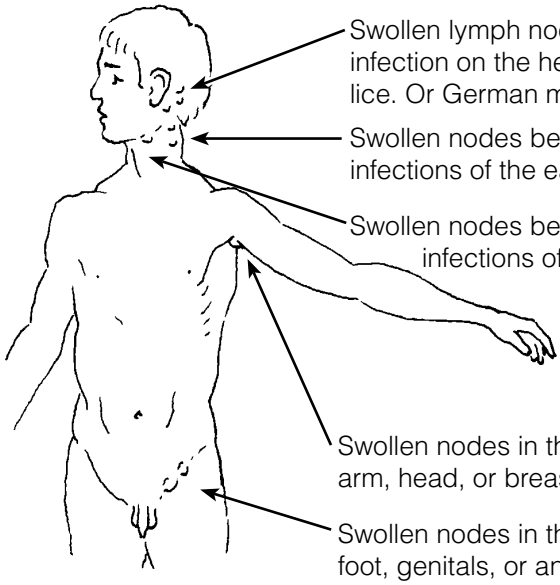
INFECTED WOUNDS: HOW TO RECOGNIZE AND TREAT THEM

A wound is infected if any of the following happens:

- it becomes **red, swollen, hot,** and **painful**
- it has **pus**
- it begins to **smell bad.**

The infection is spreading to other parts of the body if any of the following happens:

- it causes **fever**
- there is a **red line above the wound**
- the **lymph nodes become swollen and tender.** Lymph nodes are little traps for germs that form small lumps under the skin when they get infected.



Treatment of infected wounds:

♦ Put hot compresses over the wound for 20 minutes 4 times a day. Or hold an infected hand or foot in a bucket of hot water.

♦ Keep the infected part at rest and elevated (raised above the level of the heart).

♦ If the infection is severe, use an antibiotic like dicloxacillin (p. 350), or clindamycin (p. 358), or an injectable penicillin (pages 351 to 353), and also give metronidazole (p. 370).

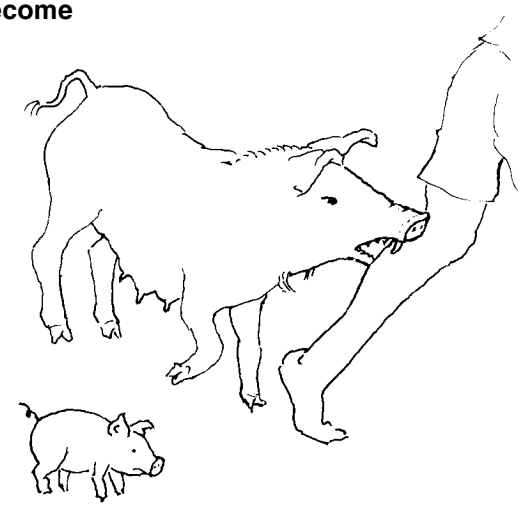
WARNING: If the wound has a bad smell, if brown or gray liquid oozes out, or if the skin around it turns black and forms air bubbles or blisters, this may be gangrene. Seek medical help fast. Meanwhile, follow the instructions for gangrene on p. 213.

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WOUNDS THAT ARE LIKELY TO BECOME DANGEROUSLY INFECTED

These wounds are most likely to become dangerously infected:

- puncture wounds and other deep wounds that do not bleed much
- wounds made where animals are kept (in corrals, pig pens, etc.)
- large wounds with severe mashing or bruising
- bites, especially from pigs, dogs, or people
- bullet wounds



Special care for this type of "high risk" wound:

1. Wash the wound well with boiled water and soap. **Remove all pieces of dirt, blood clots, and dead or badly damaged flesh.** Squirt out the dirt using a syringe or suction bulb.

2. If the wound is very deep or if it is from a knife or bullet, give an antibiotic such as cloxacillin (p. 350) or clindamycin (p. 358).

3. If the wound is a bite, give an antibiotic such as amoxicillin with clavulanic acid (p. 353), penicillin (p. 351), doxycycline (p. 355), or cotrimoxazole (p. 357). Also give metronidazole (p. 370).

4. **Never** close this type of wound with stitches or butterfly bandages. **Leave the wound open.** If it is very large, a skilled health worker or a doctor may be able to close it later.

The danger of tetanus is very great in people who have not been vaccinated against this deadly disease. To lower the risk, a person who has not been completely vaccinated against tetanus, or not had a tetanus booster within 5 years, should get a tetanus vaccination (p. 147) and, if possible, an injection of tetanus immune globulin (p. 390). If the wound is from an animal bite and there is a chance of rabies (p. 181), get injections of rabies vaccine and rabies immunoglobulin right away.

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BULLET, KNIFE, AND OTHER SERIOUS WOUNDS



Danger of infection: Any deep bullet or knife wound runs a high risk of dangerous infection. For this reason an antibiotic, such as cloxacillin (p. 350) or clindamycin (p. 358) should be used at once.

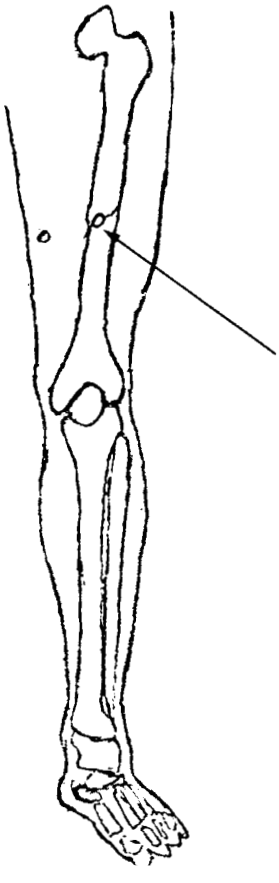
Persons who have not been vaccinated against tetanus should, if possible, be given an injection of antitetanus immunoglobulin (p. 389), and also be vaccinated against tetanus.

If possible, seek medical help.

Bullet Wounds in the Arms or Legs



- If the wound is bleeding a lot, control the bleeding as shown on page 82.
- If the bleeding is not serious, let the wound bleed for a short while. This will help clean it out.
- Wash the wound with cool, boiled water. In the case of a gunshot wound, wash the surface (outside) only. It is usually better not to poke anything into the hole. After cleaning, apply a clean bandage.
- Give antibiotics.

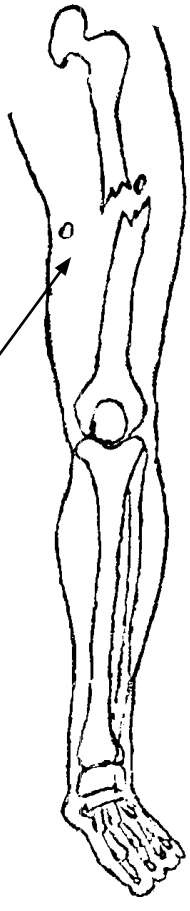


CAUTION:

If there is any possibility that the bullet has hit a bone, the bone may be broken.

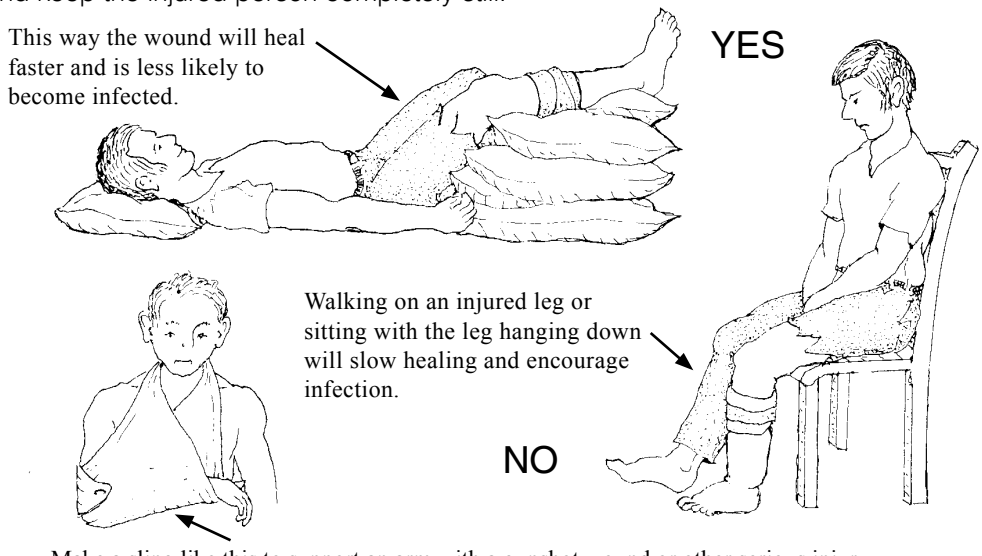
Using or putting weight on the wounded limb (standing, for example) might cause a more serious break, like this:

If a break is suspected, it is best to splint the limb and not to use it for several weeks.



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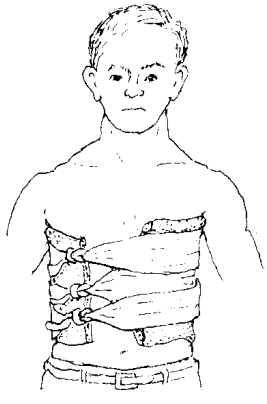
When the wound is serious, raise the wounded part a little higher than the heart and keep the injured person completely still.



Make a sling like this to support an arm with a gunshot wound or other serious injury.

Deep Chest Wounds

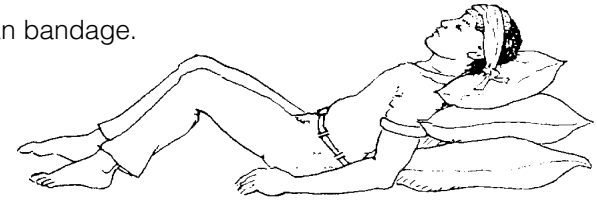
Chest wounds can be very dangerous. Seek medical help at once.



- If the wound has reached the lungs and air is being sucked through the hole when the person breathes, cover the wound at once so that no more air enters. Spread ***Vaseline*** or vegetable fat on a gauze pad or clean bandage and wrap it tightly over the hole like this: (***CAUTION:*** If this tight bandage makes breathing more difficult, try loosening or removing it.)
- Put the injured person in the position in which he feels most comfortable.
- If there are signs of shock, give proper treatment (p. 77).
- Give antibiotics and painkillers.

Bullet Wounds in the Head

- Place the injured person in a half sitting position.
- Cover the wound with a clean bandage.
- Give antibiotics (penicillin).
- Seek medical help.



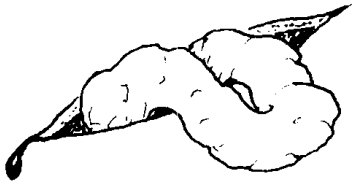
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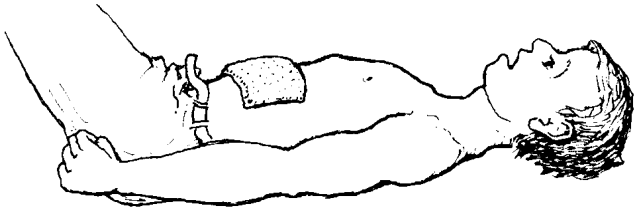
Deep Wounds in the Abdomen

Any wound that goes into the belly or gut is dangerous. **Seek medical help immediately.** But in the meantime:

Cover the wound with a clean bandage.

If the guts are partly outside the wound, cover them with a clean cloth soaked in lightly salted, cool, boiled water. Do not try to push the guts back in. Make sure the cloth stays wet.



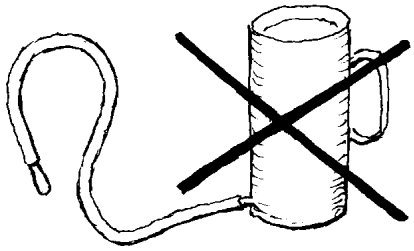


If the wounded person is in shock, raise his feet higher than his head.

Give absolutely nothing by mouth: no food, no drink, not even water—unless it will take more than 2 days to get to a health center. Then give water only, in small sips.

If the wounded person is awake and thirsty, let him suck on a piece of cloth soaked in water.

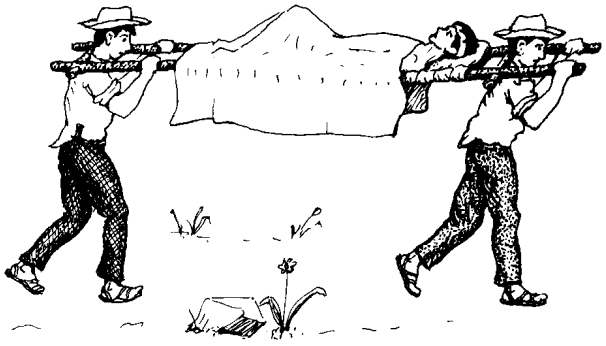




Never give an enema, even if the belly swells up or the injured person does not move his bowels for days. If the gut is torn, an enema or purge can kill him.

Inject antibiotics (see the following page for instructions).





DO NOT WAIT FOR A HEALTH WORKER.

IMMEDIATELY TAKE THE INJURED PERSON TO THE CLOSEST HEALTH CENTER OR HOSPITAL. He will need an operation.

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MEDICINE FOR A WOUND THAT GOES INTO THE GUT
(Also for appendicitis or peritonitis)

Until you can get medical help, do the following:
Give metronidazole (p. 370), 500 mg every 6 hours.

Also give one of these:
Ciprofloxacin (p. 358) 500 mg every 12 hours
OR inject ceftriaxone (p. 358), 2 g every 24 hours
OR inject ampicillin (p. 352), 2 g every 6 hours
AND gentamicin, 1.5 mg per kg, 3 times a day.

If you do not have these antibiotics in injectable form, give ampicillin or ciprofloxacin by mouth, together with metronidazole and very little water.

EMERGENCY PROBLEMS OF THE GUT (ACUTE ABDOMEN)

Acute abdomen is a name given to a number of sudden, severe conditions of the gut for which prompt surgery is often needed to prevent death. Appendicitis, peritonitis, and gut obstruction are examples (see following pages). In women, pelvic inflammatory disease (often with vaginal discharge, p. 243), or an ectopic pregnancy (p. 280) can also cause an acute abdomen. The exact cause of acute abdomen may be uncertain until a surgeon cuts open the belly and looks inside.

If a person has continuous severe gut pain with vomiting, but does not have diarrhea, suspect an acute abdomen.

ACUTE ABDOMEN:

Take to a hospital—surgery may be needed

- continuous severe pain that keeps getting worse
- constipation and vomiting
- belly swollen, hard, person protects it
- severely ill

LESS SERIOUS ILLNESS:

Probably can be treated in the home or health center

- pain that comes and goes (cramps)
- moderate or severe diarrhea
- sore throat or other signs of a cold
- person has had pains like this before
- only moderately ill

If a person shows signs of acute abdomen, get him to a hospital as fast as you can.

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Obstructed Gut

An acute abdomen may be caused by something that blocks or obstructs a part of the gut, so that food and stools cannot pass. More common causes are:

- a ball or knot of roundworms (Ascaris, p. 140)
- a loop of gut that is pinched in a hernia (p. 177)
- a part of the gut that slips inside the part below it (intussusception)

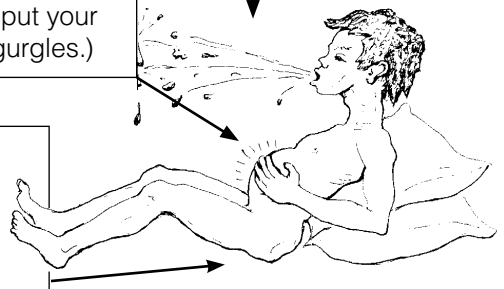
Almost any kind of acute abdomen may show some signs of obstruction. Because it hurts the damaged gut to move, it stops moving.

Signs of an obstructed gut:

Steady, severe pain in the belly.

This child's belly is swollen, hard, and very tender. It hurts more when you touch it. He tries to protect his belly and keeps his legs doubled up. His belly is often silent. (When you put your ear to it, you hear no sound of typical gurgles.)

Sudden vomiting with great force! The vomit may shoot out a meter or more. It may have green bile in it or smell and look like feces.



He is usually constipated (little or no bowel movements). If there is diarrhea, it is only a little bit. Sometimes all that comes out is some bloody mucus.

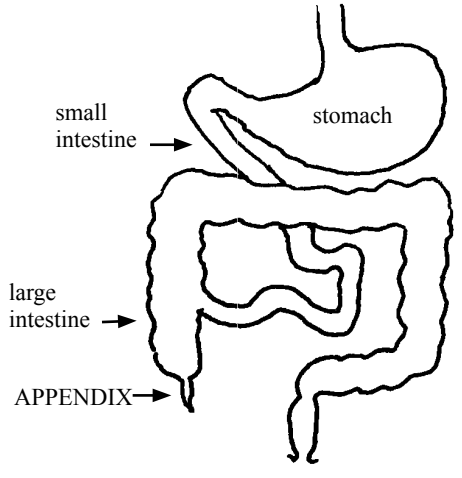
Get this person to a hospital **as fast as possible**. His life is in danger and surgery may be needed.

Appendicitis, Peritonitis

These dangerous conditions often require surgery. Seek medical help fast.

Appendicitis is an infection of the ***appendix***, a finger shaped sac attached to the large intestine in the lower right hand part of the belly. An infected appendix sometimes bursts open, causing ***peritonitis.***

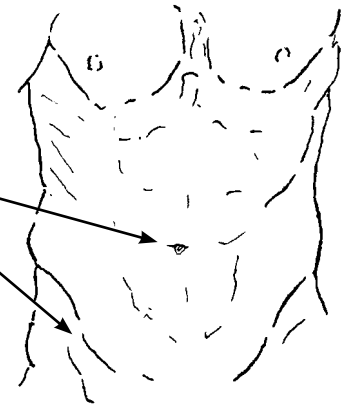
Peritonitis is an acute, serious infection of the lining of the cavity or bag that holds the gut. It results when the appendix or another part of the gut bursts or is torn.



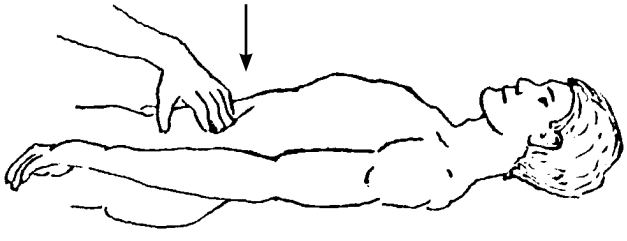
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Signs of appendicitis:

- The main sign is a steady pain in the belly that gets worse and worse.
- The pain often begins around the navel (belly button) but it soon moves to the lower right side.
- There may be loss of appetite, vomiting, constipation, or a mild fever.



TESTS FOR APPENDICITIS OR PERITONITIS:



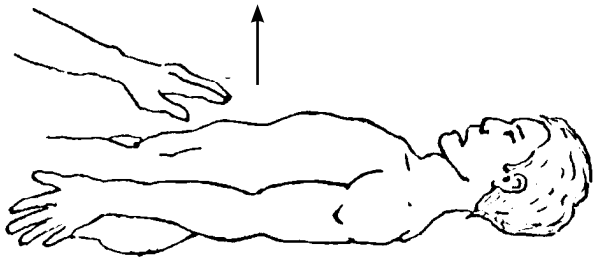
Have the person cough and see if this causes sharp pain in the belly.

Or, slowly but forcefully, press on the abdomen a little above the left groin until it hurts a little.

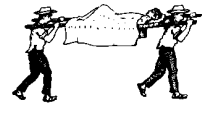
Then quickly remove the hand.

If a very sharp pain ***(rebound pain)*** occurs when the hand is removed, appendicitis or peritonitis is likely.

If no rebound pain occurs above the left groin, try the same test above the right groin.



IF IT SEEMS THAT A PERSON HAS APPENDICITIS OR PERITONITIS:



- **Seek medical help immediately.** If possible, take the person where he can have surgery.
- **Do not give anything by mouth** and do not give an enema. Only if the person begins to show signs of dehydration, give sips of water or Rehydration Drink (p. 152) made with sugar and salt—but nothing more.
- The person should rest very quietly in a half-sitting position.

Note: When peritonitis is advanced, the belly becomes hard like a board, and the person feels great pain when his belly is touched even lightly. His life is in danger. Take him to a medical center immediately and on the way give him the medicines indicated at the top of page 93.

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BURNS



Prevention:

Most burns can be prevented. Take special care with children:

- Do not let small babies go near a fire.
- Keep lamps and matches out of reach of children.
- Turn handles of pans on the stove so children cannot reach them.
- Keep chemicals in closed containers and keep them away from children.

Minor Burns

A minor burn does not form blisters, is not on the face, hands, feet, or genitals, is not across a major joint (like the knee, elbow, hip, or shoulder), and is the only injury a person has sustained in a situation. To lessen the pain and damage caused by a minor burn, put the burned area in clean cool water (not ice or ice water) right away for no longer than 20 minutes. Then keep the burn clean and dry and take aspirin, paracetamol (acetaminophen), or ibuprofen for pain (avoid giving aspirin to children). Minor burns should heal by themselves within about 2 weeks.

Severe Burns

Severe burns affect large areas or specific parts of the body (face, hands, feet, genitals, major joints), are deep (affect many layers of skin), or are combined with other injuries. When burns happen in children, it is important to treat them seriously.

To prevent infection, wash a severe burn with water that has been boiled and cooled, and add povidone iodine if you have it (mix 4 parts boiled/cooled water with 1 part povidone iodine). Scrub gently so the burn does not bleed and rinse with more boiled and cooled water. Then dry the burn by blotting with sterile gauze or sterilized cloth. Wearing sterile gloves, put one of the following directly on the burn to kill germs:

- silver sulfadiazine: Use a thin layer. Do not use for burns on eyelids or lips, or for burns on children younger than 2 months old.
- honey: Use a thin layer.
- sugar: Pour granulated sugar to cover the burn. Throw away any sugar that does not stick to the burn.

Then gently cover the burn with sterile gauze or sterilized cloth and hold in place with tape or bandages. If the burn is on an arm or leg, keep the limb elevated to lessen swelling. Clean the burn, reapply the antimicrobial agent, and change the covering once each day.

Never put ice, grease, fat, hides, coffee, herbs, or feces on a burn. If signs of infection appear—pus, bad smell, fever, or swollen lymph nodes—put an antibiotic ointment such as *Polysporin* (p. 372) on the burn and get medical attention as soon as possible. They will need surgery to clean the wound and intravenous antibiotics to treat the infection.

For more information about treating severe burns and preventing contractures during healing, see ***Disabled Village Children***, Chapter 28.

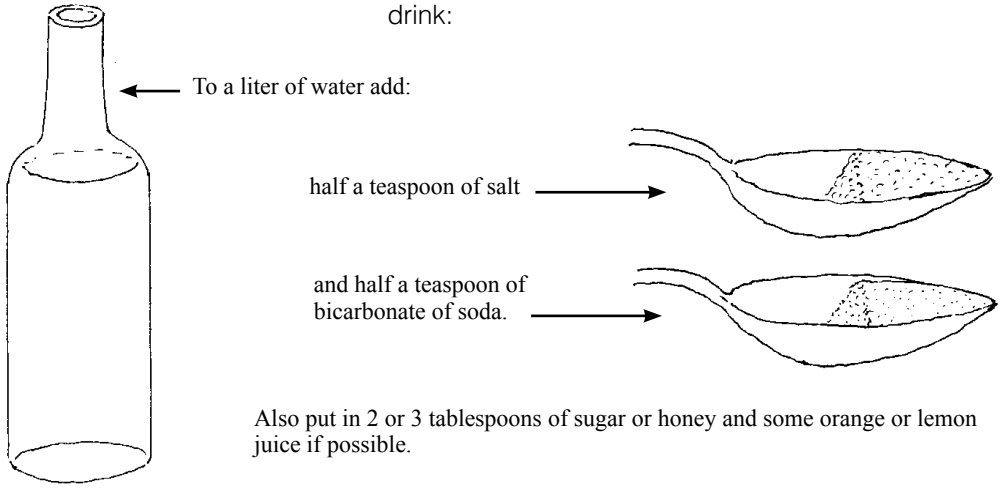
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Special Precautions for Very Serious Burns

Any person who has been badly burned can easily go into ***shock*** (p. 77) because of combined pain, fear, and the loss of body fluids from the oozing burn.

Comfort and reassure the burned person. Give him aspirin, acetaminophen, or ibuprofen for the pain and codeine if you can get it. Bathing open wounds in slightly salty water also helps calm pain. Put 1 teaspoon of salt for each liter of cool, boiled water.

Give the burned person plenty of liquid. If the burned area is large (more than twice the size of his hand), make up the following drink:



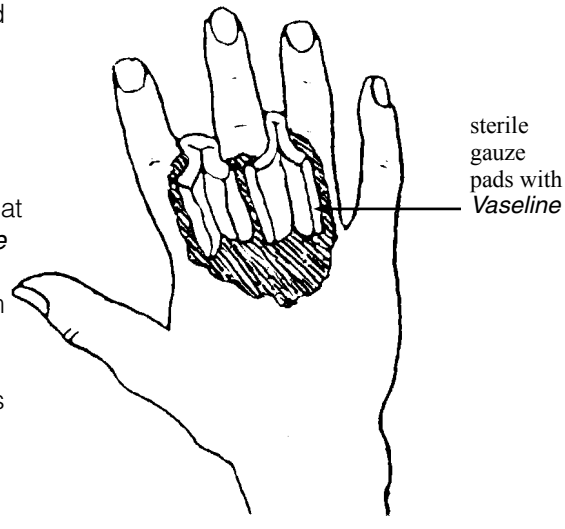
Also put in 2 or 3 tablespoons of sugar or honey and some orange or lemon juice if possible.

The burned person should drink this as often as possible, especially until he urinates frequently. He should drink 4 liters a day for a large burn, and up to 12 liters a day for a very large burn.

It is important for persons who are badly burned to eat foods rich in protein (pages 110 and 111). No type of food needs to be avoided.

Burns around the Joints

When someone is badly burned between the fingers, in the armpit, or at other joints, gauze pads with ***Vaseline*** on them should be put between the burned surfaces to prevent them from growing together as they heal. Also, fingers, arms, and legs should be straightened completely several times a day while healing. This is painful but helps prevent stiff scars that limit movement. While the burned hand is healing, the fingers should be kept in a slightly bent position.



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BROKEN BONES (FRACTURES)

When a bone is broken, the most important thing to do is **keep the bone in a fixed position.** This prevents further damage and lets it mend.

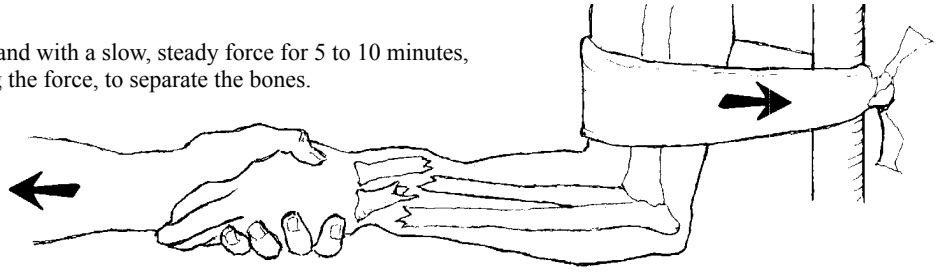
Before trying to move or carry a person with a broken bone, keep the bones from moving with splints, strips of bark, or a sleeve of cardboard. Later a plaster cast can be put on the limb at a health center, or perhaps you can make a cast according to local tradition (p. 14).

Setting broken bones: If the bones seem more or less in the right position, it is better not to move them—this could do more harm than good.

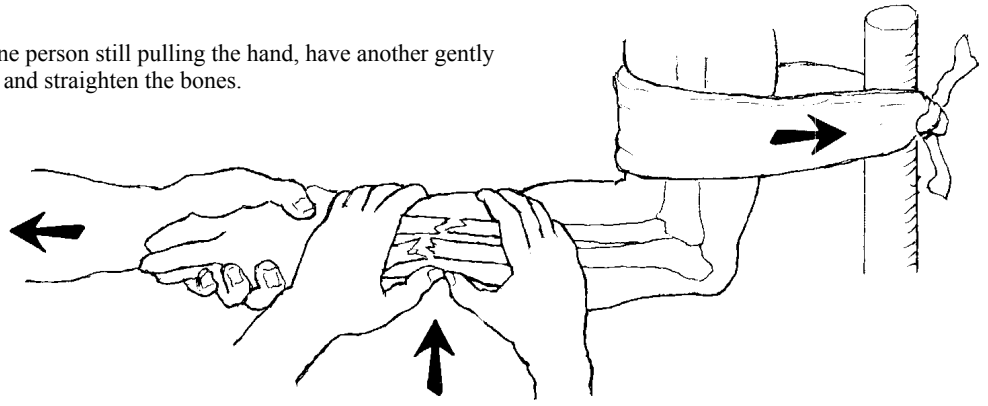
If the bones are far out of position and the break is recent, you can try to set or straighten them before putting on cast. The sooner the bones are set, the easier it will be. Before setting, if possible give diazepam to relax the muscles and calm pain (p. 391). Or give codeine (p. 385).

HOW TO SET A BROKEN WRIST

Pull the hand with a slow, steady force for 5 to 10 minutes, increasing the force, to separate the bones.



With one person still pulling the hand, have another gently line up and straighten the bones.



WARNING: **It is possible to do a lot of damage while trying to set a bone. Ideally, it should be done with the help of someone with experience. Do not jerk or force.**

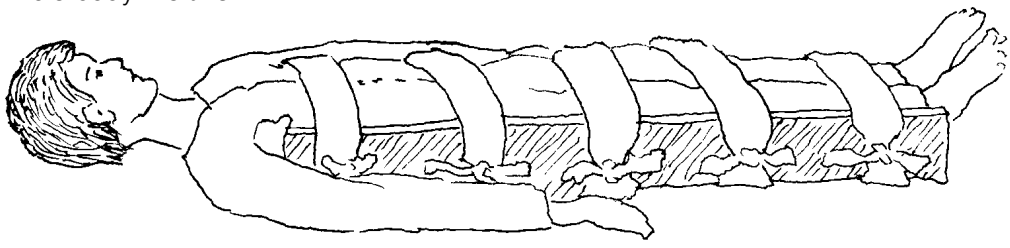
HOW LONG DOES IT TAKE FOR BROKEN BONES TO HEAL?

The worse the break or the older the person, the longer healing takes. Children's bones mend rapidly. Those of old people sometimes never join. A broken arm should be kept in a cast for about a month, and no force put on it for another month. A broken leg should remain in a cast for about 2 months.

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BROKEN THIGH OR HIP BONE

A broken upper leg or hip often needs special attention. It is best to splint the whole body like this:



and to take the injured person to a health center at once.

BROKEN NECKS AND BACKS

If there is any chance a person's back or neck has been broken, **be very careful when moving him**. Try not to change his position. If possible, bring a health worker before moving him. If you must move him, do so without bending his back or neck. For instructions on how to move the injured person, see the next page.

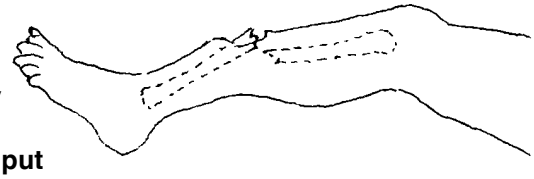
BROKEN RIBS

These are very painful, but almost always heal on their own. It is better not to splint or bind the chest. The best treatment is to take aspirin, acetaminophen, or ibuprofen (avoid giving aspirin to children)—and rest. To keep the lungs healthy, take 4 to 5 deep breaths in a row, every 2 hours. Do this daily until you can breathe as usual. At first, this will be very painful. It may take months before the pain is gone completely.

A broken rib does not often puncture a lung. But if a rib breaks through the skin, or if the person coughs blood or develops breathing difficulties (other than pain), use antibiotics and seek medical help.

BROKEN BONES THAT BREAK THROUGH THE SKIN (OPEN FRACTURES)

Since the danger of infection is very great in these cases, it is always better to get help from a health worker or doctor in caring for the injury. Wear gloves or plastic bags on your hands and clean the wound and the exposed bone very gently but thoroughly with cool, boiled water. Cover with a clean cloth. **Never put the bone back into the wound until the wound and the bone are absolutely clean.**



Splint the limb to prevent more injury.

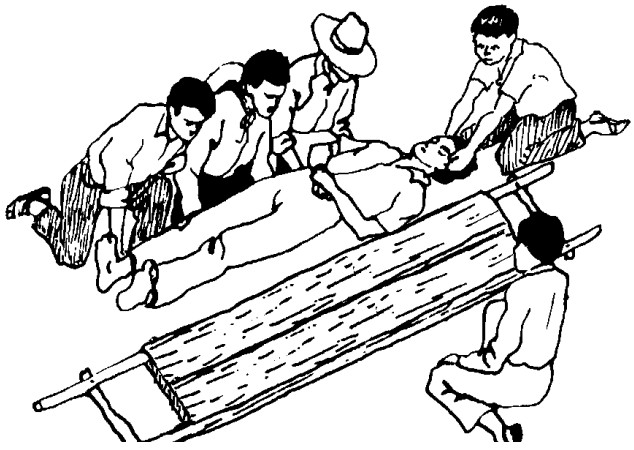
If the bone has broken the skin, use an antibiotic immediately to help prevent infection: dicloxacillin (p. 350), clindamycin (p. 358), or ceftriaxone (p. 358).

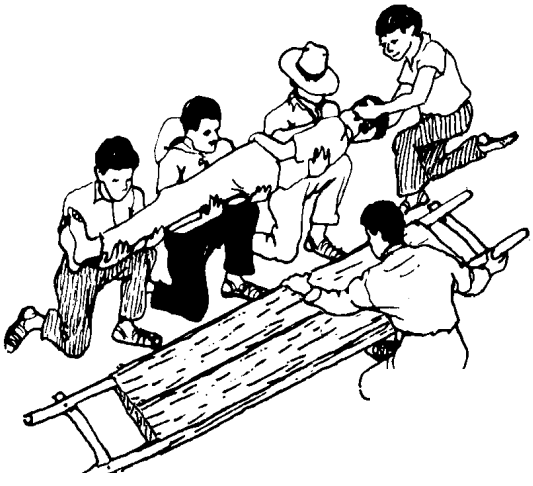
> *CAUTION:* **Never rub or massage a broken limb or a limb that may possibly be broken.**

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HOW TO MOVE A BADLY INJURED PERSON

With great care, lift the injured person without bending him anywhere. Take special care that the head and neck do not bend.





Have another person put the stretcher in place.

With the help of everyone, place the injured person carefully on the stretcher.





tightly folded clothing

If the neck is injured or broken, put tightly folded clothing or sandbags on each side of the head to keep it from moving.

When carrying, try to keep the feet up, even on hills.

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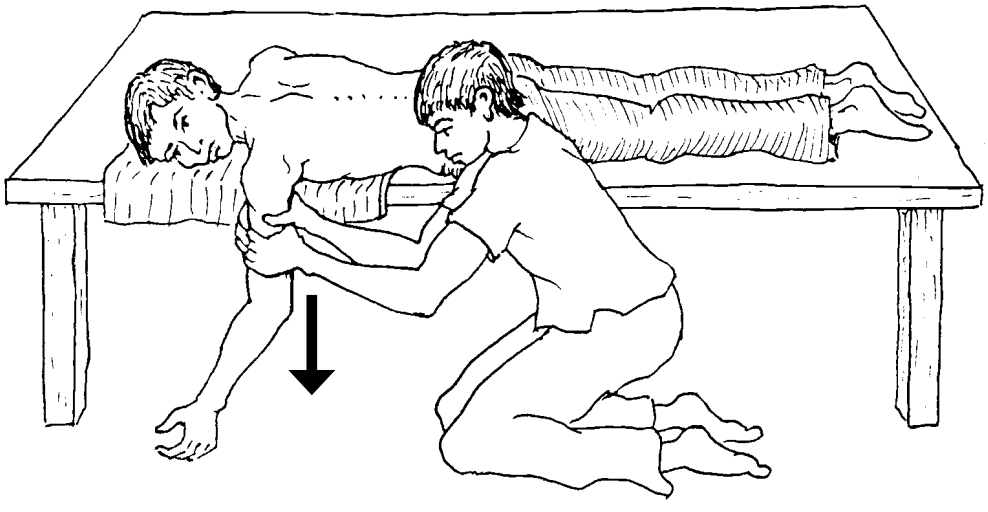
DISLOCATIONS
(BONES THAT HAVE COME OUT OF PLACE AT A JOINT)

Three important points of treatment:

- Try to put the bone back into place. **The sooner the better!**
- Keep it bandaged firmly in place so it does not slip out again (about a month).
- Avoid forceful use of the limb long enough for the joint to heal completely (2 or 3 months).

HOW TO SET A DISLOCATED SHOULDER:

Have the injured person lie face down on a table or other firm surface with his arm hanging over the side. Pull down on the arm toward the floor, using a strong, steady force, for 15 to 20 minutes. Then gently let go. The shoulder should pop back into place.



Or attach something to the arm that weighs 5 to 10 kg (start with 5 kg, but do not go higher than 10 kg) and leave it there for 15 to 20 minutes.



After the shoulder is in place, bandage the arm firmly against the body. Keep it bandaged for a week to a month. To prevent the shoulder from becoming completely stiff, unbandage the arm for a few minutes 3 times a day and, with the arm hanging at the side, move it gently in narrow circles. Do not lift any weight with the arm for a month so the shoulder does not pop out of place again.

If you cannot put the dislocated limb back in place, look for medical help at once. The longer you wait, the harder it will be to correct.

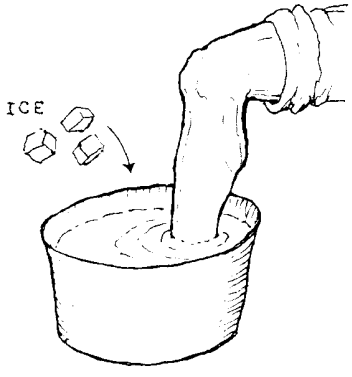
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STRAINS AND SPRAINS (BRUISING OR TEARING IN A TWISTED JOINT)

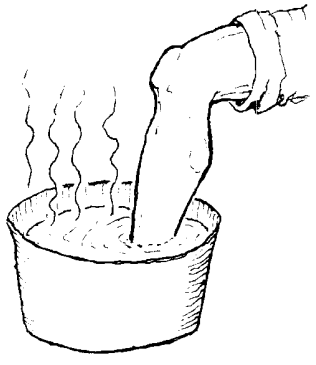
Many times it is impossible to know whether a hand or foot is bruised, sprained, or broken. It helps to have an X-ray taken.

But usually, breaks and sprains are treated more or less the same. Keep the joint motionless. Wrap it with something that gives firm support. Use crutches to give a sprained foot as much rest as possible. Serious sprains need at least 3 or 4 weeks to heal. Broken bones take longer.

To relieve pain and swelling, keep the sprained part raised high. During the first day or two, put ice wrapped in cloth or plastic, or cold, wet cloths over the swollen joint for 20 to 30 minutes once every hour. This helps reduce swelling and pain. After 24 to 48 hours (when the swelling is no longer getting worse), soak the sprain in hot water several times a day.



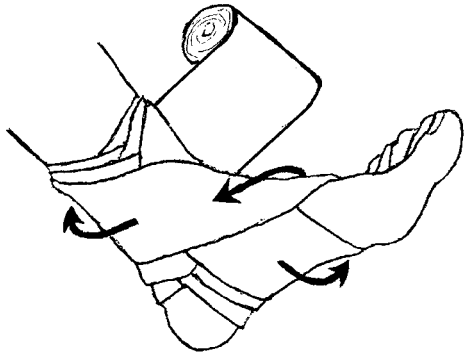
For the first day soak the sprained joint in cold water.



After 1 or 2 days use hot soaks.

You can keep the twisted joint in the correct position for healing by using a homemade cast (p. 14) or an elastic bandage.

Wrapping the foot and ankle with an elastic bandage will also prevent or reduce swelling. Start from the toes and wrap upward, as shown here. Be careful not to make the bandage too tight, and remove it briefly every hour or two. Also take aspirin, acetaminophen, or ibuprofen.



If the pain and swelling do not start to go down after 48 hours, seek medical help.

CAUTION: **Never rub or massage a sprain or broken bone.** It does no good and can do more harm.

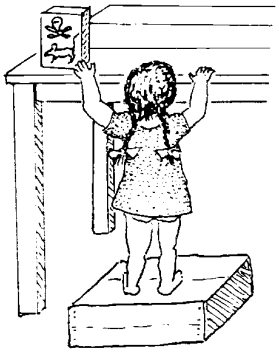
If the foot seems very loose or floppy, or if the person has trouble moving his toes, look for medical help. Surgery may be needed.

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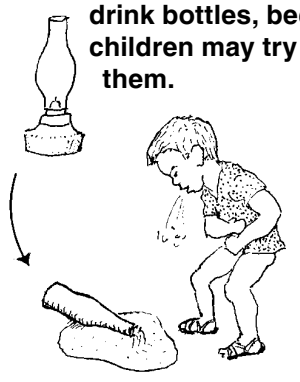
POISONING

Many children die from swallowing things that are poisonous. To protect your children, take the following precautions:

Keep all poisons out of reach of children.



Never keep kerosene, gasoline, or other poisons in cola or soft drink bottles, because children may try to drink them.



SOME COMMON POISONS TO WATCH OUT FOR:

- rat poison
- DDT, lindane, sheep dip, and other insecticides or plant poisons
- medicine (any kind when much is swallowed; take special care with **iron pills)**
- tincture of iodine
- bleach
- cigarettes
- rubbing or wood alcohol
- poisonous leaves, seeds, berries, or mushrooms
- castor beans
- matches
- kerosene, paint thinner, gasoline, petrol, lighter fluid
- lye or caustic soda
- salt—if too much is given to babies and small children
- spoiled food (p. 135)

Treatment:

If you suspect poisoning, do the following **immediately:**

- ♦ If the child is unconscious, lay him on his side. If he stops breathing, give him mouth-to-mouth breathing (p. 80).
- ♦ If the child is awake and alert, give him plenty of water or milk to drink to dilute the poison (about 1 glass of water every 15 minutes).
- ♦ If you have activated charcoal (p. 390), give it right away, mixed into a glass of water.
- ♦ If the child is awake and alert and you are sure vomiting is safe, you can make him vomit. Put your finger in his throat or make him drink very salty water.
- ♦ *CAUTION:* Do not make a person vomit if he has swallowed kerosene, gasoline (petrol), bleach, paint thinner, some pesticides, strong acids or corrosive substances (lye), or if he is unconscious.

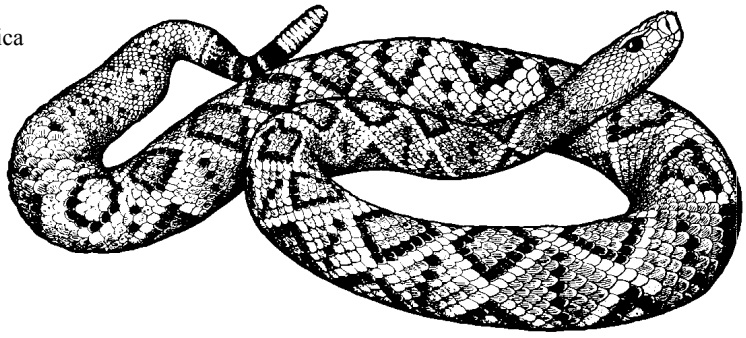
Cover the person if he feels cold, but avoid too much heat. **If poisoning is severe, look for medical help.**

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SNAKEBITE

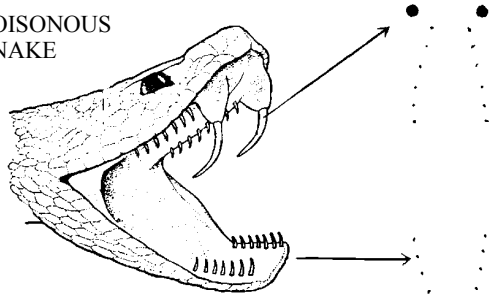
Note: Try to get information on the kinds of snakes in your area and put it on this page.

RATTLESNAKE—
North America.
Mexico, and
Central America



When someone has been bitten by a snake, try to find out if the snake was poisonous or harmless. Their bite marks are usually different:

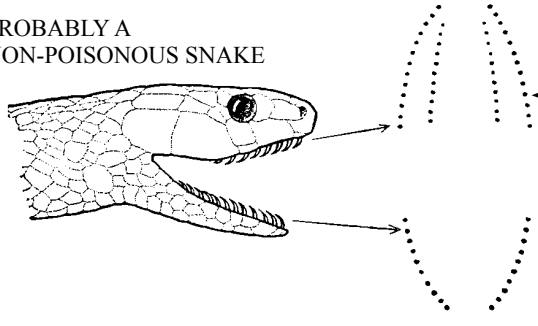
POISONOUS SNAKE



fang marks

The bite of most poisonous snakes leaves marks of the 2 fangs (and sometimes, little marks made by the other teeth).

PROBABLY A NON-POISONOUS SNAKE



If the bite of a snake leaves only 2 rows of teeth marks, but no fang marks, it is less likely that the snake is poisonous. But it still could be.

People often believe that certain harmless snakes are poisonous. Try to find out which of the snakes in your area are truly poisonous and which are not. Contrary to popular opinion, boa constrictors and pythons are not poisonous. Please do not kill non-poisonous snakes, because they do no harm. On the contrary, they kill mice and other pests that do lots of damage. Some even kill poisonous snakes.

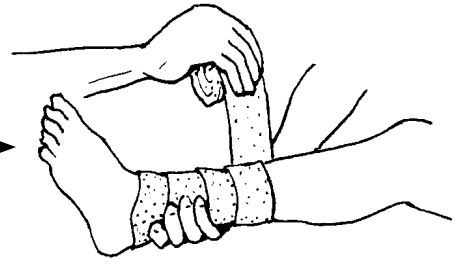
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Treatment for poisonous snakebite:

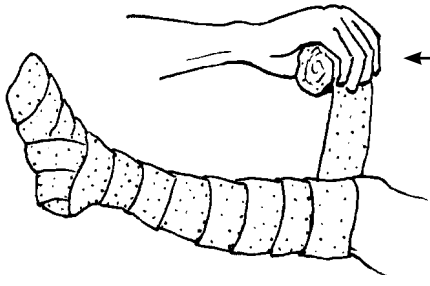
1. **Stay quiet; do not move the bitten part.** The more it is moved, the faster the poison will spread through the body. If the bite is on the foot, the person should not walk at all. **Send for medical help.**

2. Remove jewelry because swelling can spread rapidly.

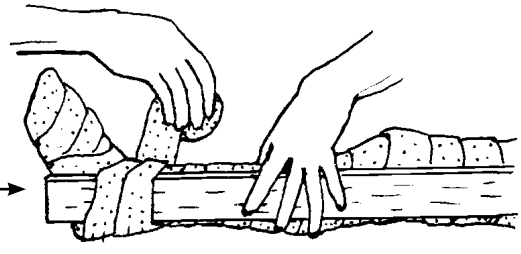
3. Wrap the bitten area with a wide elastic bandage or clean cloth to slow the spread of poison. Keeping the arm or leg very still, wrap it tightly, but not so tight it stops the pulse at the wrist or on top of the foot. If you cannot feel the pulse, loosen the bandage a little.



4. Wind the bandage over the hand or foot, and up the whole arm or leg. Make sure you can still feel the pulse.



5. Then, put on a splint to prevent the limb from moving (p. 14).



6. Carry the person, on a stretcher if possible, to the nearest health center. If you can, also take the snake, because different snakes may require different antivenoms (antitoxins, p. 389). If an antivenom is needed, leave the bandage on until the injection is ready, and take all precautions for allergic shock (p. 70). Also give tetanus antitoxin (p. 390). If there is no need for antivenom, remove the bandage.

Have antivenoms for snakes in your area ready and know how to use them—before someone is bitten!

Poisonous snakebite is dangerous. Send for medical help—but always do the things explained above **at once**.

Most folk remedies for snakebite do little if any good (p. 3).

Some treatments can cause infection or make the effects of the venom worse.

Do not:

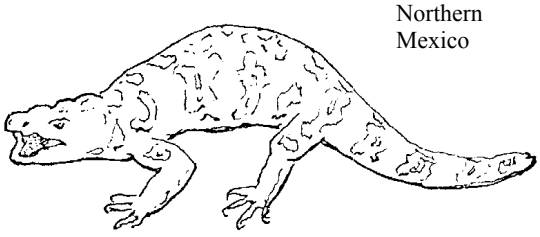
- cut the skin or the flesh around the bite
- tie anything tight around the bite or the person's body
- put ice on or around the bite
- shock the person with electricity
- try to suck the blood or the venom out of the bite

Never drink alcohol after a snakebite. It makes things worse!

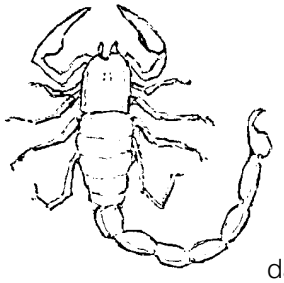
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BITE OF THE BEADED LIZARD (GILA MONSTER)

The bite of the beaded lizard is treated just like a poisonous snakebite, except that there are no good antivenoms for it. The bite can be very dangerous. Wash the bite area well. Avoid movement and keep the bite below the level of the heart.



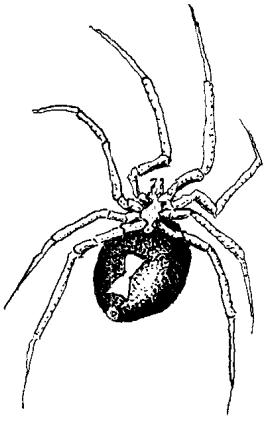
SCORPION STING



Some scorpions are far more poisonous than others. To adults, scorpion stings are rarely dangerous. Take aspirin, acetaminophen, or ibuprofen and if possible put ice on the sting to help calm the pain. For the numbness and pain that sometimes last weeks or months, hot compresses may be helpful (p. 193).

To children under 5 years old, scorpion stings can be dangerous, especially if the sting is on the head or body. In some countries scorpion antitoxin is available (p. 389). To do much good it must be injected within 2 hours after the child has been stung. Give acetaminophen for the pain. If the child stops breathing, use mouth-to-mouth breathing (p. 80). Also give tetanus antitoxin (p. 390). If the child who was stung is very young or has been stung on the main part of the body, or if you know the scorpion was of a deadly type, seek medical help fast.

BLACK WIDOW AND OTHER SPIDER BITES



The majority of spider bites, including that of the tarantula, are painful but not dangerous. The bite of a few kinds of spiders—such as the black widow and related species—can make an adult quite ill. They can be dangerous for a small child. A black widow bite often causes painful muscle cramps all over the body, and extreme pain in the stomach muscles which become rigid. (Sometimes this is confused with appendicitis!)

Give aspirin, acetaminophen, or ibuprofen and look for medical help. Most cures sold in stores are a waste of money and do not help. Diazepam (p. 392) may help reduce muscular spasms. If signs of shock develop, treat for allergic shock (p. 70). Injections of cortisone may be needed in children. Also give tetanus antitoxin (p. 390). A good antivenom exists but is hard to get.

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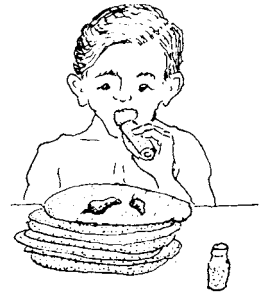
CHAPTER

11

Nutrition: What to Eat to Be Healthy

SICKNESSES CAUSED BY NOT EATING WELL

Good food is needed for a person to grow well, work hard, and stay healthy. Many common sicknesses come from not eating enough.



A person who is weak or sick because he does not eat enough, or does not eat the foods his body needs, is said to be poorly nourished—or malnourished. He suffers from *malnutrition*.

Poor nutrition can result in the following health problems:

in children

- child takes longer to grow or gain weight normally (p. 297)
- delay in walking, talking, or thinking
- big bellies, thin arms and legs
- common illnesses and infections that last longer, are more severe, and more often cause death
- lack of energy, child is sad and does not play
- swelling of feet, face, and hands, often with sores or marks on the skin
- thinning, straightening, or loss of hair, or loss of its color and shine
- poor vision at night, dryness of eyes, blindness

in anyone

- weakness and tiredness
- loss of appetite
- anemia
- sores in the corners of the mouth
- painful or sore tongue
- feeling of burning or numbness of the feet

Although the following problems may have other causes, they are sometimes caused and are often made worse by not eating well:

- diarrhea
- frequent infections
- ringing or buzzing in the ears
- headache
- bleeding or redness of the gums
- skin bruises easily
- nosebleeds
- stomach discomfort
- dryness and cracking of the skin
- heavy pulsing of the heart or of the "pit" of the stomach (palpitations)
- anxiety (nervous worry) and various nerve or mental problems
- cirrhosis (liver disease)

Not having nutritious food during pregnancy causes weakness and anemia in the mother and increases the risk of her dying during or after giving birth. It is also a cause of miscarriage, or of the baby being born dead, too small, or with a disability.

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Nutritious food helps the body resist sickness.

Not having nutritious food weakens the body's ability to resist all kinds of diseases, especially infections. Children who are malnourished are more likely to get severe diarrhea and die from it, and to die from measles. Tuberculosis is more common and gets worse faster in people who are malnourished. Even minor illnesses like the common cold are worse in people who are malnourished.

Nutritious food helps the sick get well.

Not only does nutritious food help prevent disease, it helps the sick body fight disease and become well again. So when a person is sick, eating enough nutritious food is especially important.

Unfortunately, some mothers stop feeding a child or stop giving certain nutritious foods when he is sick or has diarrhea—so the child becomes weaker, cannot fight off the illness, and may die. **Sick children need food! If a sick child will not eat, encourage him to do so.**

Feed him as much as he will eat and drink. And be patient. A sick child often does not want to eat much. So feed him something many times during the day. Also, try to make sure that he drinks a lot of liquid so that he pees (passes urine) several times a day. If the child will not take solid foods, mash them and give them as a mush or gruel.

Often the signs of poor nutrition first appear when a person has some other sickness. For example, a child who has had diarrhea for several days may develop swollen hands and feet, a swollen face, dark spots, or peeling sores on his legs. These are signs of severe malnutrition. The child needs more good food! And more often. Feed him many times during the day.

During and after any sickness, it is very important to eat well.

EATING WELL AND
KEEPING CLEAN
ARE THE BEST
GUARANTEES
OF GOOD HEALTH.



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WHY IT IS IMPORTANT TO EAT RIGHT

People who do not eat right develop **malnutrition.** This can happen from not eating enough food of any kind (general malnutrition or undernutrition), from not eating the right kinds of foods (specific types of malnutrition), or from eating too much of certain foods (like processed and "junk" foods, p. 126).

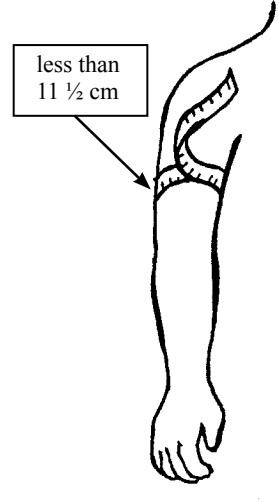
Anyone can develop general malnutrition, but it is especially dangerous for:

- **children**, because they need lots of food to grow well and stay healthy.
- **women of child-bearing age**, especially if they are pregnant or breastfeeding, because they need extra food to stay healthy, to have healthy babies, and to do their daily work.
- **elderly persons**, because often they lose their teeth and their taste for food, so they cannot eat much at one time, even though they still need to eat well to stay healthy.
- **people with HIV**, because they need more food to fight their infection.

A malnourished child does not grow well. She generally is thinner and shorter than other children. Also, she is more likely to be irritable, to cry a lot, to move and play less than other children, and to get sick more often. If the child also gets diarrhea or other infections, she will lose weight. A good way to check if a child is poorly nourished is to measure the distance around her upper arm.

Checking Children for Malnutrition: The Sign of the Upper Arm

After 1 year of age, any child whose middle upper arm measures less than 11 ½ cm around is malnourished — no matter how the rest of his body may look. If the arm measures between 11 ½ and 12 ½ cm, he is at risk of becoming malnourished.



Another good way to tell if a child is well nourished or poorly nourished is to weigh him regularly: once a month in the first year, then once every 3 months. A healthy, well nourished child gains weight regularly. The weighing of children and the use of the Child Health Chart are discussed fully in Chapter 21.

PREVENTING MALNUTRITION

To stay healthy, our bodies need plenty of good food. The food we eat has to fill many needs. First, it should provide enough **energy** to keep us active and strong. Also, it must help **build**, **repair**, and **protect** the different parts of our bodies. To do all this we need to eat a combination of foods every day.

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MAIN FOODS AND **HELPER FOODS**

In much of the world, most people eat **one main low-cost food** with almost every meal. Depending on the region, this may be rice, maize, millet, wheat, cassava, potato, breadfruit, or banana. **This main food usually provides most of the body's daily food needs.**

However, the **main food** alone is not enough to keep a person healthy. Certain **helper foods** are needed. This is especially true for growing children, women who are pregnant or breastfeeding, and older people.

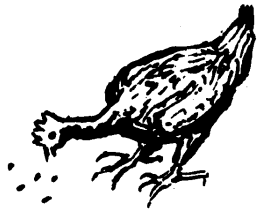
Even if a child regularly gets enough of the main food to fill her, she may become thin and weak. This is because the main food often has so much water and fiber in it, that the child's belly fills up before she gets enough energy to help her grow.

We can do 2 things to help meet such children's energy needs:

1. **Feed children more often**—at least 5 times a day when a child is very young, too thin, or not growing well. Also give her snacks between meals.



CHILDREN, LIKE CHICKENS,
SHOULD ALWAYS BE PECKING.



2. **Also add high energy "helper foods"** such as oils and sugar or honey to the main food. It is best to add vegetable oil or foods containing oils—nuts, groundnuts (peanuts), or seeds, especially pumpkin or sesame seeds.



To meet her energy needs, a child would need to eat this much boiled rice.

If the child's belly fills up before her energy needs are met, the child will become thin and weak.



But she needs only this much rice when some vegetable oil is mixed in.

High energy foods added to the main food help to supply extra energy. Also, **2 other kinds of helper foods** should be added to the main food:

When possible, add **body–building foods** (proteins) such as beans, milk, eggs, groundnuts, fish, and meat.

Also try to add **protective foods** such as orange or yellow fruits and vegetables, and also dark green leafy vegetables. Protective foods supply important vitamins and minerals.

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EATING RIGHT TO STAY HEALTHY

The "main food" your family eats usually provides **most—but not all—**of the body's energy and other nutritional needs. By adding **helper foods** to the **main food** you can make low cost nutritious meals. You do not have to eat all the foods listed here to be healthy. **Eat the main foods you are accustomed to, and add whatever helper foods are available in your area.** Try to include helper foods from each group, as often as possible.

GO FOODS
(energy helpers)

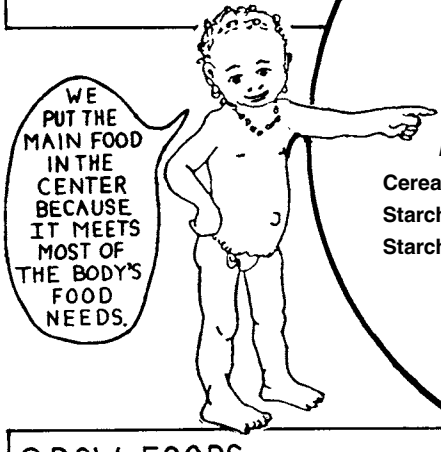


Examples:

Fats (vegetable oils, butter, *ghee*, lard)
Foods rich in fats (coconut, olives, fatty meat)
Nuts* (groundnuts, almonds, walnuts, cashews)
Oil seeds (pumpkin, melon, sesame, sunflower)
Sugars (sugar, honey, molasses, sugar cane, jaggery)

* *Note:* Nuts and oil seeds are also valuable as body-building helpers.

REMEMBER: Feeding children **enough** and feeding them **often** (3 to 5 times a day) is usually more important than the types of food you feed them.



MAIN FOODS

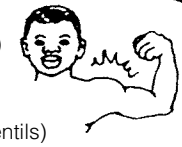


Examples:

Cereals and grains (wheat, maize, rice, millet, sorghum)
Starchy roots (cassava, potatoes, taro)
Starchy fruits (banana, plantain, breadfruit)

Note: Main foods are cheap sources of energy. The cereals also provide some protein, iron, and vitamins—at low cost.

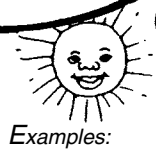
GROW FOODS
(proteins or body-building helpers)



Examples:

Legumes (beans, peas, and lentils)
Nuts (groundnuts, walnuts, cashews, and almonds)
Oil seeds (sesame and sunflower)
Animal products (milk, eggs, cheese, yogurt, fish, chicken, meat, small animals such as mice, and insects)

GLOW FOODS
(vitamins and minerals or protective helpers)



Examples:

Vegetables (dark green leafy plants, tomatoes, carrots, pumpkin, sweet potato, and peppers)
Fruits (mangoes, oranges, papayas)

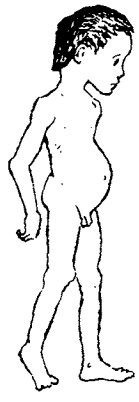
Note to nutrition workers: This plan for meeting food needs resembles teaching about food groups, but places more importance on giving enough of the traditional main food and **above all, giving frequent feedings with plenty of energy-rich helpers.** This approach is more adaptable to the resources and limitations of poor families.

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HOW TO RECOGNIZE MALNUTRITION

Among poor people, **malnutrition is often most severe in children, who need lots of nutritious food to grow well and stay healthy.** There are different forms of malnutrition:

MILD MALNUTRITION



This is the most common form, but it is not always obvious. The child simply does not grow or gain weight as fast as a well-nourished child. Although he may appear rather small and thin, he usually does not look sick. However, because he is poorly nourished, he may lack strength (resistance) to fight infections. So he **becomes more seriously ill** and takes longer to get well than a well nourished child.

Children with this form of malnutrition suffer more from diarrhea and colds. Their colds usually last longer and are more likely to turn into pneumonia. Measles, tuberculosis, and many other **infectious diseases are far more dangerous** for these malnourished children. More of them die.

It is important that children like these get special care and enough food ***before*** they become seriously ill. This is why regular weighing or measuring around the middle upper arm of young children is so important. It helps us to recognize mild malnutrition early and correct it.

Follow the guidelines for preventing malnutrition.

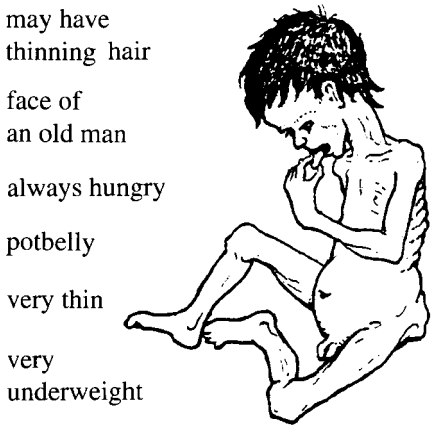
SEVERE MALNUTRITION

This occurs most often in babies who stopped breastfeeding early or suddenly, and who are not given sufficient high energy foods often enough. Severe malnutrition often starts when a child has diarrhea or another infection. We can usually recognize children who are severely malnourished without taking any measurements. The 2 main examples are:

DRY MALNUTRITION—OR MARASMUS

This child does not get enough of any kind of food. He is said to have **dry malnutrition** or *marasmus*. In other words, he is starved. His body is small, very thin and wasted. He is little more than skin and bones.

This child needs more food—especially energy foods.



THIS CHILD IS JUST *SKIN* AND *BONES.*

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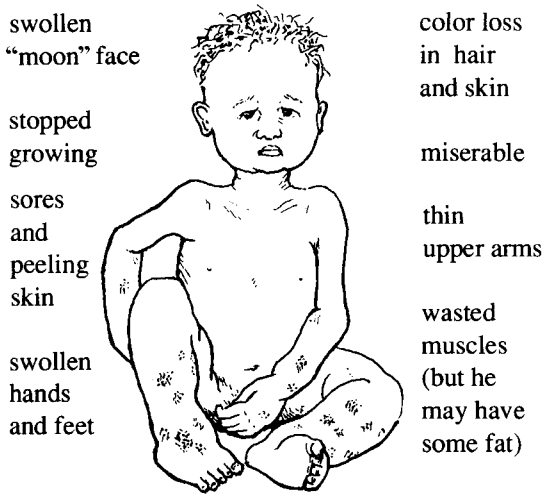
WET MALNUTRITION—OR KWASHIORKOR

This child's condition is called **wet malnutrition** because **his feet, hands, and face are swollen**. This can happen when a child does not eat enough body building helper foods—or proteins. More often it happens when he does not get enough energy foods, and his body burns up whatever proteins he eats for energy.

Eating beans, lentils, or other foods that have been stored in a damp place and are a little moldy may also be part of the cause.

This child needs more food more often—a lot of foods rich in energy, and some foods rich in protein (p. 111).

Also, try to avoid foods that are old, and may be spoiled or moldy.



First the child becomes swollen. The other signs come later.

THIS CHILD IS *SKIN, BONES,* AND *WATER.*

OTHER FORMS OF MALNUTRITION

Other forms of malnutrition may result when certain vitamins and minerals are missing from the foods people eat. Many of these specific types of malnutrition are discussed more fully later in this chapter and in other parts of this book:

- **night blindness** in children who do not get enough vitamin A (p. 226)
- **rickets** from lack of vitamin D (p. 125)
- various **skin problems, sores on the lips and mouth,** or **bleeding gums** from not eating enough fruits, vegetables, and other foods containing certain vitamins (pages 208 and 232)
- **anemia** in people who do not get enough iron (p. 124)
- **goiter** from lack of iodine (p. 130)

For more information about health problems related to nutrition, see ***Helping Health Workers Learn,*** Chapter 25, and ***Disabled Village Children,*** Chapters 13 and 30.

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This mother and 2-year-old child are from a family that does not earn enough money to buy nutritious food. The mother ate mostly maize. The patches on the mother's arms are a sign of pellagra, a type of malnutrition.

The child was fed maize porridge and was not breastfed. As a result, he is severely malnourished. He is very small and thin with a swollen belly, his hair is thin, and his physical and mental development are delayed. To prevent this, families need more access to nutritious foods.

WAYS OF EATING BETTER WHEN YOU DO NOT HAVE MUCH MONEY OR LAND



There are many reasons for hunger and poor nutrition. One main reason is poverty. In many parts of the world a few people own most of the wealth and the land. They may grow crops like coffee or tobacco, which they sell to make money, but which have no food value. Or the poor may farm small plots of borrowed land, while the owners take a big share of the harvest. **The problem of hunger and poor nutrition will never be completely solved until people learn to share with each other fairly.**

But there are many things people can do to eat better at low cost—and by eating well gain strength to stand up for their rights. On pages w13 and w14 of "Words to the Village Health Worker" are several suggestions for increasing food production. These include improved use of land through **rotating crops, contour ditches,** and **irrigation;** also ideas for **breeding fish, beekeeping, grain storage,** and **family gardens.** If the whole village or a group of families works together on some of these things, a lot can be done to improve nutrition.

When considering the question of food and land, it is important to remember that a given amount of land can feed only a certain number of persons. For this reason, some people argue that "the small family lives better." However, for many poor families, to have many children is an economic necessity. By the time they are 10 or 12 years old, children of poor families often produce more than they cost. Having a lot of children increases the chance that parents will receive the help and care they need in old age.

In short, lack of social and economic security creates the need for parents to have many children. Therefore, the answer to gaining a balance between people and land does not lie in telling poor people to have small families. It lies in redistributing the land more fairly, paying fair wages, and taking other steps to overcome poverty. Only then can people afford small families and hope to achieve a lasting balance between people and land. (For a discussion of health, food, and social problems, see *Helping Health Workers Learn*.)

When money is limited, it is important to use it wisely. This means cooperation and looking ahead. Too often the father of a poor family will spend the little bit of money he has on alcohol and tobacco rather than on buying nutritious food, a hen to lay eggs, or something to improve the family's health. Men who drink together would do well to get together sometime when they are sober, to discuss these problems and look for a healthy solution.

Also, some parents buy sweets or soft drinks (fizzy drinks) for their children when they could spend the same money buying eggs, milk, nuts or other nutritious foods. This way their children could become more healthy for the same amount of money. Discuss this with the families and look for solutions.

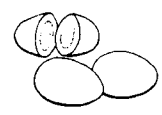
NO



IF YOU HAVE A LITTLE MONEY
AND WANT TO HELP YOUR CHILD GROW STRONG:

DO NOT BUY HIM A SOFT DRINK OR SWEETS—
BUY HIM 2 EGGS OR A HANDFUL OF NUTS.

YES



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Better Foods at Low Cost

Many of the world's people eat a lot of bulky, starchy foods, without adding enough helper foods to provide the extra energy, body building, and protection they need. This is partly because many helper foods are expensive—especially those that come from animals, like milk and meat.

Most people cannot afford much food from animals. Animals require more land for the amount of food they provide. A poor family can usually be better nourished if they **grow or buy plant foods like beans, peas, lentils, and groundnuts together with a main food such as maize or rice, rather than buy costly animal foods like meat and fish.**

People can be strong and healthy
when most of their proteins and other helper foods come from plants.

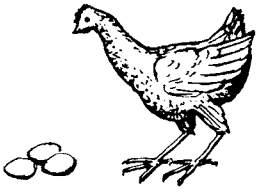
However, where family finances and local customs permit, it is wise to eat, when possible, some food that comes from animals. This is because even plants high in protein (body-building helpers) often do not have all of the different proteins the body needs.

Try to **eat a variety of plant foods.** Different plants supply the body with different proteins, vitamins, and minerals. For example, beans and maize together meet the body's needs much better than either beans or maize alone. And if other vegetables and fruits are added, this is even better.

Here are some suggestions for getting more vitamins, minerals, and proteins at low cost.



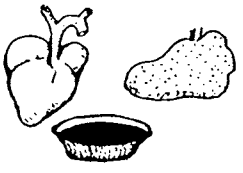
1. **Breast milk.** This is the cheapest, healthiest, and most complete food for a baby. The mother can eat plenty of plant foods and turn them into the perfect baby food—breast milk. Breastfeeding is not only best for the baby, it saves money and prevents diseases!



2. **Eggs and chicken.** In many places eggs are one of the cheapest and best forms of animal protein. They can be cooked and mixed with foods given to babies who cannot get breast milk. Or they can be given along with breast milk as the baby grows older.

Eggshells that are boiled, finely ground, and mixed with food can provide needed calcium for pregnant women who develop sore, loose teeth or muscle cramps.

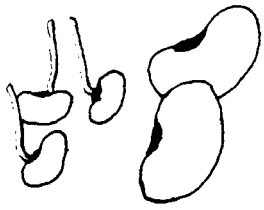
Chicken is a good, often fairly cheap form of animal protein—especially if the family raises its own chickens.



3. **Liver, heart, kidney, and blood.** These are especially high in protein, vitamins, and iron (for anemia) and are often cheaper than other meat. Also **fish** is often cheaper than other meat, and is just as nutritious.

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4. **Beans, peas, lentils, and other legumes** are a good cheap source of protein. If allowed to sprout before cooking and eating, they are higher in vitamins. Baby food can be made from beans by cooking them well, and then straining them through a sieve, or by peeling off their skins, and mashing them.

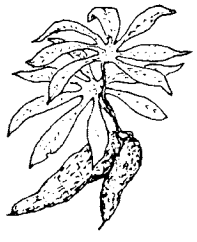


Beans, peas, and other legumes are not only a low-cost form of protein. Growing these crops makes the soil richer so that other crops will grow better afterwards. For this reason, crop rotation and mixed crops are a good idea (p. w13).



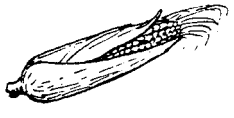
5. **Dark green leafy vegetables** have some iron, a lot of vitamin A, and some protein. The leaves of sweet potatoes, beans and peas, pumpkins and squash, and baobab are especially nutritious. They can be dried, powdered, and mixed with babies' gruel.

Note: Light green vegetables like cabbage and lettuce have less nutritional value. It is better to grow ones with dark colored leaves.



6. **Cassava (manioc) leaves** contain 7 times as much protein and more vitamins than the root. If eaten together with the root, they add food value—at no additional cost. The young leaves are best.

7. **Lime soaked maize (corn).** When soaked in lime (cal) before cooking, as is the custom in much of Latin America, maize is richer in calcium. Soaking in lime also allows more of the vitamins (niacin) and protein to be used by the body.

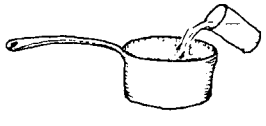


8. **Rice, wheat, and other grains** are more nutritious if their outer skins are not removed during milling. Moderately milled rice and whole wheat contain more proteins, vitamins, and minerals than the white, over milled product.

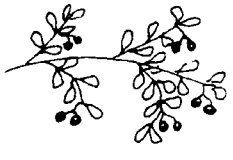


NOTE: The protein in wheat, rice, maize, and other grains can be better used by the body when they are eaten with beans or lentils.

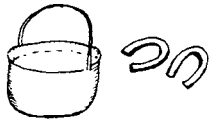
9. **Cook vegetables, rice, and other foods in little water.** And do not overcook. This way fewer vitamins and proteins are lost. Be sure to drink the leftover water, or use it for soups or in other foods.



10. Many **wild fruits and berries** are rich in vitamin C as well as natural sugars. They provide extra vitamins and energy. (Be careful not to eat berries or fruit that are poisonous.)



11. **Cooking in iron pots** or putting a piece of old iron or horseshoe in the pan when cooking beans and other foods adds iron to food and helps prevent anemia. More iron will be available if you also add tomatoes.

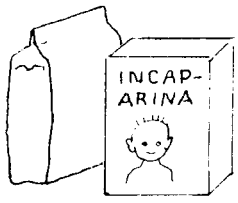


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For another source of iron, put some iron nails in a little lemon juice for a few hours. Then make lemonade with the juice and drink it.

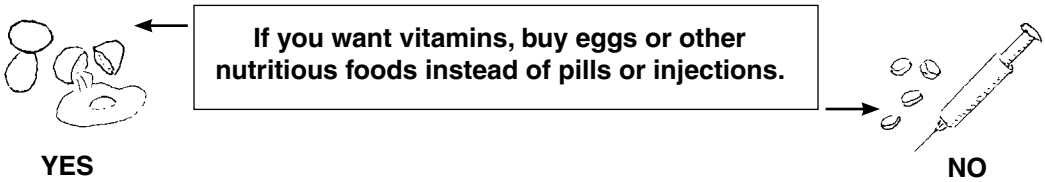


12. In some countries, **low-cost baby food preparations** are available, made from different combinations of soybean, cotton seed, skim milk, or dried fish. Some taste better than others, but most are well balanced foods. When mixed with gruel, cooked cereal, or other baby food, they add to its nutrition content at low cost.



WHERE TO GET VITAMINS: IN PILLS, INJECTIONS, SYRUPS—OR IN FOODS?

Anyone who eats a good mixture of foods, including vegetables and fruits, gets all the vitamins he needs. It is always better to eat well than to buy vitamin pills, injections, syrups, or tonics.



Sometimes nutritious foods are scarce. If a person is already poorly nourished, or has a serious illness like HIV, he should eat as well as he can and perhaps take vitamins besides.

Vitamins taken by mouth work as well as injections, cost less, and are not as dangerous. **Do not inject vitamins! It is better to swallow them—preferably in the form of nutritious foods.**

If you buy vitamin preparations, be sure they have all these vitamins and minerals:

- Niacin (niacinamide)
- Vitamin B_1 (thiamine)
- Vitamin B_2 (riboflavin)
- Iron (ferrous sulfate, etc.)—especially for pregnant women. (For people with anemia, multi-vitamin pills do not have enough iron to help much. Iron pills are more helpful.)

In addition, certain people need extra:

- Folic Acid (folicin), for pregnant women
- Vitamin A
- Vitamin C (ascorbic acid)
- Vitamin D

(for small children)

- Iodine (in areas where goiter is common)
- Vitamin B6 (pyridoxine), for small children and persons taking medicine for tuberculosis
- Calcium, for children and breastfeeding mothers who do not get enough calcium in foods such as milk, cheese, or foods prepared with lime

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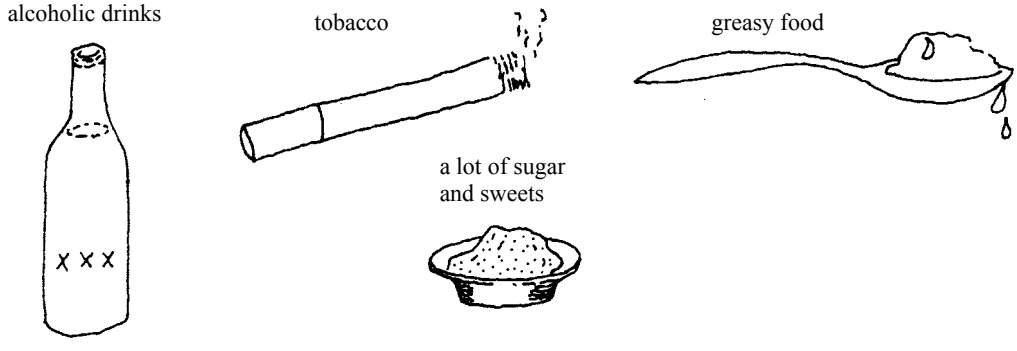
THINGS TO AVOID IN OUR DIET

A lot of people believe that there are many kinds of foods that will hurt them, or that they should not eat when they are sick. They may think of some kinds of foods as "hot" and others as "cold," and not permit hot foods for "hot" sicknesses or cold foods for "cold" sicknesses. Or they may believe that many different foods are bad for a mother with a newborn child. Some of these beliefs are reasonable but others do more harm than good. Often the foods people think they should avoid when they are sick are the very foods they need to get well.

A sick person has even greater need for plenty of nutritious food than a healthy person. We should worry less about foods that might harm a sick person and think more about foods that help make him healthy—for example: high energy foods together with fruit, vegetables, legumes, nuts, milk, meat, eggs, and fish. As a general rule:

The same foods that are good for us when we are healthy are good for us when we are sick.

Also, the things that harm us when we are healthy do us even more harm when we are sick. Avoid these things:



- Alcohol causes or makes worse diseases of the liver, stomach, heart, and nerves. It also causes social problems.
- Smoking can cause chronic (long-term) coughing or lung cancer and other problems (p. 149). Smoking is especially bad for people with lung diseases like tuberculosis, asthma, and bronchitis.
- Too much greasy food can make stomach ulcers and other problems of the digestive tract worse.
- Too much sugar and sweets spoil the appetite and rot the teeth. However, some sugar with other foods may help give needed energy to a sick person or poorly nourished child.

A few diseases require not eating certain other foods. For example, people with high blood pressure, certain heart problems, or swollen feet should use little or no salt. Too much salt is not good for anyone. Stomach ulcers and diabetes also require special diets (pages 127 and 128).

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THE BEST DIET FOR SMALL CHILDREN



THE FIRST 6 MONTHS OF LIFE

For the first 6 months give the baby breast milk and nothing else. It is better than any baby food or milks you can buy. Breast milk helps protect the baby against diarrhea and many infections. It is best not to give extra water or teas, even in hot weather.

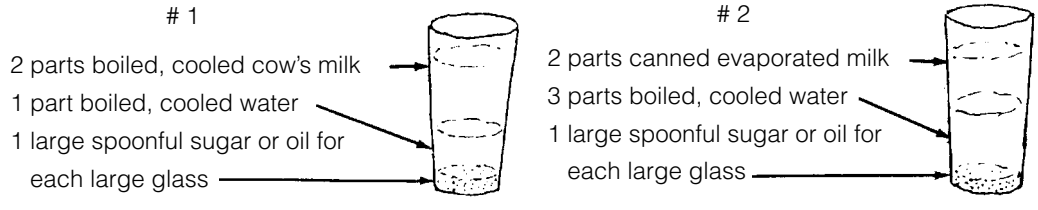
Some mothers stop breastfeeding early because they think that their milk is not good enough for their baby, or that their breasts are not making enough milk. **However, breast milk is always very nutritious for a baby, even if the mother herself is thin and weak.**

If a woman has HIV, sometimes she can pass HIV to a baby in her breast milk. But if she does not have access to clean water, her baby is more likely to die from diarrhea, dehydration, and malnutrition than AIDS. A woman who is being treated with HIV medicines is unlikely to pass the disease while breastfeeding. But only you can evaluate the conditions in your home and community and decide what to do.

Nearly all mothers can produce all the breast milk their babies need:

- The best way for a mother to keep making enough breast milk is to breastfeed the baby often, eat well, and drink lots of liquids.
- Do not give the baby other foods before he is 6 months old, and always breastfeed before giving the other foods.
- If a mother's breasts produce little or no milk, she should continue to eat well, drink lots of liquids and let the baby suck her breasts often. After each breastfeeding, give the baby, by cup (not bottle), some other type of milk—like boiled cow's or goat's milk, canned milk, or powdered milk. (Do not use sweetened condensed milk.) Add a little sugar or vegetable oil to any of these milks.

Note: Whatever type of milk is used, some cooled, boiled water should be added. Here are two examples of correct formulas:



If non–fat milk is used, add another spoonful of oil.

- If possible, boil the milk and water. **It is safer to feed the baby with a cup (or cup and spoon) than to use a baby bottle.** Baby bottles and nipples are hard to keep clean and can cause infections and diarrhea (p. 154). If a bottle is used, boil it and the nipple each time before the baby is fed.
- If you cannot buy milk for the child, make a porridge from rice, cornmeal, or other cereal. Always add to this some skinned beans, eggs, meat, chicken, or other protein. Mash these well and give them as a liquid. If possible add sugar and oil.

WARNING: **Cornmeal or rice water alone is not enough for a baby. The child will not grow well. He will get sick easily and may die. The baby needs a main food with added helper foods.**

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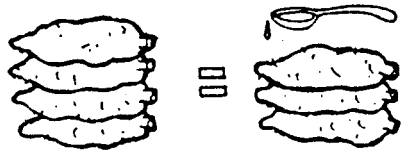
FROM 6 MONTHS TO 1 YEAR OF AGE:

1. **Keep giving breast milk**, if possible until the baby is 2 or 3 years old.

2. When the baby is 6 months old, **start giving her other foods in addition to breast milk.** Always give the breast first, and then the other foods. It is good to start with a gruel or porridge made from the main food (p. 111) such as maize meal or rice cooked in water or milk. Then start adding a little **cooking oil** for extra energy. After a few days, start adding **other helper foods** (p. 110). But **start with just a little of the new food,** and **add only 1 at time** or the baby may have trouble digesting them. These **new foods need to be well cooked and mashed.** At first they can be mixed with a little breast milk to make them easier for the baby to swallow.

3. Prepare inexpensive, nutritious feedings for the baby by adding helper foods to the main food (p. 110). Most important is to add foods that give extra energy (such as oil) and—whenever possible—extra iron (such as dark green leafy vegetables).

Remember, a young child's stomach is small and cannot hold much food at one time. So **feed her often,** and **add high-energy helpers** to the main food:



A spoonful of cooking oil added to a child's food means he has to eat only ¾ as much of the local main food in order to meet his energy needs. The added oil helps make sure he gets enough energy (calories) by the time his belly is full.

CAUTION: The time when a child is most likely to become malnourished is from 6 months to 2 years old. This is because breast milk by itself does not provide enough energy for a baby after 6 months of age. Other foods are needed, but often the foods given do not contain enough energy either. If the mother also stops breastfeeding, the child is even more likely to become malnourished.

For a child of this age to be healthy we should:

- keep feeding her breast milk as much as before.
- feed her other nutritious foods also, always starting with just a little.
- feed her at least 5 times a day and also give her snacks between meals.
- make sure the food is clean and freshly prepared.
- filter, boil, or purify the water she drinks.
- keep the child and her surroundings clean.
- when she gets sick, feed her extra well and more often, and give her plenty of liquids to drink.



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ONE YEAR AND OLDER:

After a child is 1 year old, he can eat **the same foods as adults**, but should **continue to breastfeed** (or drink milk whenever possible).

Every day, try to give the child plenty of the main food that people eat, together with helper foods that give added high energy, proteins, vitamins, iron, and minerals (as shown on p. 111) so that he will grow up strong and healthy.

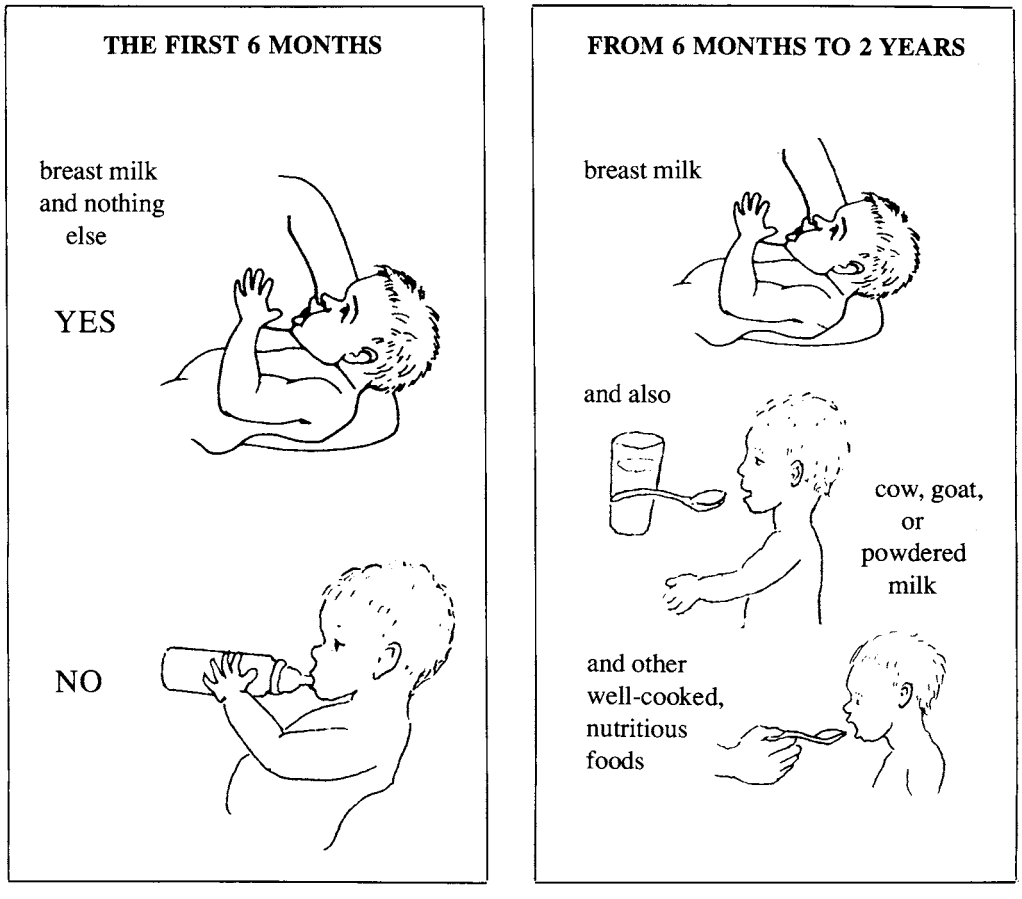
To make sure that the child gets enough to eat, **serve him in his own dish**, and let him take as long as he needs to eat his meal.

For mothers infected with HIV: After 12 months, your baby will be bigger and stronger, and will have less danger of dying from diarrhea. If you have been breastfeeding her but have enough food for her, you can now switch to other milks and feed the baby other foods. This way the baby will have less risk of getting HIV.

Children and candy: Do not accustom small children to eating a lot of candy and sweets or drinking soft drinks (colas). When they have too many sweets, they no longer want enough of the other foods they need. Also, sweets are bad for their teeth.

However, when food supply is limited or when the main foods have a lot of water or fiber in them, adding a little sugar and vegetable oil to the main food provides extra energy and allows children to make fuller use of the protein in the food they get.

THE BEST DIET FOR SMALL CHILDREN



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HARMFUL IDEAS ABOUT DIET

1. **The diet of mothers after giving birth:**

In many areas there is a dangerous popular belief that a woman who has just had a baby should not eat certain foods. This folk diet—which forbids some of the most nutritious foods and may only let the new mother eat things like cornmeal, noodles, or rice soup—makes her weak and anemic. It may even cause her death, by lowering her resistance to hemorrhage (bleeding) and infection.

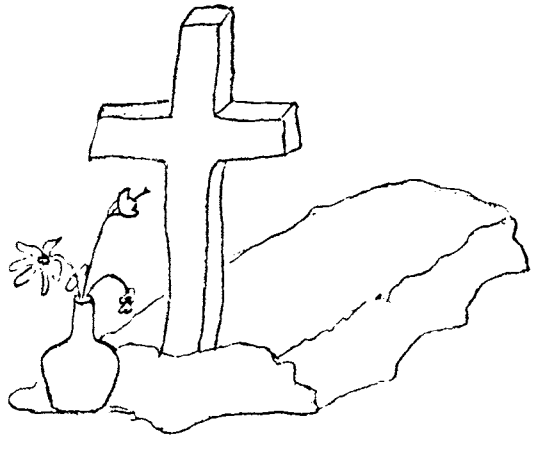
After giving birth a mother needs to eat the most nutritious foods she can get.

In order to fight infections or bleeding and to produce enough milk for her child, **a new mother should eat the main food together with plenty of body building foods like beans, eggs, chicken, and if possible, milk products, meat, and fish.** She also needs protective foods like fruits and vegetables, and high energy helpers (oils and fatty foods). None of these foods will harm her; they will protect her and make her stronger.

Here is a healthy mother who ate many kinds of nutritious foods after giving birth:



Here lies a mother who was not given nutritious foods after giving birth:



2. **It is not true that oranges, guavas, or other fruits are bad for a person who has a cold, the flu, or cough.** In fact, fruits like oranges and tomatoes have a lot of vitamin C, which may help fight colds and other infections.

3. **It is not true that certain foods like pork, spices, or guavas cannot be eaten while taking medicine.** However, when a person has a disease of the stomach or other parts of the digestive system, eating a lot of fat or greasy foods may make this worse whether or not one is taking medicines.

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SPECIAL DIETS FOR SPECIFIC HEALTH PROBLEMS

Anemia

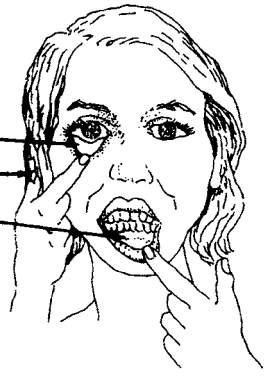
A person with anemia has thin blood. This happens when blood is lost or destroyed faster than the body can replace it. Blood loss from large wounds, bleeding ulcers, or dysentery can cause anemia. So can malaria, which destroys red blood cells. Not eating enough foods rich in iron can cause anemia or make it worse.

Women can become anemic from blood loss during monthly bleeding (menstrual periods) or birth if they do not eat the foods their bodies need. Pregnant women are at risk of becoming severely anemic, because they need to make extra blood for their growing babies.

In children anemia can come from not eating foods rich in iron. It can also come from not starting to give some foods in addition to breast milk, after the baby is 6 months old. Common causes of severe anemia in children are hookworm infection (p. 142), chronic diarrhea, and dysentery.

The signs of anemia are:

- pale or transparent skin
- pale insides of eyelids
- white fingernails
- pale gums
- weakness and fatigue



- If the anemia is very severe, face and feet may be swollen, the heartbeat rapid, and the person may have shortness of breath.
- Children and women who like to eat dirt are usually anemic.

Treatment and prevention of anemia:

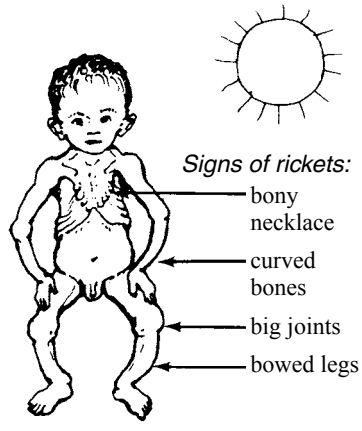
- **Eat foods rich in iron.** Meat, fish, and chicken are high in iron. Liver is especially high. Dark green leafy vegetables, beans, peas, and lentils also have some iron. It also helps to cook in iron pots (p. 117). To help the body absorb more iron, eat raw vegetables and fruit with meals, and avoid drinking coffee and tea with food.
- If the anemia is moderate or severe, the person should take iron (ferrous sulfate pills, p. 394). This is especially important for pregnant women who are anemic. For nearly all cases of anemia, ferrous sulfate tablets are much better than liver extract or vitamin B_{12}. As a general rule, **iron should be given by mouth, not injected,** because iron injections can be dangerous and are no better than pills.
- If the anemia is caused by dysentery (diarrhea with blood), hookworm, malaria, or another disease, this should also be treated.
- If the anemia is severe or does not get better, seek medical help. This is especially important for a pregnant woman.

Many women are anemic. Anemic women run a greater risk of miscarriage and of dangerous bleeding during birth. **It is very important that women eat foods high in iron,** especially during pregnancy. Allowing 2 to 3 years between pregnancies lets the woman regain strength (see Chapter 20).

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Rickets

Rickets is a weakness and deformity of the bones that happens to children. If they do not get enough food with vitamin D, are not often in sunlight, or are born to people who didn't get enough vitamin D during pregnancy, children may develop rickets. Prevent rickets by eating foods with vitamin D, like whole milk, egg yolks, animal fats, and fish liver oil. If foods with vitamin D are not available, vitamin D supplements can be given during pregnancy and breastfeeding, and during the first 6 months of a baby's life. It is also helpful to spend time in sunlight. For more information about preventing and treating rickets in children, see Chapter 13 of ***Disabled Village Children.***



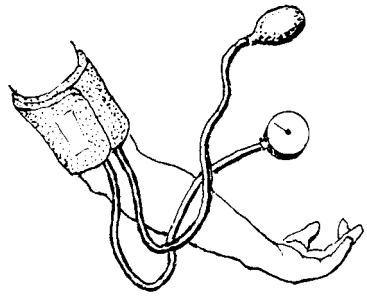
High Blood Pressure (Hypertension)

High blood pressure can cause many problems, such as heart disease, kidney disease, and stroke.

Signs of dangerously high blood pressure:

- frequent headaches
- pounding of the heart and shortness of breath with mild exercise
- weakness and dizziness
- occasional pain in the left shoulder and chest

All these problems may also be caused by other diseases. Therefore, if a person suspects he has high blood pressure, he should see a health worker and have his blood pressure measured.



A BLOOD PRESSURE CUFF for measuring blood pressure

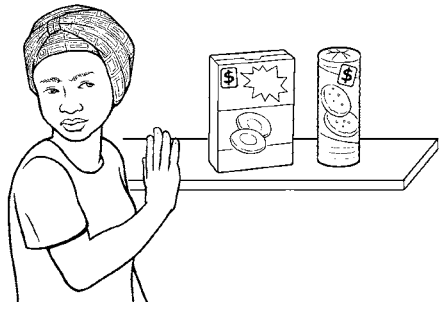
WARNING: High blood pressure at first causes no signs, and it should be lowered **before** danger signs develop. People who suspect they might have high blood pressure should have their blood pressure checked regularly. For instructions on measuring blood pressure, see pages 412 and 413.

To prevent or care for high blood pressure:

- ♦ exercise.
- ♦ avoid fatty meats and foods with a lot of sugars, carbohydrates, and salt (sodium). Use vegetable oils instead of animal fats.
- ♦ prepare and eat food with little or no salt.
- ♦ do not smoke or drink much alcohol.
- ♦ see a health worker about medicines for very high blood pressure.

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People Who Eat Too Much "Junk" Food



As our lives change and our work prevents us from having the time to prepare healthy meals, the foods we eat change. Traditional foods are being replaced by processed foods, especially "junk foods," which can be cheap, easy, and fast. People who eat a lot of these foods are more likely to have high blood pressure, heart disease, strokes, gallstones, diabetes, and some cancers. To care for your health:

- Eat healthy foods that are fast and easy, like fruits, nuts, seeds, cheese, and cooked or raw vegetables instead of "junk" foods.
- Drink water, unsweetened juices, and teas instead of sweetened juices and sodas.
- Share the work of planning and preparing meals with your family to save time.
- If it is difficult to get healthy foods because of cost or availability, see pages 116 and 117 for ways to eat healthier for less money.

Constipation

A person who has hard stools and has not had a bowel movement for 3 or more days is said to be constipated. Constipation is often caused by a poor diet (especially not eating enough fruits, green vegetables, or foods with natural fiber like whole grain bread) or by lack of exercise.

Drinking more water and eating more fruits, vegetables, and foods with natural fiber like whole grain bread, cassava, wheat bran, rye, carrots, turnips, raisins, nuts, pumpkin or sunflower seeds, is better than using laxatives. It also helps to add a little vegetable oil to food each day. Older people especially may need to walk or exercise more in order to have regular bowel movements.

A person who has not had a bowel movement for 4 or more days, if he does not have a sharp pain in his stomach, can take a mild salt laxative like milk of magnesia. **But do not take laxatives often.**

Do not give laxatives to babies or young children. If a baby is severely constipated, gently put a little cooking oil in her rectum. Or, if necessary, gently break up and remove the hard stool (feces) with a greased finger.

Never use strong laxatives or purgatives—especially if there is stomach pain.

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Diabetes

Persons with diabetes have too much sugar in their blood. This problem can start when a person is young (Type 1 diabetes) or older (Type 2 diabetes). Type 1 diabetes is usually more serious, and young people need a medicine called insulin to control it. But most people with diabetes have Type 2, starting after age 40.

Early signs of diabetes:

- always thirsty
- urinates (pees) often and a lot
- always tired
- always hungry
- weight loss

Later, more serious signs:

- itchy skin
- periods of blurry eyesight
- some loss of feeling in hands or feet
- frequent vaginal infections
- sores on the feet that do not heal
- loss of consciousness (in extreme cases)

All these signs may be caused by other diseases. In order to find out whether a person has diabetes, test her urine to see if there is sugar in it. One way to test the urine is to taste it. If it tastes sweet to you, have 2 other persons taste it. Have them also taste the urine of 3 other people. If everyone agrees that the same person's urine is sweeter, she is probably diabetic.

Another way of testing urine is to use special paper strips (for example, ***Uristix).*** If these change color when dipped in the urine, it has sugar in it.

If the person is a child or young adult, he should be seen by an experienced health worker or doctor.

Before diabetes becomes serious, it often can be controlled without medicines — by eating carefully and getting plenty of exercise. **The diet for a person with diabetes is very important and must be followed for life.** This is true for people taking diabetes medicines as well.

The diabetic diet: People with diabetes should eat lots of fresh vegetables and high fiber foods. They should eat less of starchy foods, like rice, wheat flour, and potatoes; among starchy foods, whole grains, brown rice, and beans are better choices. Foods high in protein are good for people with diabetes. **But the worst foods for diabetes, ones that you should try to remove from your diet completely, are sugary drinks and junk foods, such as chips, crisps, cakes and candies.**

Diabetes in adults can sometimes be helped by drinking the sap of the prickly pear cactus (nopal, ***Opuntia***). To prepare, cut the cactus into small pieces and crush them to squeeze out the liquid. Drink 1 ½ cups of the liquid 3 times each day before meals.

To prevent infection and injury to the skin, clean the teeth after eating, keep the skin clean, and always wear shoes to prevent foot injuries. For poor circulation in the feet (dark color, numbness), rest often with the feet up. Follow the same recommendations as for varicose veins (p. 175).

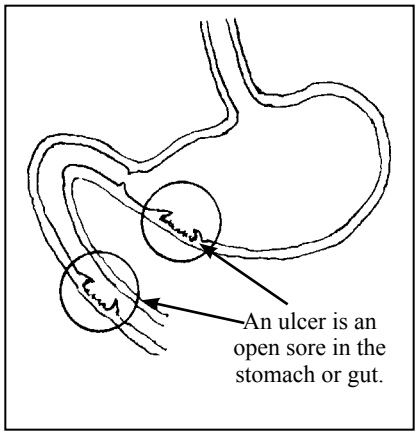
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Acid Indigestion, Heartburn, and Stomach Ulcers

Acid indigestion and heartburn often come from eating too much heavy or greasy food or from drinking too much alcohol. These make the stomach produce extra acid, which causes discomfort or a burning feeling in the stomach or mid chest. Some people mistake the chest pain, called "heartburn," for a heart problem rather than indigestion. If the pain gets worse when lying down, it is probably heartburn.

Frequent or lasting acid indigestion is a warning sign of an ulcer.

An ulcer is a chronic sore in the digestive system, usually caused by bacteria. Too much acid in the stomach prevents it from healing. It may cause a chronic, dull (sometimes sharp) pain in the pit of the stomach. As with acid indigestion, often the pain lessens when the person eats food or drinks a lot of water. The pain usually gets worse an hour or more after eating, if the person misses a meal, or after he drinks alcohol or eats fatty or spicy foods. Pain is often worse at night. Without a special examination (endoscopy) it is often hard to know whether a person with frequent stomach pain has an ulcer or not.



If the ulcer is severe, it can cause vomiting, sometimes with fresh blood, or with digested blood that looks like coffee grounds. Stools with blood from an ulcer are usually black, like tar.

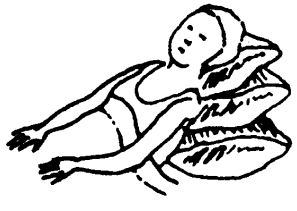
WARNING: Some ulcers are painless or "silent," and the first sign is **blood in vomit, or black, sticky stools.** This is a medical emergency. The person can quickly bleed to death. GET MEDICAL HELP FAST.

Prevention and Treatment:

Whether stomach or chest pain is caused by heartburn, acid indigestion, or an ulcer, a few basic recommendations will probably help calm the pain and prevent it from coming back.

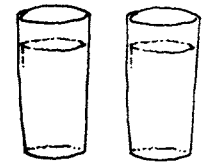
- **Do not eat too much.** Eat small meals and eat frequent snacks between meals.

- **Notice what foods or drinks make the pain worse and avoid them.** These usually include alcoholic drinks, spices, pepper, sugary drinks (soda, pop, colas), and fatty or greasy foods.



- If the heartburn is worse at night when lying flat, try sleeping with the upper body somewhat raised.

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♦ **Drink a lot of water.** Try to drink 2 big glasses of water both before and after each meal. Also drink a lot of water frequently between meals. If the pain comes often, keep drinking water like this, even in those times when you have no pain.



♦ **Avoid tobacco.** Smoking or chewing tobacco increases stomach acid and makes the problem worse.

♦ **Take antacids.** The best, safest antacids contain magnesium and aluminum hydroxide. See page 382 for information, dose, and warnings about different antacids.

♦ If the above treatments do not work, you may have an ulcer. Use 2 medicines to treat the bacteria that causes the ulcer: either amoxicillin (p. 352) or tetracycline (p. 355) and metronidazole (p. 370). Also take omeprazole (*Prilosec*, p. 382) or ranitidine (*Zantac*, p. 382) to reduce the production of acid in the stomach. These medicines help to calm the pain and heal the sore.



♦ **Aloe vera** is a plant found in many countries that is said to heal ulcers. Chop the spongy leaves into small pieces, soak them in water overnight, and then drink one glass of the slimy, bitter water every 2 hours.

CAUTION:

1. Some antacids, such as **sodium bicarbonate** (baking soda) and *Alka-Seltzer* may quickly calm acid indigestion, but soon cause more acid. They should be used only for occasional indigestion, never for ulcers. This is also true for antacids with calcium.

2. Some **medicines,** such as aspirin and ibuprofen, make ulcers worse. Persons with signs of heartburn or acid indigestion should avoid them—use acetaminophen instead of aspirin. Corticosteroids also make ulcers worse (p. 51).

It is important to **treat an ulcer early.** Otherwise it may lead to dangerous bleeding or peritonitis. Ulcers sometimes get better if the person is careful with what he eats and drinks. Anger, tension, and nervousness increase acid in the stomach. Learning to relax and keep calm will help. Treatment with antibiotics is necessary to prevent the ulcer from returning.

Avoid having minor stomach problems get worse by not eating too much, by not drinking much alcohol, by avoiding sweet sodas and junk foods, and by not smoking or using tobacco.

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Goiter (a Swelling or Lump on the Throat)

A goiter is a swelling or big lump on the throat that results from abnormal growth of a gland called the thyroid.

Most goiters are caused by a lack of iodine in the diet. Also, a lack of iodine in a pregnant woman's diet sometimes causes babies to die or to be born with cognitive delay and/or hearing loss (hypothyroidism, p. 318). This can happen even though the mother does not have a goiter.

Goiter and hypothyroidism are most common in mountain areas where there is little natural iodine in the soil, water, or food. In these areas, eating a lot of certain foods like cassava makes it more likely for a person to get a goiter.

How to prevent or cure a goiter and prevent hypothyroidism:

Everyone living in areas where people get goiters should use **iodized salt**. Use of iodized salt prevents the common kind of goiter and will help many goiters go away. (Old, hard goiters can only be removed by surgery, but this is usually not necessary.)

If it is not possible to get iodized salt, it may be possible to get iodine oil to take by mouth. Or, mix 1 drop of povidone iodine in 1 liter of water and drink a glass of the mixture every week.

Most home cures for goiter do not do any good. However, eating crab and other seafood can do some good because they contain iodine. Mixing a little seaweed with food also adds iodine. But the easiest way is to use **iodized salt.**

HOW TO KEEP FROM GETTING A GOITER

NEVER use regular salt.



IODIZED SALT
costs only a little more
than other salt and
is much better.

ALWAYS use iodized salt.



Also, if you live in an area where goiters are common, or you are beginning to develop a goiter, try to avoid eating much cassava or cabbage.

Note: If a person with a goiter trembles a lot, is very nervous, and has eyes that bulge out, this may be a different kind of goiter (toxic goiter). Seek medical advice.

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Prevention: How to Avoid Many Sicknesses

CHAPTER 12

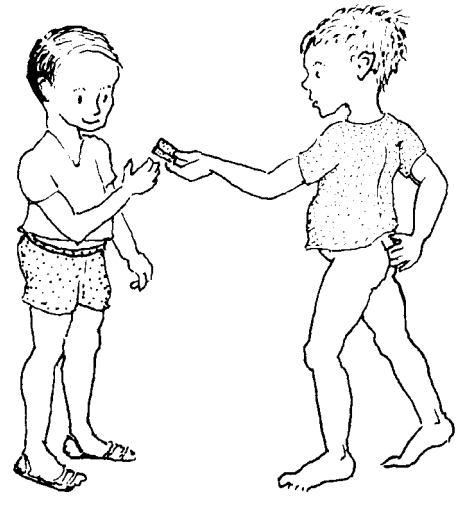
An ounce of prevention is worth a pound of cure! If we all took more care to **eat well,** to **keep ourselves, our homes, and our villages clean,** and to **be sure that our children are vaccinated,** we could stop most sicknesses before they start. In Chapter 11 we discussed eating well. In this chapter we talk about cleanliness and vaccination.

CLEANLINESS—AND PROBLEMS THAT COME FROM LACK OF CLEANLINESS

Cleanliness is of great importance in the prevention of many kinds of infections—infections of the gut, the skin, the eyes, the lungs, and the whole body. Personal cleanliness (or ***hygiene***) and community cleanliness (or ***sanitation***) are both important.

Many common infections of the gut are spread from one person to another because of poor hygiene and poor sanitation. Germs and worms (or their eggs) are passed by the thousands in the ***stools*** or ***feces*** (shit) of infected persons. These are carried from the feces of one person to the mouth of another by dirty fingers or ***contaminated*** food or water. Diseases that are spread or ***transmitted*** from ***feces-to-mouth*** in this way, include:

- diarrhea and dysentery (caused by amebas and bacteria)
- intestinal worms (several types)
- hepatitis, typhoid fever, and cholera
- certain other diseases, like polio, are sometimes spread this same way



The way these infections are transmitted can be very direct.

For example: A child who has worms and who forgot to wash his hands after his last bowel movement, offers his friend a cracker. His fingers, still dirty with his own stool, are covered with hundreds of tiny worm eggs (so small they cannot be seen). Some of these worm eggs stick to the cracker. When his friend eats the cracker, he swallows the worm eggs, too.

Soon the friend will also have worms. His mother may say this is because he ate sweets. But no, it is because he ate shit!

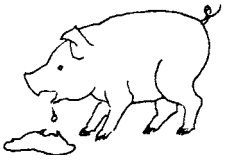
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Many times pigs, dogs, chickens, and other animals spread intestinal disease and worm eggs. For example:

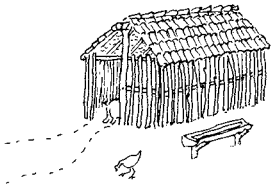
A man with diarrhea caused by worms passes stool behind his house.



A pig eats his stool, dirtying its nose and feet.



Then the pig goes into the house.



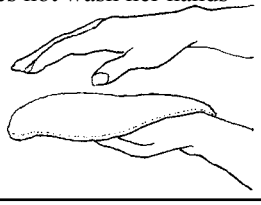
In the house a child is playing on the floor. In this way, a bit of the man's stool gets on the child, too.



Later the child starts to cry, and the mother takes him in her arms.



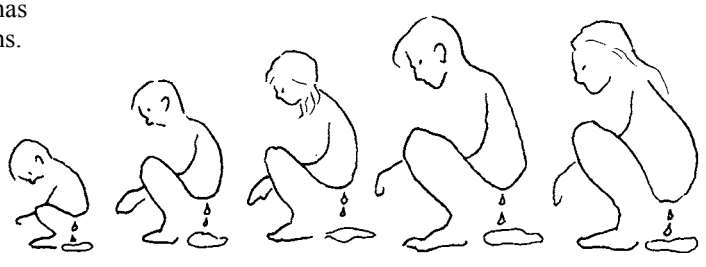
Then the mother prepares food for the family. Because the community water pump is broken and it is the dry season, she does not wash her hands first.



The family eats the food.



Soon, the whole family has diarrhea caused by worms.



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Many kinds of infections, as well as worm eggs, are passed from one person to another in the way just shown.

The family's illness could have been prevented if:

- there was a latrine or a toilet the family could use.
- animals were kept away from where the family lives and children play.
- there was clean water for washing hands, especially before touching other people or preparing food.

There are many things a community can do to improve sanitation and avoid diarrhea, worms, and other illnesses caused by intestinal parasites. If many children die from diarrhea, it is likely that children also need more and better food. To prevent death from diarrhea (p. 154), both cleanliness and good nutrition are important.

BASIC GUIDELINES OF CLEANLINESS

Personal Cleanliness (Hygiene)



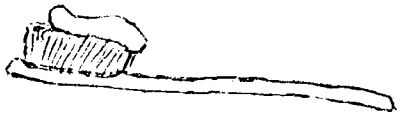
1. Always wash your hands with soap when you get up in the morning, after having a bowel movement, and before cooking or eating.



2. Bathe often every day when the weather is hot. Bathe after working hard or sweating. Frequent bathing helps prevent skin infections, dandruff, pimples, itching, and rashes. Sick persons, including babies, should be bathed daily.

3. In areas where hookworm is common, do not go barefoot or allow children to do so. Hookworm infection causes severe anemia. These worms enter the body through the soles of the feet (p. 142).

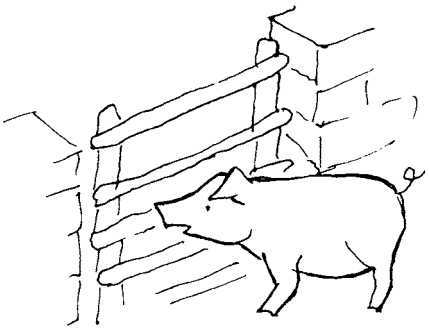




4. Brush your teeth every day and after each time you eat sweets. If you do not have a toothbrush and toothpaste, rub your teeth with salt and baking soda (p. 230). For more information about the care of teeth, see Chapter 17.

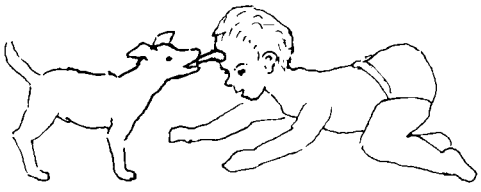
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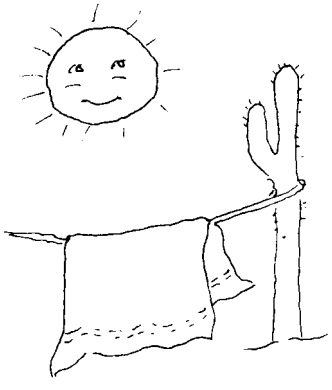
Cleanliness in the Home



1. Do not let pigs or other animals come into the house or places where children play.

2. Do not let dogs lick children or climb up on beds. Dogs, too, can spread disease.





3. If children or animals have a bowel movement near the house, clean it up at once. Teach children to use a latrine or at least to go away from houses, wells, springs, rivers, and streams.



4. Hang or spread sheets and blankets in the sun often. If there are bedbugs, pour boiling water on the cots and wash the sheets and blankets—all on the same day (p. 200).

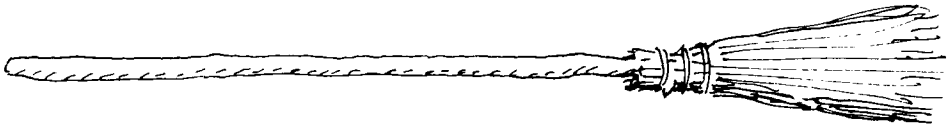
5. Fleas carry many diseases. Dogs and other animals that carry fleas should not come into the house.





6. Do not spit on the floor. Spit can spread disease. When you cough or sneeze, cover your your mouth and nose with the inner part of your elbow, or a cloth or handkerchief.

7. Clean house often. Sweep and wash the floors, walls, and beneath furniture. Fill in cracks and holes in the floor or walls where roaches, bedbugs, and scorpions can hide.

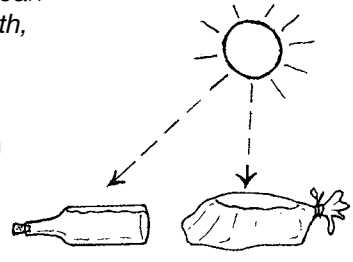


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Cleanliness in Eating and Drinking

1. Ideally, all water that does not come from a safe water source should be boiled, filtered, or purified before drinking. This is especially important for small children, people with HIV, and times when there is a lot of diarrhea or cases of typhoid, hepatitis, or cholera. However, for people who struggle to access water, having enough water is more important for preventing disease than having safe water. Also, asking poor families to use a lot of time or money for fire wood to boil drinking water may do more harm than good, especially if it means less food for the children or more destruction of forests. For more information on clean water, see *A Community Guide to Environmental Health,* Chapter 5.

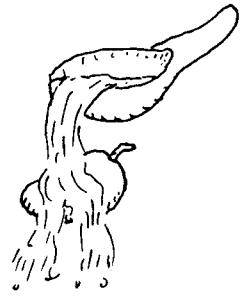
A good, low-cost way to purify water is to put it in a clean, clear bottle or a clear plastic bag and leave it in direct sunlight for at least 6 hours. If it is cloudy, leave the water exposed to sun for at least 2 days. This method will kill most germs in the water.

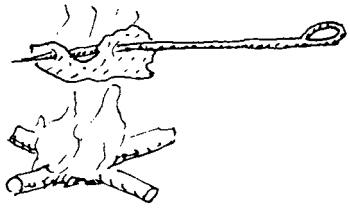




2. Do not let flies or any other insects land or crawl on food. Insects can carry germs and spread disease. Do not leave food scraps or dirty dishes lying around, as these attract flies and breed germs. Protect food by keeping it covered or in boxes or cabinets with wire screens.

3. Before eating fruit that has fallen to the ground, wash it well. Do not let children pick up and eat food that has been dropped on the ground or floor—wash it first.





4. Only eat meat, fish, and poultry that is well cooked. Before eating, make sure that cooked meat, especially pork, does not have raw parts inside. The raw parts can carry dangerous diseases.

5. Chickens carry germs that can cause diarrhea. Wash your hands after preparing chicken before you touch other foods.

6. Do not eat food that is old or smells bad. It may be poisonous. Do not eat canned food if the can is swollen or squirts when opened. Be especially careful with canned fish. Also, be careful with chicken if several hours have passed since it was cooked. Before eating left-over cooked foods, heat them again, very hot. If possible, give only foods that have been freshly prepared, especially to children, the elderly, and very sick people.





7. People with tuberculosis, flu, colds, or other diseases that spread easily should eat separately from others. Plates and utensils used by sick people should be cleaned very well before being used by others.

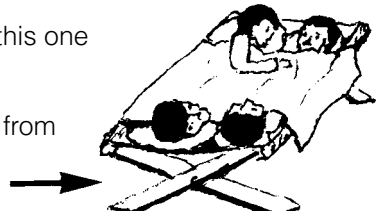
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How to Protect Your Children's Health



1. A sick child like this one

should sleep apart from children who are not sick.

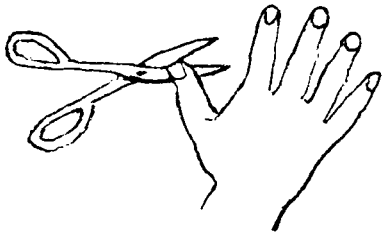


Sick children or children with sores, itchy skin, or lice should always sleep separately from those who do not have them. Children with infectious diseases like whooping cough, measles, or the common cold should sleep in separate rooms, if possible, and should not be allowed near babies or small children.

2. Protect children from tuberculosis. People with long-term coughing or other signs of tuberculosis should cover their mouths whenever they cough. They should **never** sleep in the same room with children. They should see a health worker and be treated as soon as possible.

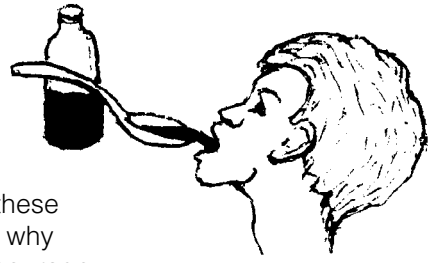


Children living with a person who has tuberculosis should be vaccinated against TB (BCG Vaccine).

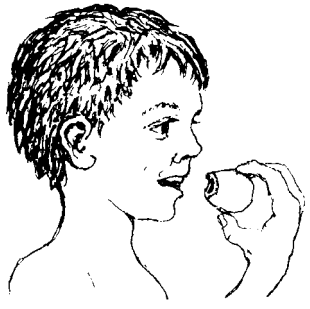


3. Bathe children, change their clothes, and cut their fingernails often. Germs and worm eggs can live beneath long fingernails.

4. Treat children who have infectious diseases as soon as possible, so that the diseases do not spread to others.



5. Follow all the guidelines of cleanliness mentioned in this chapter. Teach children to follow these guidelines and explain why they are important. Encourage children to help with projects that make your community a healthier place to live.



6. **Be sure children get enough good food.** Good nutrition helps protect the body against many infections. A well-nourished child can often fight off infections that will kill a poorly nourished child (read Chapter 11).

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Public Cleanliness (Sanitation)

1. Keep wells and public water holes clean. Do not let animals go near where people get drinking water. If necessary, put a fence around the place to keep animals out.

Do not pass stool (shit) or throw garbage near the water hole. Take special care to keep rivers and streams clean upstream from any place where drinking water is taken.

2. Burn all garbage that can be burned. Garbage that cannot be burned should be buried in a special pit or place far away from houses and the places where people get drinking water.

3. Build latrines (outhouses, toilets) so pigs and other animals cannot reach the human waste. A deep hole with a little house over it works well. The deeper the hole, the less problem there is with flies and smell.



Here is a drawing of a simple latrine that is easy to build.

It helps to throw a little lime, dirt, or ashes in the hole after each use to reduce the smell and keep flies away.

Latrines should be built at least 20 meters from homes or the source of water.

If you do not have a latrine, go far away from where people bathe or get drinking water. Teach your children to do the same.

Use of latrines helps prevent many sicknesses.

Ideas for better latrines are found on the next pages. Also latrines can be built to produce good fertilizer for gardens. See ***A Community Guide to Environmental Health***, Chapter 7.

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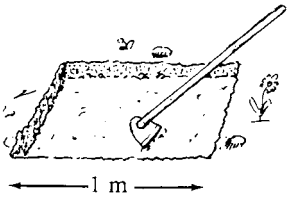
BETTER LATRINES

The latrine or outhouse shown on the previous page is very simple and costs almost nothing to make. But it is open at the top and lets in flies.

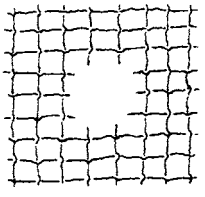
Closed latrines are better because the flies stay out and the smell stays in. A closed latrine has a platform or slab with a hole in it and a lid over the hole. The slab can be made of wood or cement. Cement is better because the slab fits more tightly and will not rot.

One way to make a cement slab:

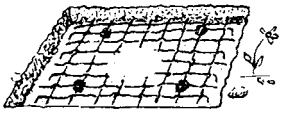
1. Dig a shallow pit, about 1 meter square and 7 cm deep. Be sure the bottom of the pit is level and smooth.



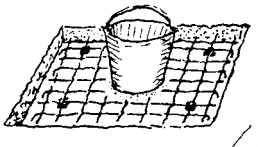
2. Make or cut a wire mesh or grid 1 meter square. The wires can be ¼ to ½ cm thick and about 10 cm apart. Cut a hole about 25 cm across in the middle of the grid.



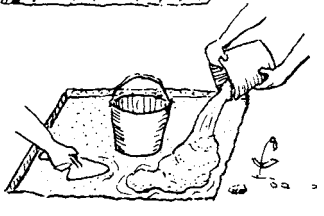
3. Put the grid in the pit. Bend the ends of the wires, or put a small stone at each corner, so that the grid stands about 3 cm off the ground.



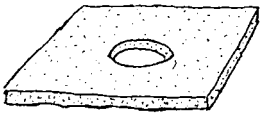
4. Put an old bucket in the hole in the grid.



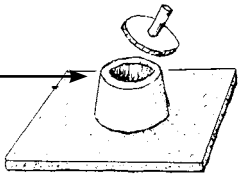
5. Mix cement with sand, gravel, and water and pour it until it is about 5 cm thick. (With each shovel of cement mix 2 shovels of sand and 3 shovels of gravel.)



6. Remove the bucket when the cement is beginning to get hard (about 3 hours). Then cover the cement with damp cloths, sand, hay, or a sheet of plastic and keep it wet. Remove the slab after 3 days.

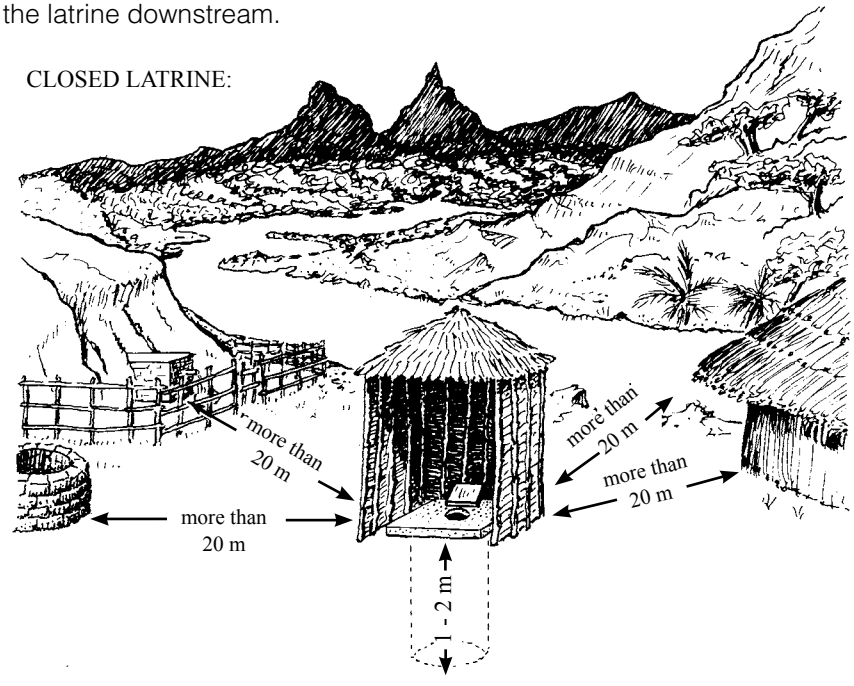


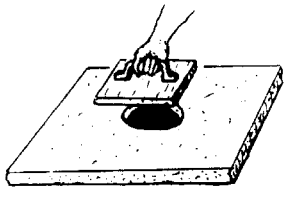
If you prefer to sit when you use the latrine, make a cement seat like this: → Make a mold, or you can use 2 buckets of different sizes, one inside the other.



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To make the closed latrine, the slab should be placed over a round hole in the ground. Dig the hole a little less than 1 meter across and between 1 and 2 meters deep. To be safe, the latrine should be at least 20 meters from all houses, wells, springs, rivers or streams. If it is anywhere near where people go for water, be sure to put the latrine downstream.



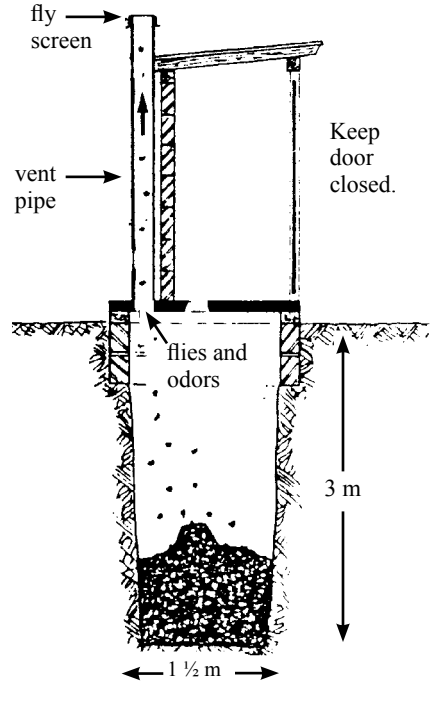


Keep your latrine clean. Wash the slab often. Be sure the hole in the slab has a cover and that the cover is kept in place. A simple cover can be made of wood.

THE FLY-TRAPPING VIP LATRINE

To make the ventilated improved pit (VIP) latrine, make a larger slab (2 meters square) with 2 holes in it. Over one hole put a ventilation pipe, covered with fly screen (wire screen lasts longer). Over the other hole build an out house, which must be kept dark inside. Leave this hole uncovered.

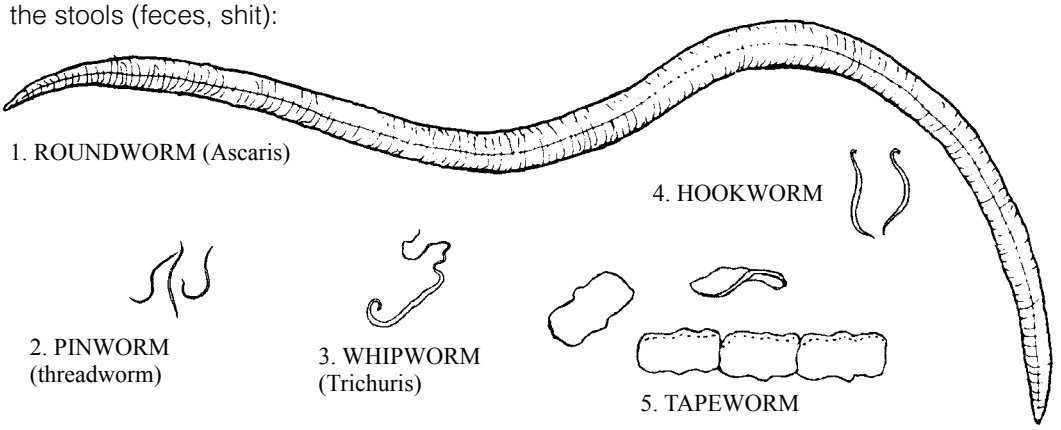
This latrine helps get rid of odors and flies: smells escape through the pipe, and flies get trapped there and die!



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WORMS AND OTHER INTESTINAL PARASITES

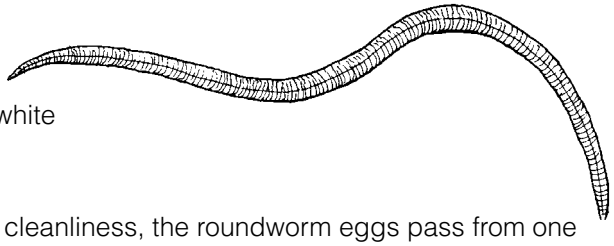
There are many types of worms and other tiny animals (parasites) that live in people's intestines and cause diseases. Those which are larger are sometimes seen in the stools (feces, shit):



The only worms commonly seen in the stools are roundworms, pinworms, and tapeworms. Hookworms and whipworms may be present in the gut in large numbers without ever being seen in the stools.

Note on worm medicines: In places where intestinal worms are common, people often give children (and adults!) worm medicine every 3 to 6 months. Many "worm medicines" contain piperazine. These work only for roundworms and pinworms and should not be given to babies and small children. Mebendazole *(Vermox)* is safer and attacks many more kinds of worms. Albendazole and pyrantel also work for many kinds of worms, but they may be expensive. Thiabendazole attacks many kinds of worms, but causes dangerous side effects and should usually not be used. See pages 373 to 375 for more information on how to use these medicines safely.

Roundworm (Ascaris)



20 to 30 cm long. Color: pink or white

How they are spread:

Feces-to-mouth. Through lack of cleanliness, the roundworm eggs pass from one person's stools to another person's mouth.

Effect on health:

Once the eggs are swallowed, young worms hatch and enter the bloodstream; this may cause general itching. The young worms then travel to the lungs, sometimes causing a dry cough or at worst, pneumonia with coughing of blood. The young worms are coughed up, swallowed, and reach the intestines, where they grow to full size.

Many roundworms in the intestines may cause discomfort, indigestion, and weakness. Children with many roundworms often have very large, swollen bellies. Rarely, roundworms may cause asthma, or a dangerous obstruction or blockage in the gut (p. 94). Especially when the child has a fever, the worms sometimes come out in the stools or crawl out through the mouth or nose. Occasionally they crawl into the airway and cause gagging.

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Prevention:

Use latrines, wash hands before eating or handling food, protect food from flies, and follow the guidelines of cleanliness described in the first part of this chapter.

Treatment:

Mebendazole will usually get rid of roundworms. For dosage see page 375. Piperazine also works (p. 376). Some home remedies work fairly well. For a home remedy using papaya see page 13.

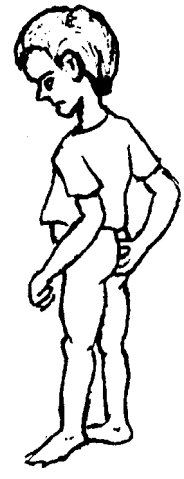
WARNING: Do not use thiabendazole for roundworms. It often makes the worms move up to the nose or mouth and can cause gagging.

Pinworm, Threadworm, Seatworm (Enterobius)



1 cm long. Color: white. Very thin and threadlike.

How they are transmitted:



These worms lay thousands of eggs just outside the anus (ass hole). This causes itching, especially at night. When a child scratches, the eggs stick under his nails, and are carried to food and other objects. In this way they reach his own mouth or the mouths of others, causing new infections of pinworms.

Effect on health:

These worms are not dangerous. Itching may disturb the child's sleep.

Treatment and Prevention:

- A child who has pinworms should wear tight diapers or pants while sleeping to keep him from scratching his anus.
- Wash the child's hands and buttocks (anal area) when he wakes up and after he has a bowel movement. Always wash his hands before he eats.
- Cut his fingernails very short.
- Change his clothes and bathe him often—wash the buttocks and nails especially well.
- Put *Vaseline* in and around his anus at bedtime to help stop itching.
- Give mebendazole worm medicine. For dosage, see page 373. Piperazine also works. When one child is treated for these worms, it is wise to treat the whole family at the same time. For a home remedy using garlic, see page 12.
- Cleanliness is the best prevention for threadworms. Even if medicine gets rid of the worms, they will be picked up again if care is not taken with personal hygiene. Pinworms only live for about 6 weeks. **By carefully following the guidelines of cleanliness, most of the worms will be gone within a few weeks, even without medicine.**

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Whipworm (Trichuris, Trichocephalus)



3 to 5 cm long. Color: pink or gray.

This worm, like the roundworm, is passed from the feces of one person to the mouth of another person. Usually this worm does little harm, but it may cause diarrhea. In children it occasionally causes part of the intestines to come out of the anus (***prolapse*** of the ***rectum***).

Prevention: The same as for roundworm.

Treatment: If the worms cause a problem, give mebendazole. For dosage, see page 375. For ***prolapse*** of the rectum, turn the child upside down and pour cool water on the intestine. This should make it pull back in.

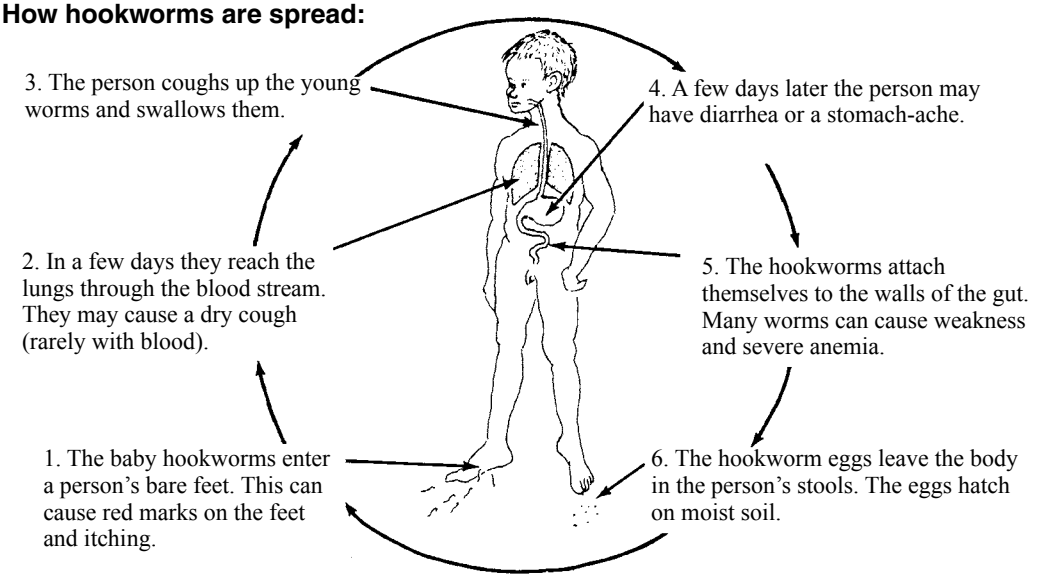
Hookworm



1 cm long. Color: red.

Hookworms cannot usually be seen in the feces. A stool analysis is needed to prove that they are there.

How hookworms are spread:



Hookworm infection can be one of the most damaging diseases of childhood. Any child who is anemic, very pale, or eats dirt may have hookworms. If possible, his stools should be analyzed.

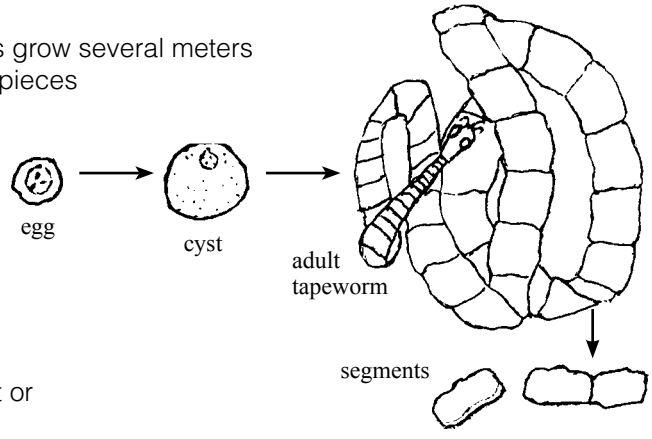
Treatment: Use mebendazole, albendazole, or pyrantel. For dosage and precautions, see pages 375 to 377. Treat anemia by eating foods rich in iron and if necessary by taking iron pills (p. 124).

Prevent hookworm: **Build and use latrines. Do not let children go barefoot.**

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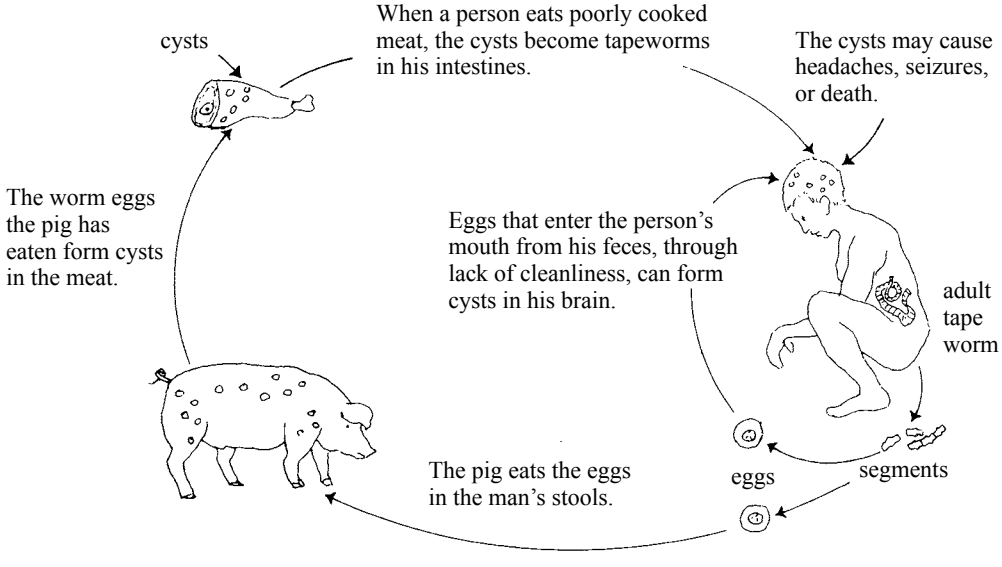
Tapeworm

In the intestines tapeworms grow several meters long. But the small, flat, white pieces (segments) found in the feces are usually about 1 cm long. Occasionally a segment may crawl out by itself and be found in the underclothing.



People get tapeworms from eating pork (pig meat), beef (cow meat) or other meat or fish that is not well cooked.

Prevention: **Be careful that all meat is well cooked, especially pork.** Make sure no parts in the center of roasted meat or cooked fish are still raw.



Effect on health: Tapeworms in the intestines sometimes cause mild stomach aches, but few other problems.

The greatest danger exists when the ***cysts*** (small sacs containing baby worms) get into a person's brain. This happens when the eggs pass from his stools to his mouth. For this reason, **anyone with tapeworms must follow the guidelines of cleanliness carefully—and get treatment as soon as possible.**

Treatment: Take niclosamide (***Yomesan***, p. 377), or praziquantel (p. 377). Follow instructions carefully.

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Trichinosis

These worms are never seen in the stools. They burrow through the person's intestines and get into her muscles. People get these worms, like tapeworms, from eating infected pork or other meat that is not well cooked.

Effect on health: Depending on the amount of infected meat eaten, the person may feel no effects, or she may become very sick or die. From a few hours to 5 days after eating the infected pork, the person may develop diarrhea and feel sick to her stomach.

In serious cases the person may have:

- fever with chills
- muscle pain
- swelling around the eyes and sometimes swelling of the feet
- small bruises (black or blue spots) on the skin
- bleeding in the whites of the eyes

Severe cases may last 3 or 4 weeks.

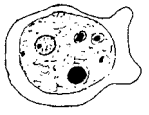
Treatment: Seek medical help at once. Albendazole or mebendazole may help. For dosages, see pages 375 and 376. (Corticosteroids may help, but should be given by a health worker or doctor.)

Important: If several people who ate meat from the same pig get sick afterward, suspect trichinosis. This can be dangerous; seek medical attention.

Prevention of trichinosis:

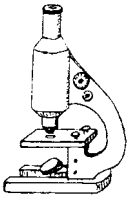
- ♦ Only eat pork and other meat that has been well cooked.
- ♦ Do not feed scraps of meat or leftovers from butchering to pigs unless the meat has first been cooked.

Amebas



Ameba as seen under a microscope

These are not worms, but very tiny parasites that can be seen only with a ***microscope*** (an instrument that makes things look much bigger).



Microscope

How they are transmitted:

The stools of infected people contain millions of these tiny parasites. Because of poor sanitation, they get into the source of drinking water or into food, and other people become infected.

Signs of infection with amebas:

Many healthy people have amebas without becoming sick. However, amebas are a common cause of severe diarrhea or ***dysentery*** (diarrhea with blood)—especially in persons already weakened by other sickness or poor nutrition. Less commonly, amebas cause painful, dangerous abscesses in the liver.

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Typical amebic dysentery consists of:

- diarrhea that comes and goes—sometimes alternating with constipation
- cramps in the belly and a need to have frequent bowel movements, even when little or nothing—or just mucus—comes out
- many loose (but usually not watery) stools with lots of mucus, sometimes stained with blood
- in severe cases, much blood; the person may be very weak and ill
- if there is fever, it means there may also be a bacterial infection

Diarrhea with blood may be caused by either amebas or bacteria. However, bacterial dysentery (Shigella) begins more suddenly, the stools are more watery, and there is almost always fever (p. 158). As a general rule:

Diarrhea + blood + fever = bacterial infection (Shigella)
Diarrhea + blood + no fever = amebas

Occasionally bloody diarrhea has other causes. To be sure of the cause, a stool analysis may be necessary.

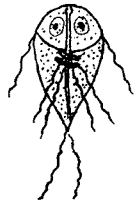
Sometimes amebas get into the liver and form an **abscess** or pocket of pus. This causes tenderness or pain in the right upper belly. Pain may extend into the right chest and is worse when the person walks. (Compare this with gallbladder pain, p. 329; hepatitis, p. 172; and cirrhosis, p. 328.) If the person with these signs begins to cough up a brown liquid, an amebic abscess is draining into his lung.

Treatment:

- Get medical help and a stool analysis, if possible.
- Treat amebic dysentery with metronidazole and if possible, follow with diloxanide furoate. For dosage, length of treatment, and precautions see page 370.
- Treat amebic abscess as for amebic dysentery but be sure to take both metronidazole and diloxanide furoate (p. 370).

Prevention: Make and use latrines, protect the source of drinking water, and follow the guidelines of cleanliness. Eating well and avoiding fatigue and drunkenness are also important in preventing amebic dysentery.

Giardia



Giardia as seen under a microscope

The giardia, like the ameba, is a microscopic parasite that lives in the gut and is a common cause of diarrhea, especially in children. The diarrhea may be *chronic* or intermittent (may come and go).

A person who has yellow, bad-smelling diarrhea that is frothy (full of bubbles) but without blood or mucus, probably has giardia. The belly is swollen with gas and uncomfortable, there are mild intestinal cramps, and the person farts and burps a lot. The burps have a bad taste, like sulfur. There is usually no fever.

Giardia infections sometimes clear up by themselves. Good nutrition helps. Severe cases are best treated with metronidazole (p. 370). Quinacrine (*Atabrine*, p. 369) is cheaper and often works well, but causes worse side effects.

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BLOOD FLUKES (SCHISTOSOMIASIS, BILHARZIA)

This infection is caused by a kind of worm that gets into the bloodstream. Different types of blood flukes are found in different parts of the world. One kind, common in Africa and the Middle East, causes blood in the urine. Other types, which cause bloody diarrhea, occur in Africa, South America, and Asia. In areas where these diseases are known to occur, **any person who has blood in his urine or stools should have a sample of it tested for fluke eggs.**

Signs:

- **The most common sign is blood in the urine** (especially when passing the last drops)—or, for other kinds of flukes, **bloody diarrhea.**
- Pain may occur in the lower belly and between the legs; it is usually worst at the end of urinating. Low fever, weakness, and itching may occur. In women, there may be sores that look like a sexually transmitted infection.
- After months or years, the kidneys, liver or spleen may be damaged or enlarged, which can cause pain and eventually even death.
- Sometimes there are no early signs. In areas where schistosomiasis is very common, persons with only mild signs or belly pain should be tested.

Treatment:

See a health worker. Praziquantel works for all types of blood flukes. Oxamniquine works for some kinds of blood flukes (p. 378).

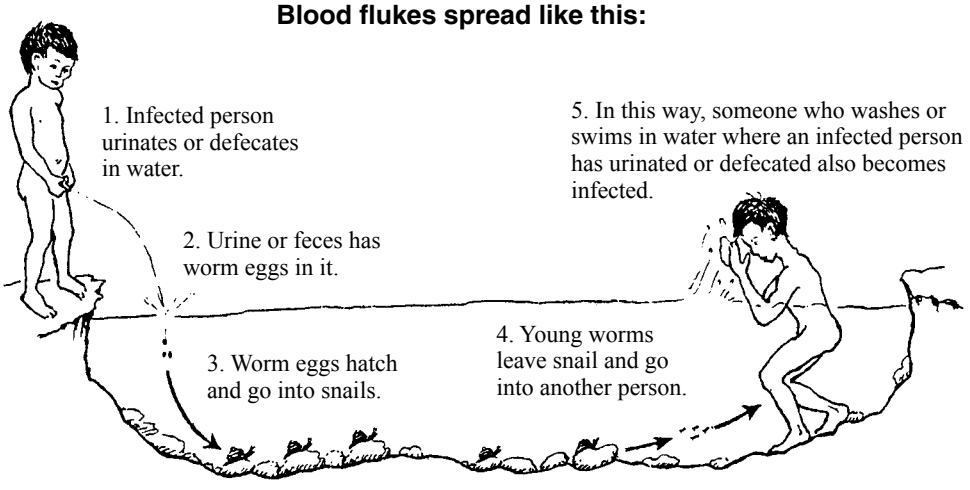
Prevention:

Blood flukes are not spread directly from person to person. Part of their life they must live inside a certain kind of small water snail.



SNAIL,
REAL SIZE

Blood flukes spread like this:



To prevent schistosomiasis, cooperate with programs to kill snails and treat infected persons. But most important: **Everyone should learn to use latrines and NEVER URINATE OR DEFECATE IN OR NEAR WATER.**

For information on **guinea worm**, which is also spread in water, see pages 408 to 409.

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VACCINATIONS (IMMUNIZATIONS)—SIMPLE, SURE PROTECTION

Vaccines protect against many dangerous diseases —get your children vaccinated! Each country has its own schedule of vaccinations and they are usually given for free. It is better to take your children to be vaccinated while they are healthy than to take them for treatment when they are sick or dying.

All children need vaccines but the need for vaccinations does not end after childhood. For some illnesses, people who were not vaccinated as children should get vaccines as adults, and both children and adults may need additional injections called "boosters," as the protection of some vaccines lessens over time. Some vaccines are given when children are older, such as the HPV vaccine, or because vaccines prevent a new illness, such as COVID-19. And sometimes new vaccines are developed for old illnesses, such as the vaccine to prevent falciparum malaria now being used in high-malaria areas.

Many companies make vaccines, using different methods, so they often have different schedules for the number of injections and when they are needed. The most important vaccines include:

DPT prevents diphtheria, whooping cough (pertussis), and tetanus. By 6 months old, babies get a series of 3 injections. Older children usually get 3 booster injections of DTP or a combination to prevent diphtheria and tetanus (Td, Dt).

Polio (infantile paralysis). Babies get a series of 3 or 4 doses. At least 3 doses are given by age 6 months, at the same time as DPT. In countries where 4 doses are given, the first is given at birth.

BCG prevents tuberculosis. A single injection, given under the skin as soon as possible after birth, leaves a small scar. If anyone in a household has tuberculosis, vaccinate children as soon as possible.

Measles. A series of 2 injections, the first after 9 months of age, and a second at 15 months or older. In many countries, a vaccine called **MMR prevents measles, mumps, and rubella (German measles).** For MMR, a first injection is given between 12 and 15 months old, and a second between 4 and 6 years old.

HepB prevents hepatitis B, a serious liver disease. A series of 3 or 4 injections, at the same times as DPT.

Hib prevents Haemophilus influenza type b that causes meningitis and pneumonia. Babies get 3 injections at the same time as DPT, plus a booster at 12 to 15 months.

Pneumococcal conjugate prevents pneumonia. Babies get 3 injections, at the same time as DPT.

Rotavirus prevents a diarrhea disease that can kill young children. Babies get this oral vaccine 2 or 3 times, usually at the same time as DPT.

HPV prevents human papillomavirus that causes cervical cancer and some other cancers. Either 2 or 3 injections are needed, depending at what age the first injection is given.

Vaccinate your children on time.
Be sure they get the complete series of each vaccine they need.

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OTHER WAYS TO PREVENT SICKNESS AND INJURY

In this chapter we have talked about ways to prevent intestinal and other infections through **hygiene, sanitation,** and **vaccination.** All through this book you will find suggestions for the prevention of sickness and injury—from building healthy bodies by eating nutritious foods to the wise use of home remedies and modern medicines.

The **Introduction** and **Words to the Village Health Worker** give ideas for getting people working together to change the conditions that cause poor health.

In the remaining chapters, as specific health problems are discussed, you will find many suggestions for their prevention. By following these suggestions you can help make your home and village healthier places to live.

Keep in mind that one of the best ways to prevent serious illness and death is early and sensible treatment.

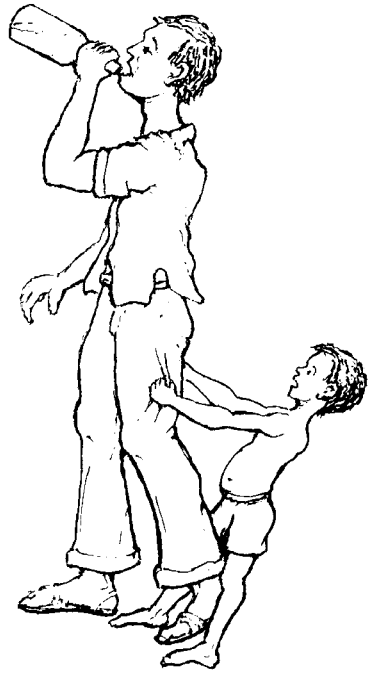
Early and sensible treatment is an important part of preventive medicine.

Before ending this chapter, we would like to mention a few aspects of prevention that are touched on in other parts of the book, but deserve special attention.

Habits that Affect Health

Some of the habits that people have not only damage their own health but in one way or another harm those around them. Many of these habits can be broken or avoided but the first step is to understand why breaking these habits is so important.

DRINKING



If alcohol has brought much joy, it has also brought much suffering—especially to the families of those who drink. A little alcohol now and then may do no harm. But too often a little leads to a lot. People who drink a lot of alcohol are more likely to develop poor nutrition (p. 107), cancer, mental health problems, problems of the heart (p. 325) and liver (p. 328), and may even die. Alcohol makes people less able to control their bodies and less likely to react quickly, so they often have more accidents and injuries.

Not only can alcohol harm the health of those who drink, but it also hurts the family and community in many ways. People misusing alcohol often have trouble meeting their financial, family, and work responsibilities, and controlling their behavior. Alcohol can make violent situations worse, especially at home.

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Once a person realizes that alcohol is harming the health and happiness of those around him, what can he do? First, he must admit that his drinking is a problem. He must be honest with himself and with others. Some individuals are able to simply decide to stop drinking. More often people need help and support to give up this habit. Some people stop drinking at home while others go to a treatment center. Some people rely on their families and friends for support while others seek support from health workers or counselors. People who have been heavy drinkers and have stopped are often able to help others do the same. Help may be available in your area (see the resources starting on page 431).

Drinking is not so much a problem of individuals as of a whole community. A community that recognizes this can do much to encourage those who are willing to make changes. If you are concerned about the misuse of alcohol in your community, help organize a meeting to discuss these problems and decide what actions to take. For more about harm from alcohol, and community action, see ***Helping Health Workers Learn,*** Chapters 5 and 27.

Many problems can be resolved when people work together and give each other help and support.

SMOKING

There are many reasons why smoking is dangerous to your own and your family's health.

1. Smoking increases the risk of cancer of the lungs, mouth, throat, and lips. (The more you smoke, the greater the chance of dying of cancer.)

2. Smoking causes serious diseases of the lungs, including chronic bronchitis and emphysema (and is deadly for persons who already have these conditions or have asthma).

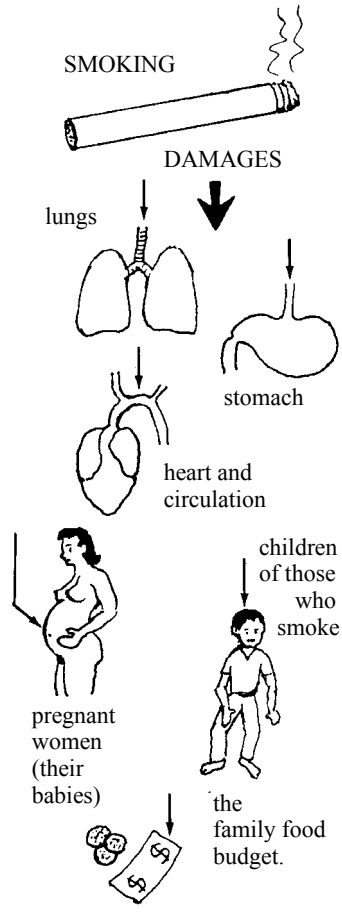
3. Smoking can cause stomach ulcers or make them worse.

4. Smoking increases your chance of suffering or dying from heart disease or stroke.

5. Children whose parents smoke have more cases of pneumonia and other respiratory illness than children whose parents do not smoke.

6. Babies of mothers who smoked during pregnancy are smaller and take longer to develop than babies whose mothers did not smoke.

(turn page)



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7. Parents, teachers, health workers, and others who smoke set an unhealthy example for children and young people, increasing the likelihood that they too will begin smoking.

8. Also, smoking costs money. It looks like little is spent, but it adds up to a lot. In poorer countries, many of the poorest persons spend more on tobacco than the country spends per person on its health program. If money spent on tobacco were spent for food instead, children and whole families could be healthier.

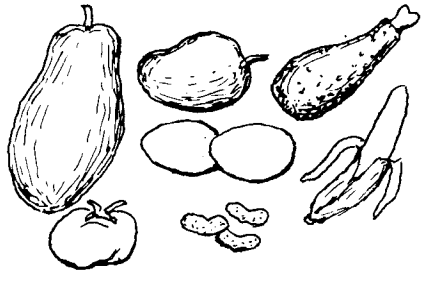
Anyone interested in the health of others should not smoke, and should encourage others not to smoke.

SUGARY DRINKS (soft drinks, soda pop, Coke, colas)

In some areas these drinks have become very popular. Often a poor mother will buy sugary drinks for a child who is poorly nourished, when the same money could be better used to buy 2 eggs or other nutritious food.

IF YOU WANT HEALTHY CHILDREN
AND HAVE A LITTLE MONEY TO BUY THEM SOMETHING . . .

buy them a couple of eggs or other nutritious food,



YES

not sugary drinks!



NO

Sugary drinks usually have no nutritional value. And for the amount of sugar they contain, they are very expensive. Children who are given a lot of sugary drinks and other sweet things often begin to get cavities and rotten teeth at an early age. They fill children up but provide no nutrition. Sugary drinks are especially bad for persons with acid indigestion or stomach ulcer.

Natural drinks you make from fruits are healthier and often much cheaper than store-bought sodas.

Do not get your children used to drinking sugary drinks.

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CHAPTER 13

Some Very Common Sicknesses

DEHYDRATION

Most children who die from diarrhea die because they do not have enough water left in their bodies. This lack of water is called dehydration.

Dehydration results when the body loses more liquid than it takes in. This can happen with severe diarrhea, especially when there is vomiting too. It can also happen in very serious illness, when a person is too sick to take much food or liquid.

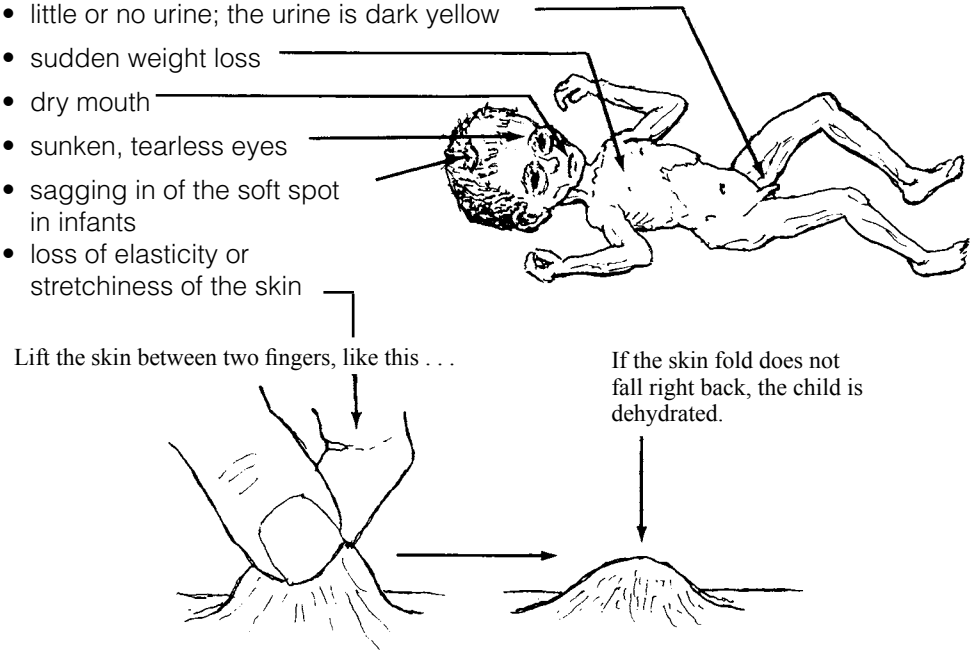
People of any age can become dehydrated, but **dehydration develops more quickly and is most dangerous in very young children.**

Any child with watery diarrhea is in danger of dehydration.

It is important that everyone—especially parents of young childrens—know the signs of dehydration and how to prevent and treat it.

Signs of dehydration:

- thirst is often a first, early sign
- little or no urine; the urine is dark yellow
- sudden weight loss
- dry mouth
- sunken, tearless eyes
- sagging in of the soft spot in infants
- loss of elasticity or stretchiness of the skin



Very severe dehydration may cause rapid, weak pulse (see Shock, p. 77), fast, deep breathing, fever, or seizures (see convulsions, p. 178).

When a person has watery diarrhea, or diarrhea and vomiting, do not wait for signs of dehydration. **Act quickly**—see the next page.

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To prevent or treat dehydration: When a person has watery diarrhea, **act quickly:**

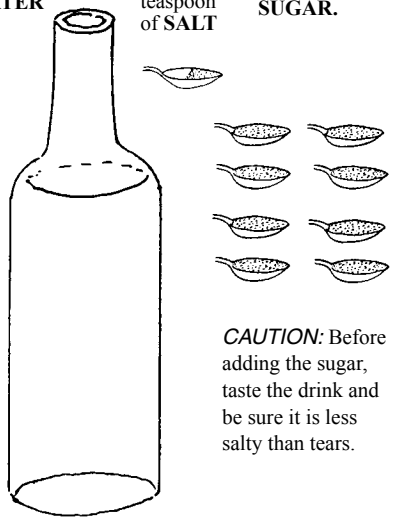
- **Give lots of liquids to drink:** Rehydration Drink is best. Or give a thin cereal porridge or gruel, teas, soups, or even plain water.
- **Keep giving food.** As soon as the sick child (or adult) will accept food, give frequent feedings of foods he likes and accepts.
- To babies, **keep giving breast milk** often—and before other drinks.

A special **rehydration drink** helps to prevent or treat dehydration, especially in cases of severe watery diarrhea:

2 WAYS TO MAKE HOME MIX REHYDRATION DRINK

1. **WITH SUGAR AND SALT** (Raw sugar or molasses can be used instead of sugar)

In 1 liter of clean **WATER** put half of a level teaspoon of **SALT** and 8 level teaspoons of **SUGAR.**

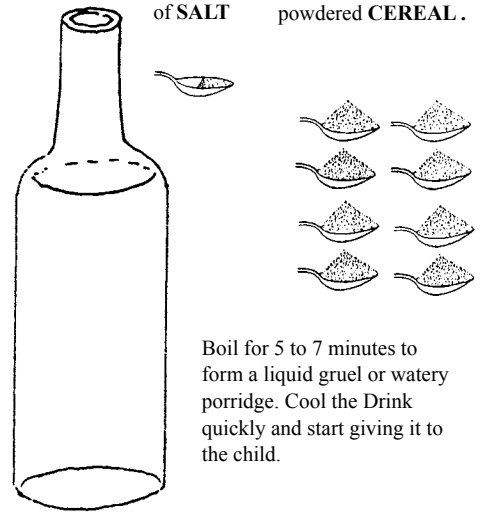


CAUTION: Before adding the sugar, taste the drink and be sure it is less salty than tears.

To either Drink add half a cup of fruit juice, coconut water, or mashed ripe banana, if available. This provides potassium which may help the child accept more food and drink.

2. **WITH POWDERED CEREAL AND SALT**
(Powdered rice is best. Or use finely ground maize, wheat flour, sorghum, or cooked and mashed potatoes.)

In 1 liter of **WATER** put half a teaspoon of **SALT** and 8 heaping teaspoons (or 2 handfuls) of powdered **CEREAL .**



Boil for 5 to 7 minutes to form a liquid gruel or watery porridge. Cool the Drink quickly and start giving it to the child.

CAUTION: Taste the Drink each time before you give it to be sure it is not spoiled. Cereal drinks can spoil in a few hours in hot weather.

IMPORTANT: Adapt the Drink to your area. If liter containers or teaspoons are not in most homes, adjust quantities to local forms of measurement. Where people traditionally give cereal gruels to young children, add enough water to make it liquid, and use that. Look for an easy and simple way.

Give the dehydrated person sips of this Drink every 5 minutes, day and night, until he begins to urinate as usual. A large person needs 3 or more liters a day. A small child usually needs at least 1 liter a day, or 1 glass for each watery stool. Keep giving the Drink **often** in small sips, **even if the person vomits.** Not all of the Drink will be vomited.

WARNING: **If dehydration gets worse or other danger signs appear, go for medical help** (p. 159). It may be necessary to give liquid in a vein (intravenous solution).

Note: In some countries packets of Oral Rehydration Salts (ORS) are available for mixing with water. These contain a simple mix of sugar, salt, citrate, zinc, and potassium (p. 383). However, homemade drinks—especially cereal drinks—when correctly prepared are often cheaper, safer, and more effective than ORS packets.

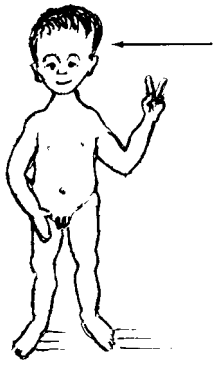
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DIARRHEA AND DYSENTERY

When a person has loose or watery stools, he has ***diarrhea.*** If mucus and blood can be seen in the stools, he has ***dysentery.***

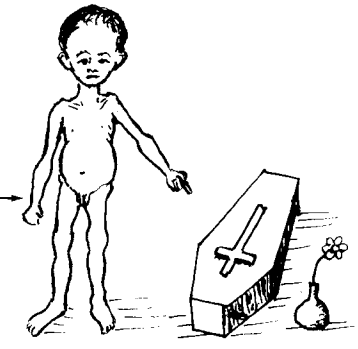
Diarrhea can be mild or serious. It can be ***acute*** (sudden and severe) or ***chronic*** (lasting many days).

Diarrhea is more common and more dangerous in young children, especially those who are poorly nourished.



This child is well nourished. He is less likely to get diarrhea. If he gets it he usually will get well again quickly.

This child is poorly nourished. He is more likely to get diarrhea—and there is a much greater chance he will die from it.



Diarrhea has many causes. **Usually no medicines are needed,** and the child gets well in a few days if you give him lots of Rehydration Drink and food. (If he does not eat much, give him a little food many times a day.) Occasionally, special treatment is needed. However, **most diarrhea can be treated successfully in the home,** even if you are not sure of the exact cause or causes.

THE MAIN CAUSES OF DIARRHEA:

poor nutrition (p. 154) weakens the child and makes diarrhea from other causes more frequent and worse

shortage of water and unclean conditions (no latrines) spread the germs that cause diarrhea

virus infection or "intestinal flu"

an infection of the gut caused by bacteria (p. 131), amebas (p. 144), or giardia (p. 145)

worm infections (p. 140 to 144) (most worm infections do not cause diarrhea)

infections outside the gut (ear infections, p. 309; tonsillitis, p. 309; measles, p. 311; urinary infections, p. 234)

malaria (falciparum type, in parts of Africa, Asia, the Pacific, Latin America and the Caribbean, p. 186)

food poisoning (spoiled food, p. 135)

HIV (long-lasting diarrhea may be an early sign of AIDS, p. 401)

inability to digest milk (mainly in severely malnourished children and certain adults)

difficulty babies have digesting foods that are new to them (p. 154)

allergies to certain foods (seafood, crayfish, etc., p. 166); occasionally babies are allergic to cow's milk or other milks

side effects produced by certain medicines, such as ampicillin or tetracycline (p. 58)

laxatives, purges, irritating or poisonous plants, certain poisons

eating too much unripe fruit or heavy, greasy foods

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Preventing diarrhea:

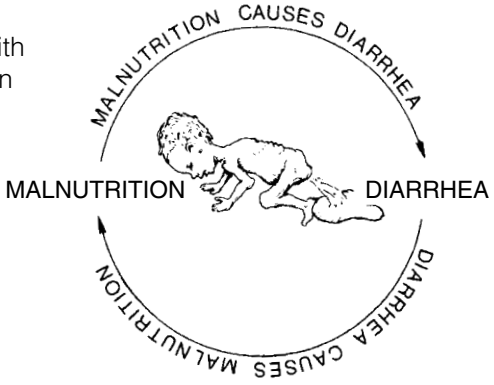
Although diarrhea has many different causes, the most common are **infection** and **poor nutrition. With good hygiene and good food, most diarrhea could be prevented.** And if treated correctly by giving **lots of drink and food,** fewer children who get diarrhea would die.

Diarrhea is also very dangerous for people with HIV, especially children. Using cotrimoxazole can prevent diarrhea in persons with HIV (p. 357).

Children who are poorly nourished get diarrhea and die from it far more often than those who are well nourished. Yet diarrhea itself can be part of the cause of malnutrition.

Malnutrition causes diarrhea.
Diarrhea causes malnutrition.

And if malnutrition already exists, diarrhea rapidly makes it worse.



THE VICIOUS CIRCLE OF MALNUTRITION AND DIARRHEA TAKES MANY CHILDREN'S LIVES.

This results in a vicious circle, in which each makes the other worse. For this reason, **good nutrition is important in both the prevention and treatment of diarrhea.**

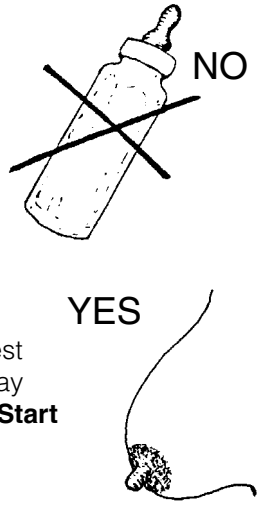
Prevent diarrhea by preventing malnutrition.
Prevent malnutrition by preventing diarrhea.

To learn about the kinds of foods that help the body resist or fight off different illnesses, including diarrhea, read Chapter 11.

The prevention of diarrhea depends both on **good nutrition** and cleanliness. Many suggestions for personal and public **cleanliness** are given in Chapter 12. These include the use of latrines, the importance of **clean water,** and the **protection of foods** from dirt and flies.

Other suggestions to prevent diarrhea in babies:

- **Breastfeed rather than bottle feed babies.** Give only breast milk for the first 6 months. Breast milk helps babies resist the infections that cause diarrhea. If it is not possible to breastfeed a baby, feed her with a cup and spoon. **Do not use a baby bottle** because it is harder to keep clean and more likely to cause an infection.
- When you begin to give the baby new or solid food, start by giving her just a little, mashing it well, and mixing it with a little breast milk. The baby has to learn how to digest new foods. If she starts with too much at one time, she may get diarrhea. **Do not stop giving breast milk suddenly. Start with other foods while the baby is still breastfeeding.**
- Keep the baby clean—and in a clean place. Try to keep her from putting dirty things in her mouth.
- Do not give babies unnecessary medicines.
- Vaccinate your child against rotavirus (p.147).



BREASTFEEDING HELPS PREVENT DIARRHEA

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Treatment of diarrhea:

For most cases of diarrhea no medicine is needed. If the diarrhea is severe, the biggest danger is **dehydration.** If the diarrhea lasts a long time, the biggest danger is **malnutrition.** So the most important part of treatment has to do with giving **enough liquids** and **enough food.** No matter what the cause of diarrhea, always take care with the following:

1. PREVENT OR CONTROL DEHYDRATION. A person with diarrhea must drink a lot of liquids. If diarrhea is severe or there are signs of dehydration, give him Rehydration Drink (p. 152). Even if he does not want to drink, gently insist that he do so. Have him take several swallows every few minutes.

2. MEET NUTRITIONAL NEEDS. **A person with diarrhea needs food as soon as he will eat.** This is especially important in small children or persons who are already poorly nourished. Also, when a person has diarrhea, food passes through the gut very quickly and is not all used. **So give the person food many times a day**—especially if he only takes a little at a time.

- A baby with diarrhea should **go on breastfeeding.**
- An underweight child should get plenty of energy foods and some body-building foods (proteins) all the time he has diarrhea—and extra when he gets well. If he stops eating because he feels too sick or is vomiting, he should eat again as soon as he can. **Giving Rehydration Drink will help the child be able to eat.** Although giving food may cause more frequent stools at first, it can save his life.
- If a child who is underweight has diarrhea that lasts for many days or keeps coming back, give him more food more often—at least 5 or 6 meals each day. Often no other treatment is needed.
- If possible, give zinc supplements to a baby or child with diarrhea (p. 383).

FOODS FOR A PERSON WITH DIARRHEA

When the person is vomiting or feels too sick to eat, he should drink:

watery mush or broth of rice, maize powder, or potato
rice water (with some mashed rice)
chicken, meat, egg, or bean broth
Rehydration Drink
breast milk
yogurt or fermented milk drinks

As soon as the person is able to eat, in addition to giving the drinks listed at the left, he should eat a balanced selection of the following foods or similar ones:

energy foods

ripe or cooked bananas
crackers
rice, oatmeal, or other well-cooked grain
fresh maize (well cooked and mashed)
potatoes
applesauce (cooked)
papaya

(It helps to add a little sugar or vegetable oil to the cereal foods.)

body-building foods

chicken (boiled or roasted)
eggs (boiled)
meat (well cooked, without much fat or grease)
beans, lentils, or peas (well cooked and mashed)
fish (well cooked)
milk (sometimes this causes problems, see the next page)

DO NOT EAT OR DRINK

fatty or greasy foods
most raw fruits
any kind of laxative or purge
highly seasoned food
alcoholic drinks

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Diarrhea and milk:

Breast milk is the best food for babies. It helps prevent and combat diarrhea. **Keep giving breast milk when the baby has diarrhea.**

Cow's milk, powdered milk, or canned milk can be good sources of energy and protein. Keep on giving them to a child with diarrhea. In a very few children these milks may cause more diarrhea. If this happens, try giving less milk and mixing it with other foods. But remember: **a poorly nourished child with diarrhea must have enough energy foods and protein.** If less milk is given, well cooked and mashed foods such as chicken, egg yolk, meat, fish, or beans should be added. Beans are easier to digest if their skins have been taken off and they are boiled and mashed.

As the child gets better, he will usually be able to drink more milk without getting diarrhea.

Medicines for diarrhea:

For most cases of diarrhea no medicines are needed. But in certain cases, using the right medicine can be important. However, many of the medicines commonly used for diarrhea do little or no good. Some are actually harmful:

GENERALLY IT IS BETTER **NOT** TO USE THE FOLLOWING MEDICINES IN THE TREATMENT OF DIARRHEA:

"Anti-diarrhea" medicines with bismuth subsalicylate (such as *Pepto-Bismol* or *Kaopectate*, p. 384) make diarrhea thicker and less frequent. But they do not correct dehydration or control infection. Some anti-diarrhea medicines, like loperamide *(Imodium)* or diphenoxylate *(Lomotil)* may even cause harm or make infections last longer.



"ANTI-DIARRHEA MEDICINES" ACT LIKE PLUGS. THEY KEEP IN THE INFECTED MATERIAL THAT NEEDS TO COME OUT.



"Anti-diarrhea" mixtures containing neomycin or streptomycin should not be used. They irritate the gut and often do more harm than good.

Antibiotics like ampicillin and tetracycline are useful only in **some** cases of diarrhea (p. 158). But they themselves sometimes cause diarrhea, especially in small children. If, after taking these antibiotics for more than 2 or 3 days, diarrhea gets worse rather than better, stop taking them—the antibiotics may be the cause.

Chloramphenicol (p. 356) should never be used for diarrhea

Laxatives and purges should never be given to persons with diarrhea. They will make it worse and increase the danger of dehydration.

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Special treatment in different cases of diarrhea:

While most cases of diarrhea are best treated by giving plenty of **liquids** and **food,** and **no medicine,** sometimes special treatment is needed.

In considering treatment, keep in mind that some cases of diarrhea, especially in small children, are caused by **infections outside the gut.** Always check for **infections of the ears,** the **throat**, and the **urinary system.** If found, these infections should be treated. Also look for signs of **measles.**

If the child has mild diarrhea together with signs of a cold, the diarrhea is probably caused by a virus, or "intestinal flu," and no special treatment is called for. Give lots of liquids and all the food the child will accept.

In certain difficult cases of diarrhea, analysis of the stools or other tests may be needed to know how to treat it correctly. But usually you can learn enough from asking specific questions, seeing the stools, and looking for certain signs Here are some guidelines for treatment according to signs.

1. **Sudden, mild diarrhea. No fever.** (Upset stomach? "Intestinal flu?")
   - ♦ Drink lots of liquids. Usually no special treatment is needed. It is usually best not to use "anti-diarrhea" medicines such as bismuth subsalicylate (*Kaopectate,* p. 384) or diphenoxylate *(Lomotil).* They are never necessary and do not help either to correct dehydration or get rid of infection so why waste money buying them? Never give them to persons who are very ill, or to small children.

2. **Diarrhea with vomiting.** (Many causes)
   - ♦ If a person with diarrhea is also vomiting, the danger of dehydration is greater, especially in small children. It is very important to give the Rehydration Drink (p. 152), tea, soup, or whatever liquids he will take. **Keep giving the Drink, even if the person vomits it out again.** Some will stay inside. Give sips every 5 to 10 minutes.
   - ♦ If you cannot control the vomiting or if the dehydration gets worse, seek medical help fast.



3. **Diarrhea with mucus and blood. Often chronic. No fever. There may be diarrhea some days and constipation other days.** (Possibly amebic dysentery. For more details, see pages 144 to 145.)
   - ♦ Use metronidazole (p. 370). Take the medicine according to the recommended dose. If the diarrhea continues after treatment, seek medical advice.

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4. **Severe diarrhea with blood, with fever.** (Bacterial dysentery caused by Shigella)

   - Give ceftriaxone or ciprofloxacin (p. 358). Pregnant women and children under 18 years old should not use ciprofloxacin. (For children under 8 weeks old, seek medical help.) Shigella is often resistant to ampicillin (p. 352), cotrimoxazole (p. 357), and azithromycin, but they are still being used. If the first medicine you try does not bring improvement within 2 days, try another or seek medical help. Women in the first 3 months of pregnancy should not use cotrimoxazole (p. 357). Azithromycin is safe during pregnancy and for children. For adults, give 1 g (1000 mg) by mouth once a day for 3 days. For children's doses, see a health worker.
   - Also give zinc, 20 mg once a day, for 14 days.

5. **Severe diarrhea with fever, usually no blood.**

   - Fever may be partly caused by dehydration. Give lots of Rehydration Drink (p. 152). If the person is very ill and does not improve within 6 hours after beginning Rehydration Drink, seek medical help.
   - Check for signs of typhoid fever. If present, treat for typhoid (p. 188).
   - In areas where falciparum malaria is common, also treat persons with diarrhea and fever for malaria (p. 186), especially if they have an enlarged spleen.

6. **Yellow, bad smelling diarrhea with bubbles or froth, without blood or mucus.** Often a lot of gas in the belly, and burps that taste bad, like sulfur.

   - This may be caused by parasites called giardia (p. 145) or perhaps by malnutrition. In either case, plenty of liquid, nutritious food, and rest are often the best treatment. Severe giardia infections can be treated with metronidazole (p. 370). Quinacrine *(Atabrine)* is cheaper, but has worse side effects (p. 371).

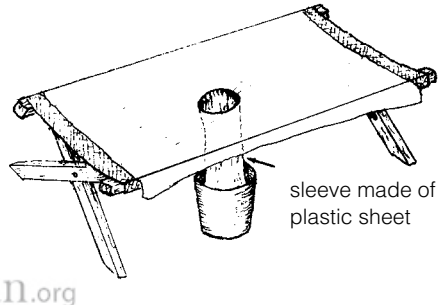
7. **Chronic diarrhea (diarrhea that lasts a long time or keeps coming back).**

   - This can be in part caused by malnutrition, or by a chronic infection such as giardia or HIV. See that the child eats more nutritious food more times a day (p. 110). If the diarrhea still continues, seek medical help.

8. **Diarrhea like rice water.** (Cholera)

   - Rice water stools in very large quantities may be a sign of cholera. In countries where this dangerous disease occurs, cholera often comes in *epidemics* (striking many people at once) and is usually worse in older children and adults. Severe dehydration can develop quickly, especially if there is vomiting also. It is important to treat the dehydration continuously with Rehydration Drink and other liquids (p. 152). Cholera should be reported to the health authorities. Seek medical help.

A **"cholera bed"** like this can be made for persons with very severe diarrhea. Watch how much liquid the person is losing and be sure he drinks larger amounts of Rehydration Drink. Give him the Drink almost continuously, and have him drink as much as he can.



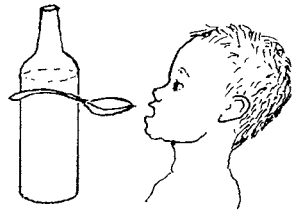
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Care of Babies with Diarrhea

GIVE HIM BREAST MILK



AND ALSO
REHYDRATION DRINK



Diarrhea is especially dangerous in babies and small children. Often no medicine is needed, but special care must be taken because a baby can die very quickly of dehydration.

- **Continue breastfeeding** and also give sips of **Rehydration Drink**.
- If vomiting is a problem, give breast milk often, but only a little at a time. Also give Rehydration Drink in small sips every 5 to 10 minutes (see Vomiting, p. 161).
- If there is no breast milk, try giving frequent small feedings of some other milk or milk substitute (like milk made from soybeans) **mixed to half normal strength with boiled water.** If milk seems to make the diarrhea worse, give some other protein (mashed chicken, eggs, lean meat, or skinned mashed beans, mixed with sugar or well-cooked rice or another carbohydrate, and boiled water).
- If possible, give zinc supplements (p. 383).
- If the child is younger than 1 month, try to find a health worker before giving any medicine. If there is no health worker and the child is very sick, give him an infant syrup that contains ampicillin: half a teaspoon 4 times daily (p. 352). It is better not to use other antibiotics.

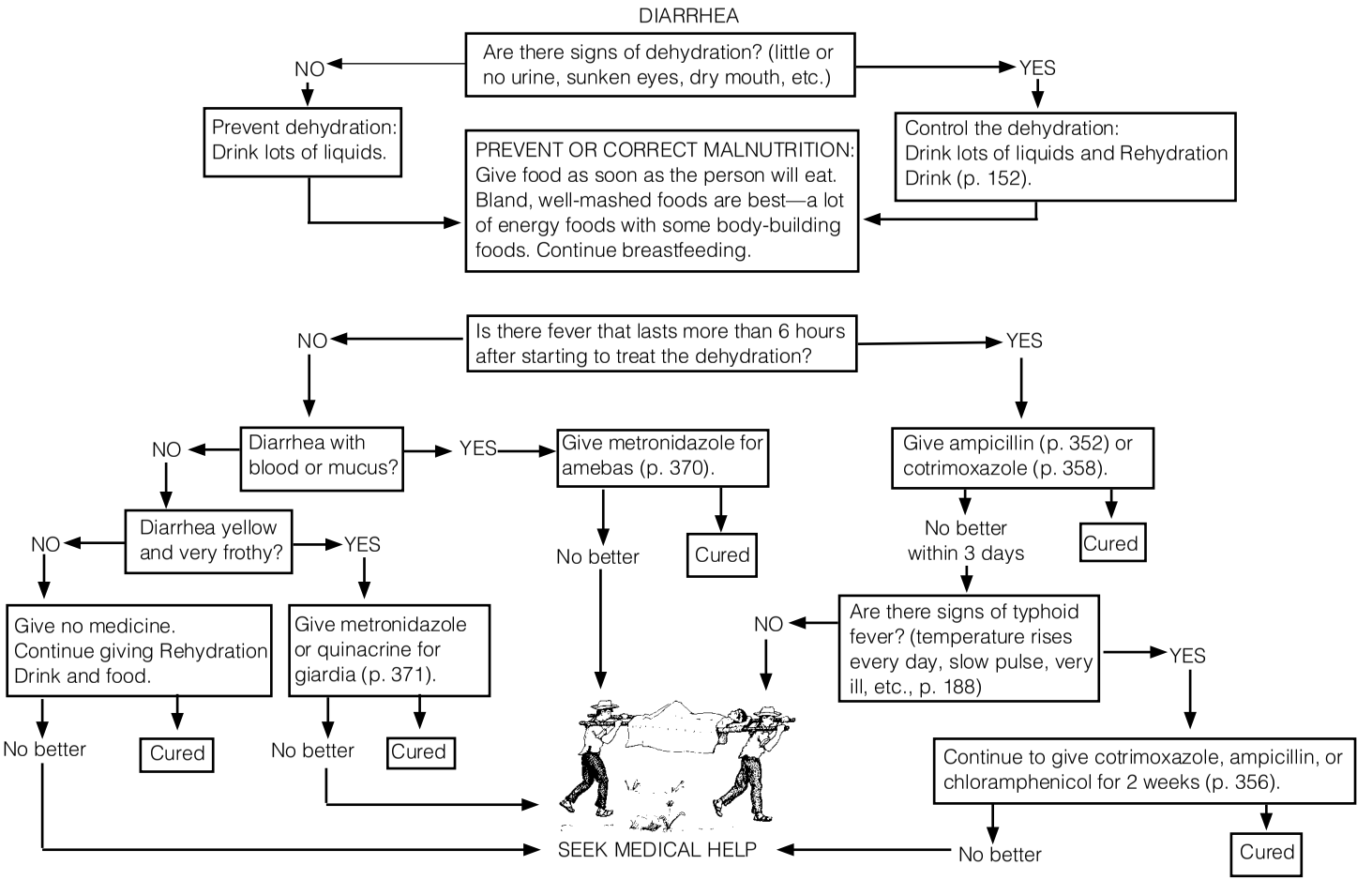
When to Seek Medical Help in Cases of Diarrhea

Diarrhea and dysentery can be very dangerous—especially in small children.
In the following situations you should get medical help:

- if diarrhea lasts more than 4 days and is not getting better—or more than 1 day in a small child with severe diarrhea
- if the person shows signs of dehydration and is getting worse
- if the child vomits everything he drinks, or drinks nothing, or if frequent vomiting continues for more than 3 hours after beginning Rehydration Drink
- if the child begins to have seizures, or if the feet and face swell
- if the person was very sick, weak, or malnourished before the diarrhea began (especially a little child or a very old person)
- if there is much blood in the stools. This can be dangerous even if there is only very little diarrhea (see gut obstruction, p. 94)

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THE CARE OF A PERSON WITH ACUTE DIARRHEA



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VOMITING

Many people, especially children, have an occasional stomach upset with vomiting. Often no cause can be found. There may be mild stomach or gut ache or fever. This kind of simple vomiting usually is not serious and clears up by itself.



Vomiting is one of the signs of many different problems, some minor and some quite serious, so it is important to examine the person carefully. Vomiting often comes from a problem in the stomach or guts, such as: an infection (see diarrhea, p. 153), poisoning from spoiled food (p. 135), or acute abdomen (for example, appendicitis or something blocking the gut, p. 94). Also, almost any sickness with high fever or severe pain may cause vomiting, especially malaria (p. 186), hepatitis (p. 172), tonsillitis (p. 309), earache (p. 309), meningitis (p. 185), urinary infection (p. 234), gallbladder pain (p. 329) or migraine headache (p. 162).

Danger signs with vomiting—seek medical help quickly!

- dehydration that increases and that you cannot control (p. 152)
- severe vomiting that lasts more than 24 hours
- violent vomiting, especially if vomit is dark green, brown, or smells like shit (signs of obstruction, p. 94)
- constant pain in the gut, especially if the person cannot defecate (shit) or if you cannot hear gurgles when you put your ear to the belly (see acute abdomen: obstruction, appendicitis, p. 94)
- vomiting of blood (ulcer, p. 128; cirrhosis, p. 328)

To help control simple vomiting:



- ♦ Eat nothing while vomiting is severe.
- ♦ Sip a cola drink or ginger ale. Some herbal teas, like camomile, may also help.
- ♦ For dehydration give small frequent sips of cola, tea, or Rehydration Drink (p. 152).
- ♦ If vomiting does not stop soon, use a vomit control medicine like promethazine (p. 387) or diphenhydramine (p. 388). But do not give these medicines to children under 2 years old.

Most of these come in pills, syrups, injections, and suppositories (soft pills you push up the ***anus***). Tablets or syrup can also be put up the anus. Grind up the tablet in a little water. Put it in with an enema set or syringe without a needle.

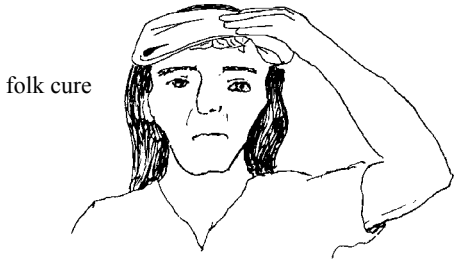
When taken by mouth, the medicine should be swallowed with very little water and nothing else should be swallowed for 5 minutes. Never give more than the recommended dose. Do not give a second dose until dehydration has been corrected and the person has begun to urinate. If severe vomiting and diarrhea make medication by mouth or anus impossible, give an injection of one of the vomit-control medicines. Promethazine may work best. Take care not to give too much.

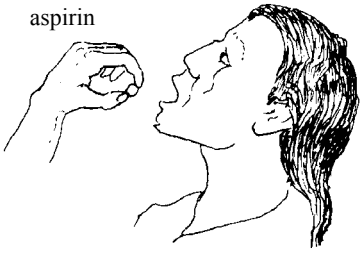
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HEADACHES AND MIGRAINES

SIMPLE HEADACHE can be helped by rest and aspirin. It often helps to put a cloth soaked in hot water on the back of the neck and to massage (rub) the neck and shoulders gently. Some other home remedies also seem to help.

For simple or nervous headache, folk cures sometimes work as well as modern medicine.





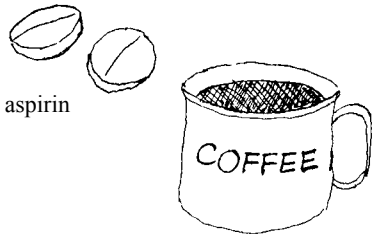
Headache is common with any sickness that causes fever. If headache is severe, check for signs of meningitis (p. 185).

Headaches that keep coming back may be a sign of a chronic illness, poor nutrition, or chemicals at work or in the environment. It is important to eat well and get enough sleep. If you think that chemicals could be causing the headaches or if they do not go away, talk with a health worker.

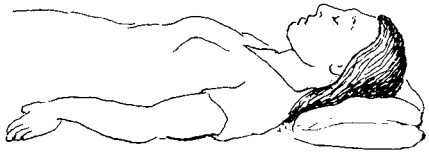
A **MIGRAINE** is a severe throbbing headache often on one side of the head only. Migraine attacks may come often, or months or years apart.

A typical migraine begins with blurring of vision, seeing strange spots of light, or numbness of one hand or foot. This is followed by severe headache, which may last hours or days. Often there is vomiting. Migraines are very painful, but not dangerous.

TO STOP A MIGRAINE, DO THE FOLLOWING AT THE FIRST SIGN:



- Take 2 aspirins with a cup of strong coffee or strong black tea.
- Lie down in a dark, quiet place. Do your best to relax. Try not to think about your problems.
- For especially bad migraine headaches, take aspirin, if possible with codeine, or with another sedative. Or obtain pills of ergotamine with caffeine (***Cafergot,*** p. 381). Take 2 pills at first and 1 pill every 30 minutes until the pain goes away. Do not take more than 6 pills in 1 day.



WARNING: Do not use ***Cafergot*** during pregnancy.

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COLDS AND THE FLU



Colds and the flu are common virus infections that may cause runny nose, cough, sore throat, and sometimes fever or pain in the joints. There may be mild diarrhea, especially in young children.

Colds and the flu almost always go away without medicine. **Do not use penicillin, tetracycline, or other antibiotics,** as they will not help at all and may cause harm.

- Drink plenty of water and get enough rest.
- Asprin, acetaminophen, or ibuprofen (pages 380 to 381) helps lower temperature and relieve body aches and headaches. More expensive "cold tablets" are no better than these.
- No special diet is needed. However, fruit juices, especially orange juice or lemonade, are helpful.

For treating coughs and stuffy noses that come with colds, see the next pages.

WARNING: Do not give any kind of antibiotic or injections to a child with a simple cold. They will not help and may cause harm.

If a cold or the flu lasts more than a week, or if the person has fever, coughs up a lot of ***phlegm*** (mucus with pus), has shallow fast breathing or chest pain, he could be developing bronchitis or pneumonia (pages 170 and 171). An antibiotic may be called for. The danger of a cold turning into pneumonia is greater in old people, in those who have lung problems like chronic bronchitis, in people who cannot move much, and in people with HIV. People with HIV can take cotrimoxazole daily to prevent pneumonia and other infections (p. 357).

Sore throat is often part of a cold. No special medicine is needed, but it may help to gargle with warm water. However, if the sore throat begins suddenly, with high fever, it could be a strep throat. Special treatment is needed (p. 310).

Prevention of colds:

- Getting enough sleep and eating well helps prevent colds. Eating oranges, tomatoes, and other fruit containing vitamin C may help. Washing hands often—especially before touching your face, nose, mouth, or anything you put into your mouth—is also good prevention.
- Contrary to popular belief, colds do not come from getting cold or wet (although getting very cold, wet, or tired can make a cold worse). A cold is "caught" from others who have the infection and sneeze the virus into the air.
- To keep from giving his cold to others, the sick person should eat and sleep separately—and take special care to keep far away from small babies. He should cover his nose and mouth when he coughs or sneezes, and wash his hands often if possible.
- To prevent a cold from leading to earache (p. 309), **try not to blow your nose—just wipe it.** Teach children to do the same.

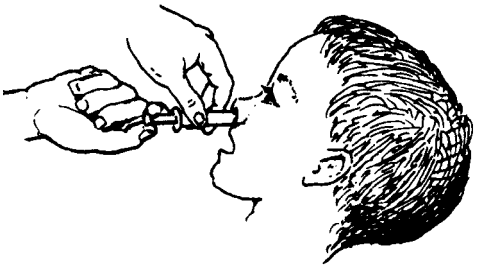
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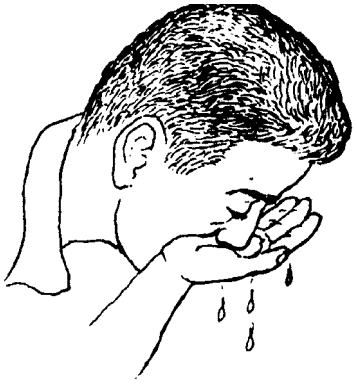
STUFFY AND RUNNY NOSES

A stuffy or runny nose can result from a cold or allergy (see next page). A lot of mucus in the nose may cause ear infections in children or sinus problems in adults.

To help clear a stuffy nose, do the following:

1. In little children, carefully suck the mucus out of the nose with a suction bulb or syringe **without a needle,** like this:





2. Older children and adults can put a little salt water into their hand and sniff it into the nose. This helps to loosen the mucus.The water should not be too salty. ¼ teaspoon of salt mixed in a cup of water is enough.

3. Breathing hot water vapor as described on page 168 helps clear a stuffy nose.

4. Wipe a runny or stuffy nose, but **try not to blow it.** Blowing the nose may lead to earache and sinus infections.

5. Persons who often get earaches or sinus trouble after a cold can help prevent these problems by using ***decongestant*** nose drops with phenylephrine or ephedrine (p. 384). After sniffing a little salt water, put the drops in the nose like this:

With the head sideways, put 2 or 3 drops in the lower nostril. Wait a couple of minutes and then do the other side.



CAUTION: **Use decongestant drops no more than 3 times a day, for no more than 3 days.**

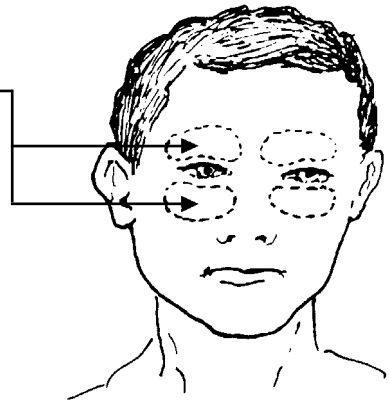
A decongestant syrup (with phenylephrine or something similar) may also help.

Prevent ear and sinus infections—try not to blow your nose, just wipe it.

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SINUS TROUBLE (SINUSITIS)

Sinusitis is an acute or chronic (long-term) inflammation of the sinuses or hollows in the bone that open into the nose. It usually occurs after a person has had an infection of the ears or throat, or after a bad cold.



Signs:

- Pain in the face above and below the eyes. (It hurts more when you tap lightly just over the bones, or when the person bends over.)
- Thick mucus or pus in the nose, perhaps with a bad smell. The nose is often stuffy.
- Fever (sometimes).
- Certain teeth may hurt.

Treatment:

- ♦ Drink a lot of water.
- ♦ Sniff a little salt water into the nose (p. 164), or breathe steam from hot water to clear the nose (p. 168).
- ♦ Put hot compresses on the face.
- ♦ Use decongestant nose drops such as phenylephrine (***Neo-synephrine,*** p. 384).
- ♦ Use an antibiotic such as tetracycline (p. 355), ampicillin (p. 352), or penicillin (p. 351).
- ♦ If the person does not get better, seek medical help.

Prevention:

When you get a cold and a stuffy nose, try to keep your nose clear. Follow the instructions on page 164.

HAY FEVER (ALLERGIC RHINITIS)



Runny nose and itchy eyes can be caused by an allergic reaction to something in the air that a person has breathed in (see the next page). It is often worse at certain times of year.

Treatment:

Use an antihistamine such as chlorpheniramine (p. 386). Dimenhydrinate (***Dramamine,*** p. 388), usually sold for motion sickness, also works.

Prevention:

Find out what things cause this reaction (for example: dust, chicken feathers, ***pollen,*** mold) and try to avoid them.

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ALLERGIC REACTIONS

An allergy is a disturbance or reaction that affects only certain persons when things they are sensitive or allergic to are . . .

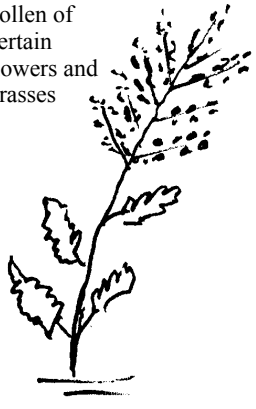
- breathed in
- eaten
- injected
- or touch the skin

Allergic reactions, which can be mild or very serious, include:

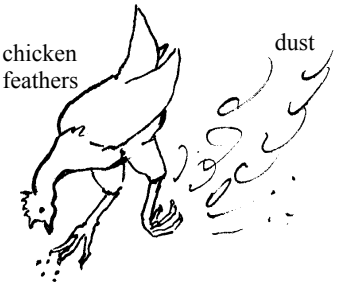
- itching rashes, lumpy patches, or ***hives*** (p. 203)
- runny nose and itching or burning eyes (hay fever, p. 165)
- irritation in the throat, difficulty breathing, or asthma (see next page)
- allergic shock (p. 70)
- diarrhea (in children allergic to milk—a rare cause of diarrhea, p. 156)

An allergy is not an infection and cannot be passed from one person to another. However, children of allergic parents also tend to have allergies.

Often allergic persons suffer more in certain seasons—or whenever they come in touch with the substances that bother them. Common causes of allergic reactions are:

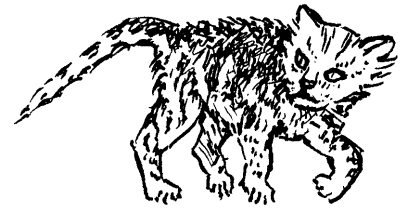


pollen of certain flowers and grasses

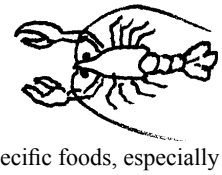


chicken feathers

dust



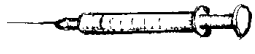
hair from cats and other animals



specific foods, especially fish, shellfish, beer, and others



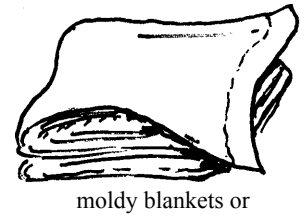
kapok or feather pillows



certain medicines, especially injections of penicillin or antitoxins made from horse serum (p. 70)



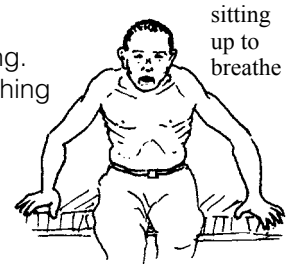
chemicals in your home, school, or work



moldy blankets or clothes

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ASTHMA


sitting up to breathe

A person with asthma has fits or attacks of difficult breathing. Listen for a hissing or wheezing sound, especially when breathing out. When he breathes in, the skin behind his collar bones and between his ribs may suck in as he tries to get air. If the person cannot get enough air, his nails and lips may turn blue, and his neck veins may swell. Usually there is no fever.

Asthma often begins in childhood and may be a problem for life. It is not ***contagious,*** but is more common in children with relatives who have asthma. It is generally worse during certain months of the year or at night.

An asthma attack may be caused by eating or breathing things to which the person is allergic (p. 166). In children asthma often starts with a cold. Nervousness or worry may bring on an asthma attack. Asthma can also be caused by unclean air (air pollution), such as smoke from cigarettes, inside cooking fires, burning fields, or cars and trucks.

Treatment:

- If asthma gets worse inside the house, the person should go outside to a place where the air is cleanest. Remain calm and be gentle with the person. Reassure him.
- Give a lot of liquids. This loosens mucus and makes breathing easier. Breathing water vapor may also help (p. 168).
- Strong coffee or black tea can help relieve an asthma attack if you do not have any medicines.
- For attacks, treat with the rescue inhaler salbutamol (albuterol, p. 385) as often as needed. This is a spray medicine that you want to breathe in as deeply as possible.


See page 386 to learn how to make a spacer for your inhaler.

- For frequent attacks, or asthma that makes you gasp for breath while walking or during mild exercise, also use the controller inhaler (beclomethasone, p. 386). Using a controller medicine can prevent attacks, save you money, and make you feel better than always responding to an asthma emergency. Using a "spacer" with your inhaler allows more medicine to get to the lungs.
- For severe asthma where you cannot get enough air and do not improve with salbutamol, use prednisolone by mouth right away, and then continue for 3 to 7 days (p. 386). In emergencies if you have no other medicines you can inject epinephrine (adrenaline, p. 386) under the skin.
- In rare cases, worms cause asthma. Try giving mebendazole (p. 375) to a child who starts having asthma if you think she has worms.
- **If the person does not get better, seek medical help.**

Prevention:

A person with asthma should avoid eating or breathing things that bring on attacks. The house or work place should be kept clean. Keep chickens and other animals outside. Air bedding in the sunshine. Sometimes it helps to sleep outside in the open air. Drink at least 8 glasses of water each day to keep the mucus loose. Persons with asthma may improve when they move to where the air is cleaner.

If you have asthma do not smoke—smoking damages your lungs even more.

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COUGH

Coughing is not a sickness in itself, but is a sign of many different sicknesses that affect the throat, lungs, or ***bronchi*** (the network of air tubes going into the lungs). Below are some of the problems that cause different kinds of coughs:

DRY COUGH WITH LITTLE OR NO PHLEGM:	COUGH WITH MUCH OR LITTLE PHLEGM:	COUGH WITH A WHEEZE OR WHOOP AND TROUBLE BREATHING:
cold or flu (p. 163) worms—when passing through the lungs (p. 140) measles (p. 311) smoker's cough (smoking, p. 149)	bronchitis (p. 170) pneumonia (p. 171) asthma (p. 167) smoker's cough, especially when getting up in the morning (p. 149)	asthma (p. 167) whooping cough (p. 313) diphtheria (p. 313) heart trouble (p. 325) something stuck in the throat (p. 79)

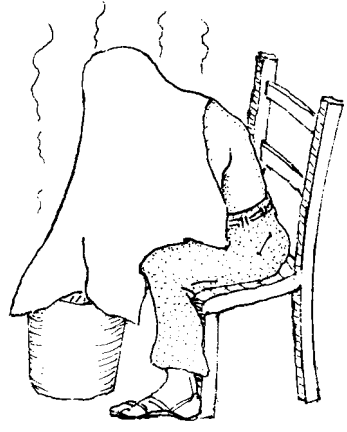
CHRONIC OR PERSISTENT COUGH:	COUGHING UP BLOOD:
tuberculosis (p. 179) smoker's or miner's cough (p. 149) asthma (repeated attacks, p. 167) chronic bronchitis (p. 170) emphysema (p. 170)	tuberculosis (p. 179) pneumonia (yellow, green, or blood-streaked phlegm, p. 171) severe worm infection (p. 140) cancer of the lungs or throat (p. 149)

Coughing is the body's way of cleaning the breathing system and getting rid of phlegm (mucus with pus) and germs in the throat or lungs. So when a cough produces phlegm, **do not take medicine to stop the cough, but rather do something to help loosen and bring up the phlegm.**

Treatment for cough:

1. **To loosen mucus** and ease any kind of cough, **drink lots of water.** This works better than any medicine.

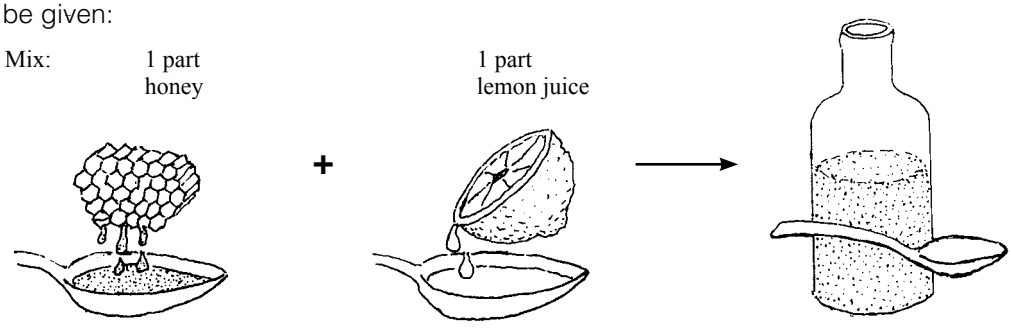
Also **breathe hot water vapors.** Sit on a chair with a bucket of very hot water at your feet. Place a sheet over the bucket to catch the vapors as they rise. Breathe the vapors deeply for 15 minutes. Repeat several times a day. Some people like to add mint or eucalyptus leaves or ***Vaporub,*** but hot water works just as well alone.



CAUTION: Do not use eucalyptus or ***Vaporub*** if the person has asthma. They make it worse.

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2. **For all kinds of cough,** especially a dry cough, the following cough syrup can be given:



Take a teaspoonful every 2 or 3 hours.

WARNING: Do not give honey to babies under 1 year. Make the syrup with sugar instead of honey.

3. **For a severe dry cough that does not let you sleep,** you can take a syrup with codeine (p. 383). Tablets of aspirin with codeine (or even aspirin alone) also help. If there is a lot of phlegm or wheezing, do not use codeine.

4. **For a cough with wheezing** (difficult, noisy breathing), see Asthma (p. 167), Chronic Bronchitis (p. 170), and Heart Trouble (p. 325).

5. **Try to find out what sickness is causing the cough and treat that.** If the cough lasts a long time, if there is blood, pus, or smelly phlegm in it, or if the person is losing weight or has continual difficulty breathing, see a health worker.

6. **If you have any kind of a cough, do not smoke.** Smoking damages the lungs.

To prevent a cough, do not smoke.
To cure a cough, treat the illness that causes it—and do not smoke.
To calm a cough, and loosen phlegm, drink lots of water—and do not smoke.

HOW TO DRAIN MUCUS FROM THE LUNGS (POSTURAL DRAINAGE)

When a person who has a bad cough is very old or weak and cannot get rid of the sticky mucus or phlegm in his chest, it will help if he drinks a lot of water. Also do the following:

- First, have him breathe hot water vapors to loosen the mucus.
- Then pound him lightly on the back with a cupped hand. This will help to bring out the mucus.



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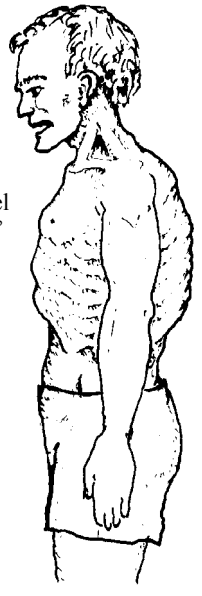
BRONCHITIS

Bronchitis is an infection of the bronchi or tubes that carry air to the lungs. It causes a noisy cough, often with mucus or phlegm. Bronchitis is usually caused by a virus, so antibiotics do not generally help. **Use antibiotics only if the bronchitis lasts more than a week** and is not getting better, if the person shows signs of **pneumonia** (see the following page), or if he already has a **chronic lung problem.**

CHRONIC BRONCHITIS

Signs:

- A cough, with mucus that lasts for months or years. Sometimes the cough gets worse, and there may be fever. A person who has this kind of cough, but does not have another long term illness such as tuberculosis or asthma, probably has chronic bronchitis.
- It occurs most frequently in older persons who have been heavy smokers.
- It can lead to emphysema, a very serious and incurable condition in which the tiny air pockets of the lungs break down. A person with emphysema has a hard time breathing, especially with exercise, and his chest becomes big "like a barrel."



Emphysema can result from chronic asthma, chronic bronchitis, or smoking.

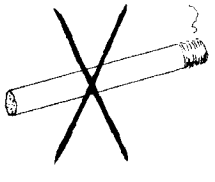
Treatment:

- ♦ Stop smoking.
- ♦ Take an anti-asthma medicine with salbutamol (p. 385).
- ♦ Persons with chronic bronchitis should use cotrimoxazole or amoxicillin every time they have a cold or flu with a fever.
- ♦ If the person has trouble coughing up sticky phlegm, have him breathe hot water vapors (p. 168) and then help him with postural drainage (p. 169).



If you have a chronic cough (or want to prevent one),

DO NOT SMOKE!



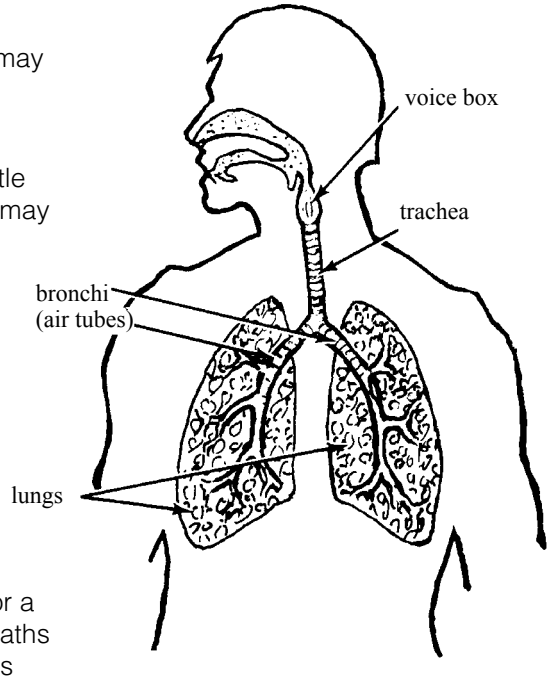
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PNEUMONIA

Pneumonia is an ***acute*** infection of the lungs. It often occurs after another respiratory illness or after any very serious illness, especially in babies and old people. Also, persons with HIV may develop pneumonia.

Signs:

- Fever (infants and older people may have no fever).
- Chills.
- Rapid, shallow breathing, with little grunts or wheezing. The nostrils may spread with each breath.
- Cough (often with yellow, greenish, or slightly bloody mucus).
- Chest pain (sometimes).
- Person looks very ill.
- Cold sores on the face or lips (p. 232).



A very sick child with fast, shallow breathing probably has pneumonia. For a newborn, this means more than 60 breaths a minute. For a baby between 2 months and 1 year, fast breathing is more than 50 breaths a minute, and for a child between 1 and 5 years old, 40 breaths a minute. (If breathing is rapid and deep, check for dehydration, p. 151, or hyperventilation, p. 24.) Do not count the breaths while the child is crying or just after she has stopped.

Treatment:

- ♦ For pneumonia, give amoxicillin by mouth, 1 g, 3 times a day for 5 to 7 days, or give amoxicillin with clavulanic acid, 500 mg, 3 times a day for 5 to 7 days (pages 352 to 353). Give small children ¼ to ½ the adult dose. Also give another antibiotic. Azithromycin works best: give 500 mg once a day for 3 days. If it is not available, give doxycycline, 100 mg, 2 times a day for 5 to 7 days.
- ♦ Give aspirin, acetaminophen, or ibuprofen (pages 380 to 381) to lower the temperature and lessen the pain. Acetaminophen is safer for children under 12.
- ♦ Give plenty of liquids. If the person will not eat, give him liquid foods or Rehydration Drink (p. 152).
- ♦ Ease the cough and loosen the mucus by giving the person plenty of water and having him breathe hot water vapors (p. 168). Postural drainage may also help (p. 169).
- ♦ If the person is wheezing, an anti-asthma medicine may help (p. 385).

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HEPATITIS

Hepatitis is an inflammation of the liver usually caused by a virus. It can also be caused by bacteria, alcohol, or chemical poisoning. There are several major types of hepatitis (for example, A, B, C, D, and E) and it can spread even when someone has no signs of disease. Even though people call it "the fever" in some places (p. 26), hepatitis may not cause fever.

Hepatitis A and E spread *feces-to-mouth* (pages 131 to 133) so are more common where people do not have clean water and good sanitation. These tend to cause mild illness in most people, and children may have no symptoms at all. Hepatitis B and C spread through body fluids including blood, semen, and vaginal fluid. These can cause chronic illness and death from scarring of the liver (cirrhosis) or liver cancer. Hepatitis D infection is possible only if someone has already been infected with hepatitis B.

Signs:

- tiredness
- does not want to eat or smoke
- pain in right side near the liver
- muscle or joint pain



- fever
- yellow skin and eyes
- nausea and vomiting
- dark urine and whitish stools

Treatment:

- ♦ There is no treatment for hepatitis A or E, but most people recover from these illnesses on their own after several weeks. Anti-retroviral medicines can treat hepatitis B and cure hepatitis C.
- ♦ Antibiotics do not work against hepatitis. Some medicines such as acetaminophen will cause added damage to the liver if taken while sick with hepatitis.
- ♦ A person sick with hepatitis should rest and drink lots of liquids: orange, papaya, and other juices plus broth or vegetable soup. Vitamins may help. To control vomiting, see page 161.
- ♦ When the sick person can eat, give a balanced meal. Do not give a lot of protein (meat, eggs, fish, etc.) because this makes the damaged liver work too hard. Avoid lard and fatty foods. The sick person should not drink any alcohol for at least 6 months.

Prevention:

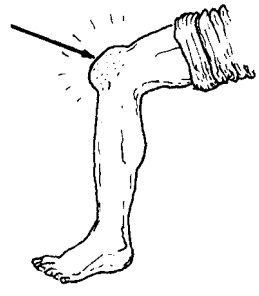
- ♦ Vaccines prevent both hepatitis A and B. The hepatitis B vaccine is part of the standard vaccinations given to all babies (p. 147). Older children and adults can get vaccinated if they did not as babies.
- ♦ Small children can have hepatitis without signs of illness, but can still spread the infection to others. It is very important that everyone in the house follow all the guidelines of cleanliness with great care (pages 133 to 139).
- ♦ To prevent the spread of hepatitis A and E, bury the stools of anyone sick with these illnesses. The sick person, his family, and caregivers must stay clean and wash their hands often.
- ♦ To prevent the spread of hepatitis B and C, use condoms (p. 287), follow the HIV prevention suggestions on p. 403, and always use clean and sterilized medical tools including needles and syringes (p. 74).

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ARTHRITIS (PAINFUL, INFLAMED JOINTS)

Most chronic joint pain, or arthritis, in older people cannot be cured completely. However, the following offer some relief:

- **Rest.** If possible, avoid hard work and heavy exercise that bother the painful joints. If the arthritis causes some fever, it helps to take naps during the day.
- **Place cloths soaked in hot water** on the painful joints (p. 195).
- **Aspirin** helps relieve pain; the dose for arthritis is higher than that for calming other pain. Adults should take 3 tablets, 4 times a day. If your ears begin to ring, take less. **To avoid stomach problems caused by aspirin,** always **take it with food, or a large glass of water.** If stomach pain continues, take the aspirin not only with food and lots of water, but also with a spoonful of an antacid such as *Maalox* or *Gelusil***.**
- It is important to do simple **exercises** to help maintain or increase the range of motion in the painful joints.



If only one joint is swollen and feels hot, it may be infected—especially if there is fever. Use an antibiotic such as penicillin (p. 350) and if possible see a health worker.

Painful joints in young people and children may be a sign of other serious illness, such as rheumatic fever (p. 310) or tuberculosis (p. 179). For more information on joint pain, see *Disabled Village Children,* Chapters 15 and 16.

BACK PAIN

Back pain has many causes. Here are some:

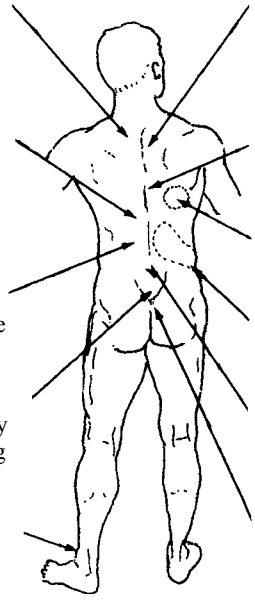
Chronic upper back pain with cough and weight loss may be TB of the lungs (p. 179).



Mid back pain in a child may be TB of the spine, especially if the backbone has a hump or lump.

Low back pain that is worse the day after heavy lifting or straining may be a sprain.

Severe low back pain that first comes suddenly when lifting or twisting may be a *slipped disc,* especially if one leg or foot becomes painful or numb and weak. This can result from a pinched nerve.



Standing or sitting with the shoulder drooped is a common cause of backache.



In older people, chronic back pain is often arthritis.

Pain in the upper right back may be from a gallbladder problem (p. 329).

Acute (or chronic) pain here may be a urinary problem (p. 234).

Low backache is common for some women during menstrual periods or pregnancy (p. 248).

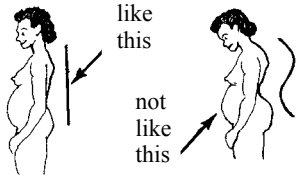
Very low back pain sometimes comes from problems in the uterus, ovaries, or rectum.

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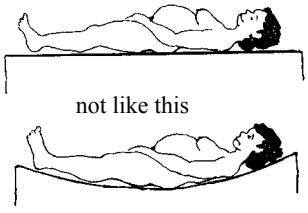
Treatment and prevention of back pain:

- If back pain has a cause like TB, a urinary infection, or gallbladder disease, treat the cause. Seek medical help if you suspect a serious disease.
- Simple backache, including that of pregnancy, can often be prevented or made better by:

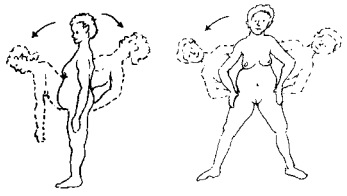
always standing straight



sleeping on a firm flat surface like this

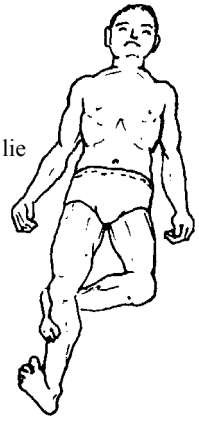


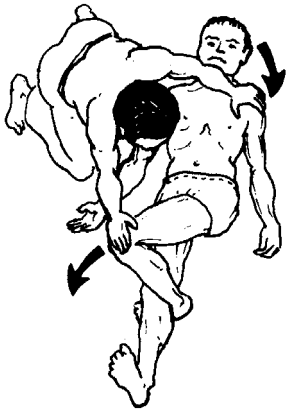
back-bending exercises (done very slowly)



- Aspirin and hot soaks (p. 195) help calm most kinds of back pain.
- For sudden, severe, low back pain that comes from twisting, lifting, bending, or straining, quick relief can sometimes be brought like this:

Have the person lie with one foot tucked under his knee.





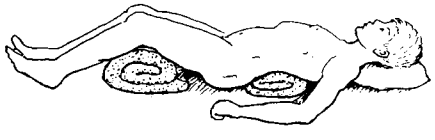
Then, holding this shoulder down,

gently but steadily push this knee over so as to twist the back.

Do this first on one side and then the other.

CAUTION: Do not try this if the back pain is from a fall or injury.

- If back pain from lifting or twisting is sudden and severe with knife-like pain when you bend over, if the pain goes into the leg(s), or if a foot becomes numb or weak, this is serious. A nerve coming from the back may be pinched by a slipped disc (pad between the bones of the back). It is best to rest flat on your back for a few days. It may help to put something firm under the knees and mid back.

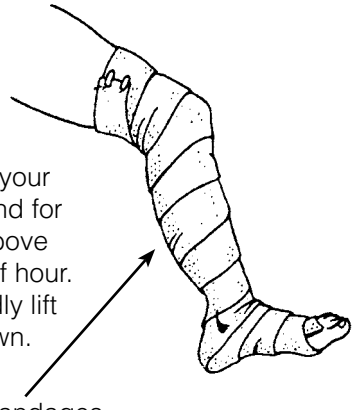


- Take aspirin and use hot soaks. If pain does not begin to get better in a few days, seek medical advice.

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VARICOSE VEINS

Varicose veins are veins that are swollen, twisted, and often painful. They are often seen on the legs of older people and of women who are pregnant or who have had many children.



Treatment:

There is no medicine for varicose veins. But the following will help:

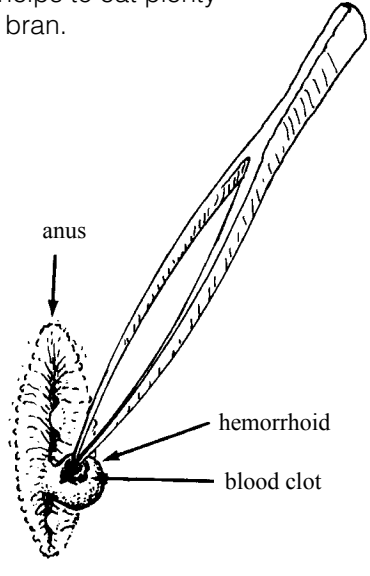
- Do not spend much time standing or sitting with your feet down. If you have no choice but to sit or stand for long periods, try to lie down with your feet up (above the level of the heart) for a few minutes every half hour. When standing, try to walk in place. Or, repeatedly lift your heels off the ground and put them back down. Also, sleep with your feet up (on pillows).
- Use elastic stockings (support hose) or elastic bandages to help hold in the veins. Be sure to take them off at night.
- Taking care of your veins in this way will help prevent chronic sores or varicose ulcers on the ankles (p. 213).

PILES (HEMORRHOIDS)

Piles or hemorrhoids are varicose veins of the anus or rectum, which feel like little lumps or balls. They may be painful, but are not dangerous. They frequently appear during pregnancy and may go away afterwards.

- Certain bitter plant juices (witch hazel, cactus, etc.) dabbed on hemorrhoids help shrink them. So do hemorrhoid ***suppositories*** (p. 393).
- Sitting in a bath of warm water can help the hemorrhoid heal.
- Piles may be caused in part by constipation. It helps to eat plenty of fruit or food with a lot of fiber, like cassava or bran.
- Very large hemorrhoids may require an operation. Get medical advice.

If a hemorrhoid begins to bleed, the bleeding can sometimes be controlled by pressing with a clean cloth directly on the hemorrhoid. If the bleeding still does not stop, seek medical advice. Or try to control the bleeding by removing the clot that is inside the swollen vein.



First, clean the anus with soap and water. Use a blade that has been sterilized by boiling to cut a small opening in the hemorrhoid. Use sterilized tweezers to pull out the clot. Put pressure on the cut with a clean cloth until bleeding stops.

CAUTION: **Do not try to cut the hemorrhoid out.** The person can bleed to death.

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SWELLING OF THE FEET AND OTHER PARTS OF THE BODY

Swelling of the feet may be caused by a number of different problems, some minor and others serious. But if the face or other parts of the body are also swollen, this is usually a sign of serious illness.

Women's feet sometimes swell during the last three months of pregnancy. This is usually not serious. It is caused by the weight of the child that presses on the veins coming from the legs in a way that limits the flow of blood. However, if the woman also has high blood pressure, swollen face, a lot of protein in her urine, or sudden weight gain, she may be suffering from ***pre-eclampsia*** (p. 249). Seek medical help fast.

Old people who spend a lot of time sitting or standing in one place often get swollen feet because of poor circulation. However, swollen feet in older persons may also be due to heart trouble (p. 325) or, less commonly, kidney disease (p. 234).

Swelling of the feet in small children may result from anemia (p. 124) or malnutrition (p. 107). In severe cases of malnutrition the face and hands may also become swollen (see "Kwashiorkor," p. 113).

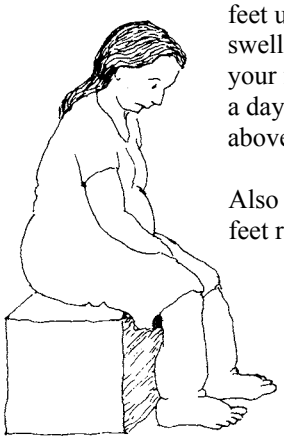
Treatment:

To reduce swelling, treat the sickness that causes it. Use little or no salt in food. Herbal teas that make people urinate a lot usually help (see corn silk, p. 12). Also do the following:

WHEN YOUR FEET ARE SWOLLEN:

Do not spend time sitting with your feet down. This makes them swell more.

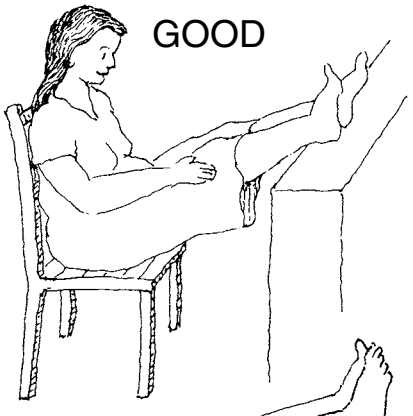
NO



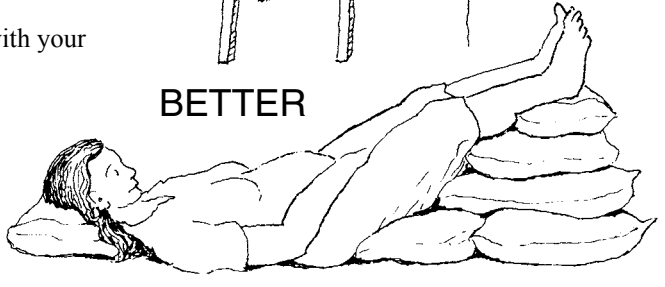
When you sit, put your feet up high. This way the swelling becomes less. Put your feet up several times a day. Your feet should be above the level of your heart.

Also sleep with your feet raised.

GOOD



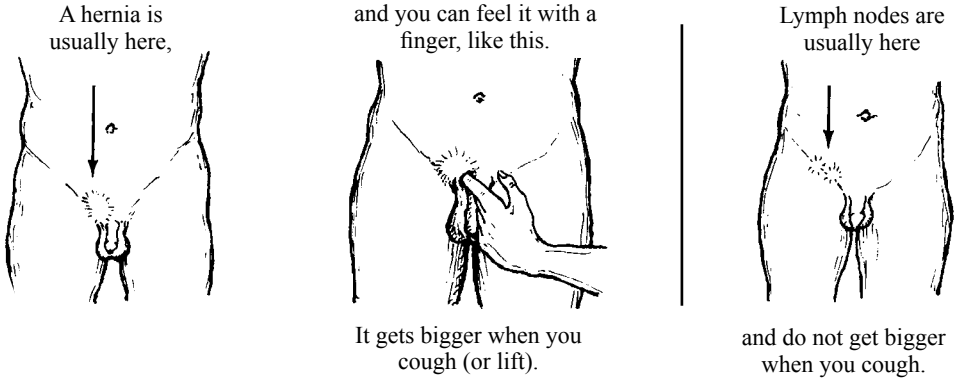
BETTER



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HERNIA (RUPTURE)

A hernia is an opening or tear in the muscles covering the belly. This permits a loop of gut to push through and form a lump under the skin. Hernias usually come from lifting something heavy, or straining (as can happen while giving birth). Some babies are born with a hernia (p. 317). In men, hernias are common in the groin. Swollen lymph nodes (p. 88) may also cause lumps in the groin. However . . .



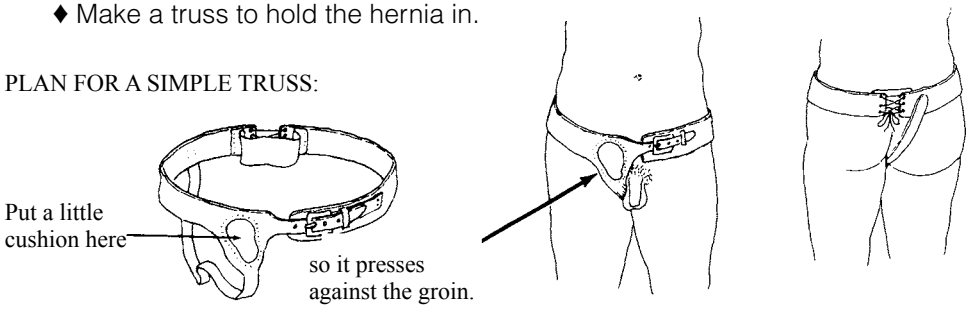
How to prevent a hernia:



How to live with a hernia:

- ♦ Avoid lifting heavy objects.
- ♦ Make a truss to hold the hernia in.

PLAN FOR A SIMPLE TRUSS:



CAUTION: If a hernia suddenly becomes large or painful, try to make it go back in by lying with the feet higher than the head and pressing gently on the bulge. If it will not go back, seek medical help.

If the hernia becomes very painful and causes vomiting, and the person cannot have a bowel movement, this can be very dangerous. Surgery may be necessary. Seek medical help fast. In the meantime, treat as for Appendicitis (p. 95).

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SEIZURES (CONVULSIONS)

We say a person has a seizure when he suddenly loses consciousness and makes strange, jerking movements (convulsions). Seizures come from a condition in the brain. In small children, common causes of seizures are high fever and severe dehydration. In very ill persons, the cause may be meningitis, malaria of the brain (severe malaria), or poisoning. In pregnancy, it may be eclampsia (p. 249). A person who often has seizures may have epilepsy.

- Try to figure out the cause of a seizure and treat it, if possible.
- If the child has a high fever, lower it with cool water (p. 76) or paracetamol (p 380).
- If the child is dehydrated, give an enema of Rehydration Drink slowly. Send for medical help. Give nothing by mouth during a seizure.
- If there are signs of meningitis (p. 185), begin treatment at once. Seek medical help.
- If you suspect severe malaria, inject quinine or artesunate (pages 369 and 367).
- If you suspect eclampsia, give medicine (p. 390).

EPILEPSY

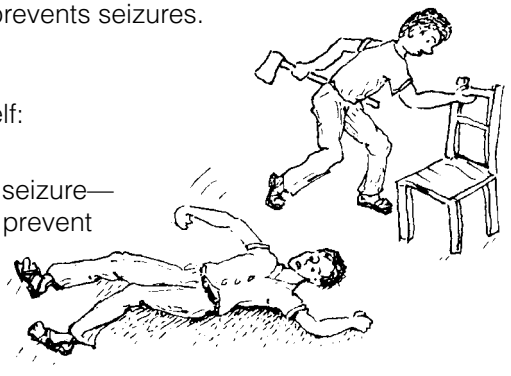
Epilepsy causes seizures in people who otherwise seem fairly healthy. Seizures may come hours, days, weeks, or months apart. In some persons they cause loss of consciousness, violent movements, or the eyes to roll back. In mild types of epilepsy the person may suddenly "blank out" a moment, make strange movements, or behave oddly. Epilepsy may come from brain injury at birth, high fever in infancy, injuries to the head and brain, pesticide or chemical poisoning, or alcohol and drug use. Epilepsy is not an infection and cannot be "caught." It is often a life-long problem. However, babies sometimes get over it.

Medicines to prevent epileptic seizures:

Note: These do not cure epilepsy; they help prevent seizures. Often the medicine must be taken for life.

- Carbamazepine and phenobarbital often control epilepsy. Valproate or phenytoin may work when other medicines do not (pages 390 to 391).
- Always use the lowest possible dose that prevents seizures.

When a person is having a seizure:



- Try to keep the person from hurting themself: move away all hard or sharp objects.
- Put nothing in the person's mouth during a seizure—no food, drink, medicine, nor any object to prevent biting the tongue.
- After the seizure the person may be confused and sleepy. Let them rest.
- If a seizure lasts more than 5 minutes, put liquid diazepam in the rectum using a plastic syringe without a needle. For dosage see page 391. Do not inject phenobarbital or diazepam into the muscles.

For more information on seizures, see ***Disabled Village Children,*** Chapter 29.

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Serious Illnesses that Need Special Medical Attention

CHAPTER 14

The diseases covered in this chapter are often difficult or impossible to cure without medical help. Many need special medicines that are difficult to get in rural areas. Home remedies will not cure them. If a person has one of these illnesses, *THE SOONER HE GETS MEDICAL HELP, THE BETTER HIS CHANCE OF GETTING WELL.*

CAUTION: Many of the illnesses covered in other chapters may also be serious and require medical assistance. See the **Signs of Dangerous Illness,** p. 42.

TUBERCULOSIS (TB)

Tuberculosis of the lungs is a ***chronic*** (long-lasting), ***contagious*** (easily spread) disease that anyone can get. But it often strikes persons between 15 and 35 years of age—especially those who are weak, poorly nourished, live in crowded conditions, have HIV, or live with someone who has TB. TB is usually only in the lungs. But it can affect any part of the body. In young children it may cause meningitis (p. 185). For skin problems from TB, see page 212.

Because so many people with HIV (p. 401) get very sick with TB, all people with HIV should get a TB test. People with HIV can take isoniazid (p. 360) to prevent TB from developing. Encourage people with TB to also be tested for HIV and get support from a treatment program if they are positive.

Tuberculosis is curable. Yet thousands die needlessly from this disease every year. Both for prevention and cure, it is very important to **treat tuberculosis early. Be on the lookout for the signs of tuberculosis.** A person may have one or many of them.



Most frequent signs of TB in the lungs:

- a cough that lasts longer than 3 weeks, often worse just after waking up
- slight fever in the evening and sweating at night
- there may be pain in the chest or upper back
- chronic loss of appetite and weight and increasing weakness

In serious or advanced cases:

- coughing up blood (usually a little, but in some cases a lot)
- pale, waxy skin
- voice grows hoarse (this is very serious)

In young children: The cough may come late. Instead, look for:

- steady weight loss
- frequent fever
- less energy for play and activity
- swellings in the neck (lymph nodes) or the belly (p. 20)

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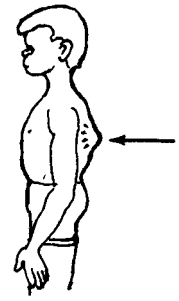
If you think you might have tuberculosis:

Seek medical help. At the first sign of tuberculosis, go to a health center where the workers can examine you, and test the stuff you cough up (***phlegm*** or ***sputum***) to see if you have TB or not. Many governments give TB medicines free. Ask at the nearest health center. For information about treatment with TB medicines, see the Green Pages (pages 359 to 361).

It is very important to take the medicines as directed. Treatment may be different in different countries, but usually the treatment has 2 parts. You will take 4 medicines for 2 months and then get your sputum tested. If you are getting better, you will take 2 or 3 medicines for another 4 months. Then you will be tested again to make sure you are cured. Do not stop taking the medicines, even if you feel better. This can lead to the illness coming back and infecting you and other people with forms of TB that are much harder to cure (p. 359). To cure TB completely can take from 6 months to more than a year.

Eat as well as possible: plenty of energy foods and also foods rich in proteins and vitamins (pages 110 to 111). Rest is important. If possible, stop working and take it easy until you begin to get better. From then on, try not to work so hard that you become tired or breathe with difficulty. Try to always get enough rest and sleep.

Tuberculosis in any other part of the body is treated the same as TB of the lungs, but the treatment may be longer. This includes TB in the glands of the neck, TB of the abdomen (see picture on p. 20), TB of the skin (p. 212), and TB of a joint (like the knee). A child with severe TB of the backbone may also need surgery to prevent paralysis (see ***Disabled Village Children***, Chapter 21).



TB of the backbone

Tuberculosis is very contagious. It spreads when someone with TB coughs germs into the air. Anyone, especially a child, who lives with someone who has TB runs a great risk of catching the disease.

If someone in the house has TB:

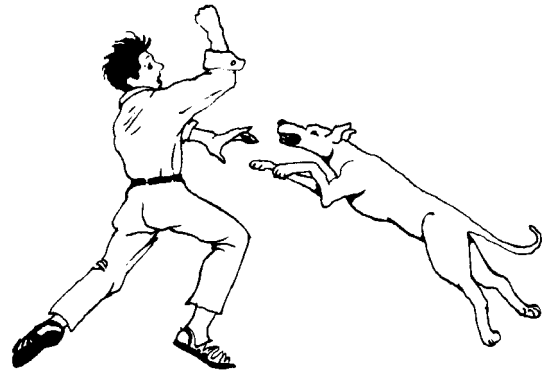
- have the whole family tested for TB (tuberculin skin test), if possible
- have the children vaccinated against TB with BCG vaccine
- make sure everyone, especially the children, gets enough nutritious food to eat
- the person with TB should eat and sleep separately from the children, if possible in a different room, as long as he has any cough at all
- ask the person with TB to cover his mouth when coughing and not spit on the floor
- watch for weight loss and other signs of TB in members of the family. Weigh each person, especially the children, once a month, until you are sure no one in the household is sick with TB

TB is likely to spread to those who often spend time with a person who has TB. If anyone in the family shows signs of TB, have tests done and begin treatment at once.

Early and full treatment is a key part of prevention.

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RABIES



Rabies comes from the bite of a rabid or "mad" animal, usually a rabid dog, cat, fox, wolf, skunk, or jackal. Bats and other animals may also spread rabies.

Signs of rabies:

In the animal:

- acts strangely—sometimes sad, restless, or irritable
- foaming at the mouth, cannot eat or drink
- may bite anyone or anything nearby
- dies within 5 to 7 days of biting person

In people:

- pain and tingling in the area of the animal bite
- irregular breathing, as if the person has just been crying
- pain and difficulty swallowing, and fear of liquids
- increased saliva
- person is nervous or excitable, and may become angry and aggressive
- as death nears, seizures (convulsions) and paralysis

If you have any reason to believe an animal that has bitten someone has rabies:

- ♦ If available, give the person a series of 4 injections of anti-rabies vaccine.
- ♦ Tie or cage the animal for a week.
- ♦ Clean the bite well with soap, water, and hydrogen peroxide. Do not stitch the wound closed.
- ♦ If the animal dies before the week is up (or if it was killed or cannot be caught), take the bitten person at once to a health center for a series of injections with anti-rabies immunoglobulin.

The first symptoms of rabies appear from 10 days up to 2 years after the bite (usually within 3 to 7 weeks). Treatment must begin before the first signs of the sickness appear. Once the sickness begins, no treatment known to medical science can save the person's life.

Prevention:

- ♦ Kill and bury (or cage for one week) any animal suspected of having rabies.
- ♦ Cooperate with programs to vaccinate dogs.
- ♦ Keep children far away from any animal that seems sick or acts strangely.

Take great care in handling any animal that seems sick or acts strangely. Even if it does not bite anyone, its saliva can cause rabies if it gets into a cut or scratch.

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TETANUS (LOCKJAW)

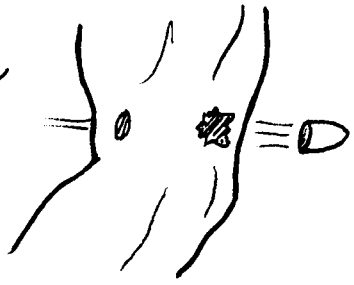
Tetanus results when a germ that lives in the feces of animals or people enters the body through a wound. Deep or dirty wounds are especially dangerous.

WOUNDS VERY LIKELY TO CAUSE TETANUS

animal bites, especially those of dogs and pigs



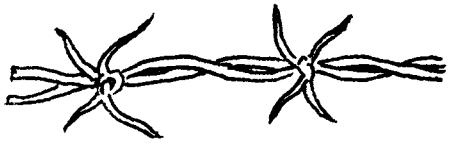
gunshot and knife wounds



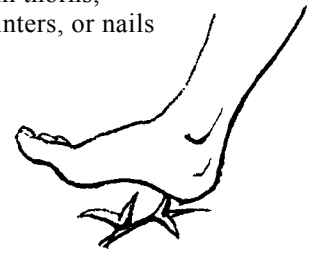
holes made with dirty needles



injuries caused by barbed wire



puncture wounds from thorns, splinters, or nails

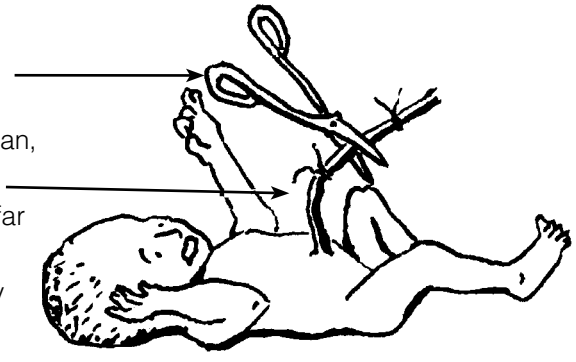


CAUSES OF TETANUS IN THE NEWBORN CHILD

Tetanus germs enter through the *umbilical cord* of a newborn baby because of lack of cleanliness or failure to take other simple precautions. The chance of tetanus is greater . . .

- when the cord has been cut with an instrument that has not been sterilized and kept completely clean, or
- when the cord has been cut too far from the body (p. 262), or
- when the newly cut cord is tightly covered or is not kept dry.

WHEN THE CORD IS CUT A LONG WAY FROM THE BODY, LIKE THIS, THE CHANCE OF TETANUS IS GREATER.

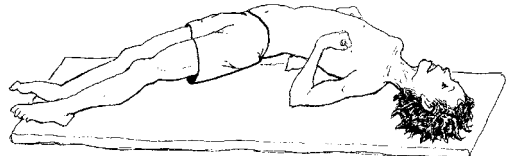


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Signs of tetanus:

- An infected wound (sometimes no wound can be found).
- Discomfort and difficulty in swallowing.
- The jaw gets stiff (lockjaw), then the muscles of the neck and other parts of the body get stiff. The person has difficulty walking.
- Painful ***convulsions*** (sudden tightening) of the jaw and finally of the whole body. Moving or touching the person may trigger sudden ***spasms*** like this:

Sudden noise or bright light may also bring on these spasms.



In the newborn, the first signs of tetanus generally appear 3 to 10 days after birth. The child begins to cry continuously and is **unable to suck.** Often the umbilical area is dirty or infected. After several hours or days, lockjaw and the other signs of tetanus begin.

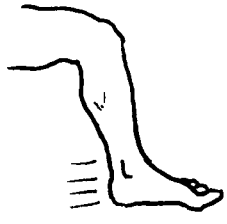
It is very important to start treating tetanus at the first sign. If you suspect tetanus (or if a newborn child cries continuously or stops nursing), use this test:

TEST OF KNEE REFLEXES

With the leg hanging freely, tap the knee with a knuckle just below the kneecap.



If the leg jumps just a little bit, the reaction is typical.



If the leg jumps high, this indicates a serious illness like tetanus (or perhaps meningitis or poisoning with certain medicines or rat poison).



This test is especially useful when you suspect tetanus in a newborn baby.

What to do when there are signs of tetanus:

Tetanus is a deadly disease. Seek medical help at the first sign. If there is any delay in getting help, do the following things:

♦ Examine the whole body for infected wounds or sores. Often the wound will contain pus. Open the wound and wash it with soap and cool, boiled water; completely remove all dirt, pus, thorns, splinters, etc.; flood the wound with hydrogen peroxide if you have any.

(continued on the next page)

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What to do when there are signs of tetanus: (continued)

- Give 500 mg metronidazole by mouth 3 to 4 times a day for 7 to 10 days (p. 370). For newborn babies, use benzathine benzylpenicillin (p. 352).
- If you can get it, inject 500 Units of antitetanus immunoglobulin (human tetanus immune globulin, HTIG, ***HyperTET***) in the muscle, 1 time only. Be sure to follow all the precautions (pages 70 and 389).
- If you can get it, inject 0.5 ml tetanus vaccine into muscle 1 time only. You must inject this into a different place than the antitetanus immunoglobulin or neither will work.
- As long as the person can swallow, give nutritious liquids in frequent small sips.
- To control convulsions, give diazepam (***Valium***) by mouth or in the rectum. For dosages see pages 390 to 392.
- Touch and move the person as little as possible. Avoid noise and bright light.
- If necessary, use a ***catheter*** (rubber tube) connected to a syringe to suck the mucus from the nose and throat. This helps clear the airway.
- For the newborn with tetanus, if possible, have a health worker or doctor put in a nose-to-stomach tube and feed the baby the mother's breast milk. This provides needed nutrition and fights infection.

How to prevent tetanus:

Even in the best hospitals, half the people with tetanus die. It is much easier to prevent tetanus than to treat it.

- Vaccination is the surest protection against tetanus. Both children and adults should be vaccinated. Vaccinate your whole family at the nearest health center (p. 147). For complete protection, the vaccination should be repeated once every 10 years. Vaccinating women against tetanus each time they are pregnant will prevent tetanus in newborn infants (p. 250).
- When you have a wound, especially a dirty or deep wound, clean and take care of it in the manner described on page 89.
- If the wound is very big, deep, or dirty, seek medical help. If you have not been completely vaccinated against tetanus, or have not had a booster within 5 years, get the vaccination and also get an injection of antitetanus immunoglobulin (p. 389).
- In newborn babies, cleanliness is very important to prevent tetanus. The instrument used to cut the umbilical cord must be sterilized (p. 262); the cord should be cut short, and the umbilical area kept clean and dry.

THIS BABY'S CORD WAS CUT SHORT, KEPT DRY, AND LEFT OPEN TO THE AIR.



HE STAYED HEALTHY.

THIS BABY'S CORD WAS LEFT LONG, KEPT TIGHTLY COVERED, AND NOT KEPT DRY.



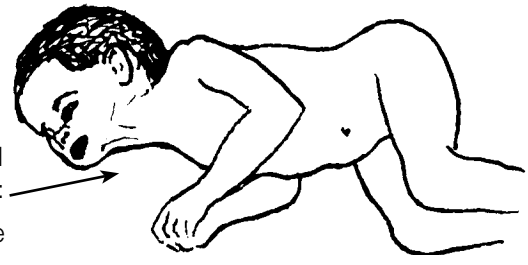
HE DIED OF TETANUS.

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MENINGITIS

This is a very serious infection of the brain, more common in children. It may begin as a ***complication*** of another illness, such as measles, mumps, whooping cough, malaria, or an ear infection. Children of mothers who have tuberculosis sometimes get tubercular meningitis in the first few months of life.

Signs:



- Fever.
- Severe headache.
- Stiff neck. The child looks very ill, and lies with his head and neck bent back, like this:
- The back is too stiff to put the head between the knees.
- In babies under a year old, the fontanel (soft spot on top of the head) bulges out.
- Vomiting is common.
- In babies and young children, early meningitis may be hard to recognize. The child may cry in a strange way (the "meningitis cry"), even when the mother puts the child on her breast. Or the child may become very sleepy.
- Sometimes there are seizures (convulsions) or strange movements.
- The child often gets worse and worse and only becomes quiet when he loses consciousness completely.
- Tubercular meningitis develops slowly, over days or weeks. Other forms of meningitis come on more quickly, in hours or days.

Treatment:

Get medical help fast—every minute counts! If possible take the person to a hospital. Meanwhile:

- ♦ Inject ampicillin every 6 hours, 500 mg for children or 1 g for adults (p. 353). Also give ceftriaxone or gentamicin (p. 358).
- ♦ If there is high fever (more than 40°C), lower it with wet cloths and aspirin, acetaminophen, or ibuprofen (pages 380 to 381).
- ♦ If the mother has tuberculosis or if you have any other reason to suspect that the child has tubercular meningitis, inject him with 20 mg of streptomycin for each kg he weighs and get medical help at once. Also, use ampicillin in case the meningitis is not from TB.
- ♦ If you know the meningitis came from malaria, an injection, or suppositories for children, of artesunate or quinine are needed at once (pages 367 and 369).

Prevention:

For prevention of tubercular meningitis, newborn babies of mothers with tuberculosis should be vaccinated with BCG at birth. Dose for the newborn is 0.05 ml (half the normal dose of 0.1 ml). For other suggestions on prevention of TB, see pages 179 to 180.

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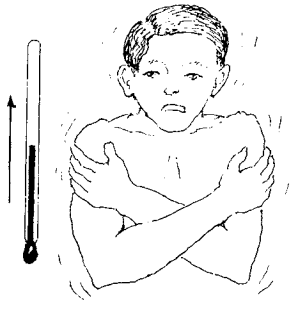
MALARIA AND OTHER MOSQUITO-BORNE ILLNESSES

Malaria is an infection of the blood that causes fever and chills. Malaria is spread by mosquitos. The mosquito sucks up the malaria parasites in the blood of an infected person and injects them into the next person it bites who gets sick 7 to 30 days later. People with HIV are more likely to catch malaria.

Malaria is especially dangerous for pregnant women. They get more severe attacks, and it can cause anemia, miscarriage, and babies who are born too small. Children need extra attention to make sure they get good nutrition so they can recover from malaria.

There are different types of malaria. Falciparum malaria is the most dangerous.

Signs of uncomplicated malaria:



- A fever, often as high as 39°C (102°F), with chills, shivers and sometimes headache.
- Fever, chills, shaking and sweating may return every few days or weeks.
- Vomiting, lack of appetite, anemia, and body pain.
- Diarrhea and cough, especially for children.
- Yellow eyes (jaundice)

Get help right away for signs of severe malaria:

- Too weak to sit or stand, cannot stay awake
- Mental confusion, convulsions or loss of consciousness
- Repeated vomiting, cannot drink or breastfeed
- Rapid breathing
- Low blood pressure and other signs of shock (p. 77)
- Dark urine, and less urine as kidneys begin to fail

Analysis and treatment:

- ♦ If you suspect malaria or have repeated fevers, ask a health worker for a rapid blood test. It gives results in 15 minutes so you can start treatment immediately.
- ♦ If there is malaria in your region and you cannot get a test, start treatment with the medicines recommended for your area. See pages 363 to 369 for doses and information on malaria medicines.
- ♦ If you get better, but after several days the fevers start again, you may need a different medicine. Get advice from the nearest health center.
- ♦ If a person with signs of severe malaria has seizures, a strong headache, or if a baby has swelling in the soft spot (the *fontanel,* p. 274), he may have severe malaria affecting his brain. Inject artesunate or quinine at once (pages 367 and 369) or put an artesunate capsule in the rectum for a child under 6 if injections are not available. Then hurry to a health center.
- ♦ In some countries where malaria is widespread, pregnant women who do not have malaria are given pyrimethamine with sulfadoxine to prevent getting it while pregnant. Do not start the treatment during the first 3 months of pregnancy, but after that give at least 3 times during pregnancy, with at least 1 month between treatments (p. 366).
- ♦ Use paracetamol (acetaminophen, p. 380) to help relieve pain and fever.

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Dengue, Zika, Chikungunya, and Yellow Fever

Like malaria, these diseases are spread by mosquitoes. They have similar signs, including fever, aches, and rash. It is possible to get more than one at a time and often they occur as epidemics. Different than malaria, mosquitoes carrying these illnesses breed in the home and bite during the day. Prevent mosquitoes from breeding by covering or emptying containers around the home. Window screens, clothing that covers the body, repellents, and bed nets will help prevent bites.

Dengue (breakbone fever): A sudden, high fever that can last up to a week, usually with 2 or more signs: severe muscle and joint ache, headache, pain behind the eyes, nausea or vomiting, and rash. Severe dengue may cause bleeding from the skin, the nose or gums, or inside the body — go to a hospital immediately.

Chikungunya: A mild fever with very intense joint pain affects the hands, feet, knees, and back. It can be so painful it hurts to walk. After the fever goes away, joint pain can last for weeks or can return, on and off, for months.

Zika: Can cause fever, rash, body aches, and irritated eyes, or have no signs. Most people get Zika from mosquitoes, but it can also pass during sex. Zika can harm a baby growing in the womb. If pregnant, avoid mosquito bites and use condoms during sex.

Yellow Fever: Fever starts suddenly and there may be chills, body aches, headache, nausea (sometimes with vomiting), and weakness. There is no rash. The illness usually goes away after 3 or 4 days. If fever returns later with jaundice, belly pain, vomiting, or bleeding from mouth, nose or eyes, this severe form of Yellow Fever needs hospital care right away. A vaccine will prevent the illness.

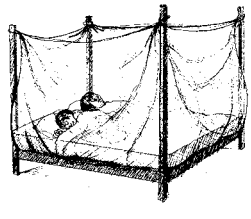
Treatment:

- No medicines cure these illnesses yet. For a week or two, the person will need rest, liquids (fruit juice, milk, or Rehydration Drink, p. 152), and acetaminophen for pain and fever (**not** aspirin or ibuprofen).
- For severe bleeding with dengue or yellow fever, treat for shock (p. 77) and get medical help fast.

How to Avoid Mosquito-borne Illnesses

Mosquito-borne illness occurs more during hot, rainy seasons. To control mosquitoes:

1. Avoid mosquitos. Sleep underneath a bed net treated with insecticide or a sheet. Cover the baby's cradle with treated mosquito netting or a thin cloth.



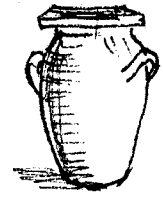
2. Cooperate with the mosquito control workers. Tell them if anyone in the family has had fevers and let them take blood for testing.



3. Treat malaria quickly. After you have been treated, mosquitos that bite you will not pass malaria on to others.



4. Destroy mosquitos and their young. Mosquitos breed in still water. Remove old tires or any items that collect water. Raise mosquito-eating fish in ponds or lakes. Fill hollow posts with sand and cover water containers.

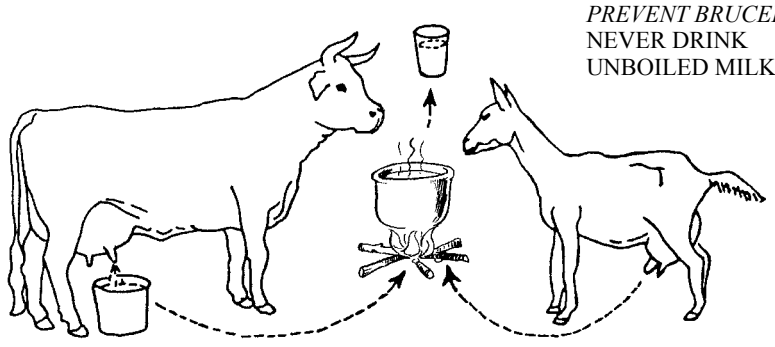


5. Medicines can prevent malaria and lessen its effects. See pages 363 to 369. A vaccine to prevent falciparum malaria is now in use in high-malaria regions.

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BRUCELLOSIS (UNDULANT FEVER, MALTA FEVER)

This is a disease that comes from drinking fresh milk from infected cows or goats. It may also enter the body through scrapes or wounds in the skin of persons who work with sick cattle, goats, or pigs, or by breathing it into the lungs.



Signs:

- Brucellosis may start with fever and chills, but it often begins very gradually with increasing tiredness, weakness, loss of appetite, headache, stomach ache, and sometimes joint pains.
- The fevers may be mild or severe. Typically, these begin with afternoon chills and end with sweating in the early morning. In chronic brucellosis, the fevers may stop for several days and then return. Without treatment, brucellosis may last for years.
- There may be swollen lymph nodes in the neck, armpits, and groin (p. 88).

Treatment:

- ♦ If you suspect brucellosis, get medical advice, because it is easy to confuse this disease with others, and the treatment is long and expensive.
- ♦ Treat with tetracycline, adults: two 250 mg capsules 4 times a day for 3 weeks. For precautions, see page 355. Or use cotrimoxazole. For dosage and precautions, see page 357.

Prevention:

- ♦ **Drink only cow's or goat's milk that has been boiled or pasteurized.** In areas where brucellosis is a problem, it is safer not to eat cheese made from unboiled milk.
- ♦ Be careful when handling cattle, goats, and pigs, especially if you have any cuts or scrapes.
- ♦ Cooperate with livestock inspectors who check to be sure your animals are healthy.

TYPHOID FEVER

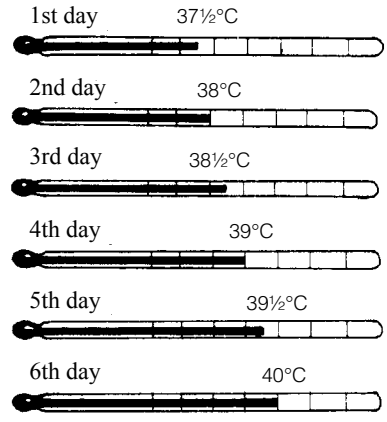
Typhoid is an infection of the gut that affects the whole body. It is spread from ***feces-to-mouth*** in contaminated food and water and often comes in ***epidemics*** (many people sick at once). Of the different infections sometimes called "the fever" (p. 26), typhoid is one of the most dangerous.

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Signs of typhoid:

First week:

- It begins like a cold or flu.
- Headache, sore throat, and often a dry cough.
- The fever goes up and down, but rises a little more each day until it reaches 40°C or more.
- Pulse is often relatively slow for the amount of fever present. Take the pulse and temperature every half hour. **If the pulse gets slower when the fever goes up, the person probably has typhoid** (p. 26).
- Sometimes there is vomiting, diarrhea, or constipation.



Second week:

- High fever, pulse relatively slow.
- A few pink spots may appear on the body.
- Trembling.
- Delirium (person does not think clearly or make sense).
- Weakness, weight loss, dehydration.

Third week:

- If there are no complications, the fever and other symptoms slowly go away.

Treatment:

- ♦ Seek medical help.
- ♦ Give ciprofloxacin (p. 358), ceftriaxone (p. 358), or azithromycin (p. 354). Ask a health worker what medicine works best where you live.
- ♦ Lower the fever with cool wet cloths (p. 76).
- ♦ Give plenty of liquids: soups, juices, and Rehydration Drink to avoid dehydration (p. 152).
- ♦ Give nutritious foods, in liquid form if necessary.
- ♦ The person should stay in bed until the fever is completely gone.
- ♦ If the person shits blood or develops signs of peritonitis (p. 94) or pneumonia (p. 171), take her to a hospital at once.

Prevention:

- ♦ To prevent typhoid, care must be taken to avoid contamination of water and food by human feces. Follow the guidelines for personal and public hygiene in Chapter 12. Make and use latrines. Be sure latrines are a safe distance from where people get drinking water.
- ♦ Cases of typhoid often appear after a flood or other disaster, and special care must be taken with cleanliness at these times. Be sure drinking water is clean. If there are cases of typhoid in your village, all drinking water should be boiled. Look for the cause of contaminated water or food.

(continued on the next page)

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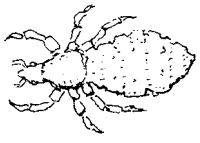
Prevention of typhoid: (continued)

- To avoid the spread of typhoid, a person who has the disease should stay in a separate room. No one else should eat or drink from the dishes he uses. His stools should be burned or buried in deep holes. Persons who care for him should wash their hands right afterwards.
- After recovering from typhoid some persons still carry the disease and can spread it to others. So anyone who has had typhoid should be extra careful with personal cleanliness and should not work in restaurants or where food is handled. Sometimes ampicillin is effective in treating typhoid carriers.

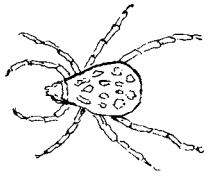
TYPHUS

Typhus is an illness similar to but different from typhoid. The infection is transmitted by bites of:

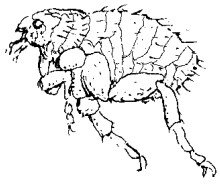
lice



ticks



rat fleas



Signs:

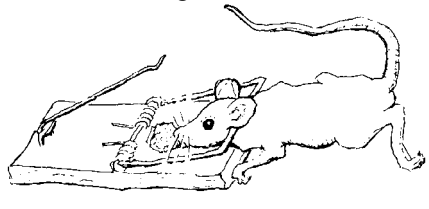
- Typhus begins like a bad cold. After a week or more fever begins, with chills, headache, and pain in the muscles and chest.
- After a few days of fever a typical rash appears, first in the armpits and then on the body, then the arms and legs (but not on the face, palms of the hands, or soles of the feet). The rash looks like many tiny bruises.
- The fever lasts 2 weeks or more. Typhus is usually mild in children and very severe in old people. An epidemic form of typhus is especially dangerous.
- In typhus spread by ticks, there is often a large painful sore at the point of the bite, and the lymph nodes near the bite are swollen and painful.

Treatment:

- If you think someone may have typhus, get medical advice. Special tests are often needed.
- Give doxycycline, adults: 1 capsule of 100 mg 2 times a day for 7 days, OR tetracycline, adults: 2 capsules of 250 mg 4 times a day for 7 days (p. 355). Chloramphenicol also works, but is riskier (p. 356).

Prevention:

- Keep clean. Check the whole family regularly for lice (p. 200).
- Remove ticks from your dogs and do not allow dogs in your house.
- Kill rats. Use cats or traps (not poison, which can be dangerous to other animals and children).
- Kill rat fleas. Do not handle dead rats. The fleas may jump onto you. Drown and burn the rats and their fleas. Put insecticide into rat holes and nests.



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LEPROSY (HANSEN'S DISEASE)

This mildly infectious disease develops slowly, often over many years. It can only spread from persons who have untreated leprosy, to persons who have low resistance to the disease. In areas where leprosy is common, children should be checked every 6 to 12 months—especially children living with persons who have leprosy.

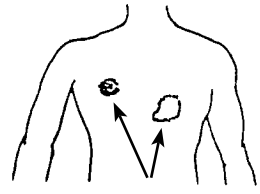
Signs: Leprosy can cause a variety of skin problems, loss of feeling, and paralysis of the hands and feet.

The first sign of leprosy is often **a slowly growing patch on the skin that does not itch or hurt.** At first, feeling inside the patch may be as usual. Keep watching it. If feeling in the patch becomes reduced or absent (p. 38) it is probably leprosy.

Examine the whole body for skin patches, especially the face, arms, back, butt, and legs.



Patches are a different color from surrounding skin, but never completely white or scaly.

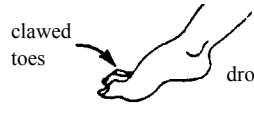


ringworm-like patch with or without raised border

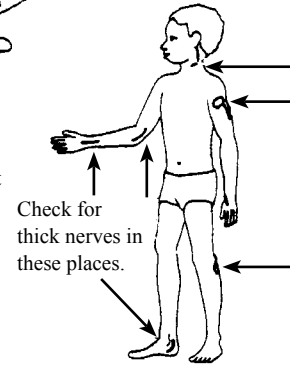
Later signs differ according to the person's natural resistance to the disease. Watch out for:

- Tingling, numbness or loss of feeling in hands or feet. Or sores or loss of feeling in skin patches.
- Slight weakness or deformities in the hands and feet.
- Swollen nerves form thick cords under the skin that may or may not be painful when pressed.
- Painless swelling or lumps on face or ears.

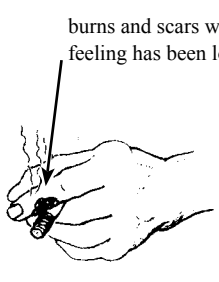


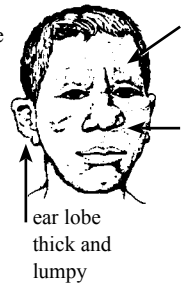




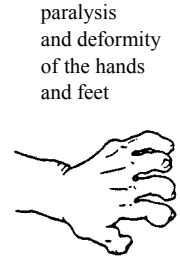


Advanced sign may include:







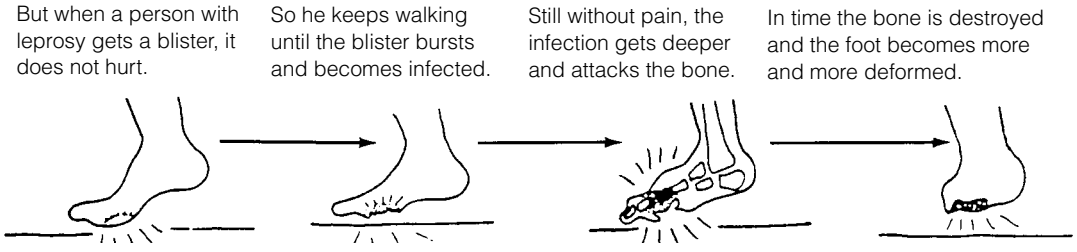


Treatment of leprosy: Leprosy is usually curable, but medicine must usually be taken for several months to 1 year. Multi-drug treatment (MDT) with rifampicin (rifampin), dapsone, and clofazamine (pages 362 to 363) works best. These medicines should be used in combination, not alone, and are supplied free in many places.

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Prevention of injury to hands, feet, and eyes: The large open sores often seen on the hands and feet of persons with leprosy are not caused by the disease itself and can be prevented. They result because, when feeling has been lost, a person no longer protects himself against injury.

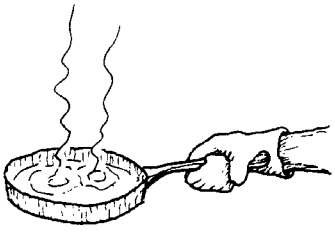
For example, when someone who does not have leprosy walks a long way and gets a blister, it hurts, so he stops walking or limps.



1. Protect hands and feet from things that can cut, bruise, blister, or burn them:

Do not go barefoot, especially not where there are sharp stones or thorns. Wear shoes or sandals. Put soft padding inside shoes and under straps that may rub.





When working or cooking meals, wear gloves. Never pick up an object that **might** be hot without first protecting your hand with a thick glove or folded cloth. If possible, avoid work that involves handling sharp or hot objects. Do not smoke.

2. At the end of each day (or more often if you work hard or walk far) examine your hands and feet very carefully—or have someone else examine them. Look for cuts, bruises, or thorns. Also look for spots or areas on the hands and feet that are red, hot, swollen or show the beginnings of blisters. If you find any of these, rest the hands or feet until the skin is completely healed. This will help callous and strengthen the skin. Sores can be prevented.

3. If you have an open sore, keep the part with the sore very clean and at rest until it has completely healed. Take great care not to injure the area again.

4. Protect your eyes. Much eye damage comes from not blinking enough, because of weakness or loss of feeling. Blink your eyes often to keep them wet and clean. If you cannot blink well, close your eyes tightly often during the day, especially when dust blows. Wear sun glasses with side shades, and maybe a sun hat. Keep eyes clean and flies away.



If you do these things and begin treatment early, most disabilities caused by leprosy can be prevented. For more information, see ***Disabled Village Children,*** Chapter 26.

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CHAPTER 15

Skin Problems

Some skin problems are caused by diseases or irritations that affect the skin only—such as ringworm, diaper rash, or warts. Other skin problems are signs of diseases that affect the whole body—such as the rash of measles or the sore, dry patches of pellagra (malnutrition). Certain kinds of sores or skin conditions may be signs of serious diseases—like tuberculosis, syphilis, leprosy, or HIV infection.

This chapter deals only with the more common skin problems in rural areas. However, there are hundreds of diseases of the skin. Some look so much alike that they are hard to tell apart—yet their causes and the specific treatments they require may be quite different.

If a skin problem is serious or gets worse in spite of treatment, seek medical help.

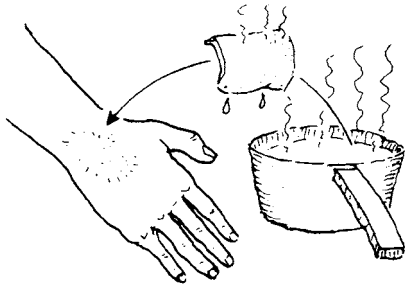
Many skin problems can be helped by keeping the body clean. Try to wash once a day with mild soap and clean water. If the skin becomes too dry, wash less often and do not use soap every time. Try rubbing petroleum jelly (*Vaseline*), glycerin, or vegetable oils into the skin after bathing. Wear loose cotton clothing.

GENERAL RULES FOR TREATING SKIN PROBLEMS

Although many skin problems need specific treatment, there are a few general measures that often help:

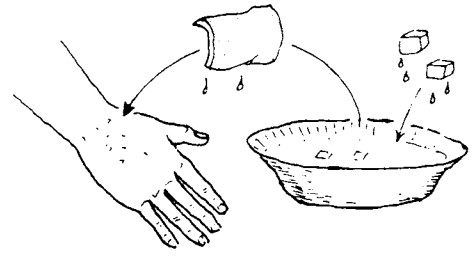
RULE #1

If the affected area is **hot** and painful, or oozes pus, treat it with **heat.** Put hot, moist cloths on it *(hot compresses)*.



RULE #2

If the affected area itches, stings, or oozes clear fluid, treat it with **cold.** Put cool, wet cloths on it *(cold compresses).*

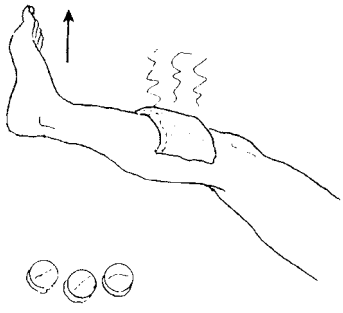


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RULE #1 (in greater detail)

If the skin shows signs of serious infection such as:

- inflammation (redness or darkening of skin around the affected areas)
- swelling
- pain
- heat (it feels hot)
- pus



Do the following:

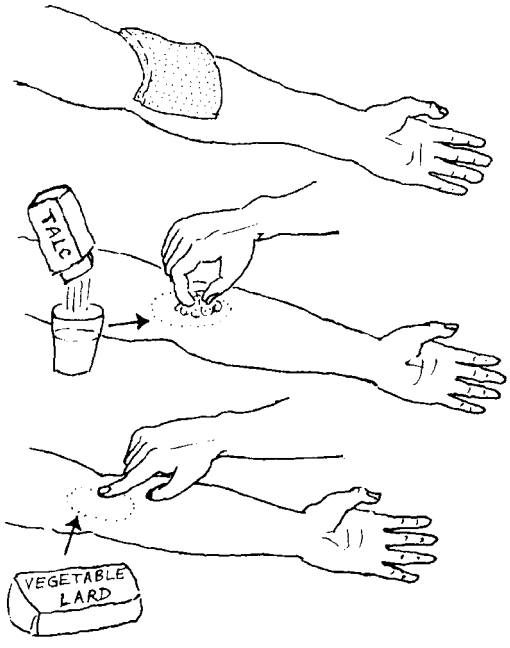
- ♦ Keep the affected part still and elevate it (put it higher than the rest of the body).
- ♦ Apply hot, moist cloths.
- ♦ If the infection is severe or the person has a fever, give antibiotics (penicillin, a sulfonamide, or erythromycin).

Danger signs include: swollen lymph nodes, a red or dark line above the infected area, or a bad smell. If these do not get better with treatment use an antibiotic and seek medical help quickly.

RULE #2 (in greater detail)

If the affected skin forms blisters or a crust, oozes, itches, stings, or burns, do the following:

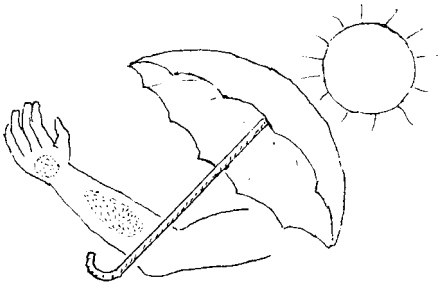
- ♦ Apply cloths soaked in cool water with white vinegar (2 tablespoons of vinegar in 1 quart of pure boiled water).
- ♦ When the affected area feels better, no longer oozes, and has formed tender new skin, lightly spread on a mixture of talc and water (1 part talc to 1 part water).
- ♦ When healing has taken place, and the new skin begins to thicken or flake, rub on a little vegetable lard or body oil to soften it.



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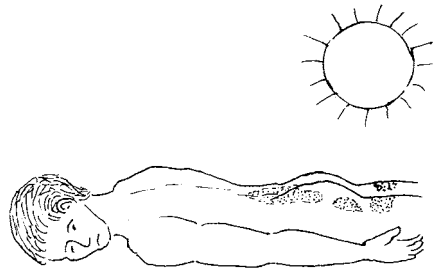
RULE #3

If the skin areas affected are on parts of the body often exposed to sunlight, protect them from the sun.



RULE #4

If the skin areas most affected are usually covered by clothing, expose them to direct sunlight for 10 to 20 minutes, 2 or 3 times a day.

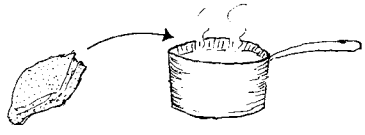


Instructions for Using Hot Compresses (Hot Soaks)

1. Boil water and allow it to cool until you can just hold your hand in it.



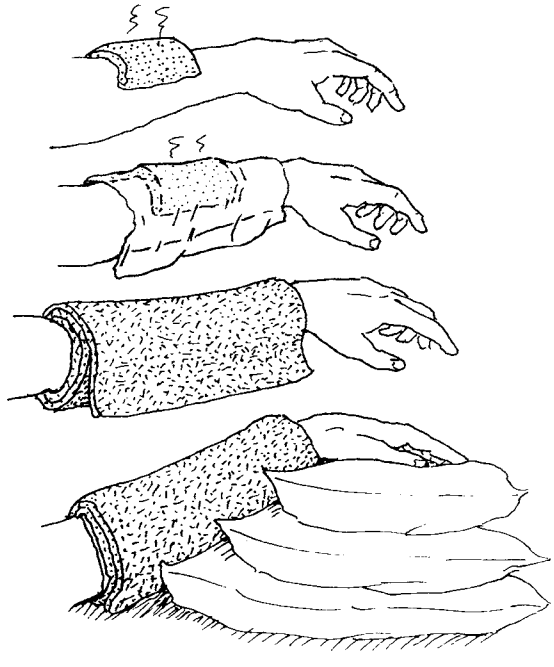
2. Fold a clean cloth so it is slightly larger than the area you want to treat, wet the cloth in the hot water, and squeeze out the extra water.



3. Put the cloth over the affected skin.

4. Cover the cloth with a sheet of thin plastic or cellophane.

5. Wrap it with a towel to hold in the heat.

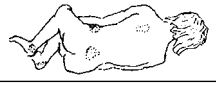
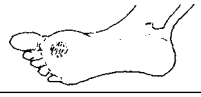


6. Keep the affected part raised.

7. When the cloth starts to cool, put it back in the hot water and repeat.

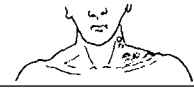
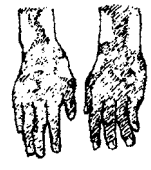
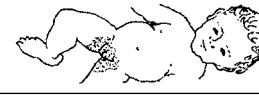
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SKIN PROBLEMS—A Guide to Identification

IF THE SKIN HAS:	AND LOOKS LIKE:		YOU MAY HAVE:	SEE PAGE:
small or pimple-like sores	Tiny bumps or sores with much itching—first between fingers, on the wrists, or the waist. 		scabies	**199**
	Pimples or sores with pus or inflammation, often from scratching insect bites. May cause swollen lymph nodes. 		infection from bacteria	**201**
	Irregular, spreading sores with shiny, yellow crusts. 		impetigo (bacterial infection)	**202**
	Pimples on young people's faces, sometimes chest and back, often with small heads of pus. 		acne, pimples, blackheads	**211**
	A sore on the genitals. 	without itching or pain.	syphilis	**238**
		with pain and pus.	buboes (lymphogranuloma venereum)	**237**
			chancroid	**405**
a large, open sore or skin ulcer	A large chronic (unhealing) sore surrounded by purplish skin—on or near the ankles of older people with varicose veins. 		ulcers from bad circulation (possibly diabetes)	**213** **127**
	Sores over the bones and joints of very sick persons who cannot get out of bed. 		bed sores	**214**
	Sores with loss of feeling on the feet or hands. 		leprosy	**191**
	A bump and then a sore that will not heal, anywhere on the body or face. 		leishmaniasis	**408**
lumps under the skin	A warm, painful swelling that eventually may break open and drain pus. 		abscess or boil	**202**
	A warm, painful lump in the breast of a woman breastfeeding. 		mastitis (bacterial infection), possibly cancer	**278** **279**
	A lump that keeps growing. Usually not painful at first. 		cancer (also see lymph nodes)	**279** **88**
	One or more round lumps on the head, neck, or upper body (or central body and thighs). 		river blindness (also see lymph nodes)	**227** **88**

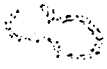
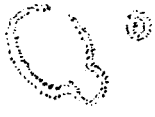
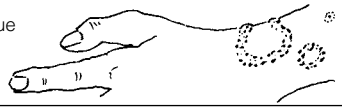
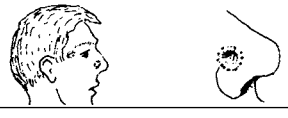
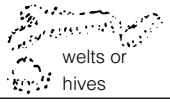
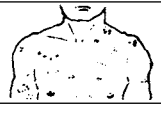
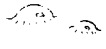
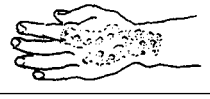
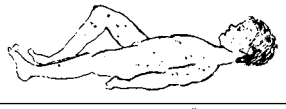
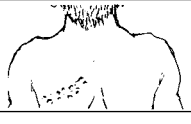
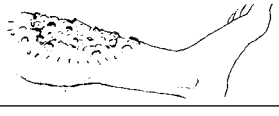
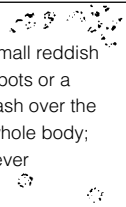
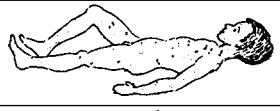
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A Guide to Identification

IF THE SKIN HAS:	AND LOOKS LIKE:		YOU MAY HAVE:	SEE PAGE:
swollen lymph nodes 	Nodes on the side of the neck that continuously break open and scar.		scrofula (a type of tuberculosis)	**212**
	Nodes in the groin that continuously break open and scar.		buboes (lymphogranuloma venereum) chancroid	**237** **405**
large spots or patches  dark	Dark patches on the forehead and cheeks of pregnant women.		mask of pregnancy	**207**
	Scaly, cracking areas that look like sunburn on the arms, legs, neck, or face.		pellagra (a type of malnutrition)	**208** **209**
	Dark spots on the skin or in the mouth that start small and then grow. They look like swollen bruises. They are painless.		Kaposi's Sarcoma (KS, cancer related to HIV).	**401-403**
	Purple spots or peeling sores on children with swollen feet.		malnutrition	**208** **209**
 white	Round or irregular patches on the face or body, especially of children.		tinea versicolor (fungus infection)	**206**
	White patches, especially on hands, feet, or lips.	 that begin with reddish or bluish pimples.	pinta (infection)	**207**
		that begin without other signs.	vitiligo (loss of color, nothing more)	**207**
 reddish	Reddish or blistering patches on the cheeks or behind the knees and elbows of young children.		eczema	**216**
	A reddish, hot, painful area that spreads rapidly.		erysipelas (cellulitis or very serious bacterial infections)	**212**
	A reddish area between the baby's legs.		diaper rash from urine or heat	**215**
	Beef-red patches with white, milky curds in the skin folds.		yeast infection (Candida)	**242**
reddish or gray	Raised reddish or gray patches with silvery scales; especially on elbows and knees; chronic (long-term).		psoriasis (or sometimes tuberculosis)	**216** **212**

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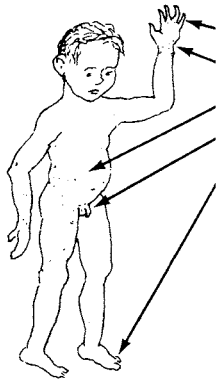
A Guide to Identification

IF THE SKIN HAS:	AND LOOKS LIKE:	YOU MAY HAVE:	SEE PAGE:
warts 	Simple warts, not very large. 	common warts (virus infection)	**210**
	Wart-like growths on the penis, vagina, or around the anus. 	genital warts	**404**
	Bumpy, wart-like growths on other parts of the body.	yaws	**204**
	Large warts (more than 1 cm), often on arms or feet. 	a type of tuberculosis of the skin	**212**
rings (spots with raised or red edges, often clear in the center)  	Small rings that continue to grow or spread and may itch. 	ringworm (fungus infection)	**205**
	Large circles with a thick border that do not itch. 	advanced stage of syphilis	**237**
	Large rings that are white or lighter colored and become numb in the center. 	leprosy	**191**
	Small rings, sometimes with a small pit in the middle, found on the temple, nose, or neck. 	cancer of the skin	**211**
welts or hives 	Very itchy rash, bumps, or patches. (They may appear and disappear rapidly.) 	allergic reaction	**203**
blisters   	Blisters with bumps and much itching and weeping (oozing). 	contact dermatitis (like poison ivy or sumac)	**204**
	Small blisters over the whole body, with some fever. 	chickenpox	**311**
	A patch of painful blisters that appears only on one part of the body, often in a stripe or cluster. 	Herpes zoster (shingles)	**204**
	A gray or black bad smelling area with blisters and air pockets that spread. 	gas gangrene (very serious bacterial infection)	**213**
small reddish spots or a rash over the whole body; fever 	A rash that very sick children get over the whole body. 	measles	**311**
	After a few days of fever a few small pinkish spots appear on the body; the person is very sick. 	typhoid fever	**188**

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SCABIES (SEVEN YEAR ITCH)

Scabies is especially common in children. It causes very itchy little bumps that can appear all over the body, but are most common:



between the fingers

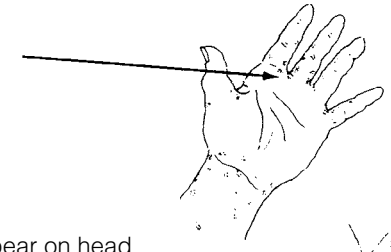
on the wrists

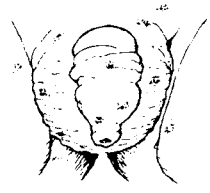
around the waist

on the genitals

between the toes

usually does not appear on head and face—except in babies





Small itchy sores on the penis and scrotum of young boys are almost always scabies.

Scabies is caused by little animals—similar to tiny ticks or chiggers—which make tunnels under the skin. It is spread by touching the affected skin or by clothes and bedding. Scratching can cause infection, producing sores with pus, and sometimes swollen lymph nodes or fever. The first time a person gets scabies, it can take 2 to 6 weeks for signs to appear. If the person has had scabies before, signs will appear in 1 to 4 days.

Treatment:

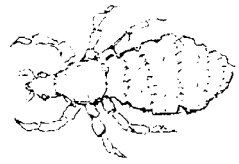
- If one person has scabies, everyone in his family should be treated. So should all sexual contacts.
- Personal cleanliness is of first importance. Bathe and change clothes daily.
- Cut fingernails very short to reduce spreading and infection.
- Wash all clothes and bedding or, better still, boil them. Hang them in the sun to dry.
- Remove all animals from the house.
- Use a cream containing permethrin *(**Elimite**, p. 374)*. First wash the whole body vigorously with soap and hot water. Then rub the cream into the whole body except the face, unless it is affected. Leave it on for 10 to 14 hours, and then bathe again. Be sure to put on clean clothes and use clean bedding after treatment. Repeat treatment 1 week later.
- Do not use creams or ointments that include lindane. Lindane is a poison!
- If you cannot get permethrin, try crotamiton *(**Eurax, Crotan**)* but avoid using it on children under 3 years old.
- Or you can try using sulfur powder mixed with lard, ***Vaseline*** or body oil – use 1 part sulfur to 10 parts lard or oil. Do not use on children under 1 year old. Apply to whole body (except face) 3 times a day for 3 days. Stop using immediately if rash worsens or other signs of allergic reaction develop (p. 166).
- If none of these treatments work, you can try giving a dose of ivermectin (p. 379), and then repeat the dose after 10 to 14 days. This is the best method for a person with HIV.

The itching and rash may last for up to two weeks after treatment. If they last longer, it is possible that the person has been re-infected or that the treatment did not work. If after 2 weeks the signs have not gone away, repeat the treatment again or try a different treatment. Remember to repeat the prevention actions as well.

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LICE





Smaller than half a grain of rice, lice live in hair: on the head, body, and pubic area. Lice (or "crabs") cause skin irritation and itching. Lice are spread by person-to-person contact or through sharing clothes and personal items. Head lice most often affects children and has nothing to do with personal cleanliness. If a child has red, itchy skin on their scalp, on the back of their neck, or around their ears, check their hair for lice. Treat all children quickly and at the same time, otherwise they will pass lice back and forth to each other. Do not let a child with lice sleep with others.

Treatment:



For head and pubic lice: You can usually get rid of lice without medicines by scrubbing the hair well with regular soap or shampoo for 10 minutes. Rinse well, and comb thoroughly with a fine-tooth comb, being sure to remove all the lice and their eggs. Repeat every day for 2 weeks.

Do not use shampoos that include lindane. Lindane is poison! If regular shampoos do not work, medicated shampoos that include pyrethrins ***(RID)*** or permethrin ***(Nix)*** may work, but follow the directions carefully. Keep them out of your eyes, watch for allergic reactions, and avoid them if you are pregnant or the person with lice is younger than 2 years old.

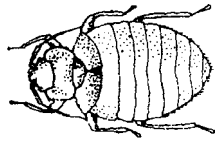
After treating for lice, you must also get rid of nits (lice eggs). If the eggs hatch, the lice will be back. People have tried different treatments, but they all include careful combing. Repeat combing every day for 2 weeks to make sure you remove all the lice and nits.

- Rub olive oil into the hair. This will loosen the nits so they are easier to remove with a fine-tooth comb. Some people find that oils such as tea tree, rosemary, or eucalyptus (this can feel hot!) work well, but other people have allergic reactions to them.
- Soak hair with warm vinegar water (1 part vinegar to 1 part water) for half an hour, then comb it thoroughly with a fine-tooth comb.

For body lice: Soak your whole body in a bath of hot water every day for 10 days. After each bath, wash thoroughly with soap and rinse well. Use a fine-tooth comb on any hairy places. If necessary, treat as for scabies. Keep clothing and bedding clean.

BEDBUGS





These are very small, flat, red-brown crawling insects that hide inside mattresses, bedding, furniture, and walls. They usually bite at night. The bites often appear in groups or lines.

To get rid of bedbugs, wash bedding in boiling water or bake in a hot stove (over 120°F/50°C) for at least 20 minutes. If you can find diatomaceous earth (a natural pesticide), sprinkle it around the bed to prevent bedbugs from crawling up. You can also try spraying mattresses, bed frames, and the area in which you sleep with a mixture of 2 parts water, 2 parts alcohol, and 1 part dish soap. Spray everywhere bedbugs might hide, then let dry. You may have to repeat again a few times during 2 weeks. Pyrethrin or permethrin (see Lice, above) might also work.

To prevent bedbugs, spread bedding, mats, and cots in the sun often.

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TICKS AND CHIGGERS

Some dangerous infections or paralysis are spread by tick bites. But careful removal within a few hours usually prevents these problems. So check the whole body well after walking in areas where ticks are common.



When removing a tick that is firmly attached, take care that its head does not remain in the skin, since this can cause an infection. Never pull on the body of a tick.

To remove a tick with tweezers, grasp the tick as close as possible to its mouth—the part sticking into the skin. (Try not to squeeze its swollen belly.) Pull the tick out gently but firmly. Do not touch the removed tick. To kill the removed tick, burn it, or hold a lit match near it, or put some alcohol on it.

To remove very small ticks or chiggers, use one of the remedies recommended for scabies (p. 199). To relieve itching or pain caused by tick or chigger bites, take aspirin and follow the instructions for treatment of itching on p. 203.

To help prevent chiggers and ticks from biting you, dust sulfur powder on your body before going into the fields or forests. Especially dust ankles, wrists, waist, and underarms.

SMALL SORES WITH PUS

Skin infections in the form of small sores with pus often result from scratching insect bites, scabies, or other irritations with dirty fingernails.

Treatment and Prevention:



- Wash the sores well with soap and cooled, boiled water, gently soaking off the scabs. Do this daily as long as there is pus.
- Leave small sores open to the air. Bandage large sores and change the bandage frequently.
- If the skin around a sore is red and hot, or if the person has a fever, red lines coming from the sore, or swollen lymph nodes, use an antibiotic—such as penicillin tablets (p. 351) or sulfa tablets (p. 356).
- Do not scratch. This makes the sores worse and can spread infection to other parts of the body. Cut the fingernails of small children very short. Or put gloves or socks over their hands so they cannot scratch.
- Never let a child with sores or any skin infection play or sleep with other children. These infections are easily spread.

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IMPETIGO



This is a bacterial infection that causes rapidly spreading sores with shiny, yellow crusts. It often occurs on children's faces especially around the mouth. Impetigo can spread easily to other people from the sores or contaminated fingers.

Treatment:

- Wash the affected part with soap and cooled, boiled water 3 to 4 times each day, gently soaking off the crusts.
- After each washing, paint the sores with gentian violet (p. 372) or spread on an antibiotic cream containing bacitracin such as ***Polysporin*** (p. 372).
- If the infection is spread over a large area or causes fever, give cloxacillin or dicloxacillin (p. 350). If the person is allergic to medicines of the penicillin family or if these medicines do not seem to be helping, try doxycycline (p. 355) or cotrimoxazole (p. 357).

Prevention:

- Follow the Guidelines of Personal Cleanliness (p. 133). Bathe children daily and protect them from bedbugs and biting flies. If a child gets scabies, treat him as soon as possible.
- Do not let a child with impetigo sleep with other children or play with them. Begin treatment at the first sign.

YAWS

Yaws is a bacterial infection that you first notice when a painless, bumpy growth emerges and gets larger and may spread a little. After about 6 months, the growth disappears. Months or years later, it reappears, spreads more, and may ooze. This is when it can spread to other people. These signs will also disappear. But if it is not treated, after 5 or 10 years the yaws infection can spread throughout the body, harming bones, joints, and causing other problems.

Treatment:

- Though the yaws bacteria is related to syphilis, it is spread by physical, not sexual, contact. Yaws can be tested for using the same test and treated using the same medicines and doses for syphilis (p. 238) or with azithromycin (p. 354).

BOILS AND ABSCESSES



A boil, or abscess, is an infection that forms a sac of pus under the skin, This can happen when the root of a hair gets infected. Or it can result from a puncture wound or an injection given with a dirty needle. A boil is painful and the skin around it becomes red and hot. It can cause swollen lymph nodes and fever.

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Treatment:

- Put hot compresses over the boil several times a day (p. 195).
- Let the boil break open by itself. After it opens, keep using hot compresses. Allow the pus to drain, but never press or squeeze the boil, since this can cause the infection to spread to other parts of the body.
- If the abscess is very painful and does not open after 2 or 3 days of hot soaks, it may help to have it cut open so the pus can drain out. This will quickly reduce the pain. If possible, get medical help.
- If the boil causes swollen nodes or fever, take penicillin tablets (p. 351) or erythromycin (p. 354). Dicloxacillin (p. 350) also works: take 500 mg by mouth, 4 times a day for 7 days.

ITCHING RASH, WELTS, OR HIVES (ALLERGIC REACTIONS IN THE SKIN)



Touching, eating, injecting, or breathing certain things can cause an itching rash or ***hives*** in allergic persons. For more details, see Allergic Reactions, p. 166.

Hives are thick, raised spots or patches that look like bee stings and itch like mad. They may come and go rapidly or move from one spot to another.

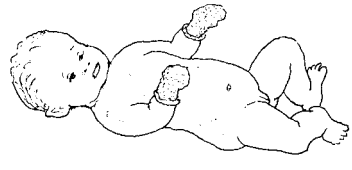
Be on the watch for any reaction caused by certain medicines, especially injections of penicillin and antivenoms or antitoxins made from horse serum. A rash or hives may appear from a few minutes up to 10 days after the medicine has been injected.

If you get an itching rash, hives, or any other allergic reaction after taking or being injected with any medicine, stop using it and never use that medicine again in your life!
This is very important to prevent allergic shock (p. 70).

Medicines used by people with HIV may cause a rash, especially cotrimoxazole (p. 357) and nevirapine (p. 399). Sometimes the rash can be avoided by starting with a small amount of medicine and slowly increasing the amount to the full dose.

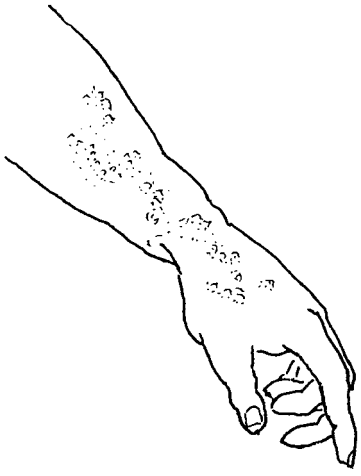
Treatment of itching:

- Bathe in cool water or use cool compresses—cloths soaked in cold water or ice water.
- Compresses of cool oatmeal water also calm itching. Boil the oatmeal in water, strain it, and use the water when cool. (Starch can be used instead of oats.)
- If itching is severe, take an antihistamine like chlorpheniramine (p. 388).
- To protect a baby from scratching himself, cut his fingernails very short, or put gloves or socks over his hands.



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PLANTS AND OTHER THINGS THAT CAUSE ITCHING OR BURNING OF THE SKIN



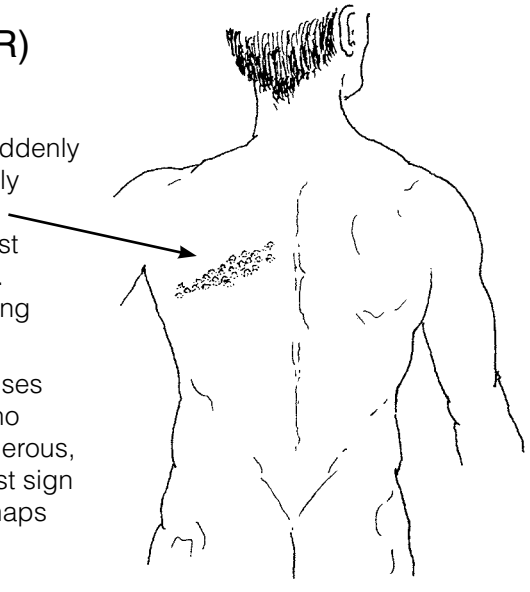
Nettles, stinging trees, sumac, poison ivy, and many other plants may cause blisters, burns, or hives with itching when they touch the skin. Juices or hairs of certain caterpillars and other insects produce similar reactions.

In allergic persons rashes or "weeping" sore patches may be caused by certain things that touch or are put on the skin. Rubber shoes, watchbands, ear drops and other medicines, face creams, perfumes, or soaps may cause such problems.

Treatment:

All these irritations go away by themselves when the things that cause them no longer touch the skin. A paste of oatmeal and cool water helps calm the itching. Aspirin or antihistamines (p. 387) may also help. In severe cases, you can use a cream that contains cortisone or a corticosteroid (p. 372). To prevent infection, keep the irritated areas clean.

SHINGLES (HERPES ZOSTER)



Signs:

A line or patch of painful blisters that suddenly appears on one side of the body is probably shingles. It is most common on the back, chest, neck, or face. The blisters usually last 2 or 3 weeks, then go away by themselves. Sometimes the pain continues or returns long after the blisters are gone.

Shingles is caused by the virus that causes chickenpox and usually affects persons who have had chickenpox before. It is not dangerous, but it can be painful. It is sometimes the first sign of some other more serious problem—perhaps cancer or HIV infection (p. 401).

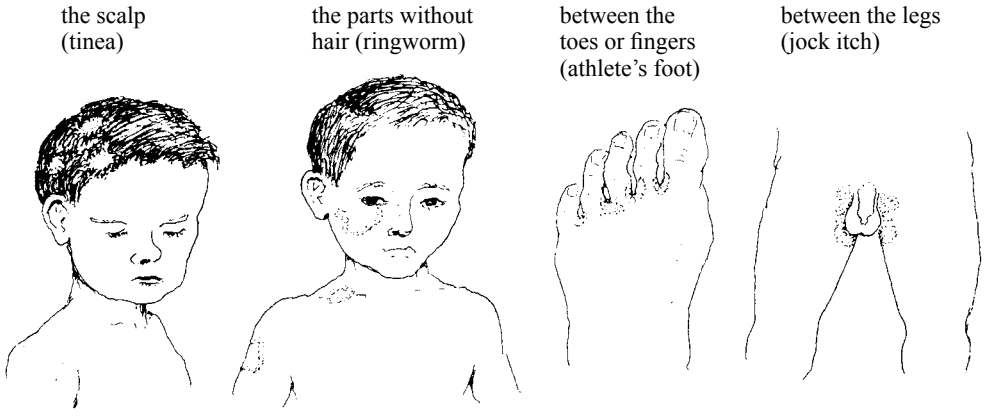
Treatment:

- ♦ Put light bandages over the rash so that clothes do not rub against it.
- ♦ Take aspirin for the pain. Acyclovir can help keep herpes blisters from spreading (p. 375). Antibiotics do not help.

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FUNGUS INFECTIONS (RINGWORM, TINEA)

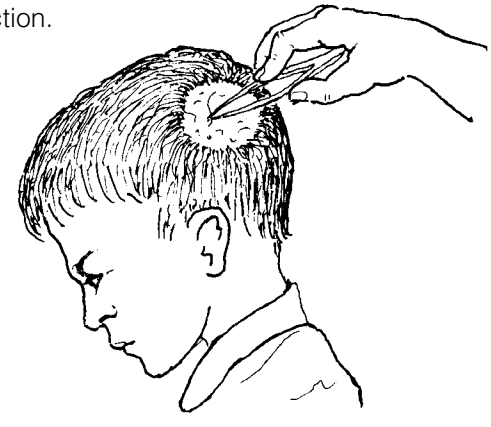
Fungus infections may appear on any part of the body, but occur most frequently on:



Most fungus infections grow in the form of a ring. They often itch. Ringworm of the head can produce round patches with scales and loss of hair. Finger and toe nails infected with the fungus become rough and thick.

Treatment:

- Soap and water. Washing the infected part every day with soap and water may be all that is needed.
- Do your best to keep the affected areas dry and exposed to the air or sunlight. Change underwear or socks often, especially when sweaty.
- Use a cream of sulfur and lard (1 part sulfur to 10 parts lard).
- Creams and powders with salicylic or undecylenic acid, or tolnaftate (*Tinactin*, p. 373) help cure the fungus between the fingers, toes and groin.
- For severe tinea of the scalp, or any fungus infection that is widespread or does not get better with the above treatments, take griseofulvin, 1 gram a day for adults and half a gram a day for children (p. 373). It may be necessary to keep taking it for weeks or even months to completely control the infection. But pregnant women should not take griseofulvin.
- Many tineas of the scalp clear up when a child reaches puberty (11 to 14 years old). Severe infections forming large swollen patches with pus should be treated with compresses of warm water (p. 195). It is important to pull out all of the hair from the infected part. Use griseofulvin, if possible.



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How to prevent fungal infections:

Ringworm and all other fungus infections are ***contagious*** (easily spread). To prevent spreading them from one child to others:

- Do not let a child with a fungal infection sleep with the others.
- Do not let different children use the same comb, or use each other's clothing or towel, unless these are washed or well cleaned first.
- Treat an infected child at once.

WHITE SPOTS ON THE FACE AND BODY



Tinea versicolor is a mild fungus infection that causes small dark or light spots with a distinct and irregular border that are often seen on the neck, chest, and back. The spots may be slightly scaly but usually do not itch. They are of little medical importance.

Treatment:

- Make a cream with sulfur and lard (1 part sulfur to 10 parts lard) and apply it to the whole body every day until they disappear. Or use an anti-fungal cream (p. 373).
- Sodium thiosulfate works better. This is the "hypo" photographers use when developing film. Dissolve a tablespoon of sodium thiosulfate in a glass of water and apply it to the whole upper body. Then rub the skin with a piece of cotton dipped in vinegar.
- To prevent the spots from returning, it is often necessary to repeat this treatment every 2 weeks.
- Selenium sulfide (p. 373) or Whitfield's ointment may also help.



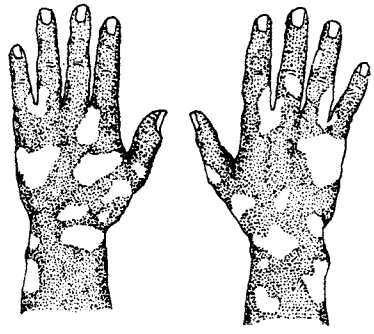
There is **another kind of small whitish spot** that is common on the cheeks of dark-skinned children who spend a lot of time in the sun. The border is less clear than in tinea versicolor. These spots are not an infection and are of no importance. Usually they go away as the child grows up. Avoid harsh soaps and apply oil. No other treatment is needed.

Contrary to popular opinion, none of these types of white spots is a sign of anemia. They will not go away with tonics or vitamins. The spots that are only on the cheeks do not need any treatment.

CAUTION: Sometimes pale spots are early signs of **leprosy** (p. 191). Leprosy spots are never completely white and may have **reduced feeling** when tested (p. 38). If leprosy is common in your area, have the child checked.

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Vitiligo (White Areas of the Skin)



In some persons, certain areas of the skin lose their natural color (pigment). Then white patches appear. These are most common on the hands, feet, face, and upper body. This loss of skin color—called vitiligo—is not an illness. It can be compared to white hair in older people. No treatment helps or is needed, but the white skin should be protected from sunburn—with clothing or an ointment of zinc oxide. Also, special coloring creams can help make the spots less noticeable.

Other Causes of White Skin Patches



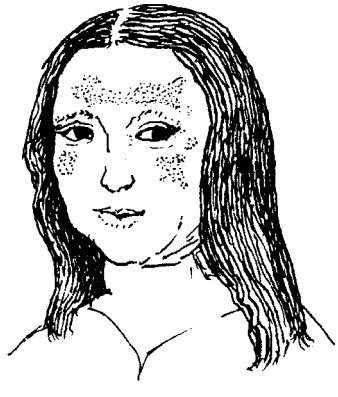
Certain diseases may cause white spots that look like vitiligo. In Latin America an infectious disease called pinta starts with bluish or red pimples and later leaves pale or white patches.

Treatment of pinta is 2.4 million units of benzathine benzylpenicillin injected into the buttocks (1.2 million units in each buttock). For a person allergic to penicillin give tetracycline or erythromycin, 500 mg 4 times each day for 15 days.

Some fungus infections also cause whitish spots (see tinea versicolor, on the opposite page).

General or patchy, partial loss of skin and hair color in children may be caused by severe malnutrition (kwashiorkor, p. 113; or pellagra, p. 208).

MASK OF PREGNANCY



During pregnancy many women develop dark, olive-colored areas on the skin of the face, breasts, and down the middle of the belly. Sometimes these disappear after the birth and sometimes not. These marks also appear sometimes on women who are taking birth control pills.

They do not indicate weakness or sickness. No treatment is needed.

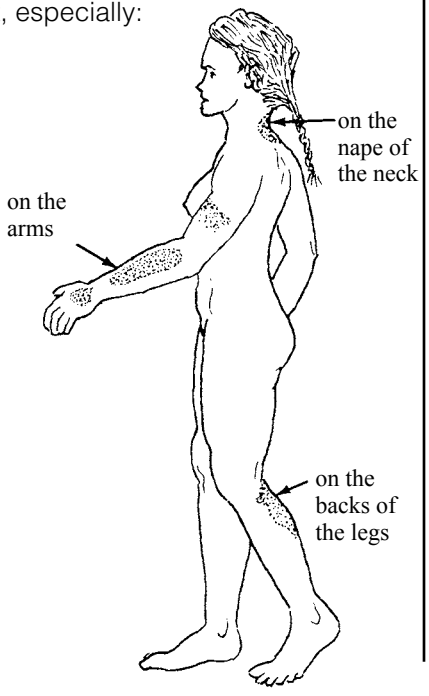
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PELLAGRA AND OTHER SKIN PROBLEMS DUE TO MALNUTRITION

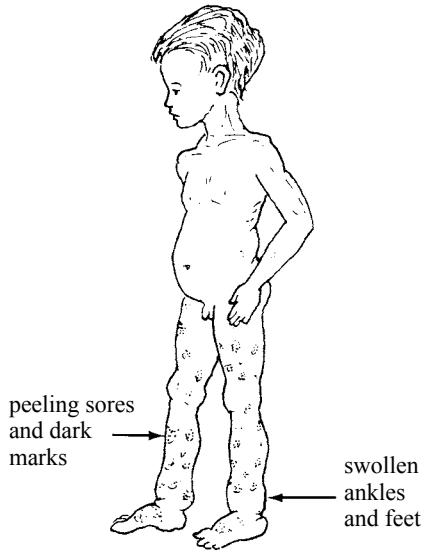
Pellagra is a form of malnutrition that affects the skin and sometimes the digestive and nervous systems. It is found in places where people eat a lot of maize (corn) or other starchy foods and not enough beans, meat, fish, eggs, vegetables, and other body-building and protective foods (p. 110).

Skin signs in malnutrition **(see the pictures on the following page):**

In adults with pellagra the skin is dry and cracked; it peels like sunburn on the parts where the sun hits it, especially:



In malnourished children, the skin of the legs (and sometimes arms) may have dark marks, like bruises, or even peeling sores; the ankles and feet may be swollen (p. 113).

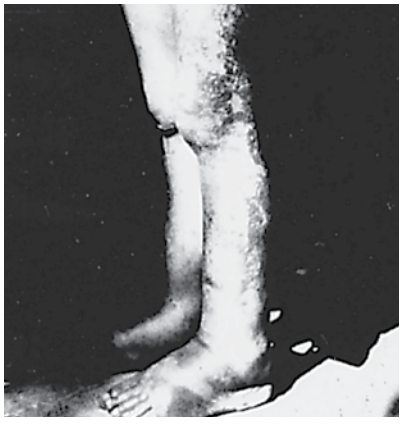


When these conditions exist, often there are also other signs of malnutrition: swollen belly; sores in the corners of the mouth; red, sore tongue; weakness; loss of appetite; failure to gain weight; etc. (see Chapter 11, pages 112 to 114).

Treatment:

- Eating nutritious foods cures pellagra. Every day a person should try to eat beans, lentils, groundnuts, or some chicken, fish, eggs, meat, or cheese. When you have a choice, it is also better to use wheat (preferably whole wheat) instead of maize (corn).
- For severe pellagra and some other forms of malnutrition, it may help to take vitamins, but **good food is more important.** Be sure the vitamin formula you use is high in the B vitamins, especially niacin. Brewer's yeast is a good source of B vitamins.

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Before eating well

After eating well



The swelling and dark spots on this boy's legs and feet are the result of poor nutrition. He was eating mostly maize (corn) without any foods rich in proteins and vitamins.

One week after he began to eat beans and eggs along with the maize, the swelling was gone and the spots had almost disappeared.



The "burnt" skin on the legs of this woman is a sign of pellagra—which results from not eating well (p. 208).

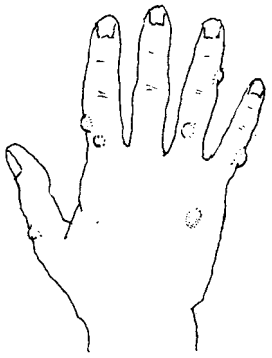


The white spots on the legs of this woman are due to an infectious disease called pinta (p. 207).

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WARTS (VERRUCAE)

Most warts, especially those in children, last 3 to 5 years and go away by themselves. Flat, painful wart-like spots on the sole of the foot are often plantar warts. (Or they may be corns. See below.)



Treatment:

- Magical or household cures often get rid of warts. But it is safer not to use strong acids or poisonous plants, as these may cause burns or sores much worse than the warts.
- Painful plantar warts sometimes can be removed by a health worker.
- For warts on the penis, vagina, or around the anus, see page 404.

CORNS

A corn is a hard, thick part of the skin. It forms where sandals or shoes push against the skin, or one toe presses against another. Corns can be very painful.

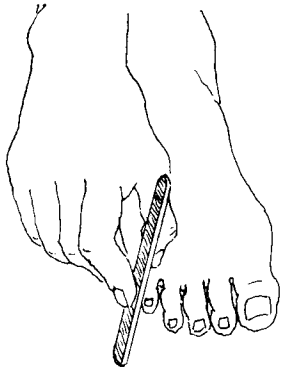
Treatment:

- Get sandals or shoes that do not press on the corns.
- To make corns hurt less, do this:

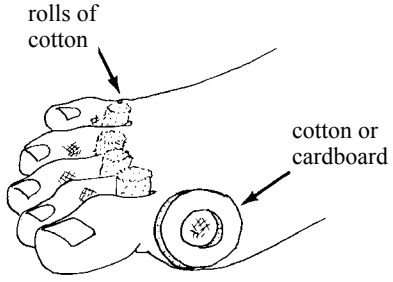
1. Soak the foot in warm water for 15 minutes.



2. With a file or rasp, trim down the corn until it is thin.

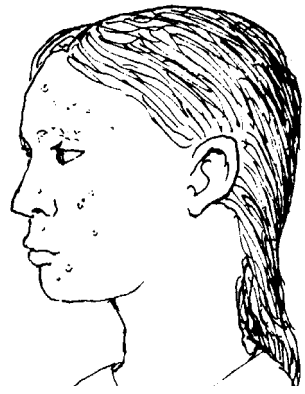


3. Pad the foot around the corn so that it will not press against the shoe or another toe. Wrap the foot or toe in a soft cloth to make a thick pad and cut a hole around the corn.



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PIMPLES AND BLACKHEADS (ACNE)



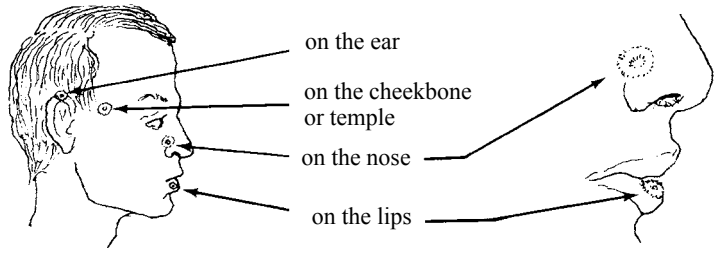
Young people sometimes get pimples on their face, chest, or back—especially if their skin has too much oil in it. Pimples are little lumps that form, often with tiny white or black "heads" of pus, oil and dead cells. Sometimes they can become quite sore and large.

Treatment:

- Wash the face twice a day with mild soap and warm (not hot) water.
- Wash the hair every 2 days, if possible.
- Sunshine helps clear pimples. Let the sunlight fall on the affected parts of the body.
- Eat as well as possible, drink a lot of water, and get enough sleep.
- Do not use skin or hair lotions that are waxy, oily, or greasy.
- Before you go to bed, put a mixture of alcohol with a little sulfur on the face (10 parts alcohol to 1 part sulfur).
- For serious cases forming lumps and pockets of pus, if these do not get better with the methods already described, tetracycline may help. Take 1 capsule 4 times a day for 3 days and then 2 capsules daily. It may be necessary to take 1 or 2 capsules daily for months.

CANCER OF THE SKIN

Skin cancer is most frequent in light-skinned persons who spend a lot of time in the sun. It usually appears in places where the sun hits with most force, especially:



Skin cancer may take many forms. It usually begins as a little ring the color of pearl with a hole in the center. It grows little by little.

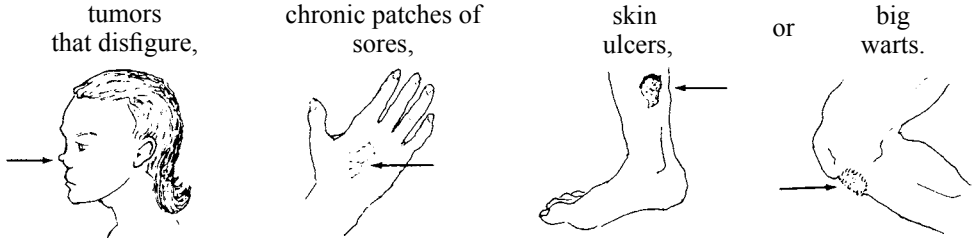
Most cancers of the skin are not dangerous if treated in time. Surgery is needed to remove them. If you have a chronic sore that might be skin cancer, see a health worker.

To prevent skin cancer, light-skinned persons should protect themselves from the sun and always wear a hat. Persons who have suffered from cancer of the skin and have to work in the sun can buy special creams that protect them. Zinc oxide ointment is cheap and works well.

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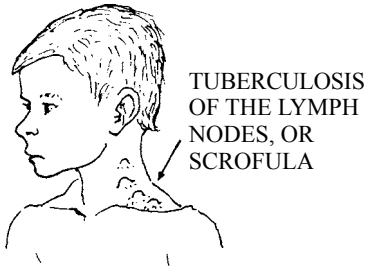
TUBERCULOSIS OF THE SKIN OR LYMPH NODES

The same microbe that causes tuberculosis of the lungs also sometimes affects the skin, causing painless



As a rule, TB of the skin develops slowly, lasts a long time, and keeps coming back over a period of months or years.

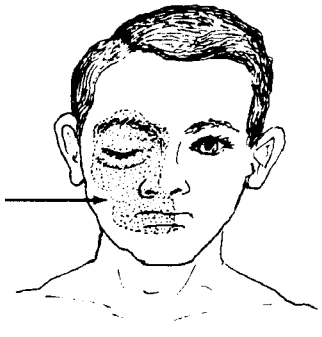
Also, tuberculosis sometimes infects the lymph nodes—most often those of the neck or in the area behind the collar bone, between the neck and the shoulder. The nodes become large, open, drain pus, seal closed for a time, and then open and drain again. Usually **they are not painful.**



Treatment:

In the case of any chronic sore, ulcer, or swollen lymph nodes, it is best to seek medical advice. Tests may be needed to learn the cause. Tuberculosis of the skin is treated the same as tuberculosis of the lungs (p. 180). To keep the infection from returning, the medicines must be taken for many months after the skin looks well.

ERYSIPELAS AND CELLULITIS



Erysipelas (or St. Anthony's fire) is a very painful acute (sudden) infection in the skin. It forms a hot, bright red, swollen patch with a sharp border. The patch spreads rapidly over the skin. It often begins on the face, at the edge of the nose. This usually causes swollen lymph nodes, fever, and chills.

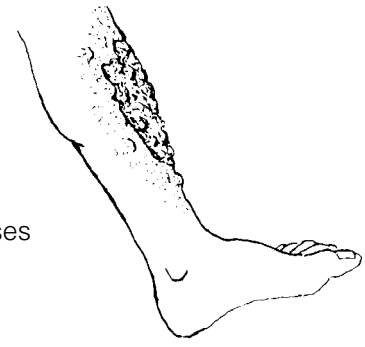
Cellulitis is also a very painful, acute infection of the skin that can appear anywhere on the body. It usually occurs after a break in the skin. The infection is deeper and the borders of the patch are less clear than with erysipelas.

Treatment:

For both erysipelas and cellulitis, begin treatment as soon as possible. Use an antibiotic: penicillin tablets, 400,000 units, 4 times a day, in serious cases, injectable procaine penicillin, 800,000 units daily (p. 352). Continue using the antibiotic for 2 days after all signs of infection are gone. Also use hot compresses—and aspirin for pain.

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GANGRENE (GAS GANGRENE)



This is a very dangerous infection of a wound, in which a foul-smelling gray or brown liquid forms. The skin near the wound may have dark blisters and the flesh may have air bubbles in it. The infection begins between 6 hours and 3 days after the injury. It quickly gets worse and spreads fast. Without treatment it causes death in a few days.

Treatment:

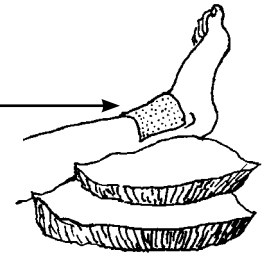
- Open up the wound as wide as possible. Wash it out with cool, boiled water and soap. Clean out the dead and damaged flesh. If possible, flood the wound with hydrogen peroxide every 2 hours.
- Inject penicillin (if possible use short-acting benzylpenicillin, p. 352), 1,000,000 (a million) units every 3 hours.
- **Leave the wound uncovered so that air gets to it. Get medical help.**

ULCERS OF THE SKIN CAUSED BY POOR CIRCULATION

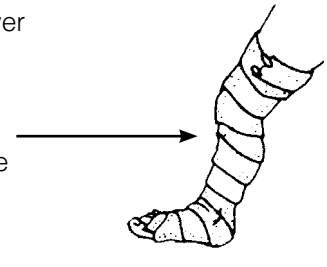
Skin ulcers, or large, open sores, have many causes (p. 20). However, chronic ulcers on the ankles of older persons, especially in women with varicose veins, usually come from poor circulation. The blood is not moved fast enough through the legs. Such ulcers may become very large. The skin around the ulcer is dark blue, shiny, and very thin. Often the foot is swollen.



Treatment:



- These ulcers heal very slowly—and only if great care is taken. Most important: **Keep the foot up** high as often as possible. Sleep with it on pillows. During the day, rest with the foot up high every 15 or 20 minutes. **Walking helps the circulation, but standing in one place and sitting with the feet down are harmful.**
- Put warm compresses of weak salt water on the ulcer—1 teaspoon salt to a liter of boiled water. Cover the ulcer loosely with sterile gauze or a clean cloth. **Keep it clean.**



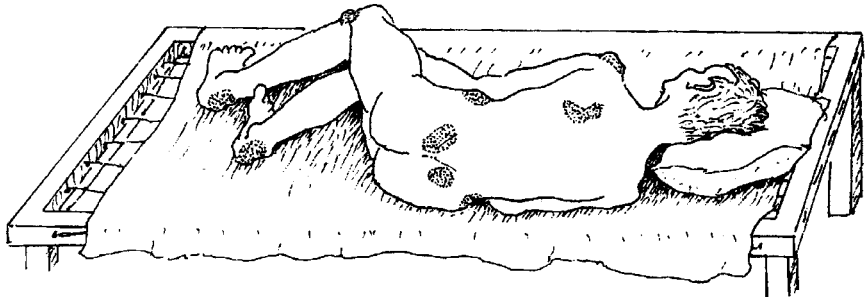
- Support the varicose veins with elastic stockings or bandages. Continue to use these and to keep the feet up after the ulcer heals. Take great care not to scratch or injure the delicate scar.
- Treating the ulcers with honey or sugar may help (p. 214).

Prevent skin ulcers—care for varicose veins early (p. 175).

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BED SORES (PRESSURE SORES)

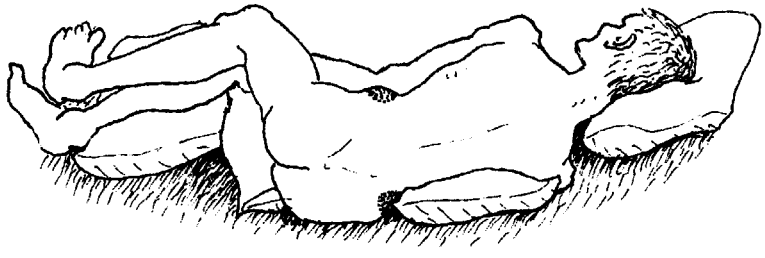
These chronic open sores appear in persons so ill they cannot roll over in bed, especially in sick old persons who are very thin and weak. The sores form over bony parts of the body where the skin is pressed against the bedding. They are most often seen on the buttocks, back, shoulders, elbows, or feet.



For a more complete discussion of pressure sores, see ***Disabled Village Children,*** Chapter 24, or ***A Health Handbook for Women with Disabilities,*** pages 114 to 117.

How to prevent bed sores:

- Turn the sick person over every hour: face up, face down, side to side.
- Bathe him every day and rub his skin with baby oil.
- Use soft bed sheets and padding. Change them daily and each time the bedding gets dirty with urine, stools, vomit, etc.
- Put cushions under the person in such a way that the bony parts rub less.



- Feed the sick person as well as possible. If he does not eat well, extra vitamins and iron may help (p. 118).
- A child who has a severe chronic illness should be held often on his mother's lap.

Treatment:

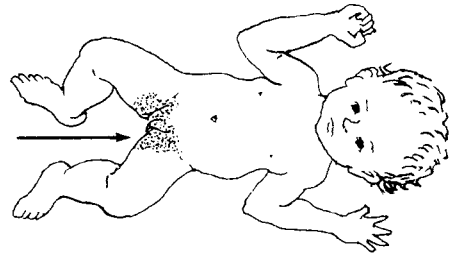
- Do all the things mentioned above.
- 3 times a day, wash the sores with cool, boiled water mixed with mild soap. Gently remove any dead flesh. Rinse well with cool, boiled water.
- To fight infection and speed healing, fill the sore with honey, sugar, or molasses. (A paste made of honey and sugar is easiest to use.) It is important to clean and refill the sore at least 2 times a day. If the honey or sugar becomes too thin with liquid from the sore, it will feed germs rather than kill them.

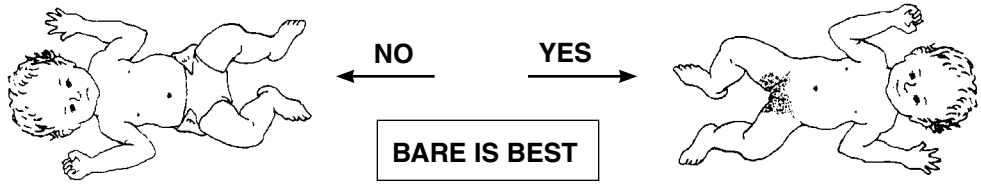
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SKIN PROBLEMS OF BABIES

Diaper Rash

Reddish patches of irritation between a baby's legs or buttocks may be caused by urine in his diapers (nappy) or bedding.



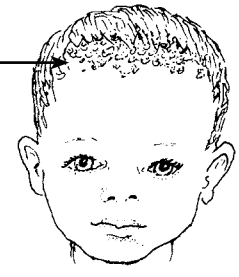


Treatment:

- Bathe the child daily with lukewarm water and mild soap. Dry her carefully.
- **To prevent or cure the rash, the child should be kept naked, without diapers, and he should be taken out into the sun.**
- If diapers are used, change them often. After washing the diapers, rinse them in water with a little vinegar.
- It is best not to use talc (talcum powder), but if you do, wait until the rash is gone.

Dandruff (Cradle Cap, Seborrhea)

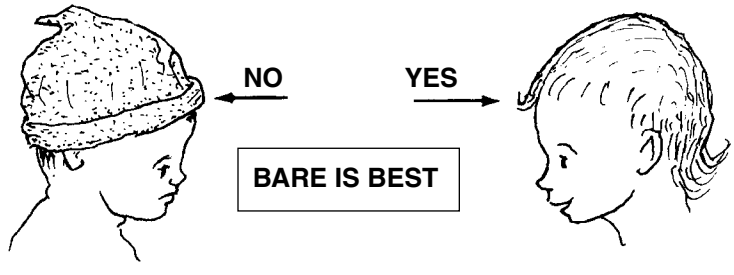
Dandruff is an oily, yellow to white crust that usually forms in patches on the scalp, but also on the cheeks, forehead, eyebrows, nose and ears. The skin is often red and irritated. In babies, dandruff usually results from not washing the baby's head often enough, or from keeping the head covered. It is also a common problem for people with HIV.



Treatment:

- Wash the head daily. A medicated soap can help, but usually regular soap and water are enough (p. 372).
- Gently clean off all the dandruff and crust. To loosen the scales and crust, first wrap the head with towels soaked in lukewarm water.

DO NOT COVER A BABY'S HEAD WITH A CAP OR CLOTH. KEEP THE HEAD UNCOVERED.



- Keep the head **uncovered**, open to the air and sunlight.
- If there are signs of infection, treat as for impetigo (p. 202).

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ECZEMA (RED PATCHES WITH LITTLE BLISTERS)



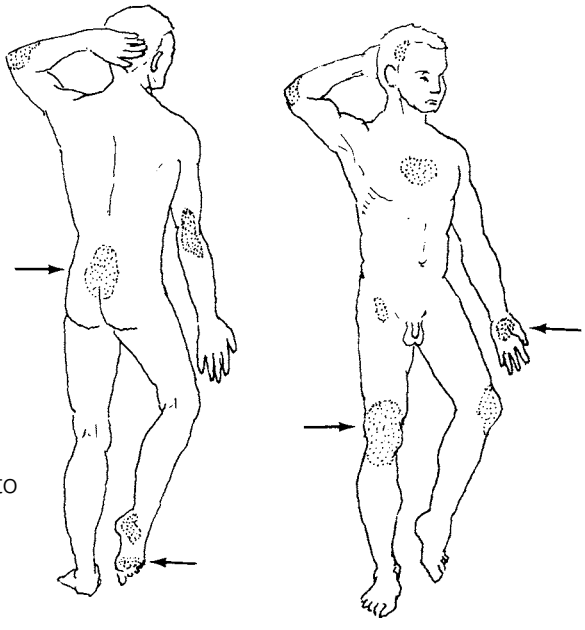
Signs:

- In small children: a red patch or rash forms on the cheeks or sometimes on the arms and hands. The rash consists of small sores or blisters that ooze or weep (burst and leak fluid).
- In older children and grown-ups: eczema is usually drier and is most common behind the knees and on the inside of the elbows.
- It does not start as an infection but is more like an allergic reaction.
- In light-skinned people, it may start red and then turn brown. In dark-skinned people, it may turn lighter or darker.

Treatment:

- ♦ Put cold compresses on the rash.
- ♦ If signs of infection develop (p. 88), treat as for impetigo (p. 202).
- ♦ Let the sunlight fall on the patches.
- ♦ In difficult cases, use a cortisone or corticosteroid cream (p. 372). Seek medical advice.

PSORIASIS



Signs:

- Thick, rough patches of reddish or blue-gray skin covered with whitish or silver-colored scales. The patches appear most commonly in the parts shown in the drawings.
- The condition usually lasts a long time or keeps coming back. It is not an infection and is not dangerous.

Treatment:

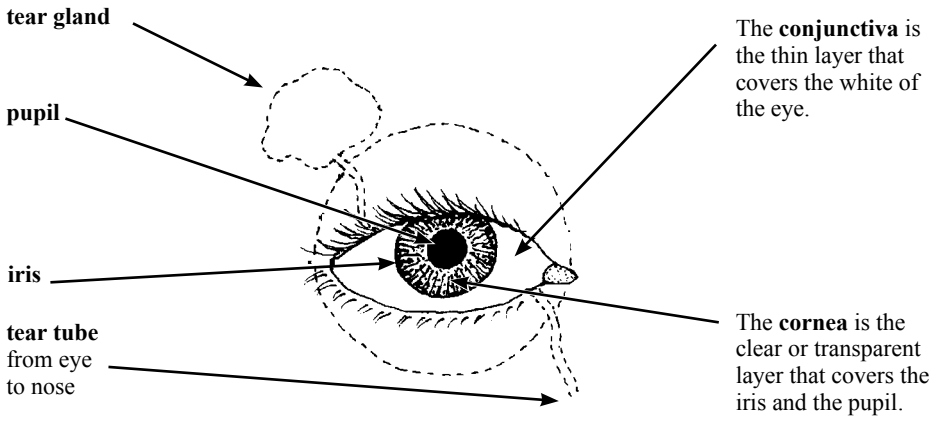
- ♦ Leaving the affected skin open to the sunlight often helps.
- ♦ Bathing in the ocean sometimes helps.
- ♦ Seek medical advice. Treatment must be continued for a long time.

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CHAPTER

The Eyes

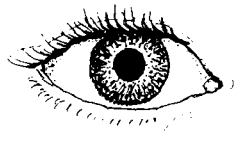
16



DANGER SIGNS

The eyes are delicate and need good care. Get medical help fast when any of the following danger signs occurs:

1. Any injury that cuts or ruptures (goes through) the eyeball.
2. Painful, grayish spot on the cornea, with redness around the cornea (corneal ulcer).
3. Great pain inside the eye (possibly iritis or glaucoma).
4. A big difference in the size of the pupils when there is pain in the eye or the head.





A big difference in the size of the pupils may come from brain injury, stroke, injury to the eye, glaucoma, or iritis. (Some people always have a small difference in pupil size.)



5. Blood behind the cornea inside the eyeball (p. 225)
6. The person begins to lose vision in one or both eyes.
7. A white glow or reflection in the pupil. This could be a sign of cancer (retinoblastoma) or a cataract (p. 225).
8. Any eye infection or inflammation that does not get better after 5 or 6 days of treatment with an antibiotic eye ointment.

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INJURIES TO THE EYE

All injuries to the eyeball must be considered dangerous, for they may cause blindness.

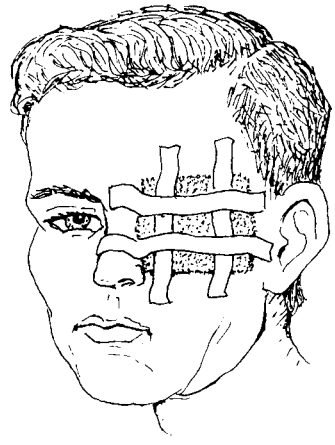
Even small cuts on the **cornea** (the transparent layer covering the pupil and iris) may get infected and harm the vision if not cared for correctly.

If a wound to the eyeball is so deep that it reaches the black layer beneath the outer white layer, this is especially dangerous.

If a blunt injury (as with a fist) causes the eyeball to fill with blood, the eye is in danger (p. 225). Danger is especially great if pain suddenly gets much worse after a few days, for this is probably acute glaucoma (p. 222).

Treatment:

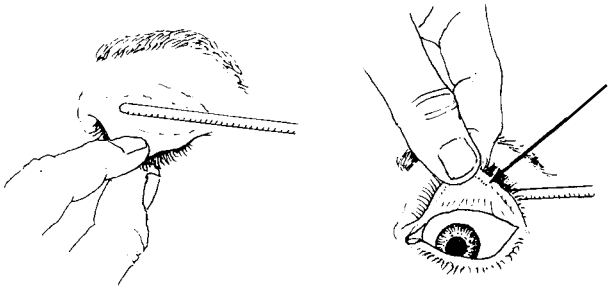
- If the person still sees well with the injured eye, put an antibiotic eye ointment (p. 380) in the eye and cover it with a soft, thick bandage. If the eye is not better in a day or two, get medical help.
- If the person cannot see well with the injured eye, if the wound is deep, or if there is blood inside the eye behind the cornea (p. 225), cover the eye with a clean bandage and go for medical help at once. **Do not press on the eye.**
- **Do not** try to remove thorns or splinters that are tightly stuck in the eyeball. Get medical help.



HOW TO REMOVE A SPECK OF DIRT FROM THE EYE

Have the person close her eyes and look to the left, the right, up and down. Then, while you hold her eye open, have her look up and then down. This will make the eye produce more tears and the dirt often comes out by itself.

Or you can try to remove the bit of dirt or sand by flooding the eye with clean water (p. 219) or by using the corner of a clean cloth or some moist cotton. If the particle of dirt is under the upper lid, look for it by turning the lid up over a thin stick. The person should look down while you do this:



The particle is often found in the small groove near the edge of the lid. Remove it with the corner of a clean cloth.

If you cannot get the particle out easily, use an antibiotic eye ointment, cover the eye with a bandage, and go for medical help.

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CHEMICAL BURNS OF THE EYE



Battery acid, lye, gasoline, or a pesticide that gets into the eye can be dangerous. Hold open the eye. **Immediately flood the eye with clean, cool water. Keep flooding for 30 minutes,** or until it stops hurting. Do not let the water get into the other eye.

RED, PAINFUL EYES—DIFFERENT CAUSES

Many different problems cause red, painful eyes. Correct treatment often depends on finding the cause, so be sure to check carefully for signs of each possibility. This chart may help you find the cause:

foreign matter (bit of dirt, etc.) in the eye (p. 218)	usually affects **one eye only;** redness and pain variable
burns or harmful liquids (p. 219)	one or both eyes; redness and pain variable
"pink eye" (conjunctivitis, p. 219) hay fever (allergic conjunctivitis, p. 165) trachoma (p. 220) measles (p. 311)	usually **both eyes** (may start or be worse in one) usually reddest at outer edge burning pain, usually mild
acute glaucoma (p. 222) iritis (p. 221) scratch or ulcer on the cornea (p. 224)	usually **one eye only;** reddest next to the cornea pain often great



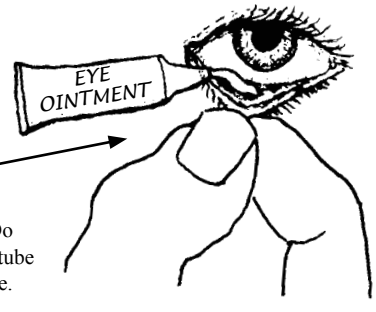


"PINK EYE" (CONJUNCTIVITIS)

This infection causes redness, pus, and mild burning in one or both eyes. Lids often stick together after sleep. It is especially common in children.

Treatment:

First clean pus from the eyes with a clean cloth moistened with boiled water. Then put in antibiotic eye ointment (p. 380). Pull down the lower lid and put a little bit of ointment **inside,** like this: Putting ointment outside the eye does no good.



CAUTION: Do not touch the tube against the eye.

Prevention:

Most conjunctivitis is very contagious. The infection is easily spread from one person to another. Do not let a child with pink eye play or sleep with others, or use the same towel. Wash hands after touching eyes.

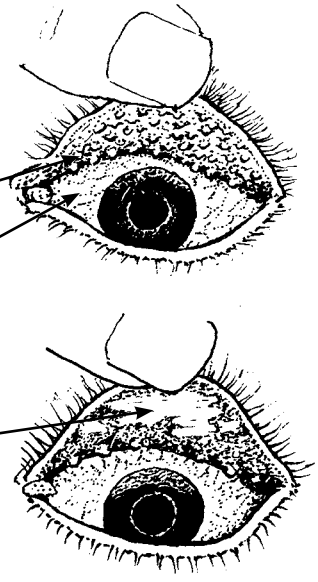
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TRACHOMA

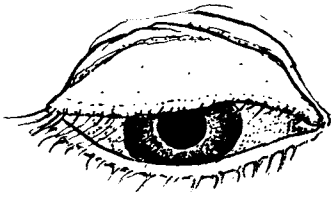
Trachoma is a chronic eye problem. It is caused by repeated infection of the inside of the eyelid and the surface of the eye itself. If not treated early, it can cause blindness. It is spread by touch or by flies, and is most common where people live in poor, crowded conditions.

Signs:

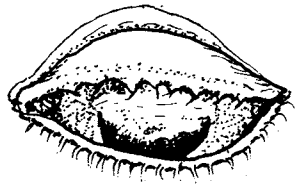
- Trachoma may begin with red, watery, sore eyes, or may develop for months with few or no early signs.
- After a month or more, small whitish, gray, or yellow lumps (follicles) form and can be seen inside the upper eyelids.
  To see these, turn back the lid as shown on p. 218.
- The white of the eye may look red and swollen. The eye may be painful, sensitive to light, or have discharge.
- After years of repeated infections, the lumps (follicles) are replaced by whitish scars inside the eyelids.



These scars make the eyelids thick and may keep them from opening or closing all the way.



Or the scarring may pull the eyelashes down into the eye, scratching the cornea and causing loss of vision.



Treatment of trachoma:

Give 1 dose of azithromycin (p. 354) to cure trachoma. If that is not available, put erythromycin or tetracycline eye ointment (p. 379) inside the eye 2 times a day for 6 weeks.

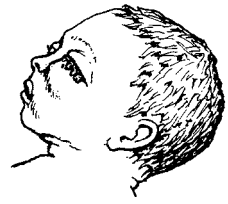
Prevention:

Early and complete treatment of trachoma helps prevent its spread to others. All persons living with someone who has trachoma, especially children, should have their eyes examined often. If signs appear, they should be treated as soon as possible. Washing the face every day can help prevent trachoma. Also, it is very important to follow the Basic Guidelines of Cleanliness, explained in Chapter 12 (pages 133 to 139).

Cleanliness helps prevent trachoma.

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INFECTED EYES IN NEWBORN BABIES (NEONATAL CONJUNCTIVITIS)



If a mother has chlamydia or gonorrhea (p. 236), she may pass these infections to her baby at birth. The infection can get into the baby's eyes and cause blindness and other health problems. If the baby's eyes get red, swell, and have pus in them within the first month, she may have one or both of these infections. It is important to provide treatment immediately.

To treat chlamydia or gonorrhea or both:

- If the baby is less than 7 days old, inject 125 mg ceftriaxone in the thigh muscle, 1 time only (p. 359)
- If the baby is 7 to 28 days old, inject 125 mg ceftriaxone in the thigh muscle, 1 time only (p. 359)
  and
  give 50 mg azithromycin by mouth, 1 time a day, for 3 days (p. 354)

  OR

  Inject 125 mg ceftriaxone in the thigh muscle, 1 time only (p. 359)
  and
  give 30 mg erythromycin by mouth, 4 times a day, for 14 days (p. 354)

Prevention:

Many women have chlamydia or gonorrhea and do not know they are infected. Give every baby medicine (p. 379) in the eyes to prevent blindness:

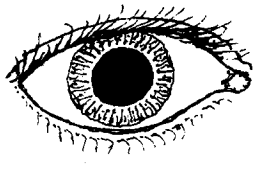
- put a line of erythromycin 0.5% to 1% ointment in each of the baby's eyes within the first 2 hours after birth, ***OR***
- put a line of tetracycline 1% eye ointment in each of the baby's eyes within the first 2 hours after birth, ***OR***
- put 1 drop of 2.5% solution of povidone iodine in each of the baby's eyes within the first 2 hours after birth, ***OR***
- put 1 drop 1% silver nitrate solution in each of the baby's eyes within the first 2 hours after birth.

Silver nitrate also irritates the baby's eyes for several days. If you can get erythromycin or tetracycline eye medicine, or povidone iodine, use one of them. But use silver nitrate if that is all you have.

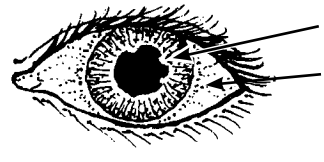
If a baby develops gonorrhea or chlamydia of the eyes, both parents should be treated for these infections (pages 237 and 359).

IRITIS (INFLAMMATION OF THE IRIS)

EYE WITHOUT IRITIS



EYE WITH IRITIS



Signs :

pupil small
often irregular

redness around iris

severe pain

Iritis usually happens in one eye only. Pain may begin suddenly or gradually. The eye waters a lot. It hurts more in bright light. The eyeball hurts when you touch it. There is no pus as with conjunctivitis. Vision is usually blurred.

This is an emergency. Antibiotic ointments do not help. Get medical help.

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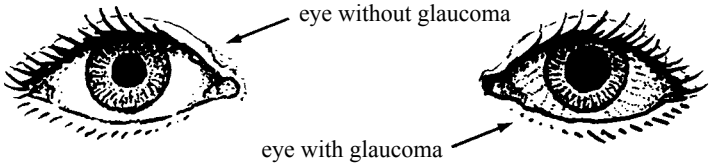
GLAUCOMA

This dangerous disease is the result of too much pressure in the eye. It usually begins after the age of 40 and is a common cause of blindness. **To prevent blindness, it is important to recognize the signs of glaucoma and get medical help fast.**

There are 2 forms of glaucoma.

ACUTE GLAUCOMA

This starts suddenly with a headache or severe pain in the eye. The eye becomes red, the vision blurred. The eyeball feels hard to the touch, like a marble. There may be vomiting. The pupil of the bad eye is bigger than that of the good eye.

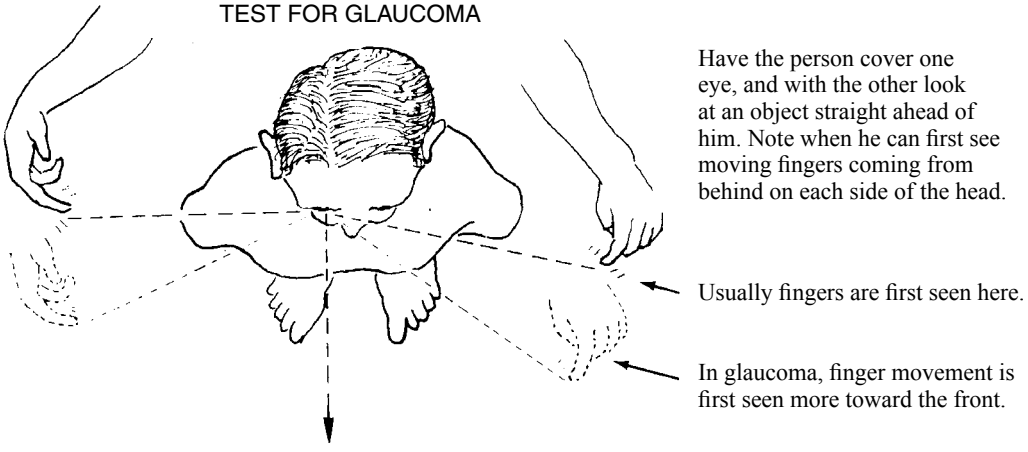


If not treated very soon, acute glaucoma will cause blindness within a few days. Surgery is often needed. **Get medical help fast.**

CHRONIC GLAUCOMA

The pressure in the eye rises slowly. Usually there is no pain. Vision is lost slowly, starting from the side, and often the person does not notice the loss. Testing the side vision may help detect the disease.

TEST FOR GLAUCOMA



If discovered early, treatment with special eyedrops (pilocarpine) may prevent blindness. Dosage should be determined by a doctor or health worker who can measure the eye pressure periodically. Drops must be used for the rest of one's life. When possible, eye surgery is usually the surest form of treatment.

Prevention:

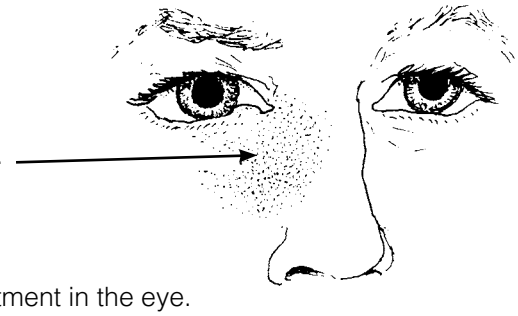
Persons who are over 40 years old or have family members who have had glaucoma should try to have their eye pressure checked once a year.

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INFECTION OF THE TEAR SAC (DACRYOCYSTITIS)

Signs:

Redness, pain, and swelling beneath the eye, next to the nose. The eye waters a lot. A drop of pus may appear in the corner of the eye when the swelling is gently pressed.



Treatment:

- Apply hot compresses.
- Put antibiotic eye drops or ointment in the eye.
- Take penicillin (p. 350).

TROUBLE SEEING CLEARLY

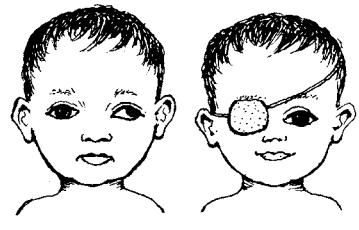
Children who have trouble seeing clearly or who get headaches or eye pain when they read may need glasses. Have their eyes examined.

In older persons, it is common that, with passing years, it becomes more difficult to see close things clearly. Reading glasses often help. Pick glasses that let you see clearly about 40 cm (15 inches) away from your eyes. If glasses do not help, see an eye doctor.



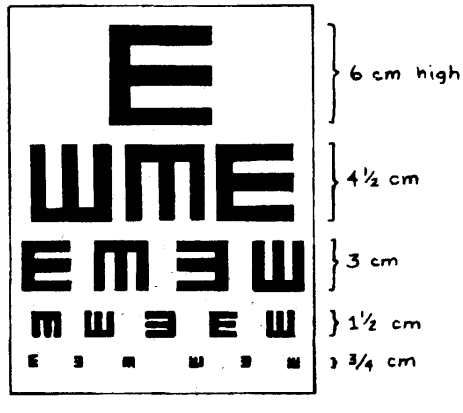
CROSS EYES AND A WANDERING OR "LAZY" EYE (STRABISMUS, SQUINT)

If the eye sometimes wanders like this, but at other times looks directly ahead, usually you need not worry. The eye will grow straighter in time. But if the eye is always turned the wrong way, and if the child is not treated at a very early age, she may never see well with that eye. See an eye doctor as soon as possible to find out if patching of the good eye, surgery, or special glasses might help.



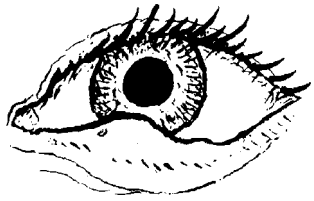
Surgery done at a later age can usually straighten the eye and improve the child's appearance, but it will not help the weak eye see better.

IMPORTANT: The eyesight of every child should be checked as early as possible (best around 4 years). You can use an "E" chart (see *Helping Health Workers Learn,* p. 24-13). Test each eye separately to discover any problem that affects only one eye. If sight is poor in one or both eyes, see an eye doctor.



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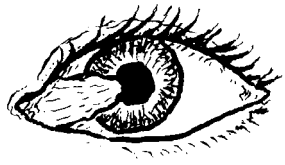
STY (HORDEOLUM)



A red, swollen lump on the eyelid, usually near its edge. To treat, apply warm, moist compresses with a little salt in the water. Use of an antibiotic eye ointment 3 times a day will help prevent more sties from occurring (p. 379).

PTERYGIUM

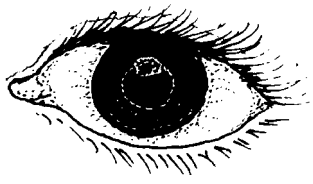
A fleshy thickening on the eye surface that slowly grows out from the edge of the white part of the eye near the nose and onto the cornea; caused in part by sunlight, wind, and dust. Dark glasses may help calm irritation and slow the growth of a pterygium. It should be removed by surgery before it reaches the pupil. Unfortunately, after surgery a pterygium often grows back again.



Folk treatments using powdered shells do more harm than good. To help calm itching and burning you can try using cold compresses. Or use eye drops of camomile (boiled, then strained, cooled, and without sugar).

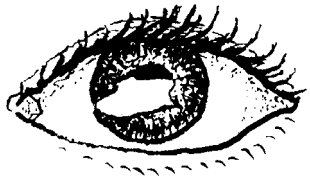
A SCRAPE, ULCER, OR SCAR ON THE CORNEA

When the very thin, delicate surface of the cornea has been scraped, or damaged by infection, a painful **corneal ulcer** may result. If you look hard in a good light, you may see a grayish or less shiny patch on the surface of the cornea.



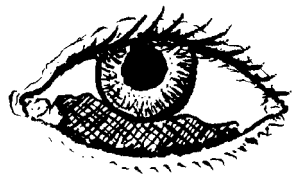
If not well cared for, a corneal ulcer can cause blindness. Apply antibiotic eye ointment, 4 times a day for 7 days (p. 379). If the eye is not better in 2 days, get medical help.

A **corneal scar** is a painless, white patch on the cornea. It may result from a healed corneal ulcer, burn, or other injury to the eye. If both eyes are blind but the person still sees light, surgery (corneal transplant) to one eye may return its sight. But this is expensive. If one eye is scarred, but sight is good in the other, avoid surgery. Take care to protect the good eye from injury.



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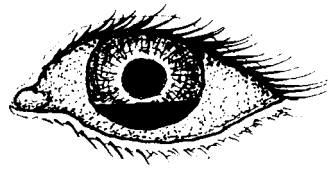
BLEEDING IN THE WHITE OF THE EYE



A painless, blood-red patch in the white part of the eye occasionally appears after lifting something heavy, coughing hard (as with whooping cough), or being hit on the eye. The condition results from the bursting of a small vessel. It is harmless, like a bruise, and will slowly disappear without treatment in about 2 weeks.

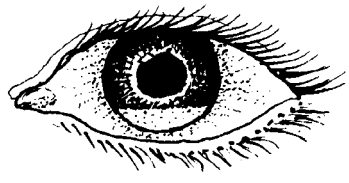
Small red patches are common on the eyes of newborn babies. No treatment is needed.

BLEEDING BEHIND THE CORNEA (HYPHEMA)



Blood behind the cornea is a danger sign. It usually results from an injury to the eye with a blunt object, like a fist. If there is pain and loss of sight, refer the person to an eye specialist immediately. If the pain is mild and there is not loss of sight, put a patch on both eyes and keep the person at rest in bed for several days. If after a few days the pain becomes much worse, there is probably hardening of the eye (glaucoma, p. 222). Take the person to an eye doctor **at once.**

PUS BEHIND THE CORNEA (HYPOPYON)



Pus behind the cornea is a sign of severe *inflammation.* It is sometimes seen with corneal ulcers and is a sign that the eye is in danger. Apply antibiotic eye ointment (p. 380) and get medical help at once. If the ulcer is treated correctly, the hypopyon will often clear up by itself.

CATARACT



The lens of the eye, behind the pupil, becomes cloudy, which you can see when you shine a light into it. Cataract is common in older persons, but also occurs, rarely, in babies. If a blind person with cataracts can still tell light from dark and notice movement, surgery may let him see again. During surgery, an artificial lens is put inside the eye to restore vision, without the need to wear glasses afterwards. Medicines do not help cataracts.

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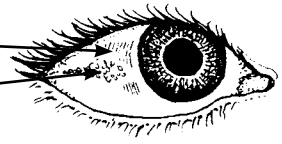
NIGHT BLINDNESS AND XEROPHTHALMIA (VITAMIN A DEFICIENCY)

This eye disease is most common in children and pregnant women. It comes from not eating enough foods with vitamin A. If not recognized and treated early, it can cause vision loss and even blindness, especially in children.

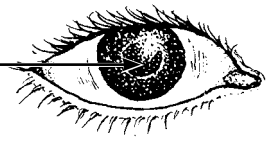


Signs:

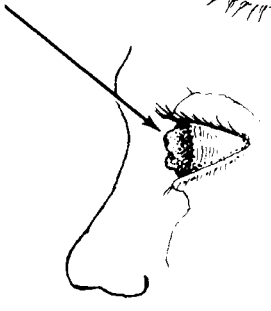
- First, the eyes produce less tears and feel dry, and may look red and irritated.
- The person may have difficulty seeing at night or in low light (**night blindness**), bump into objects, or move around less or more slowly than usual.



- Later, the white of the eyes loses its shine and begins to wrinkle
- Patches of little gray bubbles (Bitot's spots) may form in the eyes.



- As the disease gets worse, the cornea also becomes dry and dull, and may develop little pits.



- Then the cornea may quickly grow soft, bulge, or even burst. Usually there is no pain. Loss of vision may result from infection, scarring, or other damage.
- Xerophthalmia often begins, or gets worse, when a child is sick with another illness like diarrhea, whooping cough, tuberculosis, or measles. **Examine the eyes of all sick and underweight children.** Open the child's eyes and look for signs of vitamin A deficiency.

To prevent problems from vitamin A deficiency:



- ♦ Breastfeed babies. Breastfeeding helps provide vitamin A to the baby for the first 6 months.
- ♦ After the first 6 months, begin giving the child foods rich in vitamin A, such as dark green leafy vegetables, and yellow or orange fruits and vegetables such as papaya (paw paw), mango, and squash. Whole milk, eggs, fish, and liver are also rich in vitamin A.
- ♦ Where children are unlikely to get these foods, prevention programs give vitamin A (retinol) in capsules, tablets, or drops. In children younger than 6 months give 50,000 units (15 mg) by mouth 1 time only, for children 6 months to 1 year give 100,000 units (30 mg) by mouth every 4 to 6 months, and for children older than 1 year, give 200,000 units (60 mg) by mouth every 4 to 6 months.

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Treatment for vitamin A deficiency (night blindness):

- For children who already have signs of night blindness, use the same dosages as above but give 1 time on the first day, 1 time the following day, and then 1 time 1 to 2 weeks later.
- To treat night blindness during pregnancy, give 25,000 units by mouth weekly for 12 weeks.

If the eye surface (cornea) is severely damaged (dull, pitted, or bulging), get medical help right away. Give the vitamin A treatment and put 1% tetracycline ointment (p. 379) in the eye and cover with a bandage. Put on more ointment 2 times each day until you have taken the person to a health worker.

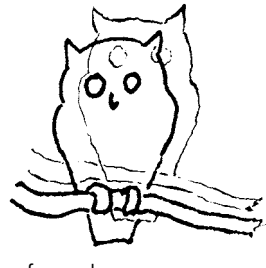
Too much vitamin A is poisonous and can harm a developing baby. **Do not give more than the amounts advised here and do not give to women or girls who may become pregnant**.

Dark green leafy vegetables, and yellow or orange fruits and vegetables, help prevent blindness in children.

SPOTS OR "FLOATERS" BEFORE THE EYES

Sometimes older persons complain of small moving spots when they look at a bright surface (wall, sky). The spots move when the eyes move and may look like bits of string or cobwebs. These spots are usually harmless and need no treatment. But if they appear suddenly in large numbers and vision begins to fail from one side, this could be a medical emergency (detached retina). **Seek medical help at once.**

DOUBLE VISION

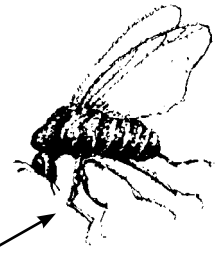


Seeing double can have many causes.

If double vision comes suddenly, is chronic, or gradually gets worse, it is probably a sign of a serious problem. Seek medical help.

If double vision occurs only from time to time, it may be a sign of weakness or exhaustion, perhaps from malnutrition. Read Chapter 11 on good nutrition and try to eat as well as possible. If sight does not improve, get medical help.

RIVER BLINDNESS (ONCHOCERCIASIS)



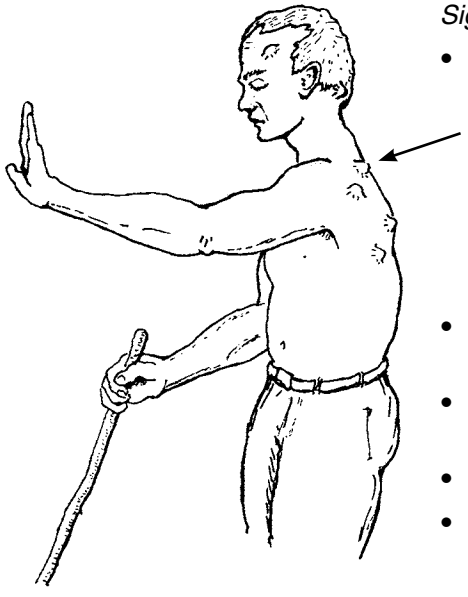
BLACK FLY

actual size →

This disease is common in many parts of Africa and certain areas of southern Mexico, Central America, and northern South America. The infection is caused by tiny worms that are carried from person to person by small, hump backed flies or gnats known as black flies (simulids).

The worms are injected into a person when an infected black fly bites him.

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Signs of river blindness:

- Several months after a black fly bites and the worms enter the body, lumps begin to form under the skin. In the Americas the lumps are most common on the head and upper body; in Africa on the chest, the lower body, and thighs. Often there are no more than 3 to 6 lumps. They grow slowly to a size of 2 to 3 cm across. They are usually painless.
- There may be itching when the baby worms are spreading.
- Pains in the back, shoulder or hip joints, or general pains all over.
- Enlargement of the lymph nodes in the groin.
- Thickening of the skin on the back or belly, with big pores like the skin of an orange. To see this, look at the skin with light shining across it from one side.
- If the disease is not treated, the skin gradually becomes more wrinkled, like an old man's. White spots and patches may appear on the front of the lower legs. A dry rash may appear on the lower limbs and trunk.
- Eye problems often lead to blindness. First there may be redness and tears, then signs of iritis (p. 221). The cornea becomes dull and pitted as in xerophthalmia (p. 226). Finally, sight is lost because of corneal scarring, cataract, glaucoma, or other problems.

Treatment of river blindness:

Early treatment can prevent blindness. In areas where river blindness is known to occur, seek medical testing and treatment when the first signs appear.

♦ Ivermectin (***Mectizan***, p. 379) is the best medicine for river blindness, and it may be given to an entire population as part of a campaign or available at no cost through your local health department. Diethylcarbamazine and suramin are other medicines that used to treat river blindness, but are rarely used any more because they can do more harm than good.

♦ Antihistamines help reduce itching (p. 387).

♦ Early surgical removal of the lumps lowers the number of worms.

Prevention:

♦ Black flies breed in fast-running water. Clearing brush and vegetation back from the banks of fast-running streams may help reduce the number.

♦ Avoid sleeping out-of-doors—especially in the daytime, which is when the flies usually bite.

♦ Cooperate with programs for the control of black flies.

♦ **Early treatment prevents blindness and reduces spread of the disease.**

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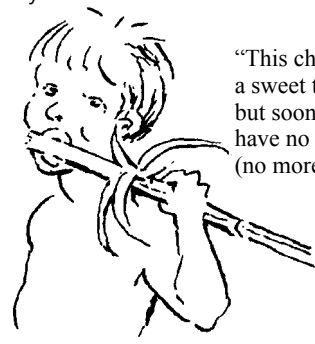
CHAPTER 17

The Teeth, Gums, and Mouth

CARE OF THE TEETH AND GUMS

Taking good care of teeth and gums is important because:

- Strong, healthy teeth are needed to chew and digest food well.
- Painful cavities (holes in the teeth caused by decay) and sore gums can be prevented by good tooth care.
- Decayed or rotten teeth caused by lack of cleanliness can lead to serious infections that may affect other parts of the body.

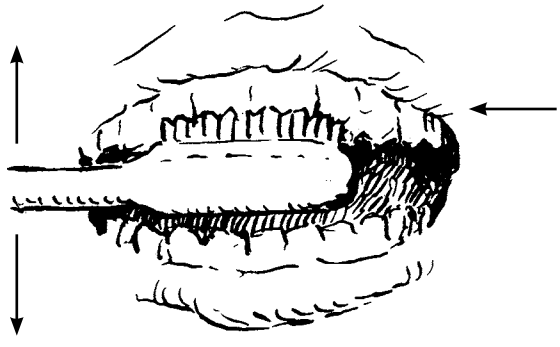


"This child has a sweet tooth—but soon he'll have no more" (no more teeth).

To keep the teeth and gums healthy:

1. **Avoid sweets.** Sweet food and drinks with a lot of sugar (sugar cane, candy, fizzy drinks like colas) can mix with germs to cause cavities in teeth. Soft food easily sticks to teeth and forms a coating of germs and food that causes infection of the gums.

2. **Brush teeth well every day**—and always brush immediately after eating anything sweet. Start brushing your children's teeth as the teeth appear. Later, teach them to brush their teeth themselves, and watch to see that they do it right.



Brush the teeth from top to bottom like this,

not just from side to side.

Brush the front, back, top, and bottom of all teeth.

3. In areas where there is not enough natural **fluoride** in water and foods, putting fluoride in the drinking water or directly on teeth helps prevent cavities. Some health programs put fluoride on children's teeth once or twice a year. Also, some foods from the sea and tea leaves contain fluoride.

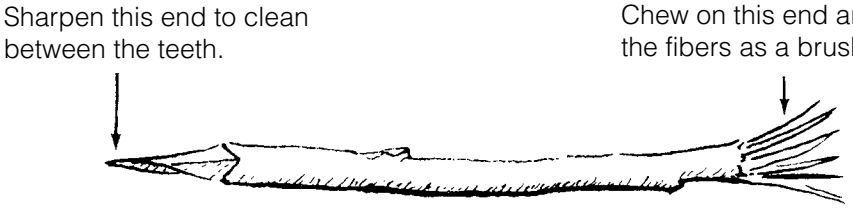
CAUTION: Fluoride is poisonous if more than a small amount is swallowed. Use with care and keep it out of the reach of children. Before adding fluoride to drinking water, try to get the water tested to see how much fluoride is needed.

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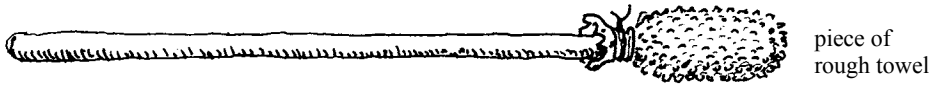
4. **Do not bottle feed older babies.** Continual sucking on a bottle bathes the baby's teeth in sweet liquid and causes early decay. It is best not to bottle feed at all (p. 271).

A TOOTHBRUSH IS NOT NECESSARY

You can use the twig of a tree, like this:

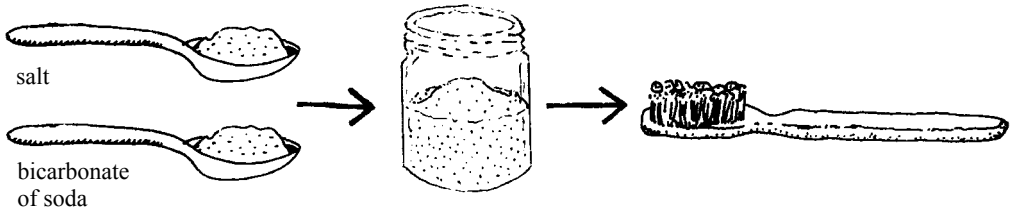


Or tie a piece of rough towel around the end of a stick or wrap it around your finger, and use it as a toothbrush.



TOOTHPASTE IS NOT NECESSARY

Just water is enough, if you rub well. Rubbing the teeth and gums with something soft but a little rough is what cleans them. Some people rub their teeth with powdered charcoal or with salt. Or you can make a tooth powder by mixing salt and bicarbonate of soda (baking soda) in equal amounts. To make it stick, wet the brush before putting it in the powder.



IF A TOOTH ALREADY HAS A CAVITY (a hole caused by rot)



To keep it from hurting as much or forming an abscess, avoid sweet things and brush well after every meal.

If possible, see a dental worker right away, if you go soon enough, he can often clean and fill the tooth so it will last for many years.

When you have a tooth with a cavity, do not wait until it hurts a lot. Have it filled by a dental worker right away.

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TOOTHACHES AND ABSCESSES



A toothache results when a cavity becomes infected.

An *abscess* results when the infection reaches the tip of a root and forms a pocket of pus.

To calm the pain:

- Clean the hole in the tooth wall, removing all food particles. Then rinse the mouth with warm salt water.
- Take a pain medicine like aspirin (p. 380).
- If the tooth infection is severe (swelling, pus, large tender lymph nodes), use an antibiotic: tablets of penicillin (p. 351), amoxicillin, or ampicillin (p. 352). People allergic to medicines in the penicillin family can take erythromycin (p. 354).

If the pain and swelling do not go away or keep coming back, the tooth should probably be pulled.

Treat abscesses right away—before the infection spreads to other parts of the body.

AN INFECTION OF THE GUMS (PYORRHEA)



Inflamed (red and swollen), painful gums that bleed easily are caused by:

1. Not cleaning the teeth and gums well or often enough.

2. Not eating enough nutritious foods (malnutrition).

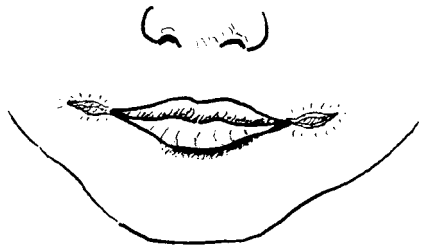
Prevention and treatment:

- Brush teeth well after each meal, removing food that sticks between the teeth. Also, if possible, scrape off the dark yellow crust (tartar) that forms where the teeth meet the gums. It helps to **clean under the gums** regularly by passing a strong thin thread (or dental floss) between the teeth. At first this will cause a lot of bleeding, but soon the gums will be healthier and bleed less.
- Eat protective foods rich in vitamins, especially eggs, meat, beans, dark green vegetables, and fruits like oranges, lemons, and tomatoes (see Chapter 11). Avoid sweet, sticky, and stringy foods that get stuck between the teeth.

Note: Sometimes medicines for seizures (epilepsy), such as phenytoin ***(Dilantin),*** cause swelling and unhealthy growth of the gums (p. 391). If this happens, consult a health worker and consider using a different medicine.

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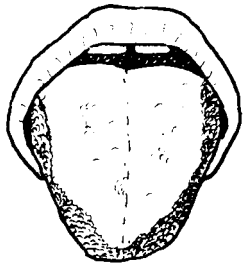
SORES OR CRACKS AT THE CORNERS OF THE MOUTH



Narrow sores at the corners of children's mouths are often a sign of malnutrition.

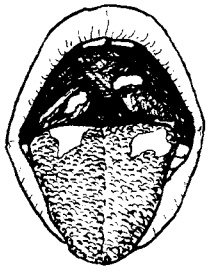
Children with these sores should eat foods rich in vitamins and proteins: like milk, meat, fish, nuts, eggs, fruits, and green vegetables.

WHITE PATCHES OR SPOTS IN THE MOUTH



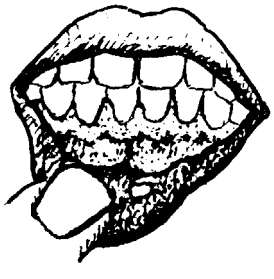
The tongue is coated with white "fur." Many illnesses cause a white or yellowish coating on the tongue and roof of the mouth. This is common when there is a fever. Although this coating is not serious, it helps to rinse the mouth with a solution of warm water with salt and bicarbonate of soda several times a day.

Tiny white spots, like salt grains, in the mouth of a child with fever may be an early sign of measles (p. 311).



Thrush: small white patches on the inside of the mouth and tongue that look like milk curds stuck to raw meat. They are caused by a yeast infection (Candida). Thrush is common in newborn babies, in persons with HIV, and in persons using certain antibiotics, especially tetracycline or ampicillin.

Unless it is very important to keep taking the antibiotic, stop taking it. Use nystatin (p. 374) or paint the inside of the mouth with gentian violet. Eating yogurt may also help. In very severe cases, or if thrush moves into the throat and makes it hard to swallow, consult a health worker. A stronger medicine may be needed.



Canker sores: small, white, painful spots inside the lip or mouth. May appear after fever or stress (worry). In 1 to 3 weeks they go away. Rinse mouth with salt water. Antibiotics do not help.

COLD SORES AND FEVER BLISTERS

Small painful blisters on lips (or genitals) that break and form scabs. These are caused by herpes virus and may appear after fever or stress. They heal after 1 or 2 weeks. Holding ice on the sores for several minutes, several times a day may help them to heal faster. Putting alum, camphor, or bitter plant juices (such as Cardon cactus, p. 13) on them may help. Taking acyclovir (p. 375) can make cold sores less painful. For information about herpes on the genitals, see page 404.

For more information on caring for the teeth and gums, see *Where There Is No Dentist,* also available from Hesperian.

CHAPTER

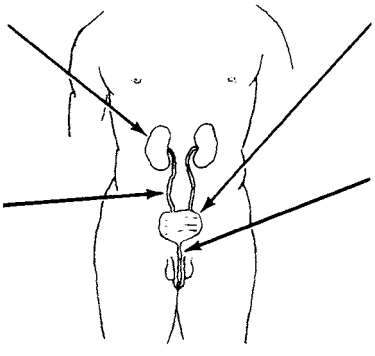
18

The Urinary System and the Genitals

The urinary system or *tract* serves the body by removing waste material from the blood and getting rid of it in the form of ***urine:***

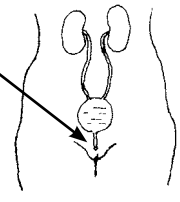
The ***kidneys*** filter the blood and form the urine.

The ureters are tubes that carry urine to the bladder.



The bladder is a bag that stores the urine. As it fills, it stretches and gets bigger.

The urine tube or ***urinary canal (urethra)*** carries urine out through the penis in men or to a small opening between the lips of the vagina in women.



The genitals are the sex organs.

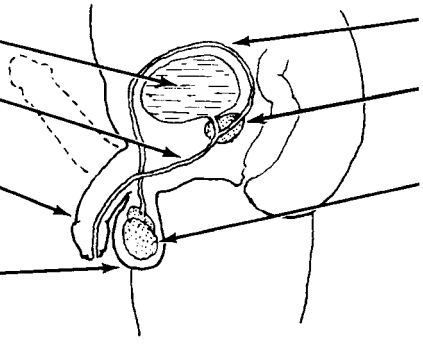
The man:

bladder

urine canal

penis or male sex organ

scrotum or sac that holds the testicles



sperm tube

The prostate gland makes the liquid that carries the sperm.

The testicles make the sperm, or microscopic cells with tails that join with an egg to cause pregnancy.

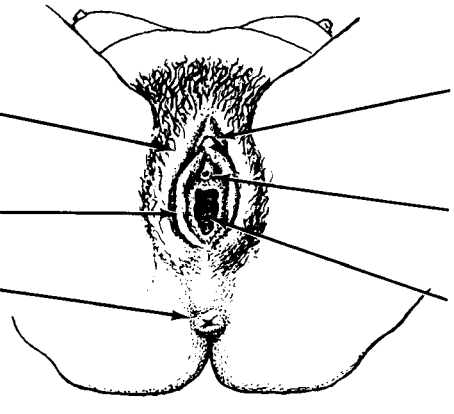


The woman:

outer lips of the vagina

inner lips

anus: end of the intestine



clitoris: a very sensitive spot that can give sexual pleasure when touched

urinary opening: hole where urine comes out

opening to the ***vagina*** or birth canal (for inside view, see p. 280)

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PROBLEMS OF THE URINARY TRACT

The urinary tract is the kidneys, the bladder, and the tubes that connect them and carry the urine out of the body. The many different problems of the urinary tract can be difficult to tell apart. And the same illness can show itself differently in men and women. Some problems are not serious, while others can be very dangerous. A dangerous illness may begin with only mild signs. It is often difficult to identify these problems correctly. Special knowledge and tests may be needed. When possible, seek advice from a health worker.

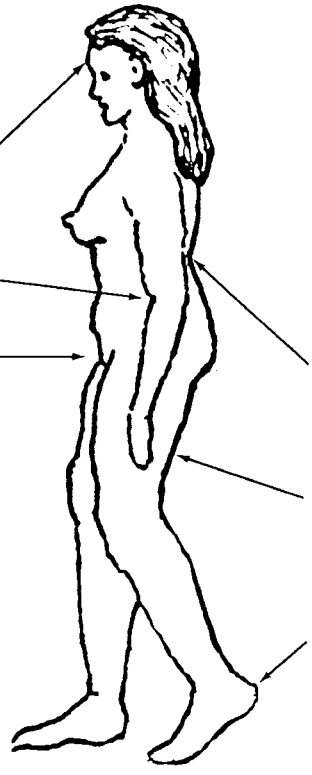
Common **problems with urinating** include:

1. Urinary tract infections. These are most common in women. (Sometimes they start after sexual contact, but may come at other times, especially during pregnancy.)
2. Kidney stones, or bladder stones.
3. Prostate trouble (difficulty passing urine caused by an enlarged prostate gland; most common in older men).
4. Gonorrhea or chlamydia (infectious diseases spread by sexual contact that often cause difficulty or pain in passing urine).
5. In some parts of the world schistosomiasis (blood flukes) is the most common cause of blood in the urine. This is discussed with other worm infections. See page 146.

Urinary Tract Infections

Signs:

- Sometimes fever and chills or headache.
- Sometimes pain in the side.
- Painful urination and need to urinate very often.
- Unable to hold in urine (especially true for children).
- Urine may be cloudy or reddish (bloody).



- Sometimes it feels as though the bladder does not empty completely.
- Sometimes there is pain in the lower back (kidneys).
- Sometimes the pain seems to go down the legs.
- In serious cases (kidney disease) the feet and face may swell.

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Many women suffer from urinary infections. In men they are much less common. Sometimes the only symptoms are **painful urination** and the **need to urinate often.** Other common signs are **blood in the urine** and **pain in the lower belly.** Pain in the mid or lower back, often spreading around the sides below the ribs, with fever, indicates a more serious problem.



Treatment:

- **Drink a lot of water.** Many minor urinary infections can be cured by simply drinking a lot of water, without the need for medicine. Drink at least 1 glass every 30 minutes for 3 to 4 hours, and get into the habit of drinking lots of water. (But if the person cannot urinate or has swelling of the hands and face, she should not drink much water.)
- If the person does not get better by drinking a lot of water, or if she has a fever, she should take cotrimoxazole (p. 357) or nitrofurantoin, 100 mg 2 times a day for 5 days. Pay careful attention to dosage and precautions. To completely control the infection it may be necessary to take the medicine for 10 days. If the infection moves into the kidneys or if these medicines do not work, try ciprofloxacin (p. 358). It is important to drink a lot of water while taking these medicines.
- If the person does not get better quickly, seek medical advice.

Kidney or Bladder Stones

Signs:

- The first sign is often sharp or severe pain in the lower back, the side, or the lower belly, or in the base of the penis in men.
- Sometimes the urinary tube is blocked so the person has difficulty passing urine—or cannot pass any. Or drops of blood may come out when the person begins to urinate.
- There may be a urinary infection at the same time.

Treatment:

- Use cotrimoxazole (p. 357) or ciprofloxacin (p. 358).
- Also give aspirin or another painkiller and an antispasmodic (p. 381).
- If you cannot pass urine, try to do it lying down. This sometimes allows a stone in the bladder to roll back and free the opening to the urinary tube.
- In severe cases, get medical help. Sometimes surgery is needed.

Enlarged Prostate Gland

This condition is most common in men over 40 years old. It is caused by a swelling of the prostate gland, which is between the bladder and the urinary tube (urethra).

- The person has difficulty in passing urine and sometimes in having a bowel movement. The urine may only dribble or drip or become blocked completely. Sometimes the man is not able to urinate for days.
- If he has a fever, this is a sign that infection is also present.

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Treatment for an enlarged prostate:

- If the person cannot urinate, he should try sitting in a tub of hot water, like this: → If this does not work, a catheter may be needed (p. 239).
- If he has a fever, use an antibiotic such as ampicillin (p. 352) or tetracycline (p. 355).
- Get medical help. Serious or chronic cases may require surgery.



Note: Both prostate trouble and gonorrhea (or chlamydia) can also make it hard to pass urine. In older men it is more likely to be an enlarged prostate. However, a younger man—especially one who has recently had sex with a person with gonorrhea or chlamydia—probably has gonorrhea or chlamydia.

INFECTIONS SPREAD BY SEX (SEXUALLY TRANSMITTED INFECTIONS)

On the following pages, we discuss some common infections spread by sexual contact (STIs): gonorrhea, chlamydia, syphilis, and buboes. For information on HIV and AIDS and some sexually transmitted infections that cause sores on the genitals (genital herpes, genital warts, and chancroid) see Additional Information, p. 401 to 405.

Gonorrhea and Chlamydia

People can have gonorrhea or chlamydia without any signs. Gonorrhea and chlamydia can have the same signs, though gonorrhea usually starts sooner and is more painful. Since people can have gonorrhea and chlamydia at the same time, it is best to treat for both. If not treated, either gonorrhea or chlamydia can make a person unable to have a baby (p. 244).

If a pregnant woman with gonorrhea or chlamydia is not treated before giving birth, the infection may get in the baby's eyes and make him blind (p. 221).

Signs in the man:

- Drops of pus from the penis
- Sometimes there is painful swelling of the testicles



Signs in the woman:

- Yellow or green discharge from the vagina or anus
- Pain in the lower belly (pelvic inflammatory disease, p. 243)
- Fever
- Pain during sex



Signs in both the man and the woman:

- Pain or burning during urination (peeing)
- Rash or sores all over the body
- Painful swelling in one or both knees, ankles, or wrists

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In a man, signs begin a few days to a few weeks after sexual contact with an infected person. In a woman, signs may not show up for weeks or months. But a person without any signs can still pass the infection to someone else a few days after becoming infected.

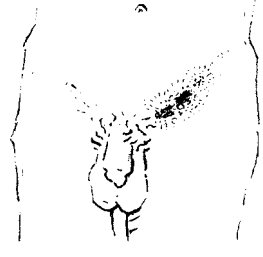
Treatment:

- In the past, gonorrhea was usually treated with penicillin. But now in many areas the disease has become ***resistant*** to penicillin, so other antibiotics must be used. It is best to seek local advice about which medicines are effective, available, and affordable in your area. Medicines used to treat gonorrhea and chlamydia are listed on p. 359. If the drip and pain have not gone away in 2 or 3 days after trying a treatment, the gonorrhea could be resistant to the medicine, or the person could have chlamydia.
- If a woman has gonorrhea or chlamydia and also has fever and pain in the lower belly, she may have pelvic inflammatory disease (p. 243).
- Everyone who has had sex with a person known to have gonorrhea or chlamydia should also be treated, even if they show no signs. If they are not treated at the same time, they are likely to continue passing the infection to each other.
- Protect the eyes of all newborn babies from chlamydia and especially gonorrhea, which can cause blindness (p. 221).

CAUTION: A person with gonorrhea or chlamydia may also have syphilis without knowing it. Sometimes it is best to go ahead and give the full treatment for syphilis, because the gonorrhea or chlamydia treatment may prevent the first syphilis symptoms, **but may not cure the disease.**

For prevention of these and other sexually transmitted infections, see page 239.

Buboes (Lymphogranuloma Venereum)



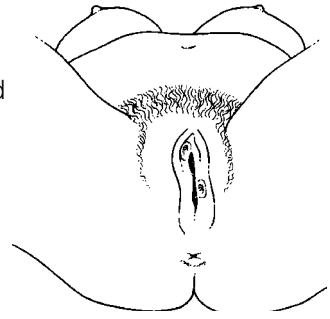
Buboes are infected lymph nodes that are inflamed, swollen, and painful. They may burst, drain pus, scar, and reopen. Some sexually transmitted infections cause buboes in the lymph nodes on one or both sides of the genitals, or in the anus. These buboes are most often caused by a chlamydia virus. But buboes in the groin can also be a sign of chancroid (p. 405). So if the treatment below does not work, try treating for chancroid.

Treatment:

- See a health worker for testing and treatment.
- Give adults doxycycline (p. 355) by mouth, 100 mg, 2 times a day for 21 days. For people who are pregnant or breastfeeding, give either azithromycin (p. 354) by mouth, 1 g, 1 time a week for 3 weeks, or erythromycin (p. 354) by mouth, 500 mg, 4 times a day for 21 days. Do not give doxycycline to people who are pregnant or breastfeeding.
- Avoid sex until the sores are completely healed and you have completed antibiotic treatment.
- To avoid reinfection, avoid sex until all partners are also treated.

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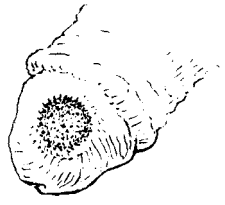
Syphilis



Syphilis is a common and serious infection passed during sex that affects the whole body and worsens over time. It can be cured if treated early.

Signs:

- The first sign is usually a sore, called a chancre. It appears 1 week to 3 months after sexual contact with a person who has syphilis. The chancre may look like a pimple, a blister, or an open sore on the genital area (or less commonly on the lips, fingers, anus, or mouth). This sore is full of germs, which are easily passed on to another person. The sore is usually painless, and if it is not visible (inside the vagina, anus, or throat), a person may not know they have it. But they can still infect anyone they have sex with. If the sore is painful, it may be chancroid (p. 405).

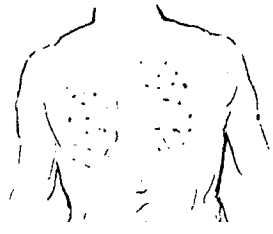


- The sore lasts only a few days and then goes away by itself without treatment. But the infection continues spreading through the body.
- Weeks or months later, the infected person may have a sore throat, mild fever, mouth sores, or swollen joints. These rashes, which have a low risk of transmitting syphilis, may appear on their skin:

a reddish-brown rash on the hands or feet



a rash that may be flat or bumpy on other parts of the body



All of these signs usually go away by themselves—but the disease continues. Without adequate treatment, syphilis can cause heart disease, paralysis, mental illness, and death. If any unexplained skin condition shows up days or weeks after a pimple or sore appears on the genitals, it may be syphilis. Get medical advice.

Note: Yaws (p. 202) shares many of the same signs as syphilis.

Treatment for syphilis: **(For complete cure, the full treatment is essential.)**

- **If signs have been present less than 2 years,** inject 2.4 million units of benzathine benzylpenicillin all at once, half the dose in each buttock (p. 352). If allergic to penicillin, take erythromycin by mouth, 500 mg, 4 times a day for 14 days.
- **If signs have been present 2 years or more, or if you don't know how long signs have been present,** inject 2.4 million units of benzathine benzylpenicillin—half in each buttock—once a week for 3 weeks, for a total of 7.2 million units. If allergic to penicillin, take erythromycin by mouth, 500 mg, 4 times each day for 30 days.
- If there is any chance that someone has syphilis, they should immediately see a health worker for testing and treatment.
- Everyone who has had sexual contact with a person known to have syphilis should also be treated, especially partners of those known to be infected.

To prevent syphilis, see the next page.

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HOW TO PREVENT THE SPREAD OF SEXUALLY TRANSMITTED INFECTIONS

1. **Protect yourself during sex:** Take precautions to lower your risk of sexually transmitted infections. Find out if there is affordable STI testing in your area and get tested with your partners. Use a condom each time you have sex.

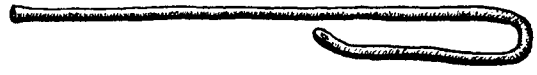
2. **Get treatment right away:** It is important that a person with a sexually transmitted infection get treatment quickly, for their protection and the protection of others. Having one STI makes it easier to get infected with other STIs, including HIV. Being treated quickly also makes a person less likely to infect others.

3. **Tell your partners if they need treatment:** When a person finds out they have a sexually transmitted infection, it is important that they tell their sexual partners so they can get treatment, too. This helps prevent spread of infection, especially for people without signs of infection who would not know otherwise.

4. **Help others:** Support people with a sexually transmitted infection by helping them get treatment. Be compassionate and do not judge people for having an STI.

HOW AND WHEN TO USE A CATHETER
(A RUBBER TUBE TO DRAIN URINE FROM THE BLADDER)

When to use and when not to use a catheter:



- **Never use a catheter unless it is absolutely necessary** and it is impossible to get medical help in time. Even careful use of a catheter sometimes causes dangerous infection or damages the urinary canal.
- If any urine is coming out at all, do not use the catheter.
- If the person cannot urinate, first have him try to urinate while sitting in a tub of warm water (p. 236). Begin the recommended medicine (for gonorrhea or prostate trouble) at once.
- If the person has a very full, painful bladder and cannot urinate, or if he or she begins to show signs of poisoning from urine, then and only then use a catheter.



Signs of urine poisoning (uremia):

- The breath smells like urine.
- The feet and face swell.
- Vomiting, distress, confusion.

Note: People who have suffered from difficulty urinating, enlarged prostate, or kidney stones should buy a catheter and keep it handy in case of emergency.

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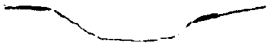
HOW TO PUT IN A CATHETER

1. Boil the catheter (and any syringe or instrument you may be using) for 15 minutes.



2. Wash well under foreskin or between vaginal lips and surrounding areas.





3. Wash hands—if possible with surgical soap (like *Betadine*). After washing, touch only things that are sterile or very clean.



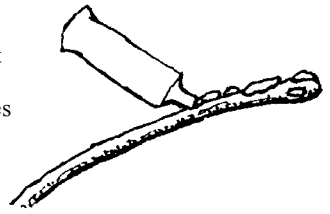
4. Put very clean cloths under and around the area.



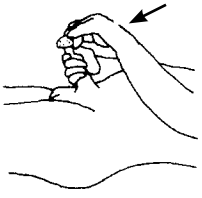
5. Put on sterile gloves or rub hands well with alcohol or surgical soap.



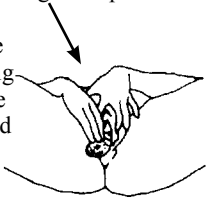
6. Cover the catheter with a sterile lubricant (slippery cream) like *K-Y Jelly* that dissolves in water (not oil or *Vaseline).*



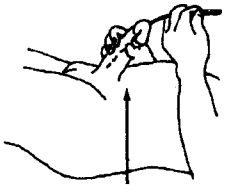
7. Pull back foreskin or open the vaginal lips.



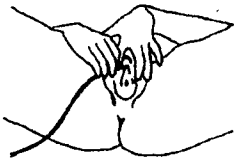
and wipe the urine opening with a sterile cotton wetted with soap.



8. Holding the foreskin back or the lips open, gently put the catheter into the urine hole. Twist it as necessary but DO NOT FORCE IT.



Hold the penis straight at this angle.



9. Push the catheter in until urine starts coming out. For a man, then push it in 3 cm more.

Note: A woman's urinary tube is much shorter than a man's.



IMPORTANT: If the person shows signs of urine poisoning, or if the bladder has been over-full and stretched, do not let the urine come out all at once: instead, let it out very slowly (by pinching or plugging the catheter), little by little over an hour or 2.

Sometimes a woman cannot urinate after giving birth. If more than 6 hours pass and her bladder seems full, she may need a catheter put in. If her bladder does not feel full, do not use a catheter but have her drink lots of water.

For more information on catheter use, see ***Disabled Village Children,*** Chapter 25.

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Vaginal Discharge
(a mucus or fluid that comes from the vagina)

It is normal to have vaginal discharge that is clear, white, or thick. The amount is different for each person and can change (at different times in the menstrual cycle, when using hormonal contraception, or during pregnancy). If there is no itching or bad smell, there is probably no problem.

When vaginal discharge is an unusual color, has a bad smell, or comes with itching or pain in or around the vagina, belly pain, pain while peeing or having sex, or fever, this may be caused by an infection. Some are dangerous if not treated quickly.

1. **Discharge that is gray, yellow, or green and smells bad.** This is probably an infection of Trichomonas. There may be pain during sex or burning when you pee.

Treatment:

- Take metronidazole by mouth. For precautions and instructions, see page 370.
- If you do not have metronidazole, take tinidazole by mouth. For precautions and instructions, see *Where Women Have No Doctor* page 516.
- It is likely that a person's partner will have the infection at the same time, even if they have no symptoms. (Some men with Trichomonas have a burning feeling when urinating.) If you are being treated with metronidazole, your partner should also take it by mouth at the same time.
- To feel better, you can take a sitz bath. Sit in a pan of clean, warm water for 15 minutes as often as possible. This is soothing to the genitals.
- You can also use a clove of garlic as a vaginal insert. Peel the garlic, taking care not to puncture it. Wrap it in a piece of clean cloth or gauze, and put it into the vagina. Insert a new clove of garlic each night. Do this for 10 to 14 days.



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2. **White, lumpy discharge from the vagina that looks like milk curd or yogurt.** This could be a yeast infection (Candida). Itching may be severe. The genitals often hurt and look red. It may hurt while urinating or having sex. This infection is especially common during pregnancy, and in people who have diabetes (p. 127), HIV, or have been taking antibiotics.

Treatment: Use vaginal inserts or cream for Candida, such as nystatin or clotrimazole. For dosage and instructions see page 373. Putting unsweetened yogurt in the vagina is said to be a useful home remedy to help control yeast infections. Never use antibiotics for a yeast infection. They can make it worse.

3. **Thick, milky discharge with a rancid smell.** This could be an infection caused by bacteria. Tests may be needed to tell this from a Trichomonas infection. See pages 236 to 238 for more information about common sexually transmitted infections and how to treat them.

4. **Discharge with blood in it, or that comes with fever or pain in the lower belly.** These may be signs of a more serious infection. Get medical help right away.

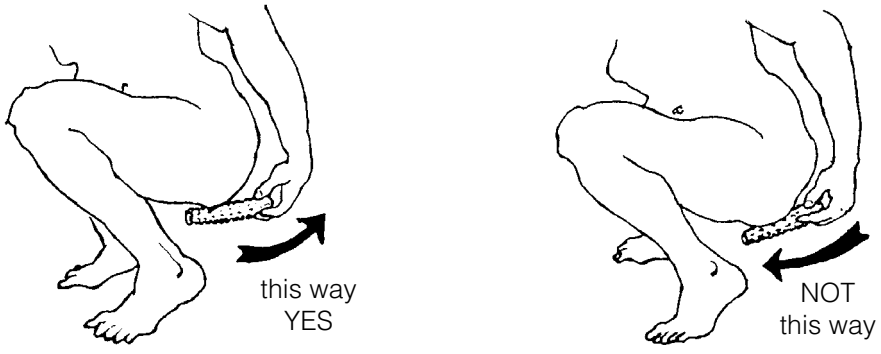
IMPORTANT: If any discharge lasts a long time, or does not get better with treatment, see a health worker.

How To Avoid Vaginal Infections:

1. Keep your body clean. When you bathe, wash the outer genitals with mild soap.

2. Urinate after sexual contact. This helps prevent urinary infections (but will not prevent pregnancy).

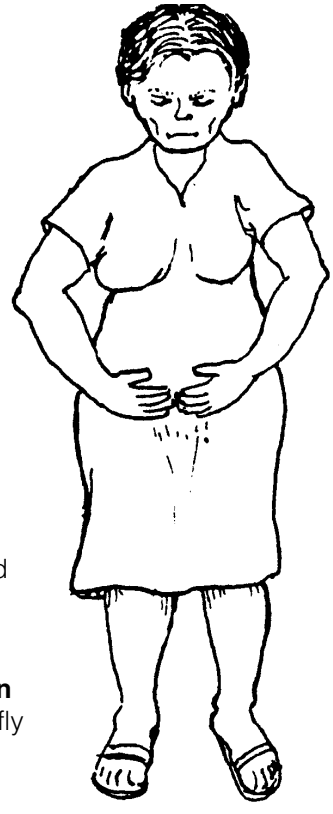
3. Be sure to wipe from front to back after each bowel movement:



Wiping forward can spread germs, amebas, or worms into the urinary opening and vagina. Also take care to wipe little girls' bottoms from front to back and to teach them, as they grow up, to do it the same way.

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Pain or Discomfort in the Lower Central Part of a Woman's Belly



This can come from many different causes, which are discussed in different parts of this book. The following list, which includes a few key questions, will help you know where to look.

Possible causes of pain in the lower belly are:

1. **Menstrual discomfort** (p. 245). Is it worse shortly before or during the period?

2. **A bladder infection** (p. 234). One of the most common low mid-belly pains. Is urination very frequent or painful?

3. **Pelvic inflammatory disease (PID).** This infection can cause pain in the lower belly, pain during sex, and fever. PID is most often caused by an untreated STI – usually gonorrhea, chlamydia, or both (p. 236). Treat with medicines for gonorrhea and chlamydia (p. 359) and also metronidazole (p. 370). See a health worker.

4. **Problems that are related to a lump or mass in the lower part of the belly.** These are discussed briefly on page 280 and include ovarian cyst and cancer. A special exam is needed, done by a trained health worker.

5. **Ectopic pregnancy** (when the baby begins to develop outside the womb (p. 280). Usually there is severe pain with irregular bleeding. The woman often has signs of early pregnancy (p. 247), and feels dizzy and weak. **Get medical help immediately; her life is in danger.**

6. **Complications from an abortion** (p. 416). There may be fever, bleeding from the vagina with clots, belly pain, difficulty urinating, and shock. Start giving antibiotics as for childbirth fever (p. 276), and **get the woman to a hospital at once. Her life is in danger.**

7. **An infection or other problem of the gut or rectum** (p. 145). Is the pain related to eating or to bowel movements?

Some of the above problems are not serious. Others are dangerous. They are not always easy to tell apart. Special tests or examinations may be needed. If you are unsure what is causing the pain, or if it does not get better soon, seek medical help. For more information on treating women's health problems, see *Where Women Have No Doctor.*

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PEOPLE WHO ARE NOT ABLE TO HAVE CHILDREN (INFERTILITY)

Sometimes people try to have children but face much difficulty making a pregnancy happen. Infertility can affect anyone, and includes being unable to become pregnant and being unable to make another person pregnant. Whether something can be done depends on the cause of the difficulty.

COMMON CAUSES OF INFERTILITY:

1. **Genetic and physical factors.** Some people are unable to have children due to genetic or physical factors that affect how their bodies work. For example, a person's menstrual cycle (p. 245) may happen in a way that makes it difficult for them to become pregnant. Or a person may make too few sperm, and so be unable to make someone pregnant. Treatments to address these depend on the specific condition and require the help of a health worker.

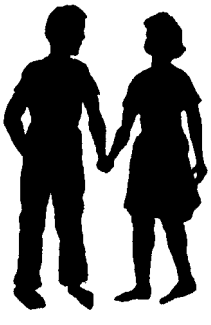
2. **Nutrition.** Poor nutrition can cause severe anemia or lack of iodine, which can make it difficult for a person to become pregnant. A person trying to become pregnant should get enough nutritious food, use iodized salt, and,if they are anemic, take iron pills (p. 247).

3. **Untreated infections.** Undiagnosed and untreated infections, especially pelvic inflammatory disease (PID, p. 243) due to gonorrhea or chlamydia, are a common cause of infertility in people trying to become pregnant. Treatment is important to lessen PID's effect on fertility. But using condoms and treating gonorrhea and chlamydia quickly are the best ways to prevent infertility caused by these infections.

4. **Medical conditions.** Some medical conditions and illnesses, such as diabetes, malaria, and tuberculosis, make it more difficult to become pregnant or make another person pregnant. Treating these conditions and illnesses is important for both fertility and long-term health.

5. **Substance use.** People who drink a lot of coffee or alcohol, smoke or chew tobacco, or who use certain drugs are at higher risk of infertility. Reducing use of these substances can help a person's fertility and overall health.

6. **Chemical exposure.** Some chemicals people are exposed to at work and in the environment increase chances of infertility. Reducing pollution from and use of chemicals is good for fertility and overall health.



There are many ways to for people who experience infertility to raise or support children:

- Arrange to care for or adopt children who need a home.
- Become a health worker in your community.
- Form a group to help care for children or adults with disabilities.
- If you live in a place where people look with shame on someone who has no children, being involved with the community can show that having babies is not the only thing that makes a person worthwhile.

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Information for Mothers and Midwives

CHAPTER 19

THE MENSTRUAL PERIOD (MONTHLY BLEEDING IN WOMEN)

Most girls have their first menstrual period or monthly bleeding between the ages of 11 and 16. This means that they are now able to become pregnant.

Most people have their periods every 23 to 36 days. And most periods last 5 to 7 days. But this can vary a lot in different people.

Irregular or painful periods are common in adolescent (teenage) girls. This does not usually mean there is anything wrong.

If your menstrual period is painful

There is no need for you to stay in bed. In fact, lying quietly may make the pain worse.

It often helps to walk around and do light work or exercises . . .



. . . or to take hot drinks, or put your feet in hot water.



But if it is very painful, it may help to take aspirin or ibuprofen (pages 380 to 381) and to lie down and put warm compresses on the belly.

During the period—as at all times—a woman should take care to keep clean, get enough sleep, and eat a well balanced diet. She can eat everything she usually eats and can continue to do her usual work. It is not harmful to have sex during the menstrual period.

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Changes and problems with the menstrual cycle:

- Young people whose periods have just started, and people who recently gave birth or stopped breastfeeding, may only bleed every few months, bleed very little, or bleed heavily. Their cycles usually become more regular with time. For other people, cycles that are not regular can be a sign of an illness such as anemia, malnutrition, or a problem in the womb.
- Menstrual periods can be late or not come for many reasons. For young people who have just begun to menstruate, for people using hormonal family planning methods (p. 288), and for people close to menopause (see below), it is not unusual to miss periods. Worry or emotional upset can also cause a missed period. Also, a missed period may be a sign of pregnancy (p. 247).
- People close to menopause (see below) may have heavier or more frequent bleeding than when they were younger. For others, if a period comes later than expected, is more severe, and lasts longer, it may be a miscarriage (p. 281).
- **If the menstrual period lasts more than 8 days, results in unusually heavy bleeding, or comes more than once a month, seek medical advice.**

MENOPAUSE (WHEN WOMEN STOP HAVING PERIODS)



Menopause or *climacteric* is the time when the menstrual periods stop and pregnancy is no longer possible. In general, this "change of life" happens between the ages of 40 and 50. The periods often become irregular for several months before they stop completely.

There is no reason to stop having sex during or after menopause. But if you do not want to have more children, continue to use birth control for 12 months after your periods stop.

When menopause begins, a woman may think she is pregnant. And when she bleeds again after 3 or 4 months, she may think she is having a miscarriage. If a woman of 40 or 50 starts bleeding again after some months without, explain to her that it may be menopause.

During menopause, people often feel many discomforts—anxiety, distress, hot flashes (suddenly feeling uncomfortably hot), pains that travel all over the body, sadness, etc. After menopause is over, most women feel better again.

Women who have severe bleeding or a lot of pain in the belly during menopause, or who begin to bleed again after the bleeding has stopped for months or years, should seek medical help. An examination is needed to make sure they do not have cancer or another serious problem (p. 280).

After menopause, a woman's bones may become weaker and break more easily. To prevent this, it helps to eat foods with calcium (p. 116).

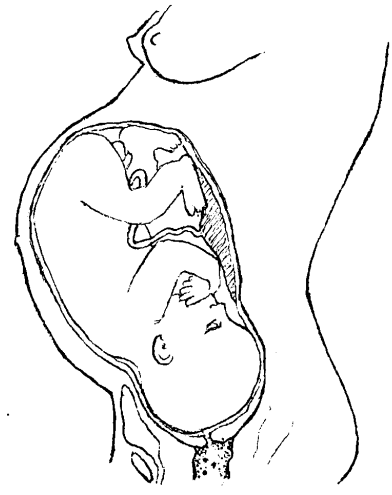
Because she will not have any more children, a woman may be more free now to spend time with her grandchildren or to become more active in the community. Some become midwives or health workers at this time in their lives.

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PREGNANCY

Signs of pregnancy:

- The woman misses her period (often the first sign).
- Morning sickness (nausea or feeling you are going to vomit, especially in the morning). This is worse during the second and third months of pregnancy.
- She may have to urinate more often.
- The belly gets bigger.
- The breasts get bigger and may feel tender.
- "Mask of pregnancy" (dark areas on the face, breasts, and belly, p. 207).



This is the normal position of the baby in the mother at 9 months.

- Finally, during the fifth month or so, the child begins to move in the womb.

For more information on pregnancy and birth, see ***A Book for Midwives.***

How to Stay Healthy during Pregnancy

- Most important is to eat enough to gain weight regularly especially if you are thin. It is also important to eat well. The body needs food rich in proteins, vitamins, and minerals, especially iron (see Chapter 11).
- Use iodized salt to increase the chances that the child will be born alive and will not have learning difficulties. (But to avoid swelling of the feet and other problems, do not use very much salt.)
- Keep clean. Bathe or wash regularly and brush your teeth every day.
- Do not use vaginal douches during pregnancy.
- Avoid taking medicines. Some medicines can harm the developing baby. If a health worker is going to prescribe a medicine, tell her that you are or might be pregnant. You can take acetaminophen, or antacids once in a while if you need them. Vitamin and iron pills are often helpful and do no harm when taken in the right dosage. Get up to date on vaccinations and tested for HIV. Medicines that fight HIV will protect your health and prevent the spread of HIV to the developing baby (p. 400).
- Do not drink or smoke during pregnancy and avoid second-hand smoke. Smoking and drinking are bad for the mother and harm the developing baby.
- Stay far away from children with measles, especially German measles (see "Rubella," p. 312).
- Try to rest more, but also get some exercise. If there are mosquitoes, sleep under a bed net.
- Avoid poisons and chemicals. They can harm the developing baby. Do not work near pesticides, herbicides, or factory chemicals—and do not store food in their containers. Try not to breathe fumes or powders from chemicals.

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Minor Problems during Pregnancy

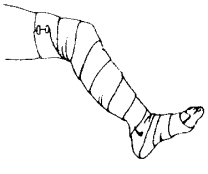
1. **Nausea or vomiting:** This is often worse in the morning, during the second or third month of pregnancy. It helps to eat something dry, like crackers or dry bread, before you go to bed at night and when you wake up in the morning. Do not eat large meals but rather smaller amounts of food several times a day. Ginger, cinnamon, or mint tea also helps. In severe cases, take an antihistamine (p. 385) when you go to bed and when you get up in the morning.

2. **Burning or pain** in the pit of the stomach or chest (acid indigestion and heartburn, p. 128): Eat only small amounts of food at one time and drink water often. Avoid greasy foods. Antacids can help, especially those with calcium carbonate (p. 382). It may also help to suck hard candy. Try to sleep with the chest and head lifted up some with pillows or blankets.

3. **Swelling of the feet:** Rest at different times during the day with your feet up (p. 176). Eat less salt and avoid salty foods. Tea made from maize silk (corn silk) may help (p. 12). If the feet are very swollen, and the hands and face also swell, seek medical advice. Swelling of the feet usually comes from the pressure of the child in the womb during the last months. It is worse in women who are anemic or malnourished. So eat plenty of nutritious food.

4. **Low back pain:** This is common in pregnancy. It can be helped by exercise and taking care to stand and sit with the back straight (p. 174). You can also ask family for help lifting things, and to rub your back.

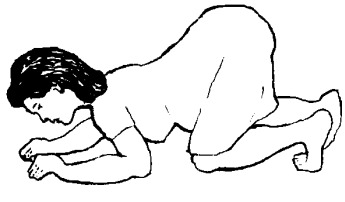
5. **Anemia and malnutrition:** Many women in rural areas are anemic even before they are pregnant, and become more anemic during pregnancy. To make a healthy baby, a woman needs to eat well. If she is very pale and weak or has other signs of anemia and malnutrition (pages 107 and 124), she needs to eat more protein and food with iron. Beans, groundnuts, chicken, milk, cheese, eggs, meat, fish, and dark green leafy vegetables are good choices. She should also take iron pills (p. 394), especially if it is hard to get enough nutritious foods. This way she will strengthen her blood to resist dangerous bleeding after birth. If possible, iron pills should also contain some folic acid and vitamin C. (Vitamin C helps the body make better use of the iron.)



6. **Swollen veins (varicose veins):** These are common in pregnancy, due to the weight of the baby pressing on the veins that come from the legs. Put your feet up often, as high as you can (p. 175). If the veins get very big or hurt, wrap them like this with an elastic bandage, or use elastic stockings. Take off the bandage or stockings at night.

7. **Piles (hemorrhoids):** These are varicose veins in the ***anus***. They result from the weight of the baby in the womb.

To relieve the pain, kneel with the buttocks in the air like this: →
Or sit in a basin of cool water. Also see page 175.



8. **Constipation:** Drink plenty of water. Eat fruits and food with a lot of natural fiber, like cassava or bran. Get plenty of exercise. Do not take strong laxatives.

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Danger Signs in Pregnancy

1. **Bleeding:** If a woman begins to bleed during pregnancy, even a little, this is a danger sign. She could be having a miscarriage (losing the baby, p. 281) or the baby could be developing outside the womb (ectopic pregnancy, p. 280). The woman should lie quietly and send for a health worker.

Bleeding late in pregnancy (after 6 months) may mean the ***placenta*** (afterbirth) is blocking the birth opening ***(placenta previa)***. Without expert help, the woman could quickly bleed to death. Do not do a vaginal exam or put anything inside her vagina. Try to get her to a hospital at once.

2. **Severe anemia:** The woman is weak, tired, and has pale or transparent skin (see The Signs of Anemia, p. 124). If not treated, she might die from blood loss when giving birth. If anemia is severe, a good diet is not enough to correct the condition in time. See a health worker and get iron sulfate pills (p. 394). If possible, she should have her baby in a hospital, in case extra blood is needed.

3. **High blood pressure or other signs of pre-eclampsia:** Blood pressure of 140/90 or greater can be a sign of a serious problem called pre-eclampsia (toxemia). A lot of protein in the urine, sudden weight gain, and swelling are other important signs. Pre-eclampsia can lead to seizures (convulsions) and even death.

If a woman has high blood pressure, ask her to lie down and rest more often. Help her get plenty of good foods and to eat a lot of protein (p. 110). She should avoid salty packaged foods and snacks. Re-check her blood pressure in a few days.

A woman with high blood pressure or other risk signs may be able to prevent pre-eclampsia by taking a low dose of aspirin. See page 380.

If you cannot check for high blood pressure or protein in the urine, watch for these other signs of pre-eclampsia:

- Swollen face, or swelling all over in the morning upon awakening
- Headaches
- Dizziness
- Blurred vision
- Pain high in the belly

If her blood pressure keeps going up (to 160/110 or higher) or if she shows any of these signs—**get medical help fast!** If she is already having seizures, see page 178.

HIV and Pregnancy

If the mother has HIV, it can spread to her baby during pregnancy, birth, and breastfeeding. All pregnant women should be tested for HIV and start treatment to protect their health and the health of their baby. Talk to a health worker who has experience working with people who have HIV, and see page 398 for more information.

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CHECK-UPS DURING PREGNANCY (PRENATAL CARE)

Many health centers and midwives encourage pregnant women to come for regular prenatal (before birth) check-ups and to talk about their health needs. If you are pregnant and have the chance to go for these check–ups, you will learn many things to help you prevent problems and have a healthier baby.

If you are a midwife, you can provide an important service to mothers-to-be (and babies-to-be) by inviting them to come for prenatal check-ups—or by going to see them. It is a good idea to see them once a month for the first 5 months of pregnancy, twice a month during months 6 to 8, and once a week during the last month.

Here are some important things prenatal care should cover:

1. **Sharing information**

Ask the mother about her problems and needs. Find out how many pregnancies she has had, when she had her last baby, and any problems she may have had during pregnancy or birth. Talk with her about ways she can help herself and her baby be healthy, including:

- **Eating right**. Encourage her to eat enough energy foods, and also foods rich in protein, vitamins, iron, and calcium (see Chapter 11).
- **Good hygiene** (Chapter 12 and p. 242).
- The importance of taking **few or no medicines** (p. 54)
- The importance of **not smoking** (p. 149), **not drinking alcoholic drinks** (p. 148), and **not using drugs** (pages 418 and 419).
- Getting enough **exercise and rest.**
- **Tetanus vaccination** to prevent tetanus in the newborn. Give the first dose as soon as possible during pregnancy, the second dose at least 4 weeks later, and the third dose at least 6 months after the second dose. For more information, see *A Book for Midwives*.

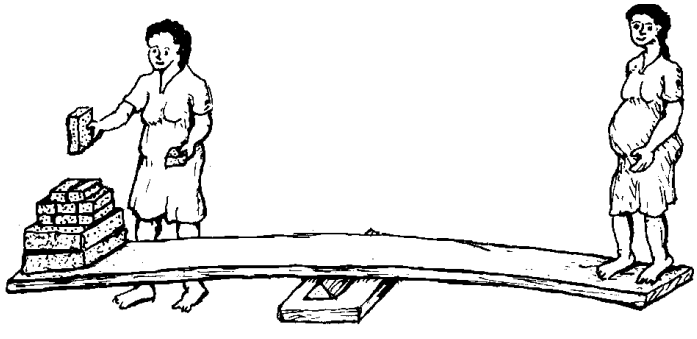
2. **Nutrition**

Does the mother look well nourished? Is she anemic? If so, discuss ways of eating better. If possible, see that she gets iron pills preferably with folic acid and vitamin C. Advise her about how to handle morning sickness (p. 248) and heartburn (p. 128).

Is she gaining weight as expected? If possible, weigh her each visit. Someone is expected to slowly and steadily gain 9 to 18 kilograms (20 to 40 lbs) during pregnancy. If she stops gaining weight, this is a bad sign. Sudden weight gain in the last months is a sign of pre-eclampsia.
If you do not have scales, try to judge if she is gaining weight by how she looks.

Or make a simple scale:

bricks or other objects of known weight →



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3. **Minor problems**

Ask the mother if she has any of the common problems of pregnancy. Explain that they are not serious, and give what advice you can (p. 248).

4. **Signs of danger and special risk**

Check for each of the danger signs on p. 249. Take the mother's pulse each visit. This will let you know what is typical for her in case she has problems later (for example, shock from pre-eclampsia or severe bleeding). If you have a blood pressure cuff, take her blood pressure (p. 412). And weigh her. Watch out especially for the following danger signs:

- high blood pressure (140/90 or greater)
- protein in the urine
- sudden weight gain
- swelling of hands and face
- headaches
- dizziness and blurred vision
- pain high in the belly

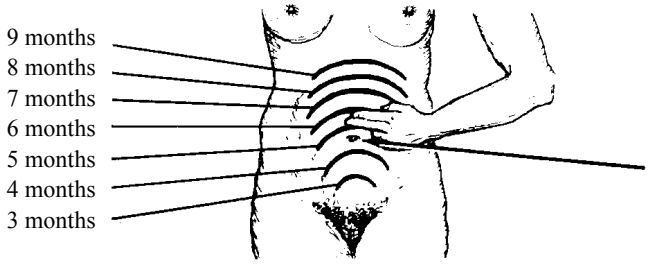
} signs of pre-eclampsia (p. 249)

Some midwives may have dip sticks or other methods for measuring the protein and sugar in the urine. High protein may be a sign of pre-eclampsia. High sugar could be a sign of diabetes (p. 127).

If any of the danger signs appear, see that the woman gets medical help as soon as possible. Also, check for signs of special risk (p. 256). If any are present, it is safer if the mother gives birth in a hospital.

5. **Growth and position of the baby in the womb**

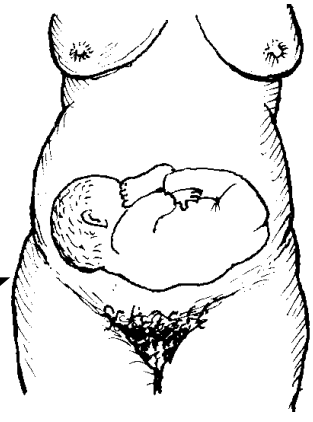
Feel the mother's womb each time she visits; or show her how to do it herself.



Usually the womb will be 2 fingers higher each month.

At 4 ½ months it is usually at the level of the navel.

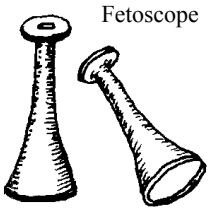
Each month write down how many finger widths the womb is above or below the navel. If the womb seems too big or grows too fast, it may mean the woman is having twins. Or the womb may have more water in it than is typical. If so, you may find it more difficult to feel the baby inside. Too much water in the womb means greater risk of severe bleeding during birth and may mean the baby has a disability.



Try to feel the baby's position in the womb. If it appears to be lying sideways, the mother should go to a doctor before labor begins, because an operation may be needed. For checking the baby's position near the time of birth, see page 257.

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6. **Baby's heartbeat (fetal heartbeat) and movement**

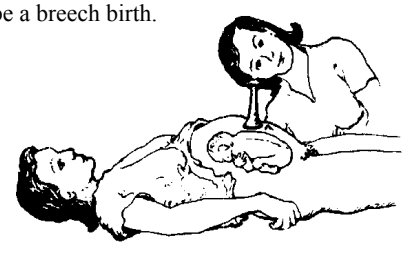

Fetoscope

After 5 months, listen for the baby's heartbeat and check for movement. You can try putting your ear against the belly, but it may be hard to hear. It will be easier if you get a ***fetoscope.*** (Or make one. Fired clay or hard wood works well.)

If the baby's heartbeat is heard loudest below the navel in the last month, the baby's head is down and will probably be born head first.



If the heartbeat is heard loudest above the navel, his head is probably up. It may be a breech birth.



A baby's heart beats about twice as fast as an adult's. If you have a watch with a second hand, count the baby's heartbeats. From 120 to 160 per minute is typical. If less than 120, something is wrong. (Or perhaps you counted wrong or heard the mother's heartbeat. Check her pulse. The baby's heartbeat is often hard to hear. It takes practice.)

7. **Preparing the mother for labor**

As the birth approaches, see the mother more often. If she has other children, ask her how long labor lasted and if she had any problems. Perhaps suggest that she lie down to rest after eating, twice a day for an hour each time. Talk with her about ways to make the birth easier and less painful (see the next pages). You may want to have her practice deep, slow breathing, so that she can do this during the contractions of labor. Explain to her that relaxing during contractions, and resting between them, will help her save strength, reduce pain, and speed labor.

If there is any reason to suspect the labor may result in problems you cannot handle, send the mother to a health center or hospital to have her baby. Be sure she is near the hospital by the time labor begins.

HOW A MOTHER CAN TELL THE DATE WHEN SHE IS LIKELY TO GIVE BIRTH:

Start with the date the last menstrual period began, subtract 3 months, and add 7 days. For example, suppose your last period began May 10.

May 10 minus 3 months is February 10,
plus 7 days is February 17.

The baby is likely to be born around February 17.

8**. Keeping records**

To compare your findings from month to month and see how the mother is progressing, it helps to keep simple records. On the next page is a sample record sheet. Change it as you see fit. A larger sheet of paper would be better. Each mother can keep her own record sheet and bring it when she comes for her check-up.

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Record of prenatal care

Name of mother:_____ Age:____ Number of children: _____ Date of last birth: _____

Date of last monthly bleeding: _____ Probable due date: _____ Problems with other births: _____

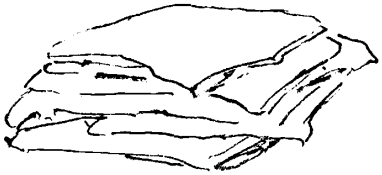
date of visit	month of pregnancy	general health and minor problems	anemia	weight	temperature	pulse	blood pressure	signs of pre-eclampsia	protein in urine	other warning signs	size of womb	position of baby in womb	baby's heartbeat

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THINGS TO HAVE READY BEFORE THE BIRTH

By the seventh month of pregnancy, have these things ready:

A lot of very clean cloths or rags.



Soap.



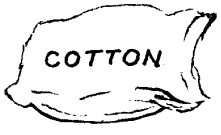
A clean scrub brush for cleaning the hands and fingernails.



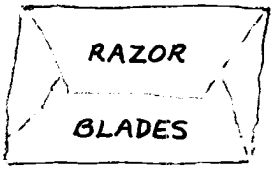
Alcohol for rubbing hands after washing them.



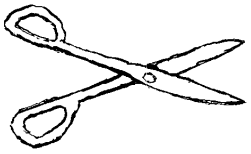
Clean cotton.



A new razor blade. (Do not unwrap until you are ready to cut the umbilical cord.)



If you do not have a new razor blade, have clean, rust-free scissors ready. Sterilize them (p. 74) just before cutting the cord.

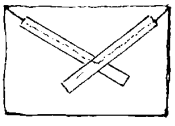


Two bowls—1 for washing hands, 1 for catching and examining the afterbirth.



Two ribbons or strips of clean cloth for tying the cord.



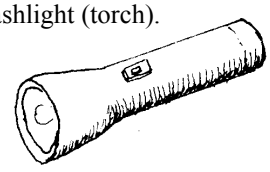


Both ribbons should be wrapped and sealed in paper packets and then baked in an oven (p. 74).

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Additional Supplies a Midwife or Birth Attendant May Have

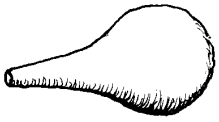
Flashlight (torch).

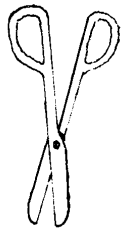


Fetoscope—or fetal stethoscope—for listening to the baby's heartbeat through the mother's belly.



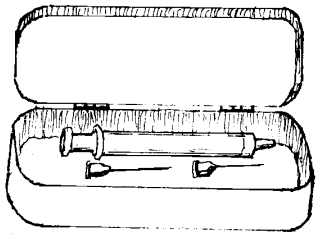
Suction bulb for sucking mucus out of the baby's nose and mouth.



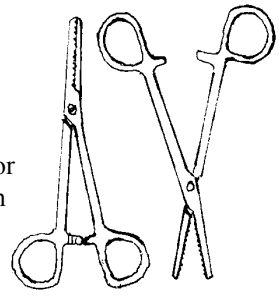


Sterile blunt-tipped scissors for cutting the cord before the baby is all the way born (extreme emergency only).

Sterile syringe and needles.



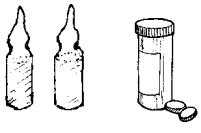
Two clamps (hemostats) for clamping the umbilical cord or clamping bleeding veins from tears of birth opening.



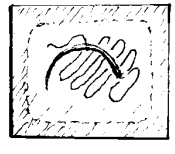


Sterile gloves or plastic bags to wear while examining the woman, while the baby is coming out, when sewing tears in the birth opening, and for catching and examining afterbirth.

Several injections or tablets of oxytocin, ergometrine, or misoprostol (pages 392 and 393).



Sterile needle and gut thread for sewing tears in the birth opening.



ART (HIV medicines) for mother and baby if either parent has HIV (p. 400).



Antibiotic ointment, povidone iodine solution, or silver nitrate solution for the baby's eyes (p. 221).



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PREPARING FOR BIRTH

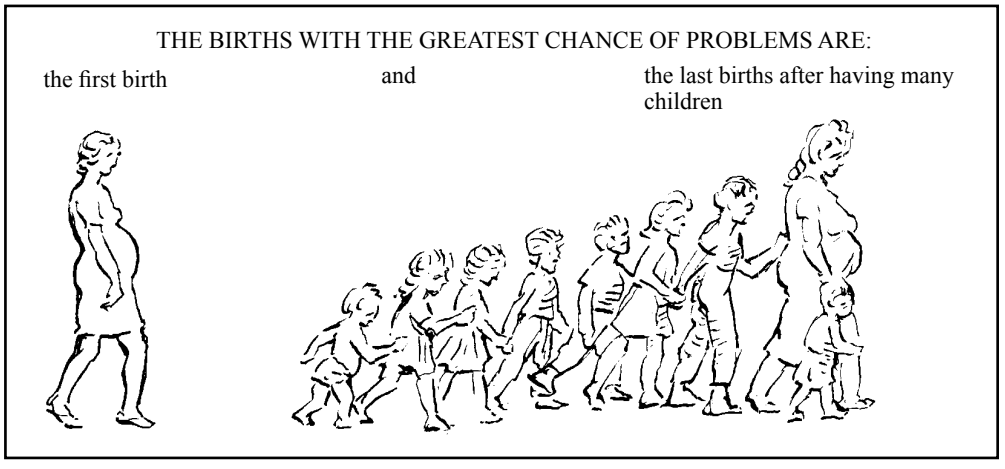
Birth is a natural event. When the mother is healthy and everything goes well, the baby can be born without help from anyone. In most births, the less the midwife or birth attendant does, the more likely everything will go well.

Difficulties during birth do occur, and sometimes the life of the mother or child may be in danger. If there is any reason to think that a birth may be difficult or dangerous, a skilled midwife or experienced doctor should be present.

CAUTION: If you have a fever, cough, sore throat, or sores or infections on your skin at the time of the birth, it would be better for someone else to deliver the baby.

Signs of Special Risk that Make it Important that a Doctor or Skilled Midwife Attend the Birth—if Possible in a Hospital:

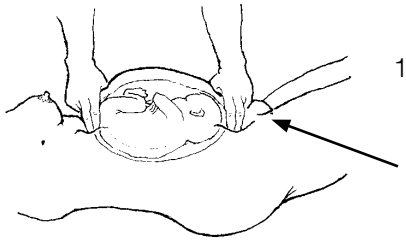
- If regular labor pains begin more than 3 weeks before the baby is expected.
- If the woman begins to bleed before labor.
- If there are signs of pre-eclampsia (p. 249).
- If the woman is suffering from a chronic or acute illness.
- If the woman is very anemic or if her blood does not clot when she cuts herself.
- If she is under 15 or over 40, or if it is her first pregnancy and she is over 35.
- If she has had more than 5 or 6 babies.
- If she is especially short or has narrow hips (p. 267).
- If she has had serious trouble or severe bleeding with other births.
- If she has diabetes or heart trouble.
- If she has a hernia.
- If it looks like she will have twins (p. 269).
- If it seems the baby is not in a good position (head down) in the womb.
- If the bag of waters breaks and labor does not begin within a few hours. (The danger is even greater if there is fever.)
- If the baby is still not born 2 weeks after 9 months of pregnancy.



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Checking the Baby's Position

A baby may change position several times during pregnancy. For birth, the baby should be lying with its head down, toward the opening of the womb. To check the baby's position, feel for the head, like this:



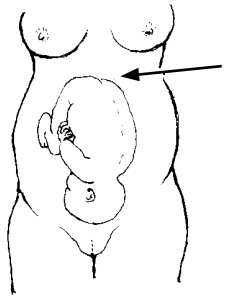
1. Have the mother breathe out all the way.

With the thumb and 2 fingers, push in here, just above the pubic bone.

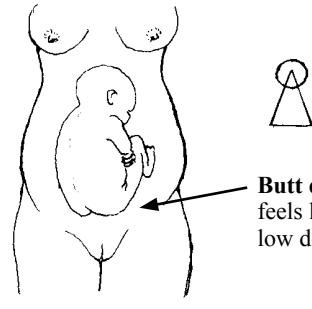
With the other hand, feel the top of the womb.

The baby's **butt** is larger and wider.

His **head** is hard and round.



Butt up feels larger high up.

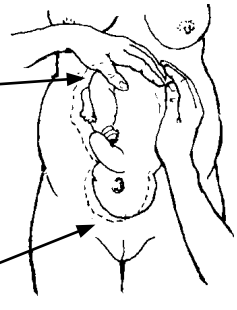


Butt down feels larger low down.

2. Push gently from side to side, first with one hand, then the other.

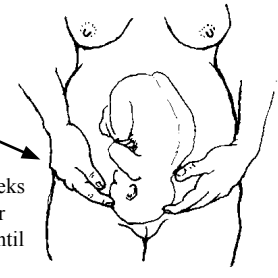
If the baby's butt is pushed gently sideways, the baby's whole body will move too.

But if the head is pushed gently sideways, it will bend at the neck and the back will not move.



If the baby still is high in the womb, you can move the head a little. But if it has already engaged (dropped lower) getting ready for birth, you cannot move it.

A woman's first baby sometimes engages 2 weeks before labor begins. Later babies may not engage until labor starts.



If the baby's head is not down toward the womb opening when labor starts, birth can be difficult or even dangerous.

If the baby's head is up, the birth will be more difficult. It may be safer to give birth in or near a hospital.

If the baby is lying sideways, the birth must be in a hospital. The mother and baby are both in danger. A baby that stays sideways cannot be born without medical help (p. 267).

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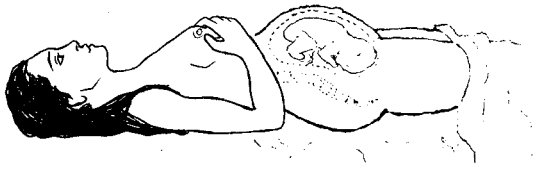
SIGNS THAT LABOR IS NEAR

These signs show labor will start soon. They may not all happen at every birth, and they can happen in any order. When any of these signs happens, it is time to get ready for the birth.

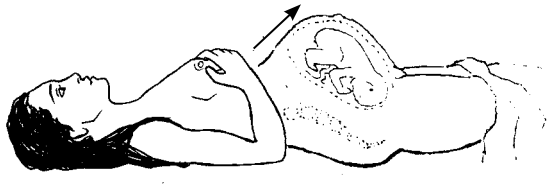
- **Clear or blood-tinted mucus comes out of the vagina.** During pregnancy, mucus plugs the opening to the womb *(cervix)* and prevents infection. When the cervix opens during labor, it releases the plug of mucus.
- **Clear water comes out of the vagina.** The *bag of waters*, which helped protect the baby from infection in the womb, may break before labor starts. (If labor does not start within 24 hours of waters breaking, infection is more likely. See a health worker.)
- **Pains *(contractions)* begin.** It is common to feel some contractions long before labor starts. But when contractions begin to occur regularly with 10 to 20 minutes between them, it is likely the beginning of labor. As labor continues, they happen more frequently and closer together.

Labor pains are caused by contractions or tightening of the womb.

Between contractions the womb is relaxed like this:



During contractions, the womb tightens and lifts up like this:



The contractions push the baby down farther. This causes the cervix or "door of the womb" to open—a little more each time.

To get ready for the birth:

- Let your family and your midwife know that labor is starting.
- Make sure your birth supplies are ready (p. 254).
- Wash your body, especially your outer genitals.
- Continue to eat small meals and drink whenever you are thirsty.
- Rest while you can.

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THE STAGES OF LABOR

Labor has 3 parts or stages:

- The first stage lasts from the beginning of the contractions that open the cervix until when the cervix is fully open.
- The second stage lasts from when the cervix is fully open until the baby is born.
- The third stage lasts from the birth of the baby until the placenta (afterbirth) comes out.

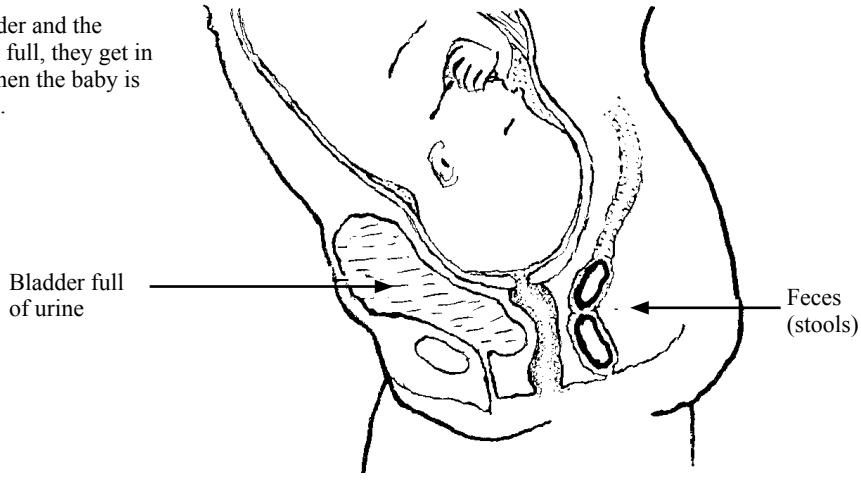
THE FIRST STAGE OF LABOR can last from more than 20 hours (especially for a first birth) to less than 10 hours. This varies a lot.

During the first stage of labor, the mother should not try to hurry the birth. It is natural for this stage to go slowly. The mother may not feel the progress and begin to worry. Try to reassure her. Tell her that most women have the same concern.

The mother should not try to push or bear down until the child is beginning to move down into the birth canal, and she feels she has to push.

The mother should keep her bowels and bladder empty.

If the bladder and the bowels are full, they get in the way when the baby is being born.



During labor, the mother should urinate often. If she has not moved her bowels in several hours, an enema may make labor easier. During labor the mother should drink water or other liquids often. Too little liquid in the body can slow down or stop labor. If labor is long, she should eat lightly, as well. If she is vomiting, she should sip a little Rehydration Drink, herbal tea, or fruit juices between each contraction.

During labor the mother should change positions often or get up and walk about from time to time. She should not lie flat on her back for a long time.

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During the first stage of labor, the midwife or birth attendant should:

- Wash the mother's belly, genitals, buttocks, and legs well with soap and warm water. The bed should be in a clean place with enough light to see clearly.
- Spread clean sheets, towels, or newspapers on the bed and change them whenever they get wet or dirty.
- Have a new, unopened razor blade or a sterilized pair of scissors or razor blade ready for cutting the cord (p. 74).

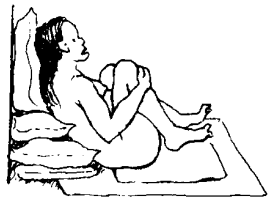
The midwife should **not** massage or push on the belly. She should **not** ask the mother to push or bear down at this time.

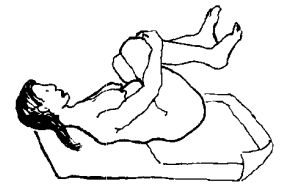
If the mother is frightened or in great pain, have her take deep, **slow**, regular breaths during each contraction, and breathe as she usually would between them. This will help control the pain and calm her. Reassure the mother that the strong pains are not a danger sign, and that they help to push her baby out.

THE SECOND STAGE OF LABOR is usually easier than Stage 1, and usually takes 2 to 3 hours. During the contractions the mother bears down (pushes) with all her strength. Between contractions, she may seem very tired and half asleep. This is typical and not a reason for concern.

To bear down, the mother should take a deep breath and push hard with her stomach muscles, as if she were having a bowel movement. If the child comes slowly after the bag of waters breaks, the mother can bend her knees like this, while

squatting, sitting propped up, kneeling, or lying down.



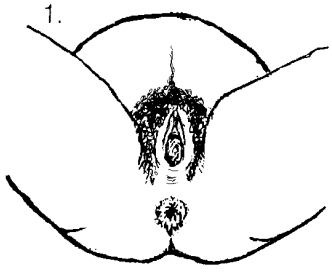
When the birth opening of the mother stretches, and the baby's head begins to show, the midwife or helper should have everything ready for the birth of the baby. At this time the mother should try **not** to push hard, so that the head comes out more slowly. This helps prevent tearing of the opening. See page 269 for more details.

When the head comes out, the midwife may support it, but must never pull on it.

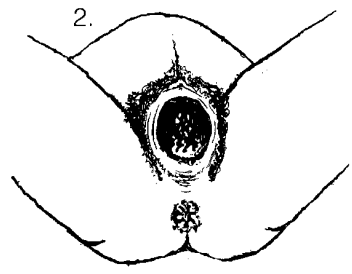
If possible, wear gloves to attend the birth—to protect the health of the mother, baby, and midwife.

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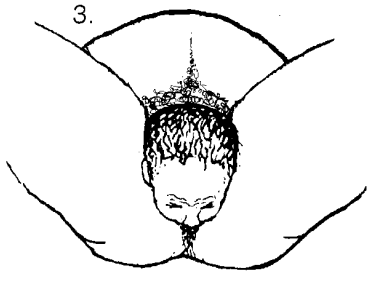
The baby is usually born head first like this:



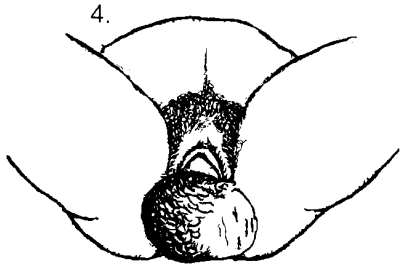
Now push hard.



Now try not to push hard. Take many short, fast breaths. This helps prevent tearing the opening (p. 269).

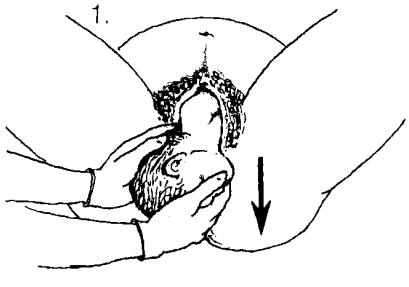


The head usually comes out face down. If the baby has feces (shit) in her mouth and nose, clean it out immediately (p. 262).

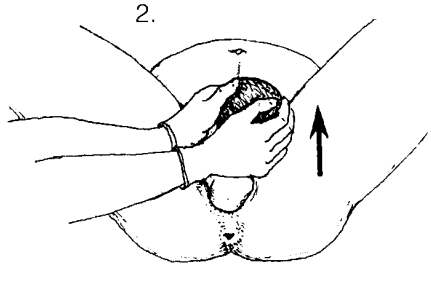


Then the baby's body turns to one side so the shoulders can come out.

If the shoulders get stuck after the head comes out:



The midwife can gently hold the baby's head and guide it toward the mother's back (away from her abdomen). This lets the front shoulder come out.



Then she can raise the head a little so that the other shoulder comes out.

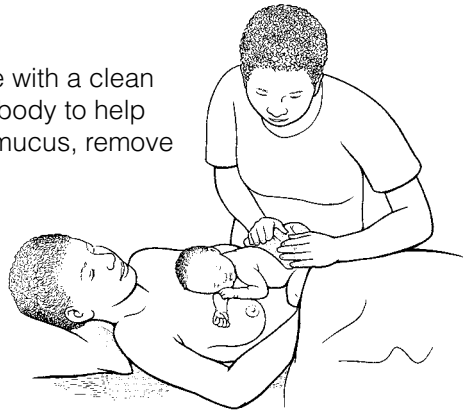
All the force to get the baby out must come from the mother. The midwife should **never pull on the head, or twist or bend the baby's neck**, because this can harm the baby.

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THE THIRD STAGE OF LABOR begins when the baby has been born and lasts until the placenta (afterbirth) comes out. Usually, the placenta comes out by itself 5 minutes to an hour after the baby. In the meantime, care for the baby. If there is a lot of bleeding (p. 265) or if the placenta does not come out within 1 hour, seek medical help.

CARE OF THE BABY AT BIRTH

Immediately after the baby is born:

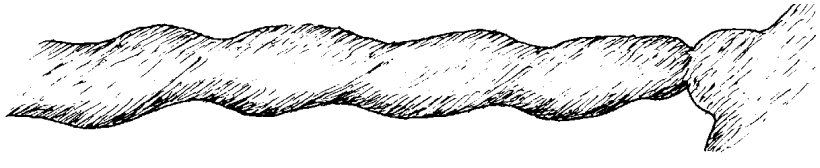


- Wipe mucus off the baby's mouth and nose with a clean cloth. Keep the baby's head lower than its body to help the mucus drain. If there is a lot of fluid or mucus, remove it with a suction bulb.
- Dry the baby well with clean cloths and put the baby directly onto the mother's chest, skin against skin. Put cloths or a blanket around them so the baby stays warm.
- Put the baby's mouth to the mother's nipple right away. When the baby sucks, the womb tightens and helps stop bleeding. This also helps the placenta come out more quickly.
- If the baby does not breathe after a minute following birth, start mouth-to-mouth breathing (p. 80).

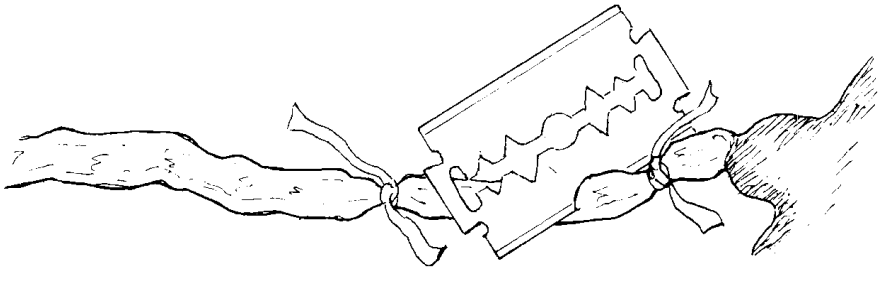
How to Cut the Cord

When the child is born, the cord pulses and is fat and blue. **WAIT.**

After a while, the cord becomes thin and white. It stops pulsing. Now tie it in 2 places with very clean, dry strips of cloth, string, or ribbon. These should have been recently ironed or heated in an oven. Cut between the ties, like this:



IMPORTANT: Cut the cord with a clean, unused razor blade. Before unwrapping it, wash your hands very well. Or wear clean rubber or plastic gloves. If you do not have a new razor blade, use freshly sterilized scissors (p. 74).



Always cut the cord close to the body of the newborn baby. Leave only about 2 centimeters attached to the baby. These precautions help prevent tetanus (p. 182).

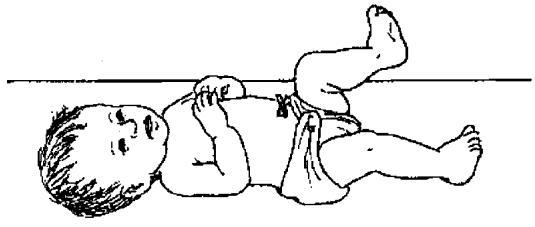
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Care of the Cut Cord

Keep the cord stump clean and dry. Always wash your hands before touching the cord stump.

If the stump or belly button becomes dirty or caked with dried blood, clean with soap and cool boiled water and a very clean cloth. Do not put anything else on the cord—dirt and dung are especially dangerous. They can cause tetanus and kill the baby, see pages 182 to 184.

If the baby is wearing diapers, keep the diaper folded below the cord.

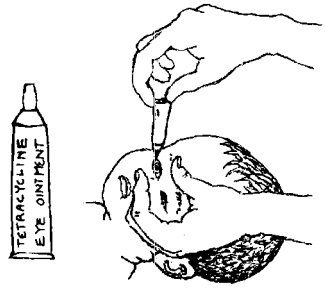


If the cord or the area around the cord gets red, drains pus, or smells bad, it is probably infected. Clean it well and give the baby an injection of benzathine benzylpenicillin (p. 352).

The cord stump usually falls off 5 to 7 days after birth. There may be a few drops of blood or mucus when the cord falls off. This is typical and not a reason for concern. But if there is a lot of blood or any pus, get medical help.

Care of the Eyes

To prevent blindness from an eye infection (p. 236), put medicine in each of the baby's eyes within 2 hours of birth. Use 0.5% to 1% erythromycin ointment, 1% tetracycline ointment, 2.5% povidone iodine solution, or 1% silver nitrate solution. See page 221 for more information.



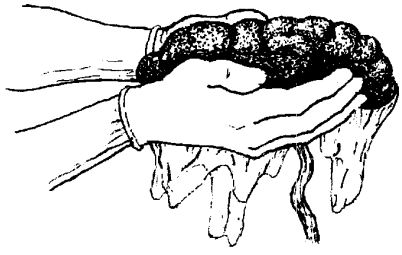
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THE DELIVERY OF THE PLACENTA (AFTERBIRTH)

The placenta usually comes out 5 minutes to ½ hour after the baby is born, but sometimes it is delayed (see below).

Checking the afterbirth:

When the afterbirth comes out, examine it to see if it is complete. If it is torn and there seem to be pieces missing, get medical help. A piece of placenta left inside the womb can cause continued bleeding or infection.



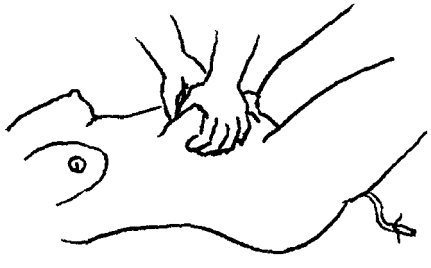
Use gloves or plastic bags on your hands to handle the placenta. Wash your hands well afterwards.

When the placenta is delayed in coming:

If the mother is not losing much blood, do nothing. **Do not pull on the cord.** This could cause dangerous hemorrhage (heavy bleeding). If the baby is not already breastfeeding, put the baby to the mother's nipple or have the mother roll her nipples. This will help the womb contract. Sometimes the placenta will come out if the woman squats and pushes a little. It may also help to have her pass urine.

If the mother is losing blood, feel the womb (uterus) through the belly. If it is soft, do the following:

Firmly rub or squeeze the top of the womb (near the belly button) until it gets hard. This should make it contract and push out the placenta.



If the placenta still does not come out, and the bleeding continues, give medicines to control the bleeding (p. 266) and seek medical help fast.

HEMORRHAGING (HEAVY BLEEDING)

Some bleeding after the placenta comes out is to be expected. But when bleeding does not stop within one day (24 hours) after birth, or more than 500 ml (half a liter, or about 2 cups) of blood is lost, it is a serious problem. Go to a hospital right away, and follow the instructions at the top of the next page while you are on the way.

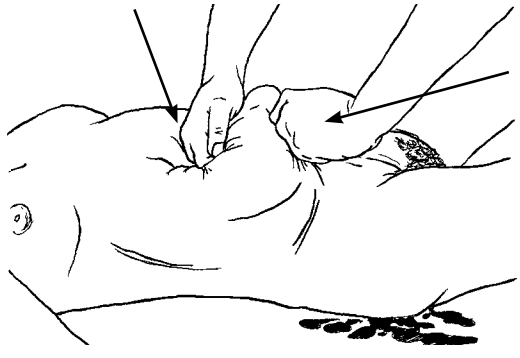
WARNING: Sometimes a woman may be bleeding severely inside without much blood coming out. Feel her belly from time to time. If it seems to be getting bigger, it may be filling with blood. Check her pulse often and watch for signs of shock (p. 77).

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- Give **oxytocin, misoprostol,** or **ergometrine** if you have it, following the instructions on the next page.
- **Check the woman's womb after the birth of the placenta** every 15 minutes or so, and whenever you notice bleeding. If the womb does not feel like a hard, round ball below the belly button, rub firmly until it feels hard. If the womb is off to one side, the bladder is full and the woman should urinate.
- To help prevent or control heavy bleeding, **let the baby suck the mother's breast**. If the baby will not suck, have someone else suck or gently pull and massage the mother's nipples. This will cause her to produce a hormone that helps control bleeding.
- **The mother should drink a lot of liquid** (water, fruit juices, tea, soup, or Rehydration Drink, p. 152). If she grows faint or has a fast, weak pulse or shows other signs of shock, put her legs up and her head down (p. 77).

If heavy bleeding continues, or if the mother is losing a great deal of blood through a slow trickle, keep massaging the womb. Rub harder, squeezing the womb between two hands. It will hurt, but can help stop the bleeding and save the person's life.

Rub the womb until it is hard. Then cup 1 hand on the top of the womb.



Put your other hand, in a fist, at the bottom of the womb.

If the bleeding still does not stop, you can put one hand inside the vagina, make a fist, and then use the other hand to press the womb into your fist.

Note: Although some doctors use it, vitamin K does not help stop bleeding related to giving birth or having a miscarriage or abortion. Vitamin K is only helpful for babies. Do not give to adults.

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MEDICINES TO CONTROL BLEEDING AFTER BIRTH OR MISCARRIAGE: Oxytocin, Misoprostol, Ergometrine

Oxytocin, misoprostol, and ergometrine (ergonovine) are medicines that cause the uterus and its blood vessels to contract. Used the wrong way before the baby is born, they can cause the death of the mother or the child in her womb. Used correctly, they can save lives. These are some of their lifesaving uses:

1. **To control heavy bleeding before the placenta comes out.** Inject 10 units of oxytocin in the buttock or thigh muscle (p. 392).

2. **If the bleeding starts after the placenta comes out.** Inject 10 units of oxytocin in the buttock or thigh muscle. If bleeding has not stopped after 30 minutes, give 800 mcg of misoprostol to dissolve under the tongue (p. 393). Or, you can give ergometrine (p. 392), but do not use ergometrine for a woman who has hypertension or before the placenta is out.

IMPORTANT: Midwives and other health workers who help women deliver should carry enough medicines to stop heavy bleeding if it happens. Too many mothers bleed to death who could be saved.

3. **To help prevent heavy bleeding after birth.** Some authorities now recommend giving all women a single dose of oxytocin, misoprostol, or ergometrine to prevent heavy bleeding after birth. This will prevent some dangerous bleeding, but also treats many women with medicine when they do not need it. A midwife who only has a little medicine may choose to save the medicine she has for emergencies.

4. **To control the bleeding of a miscarriage** (p. 281). If the woman is rapidly losing blood and medical help is far away, use oxytocin, misoprostol, or ergometrine (see above).

WARNING: The use of oxytocin, misoprostol, or ergometrine to hasten birth or give strength to the mother's labor can be very dangerous for both her and the child. These medicines should be used to strengthen labor only if you have been trained to do so and are in a medical center in case something goes wrong.

THE USE OF MEDICINES TO "GIVE STRENGTH" TO THE MOTHER DURING BIRTH . . .





CAN KILL THE MOTHER, THE BABY, OR BOTH.

Giving birth is hard work. To have enough strength to deliver a baby, a person needs:

- plenty of nutritious foods, especially during pregnancy (p. 107).
- at least 2 years between pregnancies so the body can regain its full strength (see "Family Planning," p. 284).
- emotional and physical support from family and friends during pregnancy.
- support from an experienced birth attendant, such as a midwife or doula, during the delivery.

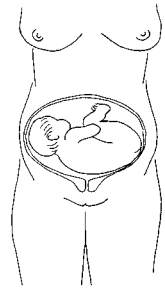
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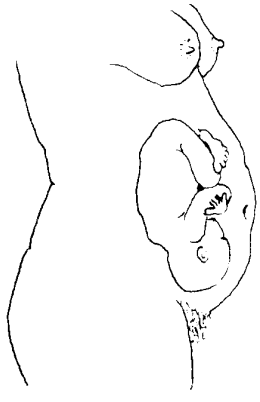
DIFFICULT BIRTHS

It is important to get medical help as quickly as possible when there is any serious problem during labor. Many problems or complications may come up, some more serious than others. Here are a few of the more common ones:

1. LABOR STOPS OR SLOWS DOWN, or lasts a very long time after being strong or after the waters break. This has several possible causes:

- **The woman may be frightened or upset.** This can slow down or even stop contractions. Talk to her. Help her to relax. Try to reassure her. Explain that the birth is slow, but there are no serious problems. Encourage her to change her position often and to drink, eat, and urinate. Stimulation (massage or milking motion) of the nipples can help speed labor.
- **The baby is lying sideways.** Feel the belly between contractions to see if the baby is sideways. A baby lying sideways cannot be born without medical help. Because turning the baby is difficult to do safely—it can pull the placenta from the wall of the womb or tear the womb—do not try to turn the baby once labor has started. Get the mother to a hospital right away.



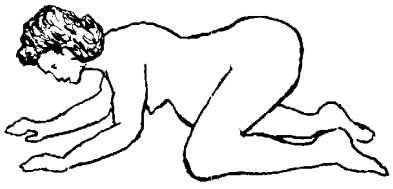


- **If the baby is facing forward** rather than backward, you may feel the lumpy arms and legs rather than the rounded back. Labor may be longer and cause the woman more back pain. She should change positions often, as this may help turn the baby. Have her try on her hands and knees.

- **The baby's head may be too large to fit through the woman's hip bones** (pelvis). This is more likely in a woman with very narrow hips or a young woman or girl whose body is not fully grown. (It is very unlikely in a woman who has had a vaginal birth before.) You may feel that the baby does not move down. If you suspect this problem, try to get the mother to a hospital as she may need an operation (Cesarean) to deliver the baby.
- **If the mother has been vomiting or has not been drinking liquids,** she may be dehydrated. This can slow down or stop contractions. Have her sip Rehydration Drink or other liquids after each contraction.

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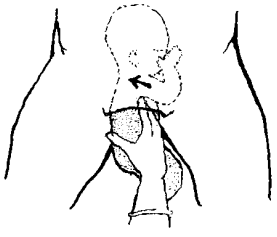
2. BREECH DELIVERY (the buttocks come out first). Sometimes the midwife can tell if the baby is in the breech position by feeling the mother's belly (p. 257) and listening to the baby's heartbeat (p. 252).



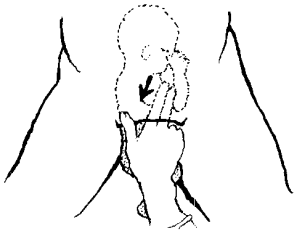
A breech birth may be easier in this position:

If the baby's legs come out, but not the arms, wash your hands very well, rub them with alcohol (or wear sterile gloves), and then. . .

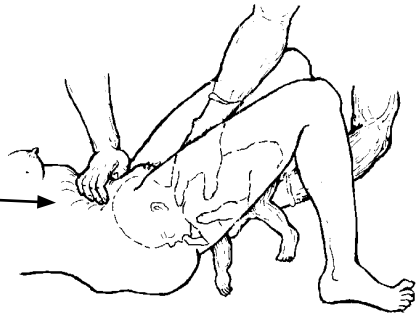
slip your fingers inside and push the baby's shoulders toward the back, like this:



or press his arms against his body, like this:

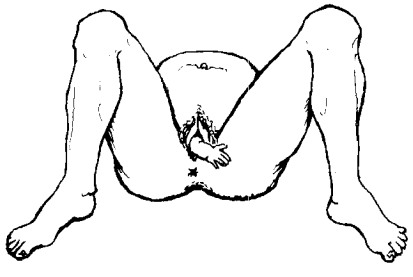


If the baby gets stuck, have the mother lie face up. Put your finger in the baby's mouth and push his head towards his chest. At the same time have someone push the baby's head down by pressing on the mother's belly like this:



Have the mother push hard. But **never pull on the body of the baby.**

3. PRESENTATION OF AN ARM (hand first). If the baby's hand comes out first, get medical help right away. An operation may be needed to get the baby out.

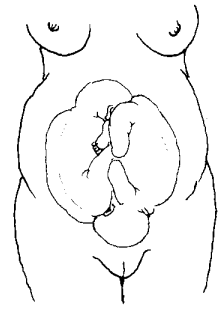


4. Sometimes the CORD IS WRAPPED AROUND THE BABY'S NECK so tightly he cannot come out all the way. Try to slip the loop of cord from around the baby's neck. If you cannot do this, you may have to clamp or tie and cut the cord. Use sterilized blunt-tipped scissors.

5. FECES IN THE BABY'S MOUTH AND NOSE. When the waters break, if you see they contain a dark green (almost black) liquid, this is probably the baby's first stools (meconium). The stool can get inside the baby's mouth, nose, and lungs and make breathing hard or cause infection after birth. As soon as his head is out, tell the mother not to push, but to take short, rapid breaths. Before the baby starts breathing, wipe its mouth and nose with a clean cloth or use a suction bulb to suck the feces out. Keep the baby's head lower than its body to help empty the mouth and nose. If the baby has difficulty breathing, take it to a hospital.

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6. TWINS. Giving birth to twins is often more difficult and dangerous—both for the mother and babies—than giving birth to a single baby. There is a greater chance one baby will be in a wrong position, or that there will be heavy bleeding after birth.



It is best to give birth to twins in a hospital.

Because with twins labor often begins early, **the mother should be within easy reach of a hospital after the seventh month of pregnancy.**

Signs that a woman may be pregnant with twins:

- The belly grows faster and the womb is larger than usual, especially in the last months (p. 251)
- If the woman gains weight faster than expected, or the common problems of pregnancy (morning sickness, backache, varicose veins, piles, swelling, and difficult breathing) are worse than usual, be sure to check for twins.
- If you can feel 3 or more large objects (heads and buttocks) in a womb that seems extra large, twins are likely.
- Sometimes you can hear 2 different heartbeats (other than the mother's)—but this is difficult.

During the last months, if the woman rests a lot and is careful to avoid hard work, twins are less likely to be born too early.

Twins are often born small and need special care. However, there is no truth in beliefs that twins have strange or magic powers.

TEARING OF THE BIRTH OPENING

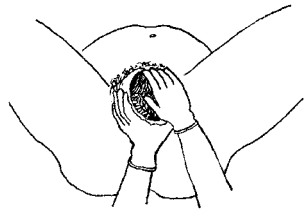
The birth opening must stretch a lot for the baby to come out. Sometimes it tears. Tearing is more likely if it is the mother's first baby.

Tearing can usually be prevented if care is taken:

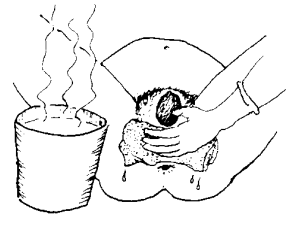
The mother should try to stop pushing when the baby's head is coming out. This gives her birth opening time to stretch. In order not to push, she should pant (take many rapid breaths).



When the birth opening is stretching, the midwife can support it with one hand and with the other hand gently keep the head from coming too fast, like this:



It may also help to put warm compresses against the skin below the birth opening. Start when it begins to stretch. You can also massage the stretched skin with oil.



If a tear does happen, someone who knows how should carefully sew it shut after the placenta comes out (pages 86 and 381).

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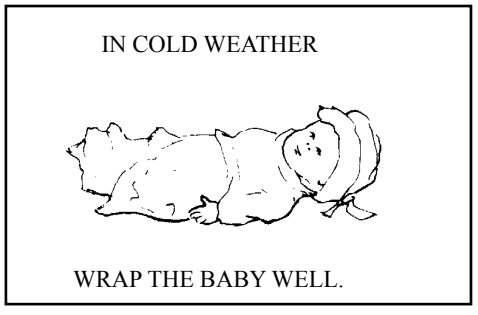
CARE OF THE NEWBORN BABY

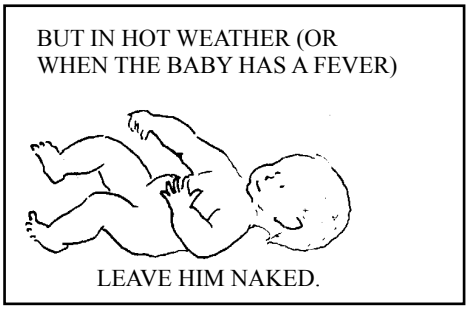
The Cord

To prevent the freshly cut cord from becoming infected, it should be kept clean and dry. If possible, clean it with alcohol and a clean cloth with every diaper (nappy) change. The drier it is, the sooner it will fall off and the navel will heal. For this reason, it is better not to use a belly band, or if one is used, to keep it very loose (pages 184 and 263).

Keeping the Baby Warm—but Not Too Warm

Protect the baby from cold, but also from too much heat. Dress him as warmly as you feel like dressing yourself.





To keep a baby just warm enough, keep him close to his mother's body. This is especially important for a baby that is born early or very small. See "Special Care for Small, Early, and Underweight Babies," page 407.

Cleanliness

It is important to follow the Guidelines of Cleanliness as discussed in Chapter 12. Take special care with the following:

- Change the baby's diapers (nappies) or bedding each time he wets or dirties them.
  If the skin gets red, change the diaper more often—or better, leave it off!
  See page 215
- After the cord drops off, bathe the baby daily with mild soap and warm water.
- If there are flies or mosquitos, cover the baby's crib with mosquito netting or a thin cloth.
- Persons with open sores, colds, sore throat, tuberculosis, or other infectious illnesses should not touch or go near the newborn baby or the woman while she is giving birth.
- Keep the baby in a clean place away from smoke and dust.

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Feeding

(Also see “The Best Diet for Small Children,” p. 120.)

Breast milk is by far the best food for a baby. Babies who nurse on breast milk are healthier, grow stronger, and are less likely to die. This is why:

- Breast milk has a better balance of what the baby needs than does any other milk, whether fresh, canned, or powdered.
- Breast milk is clean. When other foods are given, especially by bottle feeding, it is very hard to keep things clean enough to prevent the baby from getting diarrhea and other sicknesses.
- The temperature of breast milk is always right.
- Breast milk has things in it (antibodies) that help protect the baby against certain illnesses, such as diarrhea, measles, and polio.

The mother should give her breast to the baby as soon as he is born. For the first few days the mother’s breasts usually produce very little milk. This is not a reason for concern. She should continue to nurse her baby often—at least every two hours. The baby’s sucking will help her produce more milk. If the baby seems healthy, gains weight, and wets her diaper (nappy) regularly, the mother is producing enough milk.

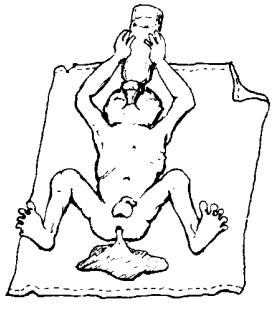
It is best for the baby if the mother gives him only breast milk for the first 6 months. After that, she should continue to breastfeed her baby, but should begin to give him other nourishing foods also (p. 122). Mothers with HIV should stop breastfeeding when the baby is 12 months old if they can give enough other nutritious foods.

HOW A MOTHER CAN PRODUCE MORE BREAST MILK:

She should...

- ♦ drink plenty of liquids,
- ♦ eat as well as possible, especially food with a lot of calcium (like milk products) and body-building foods (p. 110),
- ♦ get plenty of sleep and avoid getting very tired or upset,
- ♦ nurse her baby more often—at least every 2 hours.

BOTTLE-FED BABIES ARE MORE LIKELY TO GET SICK AND DIE.



BREAST-FED BABIES ARE HEALTHIER.



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Care in Giving Medicines to the Newborn

Many medicines are dangerous for the newborn. Use only medicines you are sure are recommended for the newborn and use them only when they are absolutely necessary. Be sure you know the right dose and do not give too much. Chloramphenicol, for example, is dangerous to newborns, especially if the baby is premature or underweight (less than 2 kilograms).

Sometimes it is important to give medicines to a newborn. For example, giving cotrimoxazole to a baby whose mother has HIV can protect the baby's health. See page 357.

ILLNESSES OF THE NEWBORN

It is very important to notice any problem or illness a baby may have and to act quickly.

Diseases that take days or weeks to kill adults can kill a baby in a matter of hours.

Problems the Baby Is Born With (Also see p. 316)

These may result from something that went wrong with the development of the baby in the womb or from injury to the baby while he was being born. Examine the baby carefully immediately after birth. Look for the following signs:

- He does not breathe as soon as he is born.
- His pulse cannot be felt or heard, or is less than 100 beats per minute.
- His face and body are white, blue, or yellow after he has begun breathing.
- His arms and legs are floppy—he does not move them by himself or when you pinch them.
- He grunts or has difficulty breathing after the first 15 minutes.

Some of these problems may be caused by brain injury at birth. They are almost never caused by infection (unless the water broke more than 12 hours before birth). Common medicines probably will not help. Keep the baby warm, but not too warm (p. 270) and get medical help.

If the newborn baby vomits or shits blood, or develops many bruises, she may need vitamin K (p. 394).

If the baby does not urinate or have a bowel movement in the first 2 days, also seek medical help.

Problems that Result After the Baby Is Born (in the first days or weeks)

1. **Pus or a bad smell from the navel or cord** is a dangerous sign. Watch for early signs of tetanus (p. 182) or bacterial infection of the blood (p. 275). Clean the cord carefully with soap and cool boiled water, and leave it open to the air. If the skin around the cord becomes hot and red, give the child benzathine benzylpenicillin (p. 352).

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2. Both **low temperature** (below 35.5°C) and **high temperature** (above 38°C) can be signs of infection in a newborn. Get medical help. For a baby with a high temperature, take off all clothing and sponge the baby with cool (not cold) water (p. 76) as you go for help. If there are signs of dehydration (p. 151), give the baby breast milk and Rehydration Drink (p. 152).

3. **Seizures (convulsions,** p. 178). If the baby also has fever, treat it as just described. Be sure to check for dehydration. Seizures that begin the day of birth could be caused by brain injury at birth. If seizures begin several days later, look carefully for signs of tetanus (p. 182) or meningitis (p. 185).

4. **The baby does not gain weight.** During the first days of life, most babies lose a little weight. This is typical and not a reason for concern. After the first week, a healthy baby should gain about 200 g a week. By two weeks the healthy baby should weigh as much as he did at birth. If he does not gain weight, or loses weight, something is wrong. Did the baby seem healthy at birth? Does he feed well? Examine the baby carefully for signs of infection or other problems. If you cannot find out the cause of the problem and correct it, get medical help.

5. **Vomiting.** When healthy babies burp (or bring up air they have swallowed while feeding), sometimes a little milk comes up too. This is common and not a reason for concern. Help the baby bring up air after feeding by holding him against your shoulder and patting his back gently, like this.



BURP YOUR BABY AFTER FEEDING.

If a baby vomits when you lay him down after nursing, try sitting him upright for a while after each feeding.

A baby who vomits violently, or so much and so often that he begins to lose weight or become dehydrated, is ill. If the baby also has diarrhea, he probably has a gut infection (p. 157). Bacterial infection of the blood (see the next pages), meningitis (p. 185), and other infections may also cause vomiting.

If the vomit is yellow or green, there may be a gut obstruction (p. 94), especially if the belly is very swollen or the baby has not been having bowel movements. Take the baby to a health center at once.

6. **The baby stops sucking well.** If more than 4 hours pass and the baby still will not nurse, this is a danger sign—especially if the baby seems very sleepy or ill, or if he cries or moves differently from usual. Many illnesses can cause these signs, but the most common and dangerous causes in the first 2 weeks of life are a bacterial infection of the blood (see next 2 pages) and tetanus (p. 182).

A baby who stops nursing during the second to fifth day of life may have a bacterial infection of the blood.

A baby who stops nursing during the fifth to fifteenth day may have tetanus.

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If a Baby Stops Sucking Well or Seems Ill

Examine him carefully and completely as described in Chapter 3. Be sure to check the following:

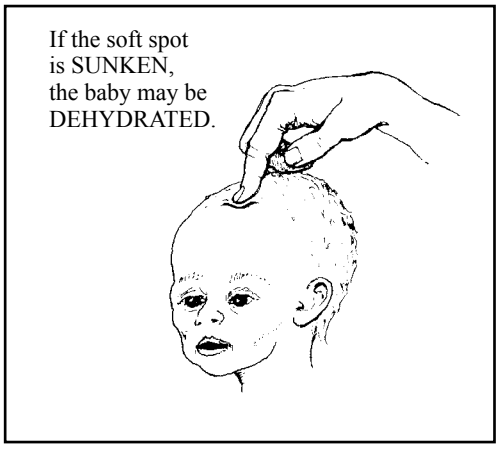
- Notice if the baby has **difficulty breathing.** If the nose is stuffed up, suck out the mucus as shown on page 164. Fast breathing (60 or more breaths a minute), blue color, grunting, and sucking in of the skin between the ribs with each breath are signs of pneumonia (p. 171). Small babies with pneumonia often do not cough; sometimes none of the common signs are present. If you suspect pneumonia, treat as for a bacterial infection of the blood (see the next page).

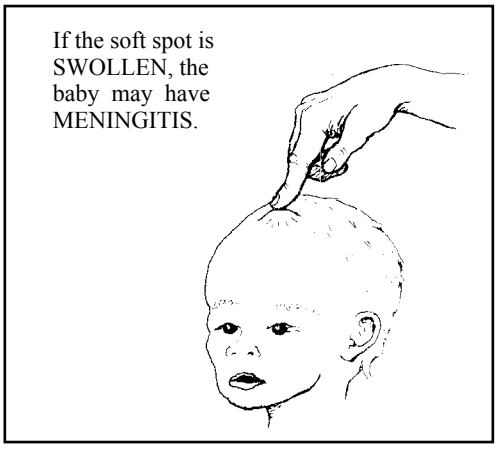
- Look at the baby's **skin color.**

  If the lips and face are blue, consider pneumonia (or a heart condition or other problem the baby was born with).

  If the face and whites of the eyes begin to get yellow (jaundiced) in the first day of life or after the fifth day, this is serious. Get medical help. Some yellow color between the second and fifth day of life is usually not serious. Give plenty of breast milk by spoon if necessary. Take off all the baby's clothes and put him in bright light near a window (but not direct sunlight).

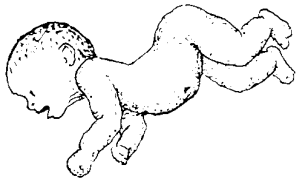
- Feel the **soft spot on top of the head** (fontanel). See page 9.





IMPORTANT: If a baby has meningitis and dehydration at the same time, the soft spot may not feel different. Be sure to check for other signs of both dehydration (p. 151) and meningitis (p. 185).

- **Watch the baby's movements and expression on his face.**



Stiffness of the body or strange movements may be signs of tetanus, meningitis, or brain injury from birth. If, when the baby is touched or moved, the muscles of his face and body suddenly tighten, this could be tetanus. See if his jaw will open and check his knee reflexes (p. 183).

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If the baby's eyes roll back or flutter when he makes sudden or violent movements, he probably does **not** have tetanus. Such seizures **may** be caused by meningitis, but dehydration and high fever are more common causes. Can you put the baby's head between his knees? If the baby is too stiff for this or cries out in pain, it is probably meningitis (p. 185).

- Look for signs of a bacterial infection in the blood.

Bacterial Infection in the Blood (Septicemia)

Newborn babies cannot fight infections well. Therefore, bacteria that enter the baby's skin or cord at the time of birth often get into the blood and spread through his whole body. Since this takes a day or two, septicemia is most common after the second day of life.

Signs:

Signs of infection in newborn babies are different from those in older children. In the baby, almost any sign could be caused by a serious infection in the blood. Possible signs are:

- does not suck well
- seems very sleepy
- very pale (anemic)
- vomiting or diarrhea
- fever or low temperature (below 35°C)
- swollen belly
- yellow skin (jaundice)
- seizures (convulsions)
- times when the baby turns blue

Each of these signs may be caused by something other than septicemia, but if the baby has several of these signs at once, septicemia is likely.

Newborn babies do not always have a fever when they have a serious infection. The temperature may be high, low, or normal.

Treatment when you suspect septicemia in the newborn:

- Inject 50 mg of ampicillin (p. 352) for each kilogram the baby weighs, 2 times a day for a baby less than 1 week old or 3 times a day if the baby is older than 1 week. If you cannot calculate the dosage, inject the average dose of 150 mg of ampicillin.
- Also inject 5 mg of gentamicin for each kilogram the baby weighs. Only give gentamicin once a day. If you cannot calculate the dosage, inject the average dose of 15 mg of gentamicin for a baby less than 1 week old, or 20 mg if the baby is older than 1 week.
- Be sure the baby has enough liquids. Spoon feed breast milk and Rehydration Drink, if necessary (p. 152).
- Try to get medical help.

Infections in newborn babies are sometimes hard to recognize. Often there is no fever. If possible, get medical help. If not, treat with ampicillin and gentamicin as described above. Ampicillin is one of the safest and most useful antibiotics for babies.



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THE MOTHER'S HEALTH AFTER BIRTH

Diet and Cleanliness

After giving birth, the mother can and should eat every kind of nutritious food she can get. She does not need to avoid any kind of food. Foods that are especially good for her are milk, cheese, chicken, eggs, meat, fish, fruits, vegetables, grains, beans, groundnuts, etc. If all she has is corn and beans, she should eat them both at each meal. A good diet helps the mother make plenty of milk for her baby.

The mother can and should bathe in the first few days after giving birth. In the first week, it is better if she bathes with a wet towel and does not go into the water. Bathing is not harmful after giving birth. In fact, women who let many days go by without bathing may get infections that will make their skin unhealthy and their babies sick.

During the days and weeks following birth, the mother should:

eat nutritious foods and **bathe regularly.**





Childbirth Fever (Infection after Giving Birth, Womb Infection)

Sometimes a mother develops fever and infection after giving birth, often because someone attending the birth did not keep everything very clean.

The signs of childbirth fever are: Chills or fever, headache or low back pain, sometimes pain in the belly, and a foul-smelling or bloody discharge from the vagina.

Treatment:

- Inject 2 grams (2000 mg) of ampicillin in the muscle for the first dose, and then reduce the dose to 1 gram (1000 mg) 4 times a day. Also inject 80 mg of gentamicin in the muscle 2 times a day. Also give 500 mg of metronidazole by mouth 3 times a day.
- When the person has had no fever for 2 days, change medicines and give 100 mg of doxycycline by mouth 2 times a day, 500 mg of metronidazole by mouth 3 times a day, and 500 mg amoxicillin/125 mg clavulanic acid by mouth 3 times a day, all for 10 days.
- If the person does not start to feel better within 1 or 2 days, keep giving antibiotics and get medical help.

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BREASTFEEDING AND CARE OF THE BREASTS

Taking good care of the breasts is important for the health of both the mother and her baby. The baby should begin to breastfeed soon after it is born. A baby may want to breastfeed right away or just lick the breast and be held. Encourage the baby to suck because it will help the milk to start flowing. This will also help the mother's womb to contract and the afterbirth to come out sooner. The mother's first milk is a thick yellow liquid (called colostrum). This has everything a new baby needs to prevent infection and is rich in protein. **It is very good for the baby, so...**

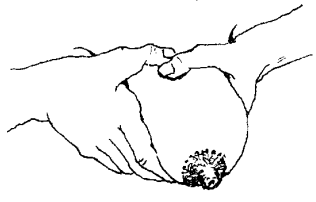
BEGIN BREASTFEEDING EARLY
Put the baby to the mother's breast as soon as possible.

The breasts usually make as much milk as the baby needs. If the baby empties them, they begin to make more. If the baby does not empty them, soon they make less. When a baby gets sick and stops sucking, after a few days the mother's breasts stop making milk. So when the baby can suck again, and needs a full amount of milk, there may not be enough. For this reason,

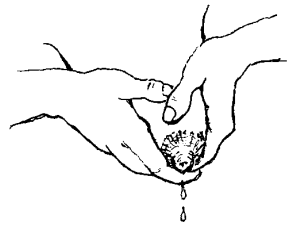
When a baby is sick and unable to take much milk, it is important that the mother keep producing lots of milk by milking her breasts with her hands.

TO MILK THE BREASTS BY HAND

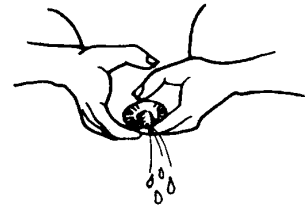
Wash your hands well, and take hold of the breast near the back,



then massage lightly with your fingers, moving toward the nipple.



To squeeze the milk out, put your fingers and thumb at the edge of your nipple and press back against your chest.



Another reason it is important to milk the breasts if the baby stops sucking is that this keeps the breasts from getting too full. When they are too full, they are painful. A breast that is painfully full is more likely to develop an infection. Also, the baby may have trouble sucking when the breast is very full.

If your baby is too weak to suck, squeeze milk out of your breast by hand and give it to the baby by spoon or dropper.

Regular bathing will help to keep your breasts clean. It is not necessary to clean your breasts and nipples each time you breastfeed your baby. Do **not** use soap to clean your breasts, as this may cause cracking of the skin, sore nipples, and infection.

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Sore or Cracked Nipples

Sore or cracked nipples develop when the baby sucks only the nipple instead of taking the nipple and part of the breast when she is breastfeeding.

Treatment:



It is important to keep breastfeeding the baby even if it hurts. To avoid sore nipples, breastfeed often, for as long as the baby wants to suck, and be sure the baby is taking as much of the breast into her mouth as she can. It also helps to change the baby's position each time she nurses.

If only one nipple is sore, let the baby suck on the other side first, then let the baby suck from the sore nipple. After the baby is finished, squeeze out a little milk and rub the milk over the sore nipple. Let the milk dry before covering the nipple. The milk will help the nipple heal. If the nipple oozes a lot of blood or pus, milk the breast by hand until the nipple is healed.

Painful Breasts

Pain in the breast can be caused by a sore nipple or breasts that get very full and hard. The pain will often go away in a day or two if the baby breastfeeds frequently and the mother rests in bed and drinks lots of liquids. Usually, antibiotics are not needed, but see the next section.

Breast Infection (Mastitis) and Abscess

Painful breasts and sore or cracked nipples can lead to an infection or abscess (pocket of pus).



Signs:

- Part of the breast becomes hot, red, swollen, and very painful.
- Fever or chills.
- Lymph nodes in the armpit are often sore and swollen.
- A severe abscess sometimes bursts and drains pus.

Treatment:

- Keep breastfeeding frequently, giving the baby the infected breast first, or milk the breast by hand, whichever is less painful.
- Rest and drink lots of liquids.
- Use hot compresses on the sore breast for 15 minutes before each feeding. Use cold compresses on the sore breast between feedings to reduce pain.
- Gently massage the sore breast while the baby is nursing.
- Take acetaminophen (p. 381) for pain.
- Use an antibiotic. Dicloxacillin is the best antibiotic to use (p. 350). Take 500 mg by mouth, 4 times a day, for 7 days. Erythromycin (p. 354) can also be used, or cotrimoxazole (p. 357) after the baby is one month old.

Prevention:

- Keep the nipples from cracking (see above) and don't let the breasts get overfull.

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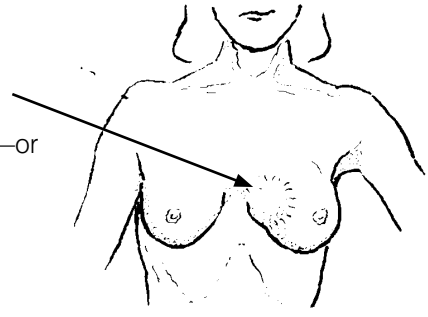
A painful, hot lump in the breast of a nursing mother is probably a breast abscess (infection).

A painless breast lump may be cancer, or a *cyst.*

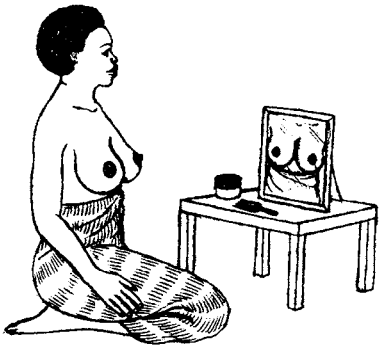
Breast Cancer

Most women have some small lumps in their breasts. These lumps can change in size and shape, and become tender during your period (menstruation). Sometimes, a breast lump that does not go away can be a sign of breast cancer. Successful treatment depends on finding and treating the problem as soon as possible. This requires medical care and sometimes surgery.

Signs of breast cancer:



- a new lump found during self-examination of the breasts (see below).
- an abnormal dent or dimple in the breast—or many tiny pits like the skin of an orange.
- swollen lymph nodes in the armpit, which may or may not be painful.
- redness or a sore on the breast that does not heal.
- abnormal discharge from the nipple.

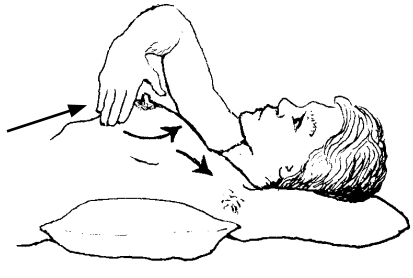


SELF-EXAMINATION OF THE BREASTS

Every woman should learn how to examine her own breasts for possible signs of cancer. It is best to do this monthly at the same point in each menstrual cycle.

♦ Use a mirror to look at your breasts carefully for any new difference between the two in size or shape. Try to notice any of the above signs.

♦ While lying with a pillow or folded blanket under your back, feel your breasts with the flat of your fingers. Press your breast and roll it beneath your finger tips. Start near the nipple and go around the breast and up into the armpit.

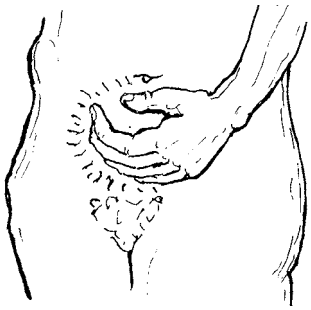


♦ Squeeze your nipples. If blood or a ***discharge*** comes out, get medical help.

If you find a lump that is smooth or rubbery, and moves under the skin when you push it, don't worry about it. But if it is hard, has an uneven shape, is painless, or does not move when you push it, get medical advice. Many lumps are not cancer, but it is important to find out early.

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LUMPS OR GROWTHS IN THE LOWER PART OF THE BELLY



The most common lump is, of course, caused by the development of a baby. Abnormal lumps or masses may be caused by:

- a ***cyst*** or fluid-filled swelling, often in the ovaries
- a fertilized egg that has begun to develop outside of the womb (ectopic preganancy)
- cancer

All 3 of these conditions are usually painless or mildly uncomfortable at first, and become very painful later. All require medical attention. If you find any unusual, gradually growing lump, seek medical advice.

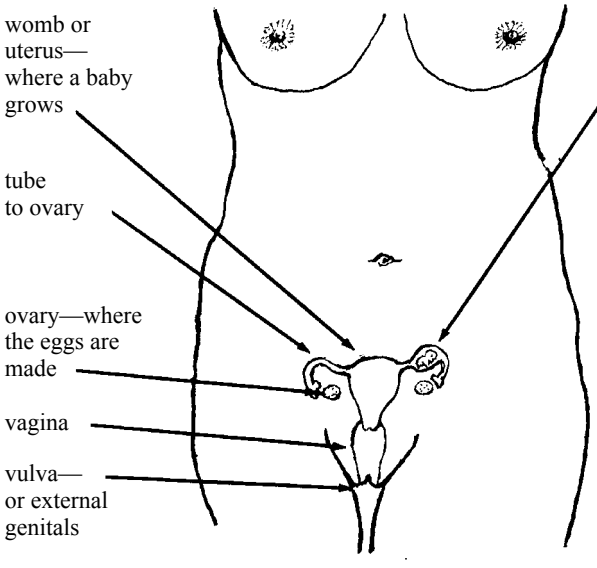
Cancer

The first sign of cancer of the uterus (womb), cervix (neck of the womb), or ovaries may be ***anemia*** or unexplained bleeding from the vagina. Later, an uncomfortable or painful lump in the belly may be noticed.

Cancer of the cervix can be cured if found early, but there are no warning signs you can see. A Pap test can find abnormal cervical cells that may be cancer or pre-cancer. Anyone with a cervix should get a Pap test every 3 to 5 years, starting around age 30. Visual inspection uses a vinegar solution to find abnormal cervical tissue, which then shows that further testing or treatment is needed. See *Where Women Have No Doctor* page 378 for more about these tests, and page 270 for a treatment that helps prevent cancer of the cervix.

At the first suspicion of cancer, seek medical help.

Ectopic (tubal) Pregnancy



Sometimes a fertilized egg begins to grow outside the womb, in one of the tubes that comes from the ovaries.

There may be abnormal menstrual bleeding together with signs of pregnancy—also severe cramps low in the belly and a painful lump **outside** the womb.

A fertilized egg that begins to form in the tube cannot develop into a baby. Ectopic pregnancy requires surgery in a hospital. **If you suspect this problem, get medical help soon, as dangerous bleeding could start any time.**

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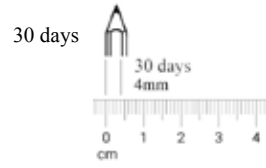
MISCARRIAGE (SPONTANEOUS ABORTION)

A miscarriage is when a pregnancy ends early by itself. This happens most often in the first 3 months (90 days) of pregnancy.

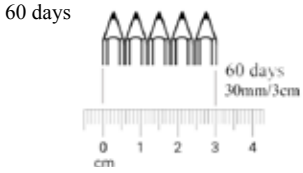
Many people have 1 or 2 miscarriages before they carry a pregnancy to birth. Many times they do not realize that they are having a miscarriage. They may think their period was missed or delayed, and then came back in a strange way, with big blood clots. A woman who has heavy bleeding after she has missed one or more periods probably is having a miscarriage.

Heavy bleeding with big blood clots and painful cramps often continue until all of the pregnancy is completely out. Bleeding may continue for several days after the miscarriage, similar to a menstrual period. She should not have sex or put anything in her vagina for at least 2 weeks after the miscarriage, or until the bleeding stops.

The embryo and tissue that come out during a miscarriage may be so small they are not visible to the naked eye. At 30 days of pregnancy, the embryo and tissue is around 4 mm in length (compared here to the width of 1 pencil).



At 60 days of pregnancy, the embryo and tissue is around 30 mm in length (compared here to the width of 5 pencils).



Treatment:

The woman should rest and take ibuprofen (p. 380) or codeine (p. 385) for pain.

If heavy bleeding continues for many days:

- Get medical help. A medicine (misoprostal, p. 393) or a simple procedure using suction may be needed to empty the womb.
- Stay in bed until the heavy bleeding stops.
- If the bleeding is extreme, follow the instructions on page 266.
- If fever or other signs of infection develop, treat as for childbirth fever (p. 276).

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HIGH RISK MOTHERS AND BABIES

A note to anyone who cares for people who are pregnant:

Some women are more likely to have difficult births and problems following birth, and their babies are more likely to be underweight and sick. These include people who are very poor or very young, who have cognitive delay, who already have sick or malnourished children, or who are raising children without support.

When a midwife, health worker, or someone else helps struggling parents get the food, care, and companionship they need, it can make a great difference in the lives of these families.

Do not wait for those in need to come to you. Go to them.





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Family Planning—Having the Number of Children You Want

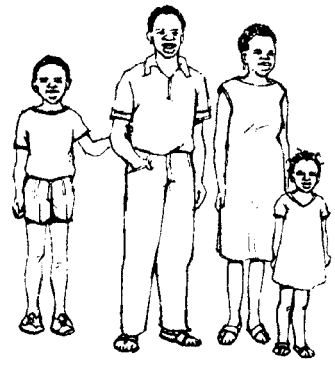
CHAPTER **20**

BOTH THESE FAMILIES LIVE IN POOR COMMUNITIES:

This family lives where wealth is distributed unfairly.



This family lives where resources are distributed fairly.



Some mothers and fathers want a lot of children—especially in countries where poor people are denied a fair share of land, resources, and social benefits. This is because children help with work and provide care for their parents in old age. In such areas, having just a few children may be a privilege only wealthier people can afford.

The situation is different in countries where resources and benefits are fairly distributed. Where employment, housing, and health care are guaranteed and where women have equal opportunities for education and jobs, people usually choose to have smaller families. This is in part because they do not need to depend on their children for economic security.

In any society, parents have a right to make their own decisions about how many children to have, and when to have them.

Different parents have different reasons for wanting to limit the size of their families. Some young parents may decide to delay having any children until they have worked and saved enough so that they can afford to care for them well. Some parents may decide that a small number of children is enough, and they never want more. Others may want to space their children several years apart, so that both the children and their mother will be healthier. Some parents feel they are too old to have more children. In some places, men and women know that if they have a lot of children, when the children grow up there may not be enough land for all of them to grow the food their families need.

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FAMILY PLANNING



Having the number of children you want, when you want them, is called family planning. If you decide to wait to have children, you can choose one of several methods to prevent pregnancy. These methods are called **family planning methods**, **child spacing methods**, or **contraception**.

Family planning allows people to complete their education, enjoy sex without worrying about unwanted pregnancy, care for the children they already have, and avoid high-risk pregnancies. Many deaths could be prevented by family planning. For example, family planning can prevent dangers from pregnancies that are:

- in young women. Women under the age of 18 are more likely to die while giving birth because their bodies are not fully grown. Their babies have a greater chance of dying in the first year.
- in older women. Older women face more danger in child bearing, especially if they have other health problems or have had many children.
- too close. A woman's body needs time to recover between pregnancies.
- too many. A woman with more than 4 children has a greater risk of death after giving birth from bleeding and other causes.

Millions of women safely use the family planning methods described in this chapter and on pages 395 to 398.

Choosing a Family Planning Method

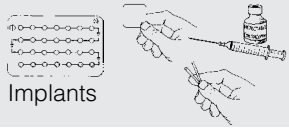
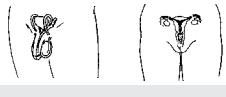
On the following pages, several methods of family planning are described. Each one works better for some people than others. Study these pages and talk with your midwife, health worker, or doctor about what methods are available and are likely to work best for you. As you read about each method, here are some questions you may want to consider:

- How well does it prevent pregnancy? How effective is it?
- How well does it protect against HIV and other sexually transmitted infections, if at all?
- How safe is it? If a woman has any of the health problems mentioned in this chapter, she may need to avoid some types of family planning methods.
- How easy is it to use?
- How much does it cost?
- Is it easy to get? Will you need to visit the health center often?
- Will the side effects (the problems the method may cause) create difficulties for you?

Family planning methods work best when both the man and the woman take responsibility for preventing pregnancy and protecting each other from sexually transmitted infections (STIs).

The chart on the next page shows how well each family planning method works to prevent pregnancy and to protect against STIs. When a man and a woman use a method correctly every time they have sex, the method will work better.

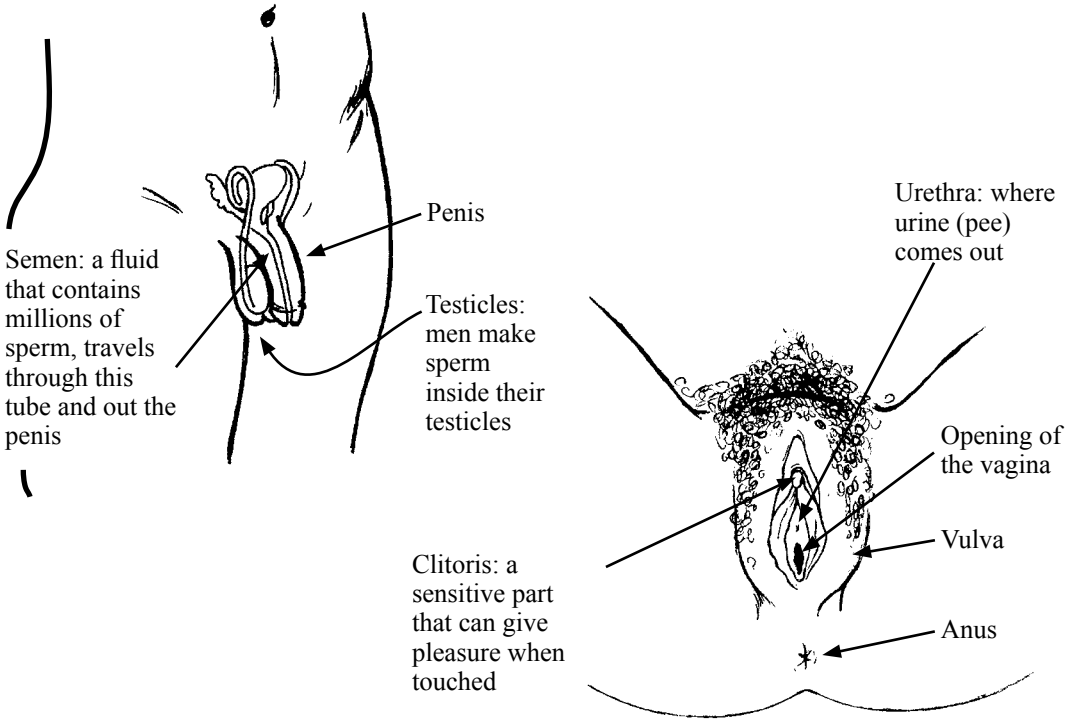
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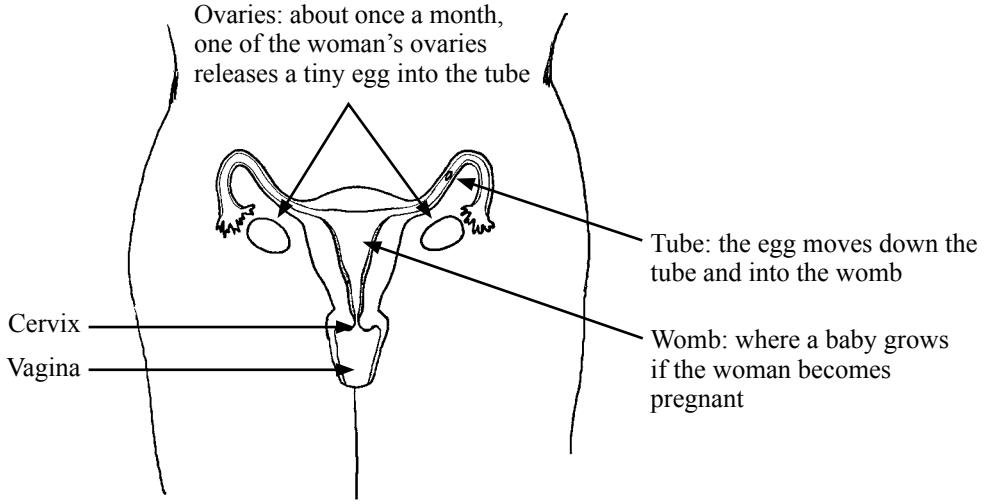
FAMILY PLANNING METHOD	Protection from pregnancy	Protection from STIs	Possible side effects	Other important information
External condom (male condom) 	★★ GOOD			Most effective when used with spermicide and water-based lubricant. Use with other methods to prevent STIs.
Internal condom (female condom) 	★★ GOOD			Most effective when used with spermicide and water-based lubricant. Use with other methods to prevent STIs.
Diaphragm or cervical cap (with spermicide) 	★★ GOOD			Most effective when used with spermicide. Effective only when using the correct size.
Spermicide or sponge 	★ SOME		 skin allergy	More effective when used with another barrier method like diaphragm or condom.
Hormonal methods Birth control pill, patch, injections, vaginal ring  Implants	★★★ VERY GOOD ★★★★ BEST		 nausea, headaches, changes in monthly bleeding	These methods may be dangerous for women with certain health problems.
IUD 	★★★★ BEST		 heavy and painful monthly bleeding	This method may be dangerous for women with certain health problems.
Sex that doesn't cause pregnancy (penis not inside vagina at all) 	★★★★ BEST			Sexual touch rarely passes STIs. Oral sex is less likely to pass STIs. Anal sex is more likely to pass STIs.
Breastfeeding (during the first 6 months only) 	★★★ VERY GOOD			Only effective in the first 6 months after birth, if giving baby only breast milk, and if periods have not returned.
Fertility awareness 	★★ GOOD			A woman must understand when she is fertile and be able to choose not to have sex that can cause pregnancy.
Sterilization 	★★★★ BEST			A woman or a man will never be able to have babies after this operation.
Pulling out (withdrawal) 	★ SOME			More effective when used with another method like spermicide or diaphragm.

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HOW WOMEN BECOME PREGNANT

When the man ejaculates (comes, climaxes) in or near the vagina, his sperm leave his penis and can get into the womb and tubes. During the woman's fertile time, the sperm can join with the woman's egg. If the sperm fertilizes the egg, it then implants in the lining of the woman's womb. This is pregnancy. Family planning methods prevent pregnancy by keeping sperm out of the vagina, or by stopping a woman's body from releasing eggs, or by stopping sperm from joining with an egg.





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FAMILY PLANNING METHODS

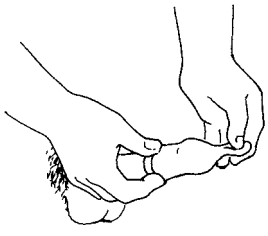
External (Male) Condoms



An external condom is a thin latex cover worn on the penis during sex. The semen stays inside the condom, so sperm cannot get into the womb and cause pregnancy. Condoms are safe and have no side effects.

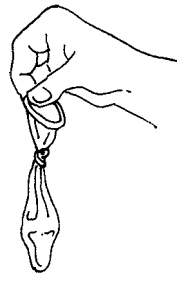
Condoms are also the most effective way to prevent sexually transmitted infections (STIs), including HIV. Even if you are using another method of birth control, you can also use a condom to protect you and your partner from STIs.

Condoms are the only family planning method that is effective at both preventing pregnancy and sexually transmitted infections. But the man must be willing to use one every time he has sex.



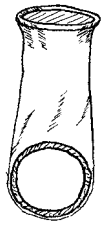
Squeeze the tip of the condom and unroll it all the way over the hard penis. The loose condom tip will hold the sperm. (If you do not leave space for the sperm, the condom might break.)

To help keep condoms from breaking, use a water-based lubricant, such as spit (saliva) or ***K-Y Jelly***. Do not use cooking oil, baby oil, mineral oil, petroleum jelly (***Vaseline***), skin lotion, or butter with condoms because these oil-based products weaken rubber and can make the condom break. Lubricants can make sex feel more pleasurable for everyone.

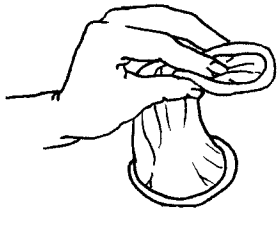


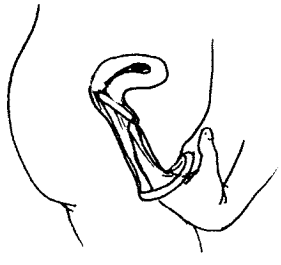
After the man ejaculates (comes), while the penis is still hard, he must hold the rim of the condom to keep it on the penis while he pulls out of the woman's vagina. Then take the condom off the penis. (Put the condom in the trash – do not just throw it where others will come across it!) Use a new condom each time you have sex.

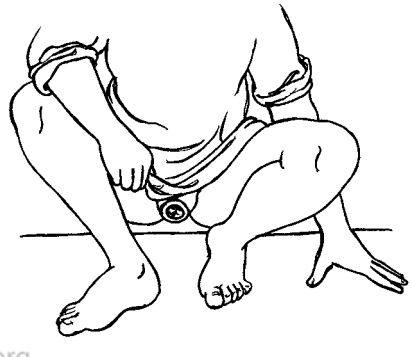
Internal (Female) Condoms



An internal condom fits into the vagina and covers the outer lips of the vulva. It is bigger than an external condom and less likely to break. It can be put in up to 6 hours before sex and should be removed immediately after sex. The internal condom prevents sperm from getting into the womb and causing pregnancy, and it also helps protect against HIV and other STIs. Do not use an internal condom at the same time as an external condom.







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Birth Control Pills (Oral Contraceptives)



Birth control pills contain hormones that are similar to the natural hormones in women's bodies. They prevent pregnancy by stopping the ovaries from releasing an egg. There are 2 main types of birth control pills: combination pills which contain 2 hormones, estrogen and progestin, and minipills which contain only progestin. Both types of pill are very effective if taken every day at the same time. They are safe for most people, but if you have certain health problems you should not take them (p. 289).

Birth control pills do not protect against HIV or other sexually transmitted infections (STIs). To protect yourself, also use a condom.

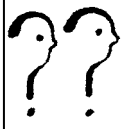
COMBINATION PILLS

Different brands of combination birth control pills have different doses of 2 hormones, estrogen and progestin. For descriptions of the most common brands and how to take them, see pages 395 and 396.

THE MINIPILL (progestin-only pills)

This birth control pill does not contain estrogen, only progestin. It is safe for most people who cannot use combined pills for health reasons (p. 289) or who have side effects from combination pills. The minipill is also very effective for people who are breastfeeding who have not had monthly bleeding since giving birth. For descriptions of the most common brands and how to take them, see page 396.

QUESTIONS AND ANSWERS ABOUT BIRTH CONTROL PILLS

	Some people claim birth control pills cause cancer. Is this true?	**No. But people who have had certain cancers should not use them. Pills lower the risk for some cancers and raise the risk for others.**
	Can a person get pregnant after they stop taking the pill?	**Yes. Most people can get pregnant within a few months of stopping the pill.**
	Is there a greater chance of having twins or children with disabilities if you have used oral contraceptives?	**No. The chances are the same as for those who have not taken the pill.**

EMERGENCY CONTRACEPTION

If you had penis-in-vagina sex without using a family planning method and you do not wish to get pregnant, you can still prevent pregnancy with emergency contraception. For information about emergency contraception with an IUD, see page 290. For information about emergency contraception with pills, see pages 396 and 397.

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WHO SHOULD NOT USE ANY METHOD THAT CONTAINS HORMONES?

Someone with any of the following signs should not use a family planning method that contains hormones (pills, patches, injections, implants, vaginal rings, or hormonal IUDs):

- A late or missed period, or the person thinks they might be pregnant already
- Breast cancer (p. 279) or liver cancer, because hormonal methods can make those cancers worse (though hormonal methods do not cause cancer)

Someone with other health problems who wants to use a hormonal method should talk to a health worker who has had training in family planning.

WHO SHOULD NOT USE METHODS THAT CONTAIN ESTROGEN?

Estrogen can make some health problems more dangerous. Someone with any of the following should not use contraception that contains the hormone estrogen (combination pills and injections, patches, vaginal rings):

- Any of the conditions listed above
- High blood pressure (160/110 or higher, p. 125)
- Diabetes for more than 20 years, or kidney, eye, or nerve problems from diabetes
- Age 35 or older and smokes tobacco
- Migraine headaches (p. 162), especially with vision changes
- A blood clot in a vein (this usually causes swelling and pain in one leg)
- Liver disease or hepatitis (p. 172 and p. 328)
- Gave birth in the last 6 weeks

Using a method with estrogen may cause the body to make less breast milk, so if someone is breastfeeding they might avoid methods with estrogen for at least 6 months after giving birth.

WARNING SIGNS FOR PROBLEMS WITH COMBINED PILLS

STOP taking the pill and see a health worker if you:

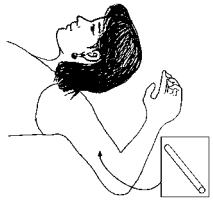
- have severe headaches with blurred vision (migraines) that begin after you start taking the pill.
- feel weakness or numbness in your arms or legs.
- feel severe pain in your chest and shortness of breath.
- have severe pain in one leg.
- have severe pain in the abdomen.

If you have any of these problems, pregnancy can also be dangerous, so use another type of family planning such as condoms until you can see a health worker trained in hormonal family planning methods.

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OTHER METHODS OF FAMILY PLANNING

Implants



Implants are small plastic tubes placed under the skin on the inside of the arm. They prevent pregnancy for 3 to 5 years, depending on the type of implant. Implants must be inserted and removed by a trained health worker. See page 398.

Just like the minipill, implants contain only progestin and can be used by women who cannot use estrogen, or by breastfeeding mothers who have not had monthly bleeding since giving birth. Women who should not use any type of hormonal birth control should not use implants either (p. 289). Implants do not protect against HIV and other STIs.

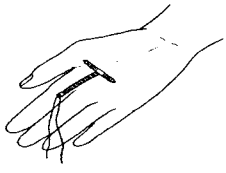
Birth Control Injections



These are injections of hormones given at a clinic every 1 to 3 months to prevent pregnancy. The injections can be started any time if the woman is sure she is not pregnant. It protects against pregnancy immediately if given within 7 days after the woman's monthly bleeding. If the injection is given more than 7 days after her monthly bleeding, the woman should use condoms to prevent pregnancy, or avoid sex for 7 days. Injections do not protect against HIV and other STIs.

Progestin-only injections, like ***Depo-Provera, Sayana Press***, and ***Noristerat***, are given every 2 or 3 months (p. 398). These are safe for people who should not use estrogen (p. 289). Combined injections, like ***Cyclofem*** and ***Mesigyna***, are given once a month. People who should not use estrogen should avoid these.

IUDs



An IUD (Intrauterine Device) is a small object put in the womb by a trained health worker (pages 397 to 398). Copper IUDs prevent pregnancy immediately and last up to 12 years. Hormonal IUDs, which contain progestin, give protection in 7 days and prevent pregnancy for 3 to 7 years, depending on the amount of hormone they contain. Copper IUDs and some hormonal IUDs can be used as emergency contraception when inserted within 5 days of unprotected sex. The IUD can then be left in as birth control.

WHO SHOULD NOT USE AN IUD:

- Women with cancer of the cervix or uterus. Women with breast cancer should not use a hormonal IUD, but they can use a copper IUD.
- Women with gonorrhea or chlamydia (p. 236).
- Women with pelvic inflammatory disease (PID, p. 243).

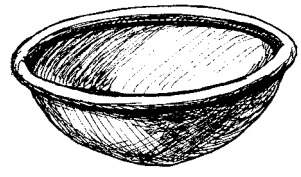
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Spermicide



Spermicides are foam, tablets, cream, jelly, or flat strips that dissolve in the vagina and kill sperm so they cannot fertilize an egg. Spermicide is put into the vagina just before having sex. It does not work well by itself, but gives extra protection against pregnancy when used with a condom or a diaphragm. Spermicide does not protect against STIs or HIV. See page 395. If used frequently it can irritate the vagina, making it easier for the woman to get an infection, including HIV.

Diaphragm



The diaphragm is a shallow cup made of soft rubber or thin silicone that a woman wears in her vagina during sex. The diaphragm covers the cervix (the opening to the womb, deep inside the vagina), so the man's sperm cannot get into the womb and cause pregnancy. It can be put in just before having sex or up to 6 hours before, and should be left in for at least 6 hours after having sex. Some diaphragms come in different sizes, and a health worker can help you find the right size. A "one size fits most" diaphragm *(Caya)* does not require a fitting. After each use, the woman should wash the diaphragm with soap and water, dry it, and keep it in a clean, dry place. A diaphragm usually lasts about 2 years. Check it regularly for holes by holding it up to the light. If there is even a tiny hole, get a new one.

BEHAVIORAL METHODS OF FAMILY PLANNING

Breastfeeding

When a woman breastfeeds, her body produces hormones that prevent pregnancy for a few months. Breastfeeding is dependable for preventing pregnancy when:

- The baby is less than 6 months old.

AND

- You are giving your baby only your breast milk, no other food or drink, and you feed your baby often, day and night.

AND

- You have not had your monthly bleeding since giving birth.



Once you start giving your baby food or you get your period, breastfeeding will no longer prevent pregnancy.

Fertility Awareness

Pregnancy can only happen during the fertile time, when an egg moves from the ovary into the tubes and womb. This time lasts for several days and happens about once a month. By avoiding sex during the fertile time, you can prevent pregnancy. (Or, if trying to get pregnant, plan to have sex during this time to increase chances of pregnancy.)

For this method to work, the woman must have regular menstrual cycles and must keep good track of each stage of her cycle. The man must be willing to help make this method work too, because during fertile times, they must avoid sex that can cause pregnancy (sex with the penis inside the vagina). They can have other types of sex, like oral sex or sexual touching. Or they can use condoms during the fertile time. Fertility awareness does not give any protection against STIs including HIV.

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THE COUNTING DAYS METHOD OF FERTILITY AWARENESS

Count the number of days of your menstrual cycle for a few months. Start counting on the first day of your menstrual period. The last day of the cycle is the last day before you bleed again. If you have about the same number of days in each cycle, and your cycles last between 26 and 32 days, this method can work. Avoid sex that can cause pregnancy or use condoms from the 8th day to the 19th day of every cycle.

For example: Suppose your period begins on the 5th day of May. Count that as day number 1.

Mark it like this:

Then count 8 days. Starting with the 8th day, put a line under the next 11 days like this:

MAY

			1	2	3	4
(5)	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

During these 11 "fertile days," do not have sexual relations.

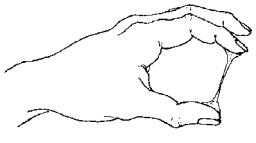
Now suppose your next period begins on the first of June. Mark it the same way, like this:

Once again count off 8 days and underline the following 11 days in which you will not have sexual contact.

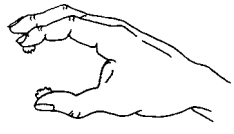
JUNE

						(1)
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Changes in cervical mucus (the wetness that comes from a woman's vagina) can also help a woman know when she is in her fertile time.



clear, wet, slippery mucus = fertile



white, dry, sticky mucus = not fertile

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Withdrawal or Pulling Out (coitus interruptus)

The man pulls his penis out of the woman and away from her genitals before he ejaculates (comes). This method is better than no method, but it does not always work. Even if the man pulls out in time, some liquid that contains sperm can leak out of his penis before ejaculation and cause pregnancy. Pulling out does not protect against HIV or other STIs.

Abstinence and sex that doesn't cause pregnancy



There are many ways to be close to someone, to have sexual pleasure, and to show love besides sex that causes pregnancy. Many couples practice oral sex: using your mouth to bring pleasure on the penis or the vulva. You cannot get pregnant this way. Sex in the anus (anal sex) also cannot cause pregnancy. But you can pass STIs, including HIV, during anal and oral sex. Using your hands to make someone feel good sexually is very safe. It cannot cause pregnancy and it cannot pass any STIs.

THESE METHODS DO NOT PREVENT PREGNANCY

Urinating (peeing) after sex is not harmful, but it won't prevent pregnancy. Urine does not wash semen out of the vagina, because it comes out of a different hole (p. 286).

Washing out the vagina (douching) after having sex doesn't work either. Sperm move very fast and some will reach the inside of the womb before they can be washed out. Douching can even push sperm up into the womb.

Putting herbs, plants, or harsh chemicals in the vagina to make it dry only causes irritation of the skin inside the vagina, making it easier for women to get infections.

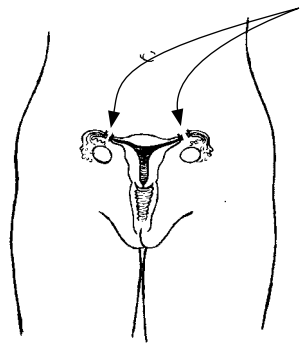
Amulets and prayers do not prevent pregnancy. Women who rely on these methods get pregnant.

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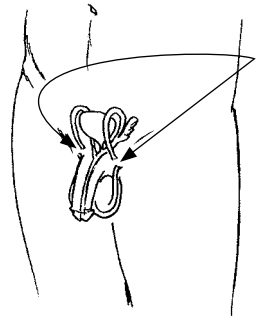
METHODS FOR THOSE WHO NEVER WANT TO HAVE MORE CHILDREN

Sterilization is a safe, simple operation for both men and women. In many countries these operations are free. Ask at the health center. Sterilization does not protect against HIV or other STIs.

For women, the operation is called a tubal ligation, which means to tie the tubes. One method is to make a small cut in the lower belly so that the tubes coming from the ovaries (where eggs are stored) can be cut and tied closed. It usually can be done in a doctor's office or health center without putting the woman to sleep. This operation has no effect on the woman's menstrual periods or sexual ability, and may make having sex more pleasant because she does not have to worry about pregnancy.



For men, the operation is called a vasectomy. It can be done simply and quickly in a doctor's office or a health center without putting the man to sleep. This operation is even safer and faster than the surgery for a woman. The testicles are not removed and the operation has no effect on the man's sexual ability or pleasure. His fluid (semen) comes just the same, but has no sperm in it.



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Health and Sicknesses of Children

CHAPTER 21

WHAT TO DO TO PROTECT CHILDREN'S HEALTH

NUTRITIOUS FOOD, CLEANLINESS, AND VACCINATIONS



ARE THE THREE IMPORTANT BODYGUARDS THAT
KEEP CHILDREN HEALTHY AND PROTECT THEM AGAINST MANY SICKNESSES.

Chapters 11 and 12 tell more about the importance of nutritious food, cleanliness, and vaccination. Parents should read these chapters carefully and use them to help care for—and teach—their children. The main points are briefly repeated here.

Nutritious Food

It is important that children eat the most nutritious foods they can get, so that they grow well and do not get sick.

The best foods for children at different ages are:

- in the first 6 months: **breast milk** and nothing more.
- from 6 months to 1 year: **breast milk** and also **other nutritious foods—** such as boiled cereals, mashed-up beans, eggs, meat, cooked fruits and vegetables.
- from 1 year on: the child should eat the **same foods as adults—**but **more often.** To the main food (rice, maize, wheat, potatoes, or cassava) add helper foods as discussed in Chapter 11.
- Above all, children should get **enough** to eat—several times a day.
- All parents should watch for signs of malnutrition in their children and should give them the best food they can.

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Cleanliness

Children are more likely to be healthy if their village, their homes, and they themselves are kept clean. Follow the Guidelines of Cleanliness explained in Chapter 12. Teach children to follow them—and to understand their importance. Here the most important guidelines are repeated:

- Bathe children and change their clothes often.
- Teach children always to wash their hands when they get up in the morning, after they have a bowel movement, and before they eat or handle food.
- Make latrines or outhouses—and teach children to use them.
- Where hookworm exists, do not let children go barefoot; use sandals or shoes.
- Teach children to brush their teeth; and do not give them a lot of candies, sweets, or carbonated drinks.
- Cut fingernails very short.
- Do not let children who are sick or have sores, scabies, lice, or ringworm sleep with other children or use the same clothing or towels.
- Treat children quickly for scabies, ringworm, intestinal worms, and other infections that spread easily from child to child.
- Do not let children put dirty things in their mouths or let dogs or cats lick their faces.
- Keep pigs, dogs, and chickens out of the house.
- Use only pure, boiled, or filtered water for drinking. This is especially important for babies.
- Do not feed babies from baby bottles because these are hard to keep clean and can cause illness. Feed babies with a cup and spoon.

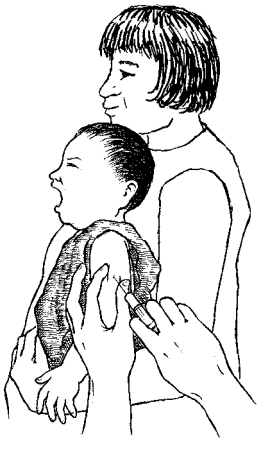
Vaccinations

Vaccinations protect children against many of the most dangerous diseases of childhood—whooping cough, diphtheria, tetanus, polio, measles, tuberculosis, hepatitis, and rotavirus.

Children should be given the different vaccinations at different ages, as shown on page 147. Several vaccines are now combined to lower the number of injections and clinic visits needed to protect your child.

Tetanus of the newborn can be prevented by vaccinating mothers against tetanus during pregnancy (p. 250).

Be sure your children get all the vaccinations they need.



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CHILDREN'S GROWTH—AND THE "ROAD TO HEALTH"

A healthy child grows steadily. If he eats enough nutritious food, and has no serious illness, a child gains weight each month.



A child who grows well is healthy.

A child who takes longer to gain weight than other children, stops gaining weight, or is losing weight is not healthy. He may not be eating enough or he may have a serious illness, or both.

A good way to check whether a child is healthy and is getting enough nutritious food is to weigh him each month and see if he gains weight as expected. If a monthly record of the child's weight is kept on a Child Health Chart, it is easy to see at a glance whether the child is gaining weight as expected.

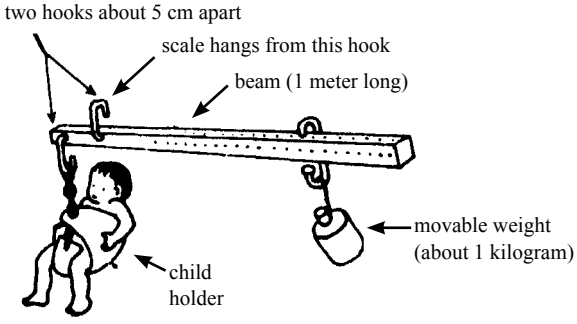
When used well, the charts tell mothers and health workers when a child is not growing as expected, so they can take early action. They can make sure the child gets more to eat, and can check for and treat any illness the child may have.

On the next page is a typical Child Health Chart showing the "Road to Health." This chart can be cut out and copied. Or larger, ready-made cards can be obtained (in English, Spanish, Portuguese, or Zulu) from Health Books International (see p. 432 for address). Similar charts are produced in local languages by the Health Departments in many countries.

It is a good idea for every mother to keep a Child Health Chart for each of her children under 5 years of age. If there is a health center or under-fives clinic nearby, she should take her children, with their charts, to be weighed and to have a check-up each month. The health worker can help explain the Chart and its use. To protect the Chart, keep it in a plastic envelope.

HOMEMADE BEAM SCALE

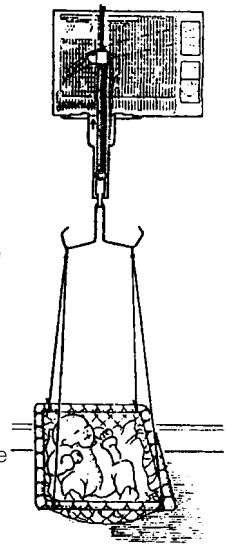
You can make a beam scale of dry wood or bamboo. Place all hooks as shown and hang the scale. To make kg marks on the beam, fill 2 plastic one-liter bottles with water. Place the first bottle where baby would hang. Hang the second bottle, and where beam balances, make the 1 kg mark, and so on. With a ruler, measure the distance between the marks, and make marks for 200, 400, 600, and 800 grams.



Weight is correct when beam stays horizontal.

DIRECT RECORDING SCALE

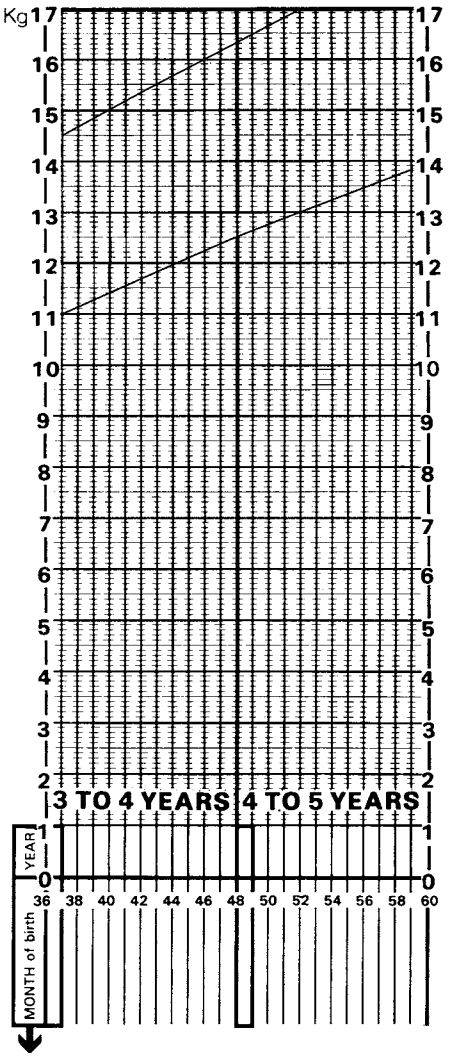
available from Health Books International (p. 433)



The growth chart slips in behind the scales so you can mark the child's weight directly onto the chart.

It is best to hang this and other scales close to the ground. A baby may be scared of hanging up high.

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CHILD HEALTH CHART

CLINIC 1 ..... No .....

CLINIC 2 ..... No .....

CHILD'S NAME	GIRL / BOY
DATE OF BIRTH day month year	BIRTH WEIGHT

MOTHER'S NAME

CARETAKER IF NOT THE MOTHER

FATHER'S NAME

WHERE DOES THE CHILD LIVE?

How many children has the mother had?

Number alive ..... Number dead .....

CARD GIVEN AND MOTHER TAUGHT BY

ASK THE MOTHER ABOUT THESE REASONS FOR GIVING THE CHILD EXTRA CARE (make a circle round the right answer)		TAKE EXTRA CARE
Was the baby **less than 2.5 kg at birth**	no	yes
Is this baby a **twin**	no	yes
Is this baby **bottle fed**	no	yes
Does the mother need more **family support**	no	yes
Are any brothers or sisters **underweight**	no	yes
Are there any other reasons for **taking extra care**?	no	yes

For example – tuberculosis or leprosy or **social problems**

Remember to discuss child spacing



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UNITED KINGDOM

GROWTH CURVE **WHO recommended Child Growth Standards 2006**
UPPERLINE: 50TH CENTIL BOYS, LOWERLINE: 3rd CENTILE GIRLS

Training materials are also available

IMMUNISATIONS		DATE GIVEN
BCG		
POLIO		FIRST DOSE
		SECOND DOSE
		THIRD DOSE
		FOURTH DOSE
DPT	Diptheria Whooping Cough Tetanus	FIRST DOSE
		SECOND DOSE
		THIRD DOSE
MEASLES		
MOTHER'S TETANUS TOXOID (or one booster)		FIRST DOSE
		SECOND DOSE
		THIRD DOSE



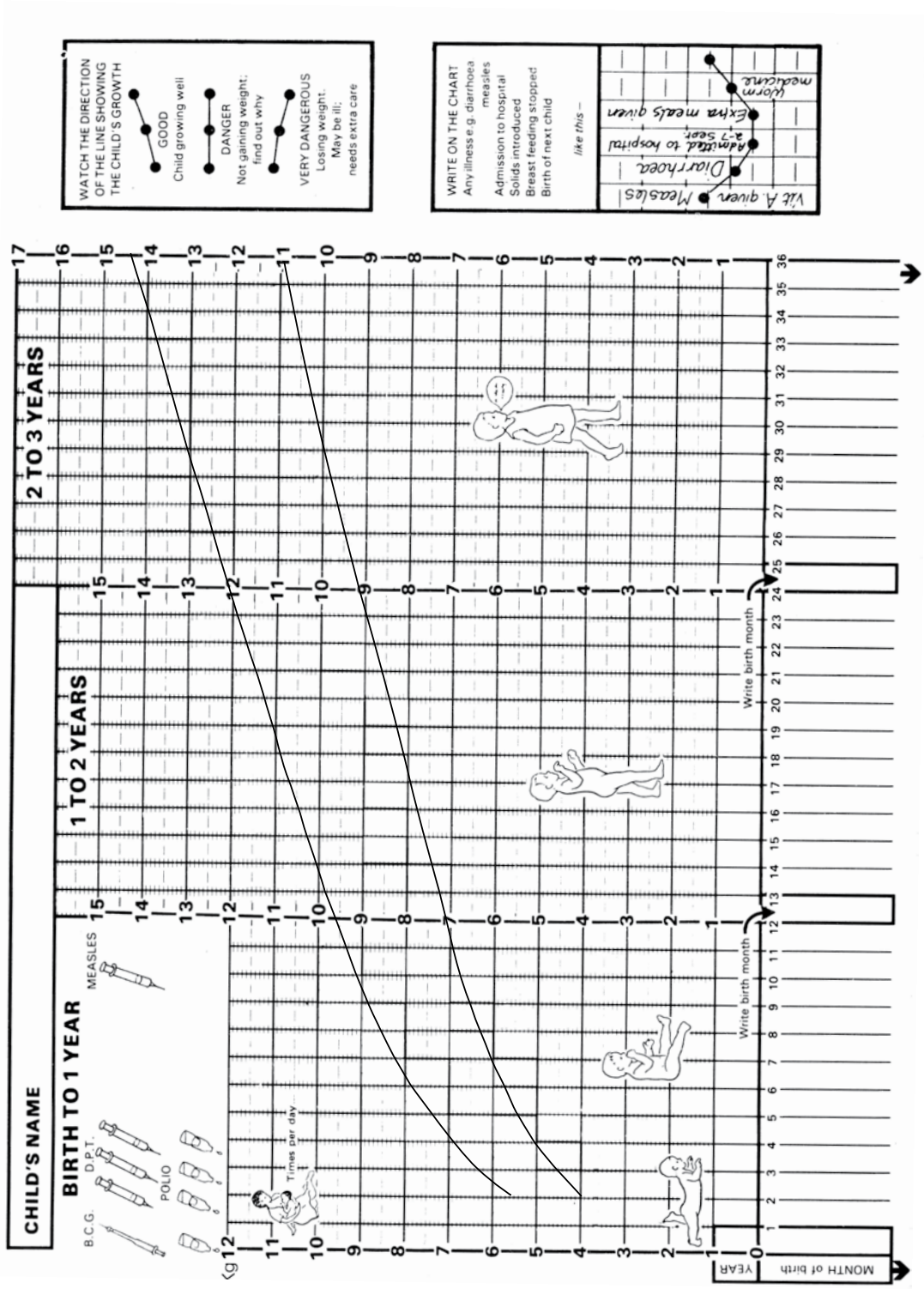
ORAL REHYDRATION

DATES			
Taught			
Used			

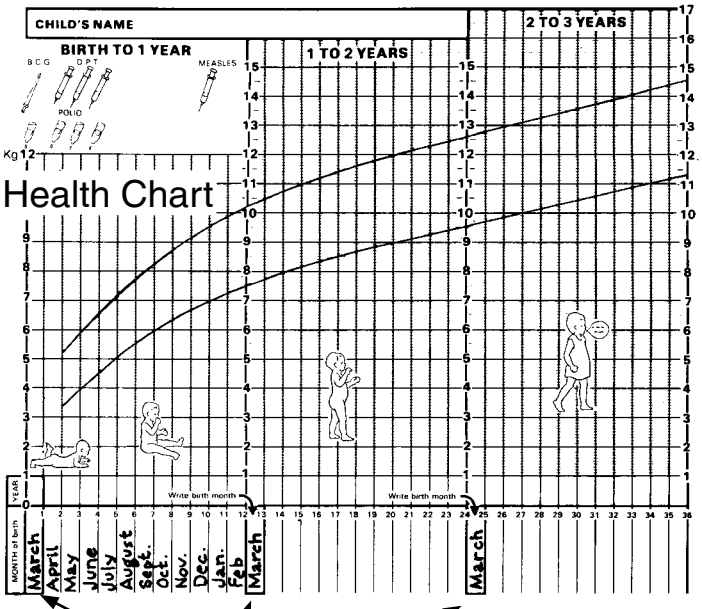
Date of visit _____

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SIDE TWO



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How to Use the Child Health Chart

FIRST, write the months of the year in the little squares at the bottom of the chart.

Write the month the baby was born in the first square for each year.
This chart shows the baby was born in March.



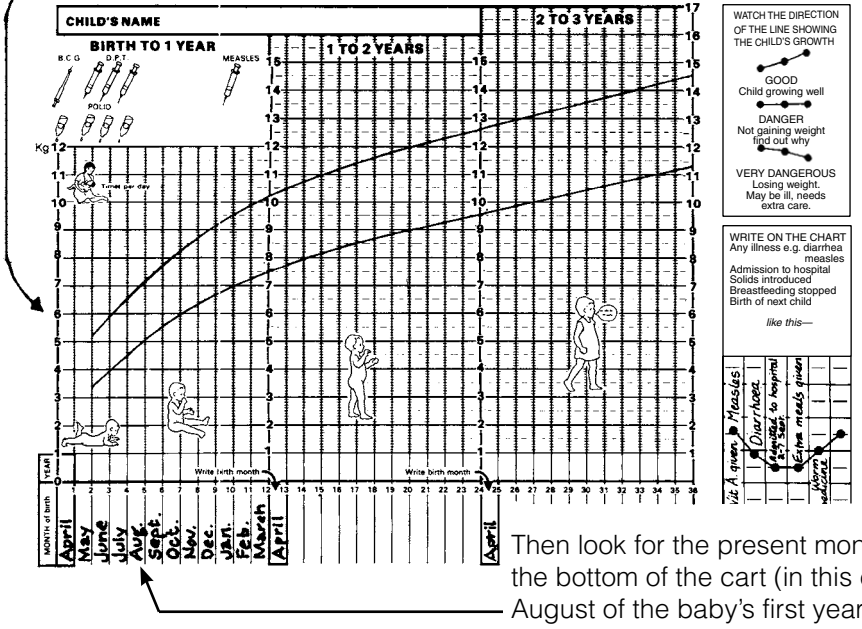
simple hanging scales

SECOND, weigh the child.

Let us suppose that a child was born in April. It is now August, and the child weighs 6 kilograms.

THIRD, look at the card.

Kilograms are written on the side of the card. Look for the number of kilograms the child weighs (in this case, 6).



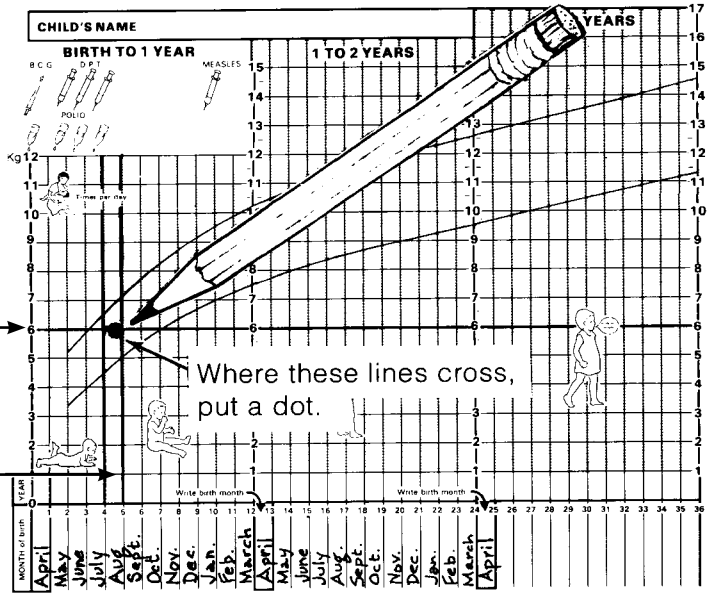
Then look for the present month at the bottom of the cart (in this case, August of the baby's first year).

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FOURTH, follow the line that goes out from the 6

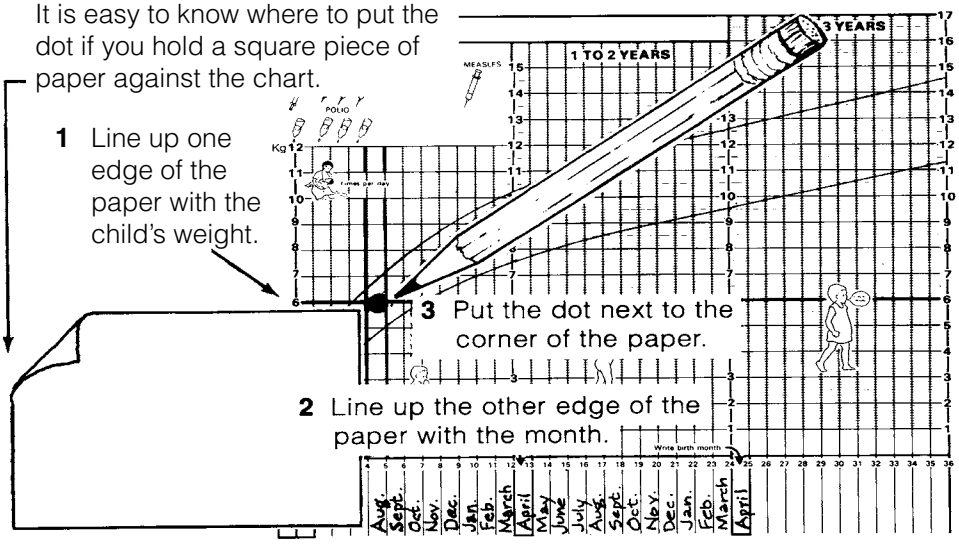
and

the lines that go up from August.



It is easy to know where to put the dot if you hold a square piece of paper against the chart.

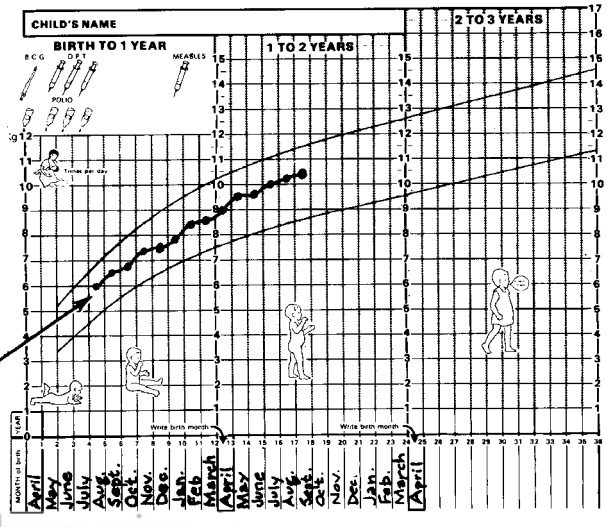
1 Line up one edge of the paper with the child's weight.



Each month weigh the child and put another dot on the chart.

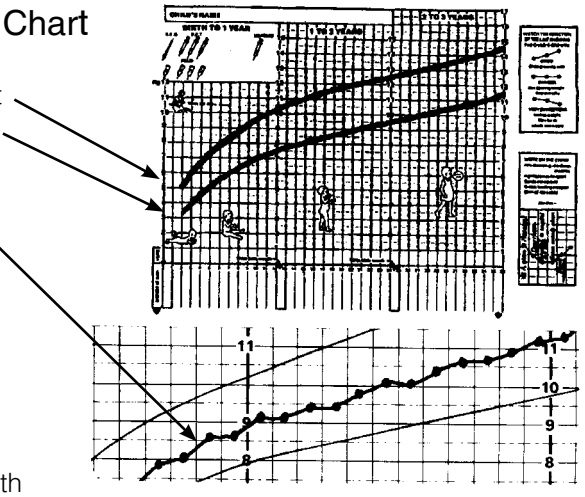
If the child is healthy, each month the new dot will be higher on the chart than the last.

To see how well the child is growing, join the dots with lines.



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How to Read the Child Health Chart



The 2 long curved lines on the chart mark the Road to Health that a child's weight should follow.

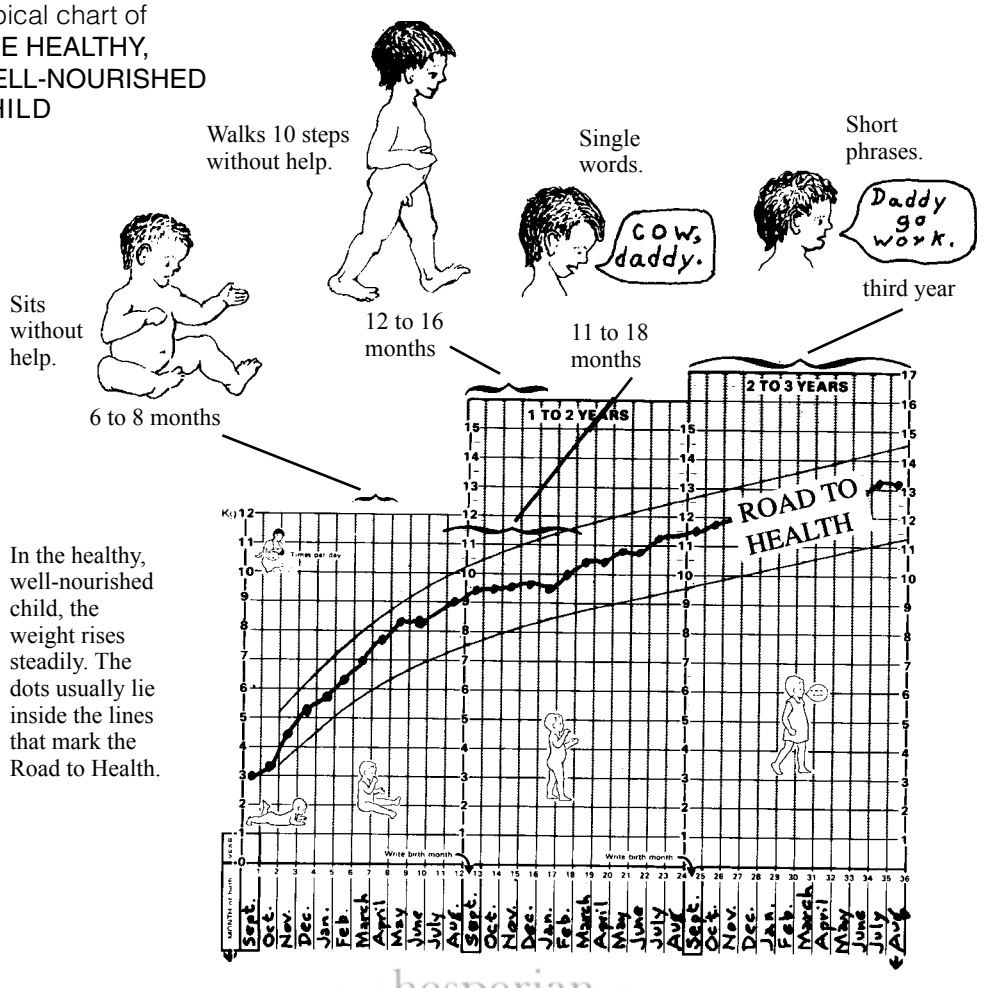
The line of dots marks the child's weight from month to month, and from year to year.

In most healthy children, the line of dots falls between the 2 long curved lines. That is why the space between these lines is called the Road to Health.

If the line of dots rises steadily, month after month, in the same direction as the long curved lines, this is also a sign that the child is healthy.

A healthy child who gets enough nourishing food usually begins to sit, walk, and speak at about the times shown here.

Typical chart of
THE HEALTHY, WELL-NOURISHED CHILD



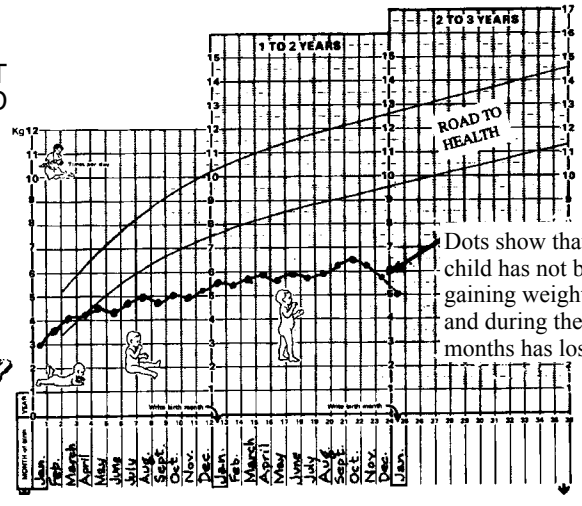
In the healthy, well-nourished child, the weight rises steadily. The dots usually lie inside the lines that mark the Road to Health.

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A malnourished, sickly child may have a chart like the one below. Notice that the line of dots (his weight) is below the Road to Health. The line of dots is also irregular and does not rise much. This shows the child is in danger.

Typical chart of
THE UNDERWEIGHT
OR MALNOURISHED
CHILD



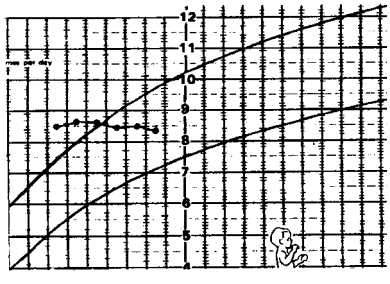


A child with a chart like the one above is seriously underweight. Perhaps he is not getting enough food. Or perhaps he has a disease like tuberculosis, HIV, or malaria. He should be given **more energy-rich foods more often**. He should also be checked or tested for possible illnesses, and visit a health worker frequently until his chart shows he is gaining weight well.

IMPORTANT: **Watch the direction of the line of dots.**

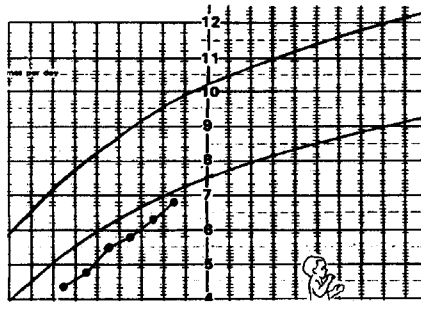
The direction of the line of dots tells more about the child's health than whether the dots are inside or below the two curved lines. For example:

DANGER! This child is not gaining weight.

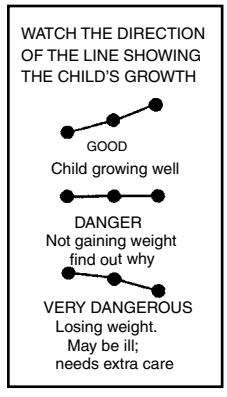


Although the dots for this child are within the curved lines. the child has not been gaining weight well for several months.

GOOD! This child is gaining weight well.



Although the dots for this child are below the 2 curved lines, their upward direction shows the child is growing well. Some children are naturally smaller than others. Perhaps this child's parents are also smaller than average.



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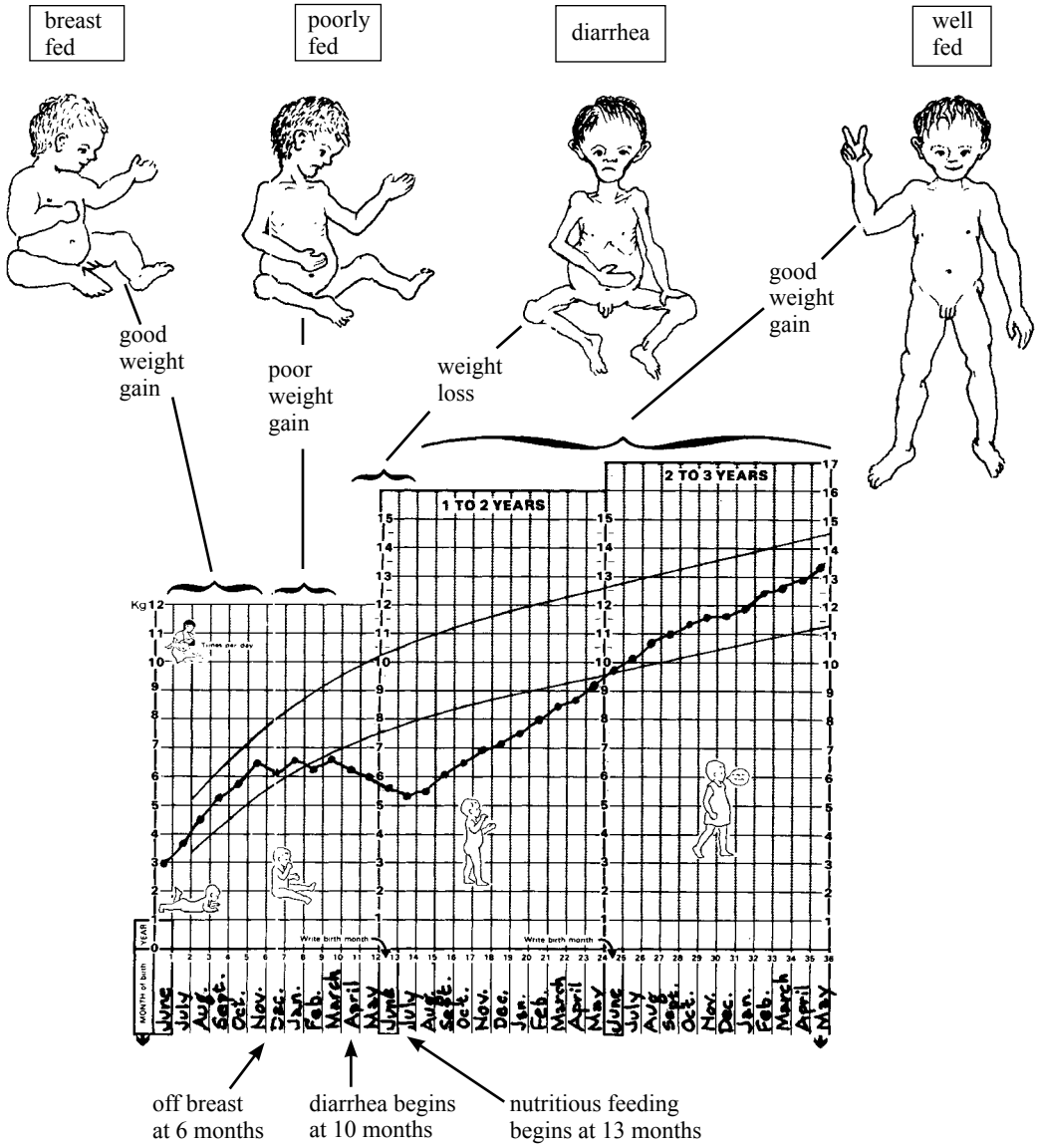
A TYPICAL CHILD HEALTH CHART SHOWING A CHILD'S PROGRESS:

This baby was healthy and gained weight well for the first 6 months of life, because his mother breastfed him.

At 6 months, the mother became pregnant again and stopped breastfeeding him. The baby was fed little more than corn and rice. He stopped gaining weight.

At 10 months he developed chronic diarrhea and began losing weight. He became very thin and sick.

When the child was 13 months old, his mother learned about ways to give the child enough good food, even without a lot of money or land. He began gaining weight fast. By age 2 he was back on the Road to Health.



Child Health Charts are important. **When used correctly, they help mothers know when their children need more nutritious food and special attention.** They help health workers better understand the needs of the child and his family. They also let the mother know when she is doing a good job.

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REVIEW OF CHILDREN'S HEALTH PROBLEMS DISCUSSED IN OTHER CHAPTERS

Many of the sicknesses discussed in other chapters of this book are found in children. Here some of the more frequent problems are reviewed in brief. For more information on each problem, see the pages indicated.

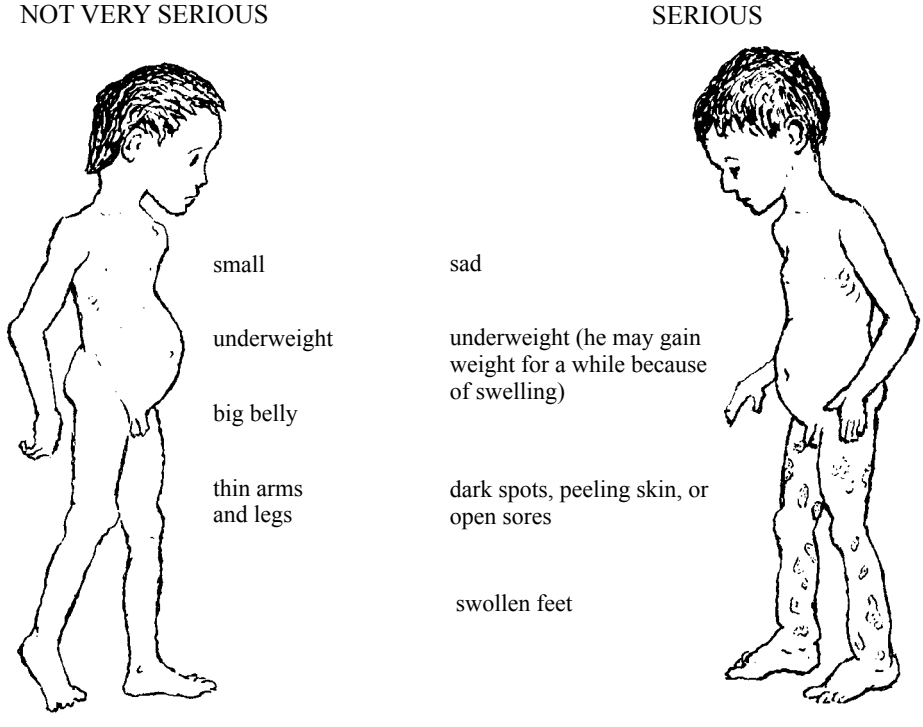
For special care and problems of newborn babies, see pages 270 to 275, and page 407.

Remember: In children, sicknesses often become serious very quickly. An illness that takes days or weeks to severely harm or kill an adult may kill a small child in hours. So, it is important to **notice early signs of sickness and attend to them right away.**

Malnourished Children

Many children are malnourished because they do not get enough to eat. Or if they eat mainly foods with a lot of water and fiber in them, like cassava, taro root, or maize gruel, their bellies may get full before they get enough energy food for their bodies' needs. Also, some children may lack certain things in their food, like vitamin A (p. 226) or iodine (p. 130). For a fuller discussion of the foods children need, see Chapter 11, especially pages 120 to 122.

THESE TWO CHILDREN ARE MALNOURISHED



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Malnutrition may cause many different problems in children, including:

In mild cases:

- slower growth
- swollen belly
- thin body
- loss of appetite
- loss of energy
- paleness (anemia)
- desire to eat dirt (anemia)
- sores in corners of mouth
- frequent colds and other infections
- night blindness

In more serious cases:

- little or no weight gain
- swelling of feet (sometimes face also)
- dark spots, bruises, or open peeling sores
- thinness or loss of hair
- lack of desire to laugh or play
- sores inside mouth
- cognitive delay
- dry eyes (xerophthalmia)
- blindness (p. 226)

Severe forms of general malnutrition are "dry malnutrition" or marasmus, and "wet malnutrition" or kwashiorkor. Their causes and prevention are discussed on p. 112 and 113.

Signs of malnutrition are often first seen after an acute illness like diarrhea or measles. A child who is sick, or who is getting well after a sickness, has an even greater need for enough good food than a child who is well.

Prevent and treat malnutrition by giving your children ENOUGH TO EAT and by feeding them MORE OFTEN. Add some high energy food, such as oil or fat, to the main food the child eats. Also try to add some body-building and protective foods like beans, lentils, fruits, vegetables, and if possible, milk, eggs, fish or meat.

Diarrhea and Dysentery

(For more complete information see pages 153 to 160.)



The greatest danger to children with diarrhea is **dehydration,** or losing too much liquid from the body. The danger is even greater if the child is also vomiting. Give **Rehydration Drink** (p. 152). If the child is breastfeeding, **continue giving breast milk,** but give Rehydration Drink also.

The second big danger to children with diarrhea is malnutrition. **Give the child nutritious food as soon as he will eat.**

Fever (p. 75)



In small children, high fever (over 39°C) can easily cause seizures. To lower fever, **take the clothes off** the child. If she is crying and seems unhappy, give her **acetaminophen** (paracetamol) or ibuprofen in the right dosage (p. 380), and give her lots of liquids. If she is very hot and shaky, **wet her with cool (not cold) water and fan her.** Also try to find the cause of the fever and treat it.

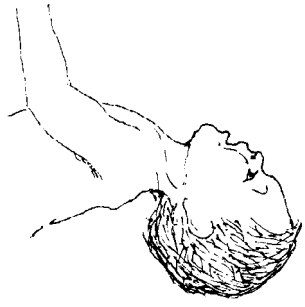
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Seizures (Convulsions) (p. 178)



Common causes of seizures or convulsions in children are high fever, dehydration, epilepsy, malaria, and meningitis. If fever is high, lower it rapidly (p. 76). Check for signs of dehydration (p. 151), malaria (p. 186), and meningitis (p. 185). Seizures that come suddenly without fever or other signs are probably epilepsy (p. 178), especially if the child seems well between them. Seizures or spasms in which first the jaw and then the whole body become stiff may be tetanus (p. 182).

Meningitis (p. 185)



This dangerous disease may come as a complication of measles, mumps, or another serious illness. Children of mothers who have tuberculosis may get tubercular meningitis. A very sick child who lies with his head tilted way back, whose neck is too stiff to bend forward, and whose body makes strange movements (seizures) may have meningitis.

Anemia (p. 124)

Common signs in children:

- pale, especially inside eyelids, gums, and fingernails
- weak, tires easily
- likes to eat dirt



Common causes:

- diet poor in iron (p. 124)
- chronic gut infections (p. 145)
- hookworm (p. 142)
- malaria (p. 186)

Prevention and Treatment:

- ♦ Eat iron-rich foods like meat and eggs. Beans, lentils, groundnuts (peanuts), and dark green vegetables also have some iron.
- ♦ Treat the cause of anemia—and do not go barefoot if hookworm is common.
- ♦ If you suspect hookworm, a health worker may be able to look at the child's stools under a microscope. If hookworm eggs are found, treat for hookworm (pages 375 to 377).
- ♦ If necessary, give iron salts by mouth (ferrous sulfate, p. 394).

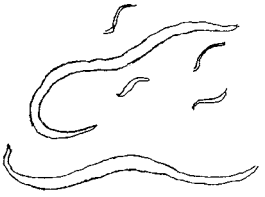
> *CAUTION:* **Do not give iron tablets to a baby or small child. They could poison her. Instead, give iron as a liquid. Or crush a tablet into powder and mix it with food.**

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Worms and Other Parasites of the Gut (p. 140)

If one child in the family has worms, all the family should be treated.
To prevent worm infections, children should:

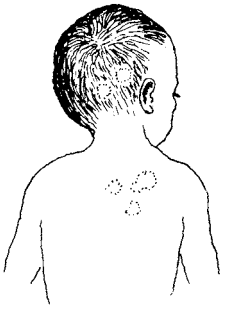
- Observe the Guidelines of Cleanliness (p. 133).
- Use latrines.
- Never go barefoot.
- Never eat raw or partly raw meat or fish.
- Drink only boiled or pure water.



Skin Problems (Chapter 15)

Those most common in children include:

- scabies (p. 199)
- infected sores and impetigo (pages 201 and 202)
- ringworm and other fungus infections (p. 205)

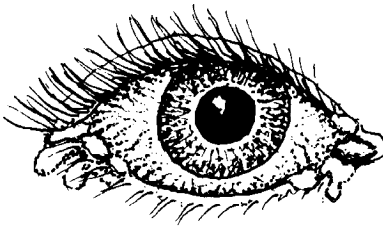


To prevent skin problems, observe the Guidelines of Cleanliness (p. 133).

- Bathe and delouse children often.
- Control bedbugs, lice, and scabies.
- Do not let children with scabies, lice, ringworm, or infected sores play or sleep together with other children. Treat them early.

Pink Eye (Conjunctivitis) (p. 219)

Wipe the eyelids clean with a clean wet cloth several times a day. Put an antibiotic eye ointment (p. 378) **inside** the eyelids 3 or 4 times a day. Do not let a child with pink eye play or sleep with others. If he does not get well in a few days, see a health worker.



Colds and the Flu (p. 163)

The common cold, with runny nose, mild fever, cough, often sore throat, and sometimes diarrhea is a frequent but not a serious problem in children.

Treat with lots of liquids. Give acetaminophen (p. 381). Let children who want to stay in bed do so. Good food and lots of fruit help children avoid colds and get well quickly.



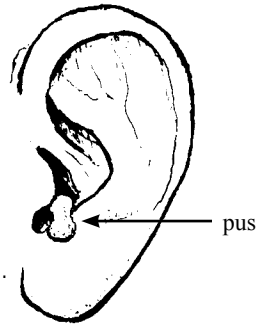
Penicillin, tetracycline, and other antibiotics do no good for the common cold or flu. Injections are not needed for colds.

If a child with a cold becomes very ill, with high fever and shallow, rapid breathing, he may be getting **pneumonia** (p. 171), and antibiotics should be given. Also watch for an ear infection (next page) or strep throat (p. 310).

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HEALTH PROBLEMS OF CHILDREN NOT DISCUSSED IN OTHER CHAPTERS

Earache and Ear Infections



Ear infections are common in small children. The infection often begins after a few days with a cold or a stuffy nose. The fever may rise, and the child often cries or rubs the side of his head. Sometimes pus can be seen in the ear. In small children an ear infection sometimes causes vomiting or diarrhea. So when a child has diarrhea and fever, be sure to check his ears.

Treatment:

- An ear infection may be very painful. But if the child is generally healthy, the infection usually goes away on its own. Give acetaminophen (p. 381) for pain.
- If the child is already in poor health, or if the ear infection does not go away after a few days, or if there is pus or blood, give amoxicillin (p. 352) or erythromycin (p. 354). **Always give antibiotics to a baby 6 months or younger with an ear infection.**
- Carefully clean pus out of the ear with cotton, but do not plug the ear with cotton, a stick, leaves, or anything else. Children with pus coming from an ear should bathe regularly but should not swim for at least 2 weeks after they are well.

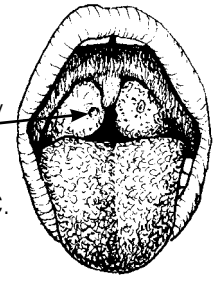
Prevention:

- Teach children to wipe but **not** to blow their noses when they have a cold.
- Do not bottle feed babies—or if you do, do not let baby feed lying on his back, as the milk can go up his nose and lead to an ear infection.
- When children's noses are plugged up, use salt drops and suck the mucus out of the nose as described on p. 164.

Infection in the ear canal:

To find out whether the canal or tube going into the ear is infected, gently pull the ear. If this causes pain, the canal is infected. Put drops of water with vinegar in the ear 3 or 4 times a day. (Mix 1 spoon of vinegar with 1 spoon of boiled water.) If there is fever or pus, also use an antibiotic.

Sore Throat and Inflamed Tonsils



These problems often begin with the common cold. The throat may be red and hurt when the child swallows. The tonsils (two lymph nodes seen as lumps on each side at the back of the throat) may become large, painful or drain pus. Fever may reach 40°C.

Treatment:

- Gargle with warm salt water (1 teaspoon of salt in a glass of water).
- Take acetaminophen for pain.
- Be sure the child drinks enough, even if it hurts to swallow. Try giving tea or watered down fruit juice.

If pain and fever come on suddenly or continue for more than 3 days, see the following page.

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Sore throat and the danger of rheumatic fever:

For the sore throat that often comes with the common cold or flu, antibiotics should usually not be used and will do no good. Treat with gargles and acetaminophen.

However, one kind of sore throat—called **strep throat**—should be treated with penicillin. It is most common in children and young adults. It usually begins suddenly with severe sore throat and high fever, often without signs of a cold or cough. The back of the mouth and tonsils become very red, and the lymph nodes under the jaw or in the neck may become swollen and tender.

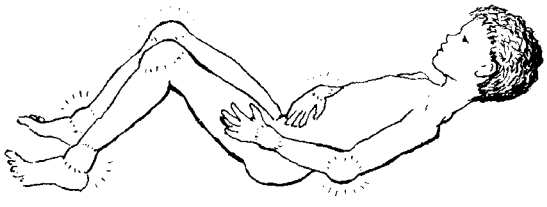
Give penicillin V (p. 351). If penicillin is given early and continued for 10 days, there is less danger of getting rheumatic fever. A child with strep throat should eat and sleep far apart from others, to prevent their getting it also.

Rheumatic Fever

This is a disease of children and young adults. It usually begins 1 to 3 weeks after the person has had a strep throat (see above).

Principal signs (usually only some of these signs are present):

- high fever
- joint pain, especially in the wrists and ankles, later the knees and elbows. Joints become swollen, and often hot and red.
- curved red lines or lumps under the skin
- uncontrolled movements
- in more serious cases, weakness, shortness of breath, and perhaps chest pain



Treatment:

- ♦ If you suspect rheumatic fever, see a health worker quickly. Early treatment can lessen the risk that the heart is damaged.
- ♦ Treat the infection. Give penicillin V (p. 351) by mouth for 10 days or benzathine benzylpenicillin (p. 352) by injection all at once. If allergic to penicillin, give azithromycin (p. 354) by mouth for 3 days.

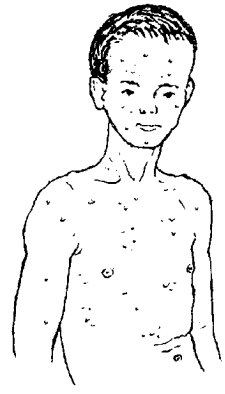
Prevention:

- ♦ A child who has had rheumatic fever may get it again, and heart damage is worse each time. For these children, treat any sore throat quickly with antibiotics (see above).
- ♦ For children who already have heart damage from rheumatic fever, give benzathine benzylpenicillin injections (p. 352) once a month for 10 years or until the child turns 21. For children under 30 kg, inject 600,000 units. For children 30 kg and over, inject 1.2 million units.

For more information about rheumatic fever, see ***Disabled Village Children***, Chapter 17.

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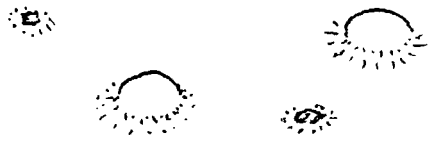
INFECTIOUS DISEASES OF CHILDHOOD



Chickenpox

This mild virus infection begins 2 to 3 weeks after a child is exposed to another child who has the disease.

Signs:



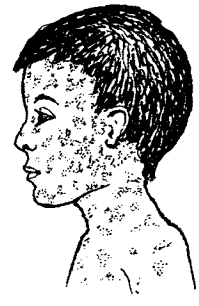
spots. blisters, and scabs

First many small, red, itchy spots appear. These turn into little pimples or blisters that pop and finally form scabs. Usually they begin on the body, and later on the face, arms, and legs. There may be spots, blisters, and scabs, all at the same time. Fever is usually mild.

Treatment:

The infection usually goes away in a week. Bathe the child daily with soap and warm water. To calm itching, apply cool cloths soaked in water from boiled and strained oatmeal. Cut fingernails very short. If the scabs get infected, keep them clean. Apply hot, wet compresses, and put an antibiotic ointment on them. Try to keep the child from scratching.

Measles



This severe virus infection is **especially dangerous in children** who are **poorly nourished** or have **tuberculosis**. Ten days after being near a person with measles, it begins with signs of a cold—fever, runny nose, red sore eyes, and cough.

The child becomes increasingly ill. The mouth may become very sore and he may develop diarrhea.

After 2 or 3 days a few tiny white spots like salt grains appear in the mouth. A day or 2 later the rash appears—first behind the ears and on the neck, then on the face and body, and last on the arms and legs. After the rash appears, the child usually begins to get better. The rash lasts about 5 days. Sometimes there are scattered black spots caused by bleeding into the skin ("black measles"). This means the attack is very severe. Get medical help.

Treatment:

- The child should stay in bed, drink lots of liquids, and be given nutritious food. If she cannot swallow solid food, give her liquids like soup. If a baby cannot breastfeed, give breast milk in a spoon (p. 120).
- If possible, give vitamin A to prevent eye damage (p. 393).
- For fever and discomfort, give acetaminophen (or ibuprofen).
- If earache develops, give an antibiotic (p. 350).
- If signs of pneumonia, meningitis, or severe pain in the ear or stomach develop, get medical help.
- If the child has diarrhea, give Rehydration Drink (p. 152).

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Prevention of measles:

Children with measles should keep far away from other children, even from brothers and sisters. Especially try to protect children who are poorly nourished or who have tuberculosis or other chronic illnesses. Children from other families should not go into a house where there is measles. If children in a family where there is measles have not yet had measles themselves, they should not go to school or into stores or other public places for 10 days.

To prevent measles from killing children, make sure all children are well-nourished. And have your children vaccinated against measles.

German Measles (Rubella)

German measles are not as severe as regular measles. They last 3 or 4 days. The rash is mild. Often the lymph nodes on the back of the head and neck become swollen and tender. There is often a low fever.

The child should stay in bed and take acetaminophen or ibuprofen if necessary.

Getting German measles in the first 3 months of pregnancy increases the chance of giving birth to a child with a disability. For this reason, people who are pregnant who have not yet had German measles—or are not sure—should keep far away from children who have this kind of measles. A vaccine preventing German measles is part of the common vaccine against mumps, measles and rubella (MMR). Vaccinating all children protects them and helps keep rubella away from anyone who is pregnant.

Mumps

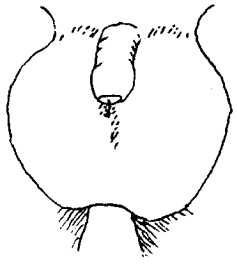


The first symptoms begin 2 or 3 weeks after being exposed to someone with mumps.

Mumps begin with fever and pain on opening the mouth or eating. In 2 days, a soft swelling appears below the ears at the angle of the jaw. Often it comes first on one side, and later on the other side.

Treatment:

The swelling goes away by itself in about 10 days, without need for medicine. Acetaminophen or ibuprofen can be taken for pain and fever. Feed the child soft, nourishing foods and keep his mouth clean.



Complications:

In adults and children over 11 years of age, after the first week there may be pain in the belly or a painful swelling of the testicles in men. Persons with such swelling should stay quiet and put ice packs or cold wet cloths on the swollen parts to help reduce the pain and swelling.

If signs of meningitis or hearing problems appear, get medical help (p. 185).

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Whooping Cough (Pertussis)



Whooping cough begins a week or two after being exposed to a child who has it. It starts like a cold with fever, a runny nose, and cough.

Two weeks later, the whoop begins. The child coughs rapidly many times without taking a breath, until she coughs up a plug of sticky mucus, and the air rushes back into her lungs with a loud whoop. While she is coughing, her lips and nails may turn blue for lack of air. After the whoop, she may vomit. Between coughing spells the child seems fairly healthy.

Whooping cough often lasts 3 months or more.

Whooping cough is especially dangerous in babies under 1 year of age, so vaccinate children early. Small babies do not develop the typical whoop so it is hard to be sure if they have whooping cough or not. If a baby gets fits of coughing and swollen or puffy eyes when there are cases of whooping cough in your area, treat her for whooping cough at once.

Treatment:

- Antibiotics are helpful only in the early stage of whooping cough, before the whoop begins. It is especially important to treat babies under 6 months at the first sign. Use erythromycin (p. 354). If you do not have erythromycin, try cotrimoxazole (p. 357), but only use cotrimoxazole for children over 8 weeks old.
- If the cough causes convulsions, phenobarbital (p. 391) may help.
- If the baby stops breathing after a cough, turn her over and pull the sticky mucus from her mouth with your finger. Then slap her on the back with the flat of your hand.
- To avoid weight loss and malnutrition, be sure the child gets enough nutritious food. Have her eat and drink shortly after she vomits.

Complications:

A bright red hemorrhage (bleeding) inside the white of the eyes may be caused by the coughing. No treatment is necessary (p. 225). If seizures or signs of pneumonia develop (p. 171), get medical help.

Vaccinate all children against whooping cough. Babies get a series of 3 injections of the combined diptheria, pertusis and tetanus (DPT) vaccine.



Diphtheria

This begins like a cold with fever, sore throat, and hoarse voice. A yellow-gray coating or membrane may form in the back of the throat, and sometimes in the nose and on the lips. The child's neck may become swollen. His breath smells very bad.

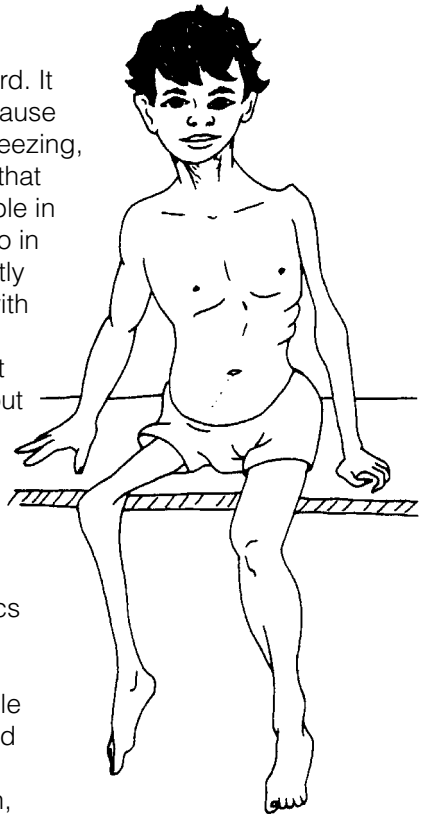
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If you suspect that a child has diphtheria:

- Put him to bed in a room separate from other persons.
- Get medical help quickly. There is special antitoxin for diphtheria.
- Give procaine penicillin by injection (p. 352) or give erythromycin (p. 354).
- Have him gargle warm water with a little salt.
- Have him breathe hot water vapors often or continually (p. 168).
- Have him sip liquids often, even if it hurts to swallow.
- If the child begins to choke and turn blue, try to remove the membrane from his throat using a cloth wrapped around your finger.

Diphtheria is a dangerous disease that can easily be prevented with the DPT vaccine. **Be sure your children are vaccinated.**

Polio (Poliomyelitis)



Polio is caused by a virus that attacks the spinal cord. It damages the nerves that control movement and can cause *paralysis*. The virus spreads through coughing and sneezing, or when a healthy child gets something in their mouth that has touched the stool (shit) of an infected child, possible in areas with poor sanitation. Vaccination has ended polio in most of the world, but where it is still a problem, it mostly affects children under 5. Most who become infected with polio show no signs. When there are signs, it may look like a bad cold with fever, vomiting, and diarrhea. Most children with polio do not become paralyzed, only about 1 in every 100.

Treatment:

There is no cure for polio, and once paralysis has started, no medicine will stop it. (However, sometimes part or all of the lost strength slowly returns.) Antibiotics do not help. For early treatment, calm the pain with acetaminophen or ibuprofen and put hot compresses on painful muscles. Position the child to be comfortable and avoid *contractures*. Gently straighten his arms and legs so that the child lies as straight as possible. Put cushions under his knees, if necessary to reduce pain, but try to keep his knees straight. For more information see ***Disabled Village Children***, Chapter 7.

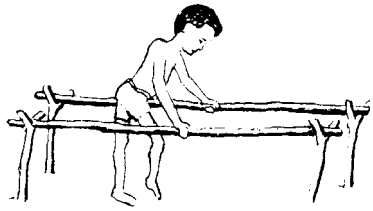
Prevention:

- Vaccination against polio is the best protection (p. 147).
- Breastfeed your baby as long as possible. Breast milk protects your baby against infections, including polio.

Vaccinate all children against polio.

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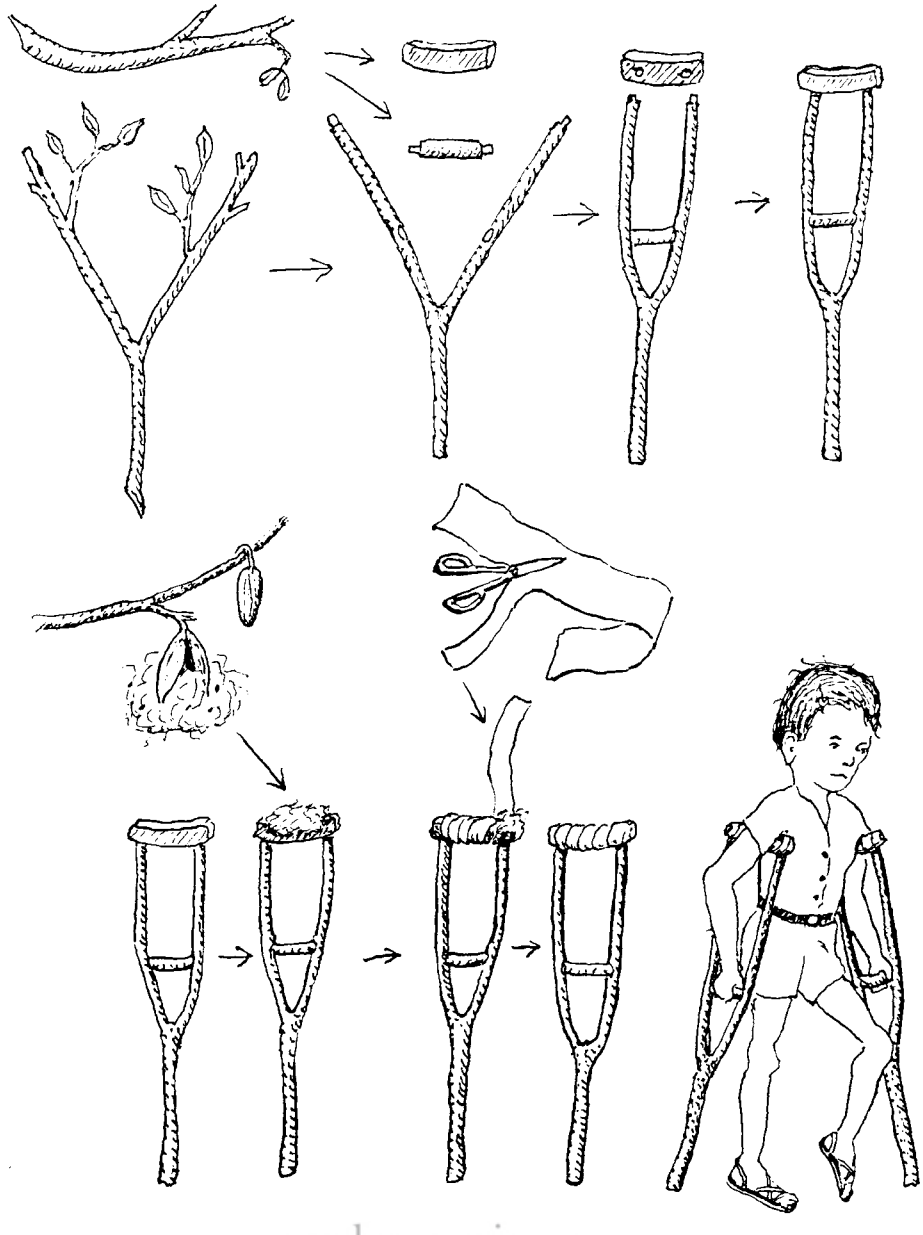
A child with paralysis caused by polio should eat nutritious food and do exercises to strengthen his other muscles.



Help the child learn to walk as best he can. Fix 2 poles for support, like these, and later make him some crutches. Leg braces (calipers), crutches, and other aids may help the child to move better and may prevent further disabilities from developing.

For more information about helping children with disabilities, see ***Disabled Village Children.***

HOW TO MAKE SIMPLE CRUTCHES

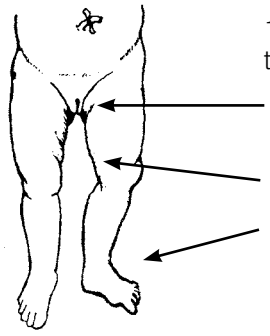


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PROBLEMS CHILDREN ARE BORN WITH

Dislocated Hip

Some children are born with a dislocated hip—the leg has slipped out of its joint in the hip bone. If treatment is given early, the child will later walk without a limp. So babies should be checked for possible hip dislocation at about 10 days after birth.



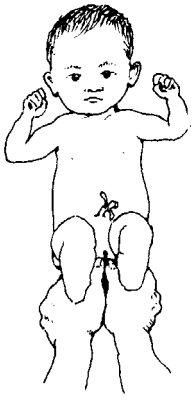
1. Compare the 2 legs. If one hip is dislocated, that side may show:

The upper leg partly covers this part of the body on the dislocated side.

There are fewer folds here.

The leg seems shorter or the knee and foot point outwards.

2. Hold both legs with the knees doubled, like this,



and open them wide like this.



If one leg stops early or makes a jump or click when you open it wide, the hip is dislocated.

Treatment:

Keep the baby with knees high and wide apart. There are several ways to do this.

The best option is a Pavlik Harness, which holds the baby's hips in the correct position and is only removed for bathing.



If you do not have access to this, use 2 to 3 diapers (nappies) at the same time. The extra layers will help hold the baby's hips in the correct position.



You can also carry the baby with legs apart on your hips or back.

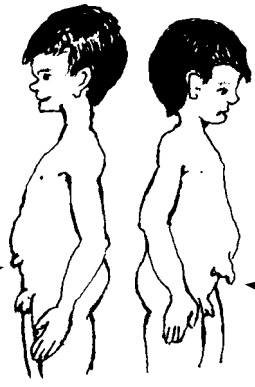


For more information see ***Disabled Village Children,*** Chapter 18.

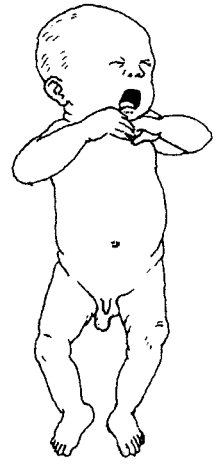
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Umbilical Hernia (Belly Button that Sticks Out)

A belly button that sticks out like this is no problem. No medicine or treatment is needed. Tying a tight cloth or "belly band" around the belly will not help.



Even a big umbilical hernia like this one is not dangerous and will often go away by itself. If it is still there after age 5, an operation may be needed. Get medical advice.

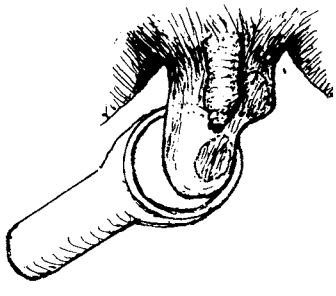


A Swollen Testicle (Hydrocele or Hernia)

If a baby's ***scrotum***, or bag that holds his testicles, is swollen on one side, this is usually because it is filled with liquid (a hydrocele) or because a loop of gut has slipped into it (a hernia).

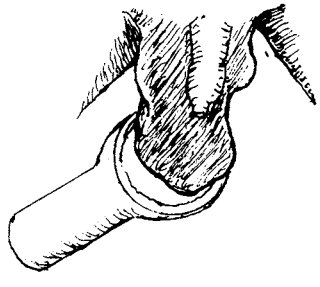
To find out which is the cause, shine a light through the swelling.

If light shines through easily, it is probably a **hydrocele.**



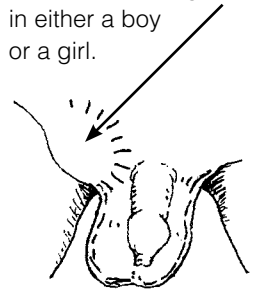
A hydrocele usually goes away in time, without treatment. If it lasts more than a year, get medical advice.

If light does not shine through, and if the swelling gets bigger when the baby coughs or cries, it is a **hernia.**



A hernia needs surgery (p. 177).

Sometimes the **hernia** causes a swelling here in either a boy or a girl.



You can tell this from a swollen lymph node (p. 88) because the hernia swells when the baby cries or is held upright and disappears when he lies quietly.

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CHILDREN WITH PHYSICAL DISABILITIES OR COGNITIVE DELAY

Sometimes parents will have a child who is born with a physical disability or with cognitive delay. Often no reason can be found. No one should be blamed. Often it just seems to happen by chance.

However, certain things greatly increase the chance of disabilities present at birth.

1. **Lack of nutritious food** during pregnancy can cause disabilities present at birth or cognitive delay. To have healthy babies, pregnant women must eat enough nutritious food (p. 110).

2. **Lack of iodine** in a pregnant woman's diet can cause *hypothyroidism* in her baby. The baby's face is puffy, and he looks dull. His skin and eyes may remain yellow (jaundiced) for a long time after he is born. His tongue hangs out, and his forehead may be hairy. He is weak, feeds poorly, cries little, and sleeps a lot. He has cognitive delay, may have hearing loss, and usually has an umbilical hernia. He will take longer to start walking and talking than other children his age.



HYPOTHYROIDISM

To help prevent hypothyroidism, pregnant women should use iodized salt instead of ordinary salt (p. 130).

If you suspect your baby may have hypothyroidism, take him to a health worker or doctor at once. Early and continued treatment with thyroid medicine helps improve growth and physical appearance, and may reduce or prevent cognitive delay.

3. **Smoking or drinking alcohol** during pregnancy causes babies to be born small or to have other problems (p. 149). **Do not drink or smoke—especially during pregnancy.**

4. **After age 35,** there is more chance that a mother will have a child with disabilities. Down syndrome, which looks somewhat like hypothyroidism, is more likely to occur in babies of older mothers. Be aware of your risk of having children born with certain disabilities so you can take this into account when building a family.

5. The mother had Zika (p. 187) while pregnant.

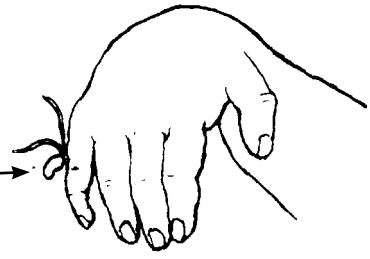
6. **Many medicines** can harm the baby developing inside a pregnant mother. **Use as little medicine as possible during pregnancy—and only those known to be safe.**

7. **Living near factories or industrial farms** can expose you to toxic chemicals that can cause disabilities present at birth. See *A Community Guide to Environmental Health.*

8. **When parents are blood relatives** (cousins, for instance), there is a higher chance that their children will have disabilities present at birth or cognitive delay. **Cross-eyes, extra fingers or toes, club feet, cleft lip,** and **cleft palate** are common. To lower the chance of these and other problems, do not marry a close relative.

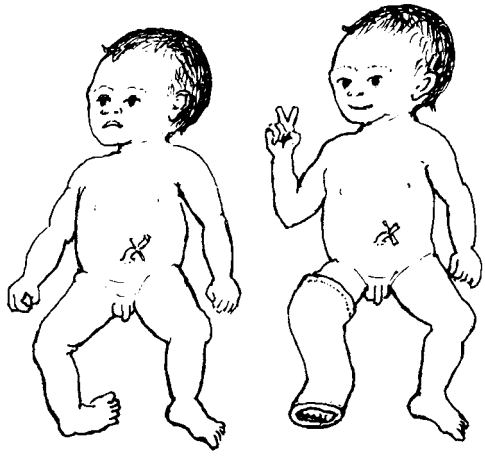
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If your child is born with a disability, take him to a health center. There are many ways a child can be helped.



- For cross-eyes, see page 223.

- If an extra finger or toe is very small with no bone in it, tie a string around it very tightly. It will dry up and fall off. If it is larger or has bone in it, either leave it or have it taken off by surgery.



CLUB FOOT WITH CAST

- If a newborn baby's feet are turned inward or bent (clubbed), try to bend them to a typical shape. If you can do this easily, repeat this several times each day. The feet (or foot) should slowly straighten out by themselves in the first few years of life.

  If you cannot bend the baby's feet, take him **at once** to a health center where his feet can be strapped in a correct position or put in casts. For the best results, it is important to **do this within 2 days after birth.**



CLEFT LIP AND CLEFT PALATE

- If a baby's lip or the top of his mouth *(palate)* is divided *(cleft)*, he may have trouble breastfeeding and need to be fed with a spoon or dropper. Surgery can improve the child's looks, eating ability, and speech. The best age for surgery is usually at 4 to 6 months for the lip, and at 18 months for the palate.

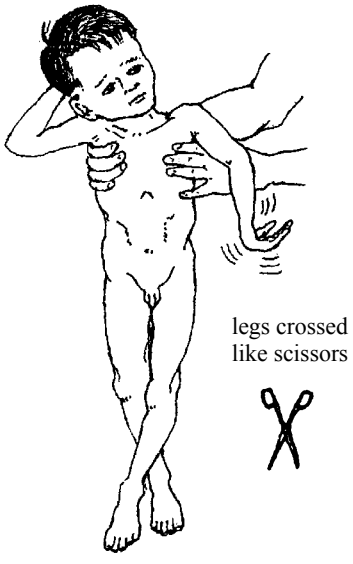
8. **Difficulties before and during birth** sometimes result in **brain injury** that causes a child to develop cerebral palsy or have **seizures (convulsions)**. The chance of injury is greater if at birth the baby takes longer to start breathing, or if the midwife or doctor injected the mother with medicine to speed up the birth or to "give force" to the mother (p. 266) before the baby was born.

Be careful in your choice of a doctor or midwife—and do not let them use medicines to speed up the birth.

For more information on children born with disabilities, see *Disabled Village Children*, Chapter 12.

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Children with Spasticity (Cerebral Palsy)



A child with spasticity has tight, stiff muscles that he has difficulty controlling. His face, neck, or body may twist, and his movements may be jerky. Often the tight muscles on the inside of his legs cause them to cross like scissors.

At birth the child may seem typical or perhaps floppy. The stiffness comes as he gets older. He may or may not have cognitive delay.

Cerebral palsy often results from brain injury at birth, caused by the baby not breathing soon enough, or from meningitis in early childhood.

There are no medicines that cure the brain injury that causes spasticity. But the child needs special care. To help prevent tightening of muscles in the legs or in a foot, straighten and bend them **very slowly** several times a day.

Help the child learn to roll over, sit, stand—and if possible to walk (as on p. 314). Encourage him to use both his mind and body as much as he can (p. 322). **Help him to help himself.**

For more information on cerebral palsy, see *Disabled Village Children*, Chapter 9.

TO HAVE A HEALTHY BABY, A PREGNANT PERSON SHOULD:

1. Not have children with a cousin or other close relative.
2. Eat as well as possible during pregnancy: as much beans, fruit, vegetables, meat, eggs, and milk products as you can.
3. Use iodized salt instead of regular salt, especially during pregnancy.
4. Not smoke or drink during pregnancy (p. 149).
5. Avoid medicines as much as possible during pregnancy—use only those known to be safe.
6. Not work in factories which use a lot of chemicals and avoid using strong chemical cleaners at home.
7. Keep away from persons with German measles during pregnancy.
8. Be careful in the selection of a midwife or doctor—and do not let them use medicines to speed up the birth or "give strength" to the mother (p. 266).
9. Be aware that risk of having children born with certain disabilities increases as parents get older, and if family members have certain conditions.

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Delayed Development in the First Months of Life

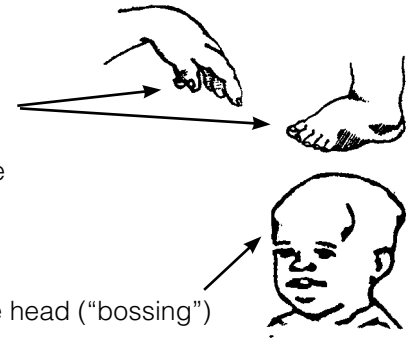
Some children who are born healthy take longer to develop because they do not eat enough nutritious food. During the first few months of life the brain develops more rapidly than at any other time. For this reason the nutrition of the newborn is of great importance. Breast milk is the best food for a baby (see The Best Diet for Babies, p. 120). Test babies for HIV if they are slow to develop or sickly.

Sickle Cell Disease (Sickle Cell Anemia)

Some children, most commonly of African or Indian ancestry, are born with a condition called sickle cell disease. This disease is passed on from the parents, who often do not know they carry the sickle cell trait. Signs may not appear in a baby until 6 months of age or later.

Signs:

- fever and crying
- occasional swelling of the feet and fingers which lasts for 1 or 2 weeks
- big belly that feels hard at the top
- anemia, and sometimes yellow color in the eyes (jaundice)
- child frequently sick (cough, diarrhea)
- child grows slowly
- by age 2, bony bumps may appear on the head ("bossing")



Malaria or other infections can bring on a sickle cell crisis with high fever and severe pain in the arms, legs, or belly. Anemia becomes much worse. Swellings on the bones may discharge pus. The child may die.

Treatment:

There is no way to change the weakness in the blood. Protect the child from malaria and other diseases and infections that can bring on a crisis. Take the child for regular monthly visits to a health worker for an examination and medicines.

- **Malaria.** In areas where malaria is common, the child may need ongoing malaria medicines to help prevent the disease. Add to this a daily dose of folic acid (p. 394) to help build up the blood. Iron supplements (ferrous sulfate) are not usually necessary.

- **Infections.** The child should be vaccinated against measles, whooping cough, and tuberculosis at the earliest recommended time. If the child shows signs of fever, cough, diarrhea, passing urine too often, or pains in the belly, legs or arms, take him to a health worker as soon as possible. Antibiotics may be necessary. Give plenty of water to drink, and acetaminophen (p. 381) for pain in the bones.

- **Avoid exposure to cold.** Keep warm with a blanket at night when necessary. Use a foam mattress if possible.

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HELPING CHILDREN LEARN

As a child grows, she learns partly from what she is taught. Knowledge and skills she learns in school may help her to understand and do more later. School can be important.

But a child does much of her learning at home or in the forest or fields. She learns by watching, listening, and trying for herself what she sees others do. She learns not so much from what people tell her, as from how she sees them act. **Some of the most important things a child can learn—such as kindness, responsibility, and sharing—can be taught only by setting a good example.**

A child learns through adventure. She needs to learn how to do things for herself, even though she makes mistakes. When she is very young, protect a child from danger. But as she grows, help her learn to care for herself. Give her some responsibility. Respect her judgment, even if it differs from your own.

When a child is young, she thinks mostly of filling only her own needs. Later, she discovers the deeper pleasure of helping and doing things for others. Welcome the help of children and let them know how much it means.

Children who are not afraid ask many questions. If parents, teachers, and others take the time to answer their questions clearly and honestly—and to say they do not know when they do not—a child will keep asking questions, and as she grows may look for ways to make her surroundings or her village a better place to live.

Some of the best ideas for helping children learn and become involved in community health care have been developed through the Child to Child program. This is described in *Helping Health Workers Learn,* Chapter 24.



Or write to:
Child to Child
Institute of Education
20 Bedford Way
London WC1H 0AL
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Tel: +44 207-612-6649
email: info@childtochild.org.uk
website: https://www.childtochild.org.uk/

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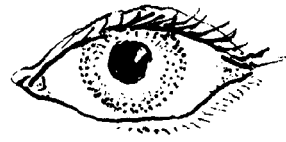
CHAPTER
22

Health and Sicknesses of Older People

This chapter is about the prevention and treatment of problems seen mostly in older persons.

SUMMARY OF HEALTH PROBLEMS DISCUSSED IN OTHER CHAPTERS

Difficulties with Vision (p. 217)



After the age of 40, many people have problems seeing close objects clearly. They are becoming *farsighted.* Often glasses will help.

Everyone over age 40 should watch for signs of glaucoma, which can cause blindness if left untreated. Any person with signs of glaucoma (p. 222) should seek medical help.

Cataracts (p. 225) and "floaters" before the eyes (tiny moving spots, p. 227) are also common problems of old age.

Weakness, Tiredness, and Eating Habits

Old people understandably have less energy and strength than when they were younger, but they will become even weaker if they do not eat well. Although older people often do not eat very much, they should eat some body building and protective foods every day (pages 110 to 111).

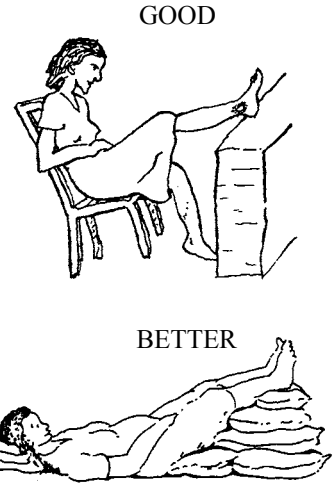


Swelling of the Feet (p. 176)

This can be caused by many diseases, but in older people it is often caused by poor circulation or heart trouble (p. 325). Whatever the cause, **keeping the feet up is the best treatment.** Walking helps too—but do not spend much time standing or sitting with the feet down. Keep the feet up whenever possible.

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Chronic Sores of the Legs or Feet (p. 213)



These may result from poor circulation, often because of varicose veins (p. 175). Sometimes diabetes is part of the cause (p. 127). For other possibilities, see page 20.

Sores that result from poor circulation heal very slowly.

Keep the sore as clean as possible. Wash it with boiled water and mild soap and change the bandage often. If signs of infection develop, treat as directed on p. 88.

When sitting or sleeping, keep the foot up.

Difficulty Urinating (p. 235)

Older men who have difficulty urinating or whose urine drips or dribbles are probably suffering from an enlarged prostate gland. See page 235.

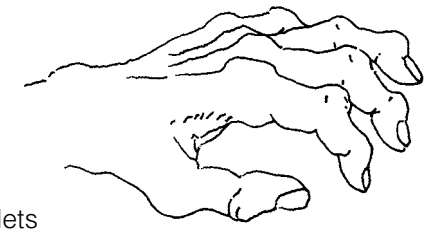
Chronic Cough (p. 168)



Older people who cough a lot should not smoke and should seek medical advice. If they had symptoms of tuberculosis when they were younger, or have ever coughed up blood, they may have tuberculosis.

If an older person develops a cough with wheezing or trouble breathing (asthma) or if his feet also swell, he may have heart trouble (see the next page).

Rheumatoid Arthritis (painful joints) (p. 173)



Many older people have arthritis.

To help arthritis:

- Rest the joints that hurt.
- Apply hot compresses (p. 195).
- Take a medicine for pain; aspirin is best. For severe arthritis, take 2 to 3 aspirin tablets up to 6 times a day with bicarbonate of soda, an antacid (p. 382), milk, or a lot of water. (If the ears begin to ring, take less.)
- It is important to do exercises that help maintain as much movement as possible in the painful joints.

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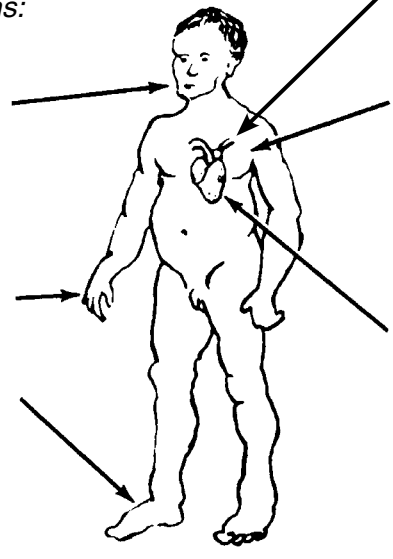
OTHER IMPORTANT ILLNESSES OF OLD AGE

Heart Trouble

Heart disease is more frequent in older people, especially in those who are fat, who smoke, or who have high blood pressure. Men and women share many of the same signs below, but women more often have unexplained tiredness, sleeping problems, and shortness of breath. Women also feel an ache or tightness in the chest more than the sharper pains felt by men.

Signs of heart problems:

- Anxiety and difficulty in breathing after exercise; asthma-like attacks that get worse when the person lies down (cardiac asthma).
- A rapid, weak, or irregular pulse.
- Swelling of the feet—worse in the afternoons.

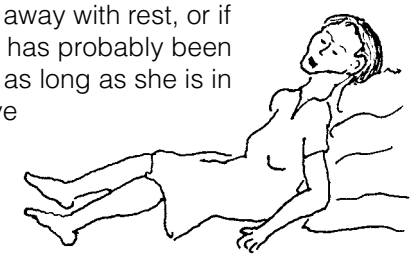


- Shortness of breath without exercise, unexplained tiredness, weakness, dizziness.
- Sudden, painful attacks in the chest, left shoulder, or arm that occur when exercising and go away after resting for a few minutes (angina pectoris).
- A sharp pain like a great weight crushing the chest; does not go away with rest (heart attack).
- In women, a feeling like indigestion, nausea, clamminess, spasms, jaw pain (heart attack).

Treatment:

- Different heart diseases may require different specific medicines, which must be used with great care. If you think a person has heart trouble, seek medical help. It is important that he have the right medicine when he needs it.
- People with heart trouble should not work so hard they get chest pain or have trouble breathing. However, regular exercise helps prevent heart attacks.
- Persons with heart problems should not eat greasy food. Also, they should not smoke or drink alcohol.
- If an older person begins having attacks of difficult breathing or swelling of the feet, he should eat food that contains little or no salt for the rest of his life.
- Take a low-dose aspirin tablet (75 to 81 mg) daily to prevent heart attack or stroke.
- If a person has angina pectoris or heart attack, she should rest very quietly in a cool place until the pain goes away.

If the chest pain is very strong and does not go away with rest, or if the person shows signs of **shock** (p. 77), the heart has probably been severely damaged. The person should stay in bed as long as she is in pain or shock. Then she can begin to sit up or move slowly, but should stay very quiet for a month or more. Consider getting medical help.



Prevention: See the next page.

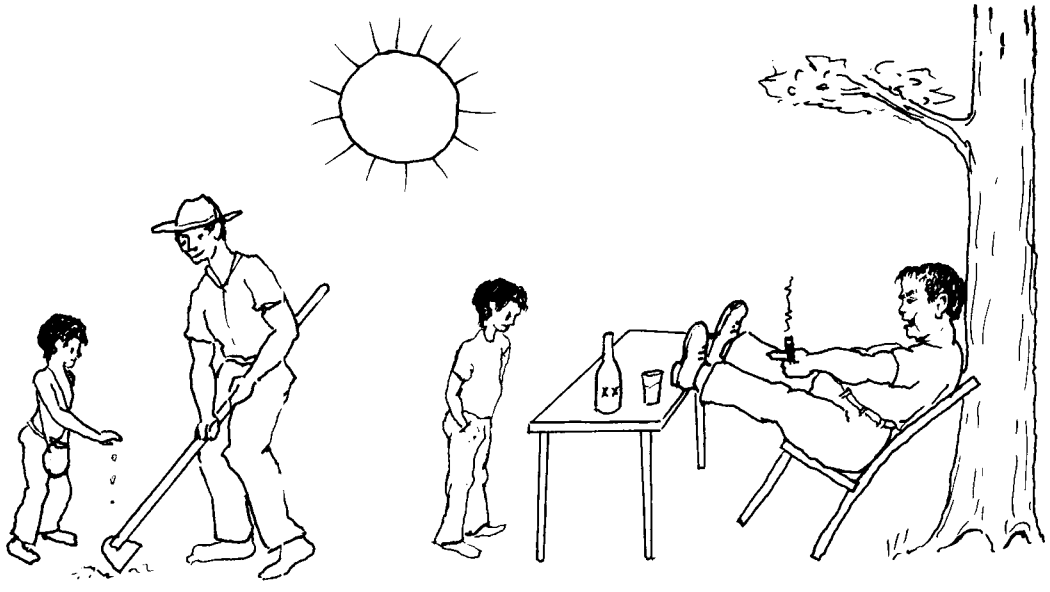
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Words to Younger Persons Who Want to Stay Healthy When They Are Older

Many of the health problems of middle and old age, including high blood pressure, hardening of the arteries, heart disease, and stroke, result from the way a person has lived and what he ate, drank, and smoked when younger. Your chances for living and staying healthy longer are greater if you:

1. **Eat well—**enough nutritious foods, but not much rich, greasy, salty, or highly processed foods. Cook with vegetable oil rather than animal fat.
2. **Do not drink a lot of alcoholic drinks.**
3. **Do not smoke.**
4. **Keep physically and mentally active.**
5. **Try to get enough rest and sleep.**
6. **Learn how to relax** and deal positively with things that worry or upset you.

High blood pressure (p. 125) and hardening of the arteries (arteriosclerosis), which are the main causes of heart disease and stroke, can usually be prevented—or reduced—by doing the things recommended above. The lowering of high blood pressure is important in the prevention of heart disease and stroke. Persons who have high blood pressure should have it checked from time to time and take measures to lower it. For those who are not successful in lowering their blood pressure by eating well, giving up smoking, getting more exercise, and learning to relax, taking medicines to lower blood pressure (antihypertensives) may help.



Which of these two men is likely to live longer and be healthy in his old age?
Which is more likely to die of a heart attack or a stroke? Why? How many reasons can you count?

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Stroke (Apoplexy, Cerebro-Vascular Accident, CVA)

In older people ***stroke*** or ***cerebro-vascular accident*** (CVA) commonly results from a blood clot or from bleeding inside the brain. The word ***stroke*** is used because this condition often strikes without warning. The person may suddenly fall down, unconscious. Her face is often reddish, her breathing hoarse and noisy, her pulse strong and slow. She may remain in a coma (unconscious) for hours or days.



If she lives, she may have trouble speaking, seeing, or thinking, or one side of her face and body may be paralyzed. In minor strokes, some of these same problems may result without loss of consciousness. The difficulties caused by stroke sometimes get better with time.

Treatment:

Put the person in bed with her head a little higher than her feet. If she is unconscious, roll her head back and to one side so her saliva (or vomit) runs out of her mouth, rather than into her lungs. While she is unconscious, give no food, drink, or medicines by mouth (see the Unconscious Person, p. 78). If possible, seek medical help.

After the stroke, if the person remains partly paralyzed, help her to walk with a cane and to use her good hand to care for herself. She should avoid heavy exercise and anger.

Prevention: See the page before this one.

Note: If a younger or middle aged person suddenly develops paralysis on one side of his face, with no other signs of stroke, this is probably a temporary paralysis of the face nerve (Bell's Palsy). It will usually go away by itself in a few weeks or months. The cause is usually not known. No treatment is needed but hot soaks may help. If one eye does not close all the way, bandage it shut at night to prevent damage from dryness.

Deafness



Deafness that comes on gradually without pain or other symptoms occurs most often in men over 40. It is usually incurable, though a hearing aid may help. Sometimes deafness results from ear infections (p. 309), a head injury, or a plug of dry wax. For information on how to remove ear wax, see page 407.

DEAFNESS WITH RINGING OF THE EARS AND DIZZINESS

If an older person loses hearing in one or both ears—occasionally with severe dizziness—and hears a loud ringing or buzzing, he probably has Ménière's disease. He may also feel nauseous, or vomit, and may sweat a lot. He should take an antihistamine, such as dimenhydrinate (***Dramamine,*** p. 388) and go to bed until the signs go away. He should have no salt in his food and should avoid caffeine (coffee, cola, chocolate). If he does not get better soon, or if the problem returns, he should seek medical advice.

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Loss of Sleep (Insomnia)

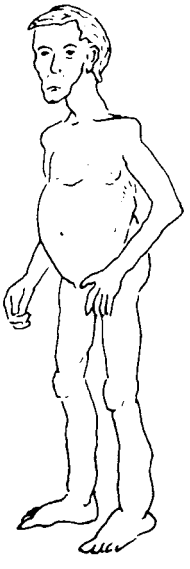
Older people usually sleep less than younger people. And they wake up more often at night. During long winter nights, older people may spend hours without being able to sleep.

Certain medicines may help bring sleep, but it is better not to use them if they are not absolutely necessary.

Here are some suggestions for sleeping:

- ♦ Get plenty of exercise during the day.
- ♦ Do not drink coffee or black tea, especially in the afternoon or evening.
- ♦ Drink a glass of warm milk or milk with honey before going to bed.
- ♦ Take a warm bath before going to bed.
- ♦ In bed, try to relax each part of your body—then your whole body and mind. Remember good times.
- ♦ If you still cannot sleep, try taking an antihistamine like promethazine (***Phenergan,*** p. 388) or dimenhydrinate (***Dramamine,*** p. 388) half an hour before going to bed. These are less habit-forming than stronger drugs.

DISEASES FOUND MORE OFTEN IN PEOPLE OVER 40 YEARS OLD



Cirrhosis of the Liver

Cirrhosis usually occurs in men over 40 who for years have been drinking a lot of liquor (alcohol) and eating poorly.

Signs:

- Cirrhosis starts like hepatitis, with weakness, loss of appetite, upset stomach, and pain on the person's right side below the ribs.
- As the illness gets worse, the person gets thinner and thinner. He may vomit blood. In serious cases the feet swell, and the belly swells with liquid until it looks like a drum. The eyes and skin may turn yellowish (jaundice).

Treatment:

When cirrhosis is severe, it is hard to cure. There are no medicines that help much. Most people with severe cirrhosis die from it. If you want to stay alive, **at the first sign of cirrhosis** do the following:

- ♦ Never drink alcohol again! Alcohol poisons the liver.
- ♦ Eat as well as possible: vegetables, fruit, and some protein (p. 110 and 111). But do not eat a lot of protein (meat, eggs, fish, etc.) because this makes the damaged liver work too hard.
- ♦ If a person with cirrhosis has swelling, he should not use any salt in his food.

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Gallbladder Problems



The gallbladder is a small sac attached to the liver. It collects a bitter, green juice called bile, which helps digest fatty foods. People who are older, who are pregnant, and who have diabetes are more likely to have gallbladder problems.

Signs:

- Sharp pain in the stomach at the edge of the right rib cage: This pain sometimes reaches up to the right side of the upper back.
- The pain may come an hour or more after eating rich or fatty foods. Severe pain may cause vomiting.
- Belching or burping with a bad taste.
- In severe cases, there may be fever.
- Occasionally the eyes may become yellow (jaundice).

Treatment:

- ♦ Do not eat greasy food. It may be helpful to eat small meals.
- ♦ Take ibuprofen to calm the pain (p. 380). Stronger painkillers are often needed. (Aspirin will probably not help.)
- ♦ If the person has a fever, she should take ampicillin (p. 352).
- ♦ In severe or chronic cases, seek medical help. Sometimes surgery is needed.

Prevention:

Avoid rich, sweet, and greasy food, do not eat too much, and get some exercise.

BILIOUSNESS

In many countries and in different languages, bad-tempered persons are said to be “bilious.” Some people believe that fits of anger come when a person has too much bile.

In truth, most-bad tempered persons have nothing wrong with their gallbladders or bile. However, persons who do suffer from gallbladder disease often live in fear of a return of this severe pain and perhaps for this reason are sometimes short-tempered or continually worried about their health. (In fact, the term “hypochondria,” which means to worry continually about one’s own health, comes from “hypo,” meaning under, and “chondrium,” meaning rib—referring to the position of the gallbladder!)

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ACCEPTING DEATH

Old people are often more ready to accept their own approaching death than are those who love them. Persons who have lived fully are not usually afraid to die. Death is, after all, the natural end of life.

We often make the mistake of trying to keep a dying person alive as long as possible, no matter what the cost. Sometimes this adds to the suffering and strain for both the person and his family. There are many occasions when the kindest thing to do is not to hunt for better medicine or a better doctor but to be close to and supporting of the person who is dying. Let him know that you are glad for all the time, the joy and the sorrow you have shared, and that you, too, are able to accept his death. In the last hours, love and acceptance will do far more good than medicines.

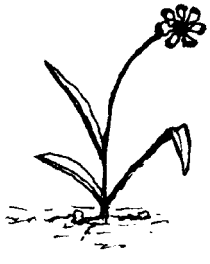
Old or chronically ill persons would often prefer to be at home, in familiar surroundings with those they love, than to be in a hospital. At times this may mean that the person will die earlier. But this is not necessarily bad. We must be sensitive to the person's feelings and needs, and to our own. Sometimes a person who is dying suffers more knowing that the cost of keeping him barely alive causes his family to go into debt or children to go hungry. He may ask simply to be allowed to die—and there are times when this may be the wise decision.

Yet some people fear death. Even if they are suffering, the known world may be hard to leave behind. Every culture has a system of beliefs about death and ideas about life after death. These ideas, beliefs, and traditions may offer some comfort in facing death.

Death may come upon a person suddenly and unexpectedly or may be long-awaited. How to help someone we love accept and prepare for his approaching death is not an easy matter. Often the most we can do is offer support, kindness, and understanding.

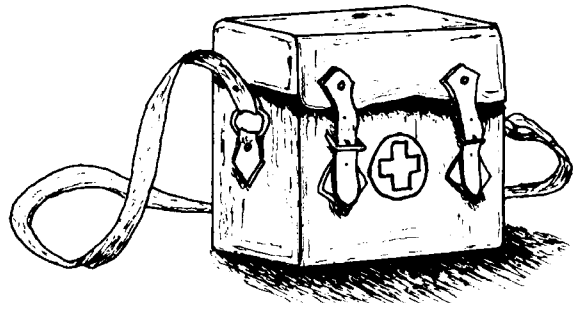
The death of a younger person or child is never easy. Both kindness and honesty are important. A child—or anyone—who is dying often knows it, partly by what her own body tells her and partly by the fear or despair she sees in those who love her. Whether young or old, if a person who is dying asks for the truth, tell her, but tell her gently, and leave some room for hope. Weep if you must, but let her know that even as you love her, and because you love her, you have the strength to let her leave you. This will give her the strength and courage to accept leaving you. To let her know these things you need not say them. You need to feel and show them.

We must all die. Perhaps the most important job of the healer is to help people accept death when it can or should no longer be avoided, and to help ease the suffering of those who still live.



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CHAPTER
23
The Medicine Kit



Every family and every village should have certain medical supplies ready in case of emergency:

- The family should have a HOME MEDICINE KIT (p. 334) with the necessary medicines for first aid, simple infections, and the most common health problems.
- The village should have a more complete medical kit (see VILLAGE MEDICINE KIT, p. 336) with supplies necessary to care for day-to-day problems as well as to meet a serious illness or an emergency. A responsible person should be in charge of it—a health worker, teacher, parent, storekeeper, or anyone who can be trusted by the community. If possible, all members of the village should take part in setting up and paying for the medical kit. Those who can afford more should contribute more. But everyone should understand that **the medicine kit is for the benefit of all**—those who can pay and those who cannot.

On the following pages you will find suggestions for what the medicine kits might contain. You will want to change these lists to best meet the needs and resources in your area. Although the list includes mostly modern medicines, important home remedies known to be safe and to work well can also be included.

How much of each medicine should you have?

The amounts of medicines recommended for the medicine kits are the smallest amounts that should be kept on hand. In some cases there will be just enough to **begin** treatment. It may be necessary to take the sick person to a hospital or go for more medicine at once.

The amount of medicine you keep in your kit will depend on how many people it is intended to serve and how far you have to go to get more when some are used up. It will also depend on cost and how much the family or village can afford. Some of the medicines for your kit will be expensive, but it is wise to have enough of the important medicines on hand to meet emergencies.

Note: **Supplies for birth kits**—the things midwives and families need for a birth—are listed on pages 254 to 255.

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HOW TO CARE FOR YOUR MEDICINE KIT

1. *CAUTION:* **Keep all medicines out of the reach of children.** Any medicine taken in large doses can be poisonous.

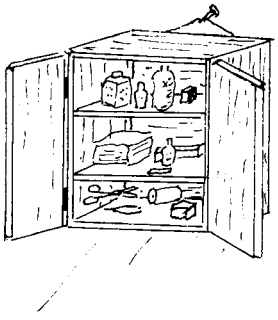
2. **Be sure that all medicine is well labeled and that directions for use are kept with each medicine.** Keep a copy of this book with the medicine kit.

3. **Keep all medicines and medical supplies together in a clean, dry, cool place** free from cockroaches and rats. Protect instruments, gauze, and cotton by wrapping them in sealed plastic bags.

4. **Keep an emergency supply of important medicines on hand at all times.** Each time one is used, replace it as soon as possible.

5. **Notice the DATE OF EXPIRATION on each medicine.** If the date has passed or the medicine looks spoiled, destroy it and get new medicine.

Note: Some medicines, especially tetracyclines, may be very dangerous if they have passed their expiration date. However, penicillins in dry form (tablets or powder for syrup or injection) can be used for as long as a year after the expiration date if they have been stored in a clean, dry, and fairly cool place. Old penicillin may lose some of its strength so you may want to increase the dose. (*CAUTION:* While this is safe with penicillin, with other medicines it is often too dangerous to give more than the recommended dose.)



Keep medicines out of reach of children.



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BUYING SUPPLIES FOR THE MEDICINE KIT

Most of the medicines recommended in this book can be bought in the pharmacies of larger towns. If several families or the village got together to buy what they need at once, often the pharmacist may sell them supplies at lower cost. Or if medicines and supplies can be bought from a wholesaler, prices will be cheaper still.

If the pharmacy does not supply a brand of medicine you want, buy another brand, but be sure that it is the same medicine and check the dosage.

When buying medicines, compare prices. Some brands are much more expensive than others even though the medicine is the same. More expensive medicines are usually no better. When possible, **buy generic medicines rather than brand-name products,** as the generic ones are often much cheaper. Sometimes you can save money by buying larger quantities. For example, a 600,000-Unit vial of penicillin often costs only a little more than a 300,000-Unit vial—so buy the large vial and use it for two doses.



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THE HOME MEDICINE KIT

Each family should have the following things in their medicine kit. These supplies should be enough to treat many common problems in rural areas.

Also include useful home remedies in your medicine kit.

SUPPLIES

Supply	Price *(write in)*	Amount recommended	See page
FOR WOUNDS AND SKIN PROBLEMS:			
plastic or rubber gloves or plastic bags for your hands	_____	1 small package	75
sterile gauze pads in individual sealed envelopes	_____	20	97, 218
1-, 2-, and 3-inch gauze bandage rolls	_____	2 each	87
clean cotton	_____	1 small package	14, 72, 83, 254
adhesive tape (adhesive plaster), 1-inch wide roll	_____	2 rolls	85
soap—if possible a disinfectant soap like ***Betadine***	_____	1 bar or small bottle	372
70% alcohol	_____	¼ liter	72, 201, 211, 254
hydrogen peroxide, in a dark bottle	_____	1 small bottle	183, 213
petroleum jelly ***(Vaseline)*** in a jar or tube	_____	1	91, 97, 141, 199
white vinegar	_____	½ liter	194, 200, 206, 309
sulfur	_____	100 g	205, 206, 211
scissors (clean, not rusty)	_____	1 pair	85, 254, 262
tweezers with pointed ends	_____	1 pair	84, 175
FOR MEASURING TEMPERATURE:			
thermometers:			
for mouth	_____		
for rectum	_____	1 each	30, 41
FOR KEEPING SUPPLIES CLEAN:			
plastic bags	_____	several	195, 332

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MEDICINES

Medicine (generic name)	Local brand *(write in)*	Price *(write in)*	Amount recommended	See page
FOR BACTERIAL INFECTIONS:				
1. Penicillin, 250 mg tablets	_____	_____	40	350
2. Cotrimoxazole (sulfamethoxazole, 400 mg, with trimethoprim, 80 mg)	_____	_____	100	357
3. Ampicillin, 250 mg capsules	_____	_____	24	352
FOR WORMS:				
4. Mebendazole tablets	_____	_____	40 tablets of 100 mg or 2 bottles	375
FOR FEVER AND PAIN:				
5. Aspirin, 300 mg (5 grain) tablets	_____	_____	50	380
6. Acetaminophen, 500 mg tablets	_____	_____	50	380
FOR ANEMIA:				
7. Iron (ferrous sulfate), 200 mg, pills (best if pills also contain vitamin C and folic acid)	_____	_____	100	394
FOR SCABIES AND LICE:				
8. Permethrin	_____	_____	1 bottle of shampoo 1 tube of cream	374
FOR ITCHING AND VOMITING:				
9. Promethazine, 25 mg tablets	_____	_____	12	387
FOR MILD SKIN INFECTIONS:				
10. Gentian violet, small bottle; or an antibiotic ointment	_____	_____	1 bottle 1 tube	372
FOR EYE INFECTIONS:				
11. Antibiotic eye ointment	_____	_____	1 tube	379

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THE VILLAGE MEDICINE KIT

This should have all the medicines and supplies mentioned in the Home Medicine Kit, but in larger amounts, depending on the size of your village and distance from a supply center. The Village Kit should also include the things listed here; many of them are for treatment of more dangerous illnesses. You will have to change or add to the list depending on the diseases in your area.

ADDITIONAL SUPPLIES

Supply	Price	Amount	Page
FOR INJECTING:			
syringes, 5 ml	_____	2	65
needles # 22, 3 cm long	_____	3–6	
# 25, 1 1/2 cm long	_____	2–4	
FOR TROUBLE URINATING:			
catheter (rubber or plastic #16 French)	_____	2	239
FOR SPRAINS AND SWOLLEN VEINS:			
elastic bandages,			102,175
2 and 3 inches wide	_____	3–6	213
FOR LOOKING IN EARS, ETC:			
penlight (small flashlight)	_____	1	34, 255

ADDITIONAL MEDICINES

Medicine	Local brand	Price	Amount	Page
FOR SEVERE INFECTIONS:				
1. Penicillin, injectable; if only one, procaine penicillin 600,000 U per ml	_____	_____	20–40	351
2. Ampicillin, injectable 500 mg vials	_____	_____	20–40	352
and gentamicin 2 ml vials or ceftriaxone 1 g vials	_____	_____	20–40	358
3. Tetracycline, capsules or tablets 250 mg	_____	_____	40–80	355
FOR AMEBA AND GIARDIA INFECTIONS:				
4. Metronidazole, 250 mg tablets	_____	_____	40–80	370
FOR SEIZURES:				
5. Carbamazepine, 200 mg tablets	_____	_____	40–80	390

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Medicine	Local brand	Price	Amount	Page
FOR SEVERE ALLERGIC REACTIONS AND SEVERE ASTHMA:				
6. Epinephrine (adrenaline) injections, ampules with 1 mg	_____	_____	5–10	386
FOR ASTHMA:				
7. Salbutamol, rescue inhaler	_____	_____	1	385
FOR SEVERE BLEEDING AFTER BIRTH:				
8. Oxytocin for injection, 10 Units/ml			6-12	392
or Misoprostol tablets of 200 mcg	_____	_____	66–84	393

OTHER MEDICINES NEEDED IN MANY BUT NOT ALL AREAS

WHERE DRY EYES (XEROPHTHALMIA) IS A PROBLEM:				
Vitamin A, 200,000 U capsules	_____	_____	10–100	393
WHERE TETANUS IS A PROBLEM:				
Antitetanus immunoglobulin, 250 units	_____	_____	2–4 vials	389
WHERE SNAKEBITE OR SCORPION STING IS A PROBLEM:				
Specific antivenom	_____	_____	2–6	388-389
WHERE MALARIA IS A PROBLEM:				
Artemisin-based combination therapy, or whatever medicines are recommended in your area.	_____	_____	50–200	363-369
TO PREVENT OR TREAT BLEEDING IN UNDERWEIGHT NEWBORNS:				
Vitamin K, injections of 1 mg	_____	_____	3–6	394

MEDICINES FOR CHRONIC DISEASES

It may or may not be wise to have medicines for chronic diseases such as **tuberculosis, leprosy,** and **schistosomiasis** in the Village Medicine Kit. To be sure a person has one of these diseases, often special tests must be made in a health center, where the necessary medicine can usually be obtained. Whether these and other medicines are included in the village medical supplies will depend on the local situation and the medical ability of those responsible.

VACCINES

Vaccines have not been included in the Village Medicine Kit because they are usually provided by the Health Department. However, a great effort should be made to see that all children are vaccinated as soon as they are old enough for the different vaccines (p. 147). Therefore, if refrigeration is available, vaccines should be part of the village medical supplies—especially the DPT, polio, tuberculosis, and measles vaccines.

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WORDS TO THE VILLAGE STOREKEEPER OR PHARMACIST



If you sell medicines in your store, people probably ask you about which medicines to buy and when or how to use them. You are in a position to have an important effect on people's knowledge and health.

This book can help you to give correct advice and to see that your customers buy only those medicines they really need.

As you know, people too often spend the little money they have for medicines that do not help them. But **you** can help them understand their health needs more clearly and spend their money more wisely. For example:

- If people come asking for cough syrups, for a diarrhea thickener like ***Kaopectate***, for vitamin B_{12} or liver extract to treat simple anemia, for penicillin to treat a sprain or ache, or for tetracycline when they have a cold, explain to them that these medicines are not needed and may do more harm than good. Discuss with them what to do instead.
- If someone wants to buy a vitamin tonic, encourage him to buy eggs, fruit, or vegetables instead. Help him understand that these have more vitamins and nutritional value for the money.
- If people ask for an injection when medicine by mouth would work as well and be safer—which is often the case—tell them so.
- If someone wants to buy cold tablets or some other expensive combination of medicines for a cold, encourage him to save money by buying plain aspirin, acetaminophen, or ibuprofen tablets and taking them with lots of liquids.

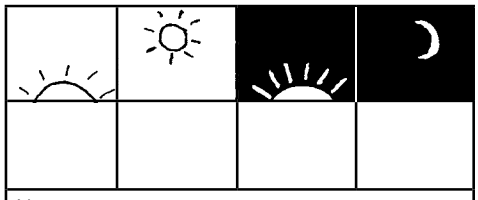
You may find it easier to tell people these things if you look up the information in this book, and read it together with them.

Above all, sell only useful medicines. Stock your store with the medicines and supplies listed for the Home and Village Medicine Kits, as well as other medicines and supplies that are important for common illnesses in your area. Try to stock low cost generic products or the least expensive brands. And never sell medicines that are expired or damaged or do not do what they claim.

Your store can become a place where people learn about caring for their own health. If you can help people use medicines intelligently, making sure that anyone who purchases a medicine is well informed as to its correct use and dosage, as well as the risks and precautions, you will provide an outstanding service to your community. Good luck!

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DOSAGE BLANKS—for giving medicines to those who cannot read (p. 64)

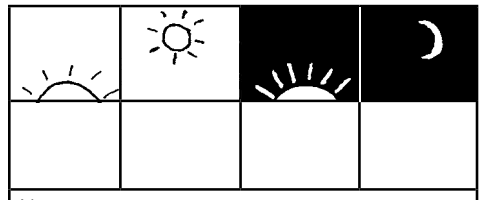


Name:

Medicine:

For:

Dosage:

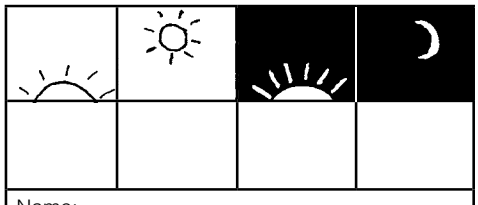


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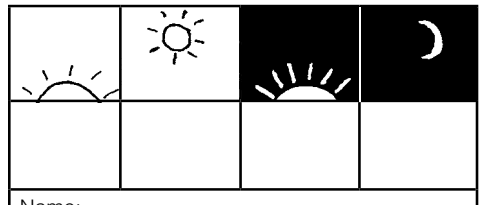


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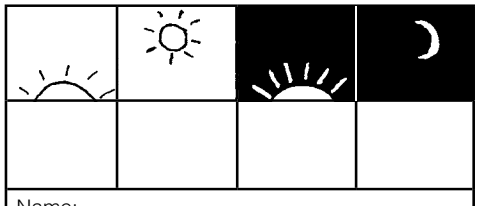


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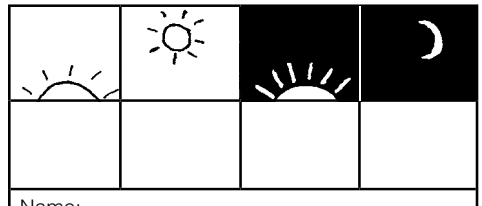


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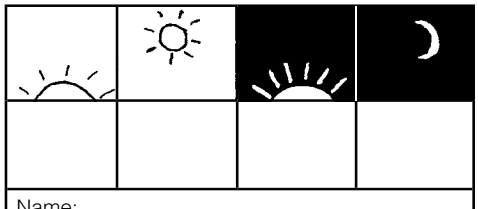


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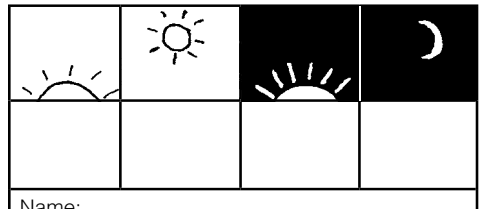


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Name:

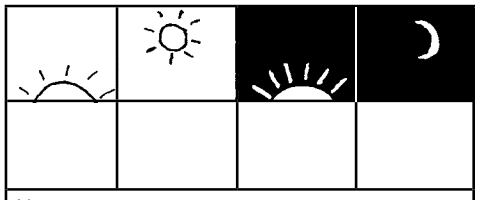
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DOSAGE BLANKS—for giving medicines to those who cannot read (p. 64)

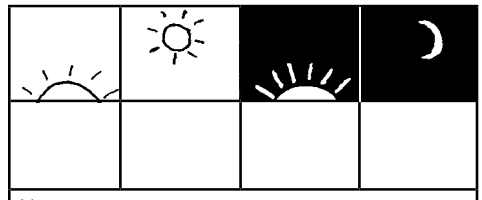


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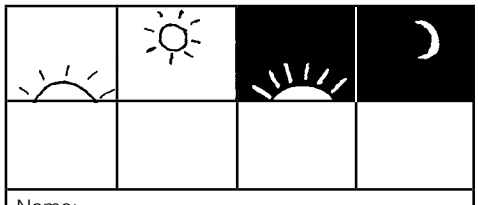


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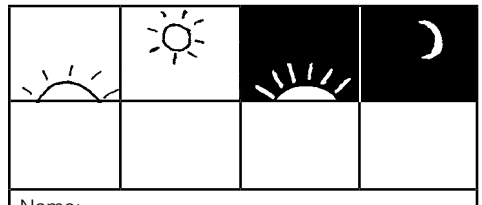


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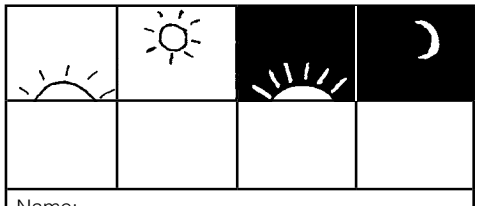


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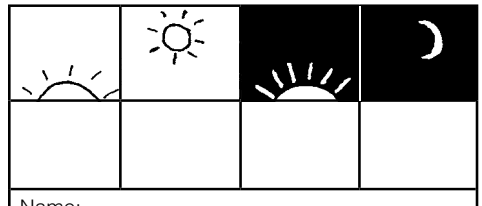


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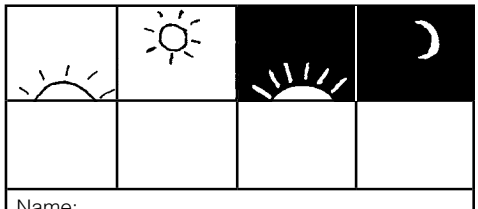


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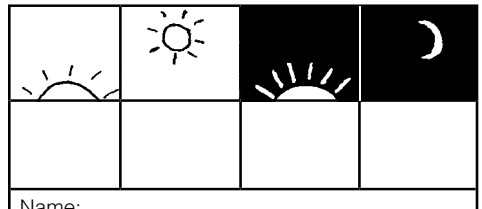


Name:

Medicine:

For:

Dosage:



Name:

Medicine:

For:

Dosage:

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PATIENT REPORT

TO USE WHEN SENDING FOR MEDICAL HELP

Name of the sick person: _____Age: _____

Male _____ Female_____ Where is he (she)? _____

What is the main sickness or problem right now?_____

_____

_____

_____

When did it begin? _____

How did it begin? _____

Has the person had the same problem before? _____When? _____

Is there fever? _____ How high? _____° When and for how long? _____

Pain? _____Where?_____What kind?_____

What is wrong or different from usual in any of the following?

Skin:_____ **Ears:**_____

Eyes: _____ **Mouth and throat:** _____

Genitals: _____

Urine: Much or little? _____Color?_____Trouble urinating?_____

Describe: _____Times in 24 hours: _____ Times at night: ____

Stools: Color?_____ Blood or mucus?_____ Diarrhea? _____

Number of times a day: _____Cramps? _____ Dehydration?_____Mild or severe?_____ Worms? _____What kind? _____

Breathing: Breaths per minute:_____ Deep, shallow, or normal? _____

Difficulty breathing (describe):_____ Cough (describe):_____

_____Wheezing?_____ Mucus?_____With blood?_____

Does the person have any of the SIGNS OF DANGEROUS ILLNESS listed on page 42? _____Which? (give details)_____

_____

Other signs: _____

Is the person taking medicine? _____What?_____

Has the person ever used medicine that has caused a rash, hives (or bumps) with itching, or other allergic reactions?_____ What?_____

The state of the sick person is: Not very serious: _____Serious: _____

Very serious: _____

On the back of this form write any other information you think may be important.

PATIENT REPORT

TO USE WHEN SENDING FOR MEDICAL HELP

Name of the sick person: _____ Age: ____

Male _____Female_____ Where is he (she)?_____

What is the main sickness or problem right now?_____

_____

_____

_____

When did it begin? _____

How did it begin? _____

Has the person had the same problem before? _____ When?_____

Is there fever? _____How high? _____ ° When and for how long?_____

Pain? _____Where?_____What kind? _____

What is wrong or different from usual in any of the following?

Skin:_____ **Ears:**_____

Eyes: _____ **Mouth and throat:**_____

Genitals: _____

Urine: Much or little? _____ Color? _____ Trouble urinating? ____

Describe: _____Times in 24 hours: _____Times at night: ___

Stools: Color?_____Blood or mucus? _____Diarrhea?_____

Number of times a day: _____ Cramps? _____Dehydration? _____ Mild or severe?_____ Worms?_____ What kind?_____

Breathing: Breaths per minute:_____ Deep, shallow, or normal?_____

Difficulty breathing (describe):_____Cough (describe): _____

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Has the person ever used medicine that has caused a rash, hives (or bumps) with itching, or other allergic reactions?_____What? _____

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Very serious: _____

On the back of this form write any other information you think may be important.

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PATIENT REPORT

TO USE WHEN SENDING FOR MEDICAL HELP

Name of the sick person: _____ Age: _____

Male ____ Female_____ Where is he (she)? _____

What is the main sickness or problem right now?_____

_____

_____

_____

When did it begin? _____

How did it begin? _____

Has the person had the same problem before? _____ When?_____

Is there fever? _____ How high? _____ ° When and for how long?_____

Pain? _____ Where? _____What kind? _____

What is wrong or different from usual in any of the following?

Skin:_____ **Ears:**_____

Eyes: _____ **Mouth and throat:**_____

Genitals: _____

Urine: Much or little? _____ Color? _____Trouble urinating? _____

Describe: _____ Times in 24 hours:_____Times at night: ____

Stools: Color? _____ Blood or mucus? _____Diarrhea?_____

Number of times a day: _____Cramps? _____Dehydration?_____Mild or severe?_____ Worms? _____What kind?_____

Breathing: Breaths per minute:_____Deep, shallow, or normal? _____

Difficulty breathing (describe):_____Cough (describe): _____

_____Wheezing? _____ Mucus?_____With blood? _____

Does the person have any of the SIGNS OF DANGEROUS ILLNESS listed on page 42? _____ Which? (give details) _____

_____

Other signs: _____

Is the person taking medicine? _____What?_____

Has the person ever used medicine that has caused a rash, hives (or bumps) with itching, or other allergic reactions?_____ What?_____

The state of the sick person is: Not very serious: _____ Serious:_____

Very serious: _____

On the back of this form write any other information you think may be important.

PATIENT REPORT

TO USE WHEN SENDING FOR MEDICAL HELP

Name of the sick person: _____Age: _____

Male ____ Female _____ Where is he (she)? _____

What is the main sickness or problem right now?_____

_____

_____

_____

When did it begin? _____

How did it begin? _____

Has the person had the same problem before? _____When? _____

Is there fever? _____How high? _____ ° When and for how long?_____

Pain? _____ Where? _____ What kind? _____

What is wrong or different from usual in any of the following?

Skin:_____ **Ears:**_____

Eyes: _____**Mouth and throat:** _____

Genitals: _____

Urine: Much or little? _____ Color? _____ Trouble urinating?_____

Describe: _____Times in 24 hours: _____ Times at night: _____

Stools: Color?_____ Blood or mucus?_____Diarrhea?_____

Number of times a day: _____ Cramps? _____Dehydration?_____Mild or severe?_____ Worms?_____ What kind? _____

Breathing: Breaths per minute:_____ Deep, shallow, or normal?_____

Difficulty breathing (describe):_____Cough (describe): _____

_____ Wheezing? _____Mucus?_____With blood? _____

Does the person have any of the SIGNS OF DANGEROUS ILLNESS listed on page 42? _____ Which? (give details) _____

_____

Other signs: _____

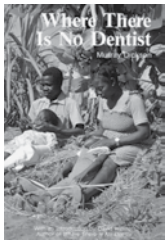
Is the person taking medicine? _____ What? _____

Has the person ever used medicine that has caused a rash, hives (or bumps) with itching, or other allergic reactions?_____What? _____

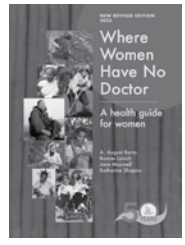
The state of the sick person is: Not very serious: _____ Serious:_____

Very serious: _____

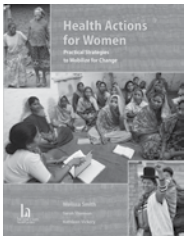
Other Books from Hesperian



Where There Is No Dentist, by Murray Dickson, shows how to care for teeth and gums at home, and in community and school settings. Detailed, illustrated information on dental equipment, placing fillings and pulling teeth, teaching hygiene and nutrition, and HIV and oral health. 248 pages.



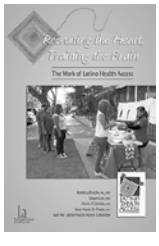
Where Women Have No Doctor, by A. August Burns, Ronnie Lovich, Jane Maxwell and Katharine Shapiro, combines self-help medical information with an understanding of the ways poverty, discrimination and cultural beliefs limit women's health and access to care. Clearly written and with over 1000 drawings, this is an essential resources for any woman who wants to improve her health. 600 pages.



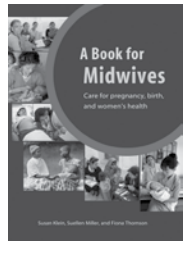
Health Actions for Women, by Melissa Smith, Sarah Shannon and Kathleen Vickery, was field tested by 41 community-based groups in 23 countries and provides a wealth of clearly explained and engagingly illustrated activities, strategies and stories that address the social obstacles and practices that prevent women and girls from enjoying healthy lives. 352 pages.



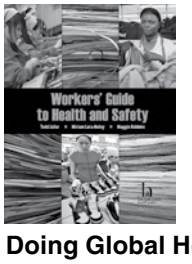
Helping Health Workers Learn, by David Werner and Bill Bower, is an indispensable resource that makes health education fun and effective. Includes activities, techniques, and ideas for low-cost teaching aids, and presents strategies for community involvement through participatory education. 640 pages.



Recruiting the Heart, Training the Brain tells the story of how Latino Health Access developed its groundbreaking *promotor* model of peer-to-peer outreach and education in Santa Ana, California. Facing problems such as obesity and diabetes, exacerbated by poverty and discrimination, their strategies, advice, and accomplishments will spark hope and change across an increasingly unhealthy country. 288 pages.



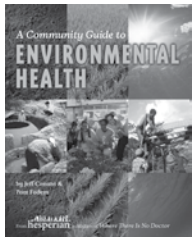
A Book for Midwives, by Susan Klein, Suellen Miller and Fiona Thomson, is an invaluable training tool and practical reference for midwives and anyone concerned about care for women in pregnancy, birth and beyond. This book discusses preventing, managing and treating obstetric complications, covers HIV in pregnancy, birth and breastfeeding, and has extensive information on reproductive care. 544 pages.



Workers' Guide to Health and Safety, by Todd Jailer, Miriam Lara-Meloy and Maggie Robbins, makes occupational safety and health accessible to those most affected by hazards — the workers themselves. An invaluable resource for training workers, supervisors, and safety committees, and in courses on labor relations. 576 pages.



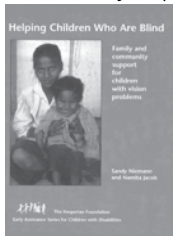
Doing Global Health Work: Approaches that Really Make a Difference, by Kirk Scirto. Using decades of experience to examine the pitfalls of traditional volunteer approaches and the benefits of a more empowering approach, Scirto guides health and development professionals toward sustainable, evidence-based global health work. 244 pages.



A Community Guide to Environmental Health, by Jeff Conant and Pam Fadem, helps urban and rural health promoters, activists and community leaders take charge of environmental health from toilets to toxics, watershed management to waste management, and agriculture to air pollution. Includes activities, how-to instructions, and stories. 640 pages.



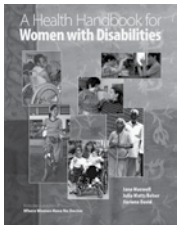
Helping Children Who Are Deaf, by Darlena David, Devorah Greenstein and Sandy Niemann, aids parents, teachers, and other caregivers to help deaf children learn basic communications skills and language. Includes simple methods to assess hearing, develop listening skills, and explore community support for deaf children. 256 pages.



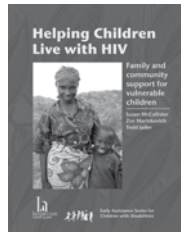
Helping Children Who Are Blind, by Sandy Niemann and Namita Jacob, aids parents and caregivers of blind children from birth to age 5 develop all their capabilities. Topics include: assessing how much a child can see, preventing blindness, moving around safely, teaching common activities, and many others. 200 pages.



Disabled Village Children, by David Werner, covers most common disabilities of children, giving suggestions for rehabilitation and explaining how to make a variety of low-cost aids. Emphasis is placed on how to help children with disabilities find a role and be accepted in the community. 672 pages.



A Health Handbook for Women with Disabilities, by Jane Maxwell, Julia Watts Belser and Darlena David. This handbook provides groundbreaking advice and suggestions from women with disabilities worldwide, and helps women with disabilities improve their health, self-esteem, and ability to care for themselves and participate in their communities. 416 pages.



Helping Children Live with HIV, by Susan McCallister, Zoe Marinkovich, and Todd Jailer, is designed to empower families and others to support young children affected by HIV, *Helping Children Live with HIV* is full of clear information, activities and stories. It provides practical guidance to promote early childhood development through meeting the physical and psychosocial needs of children made vulnerable by HIV. 320 pages.



The Greatest Good, a memoir by Dr. Davida Coady, recounts an adventurous life in international public health. From Biafra to Bangladesh, Ethiopia to El Salvador, smallpox eradication to drug rehabilitation, Dr. Coady relates an inspirational life richly and well-lived, driven by the motto: The Greatest Good for the Greatest Number of People. 396 pages.

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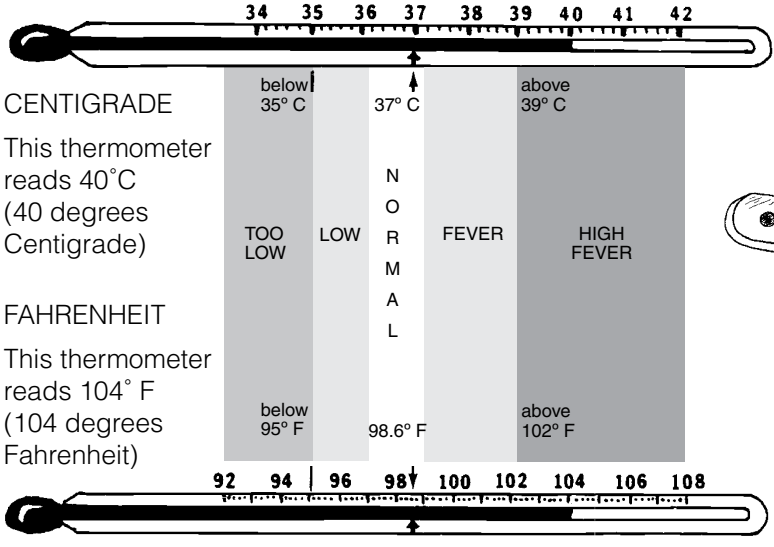
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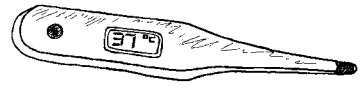
INFORMATION ON VITAL SIGNS

TEMPERATURE

There are two kinds of thermometer scales: Centigrade (°C) and Fahrenheit (°F). Either can be used to measure a person's temperature in degrees (37°C means 37 degrees Centigrade). See page 31.

Here is how they compare:





digital thermometer

PULSE OR HEARTBEAT

For a person at rest:
- ADULTS. . . . . 60 to 80 beats per minute is typical.
- CHILDREN. . . . . 80 to 100 beats per minute is typical.
- BABIES. . . . . 100 to 140 beats per minute is typical..
- NEWBORNS. . . . 120 to 160 beats per minute is typical.

For each degree Centigrade (C) of fever, the heartbeat usually increases about 20 beats per minute.

RESPIRATION

For a person at rest:
- ADULTS AND OLDER CHILDREN. .12 to 20 breaths per minute is typical.
- CHILDREN. . . . . up to 30 breaths per minute is typical.
- BABIES. . . . . up to 40 breaths per minute is typical.
- NEWBORNS . . . . . 30 to 60 breaths per minute is typical.

More than 40 shallow breaths a minute usually means pneumonia (p. 171) for a child or an adult. For babies, 50–60 breaths per minute probably means pneumonia.

BLOOD PRESSURE (This is included for health workers who have the equipment to measure blood pressure.)

For a person at rest, 120/80 is typical, but this varies a lot.

If the first reading (when the sound begins), is over 160, or if the second reading (when the sound disappears), is over 100, this is a danger sign of high blood pressure (p. 125).

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Vocabulary

This vocabulary is listed in the order of the alphabet:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Words marked with a star (*****) are usually not used in this book but are often used by doctors or found on package information of medicines.

Most names of sicknesses are not included in this vocabulary. See the Index (yellow pages) and read about the sickness in the book.

A

Abdomen The part of the body that contains the stomach, liver, and guts. The belly.

Abnormal Different from what is usual or average. Not normal.

Abscess A sac of pus caused by bacterial or other infection. For example, a boil.

Acne (pimples) A skin problem causing bumps on the face, chest, or back that form small white or black "heads" of pus, oil, and dead cells. Most common in young people (adolescents).

Acute Sudden and short-lived. An acute illness is one that starts suddenly and lasts a short time. The opposite of "chronic."

Acute abdomen An emergency condition of the abdomen that often requires a surgical operation. Severe pain in the belly with vomiting and no diarrhea may mean an acute abdomen.

Adolescent The years in which a child becomes an adult. The teens: 13 to 19 years old.

Afterbirth See **Placenta.**

AIDS (Acquired Immune Deficiency Syndrome) An illness caused by the HIV virus. A person has AIDS when the immune system gets so weak it can no longer fight off the disease.

Alcoholism A continual need a person cannot control to overuse alcoholic drinks such as beer, rum, wine, etc.

Allergy, allergic reaction A problem such as rash, itching, hives, sneezing, difficult breathing, or shock that affects certain people when specific things are breathed in, eaten, injected, or touched.

Amebas (also amoebas) Tiny animals that live in water or in the gut and can only be seen with a microscope. They can cause diarrhea, dysentery, and liver abscess.

Amputation Loss of a body part.

Analgesic Medicine to calm pain.

Anemia A disease in which the blood gets thin for lack of red blood cells. Signs include tiredness, pale skin, and lack of energy. See also **Pernicious anemia.**

Antacid Medicine used to control too much stomach acid and to calm stomach upset.

Antibiotic Medicine that fights infections caused by bacteria.

***Antiemetic** Vomit-control medicine. A medicine that helps keep people from vomiting or feeling nauseated.

Antihistamine Medicine used to treat allergies such as hay fever and itching. Also helps control vomiting and causes sleepiness.

Antiseptic A soap or cleaning liquid that prevents growth of bacteria.

Antispasmodic Medicine used to relieve cramps or spasms of the gut.

Antitoxin Medicine that acts against or neutralizes a poison or toxin.

Antivenom (anti-venin) An antitoxin used to treat poisoning from a venom, such as snake poison.

Anus The opening at the end of the large intestine; asshole.

Aorta The main artery or vessel that carries blood out of the heart to the body.

Apoplexy An old word for stroke. See **Stroke.**

Appendix A finger-like sac attached to the large intestine (gut).

Appropriate Something that is easiest, safest, and most likely to work in a particular situation or condition.

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Artery A vessel carrying blood from the heart through the body. Arteries have a pulse. Veins, which return blood to the heart, have no pulse.

Ascaris (roundworm) Large worms that live in people's intestines and cause discomfort, indigestion, weakness, and sometimes gut obstruction (blocking of the gut).

B

Bacteria Tiny germs that can only be seen with a microscope and that cause many different infectious diseases.

Bag of waters The sac inside the womb that holds the baby; amniotic sac. When it breaks, releasing its fluid, this usually means that labor has begun.

Bed sores Chronic open sores that appear in people who are so ill they do not roll over or change position in bed.

Bewitchment The act of casting a spell or influencing by witchcraft; hexing. Some people believe that they get sick because a witch has bewitched them or given them the "evil eye."

Bile A bitter, green liquid made by the liver and stored in the gallbladder. It helps digest fat.

Birth defects See **Disabilities present at birth.**

Blackhead A small plug or "head" of pus, oil, and dead cells blocking a pore in the skin of the face, chest, or back. A kind of pimple.

Bladder stones See **kidney stones.**

Blood pressure The force or pressure of the blood upon the walls of the blood vessels (arteries and veins); it varies with the age and health of the person.

Boil A swollen, inflamed lump with a pocket of pus under the skin. A kind of abscess.

Booster A repeat vaccination to renew the effect of an earlier series of vaccinations.

Bowel movement To have a bowel movement is to defecate; to shit; the way of passing solid waste out of the body.

Brand name Trade name. The name a company gives to its product. A brand–name medicine is sold under a special name and is often more expensive than the same generic medicine.

Breast abscess See **Mastitis.**

Breech delivery A birth in which the baby comes out buttocks or legs first.

Broad-spectrum antibiotic A medicine that works against many kinds of micro-organisms. Compare with a narrow-spectrum antibiotic, which works against only a few.

Bronchi The tubes leading to the lungs, through which air passes when a person breathes.

Bronchitis An infection of the bronchi.

Bubo A very swollen lymph node. **Buboes** is a common name for lymphogranuloma venereum.

Buttocks The part of the body a person sits on; ass, arse, rump, behind, backside, butt.

C

Cancer A tumor or lump that grows and may keep growing until it finally causes death.

Carbohydrates Starches and sugars. Foods that provide energy.

Cassava (manioc, yucca) A starchy root grown in the tropics.

Cast A stiff bandage of gauze and plaster that holds a broken bone in place until it heals.

Cataract An eye problem in which the lens of the eye becomes cloudy, making it more and more difficult for the person to see. The pupil looks gray or white when you shine a light into it.

Catheter A rubber tube used to drain urine from the bladder.

Cavity A hole or spot of decay in a tooth where bacteria have got in and destroyed part of the tooth.

Centigrade (C) A measure or scale of heat and cold. A healthy person's temperature (normal temperature) is 37°C. Water freezes at 0°C and boils at 100°C.

Cerebro-vascular accident, CVA See **Stroke.**

Cervix The opening or neck of the womb at the back of the vagina.

Chancre A painless sore or ulcer on the genitals, finger, or lip that is one of the first signs of syphilis.

Chigger A tiny, crawling spider or tick like animal that buries its head under the skin and sucks blood.

Child Health Chart A monthly record of a child's weight that shows whether the child is gaining weight as expected.

Childbirth fever (This is also called childbed fever, womb infection, postpartum infection, or puerperal infection.) The fever and infection that mothers sometimes develop after birth.

Chronic Long-term or frequently recurring (compare with acute). A chronic disease is one that lasts a long time.

Circulation The flow of blood through the arteries and veins by the pumping of the heart.

Cleft Divided, separated. A child born with a cleft palate has a separation or abnormal opening in the roof of his mouth.

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Cleft lip A split in the upper lip, going from the mouth up to the nose. Some babies are born with a cleft lip.

Cognitive delay When a child takes longer to develop their mental skills compared to other children their age.

Colic Sharp abdominal pains caused by spasms or cramps in the gut.

Colostrum The first milk a mother's breasts produce. It looks watery but is rich in protein and helps protect the baby against infection.

Coma A state of unconsciousness from which a person cannot be wakened. It is caused by disease, injury, or poison, and often ends in death.

Community A group of people living in the same village or area who have similar living conditions, interests, and problems.

***Complications** Secondary health problems that sometimes develop in the course of a disease. For example, meningitis may result as a dangerous complication of measles.

Compost A mixture of plant and animal waste that is allowed to rot for use as a fertilizer. Hay, dead leaves, vegetable waste, animal droppings, and manure all make good compost.

Compress A folded cloth or pad put on a part of the body. It may be soaked in hot or cold water.

Conjunctiva A thin, protective layer that covers the white of the eye and inner side of the eyelids.

Consciousness See **Loss of consciousness.**

Constipation Dry, hard, difficult stools (bowel movements) that do not come often.

Consumption An old name for tuberculosis.

Contact Touch. Contagious diseases can be spread by a sick person coming in contact with (touching or being close to) another person.

Contagious disease A sickness that can be spread easily from one person to another.

Contaminate To dirty, stain, or infect by contact. A syringe that has not been boiled is often contaminated and can cause infections, even though it looks clean.

Contraceptive Any method of preventing pregnancy.

Contractions Tightening or shortening of muscles. The strong contractions of the womb when a woman is in labor help to push the baby out of the womb.

Contractures Shortened or tight muscles in a joint that limit movement.

***Contraindication** A situation or condition when a particular medicine should not be taken. (Many medicines are contraindicated in pregnancy.)

Convulsions An uncontrolled seizure, or fit. A sudden jerking of part or all of the person's body, as in meningitis or epilepsy.

Cornea The clear outer layer or "window" of the eye, covering the iris and pupil.

Corns Hard, thick, painful parts of the skin formed where sandals or shoes push against the skin or one toe presses against another.

Cramp A painful tightening or contraction of a muscle.

Cupping A home remedy that consists of drawing blood to the surface of the body by use of a glass or cup with a flame under it.

Cyst An abnormal, sac-like, liquid-filled growth developing in the body.

D

Dandruff Oily white or grayish flakes or scales that appear in the hair. Seborrhea of the scalp.

Decongestant A medicine that helps relieve swelling or stuffiness of the nose or sinuses.

Deficiency Not having enough of something; a lack.

Dehydration A condition in which the body loses more liquid than it takes in. This lack of water is especially dangerous in babies.

Delirium A state of mental confusion with strange movements and speech; it may come with high fever or severe illness.

***Dermal** Of the skin.

Dermatitis An infection or irritation of the skin.

Diaper rash Reddish, irritated patches between a baby's legs caused by urine in his diapers (nappy) or bedding.

Diarrhea Frequent runny or liquid stools.

Disabilities present at birth Physical or mental challenges a child is born with, such as cleft lip, club foot, or cognitive delay.

Discharge A release or flowing out of fluid, mucus, or pus.

Dislocations Bones that have slipped out of place at a joint.

Douche A way to wash out the vagina by squirting a stream of water up into it.

Down syndrome A condition caused by a change in a child's chromosomes, in which the child is born with cognitive delay and specific physical signs.

Drowning When a person stops breathing (suffocates) from being under water.

Dysentery Diarrhea with mucus and blood. It is usually caused by an infection.

E

Eclampsia Sudden seizures, especially during pregnancy or when giving birth, very dangerous for both mother and baby.

Embryo The beginnings of an unborn baby when it is still very small.

Emergency A sudden sickness or injury that calls for immediate attention.

***Emetic** A medicine or drink that makes people vomit. Used when poisons have been swallowed.

Enema A solution of water put up the rectum to cause a bowel movement.

Epidemic An outbreak of disease affecting many persons in a community or region at the same time.

Estrogen Estrogen is a hormone made by a woman's body to regulate her reproductive system. Estrogen is also a chemical used in contraceptive pills and other medications.

Evaluation A study to find out the worth or value of something, or how much has been accomplished. Often done by comparing different factors or conditions before and after a project or activity is underway.

Evil eye A glance or look from someone believed to have the power to bewitch or do harm to people.

Exhaustion Extreme fatigue and tiredness.

***Expectorant** A medicine that helps a person cough up mucus from the respiratory tract (lungs, bronchi, etc.); a cough-helper.

Expiration date The month and year marked on a medicine that tells when it will no longer be good. Throw away most medicines after this date.

F

Fahrenheit (F) A measure or scale of heat and cold. A healthy person's temperature (normal temperature) is 98.6°F. Water freezes at 32°F and boils at 212°F.

Family planning Using birth control methods to plan when to have and not have children.

Farsighted Being able to see things at a distance better than things close at hand.

Feces Stools; shit; the waste from the body that is moved out through the bowels in a bowel movement.

Feces–to–mouth Spread or transmitted from the stools of one person to his or another person's mouth, usually by food or drink, or on fingers.

Fetoscope An instrument or tool for listening to sounds made by the unborn baby (fetus) inside the womb.

Fetus (foetus) The developing baby inside the womb.

Fever A body temperature higher than normal.

First aid Emergency care or treatment for someone who is sick or injured.

Flu A bad cold, often with fever, pain in the joints, and sometimes diarrhea.

Flukes Worms that infect the liver or other parts of the body and cause different diseases. Blood flukes get into the blood and cause schistosomiasis.

Foetus See **Fetus.**

Folic acid A nutritious substance found in leafy green vegetables.

Follicles Small lumps.

Fontanel The soft spot on the top of a young baby's head.

Fracture A broken bone.

Fright A great or sudden fear.

G

Gallbladder A small, muscular sac attached to the liver. The gallbladder collects bile, a liquid that helps digest fatty foods.

Gauze Soft, loosely woven kind of cloth used for bandages.

Generic name The scientific name of a medicine, as distinct from the brand names given it by different companies that make it.

Genitals The organs of the reproductive system, especially the sex organs.

Germs Very small organisms that can grow in the body and cause some infectious diseases; micro-organisms.

Giardia A microscopic parasite that can infect the intestines, causing frothy yellow diarrhea.

Glucose A simple form of sugar that the body can use quickly and easily. It is found in fruits and honey, and can be bought as a white powder for use in rehydration drinks.

Goiter A swelling on the lower front of the neck (enlargement of the thyroid gland) caused by lack of iodine in the diet.

Grain (gr) A unit of weight based on the weight of a grain of wheat. 1 grain weighs 65 mg.

Gram (g) A metric unit of weight. There are about 28 grams in an ounce. There are 1000 g in 1 kilogram (kg).

Groin The front part of the body where the legs join. The genital area.

Gut Intestines.

Gut thread or gut suture material A special thread for sewing or stitching certain wounds, and especially tears from giving birth. The gut thread is slowly absorbed (disappears) so that the stitches do not need to be taken out.

H

Health worker A person who takes part in making his community a healthier place to live.

Heartburn A burning feeling in the lower chest or upper part of the stomach.

Hemorrhage Severe or dangerous bleeding.

Hemorrhoids (piles) Small, painful bumps or lumps at the edge of the anus or inside it. These are actually swollen or varicose veins.

Herb A plant, especially one valued for its medicinal or healing qualities.

Hereditary Passed on from parent to child.

Hernia (rupture) An opening or tear in the muscles covering the belly that allows a loop of the gut to push through and form a ball or lump under the skin.

Hex A magic spell or jinx said to be caused by a witch.

History (medical history) What you can learn through asking questions about a person's sickness—how it began, when it gets better or worse, what seems to help, whether others in the family or village have it, etc.

HIV (Human Immune-deficiency Virus) The virus that causes AIDS.

Hives Hard, thick, raised spots on the skin that itch severely. They may come and go all at once or move from one place to another. A form of allergic reaction.

Hormones Chemicals made in parts of the body to do a special job. For example, estrogen and progesterone are hormones that regulate a woman's period and chance of pregnancy.

Hygiene Actions or practices of personal cleanliness that lead to good health.

***Hypertension** High blood pressure.

Hyperventilation Very rapid, deep breathing in a person who is frightened.

***Hypochondria** Extreme worry or concern over an imagined sickness.

Hypothyroidism A condition in which a child is born with cognitive delay and hearing loss. It is usually due to lack of iodine in the mother's diet.

Hysteria (1) In common language, a condition of great nervousness, fear, and emotional distress. (2) In medical terms, signs of sickness caused by fear or the power of belief.

I

Immunizations (vaccinations) Medicines that give protection against specific diseases, for example: diphtheria, whooping cough, tetanus, polio, tuberculosis, and measles.

Infection A sickness caused by bacteria or other germs. Infections may affect part of the body only (such as an infected finger) or all of it (such as measles).

Infectious disease A disease that is easily spread or communicated (passed from one person to another); contagious.

Inflammation An area that is red, hot, and painful, often because of infection.

Insecticide A poison that kills insects. DDT and lindane are insecticides.

***Insomnia** A condition in which a person is not able to sleep, even though he wants and needs to.

Insulin A substance (enzyme) produced by the pancreas, which controls the amount of sugar in the blood. Injections of insulin are sometimes needed by persons with diabetes.

Intestinal parasites Worms and tiny animals that get in people's intestines and cause diseases.

Intestines The guts or tube-like part of the food canal that carries food and finally waste from the stomach to the anus.

Intramuscular (IM) injection An injection put into a muscle, usually of the arm or the buttock—different from an intravenous (IV) injection, put directly into a vein.

Intussusception The slipping of one portion of the gut into one nearby, usually causing a dangerous obstruction or blocking of the gut.

Iris The colored or dark part of the eye around the pupil.

J

Jaundice A yellow color of the eyes and skin. It is a sign of disease in the liver, gallbladder, pancreas, or blood.

K

***Keratomalacia** A dullness and softening of the eye, ending in blindness. It is caused by a lack of vitamin A.

Kidneys Large, bean-shaped organs in the lower back that filter waste from the blood, forming urine.

Kidney stones Small stones that form in the kidneys and pass down to the urinary tube. They can cause a sharp pain in the lower back, side, urinary tube, or lower belly. In the bladder they may block the urinary tube and make urination painful or impossible.

Kilogram (kg) One thousand grams. A kilo is equal to a little over 2 pounds.

Kwashiorkor (wet malnutrition) Severe malnutrition. A child with kwashiorkor has swollen feet, hands, and face, and peeling sores.

L

Labor The sudden tightening or contractions of the womb that mean the baby will soon be born.

Larva (larvae) The young worm-like form that comes from the egg of many insects or parasites. It changes form when it becomes an adult.

Latrine An outhouse; privy; a hole or pit in the ground to use as a toilet.

Laxative A medicine used for constipation that makes stools softer and more frequent.

Ligaments Tough cords in a person's joints that help hold them in place.

***Lingual** Of or relating to the tongue.

Liter (l) A metric measure equal to about one quart. A liter of water weighs one kilogram.

Liver A large organ under the lower right ribs that helps clean the blood and get rid of poisons.

Loss of consciousness The condition of a sick or injured person who seems to be asleep and cannot be wakened. Unconsciousness.

***Lubricant** An oil or cream used to make surfaces slippery.

Lymph nodes Small lumps under the skin in different parts of the body that are traps for germs. They become painful and swollen when they get infected. In tuberculosis and cancer they are often swollen but not painful.

Lyophilized Powdered; a way of preparing injectable medicine so that it does not have to be kept cold.

M

Malnutrition Health problems caused by not eating enough of the foods that the body needs.

Marasmus (dry malnutrition) A condition caused by not eating enough. Starvation. The person is very thin and underweight, often with a pot belly.

Mask of pregnancy Dark, olive-colored areas on face, breasts, or middle of the belly that are common in a pregnant woman.

Mastitis (breast abscess) An infection of the breast, usually in the first weeks or months of nursing a baby. It causes part of the breast to become hot, red, and swollen.

Membrane A thin, soft sheet or layer that lines or protects some part of an animal or plant.

Menopause (climacteric) The time when a woman naturally stops having monthly bleeding, usually between the ages of 40 and 50.

Menstrual period, menstruation Monthly bleeding in women.

Mental Of or relating to the mind (thinking, brain).

Micro-organism A tiny plant or animal so small it can only be seen with the aid of microscope.

Microscope An instrument with lenses that make very tiny objects look larger.

Microscopic Something so small that it can only be seen with a microscope.

Migraine A severe, throbbing headache, sometimes on one side of the head only. It often causes vomiting.

Milligram (mg) One thousandth of a gram.

Milliliter (ml) One thousandth of a liter.

Minerals Simple metals or other things the body needs, such as iron, calcium, and iodine.

Miscarriage (spontaneous abortion) The death of the developing baby or fetus in the womb, sometimes followed by heavy bleeding with blood clots.

Morning sickness Nausea and vomiting that occur especially in the morning in the early months of pregnancy.

Mouth-to-mouth breathing Artificial respiration. A method of helping a person who has stopped breathing to start breathing again.

Mucus A thick, slippery liquid that moistens and protects the linings of the nose, throat, stomach, guts, and vagina.

N

Narrow-spectrum antibiotic A medicine that works against a limited number of different kinds of bacteria.

***Nasal** Of or relating to the nose.

Nausea Stomach distress or upset; feeling like you need to vomit.

Navel Belly button; umbilicus; the place in the middle of the belly where the umbilical cord was attached.

Nerves Thin threads or strings that run from the brain to every part of the body and carry messages for feeling and movement.

Non-infectious disease A disease that does not spread from person to person.

Nutritious Nourishing. Nutritious foods are those that have the things the body needs to grow, be healthy, and fight off disease.

O

Obstruction A condition of being blocked or clogged. An obstructed gut is a medical emergency.

Ointment A salve or lotion to use on the skin.

***Ophthalmic** Of the eye.

***Oral** By mouth. An oral medicine is one taken by mouth.

Organ A part of the body that is more or less complete in itself and does a specific job. For example, the lungs are organs for breathing.

Organisms Living things (animals or plants).

***Otic** Having to do with the ears.

Ounce A measure of weight equal to about 28 grams. There are 16 ounces in one pound.

Ovaries Small sacs in a woman's belly next to her womb. They produce the eggs that join with a man's sperm to make a baby.

Oxytocics Dangerous medicines that cause the womb and blood vessels in it to contract. They should only be used to control a mother's heavy bleeding after her child is born.

P

Palate The roof or top part of the mouth.

Pancreas An organ below the stomach, on the left side, that produces insulin.

Pannus Tiny blood vessels that appear in the top edge of the cornea in certain eye diseases, like trachoma.

Paralysis Loss of the ability to move part or all of the body.

Parasites Worms and tiny animals that live in or on another animal or person and cause harm. Fleas, intestinal worms, and amebas are parasites.

***Parenteral** Not by mouth but by injection.

Pasteurization The process of heating milk or other liquids to a certain temperature (60°C) for about 30 minutes in order to kill harmful bacteria.

Pelvis Hip bones.

Peritoneum The thin lining between the guts and body wall. The bag that holds the guts.

Peritonitis A very dangerous inflammation of the peritoneum. The belly gets hard like a board, and the person is in great pain, especially when he tries to lie with his legs straight.

Pernicious anemia A rare kind of anemia caused by a lack of vitamin B_{12}. Pernicious means harmful.

Petroleum jelly (petrolatum, *Vaseline*) A grease-like jelly used in preparing skin ointments.

Pharmacy A store that sells medicines and health care supplies.

Phlegm Mucus with pus that forms in abnormal amounts in the lungs and must be coughed out.

Piles See **Hemorrhoids.**

Pimples See **Acne.**

Placenta (afterbirth) The dark and spongy lining inside the womb where the fetus joins the mother's body. The placenta usually comes out 15 minutes to half an hour after the baby is born.

Placenta previa A condition in which the placenta is too low in the womb and blocks the mouth of the womb. The risk of dangerous bleeding is high. Women who have bleeding late in pregnancy—a possible sign of placenta previa—should go to a hospital at once.

Plantain A kind of banana with a lot of starch and fiber. It is often cooked and eaten when green.

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Pollen The fine dust made in the flower of a seed plant. People who are **allergic** to pollen often have hay fever at times of the year when plants put a lot of this dust into the air.

Postpartum After giving birth.

Postpartum hemorrhaging Heavy bleeding of the mother following birth.

Power of suggestion or power of belief The influence of belief or strong ideas. For example, sick people can feel better because they have faith in a remedy, even if the remedy does not have any medical effect.

Precaution Care taken in advance to prevent harm or prepare for emergencies before they happen.

Pre-eclampsia A dangerous condition during pregnancy, which can lead to seizures.

Pregnancy The period (usually 9 months) when a woman carries a child inside her.

Premature baby A baby born before the full 9 months of pregnancy and weighing less than 2 kilos.

Presentation of an arm An abnormal position of delivery in which the baby's hand comes out first during the birth. This is an emergency needing a doctor.

Prevention Action taken to stop sickness before it starts.

Progesterone Progesterone is a hormone made by a woman's body to regulate the menstrual cycle and prepare the uterus for pregnancy. Progesterone and progestin are also chemicals used in contraceptive pills and other medications.

Prolapse The slipping or falling down of a part of the body from its typical position; for example, a prolapsed rectum or womb.

Prophylactic The word prophylactic means preventive, but condoms are sometimes called prophylactics.

Prostate gland A firm, muscular gland at the base of the man's urinary tube, or urethra. Often in older men the prostate becomes enlarged, causing difficulty in urinating.

Protective foods Foods that are rich in vitamins and minerals. They help build healthy bodies and make people more able to resist or fight diseases.

Proteins Body-building foods necessary for proper growth and strength.

Pterygium A fleshy growth that slowly extends from the edge of the eye onto the cornea.

Pulse The number of times a person's heart beats in one minute.

Pupil The round opening or black center in the iris of the eye. It gets smaller in bright light and larger in the dark.

Purge A very strong laxative that causes diarrhea.

R

Rate The number of times something happens in a given amount of time.

Rebound pain A very sharp pain in the abdomen that occurs after the belly is pressed firmly and slowly, when the hand is removed suddenly. This pain is a sign of an acute abdomen.

Rectum The end of the large intestine close to the anus.

Reflex An automatic reaction or movement that happens without a person's trying to do it.

Rehydration Drink A drink to correct dehydration, which you can make with boiled water, salt, and sugar or powdered cereal.

Resistance The ability of something to defend itself against something that would usually harm or kill it. Many bacteria become resistant to the effects of certain antibiotics.

Resource What is needed or available for doing or making something. People, land, animals, money, skills, and plants are resources that can be used for improving health.

Respiration Breathing. The **respiratory system** includes the bronchi, lungs, and other organs used in breathing.

Respiration rate The number of times a person breathes in one minute.

Rhinitis An inflammation of the lining of the nose, often caused by allergies. Hay fever.

Risk The possibility of injury, loss, or harm. Danger.

Rotation of crops To grow different crops one after the other in the same field, so that the soil becomes richer rather than weaker from year to year.

Rupture See **Hernia.**

S

Sanitation Public cleanliness involving community efforts in disease prevention, promoting hygiene, and keeping public places free of waste.

Scrotum The bag between a man's legs that holds his testicles or balls.

Sedative Medicine that causes drowsiness or sleep.

Seizure A sudden, violent attack of a disease, causing convulsions or spasms (jerking of the body that the person cannot control) and sometimes unconsciousness.

Septicemia An infection of the blood sometimes called blood poisoning.

Sexually transmitted infection (STI) A disease spread by sexual contact.

Shock A dangerous condition with severe weakness or unconsciousness, cold sweat, and fast, weak pulse. It is caused by dehydration, hemorrhage, injury, burns, or a severe illness.

Side effects Problems caused by using a medicine.

Signs The things or conditions one looks for when examining a sick person, to find out what sickness he has. In this book symptoms, or the problems a person feels, are included with signs.

Sinus trouble (sinusitis) Sinuses are hollows in the bone that open into the nose. Sinusitis is inflammation causing pain above and below the eyes.

Soft drinks Fizzy, carbonated drinks like Coca-Cola.

Soft spot See **Fontanel.**

Spasm A sudden muscle contraction that a person cannot control. Spasms of the gut produce cramps, or colic. Spasms of the bronchi occur in asthma. Spasms of the jaw and other muscles occur in tetanus.

Spleen An organ usually the size of a fist under the lower edge of the ribs on the left side. Its job is to help make and filter the blood.

Spontaneous abortion See **Miscarriage.**

Sprain (strain) Bruising, stretching, or tearing of ligaments or tendons in a twisted joint. A sprain is worse than a strain.

Sputum Mucus and pus (phlegm) coughed up from the lungs and bronchi of a sick person.

Starches Energy foods like maize, rice, wheat, cassava, potatoes, and squash.

Sterile (1) Completely clean and free from living micro-organisms. Things are usually sterilized by boiling or heating. (2) Sterile also means permanently unable to have children.

Sterilization (1) To sterilize instruments, bottles, and other things by boiling or heating in an oven. (2) Also a permanent way of making a man or a woman unable to reproduce (have children).

Stethoscope An instrument used to listen to sounds in the body, such as the heartbeat.

Stomach The sac-like organ in the belly where food is digested. In common language "stomach" is often used to mean the whole belly or abdomen.

Stools Shit. Bowel movement. See **Feces.**

Stroke (apoplexy, cerebro-vascular accident) A sudden loss of consciousness, feeling, or ability to move, caused by bleeding or a clot inside the brain. Also see heat stroke (p. 81).

Sty A red, swollen lump on the eyelid, usually near the edge, caused by infection.

Sucrose The common sugar that comes from sugarcane or sugar beets. It is more complex and more difficult for the body to use than glucose.

Sugars Sweet foods like honey, sugar, or fruit that give energy.

Suppository A bullet-shaped tablet of medicine to put up the rectum or vagina.

***Suppressant** A medicine that helps to check, hold back, or stop something, such as a medicine to stop coughing (cough suppressant).

Suspension A powder mixed in a liquid.

Suture A stitch made with needle and thread to sew up an opening or wound.

Symptoms The feelings or conditions a person reports about his sickness. In this book symptoms are included with signs.

T

Tablespoon A measuring spoon that holds 3 teaspoons or 15 ml.

Taboo Something that is avoided, banned, or not allowed because of a cultural belief.

Teaspoon A measuring spoon that holds 5 ml. Three teaspoons equal 1 tablespoon.

Temperature The degree of heat of a person's body.

Tendons Tough cords that join muscles to bones (distinct from ligaments, which join bones with bones at joints).

***Thalassemia** A form of hereditary anemia seen only in certain countries. A child may become very anemic by age 2, with a large liver and spleen.

Thermometer An instrument used to measure a person's body temperature.

Tick A crawling insect-like animal that buries its head under the skin and sucks blood.

***Topical** For the skin. A topical medicine is to be put on the skin.

***Toxemia** See **Pre-eclampsia.**

Toxic Poisonous.

Tract A system of body organs and parts that work together to do a special job; for example, the urinary tract cleans the blood and gets rid of urine.

Traditions Practices, beliefs, or customs handed down from one generation to another by example or word of mouth.

Transmit To pass on, transfer, or spread from one person to another.

Tropical Having to do with the tropics or hot regions of the world.

Tumor An abnormal mass of tissue without inflammation. Some tumors are due to cancer.

U

Ulcer A break in the skin or mucus membrane; a chronic open sore of the skin, the surface of the eye, the stomach, or gut.

Umbilical cord The cord that connects a baby from its navel to the placenta on the inside of its mother's womb.

Umbilical hernia A large, outward bulge of the navel caused by a loop of intestine that has pushed through the sac holding the guts.

Umbilicus See **Navel.**

Unconsciousness See **Loss of consciousness.**

Under-Fives Program A plan that helps mothers learn about their children's health needs, make regular visits to a clinic for check-ups, and keep a record (Child Health Chart) of the growth of their children under five years old.

Urethra Urinary tube or canal. The tube that runs from the bladder to the hole a person urinates from.

Urinary tract The system of organs that form and get rid of urine—such as kidneys, bladder, and urinary tube (urethra).

Urine Liquid waste from the body; piss; pee.

Uterus Womb.

V

Vaccinations See **Immunization.**

Vagina The tube or canal that goes from the opening of the woman's sex organs to the entrance of her womb.

Vaginal Of or relating to the vagina.

Varicose veins Abnormally swollen veins, often lumpy and winding, usually on the legs of older people, pregnant women, and women who have had a lot of children.

Vaseline See **Petroleum jelly.**

Venereal disease A disease spread by sexual contact. More often called a sexually transmitted infection or STI.

Vessels Tubes. Blood vessels are the veins and arteries that carry the blood through the body.

Virus Germs smaller than bacteria, which cause some infectious (easily spread) diseases.

Vitamins Protective foods that our bodies need to work properly.

Vomiting Throwing up the contents out of the stomach through the mouth.

W

Welts Lumps or ridges raised on the body, usually caused by a blow or an allergy (hives).

Womb The organ inside a woman's belly where a baby is made. The uterus.

X

Xerophthalmia Abnormal dryness of the eye due to lack of vitamin A.

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The Green Pages

THE USES, DOSAGE, AND PRECAUTIONS FOR THE MEDICINES REFERRED TO IN THIS BOOK



The medicines in this section are grouped according to their uses. For example, all the medicines used to treat infections caused by worms are listed under the heading FOR WORMS.

If you want information on a medicine, look for the name of that medicine in the LIST OF MEDICINES beginning on page 341. Or look for the medicine in the INDEX OF MEDICINES beginning on page 345. When you find the name you are looking for, turn to the page number shown.

Medicines are listed according to their *generic* (scientific) names rather than their *brand names* (names given by the companies that make them). This is because generic names are similar everywhere, but brand names differ from place to place. Also, **medicines are often much cheaper when you buy generic rather than brand-name products.**

In a few cases, well-known brand names are given after the generic name. In this book brand names are written in *italics* and begin with a capital letter. For example, *Phenergan* is a brand name for an antihistamine called **promethazine** (promethazine is the generic name).

With the information on each medicine, blank spaces_____ have been left for you to **write in** the name and price of the most common or least expensive product in your area. For example, if the cheapest or only available form of tetracycline in your area is *Terramycin,* you would write in the blank spaces as follows:

Tetracycline (tetracycline HCl, oxytetracycline, etc.)

Name: Terramycin price: $10.25
for 6 capsules

If, however, you find you can buy generic **tetracycline** more cheaply than *Terramycin,* write instead:

Name: tetracycline price: $10.00
for 60 capsules

Note: Not all the medicines listed in the Green Pages are needed in your Home or Village Medicine kit. Because different medicines are available in different countries, information has sometimes been given for a number of medicines that do the same job. However, it is wise to

KEEP AND USE ONLY A SMALL NUMBER OF MEDICINES.

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Dosage Information:

HOW FRACTIONS ARE SOMETIMES WRITTEN

1 tablet = one tablet = 

½ tablet = half a tablet = 

1½ tablets = one and a half tablets = 

¼ tablet = one quarter or one fourth of a tablet = 

⅛ tablet = one eighth of a tablet (dividing it into 4 equal pieces and then taking ½ of 1 piece) = 

DECIDING DOSAGE BY HOW MUCH A PERSON WEIGHS

In these pages most instructions for dosage are given according to the age of a person. However, it is more exact to determine dosage according to a person's weight. This information is sometimes included in parentheses () for health workers who have scales. If you read **100 mg/kg/day**, this means **100 mg per kilogram** of body weight per day. So, during a 24 hour period you give 100 mg of the medicine for each kilogram the person weighs.

For example, suppose you want to give aspirin to a boy with rheumatic fever who weighs 36 kilograms. The recommended dose of aspirin for rheumatic fever is 100 mg/kg/day. So multiply: 100 mg x 36 = 3600 mg. The boy should get 3600 mg of aspirin a day. One aspirin tablet contains 300 mg of aspirin, so to get 3600 mg, he will need to take 12 tablets each day. So give the boy 2 tablets 6 times a day (or 2 tablets every 4 hours). For more information on dosages, see Chapter 8.

DECIDING DOSAGE FROM A RANGE

The dosage for some medicines is given as a range, for example:

Dosage of penicillin:
adults and children over 12 years:
250 to 500 mg
4 times a day for 10 days

The amount someone should take depends on the person's size and the severity of their condition (usually an infection). In general, give the smaller amount of the range for a smaller person or a less severe infection, and the larger amount for a larger person or a more severe infection.

Note to educators, planners of health care programs, and local distributors of this book:

If this book is being used to train village health workers or is distributed by a local health care program, **information about local names and prices of medicines should accompany the book.** Wherever possible, also include local sources for **generic or low-cost medicines and supplies.** (See "Buying Supplies for the Medicine Kit," page 333.)

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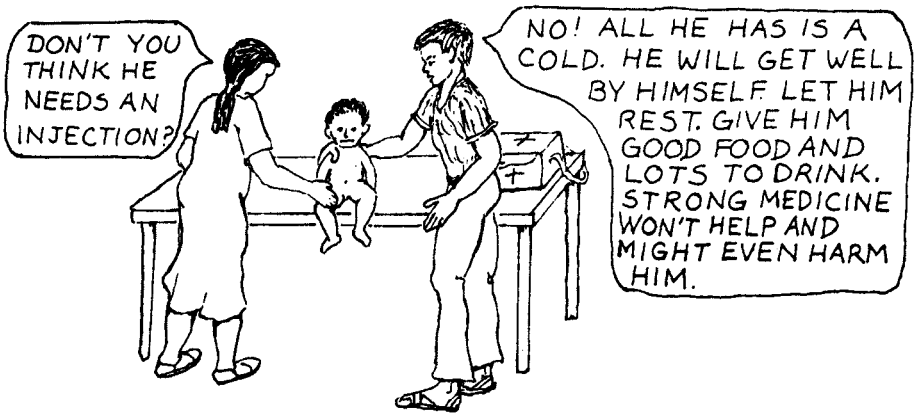
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ONLY USE A MEDICINE WHEN YOU ARE SURE IT IS NEEDED AND WHEN YOU ARE SURE HOW TO USE IT

Note: Some medicines can cause bad reactions if taken together. Before taking two or more medicines at the same time, consult a health worker, if possible, Also, read the information on the package of any medicine before using it.

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Information on Medicines

ANTIBIOTICS

THE PENICILLINS: VERY IMPORTANT ANTIBIOTICS

Penicillin is one of the most useful antibiotics. It fights certain kinds of infections, including many that produce pus. It does no good for diarrhea, most urinary infections, backache, bruises, the common cold, chickenpox, or other virus infections (pages 18 and 19).

Penicillin is measured in milligrams (mg) or units (U). For penicillin G, 250 mg =400,000 U

RISKS AND PRECAUTIONS

for all kinds of penicillin (including ampicillin and amoxicillin):

For most people penicillin is one of the safest medicines. Too much does no harm and only wastes money. Too little does not completely stop the infection and may make the bacteria resistant (more difficult to kill).

In certain persons penicillin causes **allergic reactions**. Mild allergic reactions include itchy raised spots or rashes. Often these come several hours or days after taking penicillin and may last for days. Antihistamines (p. 387) help calm the itching.

Rarely, penicillin causes a dangerous reaction called **allergic shock**. Soon after penicillin is injected (or swallowed), the person suddenly gets pale, has trouble breathing, and goes into the state of shock (p. 70). **Epinephrine (adrenaline) must be injected at once.**

Always have epinephrine ready when you inject penicillin (p. 386).

A person who has once had **any** allergic reaction to penicillin should **never** be given any kind of penicillin, ampicillin or amoxicillin again, either by mouth or by injection. This is because the next time the reaction would likely be far worse and might kill him. (But stomach upset from taking penicillin is not an allergic reaction, and no cause to stop taking it.)

Persons who cannot take penicillin can sometimes be treated with tetracycline or erythromycin by mouth. See pages 354 and 355 for uses and precautions.

Most infections that can be treated with penicillin can be treated quite well with penicillin taken by mouth. Injected forms of penicillin are more dangerous than those taken by mouth.

Use injectable penicillin only for severe or dangerous infections.

Before injecting penicillin or any medicine that contains it, take the precautions given on p. 71.

RESISTANCE TO PENICILLIN:

Sometimes penicillin does not work against an infection it would usually control. This may be because the bacteria have become resistant, so that penicillin no longer harms them (p. 58).

Nowadays, infections that are at times resistant to penicillin include impetigo, sores on the skin with pus, respiratory infections, breast infections (mastitis) and infections of the bone (osteomyelitis). If one of these infections does not respond to ordinary penicillin, another antibiotic may be tried. Or special forms of penicillin, (methicillin, nafcillin, oxacillin, cloxacillin, dicloxacillin) may work. Consult a health worker for dosage and precautions.

In many parts of the world, gonorrhea and other sexually transmitted infections are now resistant to penicillin. See page 359 for other antibiotics. Pneumonia is also sometimes resistant to penicillin—try cotrimoxazole (p. 357) or erythromycin (p. 354).

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PENICILLIN BY MOUTH

Penicillin V (phenoxymethyl penicillin)

Name:_____ price: _____ for _____

Often comes in: 250 mg (400,000 U) tablets

also: suspensions or powders for suspension, 125 or 250 mg per teaspoon

Penicillin by mouth (rather than injections) should be used for mild and moderately severe infections, including:

- abscessed or infected teeth
- erysipelas
- ear infections
- sinusitis
- sore throat with sudden, high fever (strep throat)
- some cases of bronchitis
- rheumatic fever
- pneumonia

If infection is severe, it may be best to start with injections of penicillin, but often penicillin by mouth can be given instead once improvement begins.

If improvement does not begin within 2 or 3 days, consider using another antibiotic and try to get medical advice.

Dosage for penicillin:

- adults and children over 12 years: 250 to 500 mg 4 times a day for 10 days
- children from 6 to 12 years: 125 to 250 mg 4 times a day for 10 days
- children from 1 to 5 years old: 125 mg 4 times a day for 10 days
- children less than 1 year old: 62.5 mg 4 times a day for 10 days

For strep throat (to prevent rheumatic fever): for each age group, take the maximum dosage above, 2 times a day for 10 days.

To help the body make better use of the medicine, **always take penicillin on an empty stomach**, at least 1 hour after or 2 hours before meals.

INJECTABLE PENICILLIN

Penicillin G, benzylpenicillin

Injectable penicillin should be used for certain severe infections, including:

- tetanus
- severe pneumonia
- badly infected wounds
- gangrene
- syphilis

Injectable penicillin comes in many different preparations. Before you inject any penicillin, be sure to check the **amount** and the **kind**.

CHOOSING THE RIGHT KIND OF PENICILLIN FOR INJECTION:

Some kinds of penicillin do their job quickly but do not last long. Others work more slowly but last longer. There are times when it is better to use one kind than another.

Short-acting penicillin: These are known by many names, including benzylpenicillin, crystalline penicillin, aqueous penicillin, soluble penicillin, sodium penicillin, potassium penicillin, and penicillin G injections. These penicillins act quickly but only stay in the body a short time, so they must be injected every 4 to 6 hours (4 to 6 times a day). A short-acting penicillin is the best choice for very severe infections when high doses of penicillin are needed. For example, for gas gangrene or severe pneumonia.

Intermediate-acting penicillin: Procaine benzylpenicillin or procaine penicillin. These work more slowly and last about a day in the body, so injections should be given once daily. Procaine penicillin, or a combination of procaine and a short-acting penicillin, is the best choice for most infections when injectable penicillin is needed.

Long-acting penicillin: Benzathine benzylpenicillin or benzathine penicillin. This penicillin goes into the blood slowly and lasts up to a month. Its main use is in the treatment of strep throat and syphilis, and for prevention of rheumatic fever. It is useful when a person lives far away from someone who injects or cannot be counted upon to take penicillin by mouth. For mild infections a single injection may be enough. Benzathine benzylpenicillin often comes combined with faster-acting penicillins.

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Benzylpenicillin (crystalline penicillin, penicillin G, etc.)
(a short-acting penicillin)

Name:_____ price:_____ for _____

Often comes in: vials of 1 million U (600 mg) or 5 million U (3 g)

Dosage of benzylpenicillin or any short-acting penicillin—for severe infections:

Give an injection every 4 hours for 10 to 14 days.

In each injection give:
adults and children over age 8: 1 million U
children age 3 to 8: 500,000 U
children under 3: 250,000 U

Procaine penicillin (procaine benzylpenicillin, procaine penicillin G)
(an intermediate-acting penicillin)

Name:_____ price:_____ for _____

Often comes in: vials of 1 million U (1 g) or 3 million U (3 g), and more

Dosage of procaine penicillin—for moderately severe infections:

Give 1 injection a day for 10 to 15 days.

With each injection give:
adults: 600,000 to 1,200,000 U
children age 8 to 12: 600,000 U
children age 3 to 7: 300,000 U
children under 3: 150,000 U
newborn babies: DO NOT USE unless no other penicillin or ampicillin is available. If this is your only choice, inject 50,000 U, 1 time a day for 10 to 15 days.

Sometimes procaine penicillin comes premixed with a short-acting penicillin such as benzyl penicillin or penicillin G. The ***dosage*** for these procaine penicillin combinations are the same as for procaine penicillin alone.

Benzathine benzylpenicillin (benzathine penicillin G)
(a long-acting penicillin)

Name:_____ price:_____ for _____

Often comes in: vials of 1,200,000 or 2,400,000 U

Dosage of benzathine benzylpenicillin—for mild to moderately severe infections:

Give 1 injection every 4 days. For mild infections, 1 injection may be enough.
adults and children 30 kg or more: 1,200,000 U
children up to 30 kg: 600,000 U

For rheumatic fever, give one injection of the above dose.

To prevent repeat infection in persons who have had rheumatic fever, give the above dose every 4 weeks (p. 310).

For treatment of syphilis, benzathine benzylpenicillin is best. For dosage, see page 238.

For treatment of tetanus in newborn babies, inject 100,000 U one time only along with antitetanus immunoglobulin and tetanus vaccine (p. 184).

AMPICILLIN AND AMOXICILLIN: BROAD-SPECTRUM PENICILLINS

Ampicillin

Often comes in:

solutions,125 or 250 mg/5 ml
price:_____ for _____

capsules, 250 mg
price:_____ for _____

injections, vials of 500 mg or 1 g
price:_____ for _____

Amoxicillin

Often comes in:

capsules or tablets: 250 or 500 mg
price:_____ for _____

mixture: 125 mg in 5 ml
price:_____ for _____

or 250 mg in 5 ml
price:_____ for _____

These ***broad-spectrum*** penicillins kill many more kinds of bacteria than other penicillins. They are safer than other broad-spectrum antibiotics and are especially useful for babies and small children.

Ampicillin and amoxicillin are often interchangeable. When you see a recommendation for ampicillin in this book, you will often be able to use amoxicillin in its place, in the correct dose (see below). But **do not take amoxicillin by mouth when injected ampicillin is recommended** (amoxicillin does not come in injectable form).

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Both these medicines, but especially ampicillin, tend to cause nausea and diarrhea. Avoid giving them to people who already have diarrhea if you can give another antibiotic instead.

Ampicillin works well when taken by mouth. Injections should only be used for severe illnesses such as meningitis, peritonitis, and appendicitis, or when the sick person vomits or cannot swallow.

Ampicillin and amoxicillin are often useful in treating pneumonia or ear infections of children under 6 years, tooth abscess, and typhoid fever (in some parts of the world). Ampicillin is also useful in treating septicemia and unexplained illness in the newborn, meningitis, peritonitis, and appendicitis. Amoxicillin is also used to treat ulcers and chronic bronchitis.

Persons allergic to penicillin should not take ampicillin or amoxicillin. See ***Risks and Precautions*** for all types of penicillin, p. 350.

Dosage for ampicillin and amoxicillin:

By mouth (25 to 50 mg/kg/day)—capsules of 250 mg; syrup with 125 mg per teaspoon (5 ml)

Ampicillin: Give 4 doses a day for 7 days.

Amoxicillin: Give 3 doses a day for 7 days.

In each dose give:
- adults and children over 10: 1 capsule or 2 teaspoons (250 mg)
- children under 10: ½ capsule or 1 teaspoon (125 mg)
- newborn babies: ¼ capsule or ½ teaspoon (62 mg)

For chlamydia: see doses on p. 359.

Dosage for ampicillin:

By injection, for severe infections

Give 4 doses a day, for 5 to 7 days.

In each dose give:
- adults: 500 mg (one 500 mg vial)
- children age 8 to 12: 250 mg (½ of a 500 mg vial)
- children age 3 to 7: 125 mg (¼ of a 500 mg vial)
- children under 3: 62 mg (⅛ of a 500 mg vial)
- newborn babies: 125 mg (¼ of a 500 mg vial) only **2 times** a day

For meningitis: give 100 mg/kg 2 times a day AND also give ceftriaxone OR gentamicin.

Amoxicillin with clavulanic acid (Amoxicillin-clavulanate potassium, *Augmentin*)

Often comes in:

4 to 1 strength tablets, 500 mg amoxicillin + 125 mg clavulanic acid
price:_____ for_____

7 to 1 strength tablets, 875 mg amoxicillin + 125 mg clavulanic acid
price:_____ for_____

4 to 1 liquid, 125 mg amoxicillin + 31.25 mg clavulanic acid, in 5 ml
price:_____ for_____

4 to 1 liquid, 250 mg amoxicillin + 62.5 mg clavulanic acid, in 5 ml
price:_____ for_____

When clavulanic acid is used together with amoxicillin, it strengthens the action of the amoxicillin. It comes in different strengths. For children, it is best to use the 4 to 1 ratio such as the 500/125 tablet or the liquid medicine. Often, the combined dose of amoxicillin with clavulanic acid mentions only the amount of amoxicillin (as we do here).

How to use: Give by mouth with food or milk.

For animal bites: To prevent infection, use the 4 to 1 strength and give 20 mg per kg each day for 3 to 5 days, divided into 3 doses. If you cannot weigh the person, dose by age:
- adults: 250 mg by mouth, 3 times a day OR use the 875/125 tablet by mouth, 2 times a day for 3 to 5 days.
- children age 6 to 12: give 250 mg by mouth, 3 times a day for 3 to 5 days.
- children age 1 to 5: give 125 mg by mouth, 3 times a day for 3 to 5 days.
- children 3 months to 1 year: give 50 mg by mouth, 3 times a day for 3 to 5 days.

If the bite is already infected, use the same dose for 14 days.

For pneumonia:
- adults: give the 7 to 1 tablet of 875 mg by mouth, 2 times a day for 7 to 10 days OR give the 4 to 1 tablet of 500 mg by mouth, 3 times a day for 7 to 10 days.
- children age 6 to 12: give 250 mg by mouth, 3 times a day for 7 to 10 days.
- children age 1 to 5: give 125 mg by mouth, 3 times a day for 7 to 10 days.
- children 3 months to 1 year: give 50 mg by mouth, 3 times a day for 7 to 10 days.

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ERYTHROMYCIN: AN ALTERNATIVE TO PENICILLIN

Erythromycin

Name:_____

Often comes in:

tablets or capsules of 250 mg
Price:_____ for _____

syrups with 125 or 200 mg/5 ml
Price:_____ for _____

in 5 ml eye ointment at 0.5% to1%
Price:_____ for _____

Erythromycin works against many of the same infections as penicillin and tetracycline, but is more expensive. In many parts of the world, erythromycin now works better than penicillin for some cases of pneumonia and certain other infections.

Erythromycin may be used instead of penicillin by persons allergic to penicillin. Also, it may often be used by persons allergic to tetracycline, and by pregnant women and children, who should not take tetracycline. In some cases, erythromycin is not a good substitute for tetracycline. See the sections of the book which discuss each illness.

Erythromycin is fairly safe, but care should be taken not to give more than the recommended dose. Do not use for more than 2 weeks, as it may cause jaundice.

Dosage of erythromycin:

Take erythromycin with meals to avoid stomach upset.

Give 1 dose 3 or 4 times a day for 7 to 10 days.

In each dose give:
adults: 500 mg (2 tablets or 4 teaspoons), 4 times a day
children 3 to 12 years: 250 mg (1 tablet or 2 teaspoons), 3 times a day
children under 3 years: 125 mg (½ tablet or ½ to 1 teaspoon), 3 times a day

For cholera: (where erythromycin works for cholera): give the above dosages, but only for 3 days.

For use in the eyes: see page 379.

For newborn eye infection: Give 30 to 50 mg per kg each day, divided into 3 doses a day. Give for 7 to 10 days. For an average-sized newborn of about 3 kg, each dose should be: 0.75 ml (this is a bit more than ⅛ teaspoon) of 250 mg/5 ml erythromycin syrup, **OR** 62 mg (¼ of a 250 mg tablet) ground up in a little breast milk or water.

For women with breast infection: Give 500 mg 2 times a day for 7 to 10 days.

For syphilis: in adults who have had syphilis less than 2 years, give the above dosage for 14 days. In adults who have had syphilis 2 years or more, give the above dosage for 30 days.

For buboes: in adults, give the above dosage for 21 days.

Azithromycin

Name:_____

Often comes in:

capsules of 250 mg
Price:_____ for _____

Azithromycin works against sexually transmitted infections (STIs) that ause discharge or genital sores, and for infections to which other medicines no longer work because fo drug resistance. Azithromycin is safe for women who are pregnant or breastfeeding. Unfortunately, azithromycin can be expensive and is not found everywhere.

For chlamydia:
In adults, give 1 g by mouth, 1 time only.
In babies 7 to 28 days old, give 50 mg by mouth, 1 time a day for 3 days.

For typhoid: Give 1g by mouth, 1 time a day for 5 days.

For yaws: Give 30 mg/ kg up to 2g, 1 time only.

For pneumonia: Give 500 mg by mouth, 1 time a day for 3 days.

For trachoma: Give by mouth 1 time only:
8 years or older: 1000 mg (1 g)
children 3 to 7 years: 750 mg
children 1 to 3 years: 500 mg
children under 1 year: 250 mg

For rheumatic fever: in children, give 20 mg/kg/ day by mouth 1 time each day for 3 days.

For syphilis: in adults who have had syphilis less than 2 years, give 2 g by mouth, 1 time only.

For buboes: in adults, give 1 g by mouth, 1 time a week for 3 weeks.

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TETRACYCLINES: BROAD-SPECTRUM ANTIBIOTICS

Tetracycline (tetracycline HCl, oxytetracycline, etc.)

(Familiar but expensive brand: *Terramycin*)

Name:_____

Often comes in:

Capsules of 250 mg or 500 mg
Price:_____ for _____

mixture, 125 mg in 5 ml
Price:_____ for _____

eye ointment at 1%
Price:_____ for _____

Tetracyclines are ***broad-spectrum*** antibiotics that fight many different bacteria. Tetracycline taken by mouth works as well and causes fewer problems than injections.

Tetracycline can be used for:

- diarrhea or dysentery caused by bacteria or amebas
- sinusitis
- respiratory infections
- typhus
- brucellosis
- cholera
- trachoma
- stomach ulcers

Tetracycline does no good for the common cold. For many common infections it does not work as well as penicillin or sulfas. It is also more expensive.

RISKS AND PRECAUTIONS:

1. Tetracycline can damage developing teeth and bones. Do not use during pregnancy or give to children under 8 years old. Use erythromycin instead.
2. Tetracycline may cause diarrhea or upset stomach, especially if taken for a long time.
3. Tetracycline that is "old" or past the expiration date can be poisonous.
4. For the body to make the best use of tetracycline, do not take milk or antacids within 2 hours before or after taking the medicine.
5. Some people develop a skin rash after spending time in the sun while taking tetracycline.

Dosage for tetracycline (20 to 40 mg/kg/day)—capsules of 250 mg and mixture of 125 mg in 5 ml

Give tetracycline by mouth 4 times a day for 7 to 10 days.

In each dose give:
adults: 250 mg (1 capsule)
children 8 to 12 years: 125 mg (½ capsule or 1 teaspoon)
children under 8 years: As a general rule, **do not use tetracycline**—instead use cotrimoxazole or erythromycin.

In severe cases, and for infections like chlamydia, pelvic inflammatory disease, typhus, stomach ulcers, and brucellosis, twice the above dose should be given (except to small children).

For cholera: (where tetracycline works for cholera): give the same doses listed above, but only for 3 days.

For use in the eyes: see page 379.

Doxycycline

(familiar brand name: *Vibramycin*)

Name:_____

Often comes in:

capsules or tablets of 100 mg
Price:_____ for _____

Doxycycline is like tetracycline but is taken 2 times instead of 4 times a day. It can be used for the same illnesses as tetracycline. **The risks and precautions are the same as for tetracycline.**

Dosage of doxycycline—tablets of 100 mg

Give doxycycline by mouth 2 times each day.

In each dose give:
adults: 100 mg (1 tablet)
children 8 to 12: 50 mg (½ tablet)
children under 8: **Do not use doxycycline.**

For pneumonia:
adults, give the above dose.
children 8 years and older, give 1 to 2 mg/kg by mouth 2 times each day for 5 to 7 days.

For PID: for people over 40 kg, give the above dose. Also use cefixime or ceftriaxone (p. 359) and metronidazole (p. 370).

For buboes: for adults, give the above dosage, for 21 days.

For malaria:

Use with quinine (p. 369) to treat uncomplicated chloroquine-resistant malaria:

For uncomplicated falciparum malaria, start the dose of doxycycline 1 or 2 days after starting the quinine or as soon as the person can take the medicine without vomiting. Give 2 times each day, for 7 days.

For uncomplicated vivax malaria, give the doxycycline and quinine as above, and when finished, also give primaquine (p. 368) for 14 days.

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To prevent malaria for travel to areas with malaria, adults and children take one dose of doxycycline each day beginning a day or two before travel. Continue one dose each day while you are there and for 28 days after leaving the malaria region.

For cholera (where doxycycline works against cholera):

Give 6 mg per kg, one time only. Or dose by age:

Over 12 years: give 300 mg, one time only.
8 to 12 years: give 150 mg, one time only.

Minocycline

Name:_____

Price: _____ for_____

Often comes in: capsules or tablets of 50, 75, or 100 mg

Minocycline is a tetracycline that fights more kinds of bacteria than other antibiotics in this family. **The risks and precautions are the same as for tetracycline. Use with caution if you have kidney problems.**

For dosage of minocycline in combination treatment for PB leprosy with only one skin patch, see page 362.

CHLORAMPHENICOL: AN ANTIBIOTIC FOR CERTAIN SEVERE INFECTIONS

Chloramphenicol *(Chloromycetin)*

Name:_____

Often comes in:

capsules of 250 mg
Price:_____ for _____

mixture, 150 mg in 5 ml
Price:_____ for _____

injections, 1000 mg per vial
Price:_____ for _____

Chloramphenicol should be used only for typhoid and for very serious infections that are not cured by sulfas, penicillin, tetracycline, or ampicillin. Ampicillin usually works as well as or better than chloramphenicol, and is much safer. For life-threatening illnesses such as meningitis, peritonitis, deep gut wounds, septicemia, or severe childbirth fever, chloramphenicol may be used when less dangerous medicines (like cephalosporins) are not available.

WARNING: Chloramphenicol harms the blood of some persons. It is especially dangerous for newborn babies. **For a baby less than 1 month old with a serious infection, give ampicillin instead.**

Take care not to give more than the recommended dose of chloramphenicol. **For babies, the dose is very small** (see below). Avoid long or repeated use.

In many places, typhoid has become resistant to chloramphenicol. Try ciprofloxacin or cotrimoxazole.

Chloramphenicol taken by mouth often does more good than when it is injected, and is less dangerous. Except in rare cases when the person cannot swallow, **do not inject chloramphenicol.**

Dosage for chloramphenicol (50 to 100 mg/kg/day)—capsules of 250 mg, or a mixture of 125 mg in 5 ml.

Give by mouth 4 times a day.

In each dose give:

adults: 500 to 750 mg (2 to 3 capsules)
For typhoid, peritonitis, and other dangerous infections the higher dose should be given (3 capsules 4 times a day is 12 capsules a day).
children 8 to 12 years: 250 mg (1 capsule or 2 teaspoons of mixture)
children 3 to 7 years: 125 mg (½ capsule or 1 teaspoon)
babies 1 month to 2 years: give 12 mg (½ ml of the mixture or 1/20 part of a capsule) for each kg of body weight. (This way, a 5 kg baby would get 60 mg, which is ½ teaspoon of mixture, or ¼ capsule, at each dose.)

THE SULFAS (OR SULFONAMIDES): INEXPENSIVE MEDICINE FOR COMMON INFECTIONS

Sulfamethoxazole, sulfisoxazole, sulfadoxine

Name:_____ Price:_____ for _____

The sulfas or sulfonamides fight many different kinds of infections. They are cheap and widely available, but often cause allergic reactions. Stop using any medicine containing a sulfonamide if it causes itching or a skin rash.

Not all the sulfas are used the same way or have the same dosage. Before using any sulfonamide, be sure of the correct use and dosage.

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WARNING: It is important to **drink lots of water**, at least 8 glasses a day, when taking sulfa, to prevent harm to the kidneys.

If the sulfa causes a rash, blisters, itching, joint pain, fever, lower back pain, or blood in the urine, **stop taking it and drink lots of water**.

Cotrimoxazole (sulfamethoxazole with trimethoprim, TMP-SMX)

(familiar brand names: *Bactrim, Septra*)

Name:_____

Often comes in:

tablets of 100 mg sulfamethoxazole with 20 mg trimethoprim
Price:_____ for _____

tablets of 400 mg sulfamethoxazole with 80 mg trimethoprim
Price:_____ for _____

mixture of 200 mg sulfamethoxazole with 40 mg trimethoprim in 5 ml
Price:_____ for _____

Note: This medicine also comes in double strength tablets *(Bactrim DS and Septra DS)* with 800 mg sulfamethoxazole and 160 mg trimethoprim. Use half the number of tablets given below if the medicine you have is double strength.

This combination medicine fights a wide range of bacteria, and is less expensive than ampicillin.

WARNING: Unless they have HIV, women in the last 3 months of pregnancy and babies less than 8 weeks old should not use cotrimoxazole. Do not give cotrimoxazole to someone who is allergic to medicines in the sulfa family.

Dosage of cotrimoxazole—using tablets of 400 mg sulfamethoxazole with 80 mg trimethoprim:

Important: Take with lots of water.

For brucellosis, ear infections, diarrhea with blood and fever (shigella), impetigo, chronic bronchitis with fever, infected wounds, and respiratory infections (pneumonia): Take 2 times a day for 5 days.

In each dose give:
- adults and children over 12 years: 2 tablets
- children 6 to 12 years: 1 tablet
- children 6 months to 5 years: ½ table
- babies 6 weeks to 5 months old: ¼ tablet
- babies under 6 weeks: **Do not give cotrimoxazole.**

For bladder infection or UTI: Take two 480 mg tablets 2 times a day for 3 days.

For kidney infection: Take two 480 mg tablets 2 times a day for 10 days.

Adults with **HIV** can take a 480 mg dose of cotrimoxazole 2 times every day—with lots of water—to prevent diarrhea, pneumonia, and other infections. Avoiding infections will help people with HIV live longer, healthier lives.

Children with **HIV** should also take cotrimoxazole. Using 480 mg tablets:
- children 6 to 14 years old: 1 tablet once a day
- children 6 months to 6 years old: ½ tablet once a day
- children under 6 months old: ¼ tablet once a day

People with HIV who get pneumonia should take 1920 mg (four 480 mg tablets) of cotrimoxazole 3 times every day for 21 days. Other than pneumonia, the doses for people with HIV to treat bloody diarrhea and other problems are the same as listed above.

CEPHALOSPORINS

These are powerful antibiotics that work against many different kinds of bacteria. They are often expensive and can only be given by injection. However, they generally have fewer risks and side effects than many other antibiotics and, when obtainable, can be useful in treating certain serious diseases.

There are many different types, including cefazolin (***Ancef***), cephalexin (***Keflex***), cephradine (***Velosef***), cefuroxime (***Ceftin***), cefoxitin (***Mefoxin***), ceftriaxone (***Rocephin***), cefotaxime (***Claforan***), and ceftazidime (***Fortaz***, ***Taxidime***, ***Tazicef***). Various cephalosporins can be used for pneumonia, urinary infections, typhoid, gut or pelvic infections, bone infections, and meningitis.

Get advice on dosages and side effects before using these medicines. Also, do not use them for mild illnesses or diseases that can be treated equally well with less expensive antibiotics.

Ceftriaxone

Name:_____

Price:_____ for _____

Ceftriaxone is a strong antibiotic used against serious infections and for infections resistant to penicillin. Only use ceftriaxone to treat the specific infections for which it is recommended in your area.

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Ceftriaxone cannot be taken by mouth. The injection can be painful. Mix with 1% lidocaine if you know how. When injecting, put the needle deep in the muscle.

RISKS AND PRECAUTIONS:

Do not give to a baby less than 1 week old. Avoid in babies who were born early or especially small (if there is a chance that they may have been early). Do not use if there is jaundice. Avoid while breastfeeding.

Dosage: Ceftriaxone is often used in combination with other medicines to treat specific infections, such as meningitis, gonorrhea, and womb infection.

For severe shigella infections: Inject 50 mg/ kg once a day for 5 days, but no more than 4 g per day for adults, or 1 g per day for children

adults: 1 to 2 grams, once a day
children 8 to 12 years: 1 g once a day
children 2 to 7 years: 500 mg once a day
children 2 months to 2 years: 250 mg once a day

For meningitis: Inject 100 mg/ kg per day, divided into 2 doses (give 1 dose every 12 hours). Give with ampicillin. See page 185.

For typhoid: Inject 50-75 mg/ kg 1 time a day for 10 to 14 days.

For gonorrhea eye infection in the newborn 7 days or older: Inject 50 mg/ kg, 1 time only. Do not give more than 125 mg.

For malaria: Give by mouth, 2 times a day for 7 days

Adults: 600 mg
children 8 to 12 years: 450 mg
children 3 to 7 years: 300 mg
children under 3: 150 mg

OTHER ANTIBIOTICS

Ciprofloxacin

Name:_____

Price: _____ for _____

Often comes in: tablets of 250, 500, or 750 mg

Ciprofloxacin is a powerful antibiotic of the quinolone family. It is used to treat infections that are resistant to penicillin and other antibiotics. Some important uses of ciprofloxacin are to treat chancroid, shigella, typhoid, peritonitis, and appendicitis. But for most infections it is still better to use a less expensive medicine such as penicillin or ampicillin.

RISKS AND PRECAUTIONS:

Pregnant or breastfeeding women should not use ciprofloxacin. It is best to avoid giving ciprofloxacin to children if possible.

Dosage of ciprofloxacin:

adults: Give 500 mg, 2 times a day

For chancroid and shigella, give the above dosage for 3 days. But give for 7 days if the person also has HIV.

For typhoid, give the above dosage for 10 days.

Ofloxacin

Name:_____

Price: _____ for_____

Often comes in: tablets of 200, 300, or 400 mg

Ofloxacin is quinolone antibiotic used to treat infections of the skin, reproductive, and urinary systems that are resistant to other antibiotics.

RISKS AND PRECAUTIONS:

Use with caution if you have liver or kidney problems. Do not use during breastfeeding.

For dosage of ofloxacin in combination treatment for PB leprosy with only one skin patch, see page 362.

Clindamycin

Name:_____

Often comes in:

capsules of 25, 75, 150, and 300 mg

Price: _____ for _____

liquid, 15 mg/ml

Price: _____ for _____

Clindamycin is a strong antibiotic of the lincosamide family that is used to treat many kinds of infections. Clindamycin is especially useful for treating infections that have become resistant to penicillin, such as bone infections. It can also be used with quinine to treat malaria.

RISKS AND PRECAUTIONS:

If you are taking clindamycin and start to have diarrhea, stop taking it immediately. It can cause serious problems. Avoid while breastfeeding.

Dosage of clindamycin

Give clindamycin by mouth, 3 times a day.

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In each dose give: adults: 150-400 mg
children 8-12 years: 150-300 mg
children 3-7 years: 75-150 mg
children under 3 years: 37-75 mg

For malaria: (Also give quinine, see p. 369). Give by mouth, 2 times a day for 7 days
Adults: 600 mg
children 8 to 12 years: 450 mg
children 3 to 7 years: 300 mg
children under 3: 150 mg

Gentamicin

Gentamicin is an injectable antibiotic that is used for very serious infections such as septicemia in a newborn and infection after giving birth (see pages 275 and 276 for dosages). Gentamicin should only be given by an experienced health worker, and only when other, safer medicines are not available. Incorrect use of this medicine can cause deafness and serious damage to the kidneys.

For meningitis: Inject 2 mg per kg for the first dose, then 1.7 mg per kg every 8 hours. Give with ampicillin (p. 353).

For appendicitis or peritonitis: Inject 1.5 mg per kg every 8 hours. Give with ampicillin.

MEDICINES FOR GONORRHEA AND CHLAMYDIA

Gonorrhea and chlamydia often occur together (p. 236) so it is common to give medicines for both at the same time. If there are signs that could be trichomonas (p. 241), also use a third medicine, metronidazole (p. 370).

For each list below, the best choice is first with the next best after that. For example, the best combination is ceftriaxone and azithromycin.

For gonorrhea, use one of the following:
ceftriaxone, one injection of 1 g (1000 mg), one time only.
OR
cefixime, 800 mg by mouth, one time only
OR
spectinomycin, one injection of 2 g, one time only

People who are pregnant or breastfeeding should not take spectinomycin.

For chlamydia, use one of the following:
azithromycin, 1 g by mouth, one time only
OR
doxycycline (p. 355), 100 mg by mouth, 2 times a day for 7 days
OR
erythromycin (p. 354), 500 mg by mouth, 4 times a day for 7 days. Always take erythromycin with food.

Do not take doxycycline if you are pregnant or breastfeeding, use azithromycin or erythromycin instead.

MEDICINES FOR TUBERCULOSIS

When treating tuberculosis (TB), it is very important to always use several medicines at the same time to kill the TB bacteria. Treatment begins with 4 medicines. If fewer medicines are used, the bacteria can become resistant to the drugs and make the disease harder to treat.

Many government programs test for TB and give medicines free or at low cost. Usually TB must be treated for 6 months or longer and anti-TB medicines are taken every day. In directly observed therapy (DOT), a health worker or community volunteer watches a patient take every dose of their anti-TB medicines. This helps patients stay on treatment, especially in the early months. The **full, long-term treatment is extremely important** to kill the bacteria and to keep TB from coming back again, infecting other people, and developing drug resistance.

Drug resistance means that the best and least expensive drugs no longer kill the TB bacteria. MDR (multi-drug resistant) TB and XDR (extensively drug resistant) TB are more difficult and costly to treat and the medicines must be taken for 20 to 24 months. If the laboratory you work with can culture sputum for repeat or suspicious cases of TB, more MDR and XDR cases can be identified and treated earlier with the right medicines. Experienced advice from local or national anti-TB programs is important as treatments change, bacteria become resistant, and new medicines may become available.

The recommended treatments for TB are on the next page. **Isoniazid (INH)** and **rifampicin** should always be used together in the treatment of TB. **Ethambutol** and **streptomycin** are also often used to treat TB. Taking **pyrazinamide** with INH and rifampicin can improve the likelihood that the patient is cured.

If treatment causes itching, yellow skin and eyes (jaundice), or stomach pains, see a health worker about changing the dosage or medicines. If blisters occur, stop taking medicines until you see a health worker. Avoid alcohol when taking TB medicines, especially isoniazid.

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Isoniazid can also be used to **prevent TB** from developing in family members of people sick with TB, and in people with HIV. Because it is common for people to have both HIV and TB, it is a good idea for everyone with one infection to be tested for the other.

Recommended treatments

Always check with the health authorities in your region to find out what combinations of medicines are recommended in your area. If you cannot get information from them, use one of the following combinations:

1. For new cases of TB, give isoniazid, rifampicin, ethambutol, and pyrazinamide for 2 months. Doses should be taken every day. Then stop taking pyrazinamide and ethambutol, but continue using rifampicin and isoniazid for another 4 months.
2. If the person has used TB medicines in the past but gets sick again, give isoniazid, rifampicin, ethambutol, pyrazinamide and streptomycin for 2 months. Then give isoniazid, rifampicin, ethambutol, and pyrazinamide for 1 month. Then continue using rifampicin, isoniazid, and ethambutol for another 5 months. All doses should be taken every day.
3. Pregnant women with TB should seek experienced medical advice. Otherwise use the combination of medicines in number 1 (without pyrazinamide). Never use streptomycin during pregnancy. Also give 50 mg of vitamin B_6 (pyridoxine) every day.

Keep TB medicines at "room temperature" 20°C to 25°C (68°F to 77°F) and away from light.

Isoniazid (INH)

Name: _____ price: _____ for _____

Often comes in: tablets of 100 or 300 mg

This is the most basic anti-TB medicine. To treat TB, it must always be given with rifampicin and at least 1 other anti-TB medicine. For prevention it can be given alone. Resistance to isoniazid is becoming common in some areas.

RISKS AND PRECAUTIONS:

Rarely, isoniazid causes anemia, nerve pains in the hands and feet, muscle twitching, or even seizures, especially in malnourished persons. These side effects can usually be treated by giving 50 mg of pyridoxine (vitamin B_6) daily, by mouth (p. 395).

Sometimes isoniazid can damage the liver. Persons who develop the signs of hepatitis (yellow color of skin and eyes, itching, loss of appetite, pain in the belly, see p. 172) while taking isoniazid should stop taking the medicine.

Dosage for isoniazid (5 mg/kg/day for adults; 10 mg/kg/day for children): using tablets of 100 mg

Give isoniazid once a day.

In each dose give:
adults: 300 mg (3 tablets)
children: 50 mg (½ tablet) for each 5 kg the child weighs.

For prevention of TB in family members of persons with TB, and for persons with HIV, it is recommended to give the above dose of INH for 6 to 9 months.

Rifampicin

Name: _____ price: _____ for _____

Often comes in: tablets or capsules of 150 or 300 mg

This antibiotic is powerful in fighting TB. It is never taken alone or the TB will become resistant to it. When combined with isoniazid and at least one other TB medicine, it can shorten treatment by several months.

Rifampicin is also used to treat leprosy—see page 362.

It is important to keep taking rifampicin regularly, without interruption. Be sure to get more before your supply runs out.

RISKS AND PRECAUTIONS:

Rifampicin can cause serious damage to the liver. A person who has liver problems or is pregnant should take this medicine under medical supervision.

Side effects: Urine, tears, feces, saliva, mucus from coughing (sputum), and sweat are colored red-orange by rifampicin use. The color change is harmless and not a reason for concern. Rarely, rifampicin can cause fever, loss or increase of appetite, vomiting, nausea, confusion, skin rash, and menstrual problems.

Rifampicin reduces the effectiveness of hormonal contraceptives. Use a barrier method like condoms (p. 287) while taking this medicine.

Rifampicin can affect the way ART works for a person with HIV. Talk to an experienced health worker.

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Dosage of rifampicin for TB (10 mg/kg/day for adults; 15 mg/kg/day for children under 30 kg): using tablets or capsules of 150 mg or 300 mg

Give rifampicin once a day, either 1 hour before or 2 hours after eating.

In each dose give:
- adults: 600 mg (two 300 mg capsules or four 150 mg tablets)
- children 8 to 12 years: 300 mg (1 300 mg tablet) to 450 mg (3 150 mg tablets) based on child's weight
- children 3 to 7 years: 225 mg (1½ 150 mg tablets) to 300 mg (1 300 mg tablet) based on child's weight
- children under 3 years: 75 mg (½ 150 mg tablet) to 150 mg (1 150 mg tablet) based on child's weight

Pyrazinamide

Name: _____ price:_____ for _____

Often comes in: tablets of 150 and 400 mg

RISKS AND PRECAUTIONS:

Because there is not enough information about how pyrazinamide affects pregnancy, pregnant women should use it only in areas where there is resistance to isoniazid. Talk to an experienced health worker.

Side effects: May cause swollen and painful joints, loss of appetite, nausea and vomiting, painful urination, fatigue, and fever.

Dosage for pyrazinamide (25 mg/kg/day for adults; 35 mg/kg/day for children under 30 kg): using tablets of 150 or 400 mg

Give 1 dose daily, together with other TB medicines. In each dose give:
- adults: 1000 to 2000 mg (2½ to 5 400 mg tablets) based on person's weight
- children 8 to 12 years: 800 to 1000 mg (2 to 2½ 400 mg tablets) based on child's weight
- children 3 to 7 years: 450 to 750 mg (3 to 5 150 mg tablets) based on child's weight
- children under 3 years: 150 to 300 mg (1 to 2 150 mg tablets) based on child's weight

Ethambutol (familiar brand name: *Myambutol*)

Name:_____ price:_____ for _____

Often comes in: tablets of 100 or 400 mg

RISKS AND PRECAUTIONS:

Ethambutol may cause eye pain or damage if taken in large doses for a long time. The medicine should be stopped if eye problems or vision changes develop. Eye damage caused by ethambutol usually slowly gets better after the medicine is stopped.

Dosage of ethambutol (15 to 25 mg/kg/day): using tablets of 100 mg or 400 mg

Give once a day.

In each dose give:
- adults: 800 to 1200 mg (2 to 3 400 mg tablets) based on person's weight
- children 8 to 12 years: 400 to 800 mg (1 to 2 400 mg tablets) based on child's weight
- children 3 to 7 years: 300 to 400 mg (3 100 mg tablets to 1 400 mg tablet) based on child's weight
- children under 3 years: 100 to 200 mg (1 to 2 100 mg tablets) based on child's weight

Streptomycin

Name:_____ price:_____ for _____

Often comes in:
vials for injection with 1 g in each vial.

Streptomycin is a very useful medicine for treating tuberculosis. It should not be used to treat any other illnesses, because this could increase resistance and make it ineffective against TB.

RISKS AND PRECAUTIONS:

Great care must be taken not to give more than the correct dose. Too much streptomycin for too long may cause hearing loss. If ringing of the ears or hearing loss begins, stop taking the medicine and see a health worker. Use different injection sites. Repeated use of the same site makes the medicine less effective.

Streptomycin should not be taken by pregnant women, persons with kidney problems, or in children smaller than 30 kg.

Dosage for streptomycin (15 mg/kg/day): using vials of liquid or powder for mixing with water to give 1 g of streptomycin in 4 ml

For treatment of tuberculosis:

Give 1 injection daily for 8 weeks.

With each injection give:
- adults: 700 to 1000 mg (3.4 ml to 5 ml) based on person's weight
- children 8 to 12 years: 500 to 600 mg (2.4 to 2.8 ml) based on child's weight
- Do not use in children under 30 kg

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MEDICINES FOR LEPROSY

When treating leprosy, it is important to know which form of leprosy a person has. Look for and count how many patches of skin have raised or irregular edges, and which may have reduced or no feeling in their center. If a person has 5 or fewer skin patches, it is Pauci-Bacillary (PB) leprosy. If they have more than 5 skin patches, it is Multi-Bacillary (MB) leprosy. If possible, use these medicines with the guidance of an experienced health worker or doctor, according to the national plan. Check with your Ministry of Health and the WHO for local information about leprosy treatment.

Treatment of leprosy must usually continue for at least 6 months with a combination of medicines. To prevent the bacteria (bacilli) that cause leprosy from becoming resistant, it is important to keep taking all the medicines regularly, without interruption. Be sure to get more medicine before your supply runs out.

Treatment:

For only one skin patch **(PB leprosy),** take all these medicines by mouth one time only.

Dosage for adults:
- 600 mg rifampicin, and
- 400 mg ofloxacin (p. 358), and
- 100 mg minocycline (p. 356).

Dosage for children under 15 years:
- 300 mg rifampicin, and
- 200 mg ofloxacin, and
- 50 mg minocycline.

For 2 to 5 skin patches **(PB leprosy)**, take all 3 medicines (shown below) by mouth for 6 months.

For more than 5 skin patches **(MB leprosy)**, take all 3 medicines (shown below) by mouth for 1 year.

Dosage for adults:
- 600 mg rifampicin once a month; and
- 300 mg clofazimine once a month, and 50 mg every other day; and
- 100 mg dapsone once a day.

Dosage for children 10 to 14 years:
- 450 mg rifampicin once a month; and
- 150 mg clofazimine once a month, and 50 mg every other day; and
- 50 mg dapsone once a day.

Dosage for children under 10 years:
- 10 mg/kg rifampicin once a month; and
- 100 mg clofazimine once a month, and 50 mg 2 times per week; and
- 2 mg/kg dapsone once a day.

People with leprosy sometimes have sudden periods of increased symptoms called "leprosy reactions." These can happen in untreated people, during treatment, after treatment has stopped, or when there are other changes in the body (for example, other illnesses, puberty, pregnancy, emotional stress). There may be lumpy and inflamed spots, fever, and swollen, tender nerves. It may also cause joint pains, tender lymph nodes and testicles, swelling of the hands and feet, or red and painful eyes which may lead to loss of vision.

For a mild leprosy reaction (skin inflammation but no pain or tenderness of nerves), use aspirin for pain (p. 380). In case of a severe reaction (pain along the nerves, numbness or weakness, eye irritation, or painful testicles), keep taking the leprosy treatment and also take an anti-inflammatory medicine (corticosteroid). Seek experienced medical advice about this because the corticosteroid can also cause serious problems.

Rifampicin

Name:_____ price:_____ for _____

Often comes in: tablets or capsules of 150 and 300 mg

Take rifampicin only with the advice of an experienced health worker or doctor. Take rifampicin either 1 hour before or 2 hours after eating. See page 360 for side effects and risks.

Dapsone (diaminodiphenylsulfone, DDS)

Name:_____ price:_____ for _____

Often comes in: tablets of 25, 50, and 100 mg

Dapsone sometimes causes anemia or skin rashes, which can be severe. Avoid the sun. If severe skin peeling occurs, stop taking the medicine.

WARNING: DDS is a dangerous drug. Keep it where children cannot reach it.

Clofazimine *(Lamprene)*

Name:_____ price:_____ for _____

Often comes in: capsules of 50 and 100 mg.

Clofazimine helps to control leprosy reactions, particularly in persons with MB leprosy.

Side effects: Causes the skin to become a red-purple color. This is only temporary and will disappear 1 to 2 years after stopping the medicine. May cause stomach or digestive problems. Not recommended for pregnant women.

Note: The larger dose of clofazimine, which can also be used daily to control leprosy reactions, is best given with the advice of an experienced health worker or doctor.

OTHER MEDICINES

MEDICINES FOR MALARIA

There are many medicines to treat and prevent malaria. But malaria has developed resistance to medicines, meaning some no longer work. Health workers, local health centers, or the government health authority will know what medicines work best in your area.

MEDICINES USED FOR PREVENTION

Mefloquine, chloroquine, chloroquine and proguanil, atovaquone + proguanil, and doxycycline, are medicines used for prevention when people travel to regions with malaria from an area without malaria. Primaquine is used to prevent repeat attacks of some types of malaria after the malaria has been treated.

Monthly doses of amodiaquine with sulfadoxine + pyrimethamine are used in some Sahel region countries in Africa during the rainy season to prevent malaria in children under 5. In other African countries, infants are given 3 doses of sulfadoxine + pyrimethamine in the first year of life, at the same time as common vaccinations. In some places, monthly doses of sulfadoxine + pyrimethamine are used to prevent malaria during pregnancy.

MEDICINES TO TREAT SEVERE MALARIA

Severe malaria needs emergency treatment with injectable artesunate (IV or IM). Once the person has been treated and stopped vomiting, they will also need 3 days of artemisinin-based combination (ACT) medicines by mouth (see the list of ACT medicines below). If artesunate by injection is not available, a child with severe malaria who is vomiting can be given artesunate capsule suppositories (in the rectum). This can save the child's life. Then go to a health center for more treatment.

MEDICINES TO TREAT UNCOMPLICATED MALARIA FROM P. FALCIPARUM

Malaria from P. falciparum is more likely to become severe. Depending on the region, chloroquine or other malaria medicines no longer work to treat falciparum malaria. Instead, use an ACT (Artemisinin-based Combination Therapy) medicine that works in your area. Take ACT medicines for 3 days. See Using ACT Medicines (page 364). ACT combinations include:

- **Artemether + lumefantrine**
- **Artesunate + amodiaquine**
- **Artesunate + mefloquine**
- **Artesunate + pyronaridine**
- **Artesunate with sulfadoxine + pyrimethamine**
- **Dihydroartemisinin + piperaquine**

MEDICINES TO TREAT UNCOMPLICATED MALARIA NOT FROM P. FALCIPARUM

Several parasites cause uncomplicated malaria. Use ACT (Artemisinin-based Combination Therapy) if you don't know which type of malaria it is, or if the person could have 2 types of malaria at once. If your malaria is resistant to chloroquine, find out which ACT will work instead.

If chloroquine still works where you live, it may be more available than ACT. Primaquine is often used together with chloroquine to cure the malaria more completely.

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MEDICINES TO TREAT MALARIA DURING PREGNANCY

For severe malaria, pregnant women need emergency treatment in a hospital or clinic with the same medicines used for other adults.

For uncomplicated malaria in the first 3 months of pregnancy, use quinine and clindamycin. If a malaria test shows the uncomplicated malaria is caused by the vivax parasite, or if you do not have clindamycin, use only quinine.

To treat uncomplicated malaria when a pregnancy is more than 3 months, use the ACT or other medicines that work in your area.

Quinine, chloroquine, clindamycin, and proguanil are all safe during pregnancy. Primaquine is not safe to use during pregnancy.

Pregnant women can take sulfadoxine + pyrimethamine starting at week 13 of the pregnancy. Taking one dose per month for the rest of the pregnancy is called intermittent preventive treatment (page 366).

FOR ALL MALARIA MEDICINES

Malaria may cause vomiting. For artemether + lumefantrine, repeat the dose of medicine if you vomit within 60 minutes of taking it. For most other malaria medicines, repeat the dose if you vomit within 30 minutes. If more than 30 but less than 60 minutes have gone by, take only half the dose.

Take all doses of the malaria medicines for the full number of days, even if you already feel better. This is needed to kill all the malaria parasites. If the treatment is causing vomiting or if it is hard to give a child the medicine, talk to a health worker.

Even after starting treatment with medicines, watch for danger signs of severe malaria, especially in children and in anyone pregnant or who just gave birth.

ARTEMISININ-BASED COMBINATION THERAPY (ACT)

USING ACT MEDICINES

Some ACT come as single tablets combining 2 medicines (called fixed-dose combination or coformulated tablets). Others come in a blister pack with 2 different tablets for each dose.

- Do not remove the tablets from the packaging until ready to use. Once a tablet is taken from the blister, use it right away.
- If the 3-day treatment of ACT does not stop the malaria attack, try a different combination ACT. However, if the fevers and other signs return after 4 weeks, it is probably a new case of malaria.
- In regions where falciparum malaria transmission is low, health authorities may recommend a single dose of primaquine together with the 3-day treatment of ACT (p. 368).

Artemether + lumefantrine

Name:_____ price:_____ for _____

Tablets contain:
20 mg of artemether + 120 mg of lumefantrine
40 mg of artemether + 240 mg of lumefantrine

Artemether and lumefantrine come as a fixed-dose combination tablet that treats uncomplicated falciparum malaria, other malaria types, and following emergency treatment of severe malaria.

Important: In the first 3 months of pregnancy, use quinine and clindamycin where available instead of ACT combinations. If you have heart problems, talk to an experienced health worker before taking this medicine.

Side effects: Can cause nausea, stomach upset, dizziness, headache.

Dosage

Take with a full meal or with milk. Fat in the food helps the body use the medicine. If possible, on the first day, give the 2nd dose 8 hours after the 1st dose.

For uncomplicated malaria

Using tablets of 20 mg of artemether and 120 mg of lumefantrine, dose by body weight.

5 kg to 14 kg: 1 tablet, 2 times a day, for 3 days
15 kg to 24 kg: 2 tablets, 2 times a day, for 3 days
25 kg to 34 kg: 3 tablets, 2 times a day, for 3 days
35 kg and over: 4 tablets, 2 times a day, for 3 days

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Artesunate + amodiaquine

Name:_____ price: _____ for _____

Tablets contain:
25 mg of artesunate + 67.5 mg amodiaquine
50 mg of artesunate + 135 mg amodiaquine
100 mg of artesunate + 270 mg amodiaquine

Artesunate and amodiaquine come as a fixed-dose combination tablet or as separate tablets to be taken together.

It is used to treat uncomplicated falciparum malaria, other malaria types, and following emergency treatment of severe malaria.

Important: In the first 3 months of pregnancy, give quinine and clindamycin instead of ACT combinations. Avoid giving artesunate + amodiaquine to a person taking cotrimoxazole or the HIV medicines zidovudine or efavirenz.

Side effects: Can cause itchy skin, upset stomach, headache, dizziness.

For uncomplicated malaria, dose by body weight.

Using tablets of 25 mg of artesunate and 67.5 mg of amodiaquine, give:

4.5 kg to 8 kg: 1 tablet each day, for 3 days
9 kg to 17 kg: 2 tablets each day, for 3 days

Using tablets of 100 mg of artesunate + 270 mg amodiaquine, give:

18 kg to 35 kg: 1 tablet each day, for 3 days
36 kg and over: 2 tablets each day, for 3 days

Artesunate + mefloquine

Name:_____ price:_____ for _____

Tablets contain:
25 mg of artesunate + 55 mg of mefloquine (for children)
100 mg of artesunate + 220 mg of mefloquine (for adults)

Artesunate and mefloquine come as a fixed-dose combination tablet or as separate tablets to be taken together.

It is used to treat uncomplicated falciparum malaria and other malaria types. Mefloquine by itself can be used to prevent malaria for people traveling from an area without malaria.

Important: In the first 3 months of pregnancy, give quinine and clindamycin instead of ACT combinations. Do not use mefloquine for infants under 3 months or weighing less than 5 kg. Mefloquine should not be taken by persons with epilepsy or mental illness or severe kidney problems. If you have heart problems, talk to an experienced health worker before taking this medicine.

Mefloquine sometimes causes strange behavior, confusion, anxiety, seizures or unconsciousness. If any of these signs develop, stop taking mefloquine immediately. If mefloquine had this effect on a person once, they should not use mefloquine again.

Side effects: Can cause dizziness, stomach upset, headache, sleeping and vision problems. Pregnant women may have more nausea with artesunate + mefloquine, so try to use a different ACT.

Dosage: Take with food. Dose by body weight.

For uncomplicated malaria

Using tablets with 25 mg of artesunate + 55 mg of mefloquine, give:

5 kg to 8 kg: 1 tablet each day, for 3 days
9 kg to 17 kg: 2 tablets each day, for 3 days

Using tablets with 100 mg of artesunate + 220 mg of mefloquine, give:

18 kg to 29 kg: 1 tablet each day, for 3 days
30 kg and over: 2 tablets each day, for 3 days

To prevent malaria:

Using 250 mg mefloquine tablets:

Take the dose once a week beginning 2 to 3 weeks before travel. Continue one dose each week while you are there and for 4 weeks after leaving the malaria region. Mefloquine is not recommended for infants under 5 kg.

Using 250 mg tablets, give:

5 to 19 kg: ¼ tablet (63 mg) one time each week
20 to 29 kg: ½ tablet (125 mg) one time each week
30 to 44 kg: ¾ tablet (188 mg) one time each week
45 kg and over: 1 tablet (250 mg) one time each week

Artesunate with sulfadoxine + pyrimethamine

Name:_____ price:_____ for _____

Sulfadoxine and pyrimethamine come as a fixed-dose combination tablet and is used with a separate tablet of artesunate to treat uncomplicated falciparum malaria and other malaria types. Sulfadoxine + pyrimethamine no longer works well in some regions — check with your government health authority.

Important: In the first 3 months of pregnancy, give quinine and clindamycin instead of ACT combinations. Do not use for infants. Do not use sulfadoxine + pyrimethamine if you are taking cotrimoxazole.

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Sulfadoxine + pyrimethamine should not be taken by anyone who has ever had a reaction to a sulfa medicine, such as cotrimoxazole. If the medicine causes a rash or itching, drink lots of water and do not take it again.

Side effects: Can cause stomach upset, headache.

Dosage:

For uncomplicated malaria, dose by body weight.

This ACT is a 3-day treatment as follows: on days 1, 2, and 3, give the dose of artesunate. Also on day 1, give 1 dose of sulfadoxine + pyrimethamine.

Using tablets with 50 mg of artesunate, give:

- 5 kg to 9 kg: ½ tablet, 1 time each day, for 3 days
- 10 kg to 24 kg: 1 tablet, 1 time each day, for 3 days
- 25 kg to 50 kg: 2 tablets, 1 time each day, for 3 days
- 50 kg or over: 4 tablets, 1 time each day, for 3 days

Using tablets with 500 mg of sulfadoxine + 25 mg of pyrimethamine also give:

- 5 kg to 9 kg: ½ tablet the first day only
- 10 kg to 24 kg: 1 tablet the first day only
- 25 kg to 50 kg: 2 tablets the first day only
- 50 kg or over: 3 tablets the first day only

If you are taking folic acid during pregnancy or for another reason, continue a daily dose of 0.4 mg (400 mcg) of folic acid but not higher when treated with this ACT combination. Too much folic acid interferes with the malaria medicine.

To prevent malaria in pregnancy

In some African countries, all pregnant women are given monthly doses of sulfadoxine + pyrimethamine because malaria is so common and so dangerous for the mother and developing child. Monthly doses begin when the woman is 3 months (13 weeks) pregnant. Bednets also help prevent malaria during pregnancy and after the baby is born.

Using tablets with 500 mg of sulfadoxine + 25 mg of pyrimethamine:

During week 13 to 16 of the pregnancy, give the first dose of 3 tablets. Repeat 1 month later and every month after that with a dose of 3 tablets until the 6th dose is reached or the child is born. Always wait one month between each dose.

Side effects: Some pregnant women may have nausea, vomiting, and dizziness when they take sulfadoxine + pyrimethamine, especially with the first dose.

Pregnant women also need iron and folic acid to keep the baby well and prevent anemia. If taking sulfadoxine + pyrimethamine each month for malaria prevention, take a daily dose of 0.4 mg (400 mcg) of folic acid but not higher. Too much folic acid interferes with the malaria medicine.

Dihydroartemisinin + piperaquine

Name:_____ price:_____ for _____

Tablets contain:
20 mg of dihydroartemisinin + 160 mg of piperaquine (for children)
40 mg of dihydroartemisinin + 320 mg of piperaquine (for adults)

Dihydroartemisinin and piperaquine come as a fixed-dose combination tablet.

It is used to treat uncomplicated falciparum malaria, other malaria types, and following emergency treatment of severe malaria.

Important: In the first 3 months of pregnancy, give quinine and clindamycin instead of ACT combinations. Do not use when taking erythromycin. Use with caution with people over 60 years old, people taking HIV medicines, or people with heart, kidney or liver problems.

Side effects: May cause a fast heartbeat, upset stomach, itching.

Dosage: Take between meals with a full cup of water. Do not take with milk or food that has fat because this changes how well the medicine works. Dose by body weight.

Note: Children weighing less than 25 kg use a dose based on 2.5 mg/kg for dihydroartemisinin and 20 mg/kg for piperaquine. This is a higher dose per kg than used with older children and adults.

For uncomplicated malaria

Using tablets with 20 mg of dihydroartemisinin + 160 mg of piperaquine, give:

- 5 kg to 7 kg: 1 tablet each day, for 3 days
- 8 kg to 10 kg: 1½ tablets each day, for 3 days

Using tablets with 40 mg of dihydroartemisinin + 320 mg of piperaquine, give:

- 11 kg to 16 kg: 1 tablet each day, for 3 days
- 17 kg to 24 kg: 1½ tablets each day, for 3 days
- 25 kg to 35 kg: 2 tablets each day, for 3 days
- 36 kg to 59 kg: 3 tablets each day, for 3 days
- 60 kg to 79 kg: 4 tablets each day, for 3 days
- 80 kg and over: 5 tablets each day, for 3 days

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Artesunate

Name:_____ price:_____ for _____

Artesunate comes in 50 mg tablets. See above for the dose of artesunate and sulfadoxine + pyrimethamine when used as a part of ACT. For other ACT combinations, the artesunate is combined with the other medicine into a single tablet or comes in a blister package with the 2 tablets to be taken together.

Artesunate is a medicine of the artemisinin family. To treat uncomplicated falciparum malaria, artesunate in tablet form is used in combination with one of these: amodiaquine, mefloquine, or sulfadoxine + pyrimethamine. Combining these medicines is called Artemisinin Combination Therapy (ACT).

For emergency treatment of severe malaria, health workers use intravenous (IV) artesunate or artesunate injected in muscle (IM). After at least 24 hours of this treatment, when the person is no longer vomiting, she will also need 3 days of ACT treatment by mouth.

Trained health workers can inject adults and children with artesunate before transfer to a distant hospital. Or artesunate suppositories can be placed in the rectum of a child under 6 years old as emergency treatment.

Side effects: Artesunate can cause dizziness, headaches, upset stomach.

For severe malaria in children:

When a child under 6 years has signs of severe malaria, is vomiting, and is far from a health center or artesunate injections, use artesunate gelatin capsules (called suppositories) in the rectum before leaving to get help. This can save her life. Put the capsule in the child's rectum and hold the buttocks together for about 10 minutes so the capsule does not fall out. If it comes out within 30 minutes, repeat the dose.

If you do not know the child's weight, dose by age

10 kg to 20 kg (more than 3 and less than 6 years old), use 2 of the 100 mg capsules.
5 kg to 10 kg (under 3 years old): one 100 mg capsule.
Under 5 kg: use one 50 mg capsule if available. If not, use one 100 mg capsule.

Emergency treatment does not cure malaria. The child will need more treatment by an experienced health worker.

OTHER MALARIA MEDICINES

Chloroquine

Name:_____ price:_____ for _____

Chloroquine phosphate tablets usually come in 250 mg tablets (with 150 mg chloroquine base).

Chloroquine sulfate tablets usually come in 200 mg tablets (with 155 mg chloroquine base).

In most of the world, malaria is now resistant to chloroquine. Find out which medications work best in your area. If you do not know which type of malaria a person has or if chloroquine will work, use an Artemisinin Combination Therapy (ACT) instead of chloroquine. Where chloroquine still works, it can be used to prevent malaria either by itself or combined with proguanil.

If using chloroquine as treatment for vivax or ovale types of malaria, you will also need to use primaquine to prevent the malaria from coming back. Chloroquine is safe for women who are pregnant or breastfeeding for both prevention and treatment.

Important: If too much is given, chloroquine can be very dangerous, especially to children. Do not use if the person has epilepsy. Use with caution if the person has diabetes.

Side effects: May cause mild dizziness, nausea, vomiting, abdominal pain, itching.

Dosage: Take with food. Because chloroquine comes in two forms -- chloroquine phosphate and chloroquine sulfate – you must know which form you have so you can know how much chloroquine base (the active part of the chloroquine) it contains. Dose by body weight. Give 25 mg/kg of chloroquine base over 3 days, as follows:

Day 1: 10 mg chloroquine base per kg
Day 2: 10 mg chloroquine base per kg
Day 3: 5 mg chloroquine base per kg

For uncomplicated malaria

Using chloroquine phosphate 250 mg tablets (150 mg chloroquine base)

OR using chloroquine sulfate 200 mg tablets (155 mg chloroquine base):

Give this dose on both day 1 and day 2:
Less than 8 kg: ½ tablet
8 kg to 15 kg: 1 tablet
16 kg to 30 kg: 2 tablets
31 kg to 45 kg: 3 tablets
46 kg and over: 4 tablets

On day 3, give half of the day 1 dose:
Less than 8 kg: ¼ tablet

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8 kg to 15 kg: ½ tablet
16 kg to 30 kg: 1 tablet
31 kg to 45 kg: 1½ tablets
46 kg and over: 2 tablets

To prevent vivax malaria

For prevention when traveling to a place where chloroquine still works, take chloroquine once a week beginning 1 or 2 weeks before travel. Continue one dose each week while you are there and for 4 weeks after leaving. Use the dose for day 3 of treatment shown above.

To prevent falciparum malaria

For prevention when traveling to a place where chloroquine still works, take chloroquine once a week and also take proguanil once a day. Start both medicines 1 week before travel, continue taking while you are there and for 4 weeks after leaving. Take the chloroquine the same day each week and the proguanil the same time each day.

Using chloroquine tablets with either 155 mg or 150 mg chloroquine base and proguanil tablets with 100 mg of proguanil hydrochloride:

1 to 4 years old: ½ tablet proguanil each day and ½ tablet chloroquine each week
5 to 8 years old: 1 tablet proguanil each day and 1 tablet chloroquine each week
9 to 14 years old: 1 ½ tablet proguanil each day and 1 ½ tablet chloroquine each week
15 years and older: 2 tablets proguanil each day and 2 tablets chloroquine each week

Primaquine

Name:_____ price:_____ for _____

Primaquine phosphate tablets come in two strengths, either 7.5 mg or 15 mg of primaquine base (the active part of the medicine).

Primaquine is used for 14 days along with chloroquine to prevent returning fever from vivax and ovale types of malaria. In some regions, a single dose of primaquine is given on the first day of the 3-day ACT treatment for falciparum malaria to help prevent it from spreading.

Important: Do not give to women who are pregnant, breastfeeding a baby under 7 months old, or to children under 1 year old.

People with a blood condition called G6PD deficiency (favism) will need a lower dose of primaquine, spread over many weeks instead of 14 days. But a single dose given with ACT will not harm them.

Side effects: Upset stomach and stomach pain.

Dosage: Take with food. Dose by weight or if you cannot weigh the child, dose by age.

To stop vivax or ovale malaria from returning, use with chloroquine

Using tablets with 7.5 mg primaquine base, give:

10 kg to 24 kg (3 to 7 years): ½ tablet each day for 14 days
25 kg to 49 kg (8 to 11 years): 1 tablet each day for 14 days
50 kg and over (12 years and older): 2 tablets of 7.5 mg OR 1 tablet of 15 mg primaquine base, each day for 14 days

To prevent falciparum malaria from spreading

In regions where a single dose of primaquine is added to ACT treatment to keep malaria from spreading, give it on the first day of the 3-day treatment.

Using tablets with 7.5 mg primaquine base, give:

10 kg to 24 kg (3 to 7 years): ½ tablet one time
25 kg to 49 kg (8 to 11 years): 1 tablet one time
50 kg and over (12 years and older): 2 tablets of 7.5 mg OR 1 tablet of 15 mg primaquine base, one time

Atovaquone + proguanil

Name:_____ price:_____ for _____

Proguanil prevents malaria for travelers. Proguanil is always used with another malaria medicine. Proguanil and chloroquine are used together to prevent malaria in areas where there is low resistance to chloroquine.

Tablets contain:
62.5 mg atovaquone + 25 mg proguanil (for children)
250 mg atovaquone + 100 mg proguanil (for adults)

Atovaquone and proguanil come as a fixed-dose combination tablet. It is mostly used to prevent malaria but in countries where ACT and other malaria medicines no longer work, it is sometimes used to treat malaria in combination with artesunate and primaquine.

Important: People with serious kidney problems should not use proguanil.

Side effects: Can cause headache, cough, diarrhea, mild upset stomach.

Dosage: Take with food.

To prevent malaria

Both adults and children take one dose each day 1 or 2 days before travel and continue taking one dose each day until 7 days after your travel has ended.

Using tablets made for children with 62.5 mg atovaquone + 25 mg proguanil, give:

5 kg to 7 kg: ½ tablet each day
8 kg to 9 kg: ¾ tablet each day
10 to 19 kg: 1 tablet each day
20 kg to 29 kg: 2 tablets each day
30 kg to 39 kg: 3 tablets each day
40 kg and over: 4 children's tablets
OR 1 adult tablet each day.

Quinine injections

Severe malaria is a medical emergency. A quinine injection into the muscle is sometimes used to treat a person before sending her to the hospital. Quinine injections should only be given by an experienced health worker who knows the correct dose and how to give it. For children with severe malaria, if injectable artesunate is not available, it is safer to use artesunate suppositories instead of quinine (p. 367).

Quinine sulfate, tablets

Name:_____ price:_____ for _____

Quinine sulfate, quinine hydrochloride, and quinine dihydrochloride come in tablets of 300 mg and their dose is the same. Quinine bisulfate tablets, however, have a different dose.

Quinine tablets are used for uncomplicated malaria where chloroquine does not work. For women in the first 3 months of pregnancy, use both quinine and clindamycin to treat falciparum malaria. For vivax malaria resistant to chloroquine, use quinine alone. Quinine and either clindamycin or doxycycline are sometimes used if ACT is not available after emergency care for severe malaria.

Important: Taking too much quinine is dangerous. Quinine can cause blood sugar levels to drop too low. Get medical help for danger signs such as dizziness, confusion, loss of consciousness, or too fast or too slow heart beat. Do not use quinine if taking chloroquine or mefloquine.

Side effects: Quinine can cause sweaty skin, ringing of the ears or problems with hearing, blurred vision, dizziness, nausea and vomiting, diarrhea. If it causes vomiting, an anti-nausea medicine such as promethazine may help.

Dosage: Treat with quinine for 3 or 7 days, depending on the region. Clindamycin or doxycycline may also be needed. Dose by weight: 10 mg of quinine sulfate per kg, 3 times a day. For quinine bisulfate, the dose is: 14 mg per kg, 3 times a day. Depending on the region, treatment will be for 3 or 7 days.

For uncomplicated chloroquine-resistant falciparum malaria

Using quinine sulfate, quinine hydrochloride, and quinine dihydrochloride tablets of 300 mg, give:

7 to 11 kg: ¼ tablet, 3 times a day
12 to 24 kg: ½ tablet, 3 times a day
25 to 34 kg: 1 tablet, 3 times a day
35 to 49 kg: 1½ tablets, 3 times a day
50 kg and over: 2 tablets, 3 times a day

Also take clindamycin (p.358) or doxycycline (p. 355) for 7 days starting on day 2 or day 3 after starting the quinine, when the person is less likely to vomit the medicines.

For uncomplicated chloroquine-resistant vivax malaria

Use quinine sulfate and either clindamycin or doxycycline as for chloroquine-resistant falciparum malaria (see above). After that treatment, take primaquine for 14 days but not if you are pregnant.

FOR AMEBAS AND GIARDIA

In diarrhea or dysentery caused by amebas there are usually frequent stools with much mucus and sometimes blood. Often there are gut cramps, but little or no fever. Amebic dysentery is best treated with **metronidazole,** if possible followed by **diloxanide furoate.** In cases of amebic abscess, it is important to take both metronidazole and diloxanide furoate.

In order to kill all the amebas in the gut, very long (2 to 3 weeks) and expensive treatment is necessary. It often makes more sense to stop giving medicines when the person has no more symptoms and then let the body defend itself against the few amebas that are left. This is especially true in areas where the chance of getting a new infection is high.

In diarrhea caused by giardia the stools are often yellow and frothy, but without blood or mucus. Metronidazole is often used, but quinacrine is cheaper.

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Metronidazole (familiar brand name: *Flagyl*)

Name:_____

Often comes in:

tablets of 200, 250, or 500 mg
Price:_____ for _____

solution, 200 mg in 5 ml
Price:_____ for _____

Metronidazole is useful for some gut infections, diarrhea from taking broad-spectrum antibiotics (such as ampicillin), and vaginal infections caused by trichomonas. It is also used with other antibiotics to treat infected or high-risk wounds.

CAUTION: Do not drink alcohol when taking metronidazole, as this causes severe nausea.

WARNING: Metronidazole may cause disabilities present at birth. If possible, avoid using this medicine during pregnancy, especially during the first 3 months. If breastfeeding while using large doses, do not give babies breast milk for 24 hours after taking metronidazole. Persons with liver problems should not use metronidazole.

Dosage for **giardia** infection:

Give metronidazole 3 times a day for 5 days.

In each dose give:
adults: 250 mg (1 tablet)
children 8 to 12 years: 250 mg (1 tablet)
children 3 to 7 years: 125 mg (½ tablet)
children under 3 years: 62 mg (¼ tablet)

Dosage for **giardia** infection that lasts 6 months or longer:

adults: Give 750 mg metronidazole 3 times a day for 10 days. Also give quinacrine (p. 369).

Dosage for **guinea worm:**

Give the same dose as for giardia, 3 times a day for 10 days.

Dosage for **trichomonas** infections of the vagina:

Give 500 mg by mouth 2 times a day for 7 days, or 2 g (2000 mg) by mouth 1 time only. Use the 500 mg dosage during pregnancy. Give the same treatment to the person's sexual partners (even if they do not have symptoms) so they do not pass it back.

Dosage for **PID:**

Give 500 mg 2 times a day for 14 days. Also use ceftriaxone (or cefixime, if ceftriaxone is not available) and doxycycline (p. 359).

Dosage for **stomach ulcers** (along with other medicines—see p. 129):

Give 500 mg metronidazole 3 times a day for 10 to 14 days.

Dosage for **infected or high-risk wounds** (15 to 30 mg/kg/day):

adults: Give 500 mg metronidazole 3 times a day for 7 to 10 days. Also give another antibiotic, such as penicillin (p. 351), doxycycline (p. 355), or cotrimoxazole (p. 357).

Dosage for **amebic dysentery** (25 to 50 mg/kg/day):
—using 250 mg tablets

Give metronidazole 3 times a day for 5 to 10 days.

In each dose give:
adults: 750 mg (3 tablets)
children 8 to 12 years: 500 mg (2 tablets)
children 4 to 7 years: 375 mg (1½ tablets)
children 2 to 3 years: 250 mg (1 tablet)
children under 2 years: 80 to 125 mg (⅓ to ½ tablet)

If possible, for amebic dysentery, diloxanide furoate should be taken after finishing metronidazole. For amebic abscess, it is important to take both metronidazole and diloxanide furoate.

Dosage for **tetanus:**

Give 500 mg metronidazole by mouth 3 to 4 times a day for 7 to 10 days. Also give antitetanus immunoglobulin and tetanus vaccine (p. 184).

Diloxanide furoate *(Furamide)*

Name:_____

Often comes in:

500 mg tablets
price:_____ for _____

syrup with 125 mg in 5 ml
price:_____ for _____

Side effects: Occasionally causes gas, stomach pain, or nausea.

Dosage of diloxanide furoate (20 mg/kg/day)—tablets of 500 mg

Give 3 times a day (with meals) for 10 days.

In each dose give:
adults: 1 tablet (500 mg)
children 8 to 12 years: ½ tablet (250 mg)
children 3 to 7 years: ¼ tablet (125 mg)
children under 3 years: ⅛ tablet (62 mg) or less, depending on weight

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Quinacrine (mepacrine)
(familiar brand name: ***Atabrine***)

Name:_____ price:_____ for _____

Often comes in: 100 mg tablets

Quinacrine can be used in treating giardia, malaria, and tapeworm, but is not the best medicine for any of these. It is used because it is cheap. Quinacrine often causes headache, dizziness, and vomiting.

Dosage of quinacrine for treating **giardia:**

Give quinacrine 3 times a day for a week.

In each dose give:
adults: one 100 mg tablet
children under 10 years: 50 mg (½ tablet)

Dosage of quinacrine for treating **giardia** that lasts 6 months or longer, give the above dose of quinacrine 3 times a day for 2 to 3 weeks.

Dosage of quinacrine for treating **tapeworm:**

(Half an hour before giving quinacrine, give an antihistamine like **promethazine** to help prevent vomiting.)

Give 1 large dose only:
adults: 1 g (10 tablets)
children 8 to 12 years: 600 mg (6 tablets)
children 3 to 7 years: 400 mg (4 tablets)

FOR VAGINAL INFECTIONS

Vaginal discharge, itching, and discomfort can be caused by common infections such as trichomonas and yeast (Candida).

Metronidazole, tablets to be taken by mouth (p. 370):

For trichomonas.

Nystatin or **Clotrimazole,** cream and vaginal inserts (p. 374):

For yeast infection of the vagina.

Gentian violet (crystal violet) (p. 372):

Price: _____ for _____

For treatment of yeast and other infections of the vulva and vagina.

FOR SKIN PROBLEMS

Washing the hands and bathing frequently with soap and water help prevent many infections, both of the skin and of the gut. Wounds should be carefully washed with soap and boiled water before closing or bandaging.

Frequent scrubbing with soap and water is often the only treatment necessary for dandruff, seborrhea (cradle cap), pimples, mild impetigo, as well as for minor ringworm, tinea, and other fungus infections of the skin or scalp. This works better if the soap has in it an antiseptic such as povidone iodine ***(Betadine).*** But ***Betadine*** can be irritating to tissue and should not be used on open skin. Shampoos with selenium sulfide or ketoconazole are also useful for dandruff.

Sulfur

Often comes as a yellow powder.

Price: _____ for _____

Also comes in many skin lotions and ointments.

Sulfur is useful for many skin problems:

1. To avoid or discourage ticks, mites, chiggers, jiggers, and fleas. Before going into fields or forests where these are common, dust the skin—especially legs or ankles, wrists, waist, and neck—with sulfur.
2. To help treat scabies, burrowing fleas, mites, and tiny ticks in or on the skin. Make an ointment: Mix 1 part of sulfur with 10 parts of petroleum jelly ***(Vaseline)*** or lard, and smear this on the skin (p. 199).
3. For ringworm, tinea, and other fungus infections, use the same ointment, 3 or 4 times a day, or a lotion of sulfur and vinegar (p. 205).
4. For cradle cap (seborrhea) and severe dandruff, the same ointment can be used, or the scalp can be dusted with sulfur.

Povidone iodine (polyvidone iodine, *Betadine***)**

Price: _____ for _____

For treatment or prevention of bacterial infections of the skin.

Mix 2 tablespoons of povidone iodine in a liter of warm water that has been boiled. Use on skin 1 time every day or two for 7 to 10 days. Do not use for infants or deep wounds.

Povidone iodine can be used to prevent goiter if there is no iodized salt. Mix 1 drop of povidone iodine in a liter of water. Drink a glass of this mixture every week, lifelong.

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Gentian violet (crystal violet)

Often comes as dark blue crystals. Also comes in solution of 0.5%.

Price: _____ for _____

Gentian violet helps fight certain skin infections, including impetigo and sores with pus. It can also be used to treat yeast infections (Candida) in the mouth or the nipples (thrush) or in the vulva or skin folds.

Dissolve a teaspoon of gentian violet in half a liter of water. This makes a 2 percent solution. Or use a pre-mixed solution of 0.5% to 2%. Paint it on the skin or in the mouth or the vulva. For yeast, paint on once a night for 3 nights.

Antibiotic ointments

Name:_____ price:_____ for _____

These are expensive and often do no more good than gentian violet. However, they do not color the skin or clothes and are of use in treating minor skin infections like impetigo. A good ointment is one that contains a neomycin/ polymyxin combination (for example ***Neosporin*** or ***Polysporin***). An ointment of tetracycline can also be used.

Corticosteroid ointments or lotions

Name:_____ price:_____ for _____

These can be used for "weeping" or severely itchy skin irritations caused by insect bites, by touching certain poisonous plants, and other things. They are also useful in treating severe eczema and psoriasis (p. 216). Use 3 or 4 times a day. Avoid using for long periods of time, or on large areas of skin.

Petroleum jelly (petrolatum, *Vaseline*)

Price: _____ for _____

Useful for preparing ointments or dressings in the treatment of: scabies (pages 199 and 374), ringworm (p. 373), itching from pinworm (p. 141), burns (pages 96 and 97), chest wounds (p. 91).

FOR RINGWORM AND OTHER FUNGUS INFECTIONS

Many fungus infections are very difficult to get rid of. For complete control, treatment must be continued for days or weeks after the signs disappear. Bathing and cleanliness are also important.

Ointments with undecylenic, benzoic, or salicylic acid

Name:_____ price:_____ for _____

Ointments with these acids can be used to treat ringworm, tinea of the scalp, and other fungus infections of the skin. Often they are (or can be) combined with sulfur. Ointments with salicylic acid and sulfur can also be used for cradle cap (seborrhea).

Whitfield's Ointment is a combination of salicylic and benzoic acid. It is useful for many fungal infections, including tinea versicolor. Apply twice daily for 2 to 4 weeks.

Ointments and lotions are cheaper if you make them yourself. Mix 3 parts of salicylic acid and/or 6 parts of benzoic acid with 100 parts of ***Vaseline,*** petrolatum, mineral oil, lard, or 40 percent alcohol (or rum). Rub onto skin 3 or 4 times a day.

Sulfur and vinegar

A lotion of 5 parts of sulfur to 100 parts vinegar helps fight fungus infections of the skin. Let dry on skin. Also, an ointment can be made using 1 part sulfur to 10 parts of lard.

Sodium thiosulfate ("hypo")

Often comes as white crystals, sold in photographic supply stores as "hypo."

Price: _____ for _____

Used for **tinea versicolor** infections of the skin (p. 206).

Dissolve a tablespoon of "hypo" in ½ cup of water and spread it on the skin with a piece of cotton or cloth. Then rub the skin with a piece of cotton soaked in vinegar. Do this twice daily until the spots go away and then once again every 2 weeks to keep them from coming back.

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Selenium sulfide *(Selsun, Exsel)*

Name:_____ price:_____ for _____

Often comes as lotion containing 1 or 2.5 percent selenium sulfide.

Lotions with selenium sulfide are useful for treating tinea versicolor. Apply to the affected area, and wash off 30 minutes later. Use daily for one week.

Tolnaftate *(Tinactin)*

Name:_____ price:_____ for _____

Often comes in: cream, powder, and solution of 1 percent tolnaftate.

This may be used for fungus infections caused by tinea on the feet, groin, scalp, hands, and body. Apply twice daily until 2 weeks after symptoms are gone.

Griseofulvin

Name:_____ price:_____ for _____

Often comes in: tablets or capsules of 250 or 500 mg.

Preparations in "microsized" particles are best.

This is very expensive and should be used only for severe fungal infections of the skin and deep tinea infections of the scalp. It is also used for fungal infections of the nails, but this may take months and does not always work. **Pregnant women should avoid taking griseofulvin.**

Dosage of griseofulvin (15 mg/kg/day)—for microsized particle form, 250 mg capsules

Give once a day for at least a month.
- adults: 500 to 1000 mg (2 to 4 capsules)
- children 8 to 12 years: 250 to 500 mg (1 to 2 capsules)
- children 3 to 7 years: 125 to 250 mg (½ to 1 capsule)
- children under 3 years: 125 mg (½ capsule)

Gentian violet—for yeast infections (p. 372)

Nystatin or Clotrimazole

Name:_____ price:_____ for _____

Often comes in: oral solutions, lozenges, dusting powders, ointments, creams, and vaginal inserts

Used for treating yeast infections (Candida) in the mouth (thrush), the vagina, or in the folds of the skin. Nystatin only works for infections caused by yeast, but clotrimazole works against other fungal infections as well.

Dosage for nystatin and clotrimazole is the same for children and adults:

Thrush in the mouth: For nystatin, put 1 ml of solution in the mouth and hold it there for at least 1 minute before swallowing. Do this 4 times a day. For clotrimazole, put one 10 mg lozenge in the mouth and let it dissolve (this takes about 30 minutes). Do this 5 times a day.

Yeast infection on the skin: keep as dry as possible and use nystatin or clotrimazole ointment or nystatin dusting powder 2 to 3 times a day.

Yeast infection in the vulva or vagina: put an insert or cream high in the vagina each night. For nystatin, use one 100,000 Units insert or cream each night for 14 nights. For clotrimazole, use two 100 mg inserts each night for 3 nights or one 500 mg insert for 1 night only.

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FOR SCABIES AND LICE: INSECTICIDES

Benzyl benzoate, cream or lotion

Name:_____ price:_____ for _____

Often comes in: cream or lotion.

Used for both scabies and head lice.

For head lice, wash and dry hair and scalp thoroughly before applying benzyl benzoate. Use enough to thoroughly wet the dry hair and skin. Leave the medicine on for 24 hours, then wash with warm water and soap or shampoo. After rinsing and drying, use a fine-tooth comb to remove any nits or shells from hair. For severe cases, repeat 2 to 3 times, waiting 24 hours after each use.

For scabies, wash and dry body thoroughly, then apply benzyl benzoate from the neck down, including the soles of the feet, and rub in well. Leave the medicine on for 24 hours, then wash with warm water and soap. Rinse thoroughly and dry with a clean towel. For severe cases, repeat once between 1 to 5 days after the first use.

Dosage of Benzyl benzoate for children with either head lice or scabies:

Infants: mix 1 part benzyl benzoate with 3 parts water, 1 time only.

Older children: mix 1 part benzyl benzoate with 1 part water, 1 time only.

Permethrin *(Acticin, Elimite, Nix)*

Name:_____ price: _____ for _____

Comes in many forms. For scabies, use a cream containing 5 percent permethrin. For lice, use a shampoo containing 1 percent permethrin.

For scabies, this is the best choice (unless you have HIV, then use Ivermectin, see p. 379).

For scabies, wash and dry body thoroughly, then apply permethrin from the neck down, including the soles of the feet, and rub in well. Leave the medicine on for 10 to 14 hours, then wash with warm water and soap. Rinse thoroughly and dry with a clean towel. Repeat after 1 week. Treat all family members as prevention.

For head lice, permethrin is used in some medicated shampoos (***Nix***). Follow the directions on the container, which should be the same as listed below in Pyrethrins with piperonyl ***(RID)***.

Crotamiton *(Crotan, Eurax)*

Name:_____ price:_____ for _____

Often comes in: cream or lotion containing 10 percent crotamiton.

For scabies only, but avoid using on children under 3 years old. Use like permethrin, but do not wash it off. After 24 hours, apply a second time. Wash with soap and warm water 2 days after the last application. Change clothing and bedding at this time as well. Resistance is developing to Crotamiton, so it does not always work.

Ivermectin (p. 379)

Sulfur in petroleum jelly *(Vaseline)* or lard

Use this for scabies if you cannot get the above. Mix 1 part of sulfur in 20 parts of ***Vaseline,*** mineral oil, or lard to form a 5 percent sulfur ointment.

Pyrethrins with piperonyl *(RID)*

Name:_____ price:_____ for _____

Often comes as a liquid solution containing pyrethrins and piperonyl butoxide.

Works well for all kinds of lice. Without adding any water, apply the liquid to dry hair until it is completely wet. (Do not use on eyebrows or eyelashes.) Wait 10 minutes, no longer. Wash the hair with warm water and soap or shampoo. Repeat in 1 week. Change clothing and bedding after treatment. To get rid of nits (lice eggs), see page 200.

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FOR GENITAL WARTS

Podofilox

Name:_____ price:_____ for _____

Often comes in: liquid or gel containing 0.5% podofilox.

This is used to shrink genital warts. Ask a health worker to show you how to apply it the first time. Apply liquid with a cotton swab or gel with a finger. Wash hands after use. Wait until it dries before covering with clothing. Treat warts morning and evening for 3 days, then stop using for 4 days. Repeat the 3 days of treatment and 4 days without treatment until warts are gone or for up to 4 weeks. If warts remain after 4 weeks, see a health worker to get a different treatment.

CAUTION: Podofilox can irritate skin, causing it to thin, break, and bleed. If the irritation is severe, do not apply it again. Do not use if you are pregnant or breastfeeding.

Trichloroacetic acid and bichloroacetic acid

Name:_____ price:_____ for _____

Often comes in: liquids in strengths of 10% to 35%.

These are applied directly to genital warts to shrink them. Protect skin around warts with petroleum jelly. Then use a cotton swab or clean cloth rolled to a fine point to apply small amounts of acid to warts until they turn white. It will hurt for 15 to 30 minutes. Apply once a week for 1 to 3 weeks, as needed. If the treatment is working, a painful sore will appear where the wart used to be. If there is too much irritation, wait longer before the next treatment. Keep sores clean and dry and watch for infection.

CAUTION: To avoid burns when these acids touch healthy skin, wash off right away with soap and water. Ask an experienced health worker to give this treatment to avoid burns.

FOR HERPES AND SHINGLES

Acyclovir *(Zovirax)*

Name:_____ price:_____ for _____

Often comes in: tablets of 200 or 800 mg, ointment of 5%

Acyclovir kills viruses and is used to fight herpes and shingles. Acyclovir will not cure herpes, but it shortens outbreaks, makes outbreaks less painful, and makes herpes less likely to pass during sex. Take with lots of water. People with kidney damage should not take acyclovir.

Side effects: Acyclovir may cause headache, dizziness, nausea, and vomiting. Loss of memory and not being able to pass urine are signs of taking too much.

Dosage of acyclovir:

For genital herpes infection or cold sores: For a first-time outbreak, take 400 mg acyclovir, by mouth, 3 times a day for 7 to 10 days.

If you have had a herpes outbreak before, take 400 mg acyclovir by mouth, 3 times a day, as soon as you notice any signs of tingling, burning, or sores, but for only 5 days.

If you have had more than 6 herpes outbreaks in 1 year, talk with an experienced health worker to see if taking acyclovir for a longer period will help.

For shingles: take 600 to 800 mg by mouth, 5 times a day for 7 to 10 days.

FOR WORMS

Medicines by themselves are not enough to get rid of worm infections for very long. Guidelines of personal and public cleanliness must also be followed. When 1 person in the family has worms, it is wise to treat the whole family.

Mebendazole *(Vermox)*

for many different worm infections

Name:_____ price:_____ for _____

Often comes in: tablets of 100 or 500 mg

This medicine works against hookworm, whipworm, roundworm, pinworm (threadworm), and another worm called Strongyloides. Works well for mixed infections. It may do some good in cases of trichinosis. When treating heavy worm infections there may be some gut pain or diarrhea, but side effects are not common.

WARNING: Do not give mebendazole to women in the first 3 months of pregnancy or children under 6 months old.

Dosage of mebendazole—using 100 mg tablets

Give the same amount to children over 1 year old and adults. For babies 6 months to 1 year old, give half the dosage below.

For pinworm: 1 tablet one time. Give again in 2 weeks if there are still pinworms.

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For **roundworm (Ascaris), whipworm (Trichuris), hookworm,** and **Strongyloides:** 1 tablet twice a day (morning and evening) for 3 days (6 tablets in all), or one 500 mg tablet 1 time only.

For **trichinosis:** Give 200 to 400 mg 3 times a day for 3 days. Then give 400 to 500 mg 3 times a day for another 10 days. In severe cases, corticosteroids also help, but should be given by a health worker or doctor.

Albendazole *(Zentel)*—for many different worm infections

Name:_____ price:_____ for _____

Often comes in: tablets of 200 and 400 mg

This medicine is similar to mebendazole, but often more expensive. It works against hookworm, whipworm, Strongyloides, roundworm, and pinworm. Side effects are rare.

WARNING: Do not give albendazole to women in the first 3 months of pregnancy or children under 1 year.

Dosage of albendazole—using 400 mg tablets

Give the same amount to children more than 2 years old and adults. For children 1 to 2 years old, give half the dosage below.

For **pinworm, roundworm (Ascaris), whipworm (Trichuris)**, and **hookworm:** 400 mg (1 tablet) one time.

For Strongyloides: 400 mg (1 tablet) twice a day for 3 days, and then repeat one week later.

For trichinosis: 400 mg 2 times a day for 8 to 14 days. In severe cases, corticosteroids also help, but should be given by a health worker or doctor.

Piperazine—for roundworm (Ascaris) and pinworm (threadworm, Enterobius)

Name:_____

Prepared as piperazine citrate, tartrate, hydrate, adipate, or phosphate

Often comes in:

500 mg tablets
Price:_____ for _____

Mixture, 500 mg in 5 ml
Price:_____ for _____

A large dose is given for 2 days to treat roundworm. Smaller doses every day for a week are given for pinworm. There are few side effects.

Dosage of piperazine for **roundworm** (Ascaris) (75 mg/kg/day)—500 mg tablets or mixture with 500 mg in 5 ml

Give once daily for 2 days.
- adults: 3500 mg (7 tablets or 7 teaspoons)
- children 8 to 12 years: 2500 mg (5 tablets or 5 teaspoons)
- children 3 to 7 years: 1500 mg (3 tablets or 3 teaspoons)
- children 1 to 3 years: 1000 mg (2 tablets or 2 teaspoons)
- babies under 1 year: 500 mg (1 tablet or 1 teaspoon)

Dosage of piperazine for **pinworm** (Enterobius) (40 mg/kg/day):

Give 2 doses daily for a week.
- adults: 1000 mg (2 tablets or 2 teaspoons)
- children 8 to 12 years: 750 mg (1½ tablets or 1½ teaspoons)
- children 3 to 7 years: 500 mg (1 tablet or 1 teaspoon)
- children under 3 years: 250 mg (½ tablet or ½ teaspoon)

Thiabendazole—for many different worm infections

Name:_____ price:_____ for _____

Often comes in: 500 mg tablets or mixture with 1 g in 5 ml

Because thiabendazole causes more side effects than mebendazole or albendazole, it should only be used for worms when these medicines are not available, or for worm infections that are not inside the gut.

It can be used to treat hookworm, whipworm (Trichuris), and another worm called Strongyloides. It also works for roundworm and pinworm, but piperazine has fewer side effects. It can be helpful in treating guinea worm, and may do some good in cases of trichinosis.

CAUTION: Thiabendazole may cause roundworm (Ascaris) to crawl up the throat. This can block breathing. Therefore, if you suspect a person has roundworm in addition to other worms, it is wise to treat first with piperazine before giving thiabendazole.

Side effects: Thiabendazole often causes tiredness, a sick feeling, and sometimes vomiting.

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Dosage for thiabendazole (25 mg/kg/day)—500 mg tablets or mixture with 1 g in 5 ml.

Give twice a day for 3 days. Tablets should be chewed.

In each dose give:
adults: 1500 mg (3 tablets or 1½ teaspoons)
children 8 to 12 years: 1000 mg (2 tablets or 1 teaspoon)
children 3 to 7 years: 500 mg (1 tablet or ½ teaspoon)
children under 3 years: 250 mg (½ tablet or ¼ teaspoon)

Pyrantel *(Antiminth, Cobantril, Helmex, Pin-X)*

Name:_____

Often comes in:

250 mg tablets
Price:_____ for _____

Mixture, 50 mg in 1 ml
Price:_____ for _____

This medicine works for pinworm, hookworm, and roundworm (Ascaris), but it may be expensive. Pyrantel occasionally causes vomiting, dizziness, or headache.

Dosage for pyrantel (10 mg/kg)—using 250 mg tablets

For hookworm and roundworm, give one time. For pinworm, repeat dose after 2 weeks.

In each dose give:
adults: 750 mg (3 tablets)
children 10 to 14 years: 500 mg (2 tablets)
children 6 to 9 years: 250 mg (1 tablet)
children 2 to 5 years: 125 mg (½ tablet)
children under 2 years: 62 mg (¼ tablet)

FOR TAPEWORM

There are several types of tapeworms. Niclosamide and pranziquantel are both effective for treating most types. Niclosamide is less expensive.

Niclosamide *(Yomesan)*—for tapeworm infection

Name:_____ price:_____ for _____

Often comes in: chewable tablets of 500 mg

Niclosamide is probably the best medicine for tapeworm. It works against most kinds of tapeworm in the gut, but not against cysts outside the gut.

Dosage of niclosamide for tapeworm—500 mg tablets

Chew well and swallow 1 dose only. Do not eat before or until 2 hours after taking the medicine. Giving a purge 2 hours after taking niclosamide may help get rid of the tapeworm.

adults and children over 8 years: 2 g (4 tablets)
children 2 to 8 years: 1 g (2 tablets)
children under 2 years: 500 mg (1 tablet)

To treat dwarf tapeworm, repeat the above dosage for 7 days.

Praziquantel *(Biltricide, Droncit)*

Name:_____ price:_____ for _____

Often comes in: tablets of 150 mg and 600 mg

Praziquantel is effective in treating most types of tapeworms, but is more expensive than niclosamide.

WARNING: Pregnant women and children under 4 years old should avoid taking praziquantel if possible. Women who are breastfeeding should stop giving their babies breast milk while taking praziquantel and for 72 hours after taking it (squeeze out the milk and throw it away).

Side effects: Praziquantel may cause tiredness, dizziness, headache, and loss of appetite, but these side effects are rare at the low dosages used to treat tapeworm.

Dosage of praziquantel for **most kinds of tapeworm,** including beef and pork tapeworm (10 to 20 mg/kg)—using 600 mg tablets

Take once only.
adults: 600 mg (1 tablet)
children 8 to 12 years: 300 mg (½ tablet)
children 4 to 7 years: 150 mg (¼ tablet)

Treatment of dwarf tapeworm *(H. nana)* requires a larger dosage:

Take once only.
adults: 1500 mg (2½ tablets)
children 8 to 12 years: 600 to 1200 mg (1 to 2 tablets)
children 4 to 7 years: 300 to 600 mg (½ to 1 tablet)

Quinacrine (**mepacrine,** *Atabrine*)—for tapeworm, see page 371.

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FOR SCHISTOSOMIASIS (BLOOD FLUKES, BILHARZIA)

In different parts of the world there are several types of schistosomiasis, which require different treatments. Praziquantel is a medicine that works against all forms of the disease. Metrifonate and oxamniquine are effective against some kinds of schistosomiasis. Medicines should be given under direction of an experienced health worker.

Praziquantel *(Biltricide, Droncit)*

Name:_____ price:_____ for _____

Often comes in: tablets of 150 or 600 mg

WARNING: Pregnant women and children under 4 should avoid taking praziquantel if possible. Women who are breastfeeding should stop giving their babies breast milk while taking praziquantel and for 72 hours after taking it (squeeze out the milk and throw it away).

Side effects: Praziquantel frequently causes tiredness, headache, dizziness, and loss of appetite, but treatment need not be stopped if these side effects occur. To lessen side effects, praziquantel is best taken with a large meal.

Dosage of praziquantel for schistosomiasis (40 mg/kg)—using 600 mg tablets

To treat schistosomiasis that causes blood in the urine ***(S. hematobium)***, give 2 times a day for 1 day. In each dose give:

adults: 1200 to 1500 mg (2 to 2 ½ tablets)
children 8 to 12 years: 600 to 900 mg (1 to 1 ½ tablets)
children 4 to 7 years: 300 mg (½ tablet)

The above doses will also treat one kind of schistosomiasis found in East and Central Africa and South America that causes blood in the stool ***(S. mansoni).*** But in Eastern Asia, schistosomiasis causing blood in the stool ***(S. japonicum)*** requires a larger dose (60 mg/kg):

Give 3 times a day for one day. In each dose give:

adults: 1200 to 1500 mg (2 to 2½ tablets)
children 8 to 12 years: 600 to 900 mg (1 to 1½ tablets)
children 4 to 7 years: 300 mg (½ tablet)

(To reduce side effects, this larger amount can be divided into 3 smaller doses, given in one day.)

Oxamniquine *(Vansil, Mansil)*

Name:_____

Often comes in:

capsules with 250 mg
Price:_____ for _____

syrup with 250 mg in 5 ml
Price:_____ for _____

Oxamniquine is used to treat schistosomiasis causing blood in the stools in South and Central America ***(S. mansoni).*** (To treat ***S. mansoni*** found in Africa, larger doses than those given here are needed. Seek local advice.) This medicine is best taken after a meal.

WARNING: Pregnant women should not take oxamniquine. This medicine may cause dizziness, drowsiness, and, rarely, seizures. Persons with epilepsy should use oxamniquine only when also taking epilepsy medicine.

Dosage of oxamniquine (adults: 15 mg/kg/day; children: 10 mg/kg/twice a day)—250 mg capsules

Give for one day only:
For adults, give 750 to 1000 mg (3 or 4 capsules) in one dose.
For children, give the following dose twice in one day:
children 8 to 12 years: 250 mg (1 capsule)
children 4 to 7 years: 125 mg (½ capsule)
children 1 to 3 years: 63 mg (¼ capsule)

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FOR RIVER BLINDNESS (ONCHOCERCIASIS)

The best medicine for treating river blindness is ivermectin. This medicine kills the baby worms slowly and does not cause the dangerous reaction of other treatments. If ivermectin is not available, an experienced health worker can give diethylcarbamazine first and then also suramin.

Ivermectin is also very useful in treating scabies and strongyloides (a very tiny worm).

Ivermectin *(Mectizan, Stromectal)*

Name:_____ price:_____ for _____

Often comes in: 3 or 6 mg tablets

To determine the correct dose, weigh the person or use the averages below.

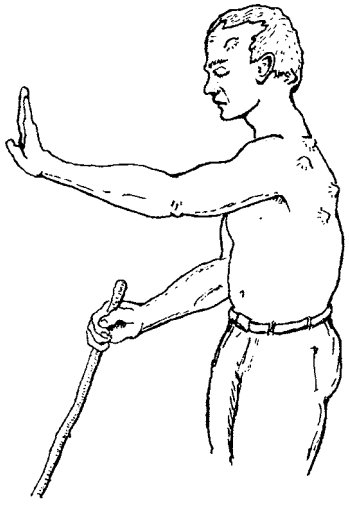
CAUTION: Do not give to children who weigh less than 15 kg (or children who are under 5 years old), to pregnant or breastfeeding women, or to persons with meningitis or other serious illness. Do not drink alcohol for a few days after taking ivermectin.

Dosage of ivermectin for **river blindness**

Give 1 time by mouth 150 mcg per kg of weight, or using 6 mg tablets:

heavy adults (over 64 kg): 2 tablets (12 mg)
average adults (45 to 63 kg): 1 ½ tablets (9 mg)
light adults and youth (26 to 44 kg): 1 tablet (6 mg)
children (15 to 25 kg): ½ tablet (3 mg)

For river blindness, another dose is sometimes needed after 6 months to 1 year.



Dosage of ivermectin for **scabies** or **strongyloides**

Give 1 time by mouth 200 mcg per kg of weight, or using 6 mg tablets:

heavy adults (over 64 kg): 2½ tablets (15 mg)
average adults (45 to 63 kg): 2 tablets (12 mg)
light adults and youth (26 to 44 kg): 1 ½ tablets (9 mg)
children (15 to 25 kg): 1 tablet (6 mg)

For scabies, repeat this dosage after 10 to 14 days.

FOR THE EYES

Antibiotic eye ointment—for "pink eye" (conjunctivitis)

Useful examples: oxytetracycline, chlortetracycline, or erythromycin eye ointments

Name:_____ price:_____ for _____

These eye ointments can be used to treat "pink eye" caused by bacteria, trachoma, and corneal ulcers (p. 224), damage to the cornea from vitamin A deficiency (p. 227), as well as to prevent sties, and gonorrhea and chlamydia eye infections in newborns. For an eye ointment to do any good, it must be put **inside** the eyelid, not outside.

Use **1% tetracycline** or **erythromycin 0.5% to 1%** ointment:

For trachoma, use eye ointment 2 times a day for 6 weeks.

For pink eye (conjunctivitis): 4 times a day for 7 days.

For preventing gonorrhea and chlamydia in newborns: once at birth. See page 221 for information about how to treat these diseases in the newborn.

If antibiotic eye ointments are not available, you can use 1 drop of **2.5% solution of povidone iodine** or 1 drop of **1% solution of silver nitrate** in each eye. Silver nitrate (or other "silver" eye medicines) stops gonorrhea blindness, but does not stop the blindness that comes from chlamydia.

WARNING: Do not use silver nitrate drops that may have become too concentrated because of evaporation—they can burn babies' eyes.

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FOR PAIN: ANALGESICS

Note: There are many different kinds of pain medicine, many of which are dangerous (especially those containing **dipyrone**). Use only those you are sure are relatively safe like **aspirin, acetaminophen (paracetamol),** or **ibuprofen**. For a stronger painkiller see **codeine** (p. 385).

Aspirin (acetylsalicylic acid)

Often comes in:

300 mg (5 grain) tablets
Price:_____ for _____

81 mg (1¼ grain) low-dose or "child's" tablets
Price:_____ for _____

Aspirin is a very useful, low-cost painkiller or analgesic. It helps to calm pain, lower fever, and reduce inflammation. It also helps a little to calm cough and reduce itching. For children under 12, use acetaminophen or ibuprofen instead.

Many different medicines sold for pain, arthritis, or colds contain aspirin, but they are more expensive and often do not do any more good than aspirin alone.

RISKS AND PRECAUTIONS:

1. Do not use aspirin for stomach pain or indigestion. Aspirin is acid and may make the problem worse. For the same reason, **persons with stomach ulcers should never use aspirin.**
2. Aspirin causes stomach pain or heartburn in some persons. To avoid this, take aspirin with milk, a little bicarbonate of soda, or a lot of water—or together with meals.
3. Do not give more than 1 dose of aspirin to a dehydrated person until he begins to urinate well.
4. It is better not to give aspirin to children under 12 years and especially not to babies (acetaminophen is safer) or to persons with asthma (this may bring on an attack).

Dosage of aspirin—for pain or fever—tablets of 300 mg (5 grains)

Take by mouth once every 4 to 6 hours (or 4 to 6 times a day). Do not take more than 4000 mg (more than 12 tablets) a day.

adults and children 12 and older: 300 to 600 mg (1 to 2 tablets)

For prevention of pre-eclampsia:

Take 1 low-dose aspirin (75 to 81 mg) by mouth 1 time each day during pregnancy.

Acetaminophen (paracetamol)—for pain and fever

Name:_____ price:_____ for _____

Often comes in: 300 to 500 mg tablets, syrups

Acetaminophen (paracetamol) is safer for children than aspirin. It does not cause stomach irritation and so can be used instead of aspirin by persons with stomach ulcers. It can also be used by pregnant women. But be careful not to take too much acetaminophen, this will poison the liver.

Dosage of acetaminophen—for pain and fever—500 mg tablets

Take by mouth 4 times a day. Do not take more than 4000 mg (8 tablets) a day.

In each dose give:
adults: 500 mg to 1 g (1 to 2 tablets)
children 8 to 12 years: 375 mg (¾ tablet)
children 3 to 7 years: 250 mg (½ tablet)
children 1 year to 2 years: 125 mg (¼ tablet)
children under 1 year: 62 mg (⅛ tablet)

Ibuprofen

Name:_____ price:_____ for _____

Often comes in: 200 mg or 400 mg tablets

Ibuprofen works for muscle swelling and pain, joint pain from arthritis, menstrual pain, headache, and to lower fever.

WARNING: Ibuprofen should not be taken by persons who are allergic to aspirin. Pregnant women should not use ibuprofen.

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Dosage of ibuprofen—for pain and fever—200 mg tablets

Take by mouth every 6 to 8 hours. Do not take more than 3200 mg a day for adults or more than 40 mg/kg a day for children. **Always take this medicine with food or a large glass of water to prevent stomach upset.**

In each dose give:
- adults: 200 to 400 mg (1 to 2 200-mg tablets)
- children 6 to 11 years: 200 to 300 mg (1 to 1½ 200-mg tablets)
- children 4 to 5 years: 150 mg (1½ 100-mg tablets)
- children 2 to 3 years: 100 mg (1 100-mg tablet)
- children 1 to 2 years: 75 mg (¾ 100-mg tablet)

Ergotamine with caffeine *(Cafergot)*—for migraine headache

Name:_____ price:_____ for _____

Often comes in: tablets with 1 mg of ergotamine

Dosage of ergotamine with caffeine for migraine:
- adults: Take 2 tablets at the first sign of a migraine, then 1 tablet every half hour until the pain goes. But do not take more than 6 tablets in 24 hours or 10 tablets per week.

WARNING: Do not take this medicine often. Do not take when pregnant.

Codeine—for severe pain, see page 385.

FOR STOPPING PAIN WHEN CLOSING WOUNDS: ANESTHETICS

Lidocaine *(Lignocaine, Xylocaine)*

2 percent (with or without epinephrine)

Name:_____ price:_____ for _____

Often comes in: ampules or bottles for injection

Lidocaine can be injected around the edges of a wound before sewing it, to make the area *anesthetic* or numb so it will not hurt.

Inject both into and under the skin at points about 1 cm apart. Be sure to pull back on the plunger before injecting (p. 73). Inject slowly. Use about 1 ml of anesthetic for each 2 cm of skin. (Do not use more than 20 ml altogether.) If the wound is clean, you can inject into the sides of the wound itself. If the wound is dirty, inject through the skin (after cleaning it) around the wound and then **clean the wound with great care** before closing it.

Use lidocaine with epinephrine for sewing most wounds. The epinephrine makes the numbness last longer and helps control bleeding. But do not use it on people with heart problems.

Use lidocaine without epinephrine for sewing tears after birth, and for wounds on fingers, toes, penis, ears, and nose. This is important because the epinephrine can stop the flow of blood to these areas and cause great damage.

Another use of lidocaine with epinephrine: **For severe nosebleed,** soak a little into some cotton and pack it into the nose. The epinephrine will cause the veins to squeeze shut and help control bleeding.

FOR GUT CRAMPS: ANTISPASMODICS

Belladonna (with or without phenobarbital)

Name:_____ price:_____ for _____

Often comes in: tablets with 8 mg belladonna

There are many different antispasmodic preparations. Most contain belladonna or something like it (atropine, hyoscyamine) and often phenobarbital (phenobarbitone). These medicines should not be used on a regular basis, but can be used occasionally for treatment of pain or cramps (colic) in the stomach or gut. They may help calm the pain of a bladder infection or inflamed gallbladder. They are sometimes useful in the treatment of ulcers.

Dosage for belladonna—for gut cramps—tablets with 8 mg belladonna
- adults: 1 tablet, 3 to 6 times a day
- children 8 to 12 years: 1 tablet, 2 or 3 times a day
- children 5 to 7 years: ½ tablet, 2 or 3 times a day
- do not give to children under 5 years

WARNING: These medicines are poisonous if too much is taken. Keep out of reach of children.

Persons with glaucoma should not take medicines that contain belladonna or atropine.

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FOR ACID INDIGESTION, HEARTBURN, AND STOMACH ULCERS

Aluminum hydroxide or magnesium hydroxide *(Milk of Magnesia)*

Name:_____ price:_____ for _____

Often comes in: tablets of 500 to 750 mg, or in mixtures with 300 to 500 mg in 5 ml.

Sometimes these are mixed together or with magnesium trisilicate. If simethicone is added, it helps control gas.

These antacids can be used occasionally for acid indigestion or heartburn or as a regular part of treatment of a stomach (peptic) ulcer. The most important time to take antacids is 1 hour after meals and at bedtime. Chew 2 or 3 tablets. For severe stomach ulcers, it may be necessary to take 3 to 6 tablets (or teaspoons) every hour.

CAUTION: Do not use these medicines if you are also taking tetracycline. Antacids with magnesium sometimes cause diarrhea, and those with aluminum may cause constipation.

Sodium bicarbonate (bicarbonate of soda, baking soda, soda)

Name:_____ price:_____ for _____

Comes as a white powder

As an antacid, this should be used in a very limited way, when someone has an occasional stomach upset, with heartburn or acid indigestion. **It should not be used in treating chronic indigestion or stomach (peptic) ulcers.** Although it seems to help at first, it causes the stomach to produce more acid, which soon makes things worse. Soda is also useful for the hangover of a person who has drunk too much alcohol the night before. For this purpose (but not for acid indigestion) it can be taken with acetaminophen or aspirin. *Alka-Seltzer* is a combination of sodium bicarbonate and aspirin. As an **occasional** antacid, mix ½ teaspoon of sodium bicarbonate with water and drink it. Do not use often.

For cleaning teeth, baking soda or a mixture of soda and salt can be used instead of toothpaste (p. 230).

WARNING: **Persons with certain heart problems (failure) or with swelling of the feet or face should not take sodium bicarbonate or other products high in sodium (like salt).**

Calcium carbonate

Name:_____ price:_____ for _____

Often comes in: tablets of 350 to 850 mg

This works more slowly than sodium bicarbonate. It is very effective for occasional acid indigestion or heartburn, but should not be used long term or for treatment of ulcers. Chew one 850 mg tablet or two 350 mg tablets when symptoms occur. Take another dose in 2 hours if necessary.

Omeprazole *(Prilosec)*

Name:_____

Often comes in:

Powder for oral liquid: 20 and 40 mg sachets
price:_____ for _____
Capsules: 10 mg, 20 mg, and 40 mg
price:_____ for _____

Omeprazole can calm pain and help an ulcer heal. But to kill the bacteria that cause the ulcer, use omeprazole with 2 antibiotics: either amoxicillin or tetracycline, and metronidazole. Be sure to follow the advice on p. 128 and 129 to treat and prevent ulcers.

Dosage of omeprazole for treatment of ulcers:
40 mg once a day for 10 to 14 days

Ranitidine *(Zantac)*

Name:_____ price:_____ for _____

Often comes in: tablets of 150 mg or 300 mg.

Ranitidine can calm pain and help an ulcer to heal. But to kill the bacteria that cause the ulcer, use ranitidine with 2 antibiotics: either amoxicillin or tetracycline, and metronidazole. But be sure to also follow the advice on p. 128 and 129 to treat and prevent ulcers.

Dosage of ranitidine for treatment of ulcers:
150 mg twice a day, or 300 mg at dinnertime, for 1 week.

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FOR SEVERE DIARRHEA AND DEHYDRATION: REHYDRATION DRINKS, "ORS," AND ZINC

Instructions for making Rehydration Drink with cereal or ordinary sugar are on page 152.

In some countries packets of a simple sugar (glucose) and salts for making a rehydration drink are sold in stores or are available at health posts. While these packets are sometimes convenient, a homemade mix using cereal or sugar and a little salt, as described on page 152, combats diarrhea as well or better. It is better to make a home mix and spend the money you save on more and better food.

Be sure to **continue giving breast milk** to a baby with diarrhea. And **start giving food as soon as the sick child will accept it.** Giving food together with Rehydration Drink combats dehydration more effectively and protects the child from becoming weaker. Giving zinc in addition to Rehydration Drink can also help children with severe diarrhea get better more quickly (see below).

WARNING: In some countries, packets of ORS (oral rehydration salts) are sold in a variety of preparations, which require different amounts of water for correct preparation. **If you use ORS packets, be sure you know how much water to mix with it.** Too little water can be dangerous.

CAUTION: If you plan to take a child with diarrhea to the health post or hospital, always give her lots of liquids, and if possible a homemade rehydration drink, before you leave home. And if you can, take some of the drink (or if nothing else, plain water) with you, to give to the child on the way to the health post and while you wait your turn. Give the child the drink often as much as she will take. If the child is vomiting, give small quantities every minute. Some of the drink will stay inside, and it will also help reduce vomiting.

Zinc

Name:_____ price:_____ for _____

Often comes in: tablets of 5 mg, 10 mg, and 20 mg
injections of 1 mg in 1 ml, 5 mg in 1 ml, and 10 mg in 2 ml
liquid solution of 10 mg per unit

Giving zinc along with Rehydration Drink (p. 152) and food helps children with diarrhea get better, faster. Zinc tablets can be ground up and mixed with breast milk or a little water.

Dosage: Give zinc once a day for 10 to 14 days. In each dose give:

children over 6 months: 20 mg
babies under 6 months: 10 mg

FOR HARD STOOLS (CONSTIPATION): LAXATIVES

A discussion of the use and misuse of different laxatives and purges is found on page 15. Laxatives are used far too much. They should be used only **occasionally** to help soften hard, painful stools (constipation). **Never give laxatives to anyone who has diarrhea or gut pain or who is dehydrated.** Do not give laxatives to small children under 2 years old.

Generally the best stool softeners are foods high in roughage or fiber, like bran or cassava. Drinking a lot of liquid (at least 8 glasses of water a day) and eating lots of fruit also help.

Milk of magnesia (magnesium hydroxide)—laxative and antacid

Name:_____ price:_____ for _____

Often comes as a milky solution

Shake well before using. Drink some water each time you take it.

Dosage for milk of magnesia:

As an antacid:
adults and children over 12 years:
1 to 3 teaspoons 3 or 4 times a day
children 1 to 12 years: ½ to 1 teaspoon
3 or 4 times a day

As a mild laxative give 1 dose at bedtime:
adults and children over 12 years: 2 to 4 tablespoons
children 6 to 11 years: 1 to 2 tablespoons
children 2 to 5 years: ⅓ to 1 tablespoon
do not give to children under 2 years old

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Epsom salts (magnesium sulfate)—as a laxative and for itching

Name:_____ price:_____ for _____

Often comes in white powder or crystals

Dosage for Epsom salts:

As a mild laxative—mix the following amount of Epsom salts in a glass of water and drink (best taken on an empty stomach):

adults: 2 teaspoons
children 6 to 12 years: ½ to 1 teaspoon
children 2 to 6 years: ¼ to ½ teaspoon
do not give to children under 2 years old

To help stop itching—mix 8 teaspoons of Epsom salts in a liter of water and put on itching skin as cool soaks or compresses.

Mineral oil—as a laxative

Name:_____ price:_____ for _____

This is sometimes taken by persons with piles (hemorrhoids) who have hard, painful stools. However, it does not really soften the stools, but merely greases them. Foods high in fiber, like bran or cassava, are far better.

Dosage of mineral oil as a laxative:

adults and children 12 years and over:
1 to 3 tablespoons by mouth at least 1 hour after the evening meal. Do not take with meals because the oil will rob some of the vitamins from the food.

CAUTION: Do not give to children under 12 years old, women who are pregnant or breastfeeding, to persons who cannot get out of bed, or to persons who have trouble swallowing.

Glycerine suppositories

Name:_____ price:_____ for _____

These are bullet-shaped pills that are pushed into the rectum. They stimulate the bowel and cause it to push out the stool (shit).

Dosage for glycerin suppositories:

adults and children over 12 years:
push 1 suppository well inside the rectum and let it stay there for 15 to 30 minutes (it helps to lie down). The longer you let the suppository stay inside the rectum, the better it will work.

FOR MILD DIARRHEA: ANTI-DIARRHEA MEDICINE

Bismuth Subsalicylate *(Pepto-Bismol,* pink bismuth*, Kaopectate)*

Name:_____ price:_____ for _____

Often comes as pink tablets or liquid

This can be used to help relieve mild diarrhea by reducing irritation of the intestine and making stool less watery. **It does not cure the cause of the diarrhea and does not help prevent or cure dehydration.** It is never necessary, and its common use is a great waste of money. **It should not be given to anyone who is very ill, has a fever, or has blood or mucus in the stool. People who are allergic to aspirin should not take this medicine or any other medicine that contains salicylate or subsalicylate. Do not use if you are breastfeeding.**

Dosage of bismuth subsalicylate, for **mild diarrhea only**

Give 1 dose every ½ to 1 hour as needed until diarrhea stops, but do not give more than 8 doses in 24 hours, and do not give for more than 2 days. Drink plenty of water or Rehydration Drink (p. 152) to prevent dehydration.

Shake liquid well before using.

In each dose give:

adults and children over 12: 2 tablespoons (30 ml) liquid or 2 tablets (262 mg in each tablet). Swallow the tablets whole with water (do not chew them).

Do not give to children under 12.

FOR STUFFY NOSE

To help open a stuffy nose, often all that is needed is to sniff water with a little salt in it, as described on page 164. Occasionally, decongestant drops may be used, as follows:

Nose drops with ephedrine or phenylephrine *(Neo-Synephrine)*

Name:_____ price:_____ for _____

These may be used for stuffy or runny nose, especially if a person has (or often gets) infection of the inner ear.

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Dosage for decongestant nose drops:

Put 1 or 2 drops in each nostril as shown on page 164. Do this 4 times a day. **Do not use for more than 3** days or make a habit of using these drops.

To make nose drops from ephedrine tablets, dissolve 1 tablet in 1 teaspoon of water.

FOR COUGH

Cough is the body's method for cleaning the air tubes that go to the lungs and preventing germs and mucus in these tubes from getting into the lungs. Because cough is part of the body's defense, medicines that stop or calm cough sometimes do more harm than good. These **cough-calmers** (or cough *suppressants*) should be used only for irritating, dry coughs that do not let a person sleep. There are other medicines, called **cough-helpers** (or *expectorants*), that are supposed to make it easier to cough up the mucus.

In truth, both kinds of cough syrups (cough-calmers and cough-helpers) are used far more than they need to be. Most popular cough syrups do little or no good and are a waste of money.

The best and most important cough medicine is water. Drinking a lot of water and breathing hot water vapors loosen mucus and help calm cough far better than most cough syrups. For instructions, see page 168. Also, instructions for a homemade cough syrup are given on page 169.

Cough-calmers (cough suppressants): codeine

Name:_____ price:_____ for _____

Often comes in: cough syrups or liquid. Also in tablets of 30 mg or 60 mg, with or without aspirin or acetaminophen.

Codeine is a strong painkiller and also one of the most powerful cough-calmers, but because it is habit-forming (narcotic), it may be hard to get. It often comes in cough syrup combinations or in tablet form. For dosage, follow the instructions that come with the preparation. Less is needed to calm cough than to control pain. **To calm cough** in adults, 7 to 15 mg of codeine is usually enough. Children should be given less, according to age or weight (p. 62). **For severe pain,** adults can take 30 to 60 mg of codeine every 4 hours.

WARNING: Codeine is habit-forming (narcotic). Use only for a few days.

FOR ASTHMA

To help prevent and manage asthma correctly, see page 167. Persons who suffer from asthma should keep asthma medicines at home. Start using them at the first sign of wheeze or chest tightness.

Salbutamol (Albuterol)

Name:_____ price:_____ for _____

Often comes in: "Rescue" inhaler for breathing (100 mcg in each puff); syrup with 2 mg in 5 ml

FOR RELIEVING AND PREVENTING ASTHMA ATTACKS

Dosage for **salbutamol inhaler:**

For mild wheezing, use 1 to 2 inhalations, every 4 to 6 hours until the wheezing stops. Use more if the wheezing is worse.

For exercise for people with asthma, starting ½ hour before, use 2 puffs every 15 to 30 minutes.

For an emergency, use 2 to 4 puffs every 20 minutes.

Dosage for **liquid oral salbutamol:** 2 mg in 5 ml

adults: 10 ml 3 times a day
children: 1 to 12 years: 5 ml 3 times a day
babies: 2 ½ ml 3 times a day

If you use salbutamol very often, your body will get used to it, you will need to use more and it will not work as well. For people with chronic asthma, it is important to use a controller inhaler (beclomethasone) regularly and use salbutamol less.

If you are pregnant, it is better to control and treat your asthma than to have asthma attacks. Salbutamol can be used while breastfeeding, but use the minimum amount you can.

Salbutamol can cause trembling, nervousness, dizziness, fast heartbeat and headaches. The liquid form can cause stomach aches and vomiting.

If you have asthma and heart problems, do not take "Beta Blocker" drugs like Atenolol, Metoprolol, Propranolol or other "olol" ending heart medicines without consulting a doctor.

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Beclomethasone

Name:_____ price:_____ for _____

Often comes in: "Controller" inhaler for breathing (50 or 250 mcg in each puff)

A steroid medicine for asthma that lessens swelling in the breathing passages in the lungs and prevents attacks.

Dosage for beclomethasone inhaler
children and adults:
2 to 4 puffs 2 times each day of the 50 mcg inhaler. If you use the 50 mcg inhaler more than 4 puffs twice a day, it costs less and works better to instead use 1 to 2 puffs of the 250 mcg inhaler.

It is best to take your beclomethasone after your dose of salbutamol because the salbutamol will open up the breathing tubes so they will better absorb the beclomethasone.

Beclomethasone does not cure asthma, but it will help prevent asthma attacks if it is used every day. You will begin to see an improvement after 3 to 7 days of use.

If you are pregnant, it is better to control and treat your asthma than to have asthma attacks. Beclomethasone can be used while breastfeeding, but use the minimum amount you can.

If you get thrush in the mouth (p. 232), treat it with nystatin or clotrimazole (p. 373). Remember to rinse your mouth after each treatment.

Use a spacer with your inhaler. If you do not use a spacer with your inhaler, most of the medicine blows onto your tongue and throat, and does not go to your lungs where you need it most. Taking a deep breath through a spacer allows more of the medicine to reach your lungs. If you did not get a spacer with your inhaler, here are 2 ways to make one:

1) Tape 2 thin plastic cups together at their wide ends. Cut a small hole for the inhaler on one end, and a larger hole for your mouth on the other.



2) Cut a hole large enough for your mouth in the bottom of a plastic soda bottle. Put the inhaler in the other end of the bottle.

Prednisolone or prednisone

Name:_____

Often comes in:

tablets of 5 mg, 25 mg, and other sizes
price:_____ for _____

liquid of 5 mg/ml
price:_____ for _____

Prednisolone and prednisone are corticosteroids, strong anti-inflammatory medicines, that can treat severe asthma.

CAUTION: Prednisolone and prednisone should only be used for severe asthma attacks. Corticosteroids can have very dangerous side effects, especially if used for more than a couple of weeks. They also lower a person's defenses against infection, can make you feel anxious, and make it hard to sleep.

Dosage of prednisolone and prednisone for severe asthma.

Give the first dose right away, then take every morning for 3 to 7 days. In each dose give:
adults and children over 8: 30 to 60 mg
children 3 to 7 years: 20 to 40 mg
children under 3: 10 to 20 mg
Do not give more than 60 mg a day.

Epinephrine (adrenaline, *Adrenalin*)

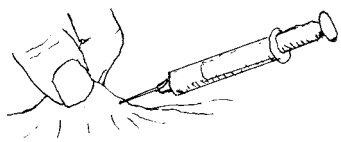
Name:_____ price:_____ for _____

Often comes in: ampules of 1 mg in 1 ml

Epinephrine should be used for:
1. **severe attacks of asthma** when there is trouble breathing and other medicines are not available.
2. **severe allergic reactions** or allergic shock due to penicillin injections, tetanus antitoxin, or other antitoxins made from horse serum (p. 70).

Dosage of epinephrine for **asthma**—using ampules of 1 mg in 1 ml of liquid—

First count the pulse. Then inject just under the skin:
adults: ⅓ ml



children 7 to 12 years: 0.2 ml
children 1 to 6 years: 0.1 ml
children under 1 year: DO NOT GIVE

You can repeat the dose every ½ hour if needed, up to 3 times.

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Dosage of epinephrine for **allergic shock**—using ampules of 1 mg in 1 ml of liquid—

Inject into the muscle:
adults: 0.5 ml
children 7 to 12 years: 0.3 ml
children 1 to 6 years: 0.25 ml
children under 1 year: DO NOT GIVE

If needed, a second dose can be given in 5 to 15 minutes, and a third dose after another 5 to 15 minutes. Do not give more than 3 doses. If the pulse goes up by more than 30 beats per minute after the first injection, do not give another dose.

In using epinephrine, be careful never to give more than the recommended amount.

FOR ALLERGIC REACTIONS AND VOMITING: THE ANTIHISTAMINES

Antihistamines are medicines that affect the body in several ways:

1. They help calm or prevent allergic reactions, such as itchy rashes or lumps on the skin, hives, "hay fever," and allergic shock.
2. They help prevent or control motion sickness or vomiting.
3. They often cause sleepiness (sedation). Avoid doing dangerous work, operating machines, or drinking alcohol when taking antihistamines.

Promethazine *(Phenergan)* and **diphenhydramine** *(Benadryl)* are strong antihistamines that cause a lot of sleepiness. **Dimenhydrinate** *(Dramamine)* is similar to diphenhydramine and is most used for motion sickness. However, for vomiting due to other causes, promethazine often works better.

Chlorpheniramine is a less expensive antihistamine and causes less sleepiness. For this reason, it is sometimes best to use chlorpheniramine to calm itching in the daytime. Promethazine is useful at night because it encourages sleep at the same time that it calms the itching.

There is no proof that the antihistamines do any good for the common cold. They are often used more than they need to be. They should not be used much.

Antihistamines should **not** be used for asthma, because they make the mucus thicker and can make breathing more difficult.

One antihistamine is all that is usually needed in a medical kit. Promethazine is a good choice. Because it is not always available, doses for other antihistamines are also given.

As a general rule, **antihistamines are best given by mouth.** Injections should be used only to help control severe vomiting or before giving antitoxins (for snakebite, etc.) when there is special danger of allergic shock. For children, it is often best to give a rectal suppository.

Promethazine (Phenergan)

Name:_____

Often comes in:
tablets of 12.5 mg
Price:_____ for _____

injections—ampules of 25 mg in 1 ml
Price:_____ for _____

suppositories of 12.5 mg, 25 mg, and 50 mg
Price:_____ for _____

CAUTION: Do not give to children under 2 years old. Pregnant or breastfeeding women should only use promethazine if it is absolutely necessary.

Dosage of promethazine (1 mg/kg/day)

—using tablets of 12.5 mg—

Give by mouth 2 times a day.

In each dose give:
adults: 25 to 50 mg (2 to 4 tablets)
children 7 to 12 years: 12.5 to 25 mg (1 or 2 tablets)
children 2 to 6 years: 6 to 12 mg (½ to 1 tablet)
babies 1 year old: 4 mg (⅓ tablet)
babies under 1 year: 3 mg (¼ tablet)

—using intramuscular (IM) injections, 25 mg in 1 ml—

Inject once, and again in 2 to 4 hours, if necessary.

In 1 dose inject:
adults: 25 to 50 mg (1 to 2 ml)
children 7 to 12 years: 12.5 to 25 mg (0.5 to 1 ml)
children under 7 years: 6 to 12 mg (0.25 to 0.5 ml)
babies under 1 year: 2.5 mg (0.1 ml)

—using rectal suppositories of 25 mg—

Put well inside the rectum and repeat in 4 to 6 hours if necessary.

In each dose insert:
adults and children over 12 years: 25 mg (1 suppository)
children 7 to 12 years: 12.5 mg (½ suppository)
children 2 to 6 years: 6 mg (¼ suppository)

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Diphenhydramine *(Benadryl)*

Name:_____

Often comes in:

capsules of 25 mg and 50 mg
Price:_____ for _____

injections: ampules with 10 mg or 50 mg in 1 ml
Price:_____ for _____

CAUTION: Do not give diphenhydramine to newborn babies or to women who are breastfeeding. It is best not to use diphenhydramine in pregnancy unless absolutely necessary.

Dosage of diphenhydramine (5 mg/kg/day)—using capsules of 25 mg—

Give 3 or 4 times a day:
- adults: 25 to 50 mg (1 or 2 capsules)
- children 8 to 12 years: 25 mg (1 capsule)
- children 2 to 7 years: 12.5 mg (½ capsule)
- babies: 6 mg (¼ capsule)

—using intramuscular (IM) injections, 50 mg in 1 ml—

Diphenhydramine should be injected only in the case of allergic shock. Inject once, and again in 2 to 4 hours if necessary:
- adults: 25 to 50 mg (½ to 1 ml)
- children: 10 to 25 mg, depending on size (⅕ to ½ ml)
- babies: 5 mg (1/10 ml)

Chlorpheniramine

Name:_____ price:_____ for _____

Often comes in: 4 mg tablets (also tablets of other sizes, syrups, etc.)

Dosage for chlorpheniramine:

Take 1 dose 3 or 4 times a day.

In each dose give:
- adults: 4 mg (1 tablet)
- children under 12: 2 mg (½ tablet)
- babies: 1 mg (¼ tablet)

Dimenhydrinate *(Dramamine)*

Name:_____ price:_____ for _____

Often comes in: 50 mg tablets; also syrups with 12.5 mg in a teaspoon; also suppositories to insert in the rectum

This is sold mostly for motion sickness, but can be used like other antihistamines to calm allergic reactions and to encourage sleep.

Dosage of dimenhydrinate:

Take up to 4 times a day.

In each dose give:
- adults: 50 to 100 mg (1 or 2 tablets)
- children 7 to 12 years of age: 25 to 50 mg (½ to 1 tablet)
- children 2 to 6 years: 12 to 25 mg (¼ to ½ tablet)
- children under 2 years: 6 to 12 mg (⅛ to ¼ tablet)

ANTITOXINS

WARNING: Many antitoxins are made from horse serum, such as the antivenoms for snakebite and scorpion sting. With these there is a risk of causing a dangerous allergic reaction (allergic shock, p. 70). Before you inject a horse serum antitoxin, **always have epinephrine ready in case of an emergency.** In persons who are allergic, or who have been given any kind of antitoxin made of horse serum before, it is a good idea to inject an antihistamine like promethazine ***(Phenergan)*** or diphenhydramine ***(Benadryl)*** 15 minutes before giving the antitoxin. When treating for snake, insect, or other bites, also give antitetanus immunoglobulin if possible.

Scorpion antitoxin or antivenom

Name:_____ price:_____ for _____

Often comes *lyophilized* (in powdered form) for injection

Different antivenoms are produced for scorpion sting in different parts of the world. In Mexico, Laboratories BIOCLON produces ***Alacramyn.***

Antivenoms for scorpion sting should be used only in those areas where there are dangerous or deadly kinds of scorpions. Antivenoms are usually needed only when a small child is stung, especially if stung on the main upper part of the body or head. To do most good, the antivenom should be injected as soon as possible after the child has been stung.

Antivenoms usually come with full instructions. Follow them carefully. Small children often need more antivenom than larger children. Two or 3 vials may be necessary.

Most scorpions are not dangerous to adults. Because the antivenom itself has some danger in its use, it is usually better not to give it to adults.

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Snakebite antivenom or antitoxin

Name:_____ price:_____ for _____

Often comes in: bottles or kits for injection

Antivenoms, or medicines that protect the body against poisons, have been developed for the bites of poisonous snakes in many parts of the world. If you live where people are sometimes bitten or killed by poisonous snakes, find out what antivenoms are available, **get them ahead of time,** and keep them on hand. Some antivenoms—those in dried (lyophilized) form—can be kept without refrigeration. Others need to be kept cold.

The following are distributors of antivenom products in different parts of the world. In many countries, antivenoms are available through the government:

North America: *Crofab* (Crotalidae Polyvalent Immune Fab-Ovine) for rattlesnakes, copperheads, cottonmouths, and water moccasins. Order from BTG Customer Service, tel: 1-877-852-8542

e-mail: CustomerService@btgplc.com

Mexico, Central America, and South America: *Antivipmyn* and *Antivipmyn TRI* (Faboterapia polivalente antiviperino) for rattlesnakes and other pit vipers, as well as water moccasins, terciopelo, massasauga, bush master, and others.

From Instituto Bioclon, Mexico, D.F., tel: (52) 5665-4111, www.bioclon.com.mx

Antivenoms are also available from Instituto Clodomiro Picado, Facultad de Microbiologia, Universidad de Costa Rica, San Jose, Costa Rica, tel: (506) 2229-0344, www.icp.ucr.ac.cr, and Instituto Butantan, Sao Paulo, Brazil, tel: (55) 11-3726-7222, fax: (55) 11-3726-1505, email: instituto@butantan.gov.br, www.butantan.gov.br

South Africa: Boomslang antivenom, Echis antivenom, polyvalent antivenoms for puff adder, Gaboon adder, rinkhals, green mamba, Jameson's mamba, black mamba, cape cobra, forest cobra, snouted cobra and Mozambique spitting cobra. Also scorpion and spider antivenoms. From

South African Vaccine Producers (SAVP), P.O. Box 28999, Sandringham 2131, Johannesburg, South Africa, tel: (27) 11-386-6000, fax: (27) 11-386-6016, www.savp.co.za

Egypt: Antivenoms for horned viper, Egyptian cobra, black-necked spitting cobra, East African carpet viper, and others. From

Vacsera, 51 Wezaret El Zeraha, Agouza, Giza, Egypt, tel: (202) 376-111-11, www.vacsera.com

India: Antivenoms for Indian cobra, Indian krait, Russell's viper, Saw-scaled viper and others, from:

Haffkine Biopharmaceutical Co., Mumbai, India, tel: (91) 22-412-9320, fax: (91) 22-416-8578, www.vaccinehaffkine.com.

Serum Institute of India, tel: (91) 20-269-93900, fax: (91) 20-269-93921, www.seruminstitute.com

Indonesia: Antivenoms for branded krait, Malayan pit viper, and Southern Indonesian spitting cobra.

Biofarma, Bandung, Indonesia, tel: (62) 22-203-3755, fax: (62) 22-204-1306, www.biofarma.co.id

Thailand: Antivenoms for king cobra, banded krait, Russell's viper, Malayan pit vipers, and others.

Thai Red Cross Society, Bangkok, Thailand, tel: (66) 2252-0161, fax: (66) 2252-0212 www.redcross.or.th

Instructions for the use of snakebite antivenoms usually come with the kit. Study them **before** you need to use them. The bigger the snake, or the smaller the person, the larger the amount of antivenom needed. Often 2 or more vials are necessary. To be most helpful, antivenom should be injected as soon as possible after the bite.

Be sure to take the necessary precautions to avoid allergic shock (p. 70).

Antitetanus immunoglobulin

Antitetanus immunoglobulin (human tetanus immune globulin) often comes in: vials of 250 U

In areas where there are people who have not been vaccinated against tetanus, make sure your medical kit includes antitetanus immunoglobulin, also known as HTIG or *HyperTET*. Do not give tetanus antitoxin made from horse serum, which should only be used in livestock, not people.

If a person who is not fully vaccinated against tetanus has a severe wound likely to cause tetanus (p. 89), **before he develops the signs of tetanus**, inject 250 U (1 vial) of antitetanus immunoglobulin.

If a person develops the signs of tetanus, inject 500 U of antitetanus immunoglobulin along with metronidazole and tetanus vaccine (p. 184). Begin treatment at once and get medical help fast.

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FOR SWALLOWED POISONS

Activated Charcoal

This comes as a powder. Follow the directions on the bottle, or mix the indicated dosage in 1 glass of water or juice and drink the whole glass.

Activated charcoal absorbs poisons that have been swallowed and reduces the harm they cause. It is most effective if used immediately after swallowing the poison. **Do not use this medicine if the person has swallowed strong acid, lye, gasoline, or kerosene.**

Dosage of activated charcoal, **within 1 hour after swallowing poison:**

adults and children 12 years and older:
50 to 100 g, 1 time only
children from 1 to 12 years:
25 g, 1 time only, or 50 g in case of serious poisoning
children under 1 year old:
1g/kg 1 time only

To eliminate poison from the body **after effects of the poison have begun:**

adults and children older than 1 year:
25 to 50 g every 4 to 6 hours
children under 1 year old:
1g/kg, 1 time, followed by ½ this dose every 2 to 4 hours.

FOR SEIZURES (CONVULSIONS)

Carbamazepine, phenobarbital, valproate and phenytoin are the most common medicines used to prevent seizures of epilepsy. Other, more expensive medicines are available, and doctors often prescribe two or more medicines when a single medicine works as well or better, with fewer side effects. Generally, start with a lower dose of your epilepsy medicine and increase it gradually until seizures stop. Find and continue using the smallest dose that stops the seizures. Medicines often must be taken for life. If the person must stop taking the medicine, do so gradually. Immediate stopping can cause more and severe seizures. Diazepam can be given to stop a long-lasting epileptic seizure or a seizure during pregnancy or child birth (eclampsia), but it is not usually taken daily to prevent them. Magnesium sulfate can also be given to stop eclampsia.

Carbamazepine *(Tegretol)*

Name:_____

Often comes in:

tablets of 100 mg and 200 mg
Price:_____ for_____

First choice for many seizures from epilepsy. Take with meals.

Dosage of carbamazepine:

adults and children over 12 years: 200 mg by mouth, 2 times a day.
children 6 to 12 years: 100 mg by mouth, 2 times a day.
children under 6 years: 5 mg/kg/day, or 50 mg by mouth 2 times a day.

If seizures do not stop, after a week increase the dose by the same starting dose amount. Continue increasing weekly until seizures stop.

A too high dose can cause dizziness, unsteady walking, or vomiting. If a skin rash develops 2 to 8 weeks after starting, change to a different medicine.

Phenobarbital (phenobarbitone, *Luminal*)

Name:_____

Often comes in:

tablets of 15 mg, 30 mg, 50 mg, 60 mg and 100 mg
Price:_____ for _____

syrup of 15 mg in 5 ml
Price:_____ for _____

Phenobarbital is taken by mouth to prevent seizures from epilepsy.

WARNING: Too much phenobarbital can slow down or stop breathing. **Be careful not to give too much!**

Dosage of phenobarbital:

adults and children over 12 years:
50 to 100 mg, 2 or 3 times a day.
children 6 to 12 years: 25 to 50 mg by mouth, 2 times a day.
children under 6 years: 3 to 5 mg/kg/day, or 10 to 25 mg.

If seizures do not stop after 1 week, slowly begin increasing the dose.

Some people do better with 1 dose a day instead of 2 doses. Try giving twice the amount listed here at bedtime. But if seizures return or the person has difficulty going to sleep or waking up, go back to 2 doses of the regular amount.

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Phenytoin (diphenylhydantoin, *Dilantin*)

Name:_____

Often comes in:

capsules of 25 mg, 50 mg, and 100 mg
Price:_____ for _____

syrup with 25 mg in 5 ml
Price:_____ for _____

This prevents seizures from epilepsy. The medicine must often be taken for life.

Side effects: Swelling and abnormal growth of the gums often occur with long-time use of phenytoin. If this is severe, another medicine should be used instead. Gum problems can be partly prevented by keeping the mouth clean and brushing or cleaning the teeth and gums well after eating.

WARNING: Not safe for people who could get pregnant.

Dosage of phenytoin:
- adults and children older than 12 years: 100 mg by mouth, 2 times a day
- children 6 to 12 years: 75 mg by mouth, 2 times a day
- children less than 6 years old: 3 to 5 mg/kg/day, or 25 mg by mouth 2 times a day.

Some people do better taking this medicine 3 times a day. Divide the daily amount into 3 parts to try that.

If the dose does not completely prevent the seizures, slowly increase the dose every 2 weeks, but do not give more than 300 mg in a day.

The difference between not enough and too much can be very small. If there are no seizures during several weeks, try lowering the dose little by little until you find the lowest dose that prevents seizures.

Valproate *(Depakene)*

Often comes in:
tablets of 100mg, 200 mg, 500 mg

This prevents seizures from epilepsy. Do not use with carbamazepine.

Side effects: Some people gain weight, have liver problems. People who could get pregnant should not use this medicine.

Dosage of valproate:
- adults and children over 12 years: 300 mg by mouth, 2 times a day.
- children 6 to 12 years: 200 mg by mouth, 2 times a day.
- children under 6 years: 10mg/kg/day, or 100 mg by mouth, 2 times a day.

If seizures do not stop after a week, slowly increase the dose by half the initial amount divided into 2 doses. Do not give more than 60 mg/kg/day.

Diazepam *(Valium)*

Name:_____ price:_____ for _____

Often comes in:
injections of 5 mg in 1 ml of liquid
injections of 10 mg in 2 ml of liquid
tablets of 5 mg and 10 mg

We do not give the dosages for diazepam injections. These should only be given by a person with experience giving injections into a vein.

To stop an epileptic seizure lasting more than 5 minutes, put the liquid solution for injection into a syringe without a needle, insert the syringe in the rectum and release the solution. Or grind up 1 tablet, mix the powder with water, and put the mixture into the rectum in the same way.

Dosage of diazepam solution, in the rectum:
- adults and children over 12 years: 5 to 10 mg
- children 6 to 12 years: 3 to 5 mg
- children under 6 years: 1 to 3 mg

If the seizure is not controlled 15 minutes after giving the medicine, repeat the dose. **Do not repeat more than once.**

WARNING:
1. Too much diazepam can slow down or stop breathing. Be careful not to give too much!
2. Diazepam is a habit-forming (addictive) drug. Avoid long-term or frequent use. Keep this medicine under lock and key.
3. Diazepam can be dangerous for pregnant or breastfeeding women. Only use to stop seizures (eclampsia).

For tetanus, give enough to control most of the spasms. For adults and children over 5 years, start with 5 mg by mouth or in the rectum (less in children) and give more later if necessary, but not more than 10 mg at 1 time, or more than 50 mg in 1 day. Wait for 30 minutes before repeating a dose. For children younger than 5 years old, give 1 to 2 mg in the rectum every 3 to 4 hours.

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To relax muscles and calm pain, 30 minutes before setting broken bones in an adult, give 10 mg by mouth.

For eclampsia (sudden seizures during pregnancy or birth.) Magnesium sulfate works better, and is safer for pregnant women. Only use diazepam if you don't have magnesium sulfate or if it isn't working. Give 20 mg diazepam solution in the rectum. If convulsions continue, give another 10 mg after waiting 30 minutes.

Magnesium Sulfate—for eclampsia

Name:_____ price:_____ for _____

Often comes in: 10%, 12.5%, 25%, or 50% solution for injection

Dosage to stop a seizure in a woman with eclampsia: Inject 5 g of 50% solution into each buttock muscle once. Repeat after 4 hours if needed.

WARNING: Too much magnesium sulfate can slow down or stop breathing. Be careful not to give too much! Do not give to women with kidney problems.

FOR SEVERE BLEEDING AFTER BIRTH (POSTPARTUM HEMORRHAGE)

For information on the right and wrong use of medicines to control bleeding after birth, see page 266. **Oxytocin, misoprostol, and ergometrine should only be used to control bleeding after the baby is born.** Their use to speed up labor or to give strength to the mother in labor can be dangerous both to the mother and child. If there is much bleeding before the afterbirth (placenta) comes out, but after the child is born, oxytocin or misoprostol can be given. **But do not use ergometrine (ergonovine) before the afterbirth comes out,** as this may prevent it from coming out.

Pituitrin is similar to oxytocin, but more dangerous, and should never be used except in a case of emergency bleeding when oxytocin, misoprostol, and ergometrine are not available.

For bleeding in the newborn child, use **vitamin K** (p. 394). Vitamin K is of no use for bleeding of the woman from birth, miscarriage, or abortion.

Ergometrine maleate, ergonovine *(Ergotrate, Methergine)*

Name:_____

Often comes in:

injections of 0.2 mg in a 1 ml ampule
Price:_____ for _____

tablets of 0.2 mg
Price:_____ for _____

Ergometrine can be used to prevent or control heavy bleeding **after** the placenta has come out. It also controls heavy bleeding after miscarriage or abortion. Do not give to a woman with hypertension.

Dosage:

To **treat** heavy bleeding after the afterbirth (placenta) has come out, or after miscarriage or abortion, give 1 ampule (0.2 mg) of ergometrine by intramuscular injection. In extreme emergencies, you can give 1 ampule by intravenous injection if you have been trained to do so. Repeat dose every 6 to 12 hours until heavy bleeding has stopped. Do not give more than 5 doses.

To **prevent** heavy bleeding after giving birth, give 0.2 mg of ergometrine after the afterbirth comes out.

Oxytocin *(Pitocin)*

Name:_____ price:_____ for _____

Often comes in: ampules of 10 units in 1 ml

Oxytocin can be used to prevent or control severe bleeding of the mother **after** the baby is born and **before or after** the afterbirth comes out. (It also helps bring the afterbirth out, but should not be used for this unless there is heavy bleeding or delay.) It can also be used to control heavy bleeding after miscarriage or abortion.

Dosage:

To **treat** heavy bleeding, give 1 ml (10 units) by intramuscular injection.

To **prevent** heavy bleeding after birth, give 1 ml after the baby is born.

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Misoprostol *(Cytotec)*

Name:_____ price:_____ for _____

Often comes in: tablets of 100 or 200 mcg

Misoprostol can be used to prevent or control heavy bleeding after birth, and control heavy bleeding from miscarriage or abortion. It can also be used to end a pregnancy, but it is safer when taken with another medicine, **mifepristone** (see *Where Women Have No Doctor* for more information).

Dosage to control heavy bleeding:

Dissolve 600 mcg inside the cheek or under the tongue for 30 minutes and then swallow what is left. If the woman is feeling nauseous, you can also put the tablets in her rectum to dissolve there.

FOR PILES (HEMORRHOIDS)

Suppositories for hemorrhoids

Name:_____ price:_____ for _____

These are special bullet-shaped tablets to be put in the rectum. They help make hemorrhoids smaller and less painful. There are many different preparations. Those that are often most helpful, but are more expensive, contain **cortisone** or another **corticosteroid.** Special ointments are also available. Diets to soften stools are important (p. 126).

Dosage:

Insert a suppository in the rectum after the daily bowel movement, and another on going to bed.

FOR MALNUTRITION AND ANEMIA

Powdered milk (dried milk)

Name:_____ price:_____ for _____

For babies, **breast milk is best.** It is rich in body-building vitamins and minerals. When breast milk is not available, other milk products—including powdered milk—can be used. To allow a baby to make full use of its food value, mix the powdered milk with some sugar and cooking oil (p. 120).

In 1 cup of boiled water, put:
12 level teaspoons of powdered milk,
2 level teaspoons of sugar,
and 3 teaspoons of oil

Mixed (or multi) vitamins

Name:_____ price:_____ for _____

Nutritious food is the best source of vitamins. If additional vitamins are needed, use vitamin tablets. Injections of vitamins are rarely necessary and can cause unnecessary pain and infecton.

In some cases of poor nutrition added vitamins may help, and multivitamins can be helpful for people with HIV. Be sure the tablets used contain all the important vitamins (p. 118).

Using standard tablets of mixed vitamins, 1 tablet daily is usually enough.

Vitamin A (retinol)—for night blindness and xerophthalmia

Name:_____

Often comes as:
capsules of 100,000 and 200,000 units
oral solution with 100,000 units in 1 ml
tablets of 10,000 units
price:_____ for _____

WARNING: Too much vitamin A can be dangerous. Do not give the regular adult dose (200,000 units) during pregnancy or to anyone old enough to become pregnant. For treatment in pregnancy, vitamin A is given in smaller doses more often instead of a single large dose (p. 227). When treating infants and small children, capsules can be cut open and contents squeezed into the mouth.

For prevention of night blindness (xerophthalmia): During the first 6 months of breastfeeding the milk passes vitamin A to the baby, so breastfeed as long as possible. For children who are no longer breastfeeding, give vegetables and other foods high in vitamin A (p. 226). In areas where children do not get enough vitamin A from food, prevention programs give vitamin A supplements (p. 227). This prevents night blindness and xerophthalmia and helps children survive measles and other serious illnesses.

For treatment: For children older than 12 months and adults who are not, or will not become, pregnant, give 200,000 units vitamin A by mouth. The next day give 200,000 units vitamin A by mouth. 1 to 2 weeks later give a third dose of 200,000 units by mouth. For children less than 6 months, give 50,000 units 3 times as above. For children 6 to 12 months, give 100,000 units 3 times as above. To treat night blindness during pregnancy, give 25,000 units by mouth weekly in pregnancy for 12 weeks.

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For children with measles: Vitamin A helps prevent pneumonia and loss of vision—common complications of measles. According to age, give the correct dose above for 2 days in a row. But do not give a third dose.

Iron sulfate (ferrous sulfate)—for anemia

Name:_____ price:_____ for _____

Often comes in: tablets of 200, 325, or 500 mg (also in drops, mixtures, and elixirs for children)

Ferrous sulfate is useful in the treatment or prevention of most anemias. Treatment with ferrous sulfate by mouth usually takes at least 3 months. If improvement does not take place, the anemia is probably caused by something other than lack of iron. Get medical help. If this is difficult, try treating with folic acid.

Ferrous sulfate is especially important for pregnant women who may be anemic or malnourished.

Iron may work best if it is taken with some vitamin C (either fruits and vegetables, or a vitamin C tablet).

Ferrous sulfate sometimes upsets the stomach and is best taken with meals. Also, it can cause constipation, and it may make the stools (feces) look black. For children under 3 years, a piece of a tablet can be ground up very fine and mixed with the food.

WARNING: Be sure the dose is right. Too much ferrous sulfate is poisonous. Keep tablets out of the reach of children. Do not give ferrous sulfate to severely malnourished persons.

Dosage of ferrous sulfate for anemia:

—using tablets of 200 or 325 mg (both sizes contain 65 mg of iron)—

Give 3 times a day, with meals.

In each dose give:
adults and children over 12: 1 tablet
children 2 to 12 years: ½ tablet
children under 2 years: ⅛ to ¼ tablet ground up fine and mixed with food.

Folic acid—for some kinds of anemia

Name:_____ price:_____ for _____

Often comes in: tablets of 400 mcg

Folic acid can be important in the treatment of kinds of anemia in which blood cells have been destroyed in the veins, as is the case with malaria. An anemic person who has a large spleen or looks yellow may need folic acid, especially if his anemia does not get much better with ferrous sulfate. Babies who are fed goat's milk and pregnant women who are anemic or malnourished often need folic acid as well as iron.

Folic acid can be obtained by eating dark green leafy foods, meat, and liver, or by taking folic acid tablets. Usually 2 weeks treatment is enough for children, although in some areas children with ***sickle cell disease,*** or a kind of anemia called ***thalassemia*** may need it for years. Pregnant women who are anemic and malnourished would be helped by taking folic acid and iron tablets daily throughout pregnancy.

Dosage of folic acid for anemia—using 400 mcg tablets:

Give by mouth once a day.
adults and children over 4 years:
1 tablet (0.4 mg)
children under 4 years: ½ tablet (0.2 mg)

Vitamin B_{12} (cyanocobalamin)—for pernicious anemia only

This is mentioned only to discourage its use. Vitamin B_{12} is useful only for a rare type of anemia that is almost never found except in some persons over 35 years whose ancestors are from northern Europe. Many doctors prescribe it when it is not needed, just to be giving their patients something. **Do not waste your money on vitamin B_{12}** or let a doctor or health worker give it to you unless a blood analysis has been done, and it has been shown that you have ***pernicious anemia.***

Vitamin K (phytomenadione, phytonadione)

Name:_____ Price:_____ for _____

Often comes in: ampules of 1 mg in 2.5 ml of milky solution.

If a newborn child begins to bleed from any part of his body (mouth, cord, anus), this may be caused by a lack of vitamin K. Inject 1 mg (1 ampule) of vitamin K into the outer part of the thigh. Do not inject more, even if the bleeding continues. In babies who are born very small (under 2 kg) an injection of vitamin K may be given to reduce the risk of bleeding.

Vitamin K is of no use to control bleeding of the mother after giving birth.

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Vitamin B_6 (pyridoxine)

Name:_____ price:_____ for _____

Often comes in: 25 mg tablets

Persons with tuberculosis being treated with **isoniazid** sometimes develop a lack of vitamin B_6. To prevent this, 25 mg of vitamin B_6 (pyridoxine) may be taken daily while taking isoniazid. Or the vitamin can be given only to persons who develop problems because of its lack. Signs include pain or tingling in the hands or feet, muscle twitching, nervousness, and being unable to sleep.

Dosage of vitamin B_6—if problems develop while taking isoniazid:

adults: take 50 mg (2 tablets), 3 times a day.
children over 2 months old: give 10 to 25 mg, 3 times a day.
newborns to 2 months old: give 10 mg once a day.

FAMILY PLANNING METHODS

ORAL CONTRACEPTIVES (BIRTH CONTROL PILLS)

Information about the use, risks, and precautions for birth control pills can be found on page 289.

Most birth control pills contain 1 or 2 hormones similar to hormones that a woman's body makes during her menstrual cycle (pages 245 and 291). These hormones are called estrogen and progestin (p. 288). Each type of pill comes in different strengths of each hormone and is sold under many different brand names.

Women who take birth control pills usually have lighter monthly bleeding than they would without the pills. This may be a good thing, especially for women who are anemic. But if a woman has no monthly bleeding or very light monthly bleeding for months and does not like this side effect, she can try changing to a pill with more estrogen.

Other medicines interact with birth control pills

Rifampicin (for tuberculosis), ritonavir (for HIV) and some epilepsy medicines make birth control pills less effective. If you take these medicines, use a different family planning method.

COMBINATION BIRTH CONTROL PILLS

Multiphasic combination pills

These pills contain a mix of estrogen and progestin that changes throughout the month. Since the amounts change, it is important to take the pills in order on a 28-day cycle.

Some multiphasic brand names:

Gracial *Logynon* *Qlaira* *Synphase*
Trinordiol *Trinovum* *Triquilar* *Triphasil*

Fixed-dose combination pills

These contain estrogen (usually 35 mcg) and progestin (usually 0.1 mg). A 28-pill pack has 21 pills with hormones and 7 reminder (placebo) pills. A 21-pill pack has only hormone pills. The amounts of each hormone are the same in all 21 hormone pills in each pack.

Some brand names:

Alesse *Cilest* *Diane* *Femoden*
Gynera *Harmonet* *Norinyl*
Ortho-Novum *Ovysmen*

Fixed-dose combination pills with less estrogen

These pills are higher in progestin (0.15 mg) and lower in estrogen (30 mcg). A 28-pill pack has 21 pills with hormones and 7 reminder (placebo) pills. A 21-pill pack has only hormone pills. The amounts of each hormone are the same in all 21 hormone pills in each pack. These pills may work better for a woman with very heavy monthly bleeding or painful breasts before her period begins.

Some brand names:

Lo-Femenal *Lo/Ovral* *Microgynon*
Microvlar *Nordette*

How to take the combination pill

If you are sure you are not pregnant and you are not breastfeeding a baby under 6 months old, you can start taking the pill any time. Pills will not prevent pregnancy until you have been taking them for about a week. So during the first 7 days after starting birth control pills, use condoms or avoid sex.

Combination pills can be used 3 ways

28-day use: Take the pills for 21 days. If you have a 28-day packet, take 1 pill every day. The last 7 pills of a different color do not contain hormones—they are there to help you remember to take a pill each day. If you have a 21-day packet, take 1 pill every day, stop for 7 days, and then start a new packet. During the 7 days when you do not take any hormone pills, you will have bleeding like a typical period.

Extended use (not with multiphasic pills): Take 1 pill every day for 84 days in a row and then stop for 7 days. Sometimes pills come in packets with 91 pills (84 with hormones and 7 different color pills without hormones). During those 7 days, you will have bleeding like a period but only once every 3 months. Spotting (very light bleeding) may occur but should go away after a few months.

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With all combination pills:

If you forget to take 1 pill, take 1 pill as soon as you remember. Then take the next pill at the regular time. This may mean that you take 2 pills in one day.

If you forget to take 2 or more pills in a row, take the most recent pill as soon as you remember and discard any other missed pills. Take the remaining pills in the pack at the regular time, even if this means taking 2 pills in one day. If you miss pills in the last week of hormonal pills (days 15-21 in a pack), finish the hormonal pills in the current pack, skip the sugar pills (or skip the 7 day break for a 21-day pack), and start a new pack.

If your period does not come on time and you have missed some pills, keep taking your pills, but have a pregnancy test. If you find out you are pregnant, stop taking the pill.

Possible side effects of the combination pill

Some women get headaches, nausea, tender and swollen breasts, and changes in monthly bleeding when they start taking combination pills. These side effects are not dangerous and usually stop after about 3 months. A different kind of pill may give you fewer side effects.

Ending the combination pill

You can stop taking the pill at any time. You could then get pregnant right away, so if you want to avoid pregnancy, use condoms or another method.

THE MINIPILL (PROGESTIN-ONLY PILLS)

These pills contain only progestin and come in 28-pill packs. All of the pills have the same amount of progestin.

Some brand names:

Femulen *Microlut* *Micronor* *Micronovum*
Neogest *Microval* *Ovrette* *Exluton*

How to take the minipill

Take your first pill on the first day of your period. Then take 1 pill at the same time every day. When you finish a packet, start your new packet the next day, even if you have not had any bleeding. Do not skip a day.

If you take the minipill even a few hours late, or if you forget 1 day's pill, you can become pregnant. If you miss a pill, take it as soon as you remember. Then take the next pill at the regular time, even if it means taking 2 pills in one day. Use condoms or do not have sex for 7 days. You may bleed a little if you miss your minipill or take it late.

Possible side effects of the minipill

The most common side effect of progestin-only minipills is changes in monthly bleeding. You may have bleeding when you do not expect it. Your period may go away altogether. This is not dangerous. Other possible effects include weight gain, headaches, and acne (pimples).

Ending the minipill

If you want to get pregnant or change methods, you can stop taking the minipill at any time. You could get pregnant as soon as you stop, so if you do not want to, start another method immediately.

EMERGENCY CONTRACEPTION (EC)

To prevent pregnancy within 5 days after unprotected sex, you can use special emergency contraception pills, or certain types of regular birth control pills or IUDs as emergency contraception (EC). For more information about IUDs, see page 290.

The chart on the next page shows how to use special emergency contraception pills and some regular birth control pills for EC. The chart lists only a few common brand names for each type of pill, but it also shows the total dose of hormones needed and how many pills to take to reach that dose. If you know the type and amount of hormone in the pills you have, this chart will help you know how many pills you would need to take.

Common side effects of EC with pills are headaches, nausea, and pain in the belly, but these should go away in a day or two. It is also common to have light bleeding or a change in timing of your next monthly bleeding.

Special emergency contraception pills and progestin-only birth control pills have fewer side effects than combined birth control pills when used for EC.

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How to take pills for emergency contraception

With a pack of 28 pills, use any of the first 21 pills for emergency contraception. Do not use the last 7 pills in a 28-day pack, because these pills do not contain any hormones. Never mix different kinds of emergency contraception or other birth control pills together because that could make them not work at all.

Emergency pills containing 1.5 mg (1500 mcg) levonorgestrel *(Norlevo 1.5, Plan B One-Step, Postinor-1)*	Take 1 pill, one time only	
Emergency pills containing 30 mg ulipristal acetate *(Ella, Ella One)*	Take 1 pill, one time only	
Emergency pills containing 0.75 mg (750 mcg) levonorgestrel *(Norlevo 0.75, Optinor, Postinor, Postinor-2, Plan B)*	Take 2 pills, one time only	
Emergency pills containing 50 mcg ethinyl estradiol and 250 mcg levonorgestrel *(Tetragynon)*	Take 2 pills	Take 2 more pills 12 hours later
Combined pills containing 50 mcg ethinyl estradiol and 250 mcg levonorgestrel *(Neogynon, Nordiol)* or 500 mcg norgestrel *(Ogestrel, Ovral)*	Take 2 pills	Take 2 more pills 12 hours later
Combined pills containing 30 mcg ethinyl estradiol and 150 mcg levonorgestrel *(Microgynon, Nordette)* or 300 mcg norgestrel *(Lo-Femenal, Lo/Ovral)*	Take 4 pills	Take 4 more pills 12 hours later
Combined pills containing 20 mcg ethinyl estradiol and 100 mcg levonorgestrel *(Alesse, Lutera)*	Take 5 pills	Take 5 more pills 12 hours later
Progestin-only pills (minipills) containing 75 mcg norgestrel *(Neogest, Ovrette)*	Take 40 pills one time only	
Progestin-only pills (minipills) containing 30 mcg levonorgestrel *(Microlut, Microval, Norgeston)*	Take 50 pills one time only	

Condoms (rubbers, prophylactics, sheaths)

Name:_____ price:_____ for _____

There are many different brands of condoms. Some are lubricated, some come in different colors, and some have spermicide. There are also condoms for women (Female Condom).

In addition to helping prevent pregnancy, condoms can help prevent the spread of sexually transmitted (venereal) infections, including HIV. Many people use condoms along with another form of birth control.

See page 287 for use and care of condoms.

Diaphragm

Name:_____ price:_____

The diaphragm is most effective when used with a spermicide cream or jelly. Put some inside the diaphragm, and also spread some on the rim before putting it in the vagina (p. 291).

Name of jelly or cream: _____
price: _____

Spermicides (Well-known brands: *Emko, Koromex, Delfen, Gynol II, VCF*)

Name:_____ price:_____

Spermicides come in different forms to put in the vagina just before having sex, or to use with a condom or diaphragm (p. 290). Do not douche or wash the spermicide out of the vagina for at least 6 hours after sex.

Intrauterine devices (IUDs)

Name:_____ price:_____

Fee for putting it in: _____

An IUD must be inserted and removed by a trained health worker. Common side effects of copper IUDs are heavier, more painful monthly bleeding, which often decreases over time. Common side effects of hormonal IUDs are lighter, less painful monthly bleeding, and for some, no bleeding at all. For information on IUDs, see page 290.

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If an IUD slips out of place, it will not prevent pregnancy. Learn how to check that the IUD is still in place: IUDs have strings attached which usually hang down into the vagina. After each monthly bleeding, wash your hands well and then reach with two fingers as far into the vagina as you can. Feel for the IUD strings but do not pull them. If you cannot feel the strings, or if you feel part of the IUD that isn't the strings, use condoms or another barrier method of family planning until getting the IUD checked by a health worker.

Rarely do problems result from having an IUD. If there is unusual belly pain, unusually heavy bleeding from the vagina, pain or bleeding from sex, or unexplained fever or chills, see a trained health worker right away, as these may be signs of infection.

Injectable contraceptives

(Common brands: ***Depo-Provera*** (DMPA)***, Sayana Press, Noristerat*** (NET-EN)***, Mesigyna, Cyclofem***)

Name:_____ price:_____

Injectable contraceptives work by preventing the woman's ovaries from releasing an egg. The hormones also make the mucus at the opening of the womb very thick, which helps stop the sperm from getting inside the womb.

Progestin-only injections, such as ***Depo-Provera, Sayana Press,*** and ***Noristerat***, contain only the hormone progestin. These can be used by women who should not use estrogen, but should not be used by women who should not use any hormonal method (p. 289). Progestin-only injections almost always cause changes in the monthly bleeding. A woman using these injections may have light bleeding every day or every once in a while. She will probably stop having monthly bleeding by the end of the first year. These changes are common and not a reason for concern.

Combined injections, such as ***Mesigyna*** or ***Cyclofem***, contain both estrogen and progestin. These injections are good for women who want to have regular monthly bleeding. Women who should not use methods that contain estrogen should not use combined injections (p. 289). Combined injections are given every month and are more expensive than progestin-only injections.

Women using either progestin-only or combined injections sometimes gain weight and get headaches, but these effects usually go away after the first few injections. A woman can stop having family planning injections any time she wants. After she stops, it can take a year or more to become pregnant and for her monthly bleeding to return to normal. If she stops having injections and does not want to become pregnant right away, she must use another method of family planning.

Contraceptive implants

(Common brands: ***Implanon, Jadelle, Levoplant, Nexplanon, Sino-implant)***

Implants are placed under the skin and release the hormone progestin. This prevents the ovaries from releasing an egg and thickens the mucus at the opening of the womb, which stops sperm from getting inside the womb. Implants can be used by people who are breastfeeding and by those who should not use estrogen, but not by people who should not use any hormonal method (p. 289). Some implants have 1 tube ***(Implanon, Nexplanon)***, others have 2 tubes ***(Jadelle, Levoplant, Sino-implant)***. Implants prevent pregnancy for 3 to 5 years, depending on the type.

Implants may cause irregular bleeding or more days of monthly bleeding. It is also common for an implant to cause bleeding to stop. This is not unhealthy. Other common side effects from implants are weight gain and headaches, which often go away as the body gets used to the hormone.

Implants can be removed at any time by a health worker trained to remove them safely. Pregnancy is possible immediately after implants are removed, so use another family planning method if you do not want to become pregnant.

MEDICINES FOR HIV — ANTIRETROVIRAL THERAPY (ART)

No medicine can cure HIV yet, but medicines called antiretrovirals can help people with HIV live longer and healthier lives, and taking them helps prevent HIV from spreading. Taken daily as a combination of at least 3 medicines, this is called Antiretroviral Therapy, or ART. The antibiotic cotrimoxazole (p. 357) also improves health by preventing many bacterial infections in people with HIV.

HIV CARE AND ART PROGRAMS

As soon as you have a positive HIV test, try to find an HIV care program where health workers can see you regularly, treat your health problems quickly, and help you start ART.

When is ART needed?

- The best time to start ART is as soon as you test positive for HIV. Sometimes a blood test called a CD4 cell count, which measures how well the body is able to fight illness, is required. When your CD4 count is below 350, it is important that you start ART.
- Anyone with HIV and either TB or hepatitis B should start ART.
- Pregnant women with HIV should start ART as soon as possible to protect their own health and the health of the developing baby (p. 398).
- All babies and children with HIV need ART to protect their growth, health, and development.
- ART can also help prevent HIV being passed between sexual partners when one person has HIV and the other does not.

Get support from a person you trust or an HIV support group to help you take your ART every day, which is necessary for it to work.

Do not start taking ART on your own. They may be the wrong medicines for you and can have serious side effects or cause drug resistance.

Do not share ART with anyone. The medicines will not work if you take less than the recommended doses.

Do not buy ART from someone who is not part of an approved HIV care or ART program. Getting drugs from an ART program is more reliable and less costly than buying them from a private source.

How to take ART

ART works as a combination of at least 3 medicines. Four common combinations are listed in the box on the right. Ask your health worker what medicines are used in your area. Some ART comes in 1 or 2 tablets so there are fewer pills to take.

ART for children is often available as a liquid that can be easily mixed into food.

Whatever combination you use, take every medicine every day, at the same time of day. Twice-a-day medicines should be taken every 12 hours. Having too little medicine in your body for some hours can cause drug resistance and the drugs will no longer work for you or for others in your community as drug-resistant HIV spreads.

ART combinations for people 11 years old and older

COMBINATION 1
TDF (tenofovir), 300 mg, once a day
+ 3TC (lamivudine), 300 mg, once a day
OR
FTC (emtricitabine), 200 mg, once a day
+ DTG (dolutegravir), 50 mg, once a day

COMBINATION 2
TDF (tenofovir), 300 mg, once a day
+ 3TC (lamivudine), 300 mg, once a day
OR
FTC (emtricitabine), 200 mg, once a day
+ LPV/r (lopinavir/ritonavir), 1 tablet of 400 mg lopinavir/100 mg ritonavir, 2 times a day

COMBINATION 3
AZT (zidovudine), 250 to 300 mg, 2 times a day
+ 3TC (lamivudine), 300 mg, once a day
+ NVP (nevirapine), 200 mg. Take NVP once a day for 14 days, then 2 times a day

COMBINATION 4
AZT (zidovudine), 250 to 300 mg, 2 times a day
+ 3TC (lamivudine), 300 mg, once a day
+ EVF (efavirenz), 400 mg, once a day

Side effects of specific ART medicines:

AZT: anemia, low white blood count

EVF: dizziness, confusion, mood changes, should not be taken in first 3 months of pregnancy

NVP: skin rash, liver problems

TDF: kidney problems, decreased bone density

Important: Some ART combinations use d4t (stavudine) instead of AZT. But long-term use can cause serious side effects. Try not to use it. If you use stavudine, do not take more than 30 mg 2 times a day.

Side effects of ART

ART can have side effects, but they often decrease or go away over time. Side effects include diarrhea, tiredness, headaches, and stomach problems. Talk to your health worker about how to handle these problems. But keep taking your ART until your health worker tells you to change or stop.

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Other side effects can be life-threatening, such as severe liver problems, severe tiredness with shortness of breath, skin allergies and rashes, tingling or burning in the hands and feet, and anemia (p. 124). If you have serious side effects, see a health worker right away.

Preventing HIV before a person is exposed to it

A person who does not have HIV and is regularly exposed to it from a partner or their work can protect against infection by using pre-exposure prophylaxis (PrEP). PrEP is 2 ART medicines taken every day.

PrEP Combination 1

TDF (tenofovir), 300 mg, once a day
+ FTC (emtricitabine), 200 mg, once a day

PrEP Combination 2

TDF (tenofovir), 300 mg, once a day
+ 3TC (lamivudine), 300 mg, once a day

Preventing HIV right after a person has been exposed to it

When a health worker is exposed to HIV during her work, for example because she is stuck with a needle, or when a person is raped or has unprotected sex with someone who is likely to have HIV, taking ART for about a month can prevent HIV. This is called Post-Exposure Prophylaxis, or PEP.

If you may have been exposed to HIV (see p. 399 for how HIV is spread), start PEP as soon as possible, and no later than 3 days after exposure. Start an ART combination in the box "ART Combinations for people 11 years old and older" on page 399, preferably Combination 1 or 2. Other combinations may be used in your area. All medicines for PEP must be taken for 28 days.

ART FOR PREGNANT WOMEN WITH HIV

Women who are pregnant should be tested for HIV and if positive, should start ART to improve their health. The mother's ART will also help prevent HIV from spreading to her baby. ART Combinations 1 and 2 in the box "ART Combinations for people 11 years old and older" on page 399 are safe during pregnancy and breastfeeding. Once a pregnant woman starts ART, she should continue for the rest of her life.

A woman who is already on ART when she becomes pregnant should continue taking it throughout her pregnancy, during the birth, while breastfeeding, and after. The baby will also need to be treated at birth.

Medicines are only one part of preventing HIV in a baby. Safer sex during pregnancy, safe birth practices, careful feeding of the baby, and treatment of illnesses in both mother and child, are also important. See *Where Women Have No Doctor* for more information.

ART medicines to prevent HIV in babies (mother-to-child transmission)

If the mother IS already taking ART, she should continue taking her medicines and also give the medicines listed here "FOR THE BABY".

If the mother IS NOT taking ART, she should start taking ART to maintain her health, and give medicines "FOR THE BABY" to prevent HIV infection in her baby.

FOR THE BABY

Give the baby only NVP (nevirapine) for 6 weeks following birth if the mother was already on ART when she became pregnant, or started taking ART early in the pregnancy.

Give the baby both NVP (nevirapine) and AZT (zidovudine) for 6 weeks following birth if the mother started ART less than 1 month before birth, thinks she was infected with HIV during pregnancy or breastfeeding, has a lot of HIV in her blood, or feels very ill.

If breastfeeding, continue giving the baby either NVP or AZT for an additional 6 weeks (a total of 12 weeks following birth).

Use these amounts:

NVP (nevirapine)

For babies, this medicine comes as a liquid to give by mouth.

0 to 6 weeks, weighing less than 2 kg (4.4 pounds): 2 mg per kg, once a day
0 to 6 weeks, weighing 2 to 2.5 kg (4.4 to 5.5 pounds): 10 mg once a day
0 to 6 weeks, weighing more than 2.5 kg (5.5 pounds): 15 mg once a day
6 weeks to 12 weeks: 20 mg once a day

AZT (zidovudine)

For babies, this medicine comes as a liquid to give by mouth.

0 to 6 weeks, weighing less than 2 kg (4.4 pounds): 4 mg per kg, 2 times a day
0 to 6 weeks, weighing 2 to 2.5 kg (4.4 to 5.5 pounds): 10 mg, 2 times a day
0 to 6 weeks, weighing more than 2.5 kg (5.5 pounds): 15 mg, 2 times a day
6 to 12 weeks: 60 mg, 2 times a day

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Additional Information

When we revised Where There Is No Doctor *in 1992, we added several topics. We continue to update these with each new edition. Some of these topics were specifically requested and others are problems that affect more and more people, such as HIV and AIDS, complications from unsafe abortions, pesticide poisoning, and drug addiction. We added the section on blood pressure because the book is used by many health workers who have equipment for measuring it.*

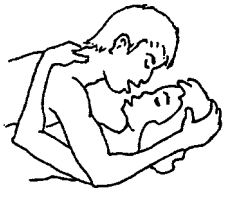
HIV AND AIDS

HIV (Human Immunodeficiency Virus) is a very small germ called a virus. You cannot see it without a microscope. If left untreated, HIV damages the body's ability to fight disease, making illnesses like diarrhea, pneumonia, tuberculosis, cancers, and other health problems more serious and difficult to treat. With treatment, people with HIV can stay healthy for many years.

AIDS (Acquired Immune Deficiency Syndrome) is a stage of illness that can develop after a person has HIV but has not had treatment for some time. Many people with AIDS die from diseases they are no longer strong enough to fight because of HIV.

HIV spreads when an HIV-infected person's blood, semen (sperm), breast milk, or fluid from the vagina enters the body of a person without HIV. It can spread through:

Unprotected sex between someone who has HIV and someone who does not. This is the most common way HIV is spread.



Using an unsterilized needle or syringe (or any instrument that pierces or cuts the skin).



Pregnancy, birth or breastfeeding, which can pass HIV to a baby if the mother is infected. See page 398 for information on preventing HIV from spreading this way.



Blood transfusions, if the blood has not been tested to be sure it is free from HIV.



HIV is not spread through everyday contact such as shaking hands, hugging, kissing, or living, playing, sleeping, or eating together. Also, it is not spread by food, water, insects, toilet seats, or communion cups. Caring for someone with HIV or AIDS is safe if you follow the advice on p. 403.

IMPORTANT: **Someone who looks and feels completely healthy can have, and spread, HIV.** It may take years after the virus enters the body for the first signs of illness to appear. The only way to know for sure whether or not you have HIV is to get an HIV test. These tests are available at many health centers at low or no cost.

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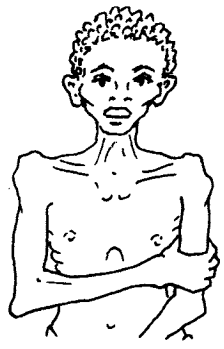
Signs of HIV:

Signs of HIV are often the signs of other common illnesses, but may be more severe and last longer. The only sure way to know if someone has HIV is get an HIV test. These 3 signs are common:

- Gradual weight loss.
- Diarrhea for more than 1 month.
- A fever for more than 1 month, sometimes with chills or soaking night sweats.

The person may also have one or more of these signs:

- A bad cough that lasts for more than 1 month.
- Yeast infection in the mouth (see "thrush," p. 232).
- Swollen lymph nodes, anywhere in the body (p. 88).
- Rashes or painless dark patches on the skin.
- Warts or sores that keep growing and do not go away, especially around the genital area and buttocks.
- Feels tired all the time.
- People with HIV are more likely to get TB (p. 179) or shingles (p. 204).



AIDS was called "slim disease" in Africa because people lost so much weight.

Treatment to stay healthy with HIV

To live with HIV, the most important thing is to begin taking Antiretroviral Therapy, or ART—medicines that control HIV. Medicines must be taken every day. See pages 398 to 400. Some people also take cotrimoxazole to prevent infections (p. 357). When health problems arise, treat them quickly:

- For diarrhea, use Rehydration Drink (p. 152).
- For thrush or yeast infection in the mouth, use gentian violet (p. 372) or nystatin (p. 373).
- For warts, use trichloroacetic acid or podofilox (pages 375 and 404).
- Lower fevers by taking aspirin, acetaminophen, or ibuprofen (pages 380 to 381), drinking lots of fluids, and taking cool baths (pages 75 and 76).
- Treat cough (pages 168 to 169) and pneumonia (p. 171). If cough and fever last more than a week, seek help immediately for TB prevention and treatment (pages 179 to 180).
- For itching and rashes, use antihistamines (p. 387) and treat infections (p. 202).
- Treat infected wounds and sores (pages 88 and 89).
- For shingles, see page 204.

People with HIV need to eat more than those without HIV, and keep a healthy diet (see Chapter 11). Taking a multivitamin pill may help. Also:

- If water is not safe, boil or disinfect drinking water to avoid diarrhea and other problems.
- Avoid using alcohol, tobacco and other drugs.
- Get enough rest and sleep.
- Make time for activities and people who make you feel good.

People with HIV also need emotional support. Encourage them to seek support from people they trust. They can learn a lot from others who are living with HIV.

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Preventing HIV:

- Have sex with only one partner who has sex only with you. Practice safer sex (p. 290). **Use a condom to reduce the risk of getting or giving HIV.**
- Get tested for HIV and if positive, start treatment.
- Treat sexually transmitted infections early—especially those that cause sores.
- Do not use syringes, needles or other tools that could be dirty. Only cut skin with sterilized tools. **Health workers should NEVER reuse a needle or syringe without sterilizing it first** (p. 74). Also make sure equipment for cutting, ear piercing, acupuncture, and scarring is sterilized.
- Do not accept a blood transfusion that has not been tested. Avoid transfusions except when absolutely necessary.
- Do not share razors.
- Wear latex gloves or plastic bags on your hands if you touch someone else's wound, blood, or body fluids.
- If you were raped or had unprotected sex with someone who has HIV, use post-exposure prophylaxis (PEP) to prevent getting HIV. See page 400.
- If you are at high risk for HIV, consider using pre-exposure prophylaxis (PrEP) to protect against infection. See page 400.
- **Treatment is prevention**. All people with HIV, especially pregnant women, can take ART to improve their health and stop HIV from spreading.

Setting up treatment and testing programs will also help prevent HIV from spreading in your community. In the long run, HIV can best be prevented by fighting for fairer social and economic conditions, so that people have stronger bodies from better nutrition, so that families do not need to separate to find work, and so that people need not sell their bodies for sex.

CARING FOR SOMEONE WITH HIV OR AIDS:

People with HIV or AIDS need comfort and kindness. You can help them decide how to tell others about their illness. They may also need help getting enough to eat or taking their medicines.

If they have a lot of fever, diarrhea, or pain, they will need extra help staying clean. This can usually be done without risk. To prevent spreading the virus, remember:

- Blood, open sores, bloody diarrhea, or bloody vomit can spread the virus. To prevent touching these, wear rubber latex or plastic gloves, or plastic bags on your hands. Wash your hands often.



Be kind to persons with HIV or AIDS.

- Soiled or bloody clothes, bedding, or towels should be handled with care. Wash them in hot soapy water, or add chlorine bleach. Keep separate from other household laundry.

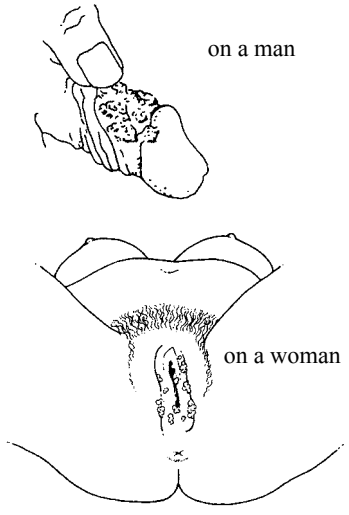
At some point there may be little that can be done to treat a person with AIDS. You can help them prepare the legal and social arrangements necessary to care for children, family and property. Family and friends can give love and support to help the person prepare for death (p. 330).

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SORES ON THE GENITALS

A single, painless sore on the genitals may be a sign of syphilis (p. 237). But several sores are likely to be a sign of other sexually transmitted infections: genital warts, genital herpes, or chancroid. HIV can easily pass through a sore on the genitals during sex. Always use a condom, and avoid having sex if the condom will not cover the sore.

Genital Warts (Venereal warts, HPV)



These warts are caused by a virus that is spread by sexual contact. They look like warts on other parts of the body (p. 210) but there are usually more of them.

Signs:

Small, firm, whitish or brownish growths that have a rough surface and sometimes itch. They can grow on the penis and scrotum, on the vulva and inside the vagina, and around the anus.

Treatment:

Treatment is given once a week, usually for several weeks. A health worker can show you how to treat at home or have you return for treatments. Effective medicines include trichloroacetic acid (TCA), bichloracetic acid (BCA), or podofilox, page 375.

Prevention:

Wear a condom during sex (p. 287) if you or your partner has genital warts or avoid sex until they are gone. The vaccine that prevents human papilloma virus (HPV, p. 147) helps prevent genital warts.

Genital Herpes

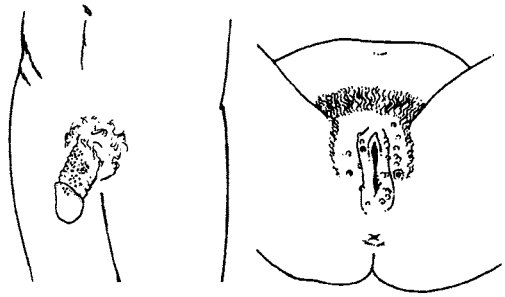
Genital herpes is an STI caused by a virus. It produces painful sores on the genitals that come and go for months or years. Herpes spreads when skin touches skin, as between sexual partners. It can spread even when you cannot see a sore, but is more likely to spread when there is a sore. When sores appear, it is called an outbreak.

Herpes virus can cause sores on the mouth (cold sores), also called oral herpes (p. 232). Kissing or sharing something from mouth to mouth can spread oral herpes. Oral herpes can become genital herpes if passed during oral sex.

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Signs:

- One or more very small, painful blisters, like drops of water on the skin, appear on the genitals, anus, buttocks or thighs.
- The blisters burst and form painful, open sores (an outbreak).
- The sores dry up and become scabs.



on a man on a woman

The first time you get herpes sores, they can last 3 weeks or more. You can have fever, headache, body ache, chills, and swollen lymph nodes in the groin.

The virus stays in the body after all the signs disappear. New blisters can appear at any time, from weeks to years later. Usually the new sores appear in the same place, but are fewer, not as painful, and heal more quickly.

Treatment:

There is no cure for herpes, but treatment with acyclovir (p. 375) can make outbreaks shorter and less painful. Keep the area clean. Do not have sex until all the sores are healed—not even with a condom.

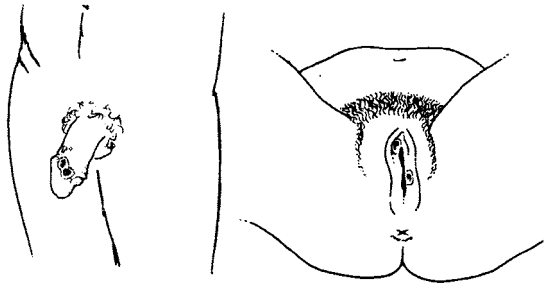
Always wash hands with soap and water after touching the sores. Be careful not to touch your eyes or your children's eyes. A herpes infection in the eyes is serious and can cause vision loss.

CAUTION: Having herpes sores in the vagina during birth can pass herpes and cause health problems in the baby. Let your health worker or midwife know if you have ever had genital herpes.

Chancroid

Signs:

- soft, painful sores on the genitals or anus
- enlarged lymph nodes (buboes) may develop in the groin



on a man on a woman

Treatment:

- Give 1 g (1000 mg) of azithromycin by mouth 1 time only, or ciprofloxacin 500 mg by mouth 2 times a day for 3 days, or erythromycin 500 mg by mouth 4 times a day for 7 days. You can also give ceftriaxone, 250 mg by intramuscular injection, as a single dose. **Pregnant women and children should not take ciprofloxacin.**
- If there is chancroid in your region and you are not sure if a person has chancroid or syphilis, it is best to treat for both (p. 238).

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CIRCUMCISION AND EXCISION (CUTTING AWAY SKIN FROM THE SEX PARTS)

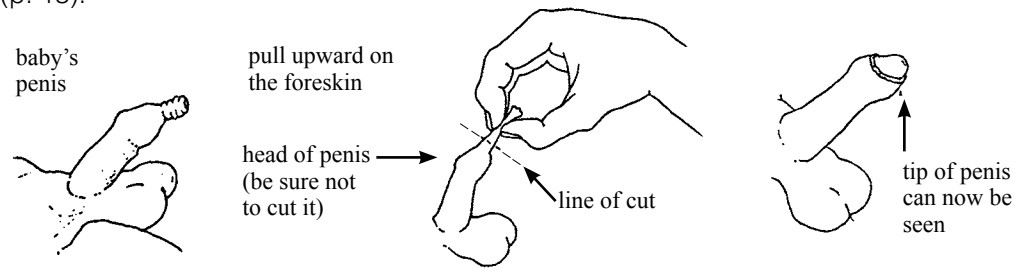
In many communities, boy children are circumcised—as are girls in some parts of the world—as a traditional practice or custom. Circumcision is not necessary for health, although male circumcision may provide some protection against HIV. For boys it is usually not dangerous. But for girls, this practice—sometimes called "excision," "infibulation," or "female genital cutting"—is very dangerous and should be stopped. For both boys and girls, unclean cutting tools risk spreading infection.

BOYS

A baby boy is born with a tube of skin (foreskin) covering the head of his penis. As long as urine comes out of the hole at the tip, there should be no problem. The foreskin will usually not pull back completely over the head of the penis until the boy is about 4 years old. This is not a reason for concern and circumcision is not necessary. Do not try to pull the foreskin back by force.

However, if the foreskin becomes red, swollen, and so tight that the baby cannot pass urine without pain, this is a problem. Take him to a health worker for a circumcision as soon as possible.

As a family ritual, simple circumcision of a healthy baby or young boy may be done by a midwife or person with experience. Using a new razor or disinfected knife, she cuts off a little of the foreskin beyond the head of the penis. After the cut, there is some pain and bleeding. Hold the penis firmly with a clean cloth, or gauze, for 5 minutes, until the bleeding stops. Some healers use the juice of a plant to help stop the bleeding (p. 13).



If the bleeding does not stop, wash away the clots of blood with clean water, and pinch the end of the foreskin between the fingers with a piece of clean cloth for as long as it takes the bleeding to stop. No medicine is needed.

GIRLS

In circumcision of girls, or female genital cutting, the soft knob of flesh (clitoris) at the front end of the vagina is cut out. Sometimes the vaginal lips are also cut away. Genital cutting is a violation of human rights and it should not be done. Genital cutting damages the ability to feel sexual pleasure, creates psychological and physical problems including frequent urinary and vaginal infections, and problems during birth.

There is also danger of severe bleeding. The child can die in a few minutes. **Act quickly.** Wash away the clots to find the exact point where the blood is coming from and press on it firmly for 5 minutes. If bleeding continues, keep pressing the bleeding spot while you carry the child to a health worker or doctor for help. Watch for signs of shock (p. 77) and infection.

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SPECIAL CARE FOR SMALL, EARLY, AND UNDERWEIGHT BABIES—"KANGAROO CARE"

A baby who is born very small (weighs less than 2 ½ kg or 5 lbs) will need special care. If possible, take the baby to a health post or hospital. In the hospital, these babies are often kept warm and protected in a special temperature–controlled box called an incubator. However, for a baby who is basically healthy, a mother can often provide similar warmth and protection by "kangaroo care" of the baby:



- Place the baby naked, with or without a diaper or nappy, upright inside your clothing against your skin, between your breasts. (It helps to wear a loose blouse, sweater, or wrap tied at the waist.)
- If you are breastfeeding, let the baby suck at your breast as often as he wants, but at least every 2 hours.
- Sleep propped up so that the baby stays upright.
- Wash the baby's face and bottom each day.
- **Make sure the baby stays warm at all times.** If it is cool, dress the baby with extra clothing, and cover his head.
- Alternate "kangaroo care" of the baby with other family members so you have time to rest, bathe, and eat.
- Take the baby to a health worker regularly. Be sure that he gets all his vaccinations (p. 147).
- Give the baby iron (p. 394) and vitamin supplements—especially vitamin D (p. 125).

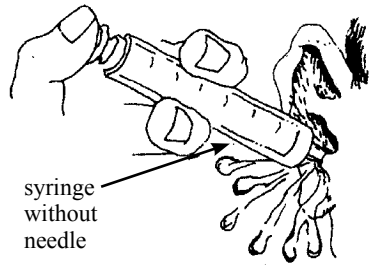
EAR WAX

A little wax in the ears is common. But some people have too much wax, or it dries into a hard lump close to the ear drum. This can block the ear canal so that the person cannot hear well.

Treatment:

To remove the wax, first soften it by putting several drops of warm vegetable oil into the person's ear. Then have her lie down on her side with the ear up for 15 minutes. Next, wash the ear out well by pouring several cups of warm (not hot) water into it.

If this does not work, remove the needle from a syringe and fill the syringe with warm water and squirt it into the ear canal. Repeat this several times, or until the wax comes out. Stop if the person starts to feel dizzy. If the wax still will not come out, seek medical advice.



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LEISHMANIASIS

This disease is found in Africa, Asia, the Middle East, Latin America, and the U.S. The infection is carried from person to person by a small sand fly which infects a person when it bites.

Some forms of the disease cause damage inside the body (visceral leishmaniasis, kala–azar, dumdum fever). These are very difficult to recognize and the treatment is very complicated and expensive. If possible, seek medical help.

Other forms affect mainly the skin (cutaneous leishmaniasis, tropical sore, Delhi boil, espundia, forest yaws, uta, chiclero ulcer). These are easier to treat.

Signs of leishmaniasis of the skin:

- 2 to 8 weeks after being bitten, swelling appears where the fly bit.
- The swelling becomes an open sore, usually with pus.
- Sores can heal by themselves, but may take several weeks to 2 years.
- Sores become infected (with bacteria) very easily.

Treatment:

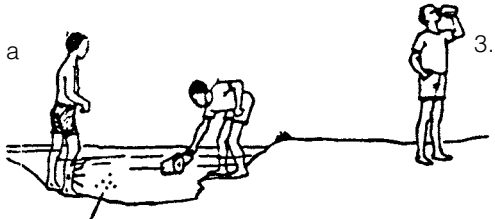
- Clean the sore with cool, boiled water.
- Apply a hot, moist cloth to the sore (not so hot that it burns the skin) for 10 to 15 minutes.
- Do this 2 times a day for 10 days. This heat treatment often brings a complete cure.
- If the sore looks infected (red and painful), also give antibiotics (p. 351).

GUINEA WORM

Guinea worm is a long, thin worm that lives under the skin and makes a painful sore on the ankle, leg, or elsewhere on the body. The worm, which looks like a white thread, can be over a meter long. Guinea worm was a health problem in some countries of Africa but now has almost disappeared.

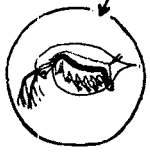
Guinea worm is spread from person to person, like this:

1. Infected person with open sore wades into a water hole. The worm pokes its head out of the sore and lays thousands of eggs into the water.

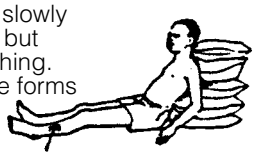


3. Another person drinks some of the water. The fleas, with the worm eggs, are swallowed.

2. Tiny water-fleas pick up the worm eggs.



4. Some of the eggs develop slowly into worms under the skin, but at first the person feels nothing. About one year later, a sore forms when an adult worm breaks through the skin to lay its eggs.



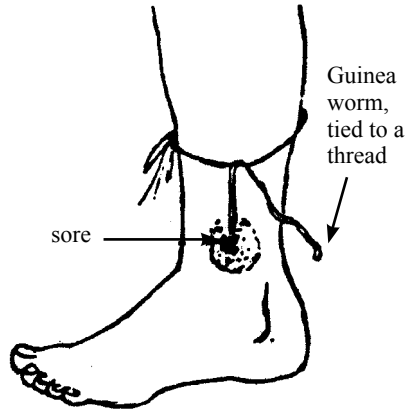
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Signs:

- A painful swelling develops on the ankle, leg, testicles or elsewhere on the body.
- After a week a blister forms, which soon bursts open forming a sore. This often happens when standing in water, or bathing. The end of a white thread-like Guinea worm can be seen poking out of the sore.
- If the sore gets dirty and infected, the pain and swelling spread, and walking becomes impossible. Sometimes tetanus occurs (p. 182).

Treatment:

- Keep the sore clean. Soak the sore in cold water until the worm's head pokes out.
- Attach a thread to the worm, or roll it round a thin stick, and pull gently, a little more each day. This may take a week or more. The worm can be more than a meter long! Try not to break it, because this can cause severe infection.
- Give metronidazole or thiabendazole to help reduce discomfort and make it easier to slowly pull out the worm. (The medicines do not kill the worms. For dosages and precautions, pages 370 and 376.)



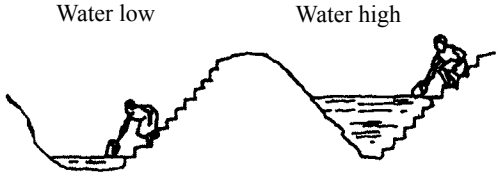
- Give anti-tetanus vaccination (p. 147).
- If sores become infected (spreading pain, redness, swelling, and fever), give penicillin or dicloxacillin or a similar antibiotic (p. 351).

Prevention:

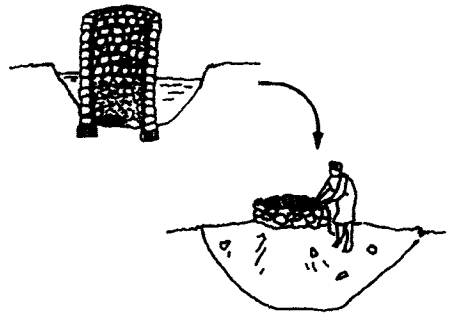
- Use tap water for drinking, if available. If a water hole is the only supply, then do not drink from it directly. Pour the water into a special drinking water pot, through a clean cloth tied over the top. The cloth will filter out the infected water-fleas.



- If the community can build stone steps into the water hole, people can scoop water from the last dry step without getting wet.
- Or turn the water hole into a well, so that people can draw water with a rope and bucket.



ALWAYS USE THE LAST DRY STEP.
NEVER STEP INTO THE WATER.



If nobody wades or bathes in water used for drinking, the infection cannot be passed on, and will eventually disappear from the area.

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EMERGENCIES CAUSED BY COLD

Loss of Body Heat (Hypothermia)



In cold climates, or cold, wet or windy weather, persons who are not wearing enough warm clothes can lose the heat from their bodies. **This is very dangerous.** Often the person does not realize what is happening and can become so confused that she will not ask for help and may die.

Signs:

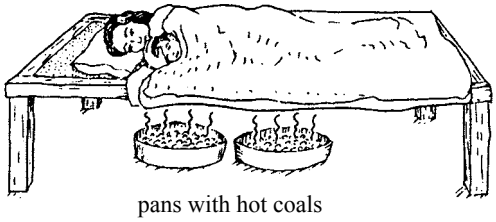
- Uncontrolled shivering
- Slow or unclear speech
- Stumbles when walking
- Cannot think clearly
- Feels very tired

Treatment:

- ♦ Quickly get the person to a dry place protected from the wind.
- ♦ Take off wet clothes and cover person with dry clothing and dry blankets.
- ♦ Make sure her head, feet, and hands are covered.
- ♦ Heat stones in a fire, wrap them in cloth, and put them next to her back and belly.

> *WARNING:* **Do not warm up the person too fast as this could cause heart problems and death.**

- ♦ Do all you can to keep the person warm. If it is a child, wrap him inside your clothing against your skin (see "kangaroo care," p. 407). Or sleep with him in your arms. If possible, have someone else lie on the other side. Or put pans of hot coals, or a few small oil lamps under the cot. (But be careful he does not get burned, or too warm.)



pans with hot coals

- ♦ Give sweet things to eat and drink like sugar, candy, honey, ripe fruit or juice. If you do not have sweets, give starchy foods like rice, bread, plantain, or potatoes.
- ♦ If the person stops breathing, give mouth-to-mouth breathing (p. 80). Keep giving mouth-to-mouth breathing for at least 1 hour.

If the person stops shivering but still has any of the above signs, or if he is unconscious, his condition is very serious. Keep trying to warm him, but if he does not wake up, **get medical help FAST.**

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Dangerously Low Body Temperature in Babies and Sick Persons

Sometimes, especially in cool weather, a baby, sick child, or person who is very old, ill, malnourished, or weak may lose so much body heat that their temperature drops below normal. The signs mentioned on the previous page may develop, and the person may die. Try to raise the body temperature by keeping the person warm as described on p. 410.

Frozen Skin (Frostbite)

In freezing weather, if a person is not dressed warmly enough, her hands, feet, ears, and sometimes face may begin to freeze. **Frostbite is very dangerous.** If completely frozen, the skin will die and later turn black (p. 213). The part may have to be cut off (amputated).

Signs of frostbite:

- At first, numbness and often sharp pain in one part of the body.
- Then all feeling goes away as the part gets more frozen.
- The part gets pale in color and feels hard when touched.

Treatment of mild frostbite: If the skin still feels soft when touched, the person probably has mild frostbite. Wrap the part with dry cloth and warm it against another part of the person's own body or someone else's. Try to keep moving and get out of the cold as fast as possible.



Warm hands and feet against body.

Treatment of severe frostbite: CAUTION: Do not start treatment for severe frostbite until you are in a place where the person's whole body can be kept warm during and after treatment. It is better to let a hand or foot stay frozen for several hours than to let it get warm and then freeze again. When you get to a warm, protected place:

- Fill a large container with warm water **(not hot)** that feels comfortable when you hold your hand in it.
- Soak the person's frozen part in the water until it gets warm.
- If the water cools, add more warm water. But take out the person's hand or foot while you do this. Remember, she cannot feel how hot the water is and you can easily burn her.
- As it gets warm, the frozen part will become very painful. Give aspirin or codeine (p. 380 and 385).
- When it is no longer frozen, the person must stay warm and rest.
- Be very gentle with the part that was frozen. Treat as you would a severe wound or burn (p. 96). Seek medical help. Sometimes dead parts of the body must be removed through surgery.

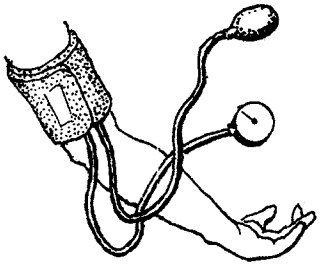
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HOW TO MEASURE BLOOD PRESSURE

Blood pressure measurement is an important skill for health workers and midwives. It is an especially useful tool in examining:

- Pregnant women (pages 249, 251, and 253) before and during birth.
- A person who may be losing a lot of blood from any part of the body, inside or out (p. 77).
- A person who might be in shock (p. 77), including allergic shock (p. 70).
- People over 40.
- Anyone with signs of heart trouble (p. 325), stroke (p. 327), difficulty breathing, frequent headaches, swelling, diabetes (p. 127), chronic urinary problems (p. 234), or swollen or painful veins (p. 175).
- Persons known to have high blood pressure (p. 125).
- Women taking (or planning to take) birth control pills (p. 288).

There are 3 kinds of instruments for measuring blood pressure:



A manual blood pressure cuff with a gauge,



an electric blood pressure cuff with a display,



and the older mercury sphygmomanometer, which shows the level of mercury.

To measure blood pressure:

- **Make sure the person is relaxed.** Recent exercise, caffeine, anger, or nervousness can cause a falsely high reading. Explain what you are going to do, so the person is not surprised or frightened. Have them sit at rest for 5 minutes before you measure.
- **Fasten the pressure cuff** around the person's bare upper arm about 2 finger widths above the elbow crease.
- **Close the valve** on the rubber bulb by turning the screw clockwise.
- **Feel for a pulse just below the cuff** on the inside of the elbow, and put the stethoscope on the pulse.
- **Pump the pressure up** to more than 200 millimeters of mercury.
- **Listen carefully for the pulse** as you slowly let air out of the cuff. As the needle of the gauge (or the level of mercury) slowly drops, **take two readings:**

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1. **Take the first reading the moment you begin to hear the soft thumping of the pulse.** This happens when the pressure in the cuff drops to the highest pressure in the artery (systolic or "top" pressure). This top pressure is reached each time the heart contracts and forces the blood through the arteries. In a healthy person, this top pressure reading is usually around 110 to 120 mm.

2. Continue to slowly release the pressure while listening carefully. **Take the second reading when the sound of the pulse begins to fade or disappear.** This happens when the pressure in the cuff drops to the lowest pressure in the artery (diastolic or "bottom" pressure). This bottom pressure occurs when the heart relaxes between pulses. It is usually around 60 to 80 mm.

When you record a person's blood pressure, always write both the top and bottom pressure readings. We say that an adult's blood pressure (BP) is "120 over 80," and write it like this:

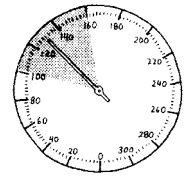
BP $\frac{120}{80}$ or BP 120/80

120 is the top (systolic) reading.

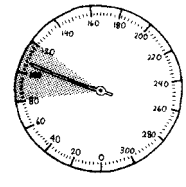
80 is the bottom (diastolic) reading.

For health workers, it may be better to speak of the "top" and "bottom" numbers (TN and BN), rather than use big, strange words like systolic and diastolic.

If a person's blood pressure is 160/110, he has seriously **high blood pressure** and should get treatment. A bottom number of over 100 or a top number over 160 usually means the blood pressure is high enough to require attention (diet and perhaps medicine).



Typical blood pressure for an adult is usually around 120/80, but anything from 100/60 to 140/90 can be considered healthy.



If a person regularly has **low blood pressure,** there is no need to worry. In fact, blood pressure that is a little low, 90/60 to 110/70, means a person is likely to live long and is less likely to suffer from heart trouble or stroke.



A sudden drop in blood pressure is a danger sign, especially if it falls below 60/40. Health workers should watch for any sudden drop in the blood pressure of persons who are losing blood or at risk of shock (p. 77).

For more information about blood pressure measurement, see *A Book for Midwives*, Chapter 8.

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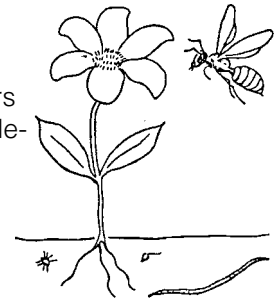
POISONING FROM PESTICIDES

Pesticides are chemical poisons used to kill certain plants (herbicides), fungus (fungicides), insects (insecticides) or other animals (for example, rat poison). In recent years, the increasing misuse of pesticides has become a big problem everywhere. These dangerous chemicals can cause severe health problems. They can also damage the balance of nature, which in time can lead to smaller harvests.



Many pesticides are extremely dangerous. Villagers often use them without knowing their risks, or how to protect themselves while using them. As a result, many persons become **very ill, blind, sterile, paralyzed,** or their children may be **born with disabilities.** Also, working with these chemicals, or eating foods sprayed with them, sometimes causes **cancer.**

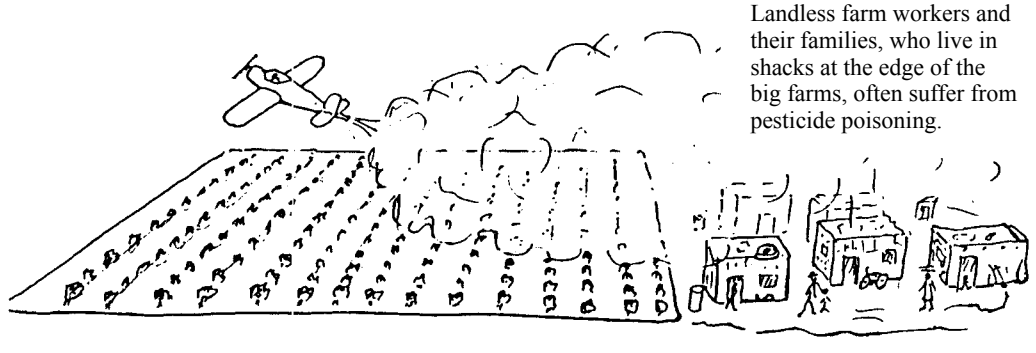
Chemicals used to kill insects and weeds at first allow farmers who can afford them to produce more crops. But today, pesticide-treated crops often produce smaller harvests than crops produced without pesticides. This happens because pesticides also kill the birds and insects that provide a natural control of pests and are beneficial to the soil. Also, as the insects and weeds become resistant, greater quantities and more poisonous kinds of pesticides are needed. So, once farmers begin to use these chemical poisons, they become dependent on them.



Pesticides also kill the beneficial animals—such as bees and earthworms.

As farmers' dependency on chemical pesticides and fertilizers goes up, so does the cost. When the smaller, poorer farmers can no longer afford them, they are forced off the land. As the land becomes owned by a few giant farmers, and more and more people become landless, the number of malnourished and hungry people increases.

The risk of pesticide poisoning is high for these landless, poorly paid farm workers and their families. Many live in open shacks at the edge of fields that are sprayed with pesticides. The poison can easily get into their homes or water supply. This is especially dangerous for small children, who can be seriously harmed by even small amounts of these poisons. Farmers who use backpack sprayers, which often leak, are also at high risk. See *A Community Guide to Environmental Health*, Chapter 14, for more information.



Landless farm workers and their families, who live in shacks at the edge of the big farms, often suffer from pesticide poisoning.

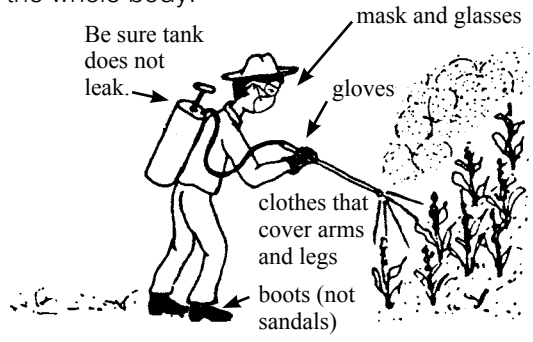
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Laws are needed to prohibit the most dangerous pesticides and to provide clear warnings. Unfortunately, after governments in industrialized countries limited the use of many pesticides, chemical manufacturers began to sell their dangerous products to developing countries, where laws are less strict.

Some of the most dangerous pesticides are aldrin, dieldrin, endrin, chlordane, heptachlor, DDT, DBCP, HCH, BHC, ethylene dibromide (EDB), paraquat, parathion, agent orange (2-4D with 2-4-5T), camphechlor (toxaphene), pentachlorophenyl (PCP), and chlordimeform. It is very important to read carefully the labels of pesticide containers. Be sure to read the small print, because the pesticide may not be part of the brand name.

WARNING: If you use any pesticide, take the following precautions:

- Mix chemicals and load spray equipment carefully.
- Stand so that wind blows spray away from you.
- Wear protective clothing, covering the whole body.
- Wash hands before eating.
- Wash the whole body and change clothes immediately after spraying.
- Wash clothes after spraying.
- Do not let wash water get into drinking supply.
- Be sure containers with pesticides are clearly marked, and kept out of children's reach. Do not use pesticide containers for food or water.



CAUTION: **Make sure that children, and women who are pregnant or breastfeeding, stay away from all pesticides.**

Treatment for pesticide poisoning:

- If the person is not breathing, quickly do mouth-to-mouth breathing (p. 80).
- Follow instructions on p. 103 to make the person vomit, and to give powdered charcoal (or egg whites) to soak up the poison inside the gut. But do not make the person vomit if you do not know what kind of pesticide he was using, or if he swallowed a pesticide with gasoline, kerosene, xylene, or other petroleum-based liquids.
- Remove any pesticide-soaked clothing, and wash skin exposed to pesticide.

The above steps can help to treat the immediate problem of pesticide poisoning. But solving the underlying problem will require:

1. Education for avoiding the most dangerous pesticides, and laws to restrict their use.
2. Farm workers organizing to insist their rights are protected, and safety hazards are corrected.
3. Fairer land distribution.



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PREVENTING DEATHS FROM UNSAFE ABORTION

An abortion is when someone on purpose ends a pregnancy before birth. Abortion is very safe in places where it is legal, and problems are very rare. Where abortion is illegal, people still get abortions but often have problems from:

- using unsafe medicines, herbs, and practices to try to end a pregnancy. These can cause injury, death, or problems with the pregnancy if the method does not successfully cause an abortion.
- infections because locations or instruments are not clean or sterile.
- waiting too long to seek medical help for problems because they fear arrest or legal consequences.



Methods of Safe Abortion

Medical abortion (abortion with pills) uses one or two medicines (misoprostol by itself or with mifepristone) to cause contractions that expel the pregnancy from the uterus. This is safe to do at home up to 13 weeks. After that, it is safe through 24 weeks in a health center or accompanied by an experienced abortion support worker. Medical abortion is very safe and effective. Since nothing is put inside the uterus, there is very little chance of infection.

Suction abortion (MVA, EVA, vacuum aspiration) uses either a machine or a large syringe to remove the pregnancy from the uterus by suction. This is a safe method during the first 16 weeks of pregnancy. It is done in a clinic.

Dilation and evacuation abortion (D&E) uses a combination of medicines, suction and other instruments to remove the pregnancy from the uterus. This method is safe to use starting at 14 weeks of pregnancy. It is done in a clinic.

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Danger Signs after Abortion

Get medical help right away if you:

- soak more than 2 pads or cloths in 1 hour for 2 hours in a row, or have bleeding with dizziness
- pass blood clots larger than your fist
- have severe belly pain that gets worse even with pain medicine
- have bad-smelling discharge from the vagina
- have fever
  - for medical abortion, fever over 38.5°C (101°F) that starts a day after the last misoprostol dose and lasts 4 hours or more
  - for abortion by suction or D&E, fever over 38°C (100°F) or chills at any time after the abortion

Some people with danger signs after an unsafe abortion do not go for medical help because they are afraid they will have legal problems. They may wait until they are very sick to get help. This delay can be fatal. Go for help right away and meanwhile do the following:

- ♦ Treat for shock (p. 77)
- ♦ Give antibiotics. Use the medicines for childbirth fever on p. 276.

Prevent Illness and Death from Unsafe Abortion

Where abortion is legal and accessible, there are almost no deaths or problems from abortion. Work to make safe abortion available in your country and to remove the stigma that people feel when accessing abortion.

Work to make birth control methods more available and affordable in your community. Educate everyone about how these methods can reduce the number of unplanned pregnancies, and help to reduce the need for abortion.

For more information about how to care for someone after an abortion, see *A Book for Midwives.* For ideas about how challenge stigma about abortion and how to make birth control methods available, see *Health Actions for Women.*

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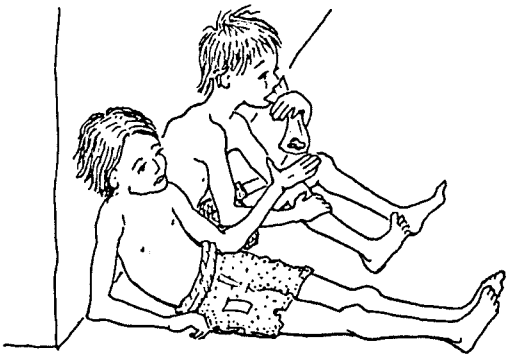
DRUG MISUSE AND ADDICTION

The use of **habit-forming, or addictive, drugs** is a growing problem in the world today.

Although **alcohol** and **tobacco** are legal in most countries, both are habit-forming. They contribute to the poor health and death of many millions of people each year. Alcohol misuse causes enormous health, family, and social problems throughout the world. Cigarette smoking has for many years been a major cause of death in rich countries, and is now becoming an even bigger cause of death in poor countries. As more people in the wealthier countries stop smoking, tobacco companies have turned to lower-resource countries as their new market.

Health problems related to use of alcohol and tobacco are discussed on pages 148 to 149.

In addition to alcohol and tobacco, many people in different parts of the world are using drugs that may be illegal. These vary from place to place, and include **marijuana** (weed, pot, grass, *sinsemilla, mota*, hashish, ganja), **opium** (heroin, morphine, smack), **methamphetamine** (speed) and **cocaine** (crack, snow, rock).



An increasing problem among poor children in cities is the **sniffing of chemicals,** especially **glue,** but sometimes paint thinner, shoe polish, gasoline, and cleaning fluid. Also, some people misuse medicines—especially certain strong painkillers, stimulants, and appetite-control drugs.

Drugs can be swallowed, injected, smoked, chewed, or sniffed. Different drugs create different effects on the body and mind. Cocaine or kolanuts may make a person feel energetic and happy, but some time later he will feel tired, irritable, and depressed. Some drugs, like alcohol, opium, morphine, and heroin, may at first make a person feel calm and relaxed, but later they may cause him to lose his inhibitions, self-control, or even consciousness. Other drugs, such as marijuana, PCP, LSD, and peyote make a person imagine things that do not exist, or create dream-like fantasies.

> *WARNING:* **Use of cigarettes, alcohol, or other drugs by pregnant women harms their developing babies. Also, injecting drugs using the same needle for more than one person spreads dangerous diseases. See hepatitis (p. 172) and HIV and AIDS (p. 401).**

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People may start taking drugs to escape the hardships, forget the hunger, or calm the pain in their daily lives. Alcohol and drugs are easily misused, and some may cause addiction. Misuse happens when people lose control over when and how much they use, when they cannot control what they do while using, or when using causes health problems. Addiction is when a person is unable to control their alcohol or drug use, even though it is causing harm in their life.



Some drugs such as cocaine and heroin are very addictive; a person may try the drug only once and feel that he needs to keep taking it. Other drugs become addictive after longer periods of time. Addiction is a dangerous trap that can lead to health problems or even death. Overcoming alcohol or drug use takes time and effort, but it is possible with help and support.

When a person quits using, he will go through a period of withdrawal. He may feel nervous or irritable, have trouble sleeping and eating, feel slightly shaky, sweat, and have body aches, nausea, vomiting, and stomach pain.

With some drugs, such as heroin or cocaine, withdrawal may be so severe that the person can become violent and injure himself or others. He or she may need the help of a special clinic. For other kinds of drugs, such as alcohol, marijuana, tobacco, and chemical sniffing, medical care is usually not necessary, but the care and support of family and friends is very important.

Here are a few suggestions to reduce the harms of drug misuse and addiction in your community:

- Be as helpful and supportive as possible to someone trying to overcome drug use. But also be kind to yourself. You cannot always help people control their addiction. They must want to change.
- Members of the community who have been addicted to drugs and recovered can form a support group to help others trying to quit. Alcoholics Anonymous is one such organization (p. 431). This group of recovering alcoholics has successfully helped people all over the world to deal with problems of addiction.
- Families, schools, and health workers can tell children about the dangers of cigarettes, alcohol, and drugs. Help children learn that there are other, healthier ways to feel good, to act "grown up," or to rebel.
- Work to address some of the problems in your community that may lead people to use drugs: hunger, exploitative working conditions, and lack of opportunities to lead a better life. Help disadvantaged persons organize and stand up for their rights.

Actions that are *supportive* and *kind* work better than those that are punishing and cruel.

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Addresses for Teaching Materials

Hesperian Health Guides

2860 Telegraph Avenue
Oakland, California 94609
USA
tel: 1 510 845 1447
e-mail: hesperian@hesperian.org
website: www.hesperian.org

Community health guides in English and Spanish: ***Where There Is No Doctor, Where Women Have No Doctor, Health Actions for Women, A Community Guide to Environmental Health, Workers' Guide to Health and Safety, A Book for Midwives, Helping Children Who Are Blind, Helping Children Who Are Deaf, Helping Health Workers Learn, Where There Is No Dentist, A Health Handbook for Women with Disabilities,*** and ***Disabled Village Children.***

Amref Health Africa
(formerly African Medical and Research Foundation)

AMREF Headquarters
Langata Road, PO Box 27691-00506
Nairobi
Kenya
tel: 254 20 6994000
e-mail: info@amref.org
website: www.amref.org

Wide range of low-cost, practical manuals and books on primary health care.

Alcoholics Anonymous

AA General Service Office
P.O. Box 459, Grand Central Station
New York, NY 10163
USA
tel: 1 212 870 3400
email: Use form at www.aa.org/contact-international
website: www.aa.org

Information about alcoholism and materials on how to start community support groups for persons with drug or alcohol problems. Contact them for information about groups in your area.

Arab Resource Collective

Arab Resource Collective
P.O. Box 13-5916
Beirut, Lebanon
tel: 961 1 742 075
e-mail: arcleb@mawared.org
website: www.mawared.org

Books, teaching aids and other educational resources in Arabic and English, for the use of community workers in health, education and development projects, and to facilitate communication and networking among workers and organizations in the Arab world.

Child to Child

Institute of Education
20 Bedford Way
London WC1H 0AL
United Kingdom
tel: 44 207 612 6648
email: info@childtochild.org.uk
website: www.childtochild.org.uk

Materials for teachers and health workers to involve children in health promotion activities.

Christian Medical Association of India

A-3 Local Shopping Centre
Janakpuri, New Delhi 110 058
India
tel: 011 41003490
e-mail: cmai@cmai.org
website: www.cmai.org

Health and community development resources, including ***Footsteps,*** a magazine published in English, French, Hindi, Portugues and Spanish. Available free to grassroots development workers.

Demotech, design for self-reliance

Biesenwal 3
6211 AD Maastricht
The Netherlands
tel: 31 6174 77177
e-mail: info@demotech.org
website: www.demotech.org

Educational material for sanitation and water systems, innovative education methods.

ENDA – Environmental Development Action in the Third World

Avenue Cheikh Anta Diop X Canal IV
Complexe SICAP Point E Bâtiment B
1er étage
Dakar 17000
Senegal
tel: 221 33 869 99 48
e-mail: se@endatiersmonde.org
website: www.endatiersmonde.org

Mostly French language information and materials for grassroots development, including health and appropriate technology.

Health Books International
(formerly Teaching Aids at Low Cost)

Now distributed by Practical Action (see next page)
tel: 44 1926 634501
e-mail: help@healthbooksinternational.org
website: www.healthbooksinternational.org

Low-cost books, slides and accessories in English, French, Spanish and Portuguese on health care and development for use in poor communities.

Helen Keller International

One Dag Hammarskjold Plaza
Floor 2
New York, NY 10017
USA
tel: 1 212 532 0544
e-mail: info@hki.org
website: www.hki.org

Material on blindness from lack of vitamin A. Information on blindness prevention and visual chart.

www.hesperian.org
health guides

International Development Research Centre (IDRC)

P.O. Box 8500
Ottawa, Ontario
Canada K1G 3H9
tel: 1 613 236 6163
fax: 1 613 238 7230
e-mail: info@idrc.ca
website: www.idrc.ca

Magazines, brochures, videos, and other materials on health, agriculture, and development. Materials in English, Spanish, French, and Arabic, some at no cost. Contact them for links to regional offices around the world.

International Planned Parenthood Federation (IPPF)

4 Newhams Row
London SE1 3UZ
United Kingdom
tel: 44 20 7939 8200
fax: 44 20 7939 8300
e-mail: info@ippf.org
website: www.ippf.org

Information on all aspects of family planning. Contact them for links to affiliated Family Planning Associations in over 180 countries.

Johns Hopkins Center for Communication Programs

Bloomberg School of Public Health
111 Market Place, Suite 310
Baltimore, Maryland 21202
USA
tel: 1 410 659 6300
e-mail: ccpinfo@jhu.edu
website: www.ccp.jhu.edu

Wide variety of health information and health education materials.

Nutrition Center of the Philippines

Launchpad Coworking 214-215
Commercenter,
East Asia Drive cor. Commerce Avenue,
Filinvest Corporate City, Alabang
Muntinlupa City
Philippines
tel: 63 8925 1876
e-mail: info@ncp.org.ph
website: www.ncp.org.ph

Health and nutrition materials including books, posters, manuals, flipcharts, pamphlets, and calendars.

Practical Action

25 Albert Street
Rugby, Warwickshire
CV21 2SD
UNITED KINGDOM
tel: 44 1926 634400
fax: 44 1926 634401
e-mail: enquiries@practicalaction.org.uk
website: www.practicalaction.org

Technical information for grassroots development. Print materials and multimedia. Contact them for links to resource centers in other countries.

SMART Recovery International

7304 Mentor Avenue
Mentor, OH 44060
USA
website:
www.smartrecoveryinternational.org

A global organization that supports people in their recovery from addiction to drugs and alcohol. Focuses on weekly in-person and online support groups.

www.hesperian.org
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Voluntary Health Association of India (VHAI)

B-40, Qutab Institutional Area
South of I.I.T. Delhi
New Delhi 110016
India
tel: 91 11 4700 4300
e-mail: healthpromotion@vhai.org
website: www.vhai.org

Health education materials in English and local Indian languages.

World Neighbors International Headquarters

5600 North May Avenue, Suite 160
Oklahoma City, OK 73112
USA
tel: 1 800 242 6387 or 1 405 752 9700
e-mail: contact@wn.org
website: www.wn.org

Teaching materials designed from program experience for use in the specific country and locality. Topics include health and nutrition, family planning, community development and agriculture. In English, French, and Spanish.

www.hesperian.org health guides