





























































- ➔  **Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)**
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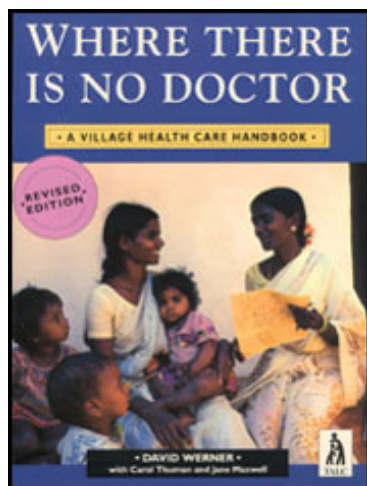
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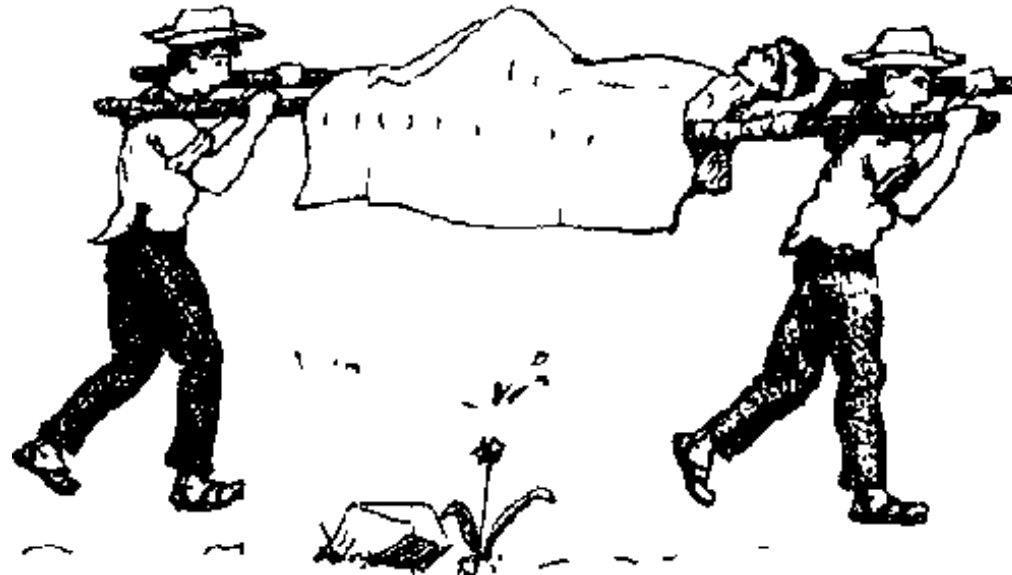
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- revised edition -

***by
David Werner
with***

Carol Thuman and Jane Maxwell



Figure

with drawings by David Werner



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THIS REVISED EDITION CAN BE IMPROVED WITH YOUR HELP.

If you are a village health worker, doctor, mother, or anyone with ideas or suggestions for ways this book could be changed to meet the needs of your people better, please write to the author at the Hesperian Foundation address. Thank you for your help.

Cover photograph courtesy of Dr John Hubley



Thanks to the work and dedication of many groups and individuals around the world. *Where There Is No Doctor* has been translated into more than 50 languages. The following are some of the translations and the addresses where you can obtain them.



SPANISH AND ENGLISH:

**The Hesperian Foundation
1919 Addison Street, Suite 304
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Where There is No Doctor - A new revised edition for Africa

A new revised edition of the special English language edition for Africa is now

available. It has been edited to take into account medical conditions which are more prevalent in Africa, as well as social and cultural factors. The illustrations have been placed in the African context.

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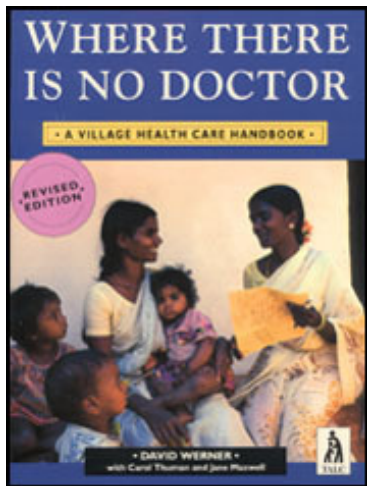
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Chapter 3 - HOW TO EXAMINE A SICK PERSON

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.

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?



Figure

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.)

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 and of shock.

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.)

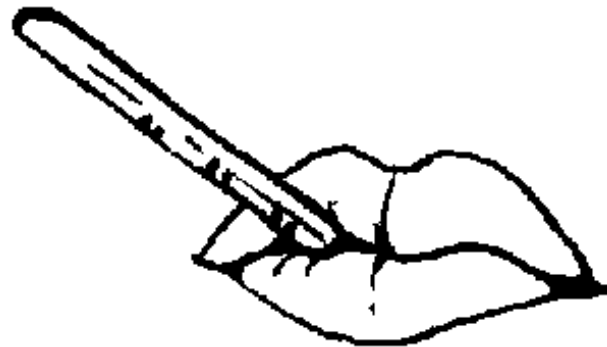
- **Paleness, especially of the lips and inside the eyelids, is a sign of anemia. Skin may also go lighter as a result of tuberculosis or kwashiorkor.**
- **Darkening of the skin may be a sign of starvation.**

- **Bluish skin, especially blueness or darkness of the lips and fingernails, may mean serious problems with breathing or with the heart. Blue-gray color in an unconscious child may be a sign of cerebral malaria.**
- **A gray-white coloring, with cool moist skin, often means a person is in shock.**
- **Yellow color (jaundice) of the skin and eyes may result from disease in the liver (hepatitis, cirrhosis, or amebic abscess) or gallbladder. It may also occur in newborn babies, and in children born with sickle cell disease.**

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.

Temperature

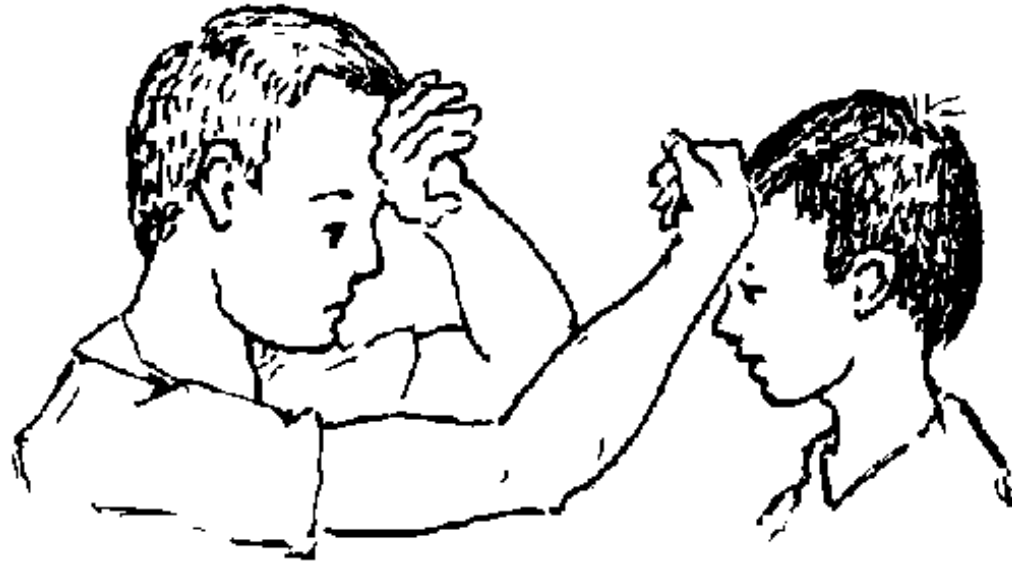
It is often wise to take a sick person's temperature, even if he does not seem to have a fever. If the person is very sick, take the temperature at least 4 times each day and write it down.



Figure

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.



Figure

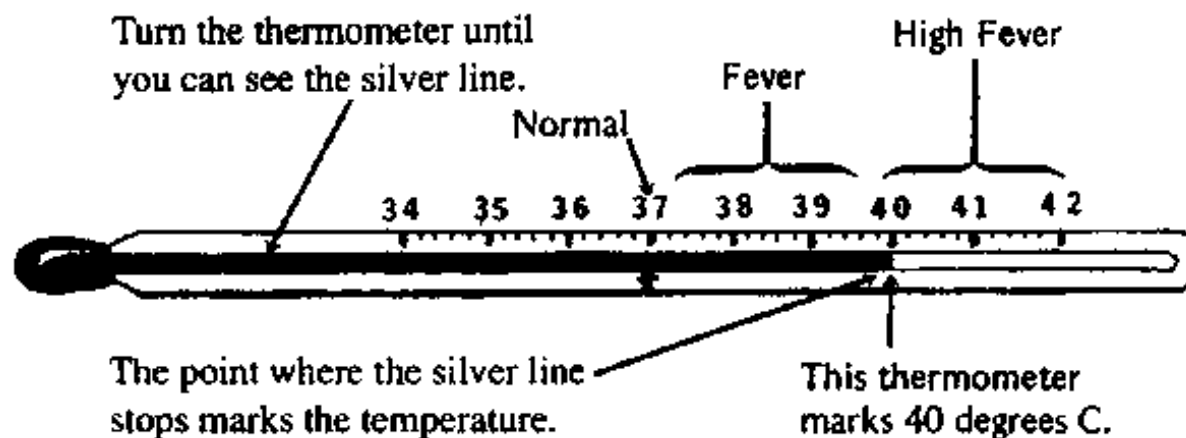
It is important to find out when and how the fever comes, how long it lasts, and how it goes away. This may help you identify the disease. Not every fever is malaria, though in some countries it is often treated as such. Remember other possible causes. For example:

- **Common cold, and other virus infections. 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.**

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.

How to read the thermometer (using one marked in degrees *centigrade* - °C):



Figure

How to take the temperature:

1. Clean the thermometer well with soap and water or alcohol. Shake it hard, with a snap of the wrist, until it reads less than 36 degrees.



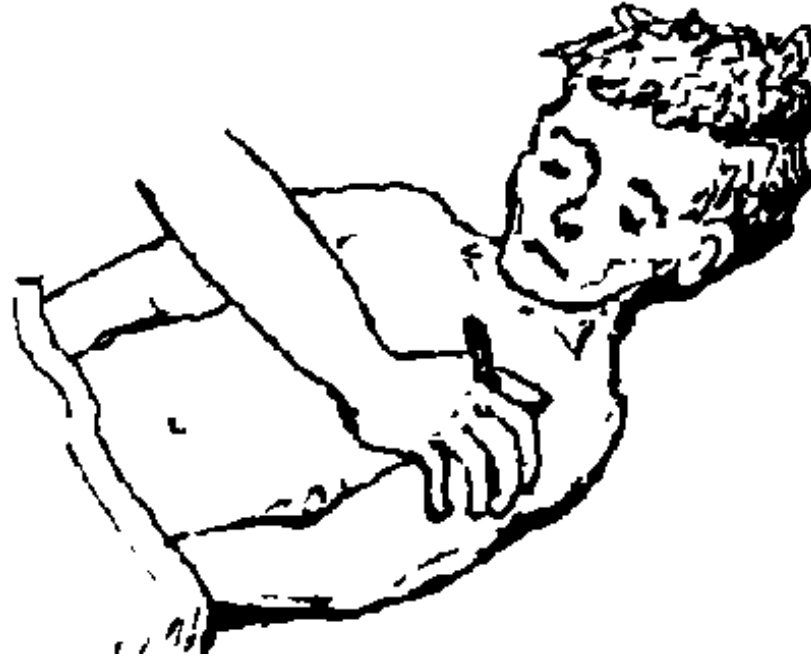
Figure

2. Put the thermometer...



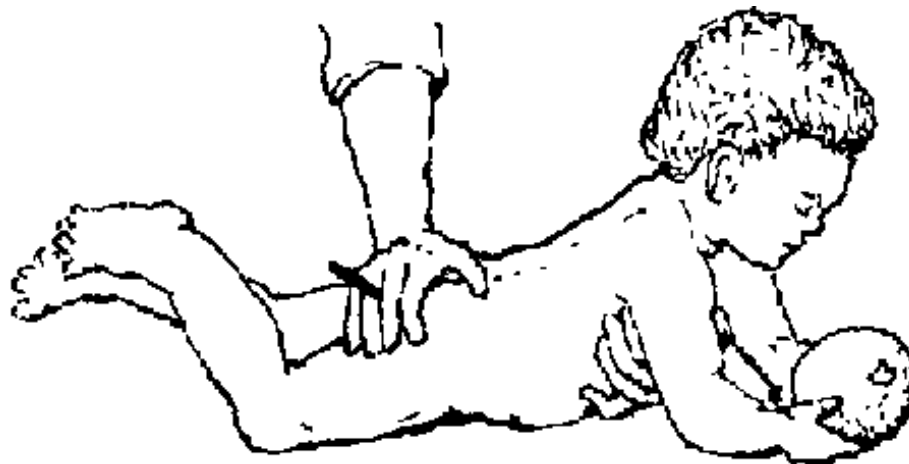
under the tongue (keeping the or mouth shut)

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.

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°) may mean a serious infection.**

- **To learn about other fever patterns.**
- **To learn what to do for a fever.**

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 per minute is normal for adults and older children. Up to 30 breaths a minute is normal for children, and 40 for babies. People with a high fever or serious respiratory illnesses (like pneumonia) breathe more quickly than normal. More than 40 shallow breaths a minute in an adult, or 60 in a small child, usually means pneumonia.

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

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

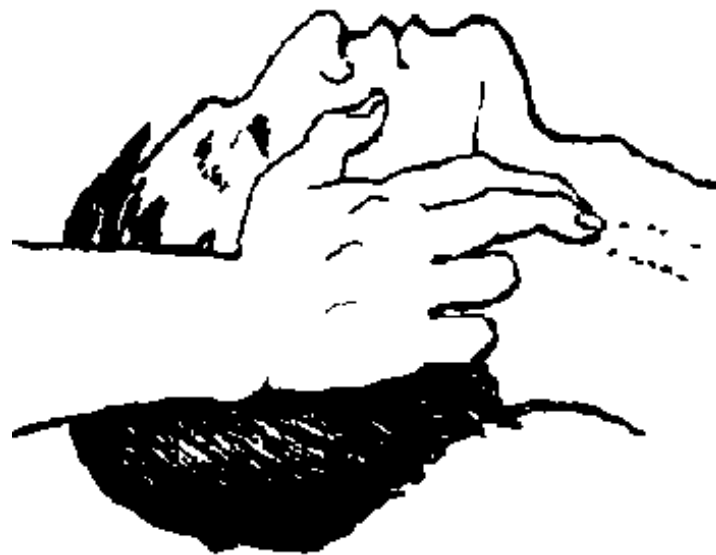
Look for 'sucking in' of the skin between ribs and at the angle of the neck (behind the collar bone) when the person breathes in. This means air has trouble getting through. Consider the possibility of something stuck in the throat, pneumonia, asthma, or bronchitis (mild sucking in).

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 neck beside the voicebox,



or put your ear directly on 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.

NORMAL PULSE FOR PEOPLE AT REST

adults	from 60 to 80 per minute
children	80 to 100
babies	100 to 140

The pulse gets much faster with exercise and when a person is nervous, frightened, 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.**
- **A very rapid, very slow, or irregular pulse could mean heart trouble.**
- **A relatively slow pulse in a person with a high fever may be a sign of typhoid.**

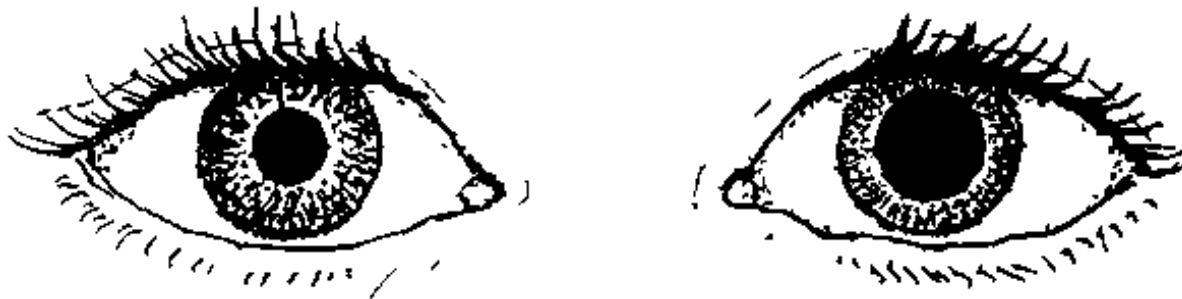
Eyes

Look at the color of the white part of the eyes. Is it normal, red, 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 damage.

Pay attention to the size of the *pupils* (the black 'window' in the center of the eye). If they are very large, it can mean a state of shock. If they are very large, or very small, it can mean poison or the effect of certain drugs.

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



Figure

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 GLAUCOMA.

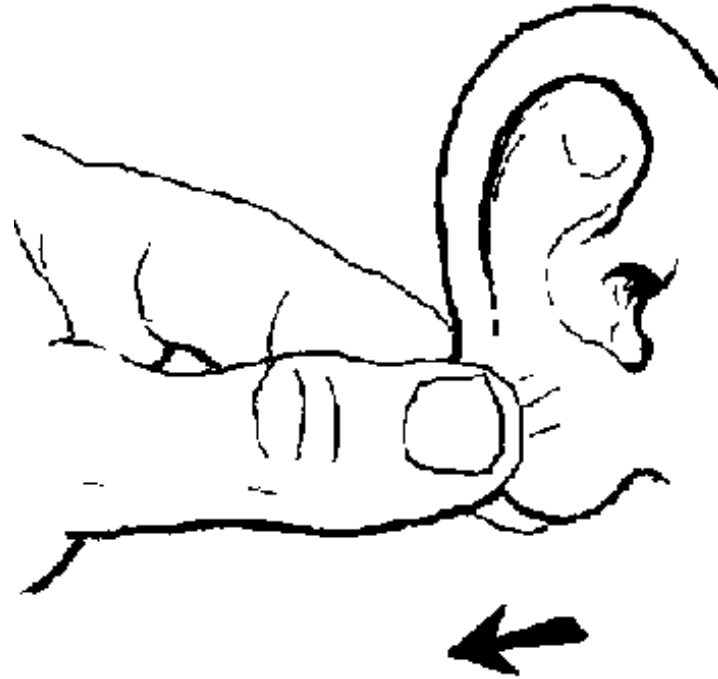
- **If the eye with the smaller pupil hurts a great deal, the person may have IRITIS, a very serious problem.**
- **Difference in the size of the pupils of an unconscious person or a person who has had a recent head injury may mean brain damage. It may also mean STROKE.**

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

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 often has an ear infection.

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.



Figure

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 chapter 22.

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 'ahhhhh...' 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. Also examine the mouth for sores, inflamed gums, sore tongue, rotten or abscessed teeth and other problems. (Read Chapter 17.)

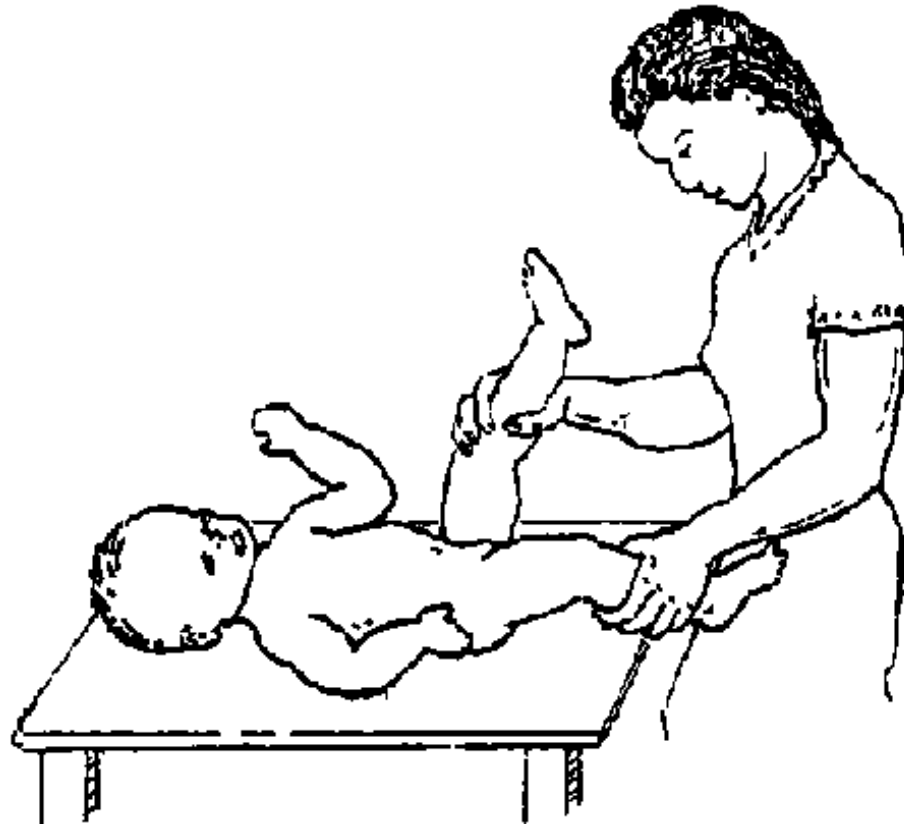
Nose: Is the nose runny or plugged? (Notice if and how a baby breathes through his nose.) Shine a light inside and look for mucus, pus, blood; also look for redness, swelling, or bad smell. Check for signs of sinus trouble or hayfever.

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 not normal, 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)**
- **abnormal lumps or masses**
- **unusual thinning or loss of hair, or loss of its color or shine**
- **loss of eyebrows (leprosy?)**

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).



Figure

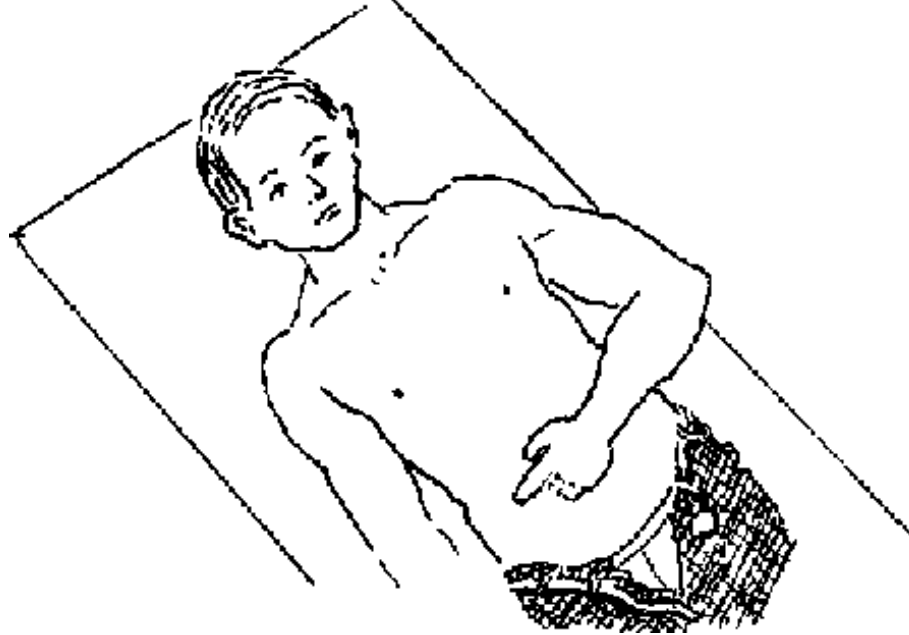
The Belly (Abdomen)

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

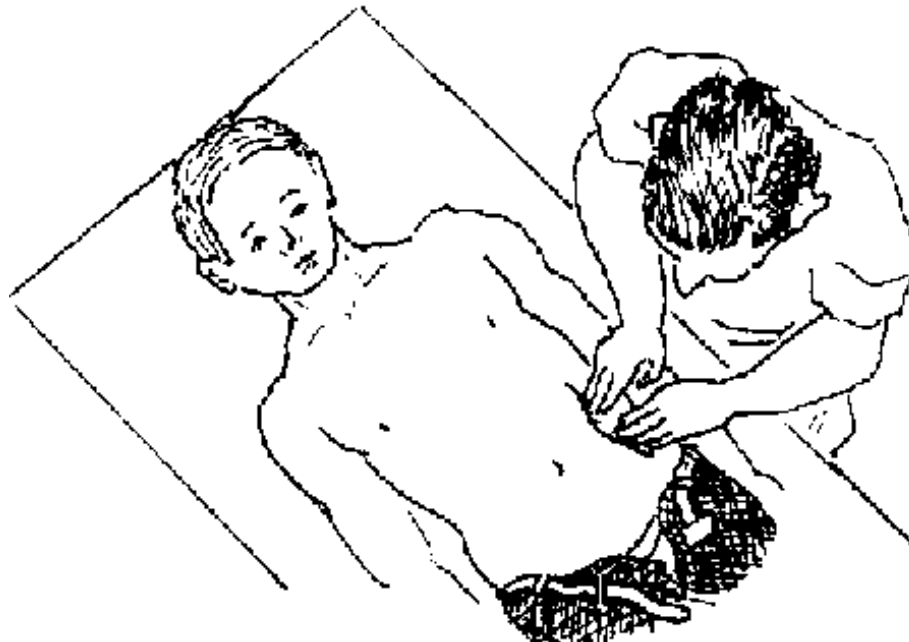
Learn whether the pain is steady or whether it suddenly comes and goes, like cramps or *colic*.

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.**

If you suspect peritonitis or appendicitis, do the test for *rebound pain*.

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

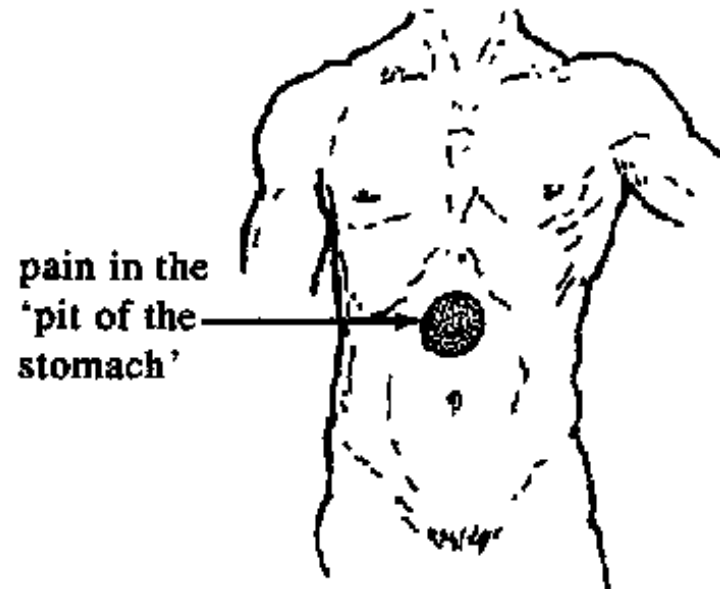
If the person has a constant pain in the stomach, with nausea, and has not been able to move her bowels, put an ear (or stethoscope) on the belly, like this:



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, p. 93.)

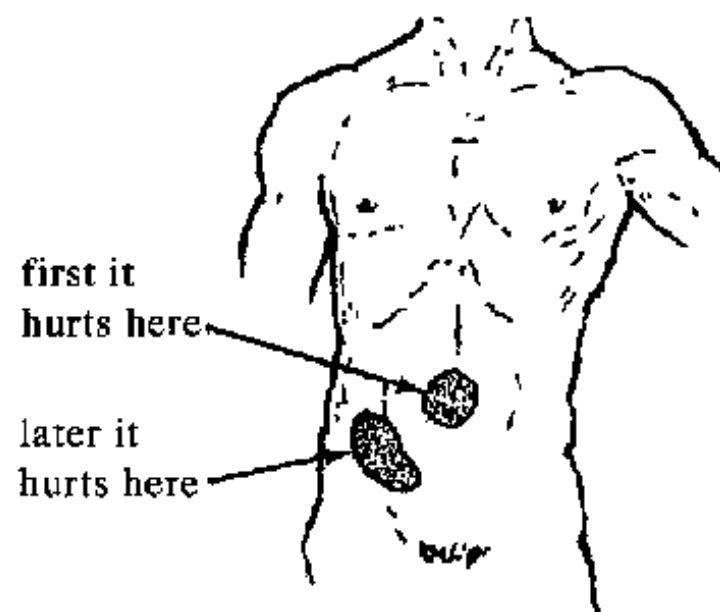
A silent belly is like a silent dog. Beware!

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



pain in the
'pit of the
stomach'

Ulcer

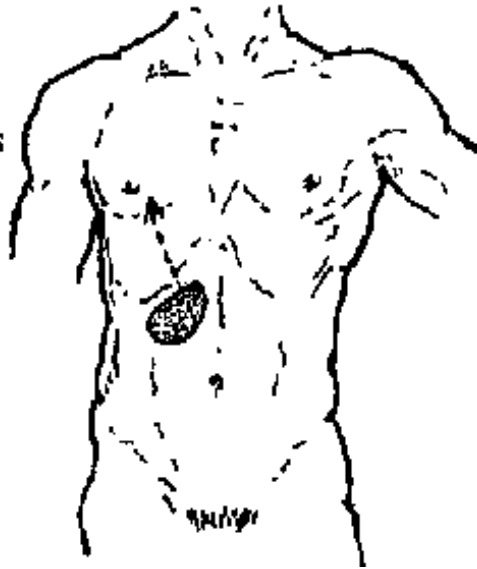


first it
hurts here

later it
hurts here

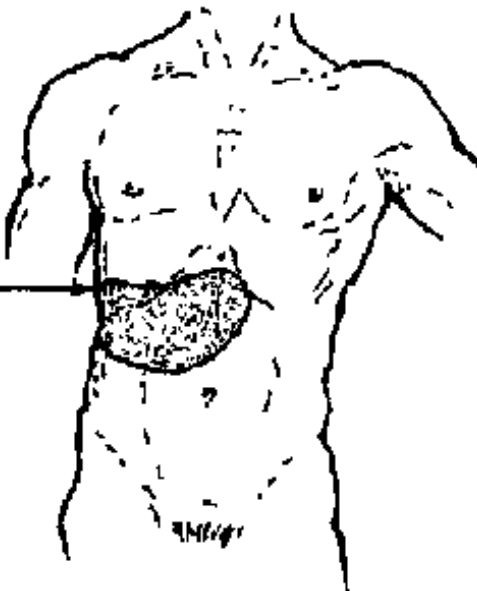
Appendicitis

the pain
often reaches
to the back



Gallbladder

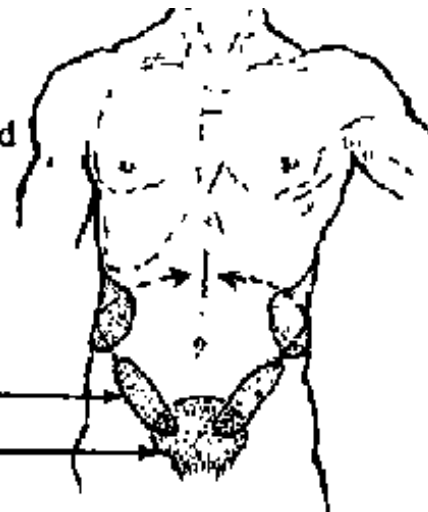
pain here,
at times it
spreads to
the chest



Liver

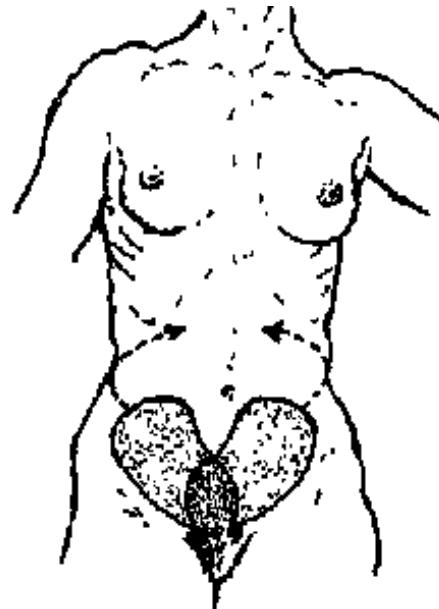
mid or
low back pain;
often goes around
the waist to the
lower part of
the belly

urinary
tubes
bladder



Urinary system

pain on one
side or both,
sometimes
spreading to
the back



Inflammation or tumor of the ovaries, or out-of-place pregnancy, etc.

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.



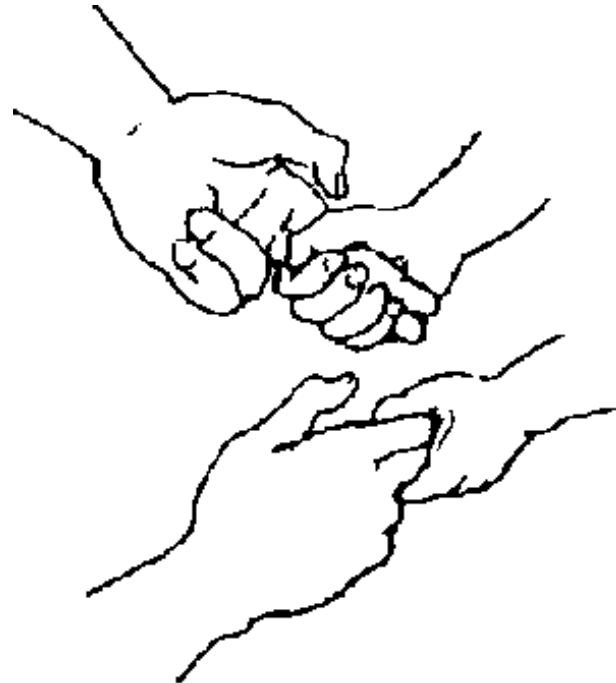
Figure

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

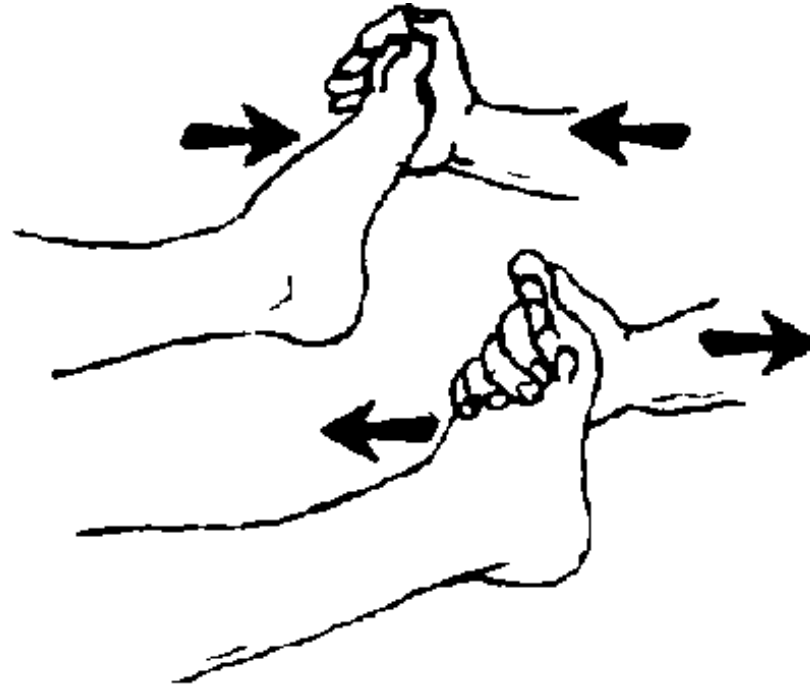
If it came slowly, it may be a brain tumor. Get medical advice.

Also check for normal eye movement, size of pupils, and how well he can see.

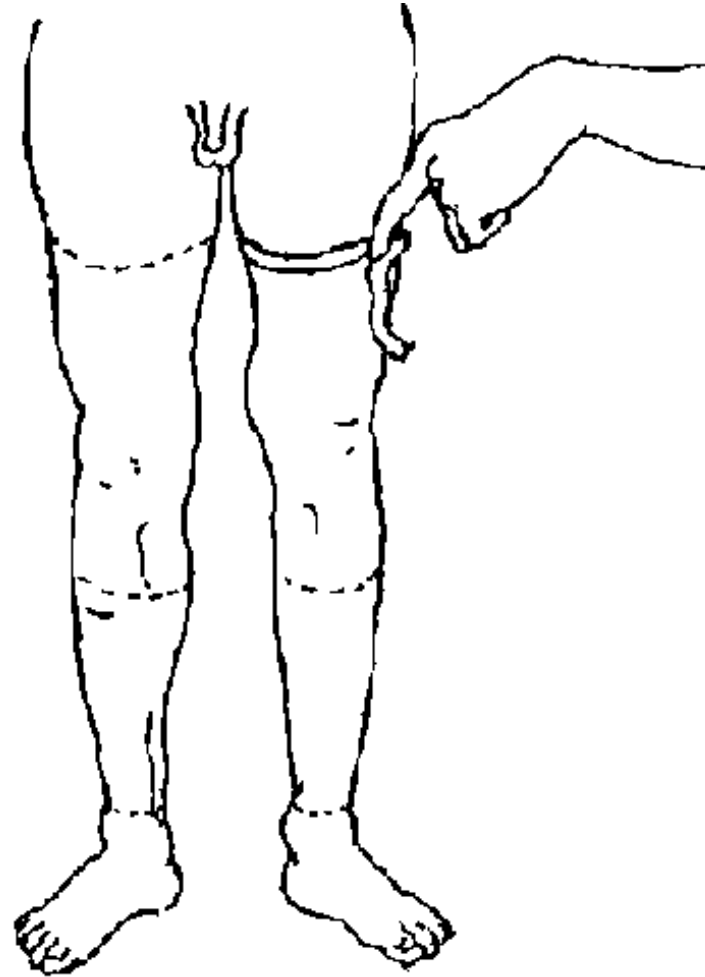
Arms and legs: Look for loss of muscle. Notice - or measure - difference in thickness of arms or legs.



Have him squeeze your fingers to compare strength in his hands



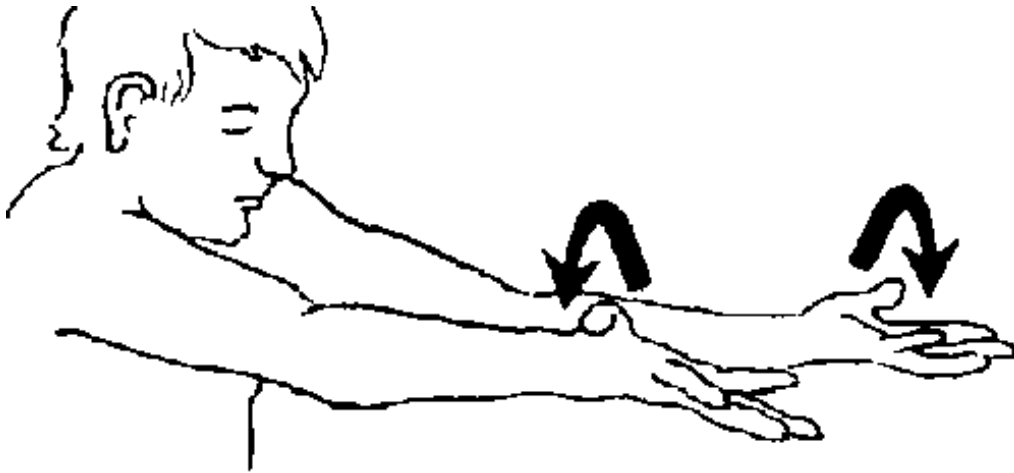
and push and pull with his feet against your hand.



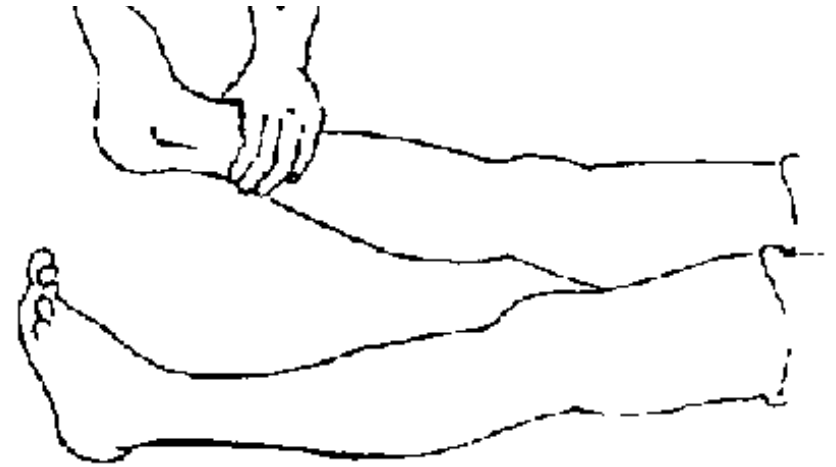
Any string or ribbon will do to check if the distance around the arms or legs is different.

Note any
weakness
or
trembling





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



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

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

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

For more information on muscle testing and physical examination of disabled persons, see *Disabled Village Children*, Chapter 4.

Check for stiff ness or tightness of different muscles:

- **If the jaw is stiff or will not open, suspect tetanus or a severe infection of the throat or of a tooth. If the problem began after he yawned or was hit in the jaw, he may have a dislocated jaw.**



Figure

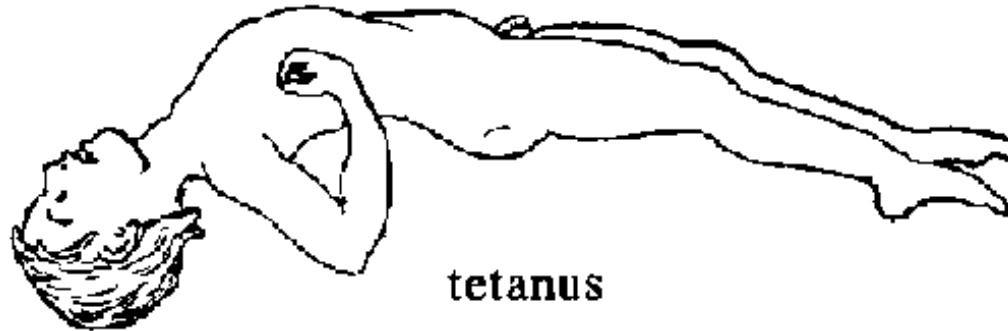
- **If the neck or back is stiff and bent backwards, in a very sick child, suspect meningitis. If the head will not bend forward or cannot be put between the knees, meningitis is likely.**



meningitis

Figure

- **If a child always has some stiff muscles and makes strange or jerky movements, he may be *spastic*.**
- **If strange or jerky movements come suddenly, with loss of consciousness, he may have fits. If fits happen often, think of epilepsy. If they happen when he is ill, the cause may be high fever or dehydration or tetanus or meningitis.**



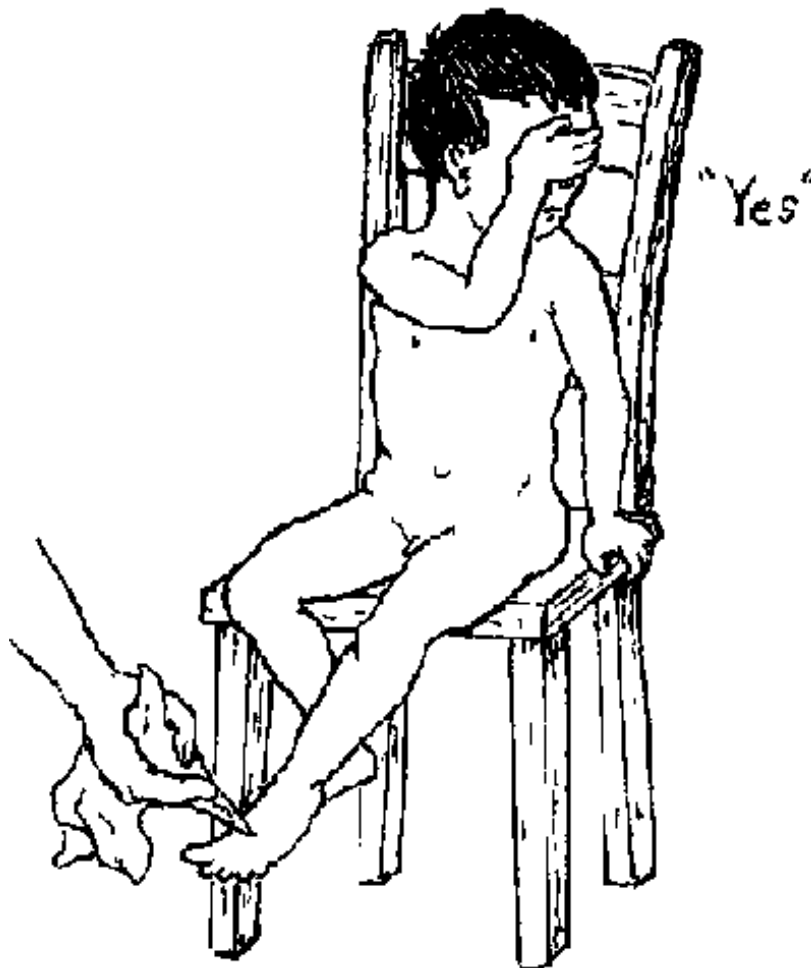
tetanus

Figure

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

Have the person cover his eyes. Lightly touch or prick 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.**
- **Loss of feeling in both hands or feet may be due to diabetes or leprosy.**
- **Loss of feeling on one side only could come from a back problem or injury.**



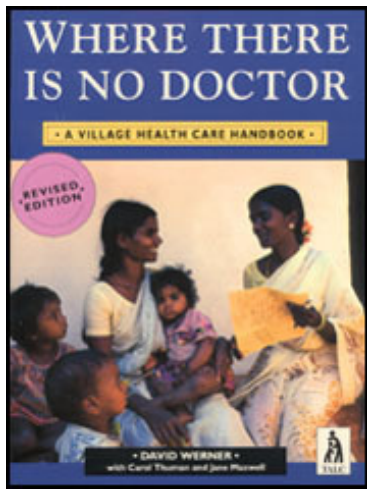
Figure



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 **Where There Is No Doctor - A Village Health Care Handbook**
(Hesperian Foundation, 1993, 516 p.)

  **Chapter 4 - HOW TO TAKE CARE OF A SICK PERSON**



- 📄 **(introduction...)**
- 📄 **The Comfort of the Sick Person**
- 📄 **Special Care for a Person Who Is Very Ill**
- 📄 **Liquids**
- 📄 **Food**
- 📄 **Cleanliness and Changing Position in Bed**
- 📄 **Watching for Changes**
- 📄 **Signs of Dangerous Illness**
- 📄 **When and How to Look for Medical Help**
- 📄 **What to Tell the Health Worker**
- 📄 **Patient Report**

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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:

The Comfort of the Sick Person

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.



Figure

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.



Figure

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

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.



Figure

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:

stomach ulcers and heartburn

appendicitis, gut obstruction, acute abdomen (in these cases take no food at

**all)
diabetes
heart problems
gallbladder problems**

Special Care for a Person Who Is Very Ill



Figure

Liquids

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 (60 cc.) 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, 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. 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.

Food

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.

Cleanliness and Changing Position in Bed

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.

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.

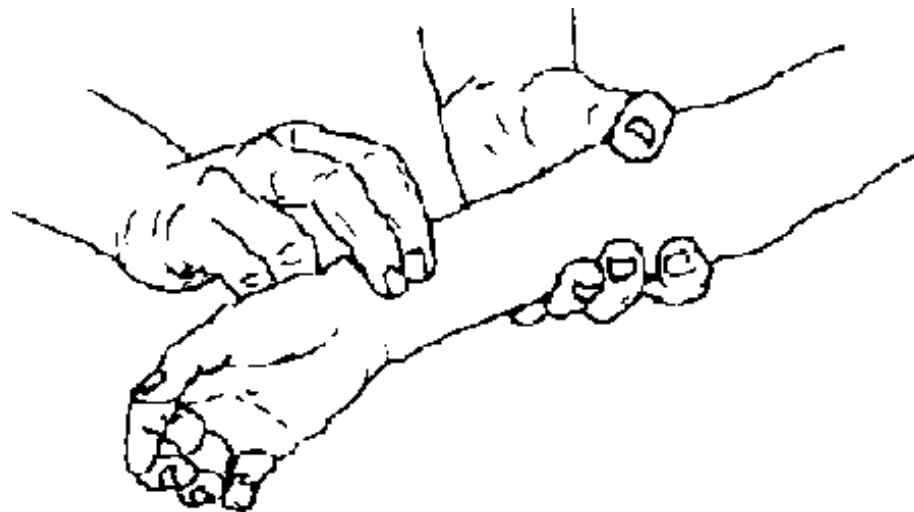
Watching for Changes

5. Watching for Changes

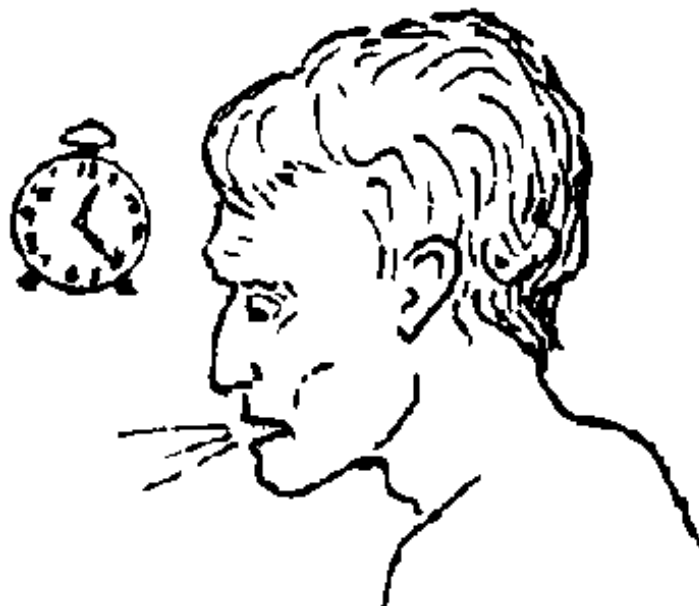
You should watch for any change in the sick person's condition that may tell you whether he is getting better or worse. Keep a record of his 'vital signs'. Write down the following facts 4 times a day:



temperature (how many degrees)



pulse (beats per minute)



breathing (breaths per minute)

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

Signs of Dangerous Illness

Figure

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.

- 1. Loss of large amounts of blood from anywhere in the body**
- 2. Coughing up blood**
- 3. Marked blueness of lips and nails (if it is new)**

- 4. Great difficulty in breathing; does not improve with rest**
- 5. The person cannot be wakened (coma)**
- 6. The person is so weak he faints when he stands up**
- 7. A day or more without being able to urinate**
- 8. A day or more without being able to drink any liquids**
- 9. Heavy vomiting or severe diarrhea that lasts for more than one day or more than a few hours in babies**
- 10. Black stools like tar, or vomit with blood or feces**
- 11. Strong, continuous stomach pains with vomiting in a person who does not have diarrhea or cannot have a bowel movement**
- 12. Any strong continuous pain that lasts for more than 3 days**
- 13. Stiff neck with arched back, with or without a stiff jaw**
- 14. More than one fit (convulsions) in someone with fever or serious illness**
- 15. High fever (above 39° C) that cannot be brought down or that lasts more than 4 or 5 days**
- 16. Weight loss over an extended time**
- 17. Blood in the urine**

18. Sores that keep growing and do not go away with treatment

19. A lump in any part of the body that keeps getting bigger

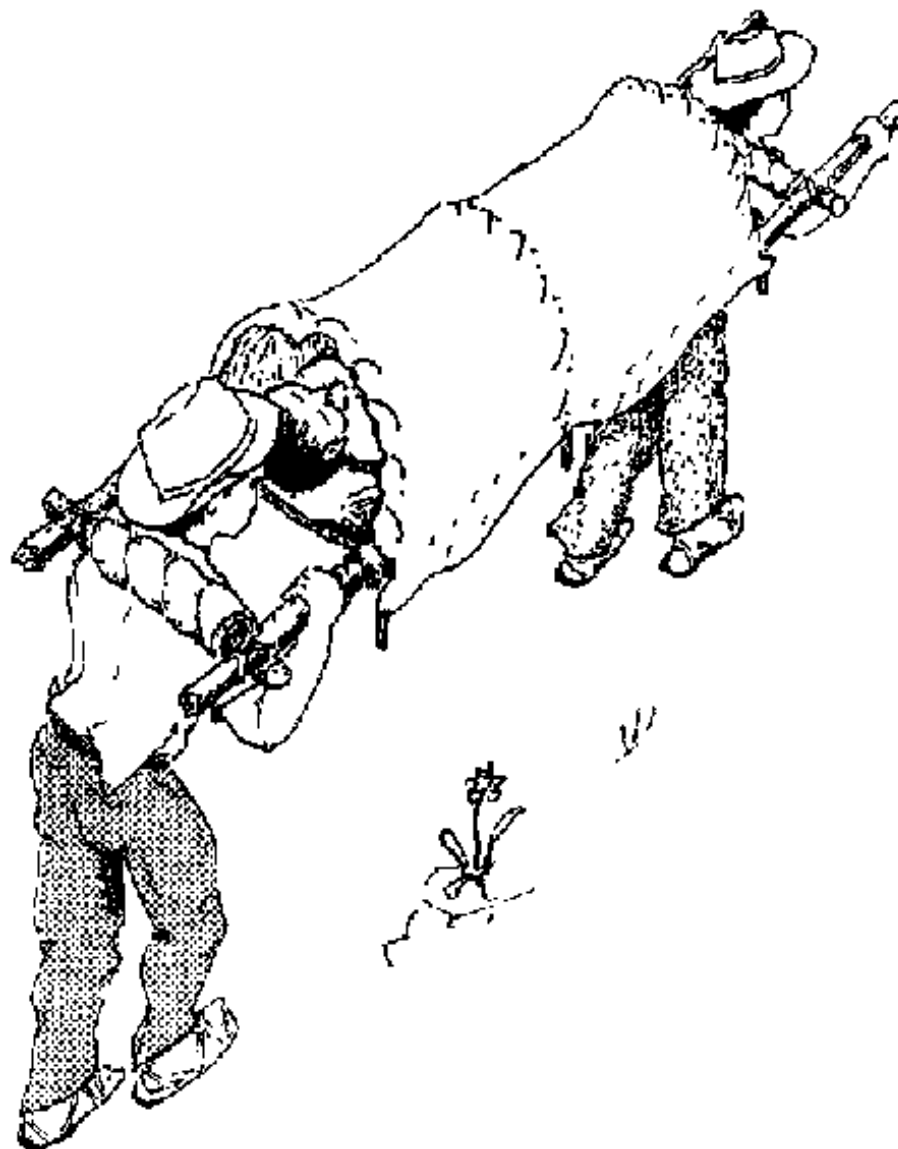
20. Problems with pregnancy and childbirth: any bleeding during pregnancy swollen face and trouble seeing in the last months long delay once the waters have broken and labor has begun severe bleeding

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. If the sun is very strong, rig a sheet over the stretcher to give shade yet allow fresh air to pass underneath



Figure

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 small child or a fool.

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.

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 normal 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?

_____ **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?** _____

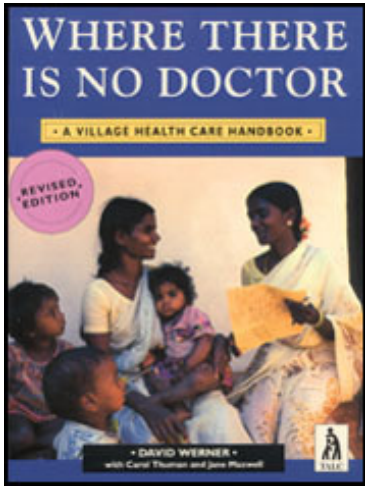
The state of the sick person is: Not very serious: _____ **Serious:** _____

Very serious: _____

On the back of this form write any other information you think may be important.



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 **(Hesperian Foundation, 1993, 516 p.)**

➔  **Chapter 5 - HEALING WITHOUT MEDICINES**

 **(introduction...)**

 **Healing with Water**

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

Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)

Chapter 5 - HEALING WITHOUT MEDICINES

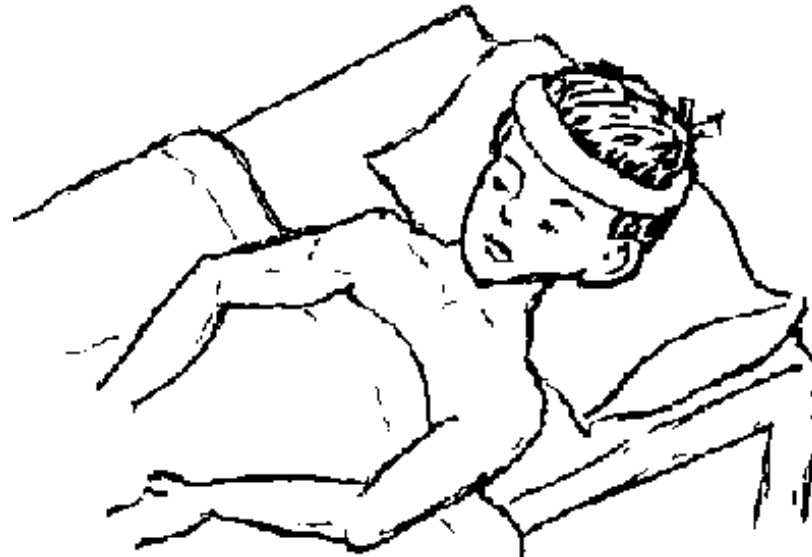
For most sicknesses no medicines are needed. Our bodies have their own defenses, or ways to resist and fight disease. In most cases, these natural defenses are far more important to our health than are medicines.

People will get well from most 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 people simply learned how to use water correctly, this alone might do more to prevent and cure illnesses than all the medicines they now use... and misuse.

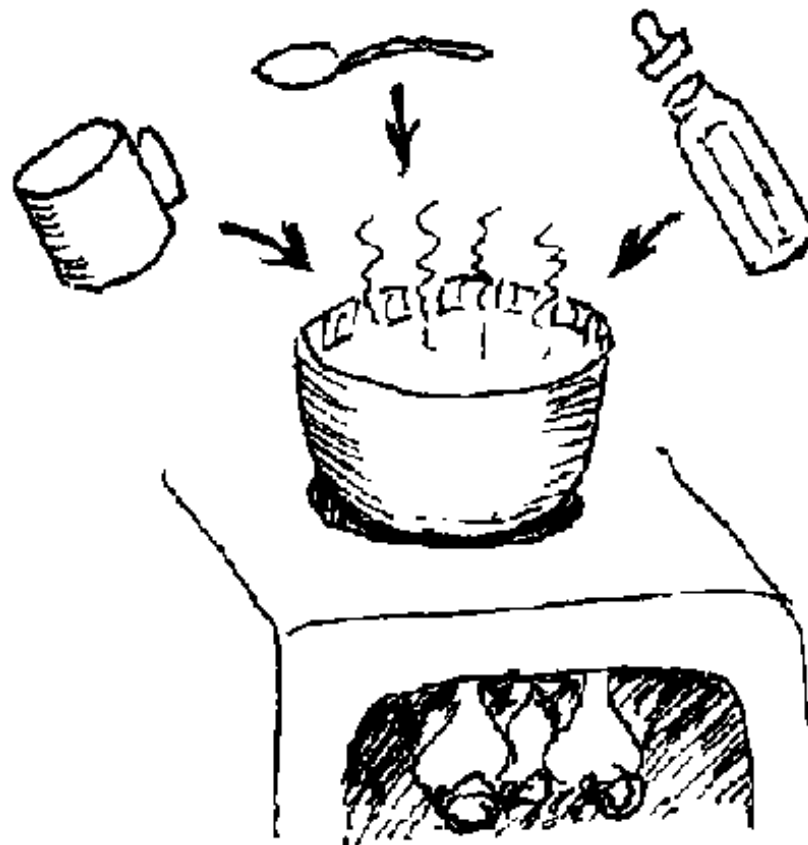
Healing with Water

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.

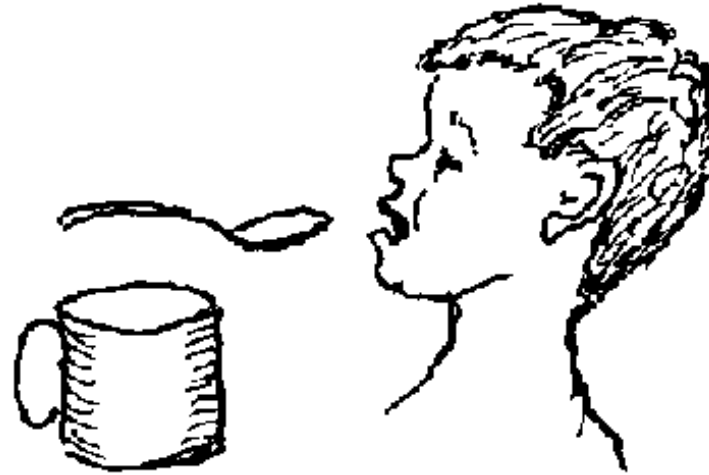
An important part of the prevention of diarrhea and many other illnesses is to make sure that drinking water is safe. Protect wells and springs from dirt and animals by putting fences or walls around them. Use cement or rock to provide good drainage around the well or spring, so that rain or spilled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

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 spoon. Washing hands with soap and water after a bowel movement (shifting) and before eating or handling foods is also important.



PREVENTION

A common cause of death in children with diarrhea is severe *dehydration*, or loss of too much water from the body. 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).



TREATMENT

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.

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

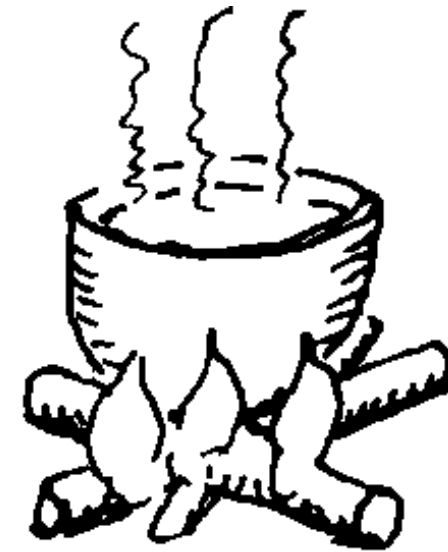
PREVENTION

to help prevent

1. diarrhea, worms, gut infections

use water

boil or filter drinking water, wash hands, etc.



Figure

- 2. skin infections
- 3. wounds becoming infected; tetanus

bathe often
wash wounds well with soap and clean water



Figure

TREATMENT

to treat

use water

1. diarrhea,
dehydration

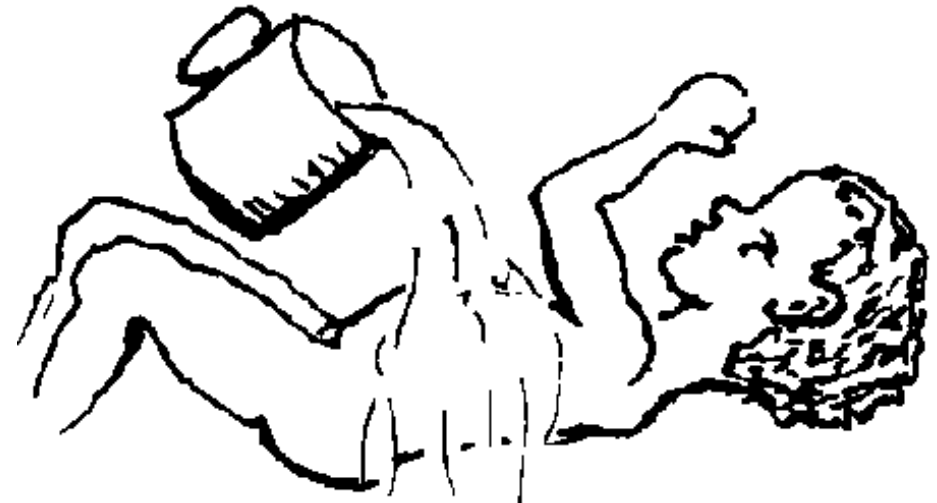
drink plenty of liquids



Figure

2. illnesses with fever
3. high fever

drink plenty of liquids
remove clothing and soak
body with cool water



Figure

4. minor urinary
infections (common in
women)

drink plenty of water

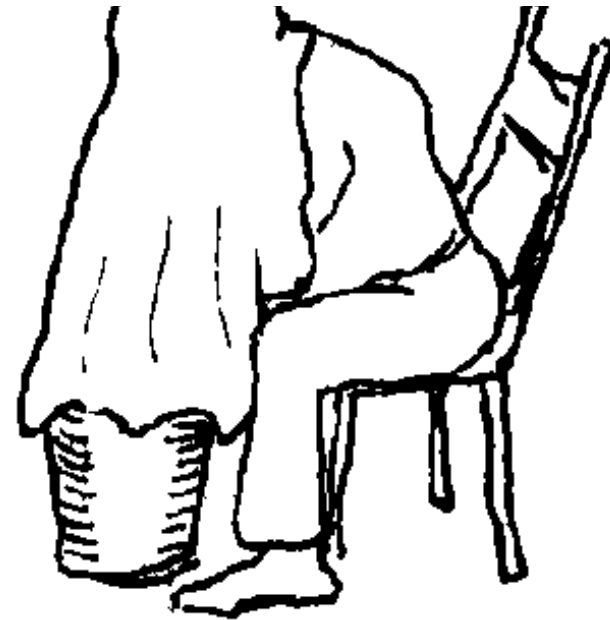
5. cough, asthma,
bronchitis, pneumonia,

drink a lot of water and
breathe hot water vapors



whooping cough

(to loosen mucus)



Figure

6. sores, impetigo,
ringworm of skin or
scalp, cradle cap,
pimples

scrub with soap and clean
water

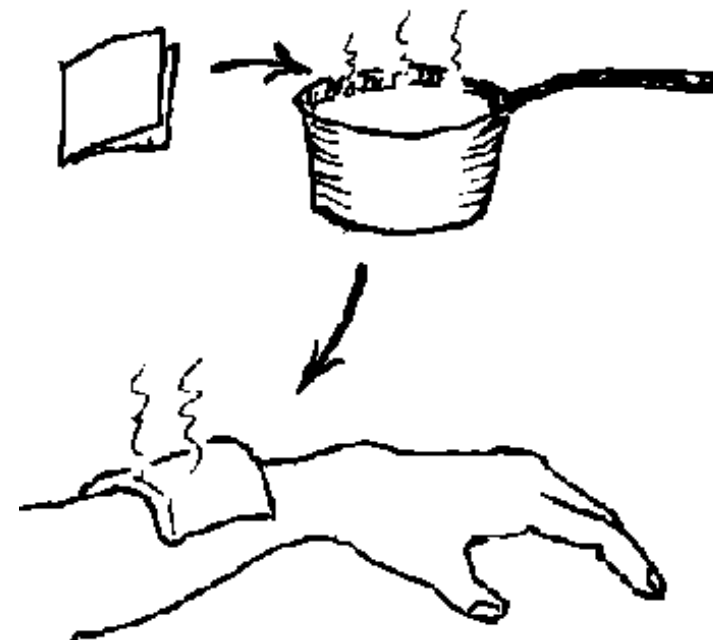


Figure

7. infected wounds. hot soaks or compresses

abscesses, boils
8. stiff, sore muscles
and joints

hot compresses



Figure

9. itching, burning, or
weeping irritations of
the skin

cold compresses

10. minor burns

hold in cold water at once

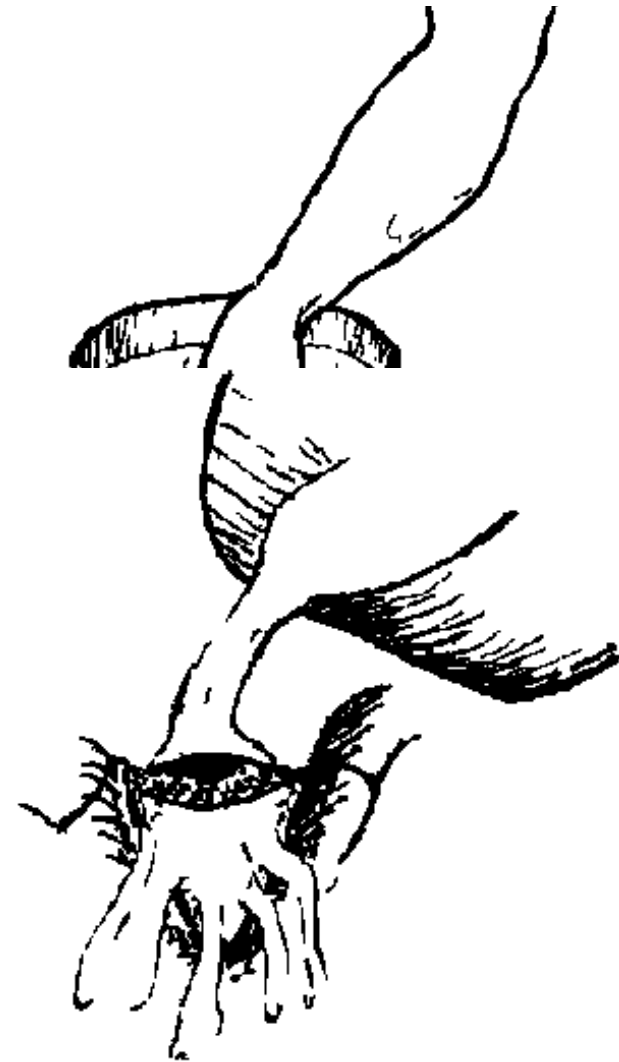
11

11. sore throat or tonsillitis

gargle with warm salt water

12. acid, lye, dirt, or irritating substance in eye

flood eye with cool water at once, and continue for 30 minutes



Figure

13. stuffed up nose sniff salt water



Figure

14. constipation, hard stools drink lots of water (also, enemas are safer than laxatives, but do not overuse)

15. cold sores or fever blisters hold ice on blister for 1 hr. at first sign

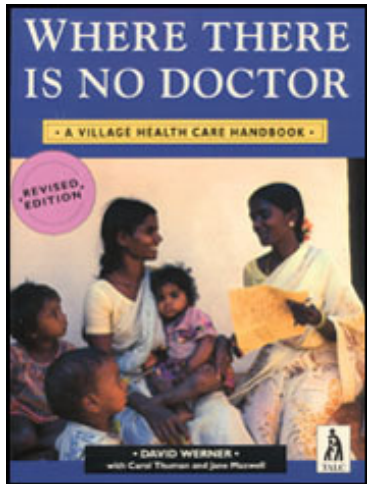





In each of the above cases (except pneumonia) when water is used correctly, often medicines are not needed. In this book you will find many suggestions for ways of healing without need for medicine. Use medicines only when absolutely necessary.



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 **Where There Is No Doctor - A Village Health Care Handbook**
(Hesperian Foundation, 1993, 516 p.)

 **Chapter 6 - RIGHT AND WRONG USES OF MODERN MEDICINES**

 *(introduction...)*

 **Guidelines for the Use of Medicine**

 **The Most Dangerous Misuse of Medicine**

 **When Should Medicine Not Be Taken?**

Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)

Chapter 6 - RIGHT AND WRONG USES OF MODERN MEDICINES

Some medicines sold in pharmacies or village stores can be very useful. But many are of no value. Of the 60,000 medicines sold in most countries, the World Health

Organization says that only about 200 are necessary.

Also, people sometimes use the best medicines in the wrong way, so that they do more harm than good. To be helpful, medicine must be used correctly.

Many people, including most doctors and health workers, prescribe far more medicines than are needed - and by so doing cause much needless sickness and death.

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. (I have seen a baby die because his mother gave him a dangerous medicine, chloramphenicol, for a cold.) Never use a dangerous medicine for a mild illness.



REMEMBER: *MEDICINES CAN KILL*

Guidelines for the Use of Medicine

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: Some health workers and many doctors give medicines when none is needed, often 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.

The Most Dangerous Misuse of Medicine

Here is a list of the most common and 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*)



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. Never give it to newborn babies.

2. Oxytocin (*Pitocin*), Pituitrin, and Ergonovine (*Ergotrate*)



Unfortunately, some midwives use these medicines to speed up childbirth or 'give strength' to the mother in labor. This practice is very dangerous. It can kill the mother



or the child. Use these medicines **only** to control bleeding **after** the child is born.

3. Injections of any medicine



The common 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.** Injections given to a child who has a mild polio infection (with only signs of a cold) can lead to paralysis. Use of injections should be **very limited** (read Chapter 9 carefully).

4. Penicillin

Penicillin works only against certain types of *infections*. Use of penicillin for sprains, bruises, or any pain or fever is a great mistake. 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.

Penicillin is dangerous for some people. Before using it, know its risks and the precautions you must take.

5. Kanamycin and Gentamicin (*Garamycin*)

Too much use of these antibiotics 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.

6. Anti-diarrhea medicines with hydroxyquinolines (Clioquinol, diiodohydroxyquinoline, 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 cortico-steroids (Prednisolone, dexamethasone, and others)

These are powerful anti-inflammatory drugs that are occasionally 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 is much safer and cheaper. For pain and fever only, acetaminophen can be used.

10. Vitamin B₁₂, liver extract, and iron injections

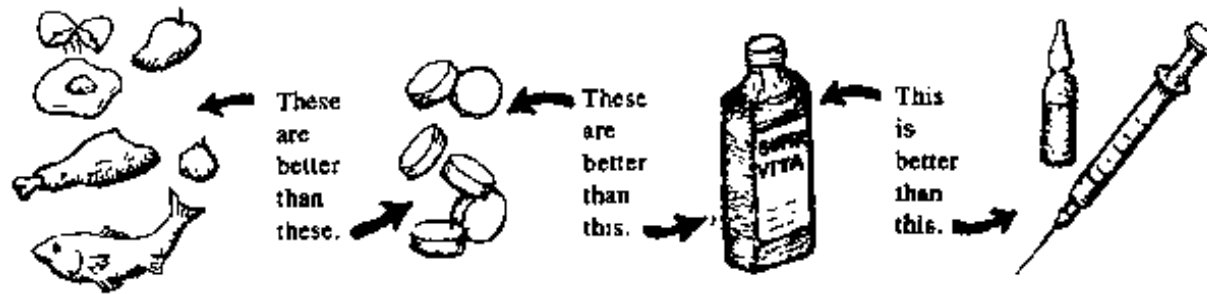
 Vitamin B₁₂ and liver extract do not help anemia or 'weakness' except in rare cases. Also, they have certain risks when injected. They should only be used when a specialist has prescribed them **after testing the blood**. Also, avoid injectable iron, such as *Imferon*. To combat anemia, iron pills are safer and work as well.

11. Other vitamins

As a general rule, DO NOT INJECT VITAMINS. Injections are more dangerous, more expensive, and usually no more effective than pills.

Unfortunately, many people waste their money on syrups, tonics, and 'elixirs' that contain vitamins. Many lack the most important vitamins. But even when they contain them, it is wiser 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. Giving a thin, weak person good food more often will usually help him far more than giving him vitamin and mineral supplements.

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.

12. Combination medicines

Sometimes, 2 or more medicines are combined in the same pill or tonic. Usually they are less effective, and more expensive, when prepared this way. Sometimes they do more harm than good. If someone wants to prescribe combination medicines, ask him or her to prescribe only the medicine that is really necessary. Do not waste your money on these medicines.

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)**

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, 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 (Intravenous or 'I.V.' solutions)

In some areas, persons who are anemic or very weak spend their last penny to have a liter of I.V. solution put into their veins. They believe that this will make-them stronger or their blood richer. But they are wrong! Intravenous solution is nothing more than pure water with some salt or sugar in it. It gives less energy than a large candy bar and makes the blood thinner, not richer. It does not help anemia or make the weak person stronger.

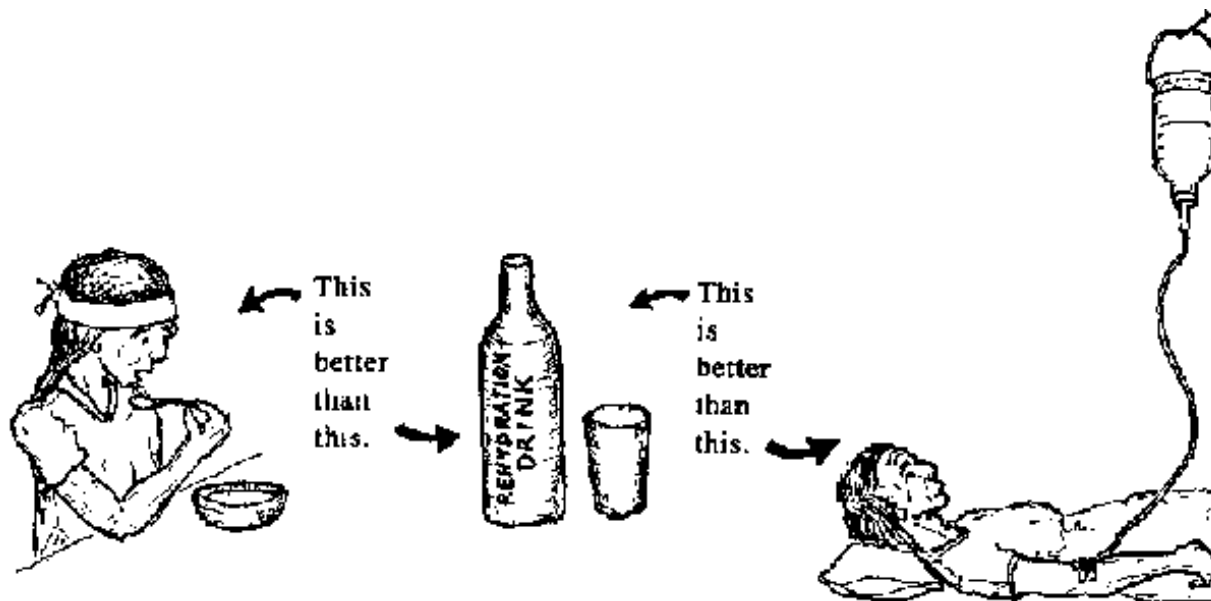
Also when a person who is not well trained puts the I.V. solution into a vein, there is

danger of an infection entering the blood. This can kill the sick person.

Intravenous solution should be used only when a person can take nothing by mouth, or when she is badly dehydrated.

If the sick person can swallow, give her a liter of water with sugar (or cereal) and salt (see Rehydration Drink). It will do as much for her as 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...



Figure

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. Certain medicines will cause bad reactions if a person drinks alcohol (see metronidazole).

There are situations when, without a doubt, it is best not to use certain medicines:

- 1. Pregnant women or women who are breast feeding should avoid all medicines that are not absolutely necessary. (However, they can take limited amounts of vitamins or iron pills without danger.)**



Figure

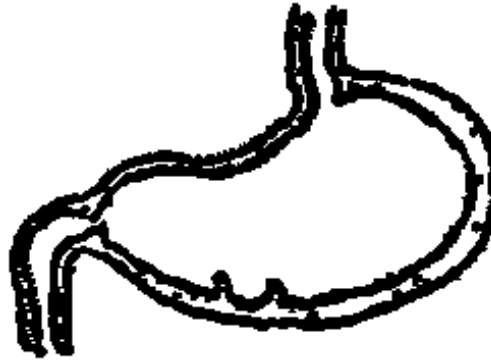
2. With newborn children, be very careful when using medicines. Whenever possible look for medical help before giving them any type of medicine. Be sure not to give too much.

3. A person who has ever had any sort of allergic reaction - *hives*, itching, etc. - after taking penicillin, ampicillin, a sulfonamide, or other medicines, should never use that medicine again for the rest of his life because it would be dangerous (see Dangerous reactions from injections of certain medicines).



Figure

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



Figure

5. There are specific medicines that are harmful or dangerous to take when you have certain illnesses. For example, persons with hepatitis should not be treated with antibiotics or other strong medicines, because their liver is damaged, and the medicines are more likely to poison the body.

6. Persons who are dehydrated or have disease of the kidneys should be especially careful with medicines they take. Do not give more than one dose of a medicine that could poison the body unless (or until) the person is urinating normally. For example, if a child has high fever and is dehydrated, do not give him more than one dose of acetaminophen or aspirin until he begins to urinate. Never give sulfa to a person who is dehydrated.



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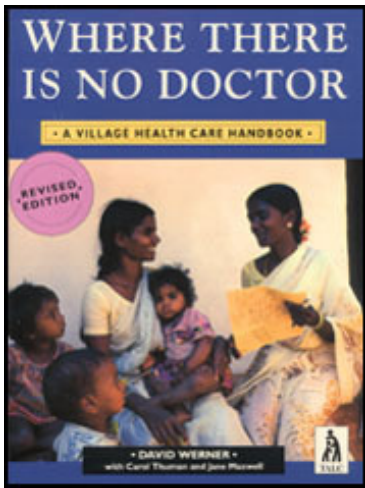


**Where There Is No Doctor - A Village Health Care Handbook
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Chapter 7 - ANTIBIOTICS: WHAT THEY ARE AND HOW TO





USE THEM

- 📄 **(introduction...)**
- 📄 **Guidelines for the Use of Antibiotics**
- 📄 **What to Do if an Antibiotic Does Not Seem to Help**
- 📄 **Importance of Limited Use of Antibiotics**

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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*. Well-known antibiotics are penicillin, tetracycline, streptomycin, chloramphenicol, and the sulfa drugs, or sulfonamides.

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

examples of brand

brand names in your area (write

antibiotic group (generic name)	examples of brand names	brand names in your area (write in)
PENICILLINS	<i>Pen-V-K</i>	_____
AMPICILLINS*	<i>Penbritin</i>	_____
TETRACYCLINES	<i>Terramycin</i>	_____
SULFAS (SULFONAMIDES)	<i>Gantrisin</i>	_____
CO-TRIMOXAZOLE	<i>Bactrim</i>	_____
STREPTOMYCIN, etc.	<i>Ambistryn</i>	_____
CHLORAMPHENICOL	<i>Chloromycetin</i>	_____
ERYTHROMYCIN	<i>Erythrocin</i>	_____
CEPHALOSPORINS	<i>Keflex</i>	_____

*** Note: Ampicillin is a type of penicillin that kills more kinds of bacteria than do ordinary penicillins.**

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, if you have some *Paraxin 'S'* but do not know what is in it, read the fine print. It says 'chloramphenicol'.



Look up chloramphenicol in the GREEN PAGES. You will find it must be used only for a few very serious illnesses, like typhoid, and is especially dangerous when given to the newborn.

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.

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 name of the medicine in the alphabetical list at the beginning of those pages.

Guidelines for the Use of Antibiotics

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. Keep using the antibiotics until the illness is completely cured, or for at least 2 days after the fever and other signs of infection have gone. (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.**

8. Only use antibiotics when the need is great. 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 *Adrenalin* (epinephrine) to control an allergic reaction if one occurs.**
- 2. For persons who are allergic to penicillin, use another antibiotic such as erythromycin or a sulfa.**
- 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. Broad-spectrum antibiotics attack many more kinds of bacteria than narrow-spectrum antibiotics.**
- 4. As a rule, use chloramphenicol only for certain severe or life-threatening illnesses like typhoid. It is a dangerous drug. Never use it for mild illness. And never give it to newborn children (except perhaps for whooping cough).**
- 5. Never inject tetracycline or chloramphenicol. They are safer, less painful, and do as much or more good when taken by mouth.**
- 6. Do not give tetracycline to pregnant women or to children under 8 years old. It can damage new teeth and bones.**
- 7. As a general rule, use streptomycin, and products that contain it, only for tuberculosis - and always together with other anti-tuberculosis medicines. Streptomycin in combination with penicillin can be used for deep wounds to the gut,**

appendicitis, and other specific infections when ampicillin is not available (or is too costly), but should never be used for colds, flu, and common *respiratory* infections.

8. All medicines in the streptomycin 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 certain very serious infections for which these medicines are recommended.

9. Eating yogurt or curdled milk helps to replace necessary bacteria killed by antibiotics like ampicillin and to return the body's natural balance to normal (see next page).

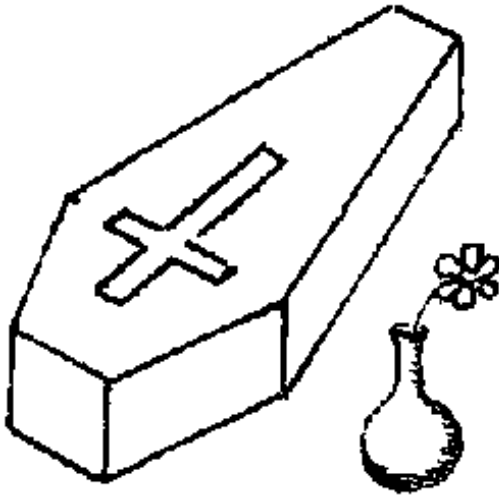
What to Do if an Antibiotic Does Not Seem to Help

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?

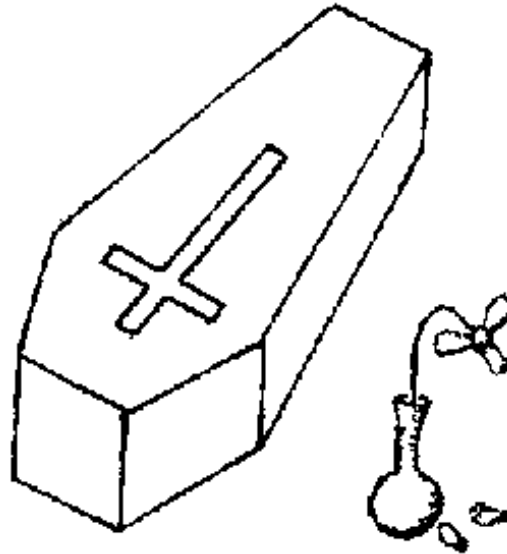


Figure

Penicillin!

(see Allergic Shock)

What took the toll?

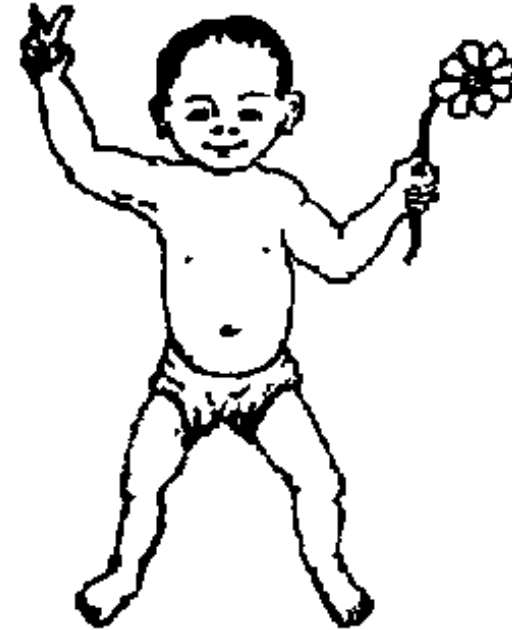


Figure

Chloramphenicol!

(see risks and precautions
for this drug)

Why did this child get well again?



Figure

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.

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. Upsetting the natural balance. Not all bacteria in the body are harmful. Some are necessary for the body to function normally. Antibiotics often kill the good bacteria along with the harmful ones. Babies who are given antibiotics sometimes develop fungus or yeast infections of the mouth (thrush) or skin (moniliasis). This is because the antibiotics kill the bacteria that help keep fungus under control.

For similar reasons, persons who take ampicillin and other *broad-spectrum* antibiotics for several days may develop diarrhea. Antibiotics may kill some kinds of bacteria necessary for digestion, upsetting the natural balance of bacteria in the gut.

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 attacked many times by the same antibiotic, bacteria become stronger and are no longer 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, normally the best medicine for treating it. Chloramphenicol has been used far too much for minor infections, infections for which other antibiotics would be safer and work as well, or for which no antibiotic at all is needed.

Throughout the world important diseases are becoming resistant to antibiotics -

largely because antibiotics are used too much 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, and perhaps painting them with gentian violet. 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, 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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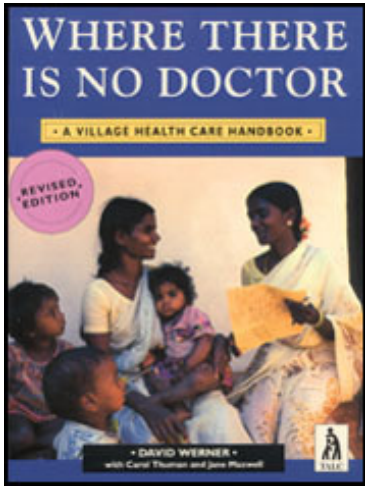
 **Where There Is No Doctor - A Village Health Care Handbook
(Hesperian Foundation, 1993, 516 p.)**

  **Chapter 8 - HOW TO MEASURE AND GIVE MEDICINE**

 **(introduction...)**

 **Medicine in Liquid Form**

 **How to Give Medicines to Small Children**



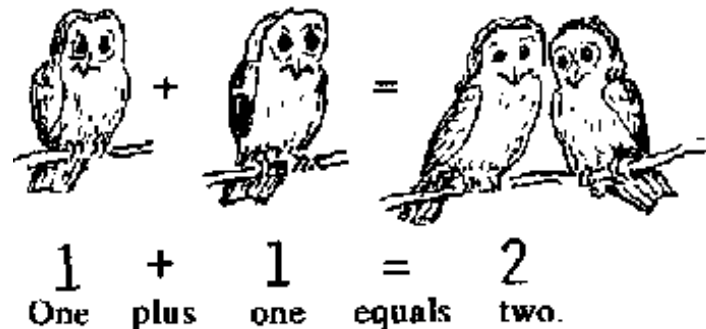
- 📄 **How to Take Medicines**
- 📄 **Dosage Instructions for Persons Who Cannot Read**

Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)

Chapter 8 - HOW TO MEASURE AND GIVE MEDICINE

SYMBOLS:

= means: **is equal to** or



Figure

is the same as

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

HOW FRACTIONS ARE SOMETIMES WRITTEN:

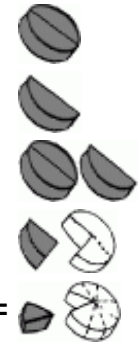
1 tablet = one whole tablet =

$1/2$ tablet = half of a tablet =

$1 \frac{1}{2}$ tablet = one and one-half tablets =

$1/4$ tablet = one quarter or one-fourth of a tablet =

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





MEASURING

Medicine is usually weighed in grams (gm.) and milligrams (mg.).

1000 mg. = 1 gm. (one thousand milligrams make one gram)

1 mg. = .001 gm. (one milligram is one one-thousandth part of a gram)

Examples:

	<p>One adult aspirin tablet contains 300 milligrams of aspirin.</p>	<p>.3 gm. 0.3 gm. 0.300 gm. 300 mg.</p>	<p>All these are different ways of saying 300 milligrams.</p>
	<p>One baby aspirin contains 75 milligrams of aspirin.</p>	<p>.075 gm. 0.075</p>	<p>All these are different ways of saying 75 milligrams.</p>

gm.
75.0
mg.
75 mg.

Note: In some countries some medicines are still weighed in grains; gr. = grain and 1 gr. = 65 mg. This means a 5 gr. aspirin tablet weighs about 300 mg.

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

For example, if you want to give a small piece of adult aspirin to a child, instead of baby aspirin, but you do not know how big a piece to give...

read the small print on the labels of each. It says aspirin:
acetylsalicylic acid .3 gm. (acetylsalicylic acid = aspirin)



Figure

.3 gm. = 300 mg. and .075 gm. = 75 mg. So, you can see that one adult aspirin weighs 4 times as much as one baby aspirin.

75 mg. 

75 mg.  4 baby aspirin

15 mg. 

75 mg.  add up to

300 mg.  1 regular aspirin

If you cut the adult aspirin into 4 equal pieces, each quarter = one baby aspirin



Figure



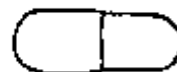
Figure

So if you cut an adult aspirin into 4 pieces, you can give the child 1 piece in place of a baby aspirin. Both are equal, and the piece of adult aspirin costs less.

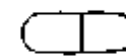
CAUTION: Many medicines, especially the antibiotics, come in different weights and sizes. For example, tetracycline may come in 3 sizes of capsules:



250 mg.



100 mg.



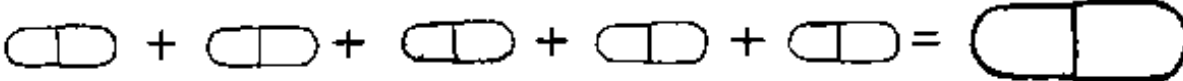
50 mg.

Figure

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).

$$50 \text{ mg.} + 50 \text{ mg.} + 50 \text{ mg.} + 50 \text{ mg.} + 50 \text{ mg.} = 250 \text{ mg.}$$


The diagram illustrates the equivalence between five 50 mg capsules and one 250 mg capsule. It shows five small, identical capsules on the left, each with a vertical score line, followed by plus signs and an equals sign. To the right of the equals sign is a single, larger capsule, also with a vertical score line, representing the total 250 mg dose.

Figure

MEASURING PENICILLIN

Penicillin is often measured in units.

U. = unit 1,600,000 U. = 1 gm. or 1,000 mg.

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

$$400,000 \text{ U.} = 250 \text{ mg.}$$

Medicine in Liquid Form

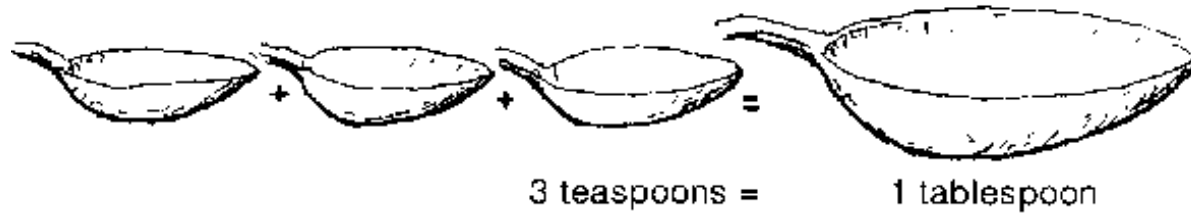
Syrups, suspensions, tonics, and other liquid medicines are measured in milliliters:

ml. = milliliter liter = 1000 ml.

Often liquid medicines are prescribed in tablespoons or teaspoons:

1 teaspoon (tsp.) = 5 ml.

1 tablespoon (Tbs.) = 15 ml.

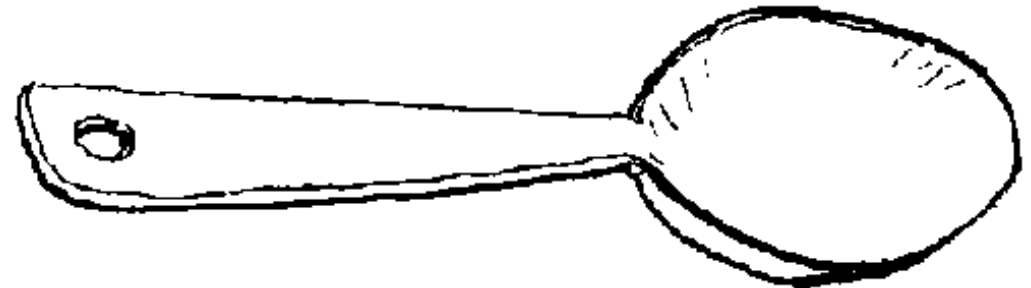
**Figure**

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

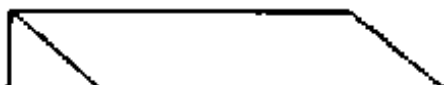
Many of the 'teaspoons' people use hold as much as 8 ml. or as little as 3 ml. When using a teaspoon to give medicine, it is important that it measure 5 ml. - No more. No less.

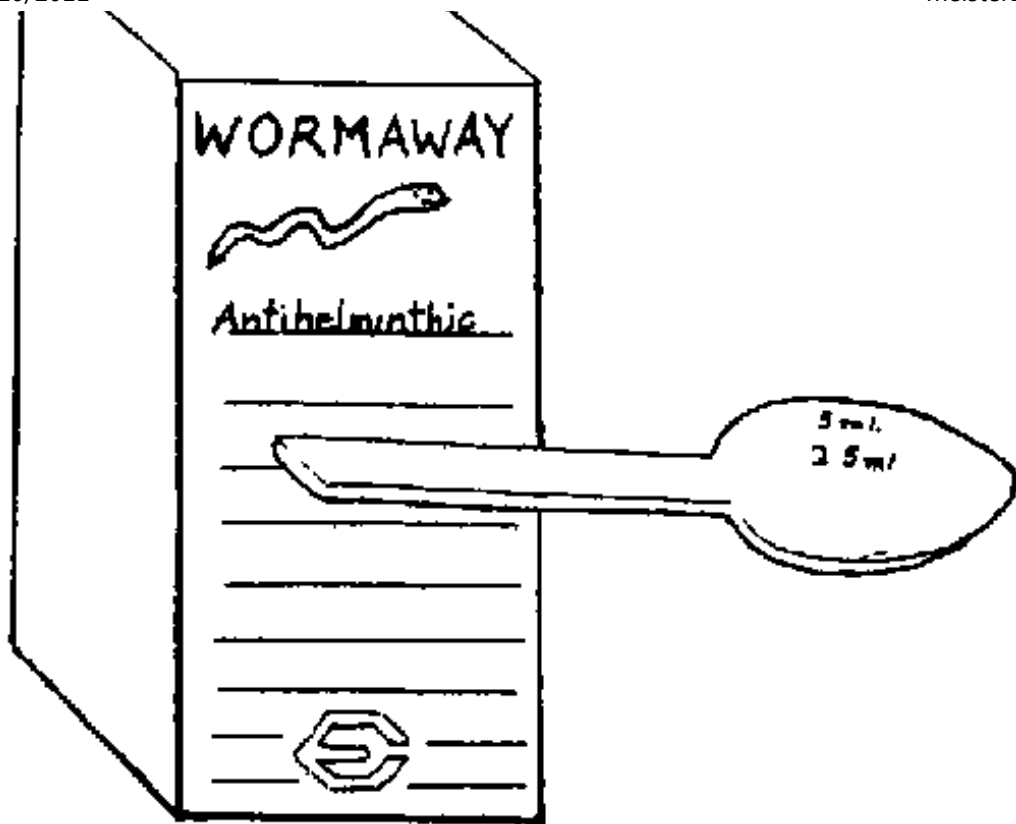
How to Make Sure that the Teaspoon Used for Medicine Measures 5 ml.

1. Buy a 5 ml. measuring spoon.

**Figure**

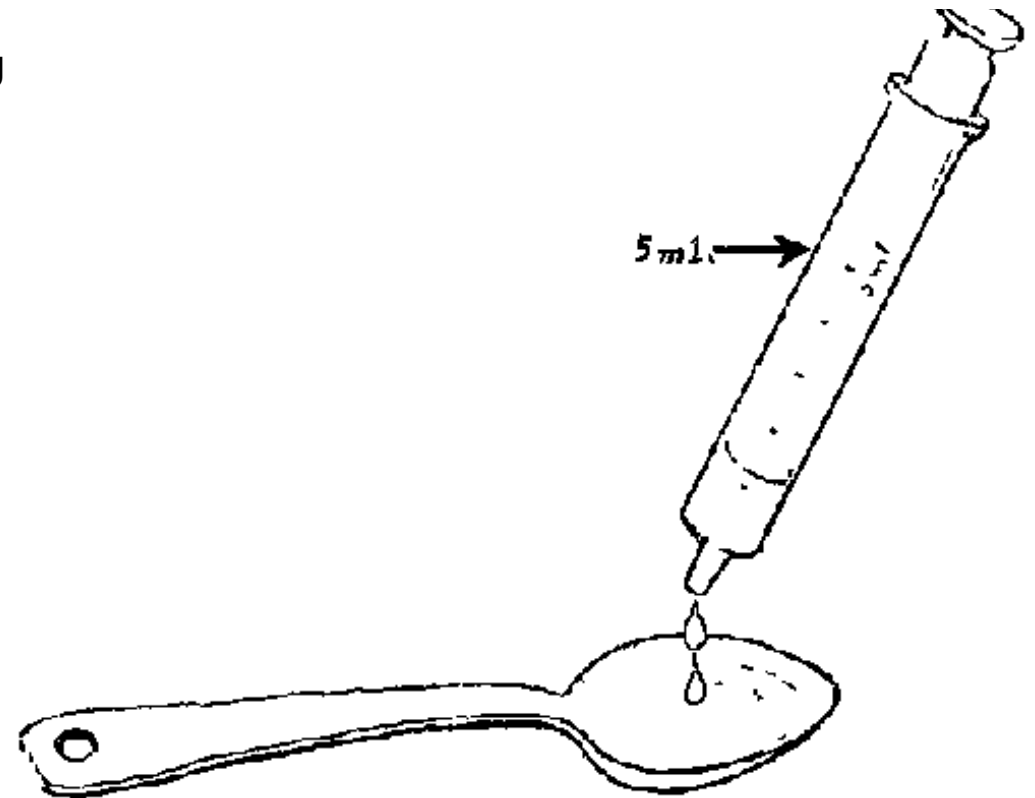
2. Buy a medicine that comes with a plastic spoon. This measures 5 ml. when it is full and may also have a line that shows when it is half full (2,5 ml.). Save this spoon and use it to measure other medicines.





Figure

3. 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.**



Figure

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 are usually more expensive than pills or capsules. You can save money by making your own syrup in the following way:

and mix the powder
with boiled water
(that has cooled) and

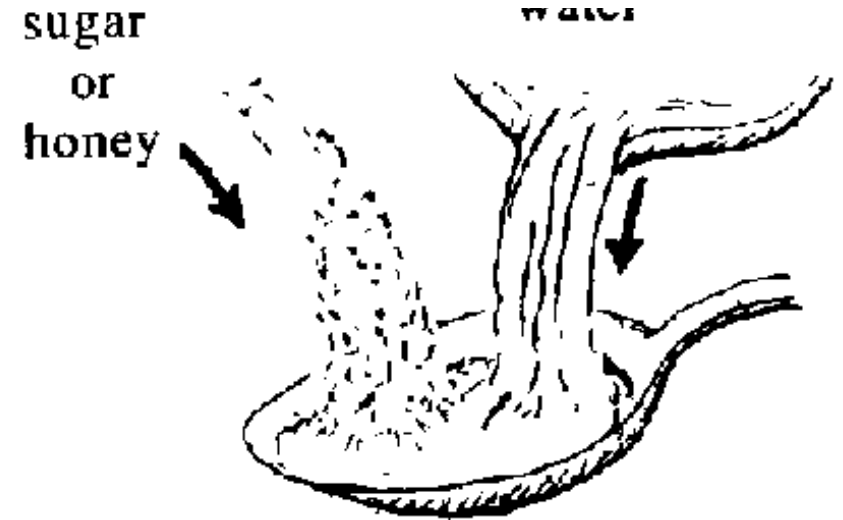
**cool boiled
water**





sugar or honey.

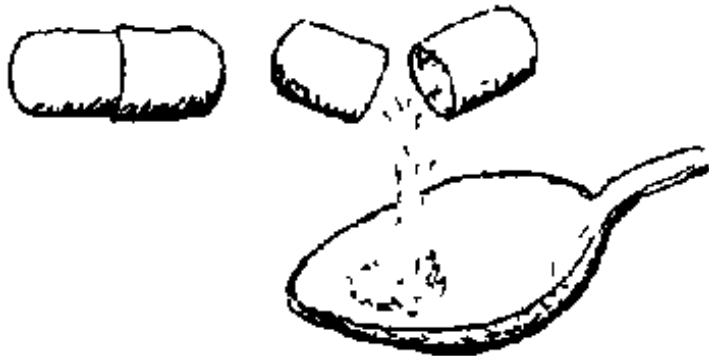
Grind up the pill very well



sugar
or
honey

water

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



or open the capsule

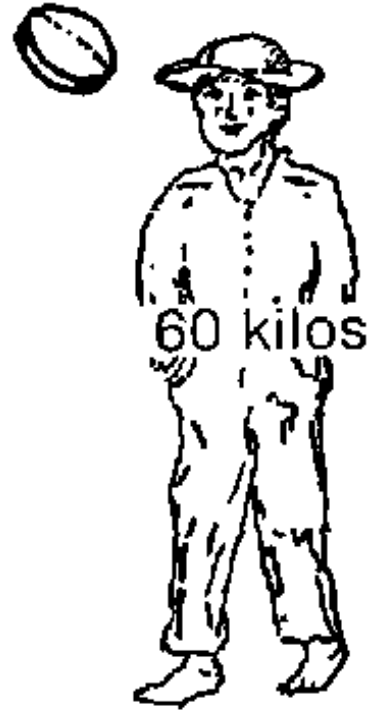
When making syrups for children from pills or capsules, be very careful not to give too much medicine.

***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 fit, 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:

1 kilogram (kg.) = 2.2 pounds (lb.)



60 kilos

132 lbs.

Adults: 1 dose



66 lbs.

Children 8 to 13 years: 1/2 dose



33 lbs.

Children 4 to 7 years: 1/4 dose



17.6 lbs.

Children 1 to 3 years: 1/8 dose



11 lbs.

Give a child under 1 year old the dose for a child of 1 year, but ask medical advice when possible.

How to Take Medicines

It is important to take medicines more or less at the time recommended. Some medicines should be taken only once a day, but others must be taken more often. If you do not have a clock, it does not matter. If the directions say '1 pill every 8 hours', take 3 a day: one 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 more or less the same time between pills.



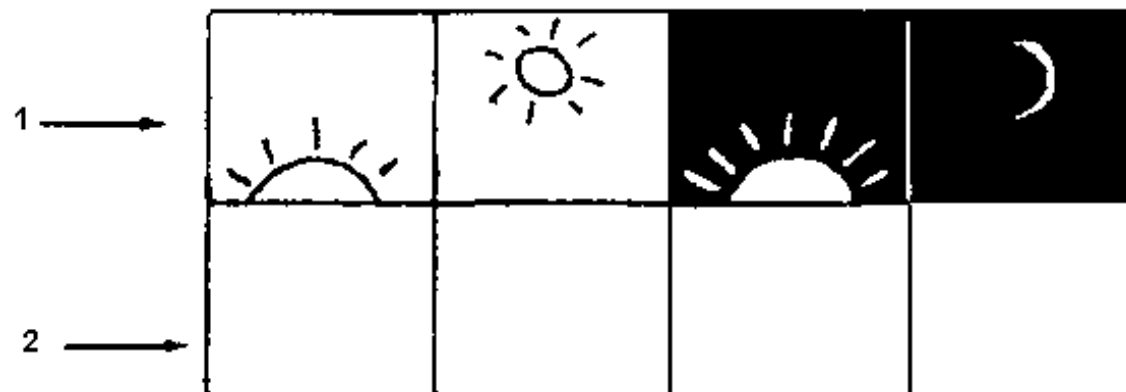
Figure

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.

Dosage Instructions for Persons Who Cannot Read

To remind people who cannot read when to take their medicine, you can give them a note like this (1)

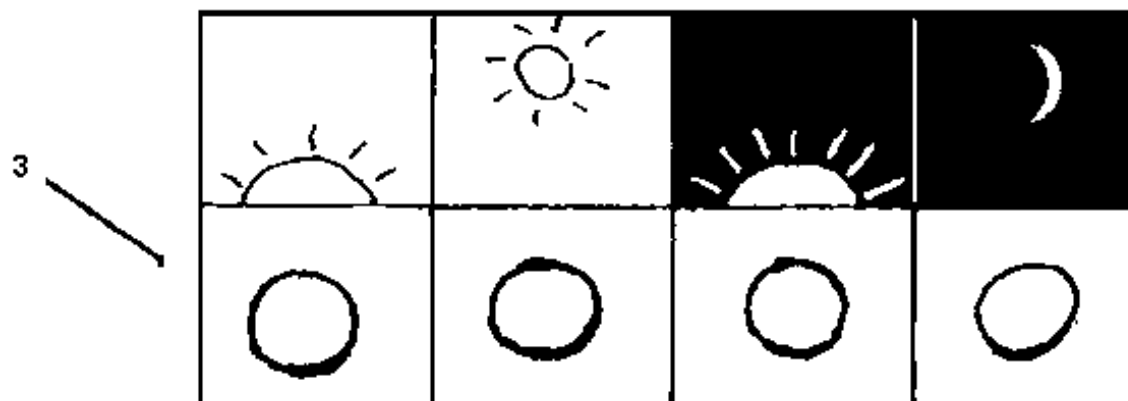
In the blanks at the bottom draw the amount of medicine they should take and carefully explain what it means. (2)



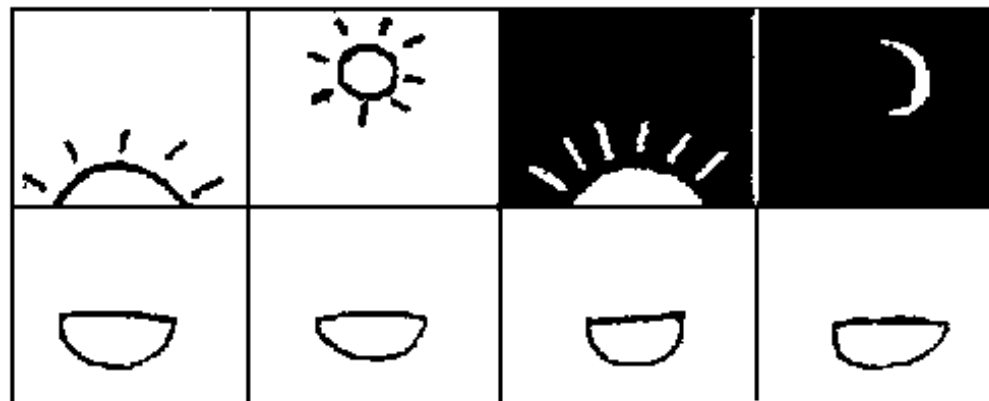
Figure

For example:

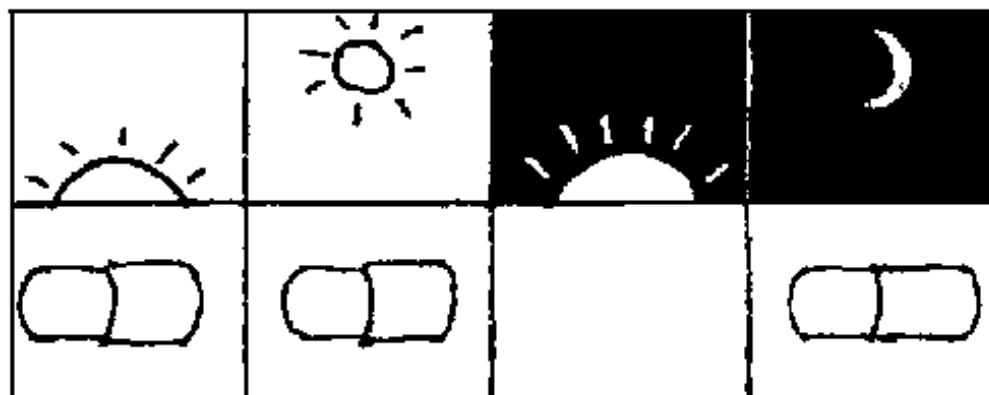
This means 1 tablet 4 times a day, 1 at sunrise (3), 1 at noon, 1 at sunset, and 1 in the middle of the night.



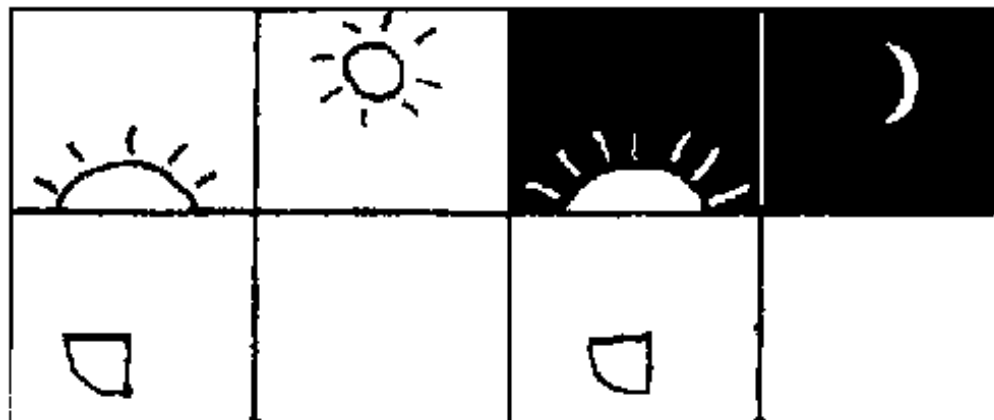
Figure



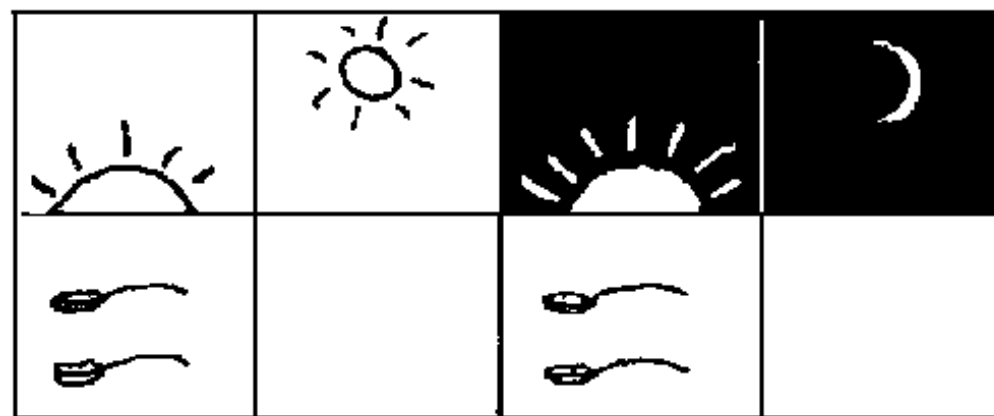
This means 1/2 tablet 4 times a day.



This means 1 capsule 3 times a day.



This means 1/4 tablet twice a day.









This means 2 teaspoons twice a day.

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 (1)**
- **the name of the medicine (2)**
- **what it is for (3)**

- the dosage (4)

					
					
1	→	Name: Johnny Brown			
2	→	Medicine: Piperazine 500mg tablets			
3	→	For: Threadworm			
4	→	Dosage: take 2 tablets twice a day			

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 use them as needed. When you run out, you can make more 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.

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.

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 meals:

- penicillin
- ampicillin
- tetracycline

It is better not to drink milk an hour before
or after taking tetracycline.

Take these medicines together with or soon after
meals (or with a lot of water):

- aspirin and medicine that contains aspirin
- 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.

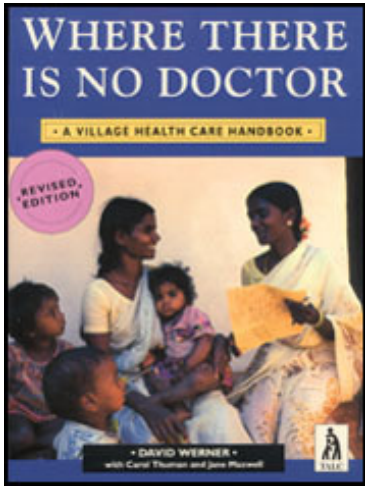
Note: It is best to take medicines while you are standing or sitting up. Also, try to drink a glass of water each time you take a medicine. If you are taking a sulfa medicine, it is important to drink lots of water, at least 8 glasses a day, to prevent harm to the kidneys.



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  **Chapter 9 - INSTRUCTIONS AND PRECAUTIONS FOR
INJECTIONS**

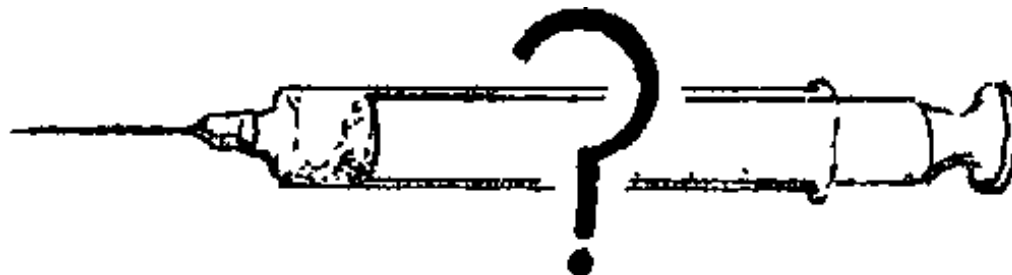


- 📄 **When to Inject and When Not To**
- 📄 **Emergencies When It Is Important to Give Injections**
- 📄 **Medicines Not to Inject**
- 📄 **Risks and Precautions**
- 📄 **Dangerous Reactions From Injecting Certain Medicines**
- 📄 **How to Avoid Serious Reactions to a Penicillin Injection**
- 📄 **How to Prepare a Syringe for Injection**
- 📄 **How to Inject**
- 📄 **How Injections Can Disable Children**
- 📄 **How to Clean (Sterilize) Equipment**

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Chapter 9 - INSTRUCTIONS AND PRECAUTIONS FOR INJECTIONS

When to Inject and When Not To



Figure

Injections are not needed often. Most sicknesses that require medical treatment can be treated as well or better with medicines taken by mouth. 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 PRESCRIBES INJECTIONS

Doctors and other health workers sometimes prescribe 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 prescribes 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 prescribe injections of vitamins, liver extract, or vitamin B₁₂ but has not had your blood tested, tell him you would prefer to see another doctor.**

Emergencies 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 Infections after childbirth Gangrene	penicillin in high doses
Tetanus	penicillin and tetanus antitoxin and phenobarbital or diazepam
Appendicitis Peritonitis and bullet wound or other puncture wound in the belly	ampicillin in high doses or penicillin with streptomycin
Poisonous snakebite Scorpion sting (in children)	snake antivenom scorpion antivenom
Meningitis when you do not suspect tuberculosis	ampicillin or penicillin in very high doses
Meningitis when you suspect tuberculosis	ampicillin or penicillin together with streptomycin and, if possible, other TB medicines
Vomiting when it cannot be controlled	antihistamines, for example, promethazine
Severe allergic reaction allergic shock and	epinephrine (<i>Adrenalin</i>) and, if possible,

severe asthma	diphenhydramine (<i>Benadryl</i>).
The following chronic illnesses may require injections, but they are rarely emergencies. It is best to consult a health worker for treatment.	
Tuberculosis	streptomycin together with other TB medicines
Syphilis	benzathine penicillin in very high doses
Gonorrhoea	kanamycin or penicillin



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 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.

2. Liver extract, vitamin B₁₂, and iron injections (such as *Imferon*). Injecting these can cause abscesses or dangerous reactions (shock). Ferrous sulfate pills will do more good for almost all cases of anemia.

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. Penicillin with streptomycin. As a general rule, avoid this combined medicine. Never use it for colds or the flu because it does not work. It can cause serious problems - sometimes deafness or death. Also, overuse makes it more difficult to cure tuberculosis or other serious illness.

6. Chloramphenicol or tetracycline. These medicines do as much or more good when taken by mouth. Use capsules or syrups rather than injections.

7. 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.

8. 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'.

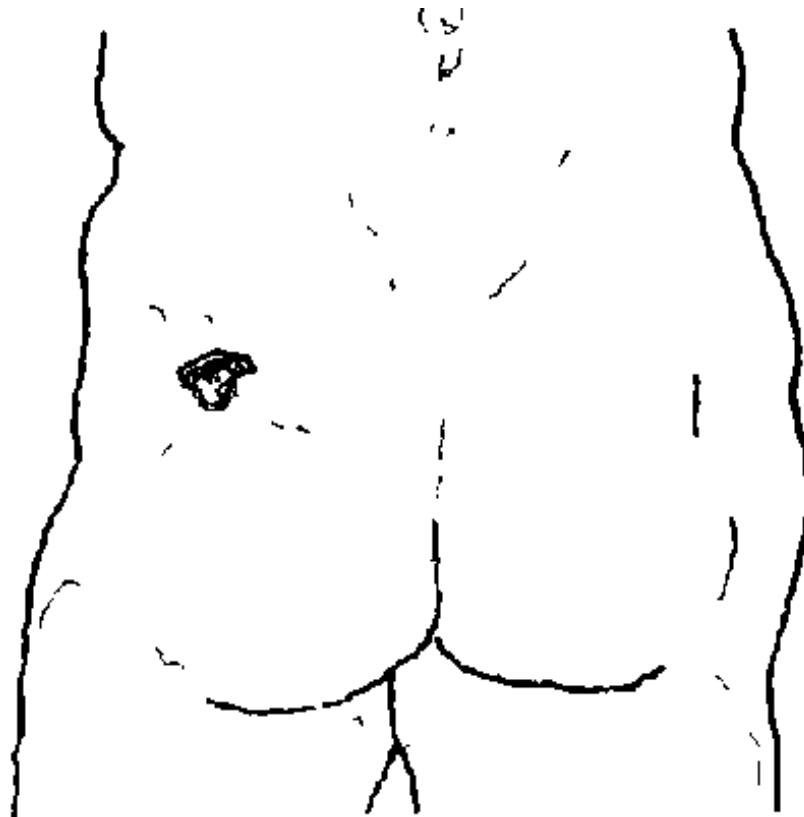
Risks and Precautions

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 completely clean. It is very important to boil the needle and syringe before injecting. After boiling, do not touch the needle with your fingers or with anything else.

Never use the same needle and syringe to inject more than one person without boiling 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.



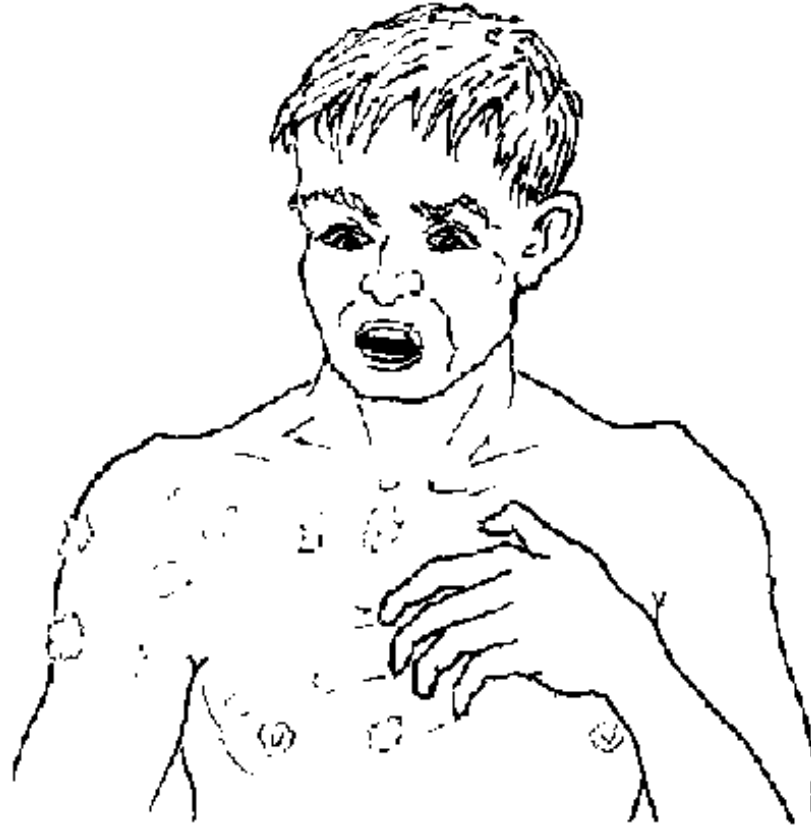
An abscess like this one comes from injecting with a needle that has not been well boiled and is not sterile (completely clean and germ-free).

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**
- **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.

This child was injected with a needle that was not *sterile* (boiled and 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.



Figure



Figure

To avoid problems like these:

Inject only when absolutely necessary.

- **Boil the syringe and needle just before giving the injection and be very careful to keep them completely clean.**
- **Use only the medicine recommended for the disease and be sure it is still in good**

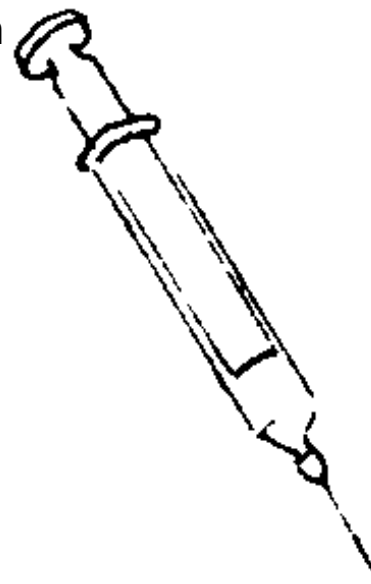
condition and not spoiled.

• **Inject in the correct place. Do not inject infants and small children in the buttock. 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 damage the nerve.)**

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
tetanus antitoxin



Figure

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.



Figure

Rarely, ALLERGIC SHOCK may result from the sting of a wasp or bee or from medicine taken by mouth.



Figure

To prevent a serious reaction from an injection:

- 1. Use injections only when absolutely necessary.**
- 2. Before injecting one of the medicines listed above, always have ready 2 ampules of epinephrine (*Adrenalin*) and an ampule of an antihistamine like promethazine (*Phenergan*) or diphenhydramine (*Benadryl*).**
- 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 tetanus 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 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:**

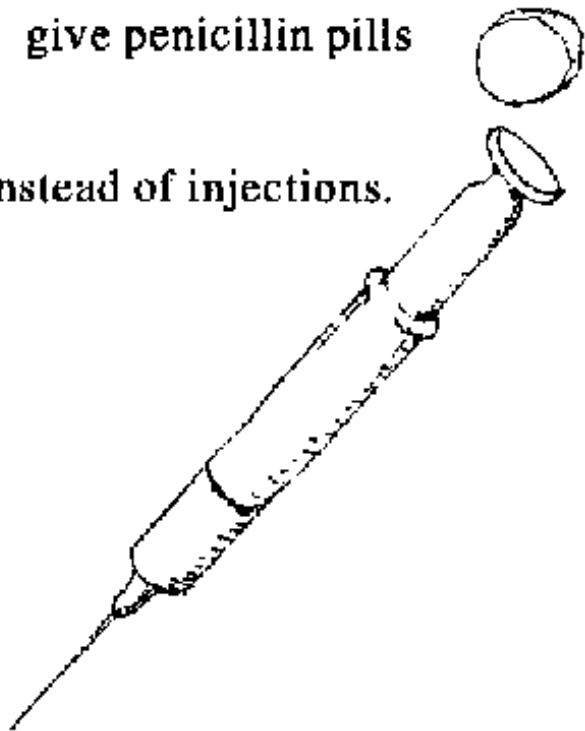
- **cool, moist, pale, gray skin (cold sweat)**
- **weak, rapid pulse or heartbeat**
- **difficulty breathing**
- **loss of consciousness**

6. If these signs appear, immediately inject epinephrine (*Adrenalin*): adults, 1/2 ml.; children, 1/4 ml. Treat the person for SHOCK. Follow by giving an antihistamine in double the normal dose.

How to Avoid Serious Reactions to a Penicillin Injection

1. For mild to moderate infections: give penicillin pills

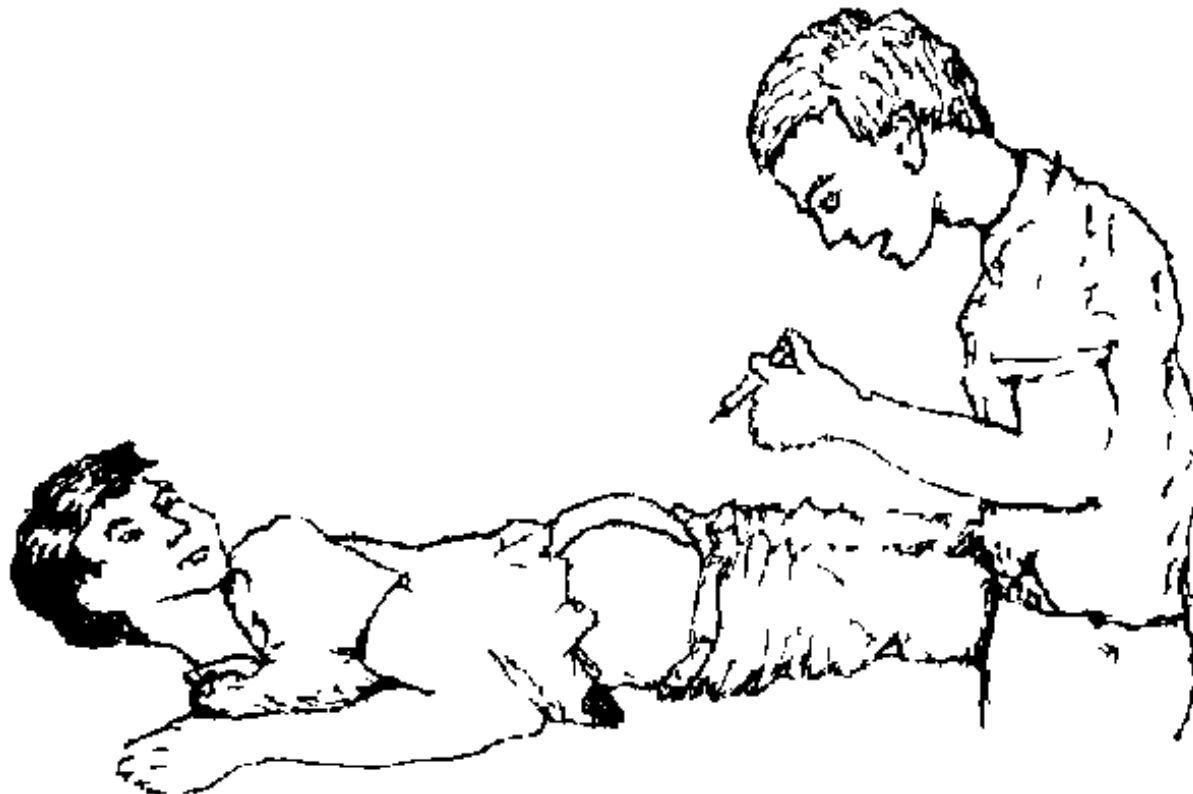
give penicillin pills
instead of injections.



Figure

2. Before injecting ask the person:

“Have you ever had a rash, itching, swelling, or trouble breathing after getting an injection of penicillin?” instead of injections.

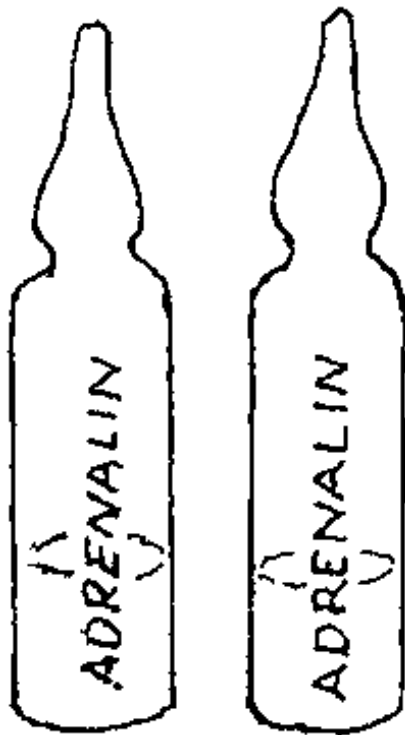


Figure

If the answer is yes, do not use penicillin or ampicillin. Use another antibiotic like erythromycin or a sulfonamide.

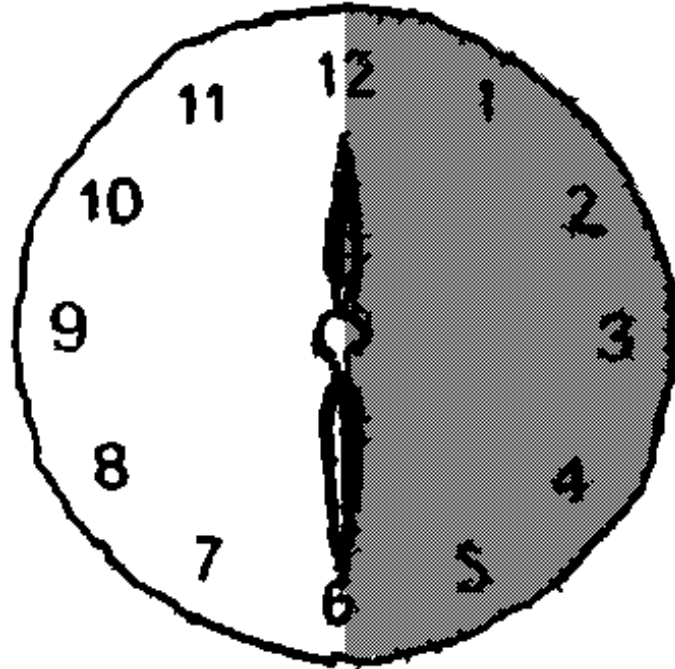
3. Before injecting penicillin:

always have ampules of EPINEPHRINE (*Adrenalin*) ready.



Figure

4. After injecting:

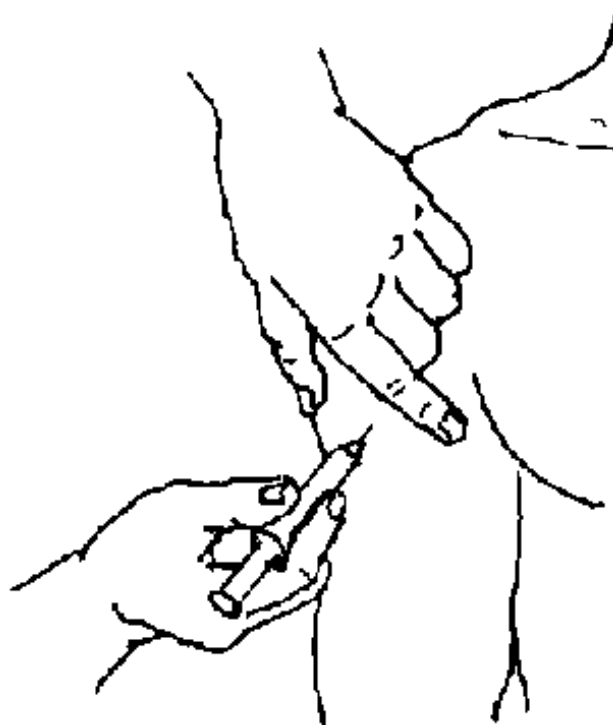


Figure

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

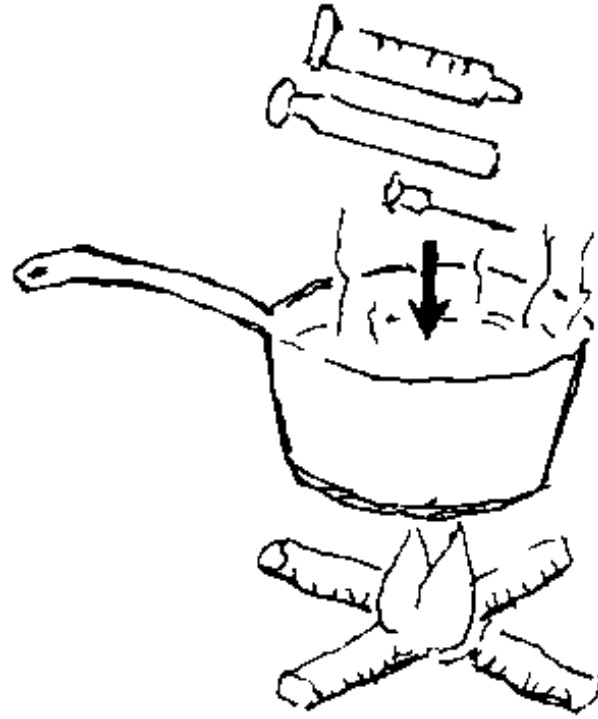
starts to faint, immediately inject into a muscle (or just under the skin) half an ampule of EPINEPHRINE (*Adrenalin*, a quarter of an ampule in small children) and repeat in 10 minutes if necessary.



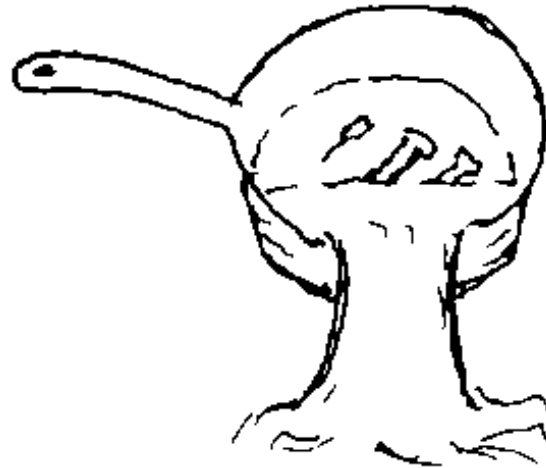
Figure

How to Prepare a Syringe for Injection

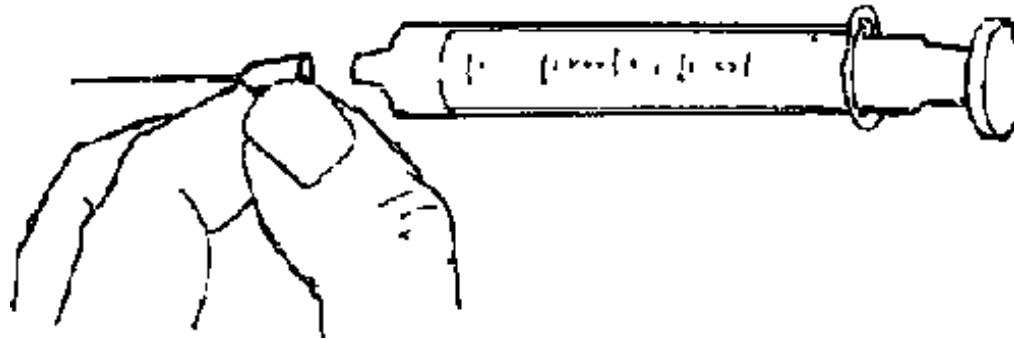
Before preparing a syringe, wash hands with soap and water.



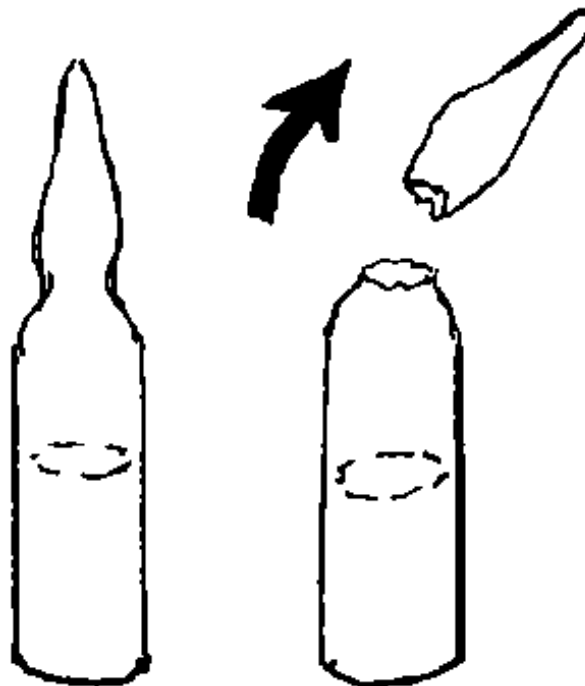
1. Take the syringe apart and boil it and the needle for 20 minutes.



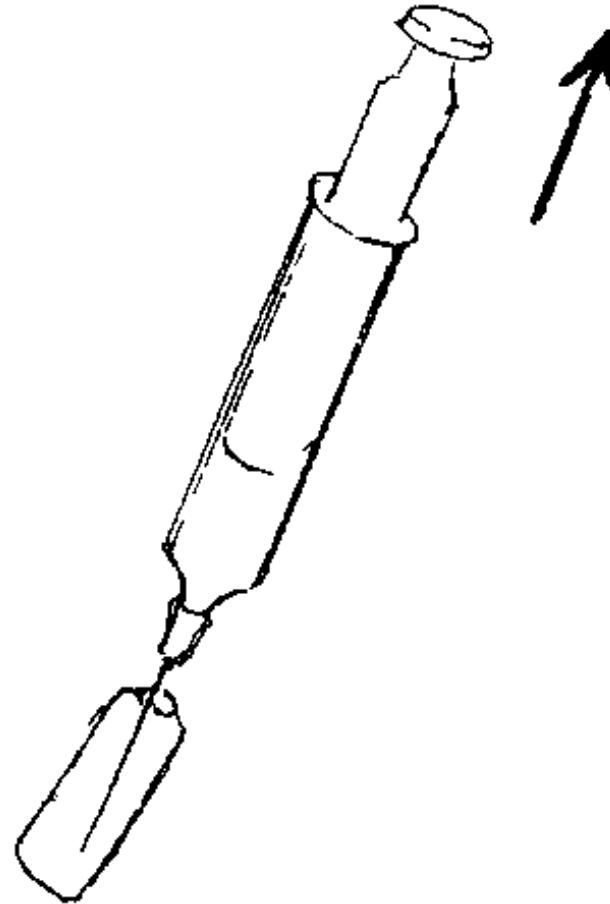
2. Pour out the boiled water without touching the syringe or the needle.



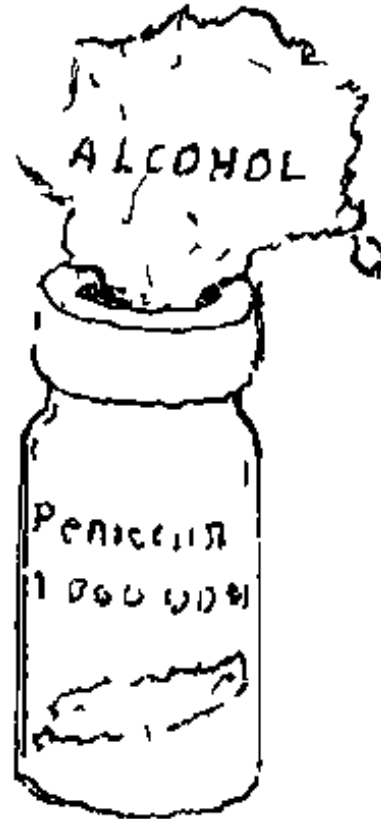
3. Put the needle and the syringe together, touching only the base of the needle and the button of the plunger.



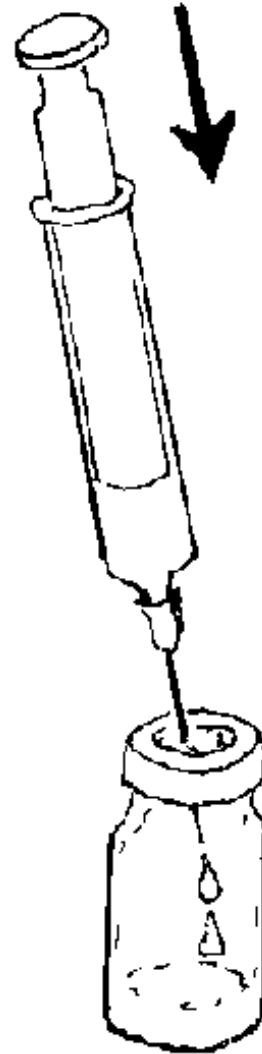
4. Clean the ampule of distilled water well, then break off the top.



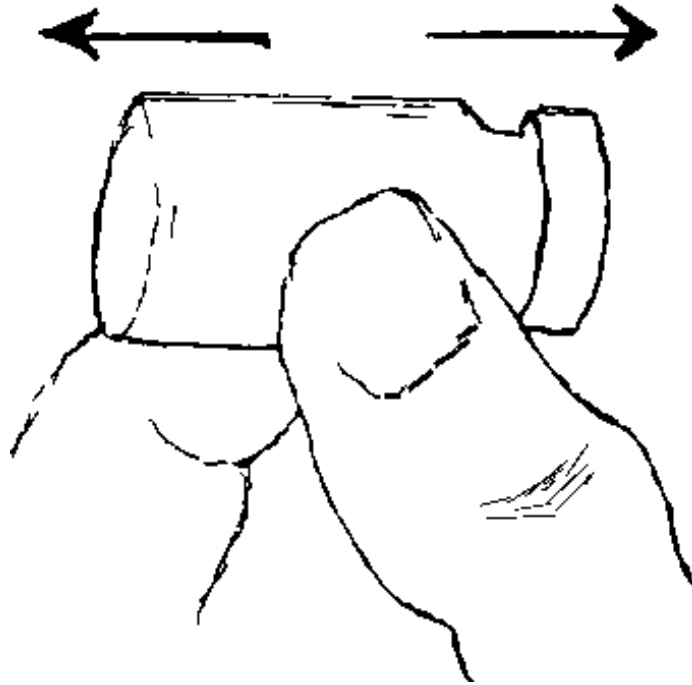
5. Fill the syringe. (Be careful that the needle does not touch the outside of the ampule.)



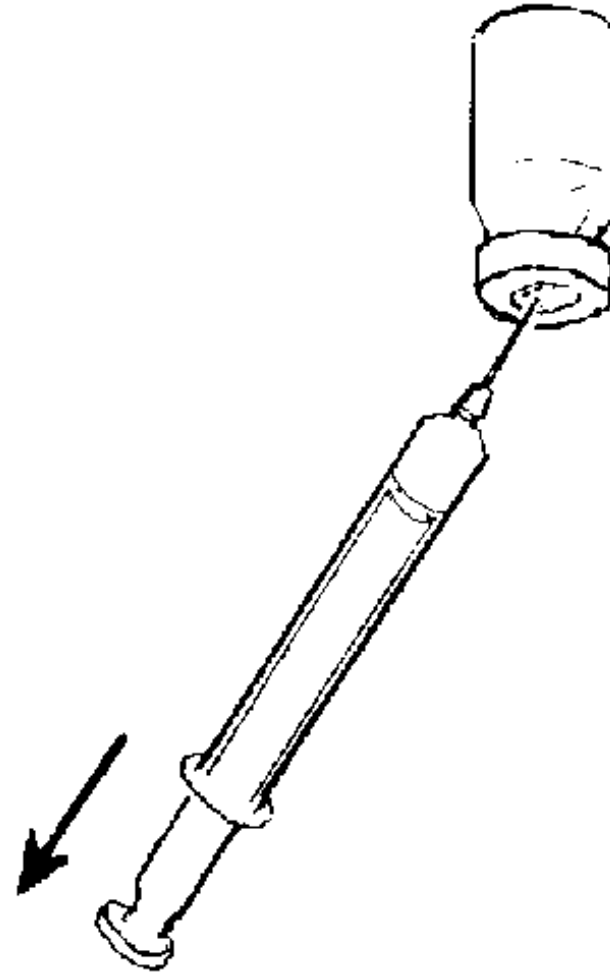
6. Rub the rubber of the bottle with clean cloth wet with alcohol or boiled water.



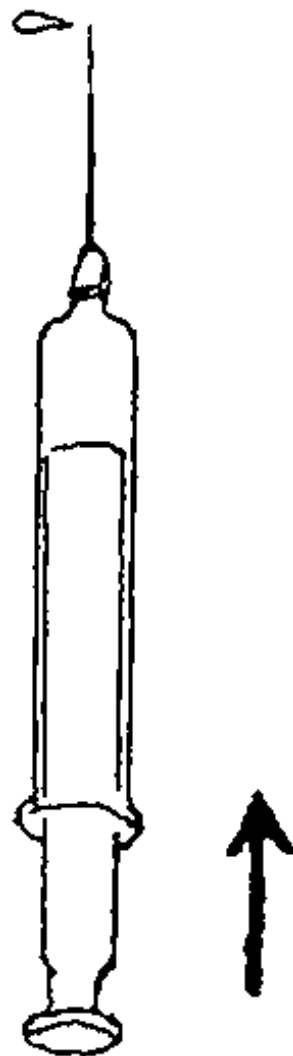
7. Inject the distilled water into the bottle with the powdered medicine.



8. Shake until the medicine dissolves.



9. Fill the syringe again.



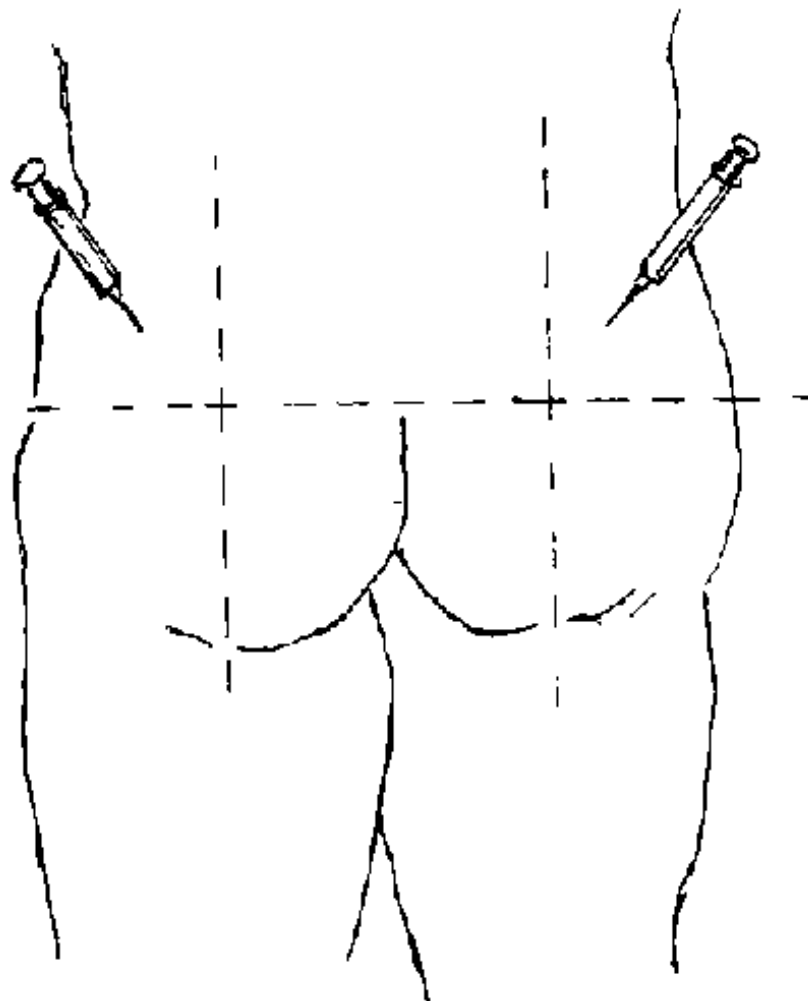
10. Remove all air from the syringe.

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, boil it again.

WHERE TO GIVE AN INJECTION

Before injecting, wash hands with soap and water.

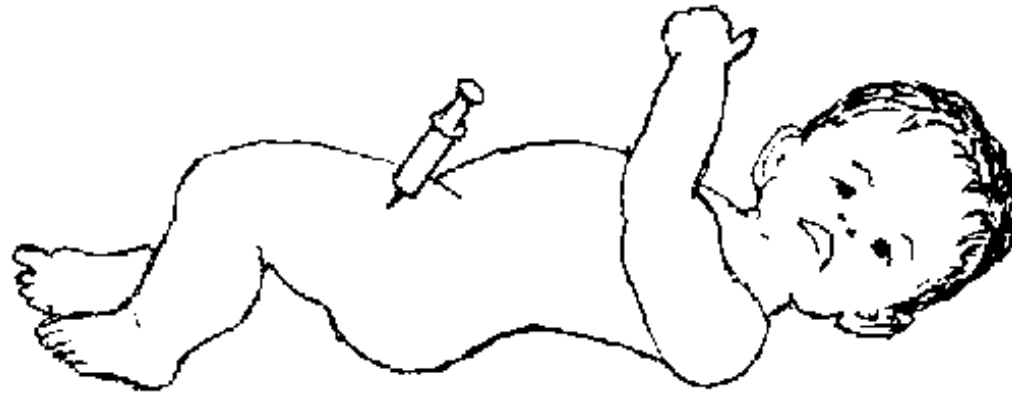
It is preferable to inject in the muscle of the buttocks, always in the upper outer quarter.



Figure

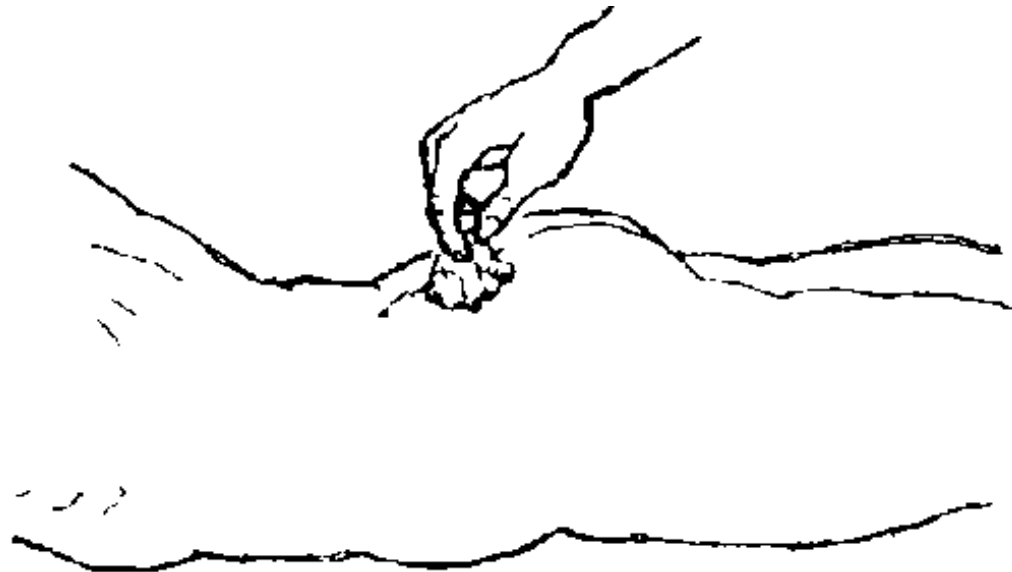
***WARNING:* Do not inject into an area of skin that is infected or has a rash.**

Do not inject infants and small children in the buttock. Inject them in the upper outer part of the thigh.

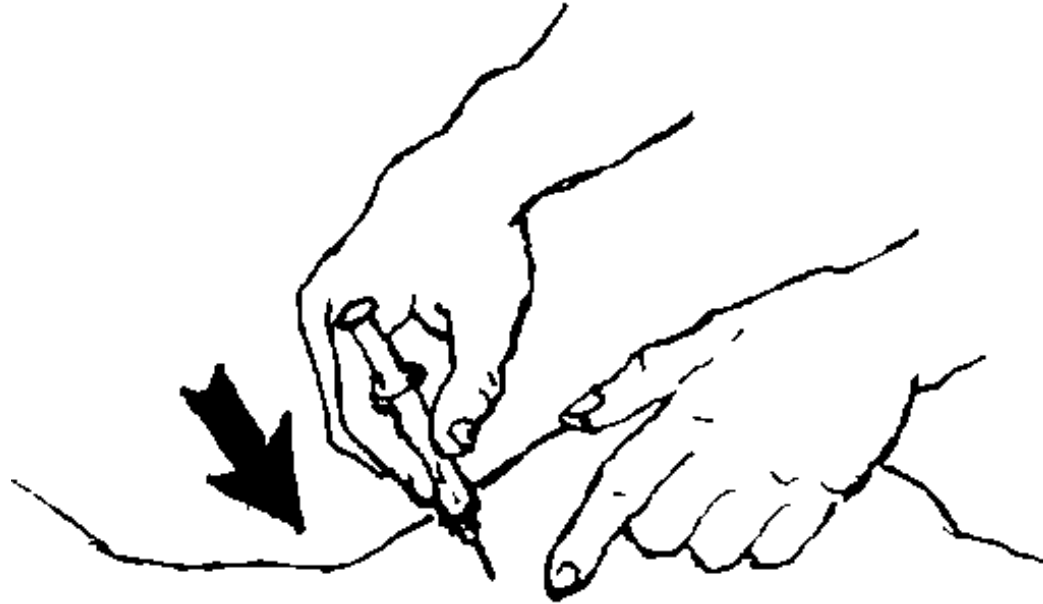


Figure

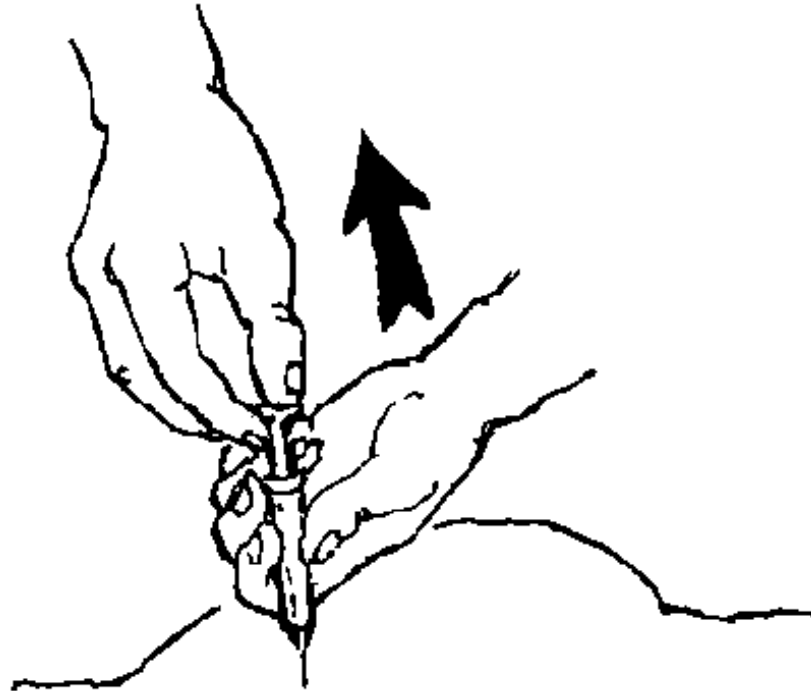
How to Inject



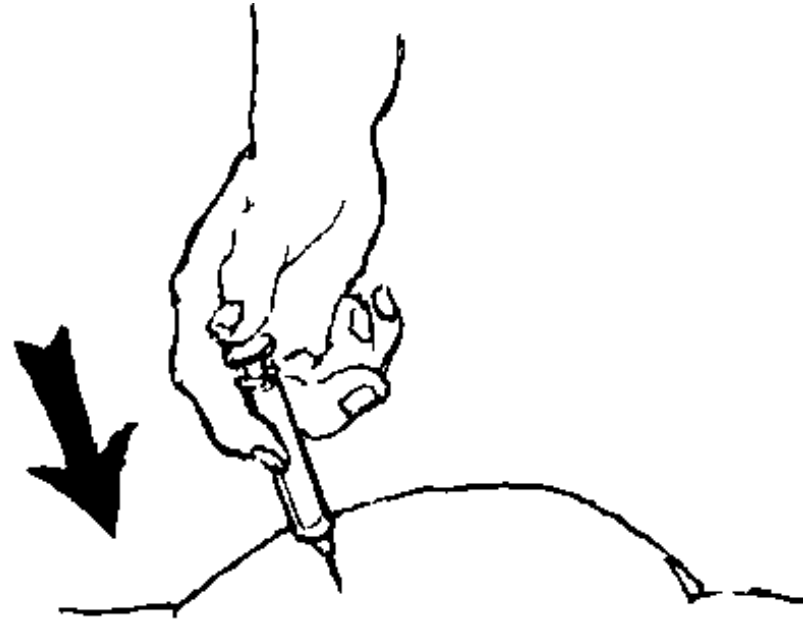
- 1. Clean the skin with soap and water (or alcohol - but to prevent severe pain, be sure the alcohol is dry before injecting).**



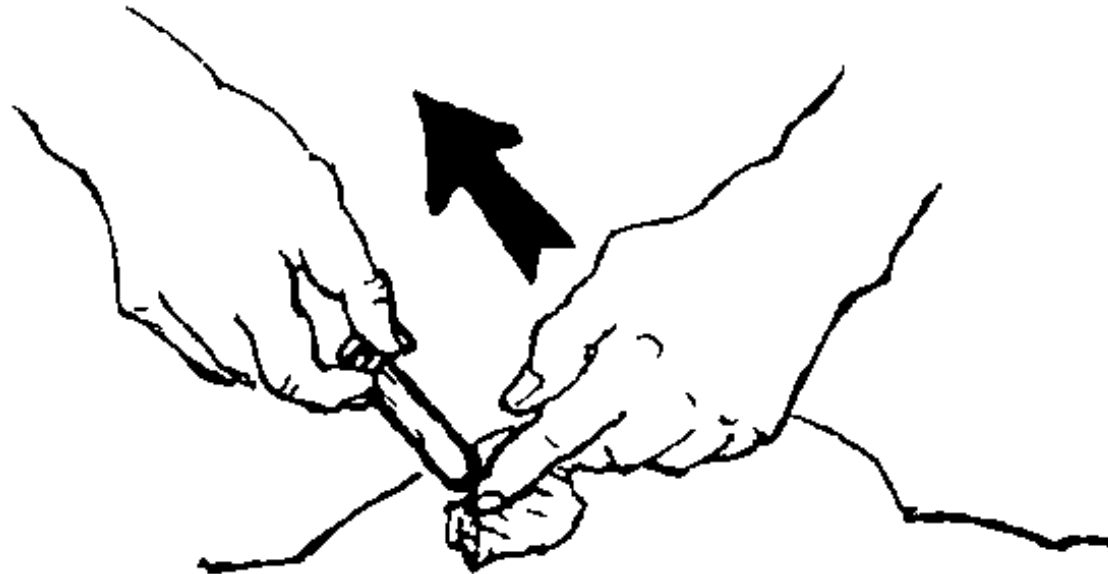
2 Put the needle straight in, all the way (If it is done with one quick movement, it hurts less)



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.

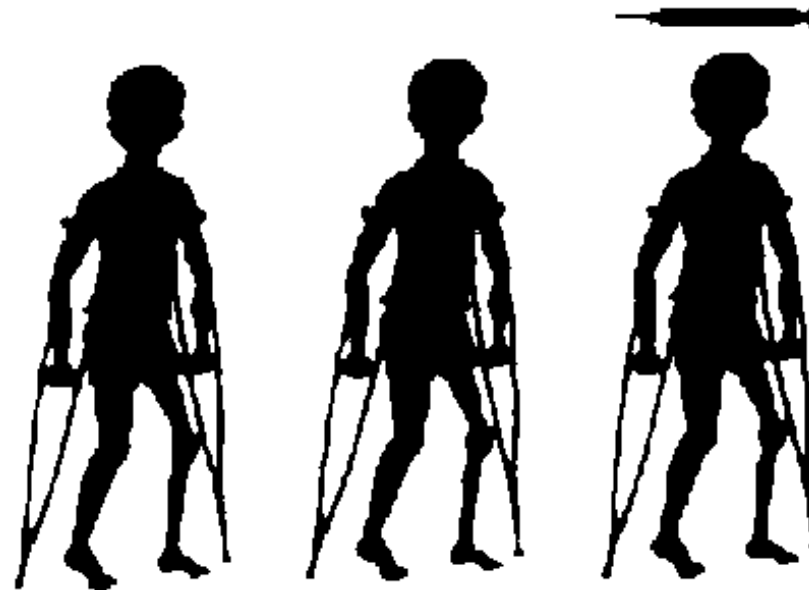
6. After injecting, rinse the syringe and needle at once. Squirt water through the

needle and then take the syringe apart and wash it. Boil before using again.

How Injections Can Disable Children

When used correctly, certain injected medicines are important to health.

Vaccinations, including those that are injected, help to protect a child's health and prevent disability. However, to reduce the chance of paralysis from polio, it is best *not* to give vaccinations (immunizations) or any other injections when a child has a fever or signs of a cold. This could be a mild polio infection without paralysis. If so, the irritation caused by an injection could cause permanent paralysis from the polio. Some experts say that each year thousands of children are paralyzed by polio because of injections. Most of these injections are not needed.



1 out of every 3 cases of polio is caused by injections.

For more information on how injections disable children, 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 (Sterilize) Equipment

Many infectious diseases, such as AIDS, hepatitis, and tetanus, can be passed from a sick person to a healthy person through the use of syringes, needles, and other instruments that are not sterile (this includes the instruments used for piercing ears, acupuncture, tattoos, or circumcision). Many skin infections and abscesses also start because of this. Any time the skin is cut or pierced, it should only be done with equipment that has been sterilized.

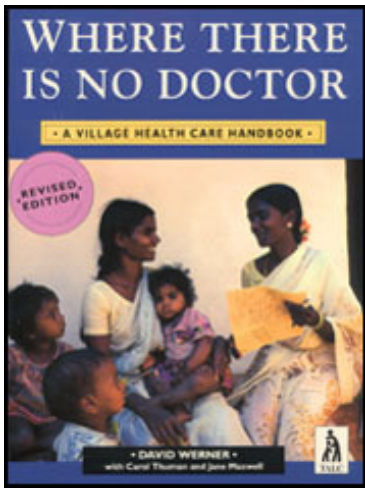
Here are some ways to sterilize equipment:

- Boil for 20 minutes. (If you do not have a clock, add 1 or 2 grains of rice to the water. When the rice is cooked, the equipment will be sterile.)**
- Or steam for 15 minutes in a special pot called a pressure cooker (or autoclave).**
- Or soak for 20 minutes in a solution of 1 part chlorine bleach to 7 parts water, or in a solution of 70% ethanol alcohol. If possible, prepare these solutions fresh each day, because they lose their strength. (Be sure to sterilize the inside of a syringe by pulling some solution inside and then squirting it out.)**

When you are helping someone who has an infectious disease, wash your hands often with soap and water.



























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Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)

Chapter 10 - FIRST AID

-  **Fever**
-  **Shock**
-  **Loss of Consciousness**
-  **When Something Gets Stuck in the Throat**
-  **Drowning**
-  **What to Do When Breathing Stops: Mouth-to-Mouth Breathing**
-  **Emergencies Caused by Heat**
-  **How to Control Bleeding from a Wound**
-  **How to Stop Nosebleeds**
-  **Cuts, Scrapes, and Small Wounds**
-  **Large Cuts: How to Close Them**
-  **Bandages**
-  **Infected Wounds: How to Recognize and Treat Them**
-  **Bullet, Knife, and Other Serious Wounds**
-  **Emergency Problems of the Gut (Acute Abdomen)**
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-  **Broken Bones (Fractures)**
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-  **Dislocations (Bones that Have Come Out of Place at a Joint)**
-  **Strains and Sprains (Bruising or Tearing in a Twisted Joint)**
-  **Poisoning**
-  **Snakebite**
-  **Other Poisonous Bites and Stings**

Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)

Chapter 10 - FIRST AID

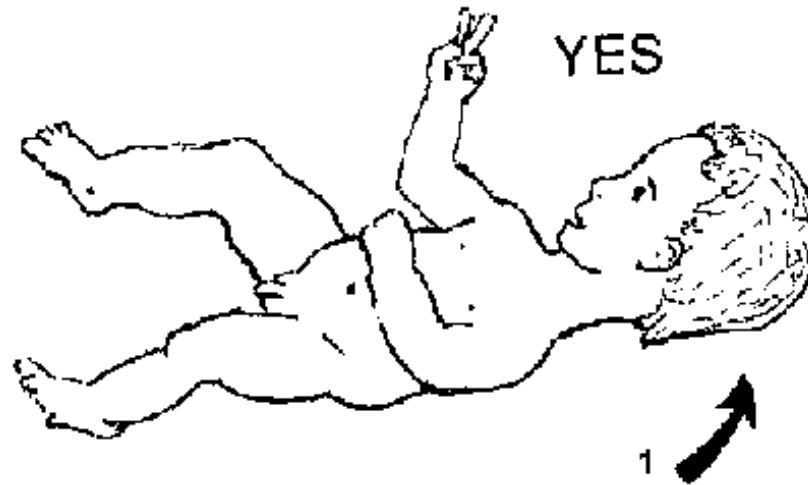
Fever

When a person's body temperature is too hot, we say he has a *fever*. Fever itself is not a sickness, but a sign of many different sicknesses. However, high fever can be dangerous, especially in a small child.

When a person has a fever:

1. Uncover him completely.

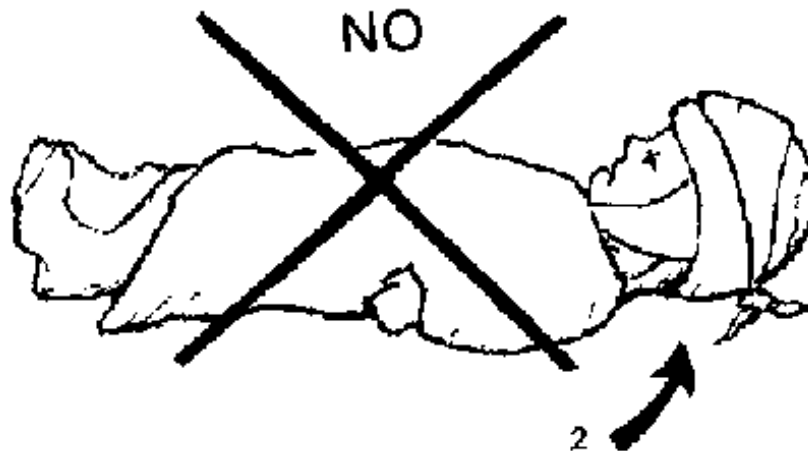
Small children should be undressed completely and left naked until the fever goes down.



Figure

This helps the fever go down. (1)

Never wrap the child in clothing or blankets.



Figure

This makes the fever go up. (2)

To wrap up a child with fever is dangerous

Do not wrap up a child with fever. It is dangerous.

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. For small children, it may be safer to give acetaminophen (paracetamol). Be careful not to give too much.

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 dangerous if it is not brought down soon. It can cause fits (convulsions) or even permanent brain damage (paralysis, mental slowness, epilepsy, etc.). High fever is most dangerous for small children.

When a fever goes very high (over 40°), it must be lowered at once:

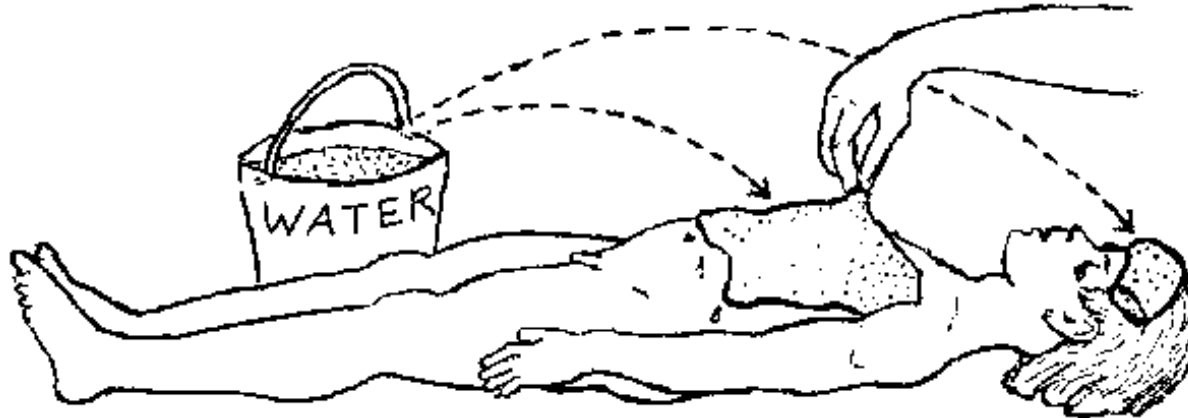
1. Put the person in a cool place.

2. Remove all clothing.

3. Fan him.

4. Pour cool (not cold) 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°).



Figure

5. Give him plenty of cool (not cold) water to drink.

6. Give a medicine to bring down fever. Aspirin or acetaminophen works well.

***Dosage* for aspirin or acetaminophen (using 300 mg. adult tablets):**

Persons over 12 years: 2 tablets every 4 hours

Children 6 to 12 years: 1 tablet every 4 hours

Children 3 to 6 years: 1/2 tablet every 4 hours

Children under 3 years: 1/4 tablet every 4 hours

***Note:* Acetaminophen is safer than aspirin for a child under 12 years old who has a cold, flu, or chickenpox.**

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, or if fits (convulsions) begin, continue cooling with water and seek medical help at once.

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.

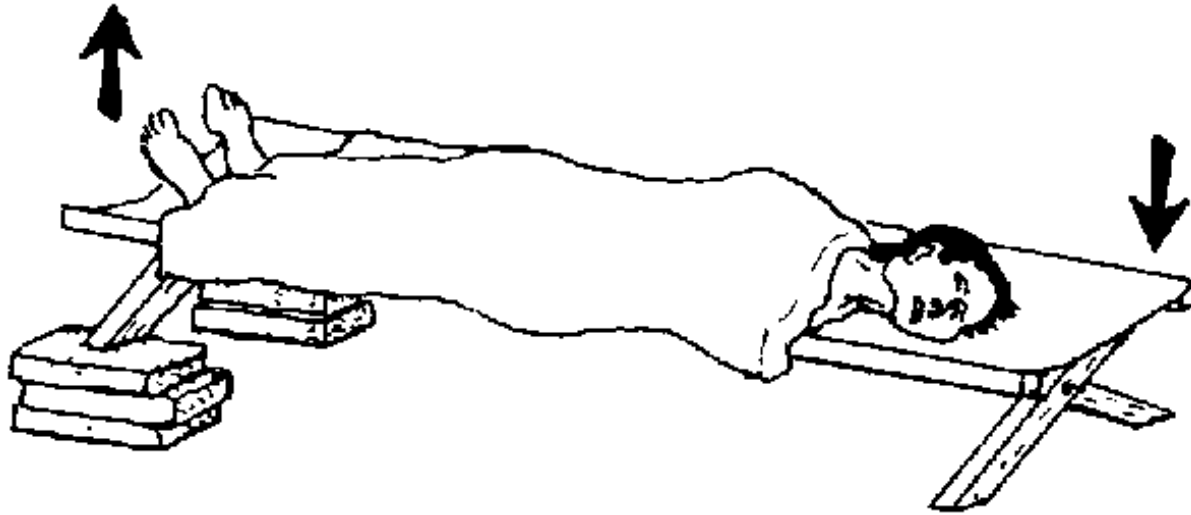
Signs of SHOCK:

- **weak, rapid pulse (more than 100 per minute)**
- **'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...

- **Have the person lie down with his feet a little higher than his head, like this:**



Figure

However, if he has a severe head injury, put him in a 'half-sitting' position.

- **Stop any bleeding.**
- **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.**
- **Treat his wounds, if he has any.**
- **If he is in pain, give him aspirin or another pain medicine - but not one with a *sedative* such as codeine.**
- **Keep calm and reassure the person.**

If the person is unconscious:

- **Lay him on his side with his head low, tilted back and to one side (see above). If he seems to be choking, pull his tongue forward with your finger.**
- **If he has vomited, clear his mouth immediately. Be sure his head is low, tilted back, and to one side so he does not breathe vomit into his lungs.**
- **Do not 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.**

Loss of Consciousness

Common causes of loss of consciousness are:

- **drunkenness**
- **a hit on the head (getting knocked out)**
- **shock**
- **fits**
- **poisoning**
- **fainting (from fright, weakness, etc.)**
- **heat stroke**
- **stroke**
- **heart attack**

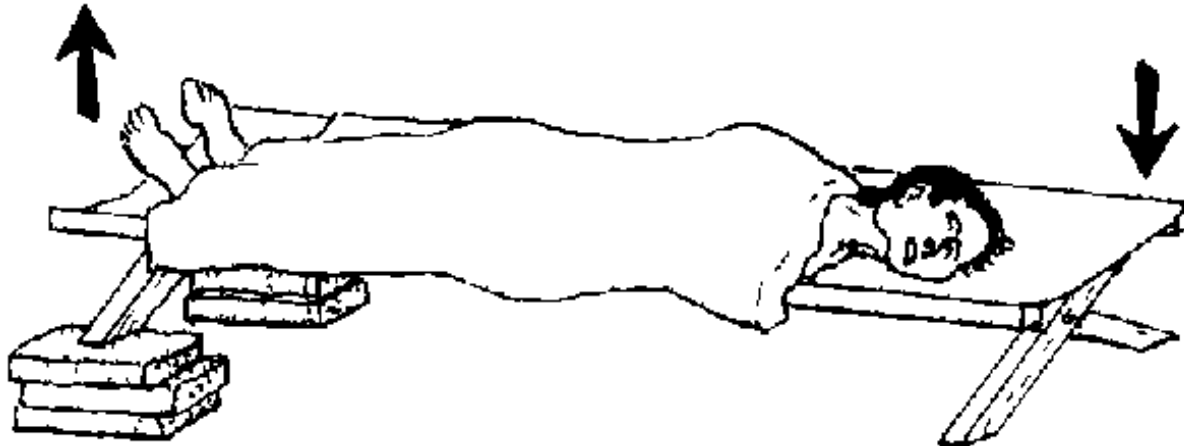


Figure

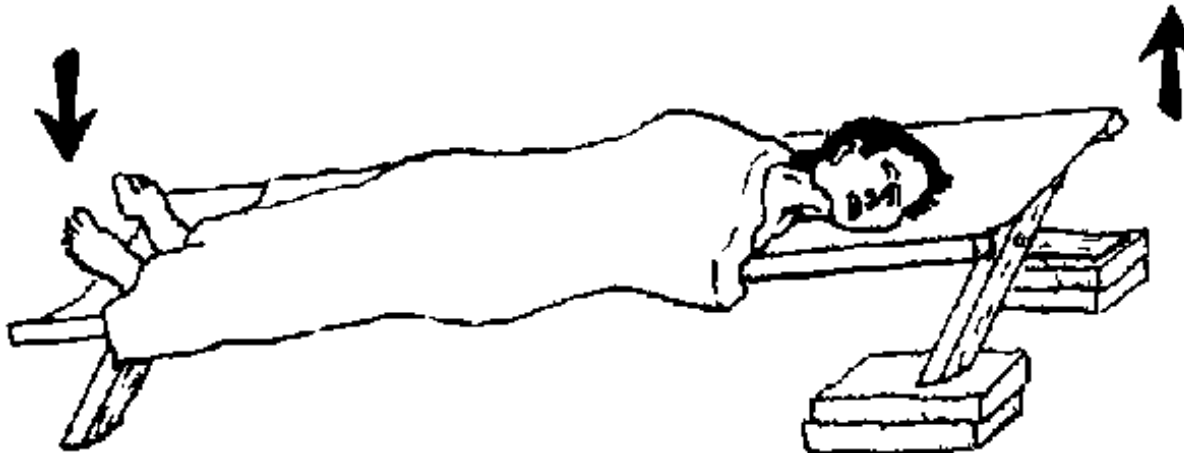
If a person is unconscious and you do not know why, immediately check each of the following:

- 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.**
- 2. Is he losing a lot of blood? If so, control the bleeding.**
- 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.**
- 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.**

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.

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.

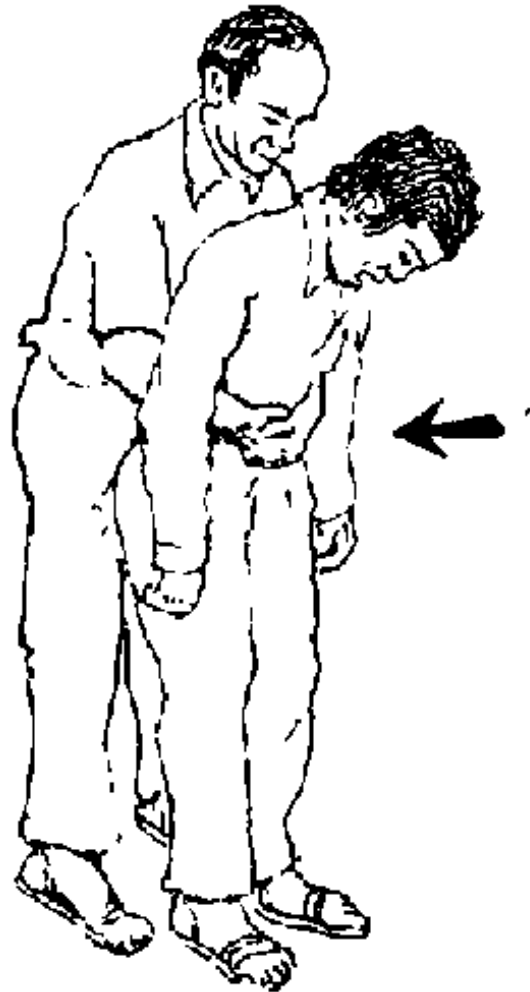
When Something Gets Stuck in the Throat



Choking

When food or something else sticks in a person's throat and he cannot breathe, quickly do this:

- **Stand behind him and wrap your arms around his waist, (1)**



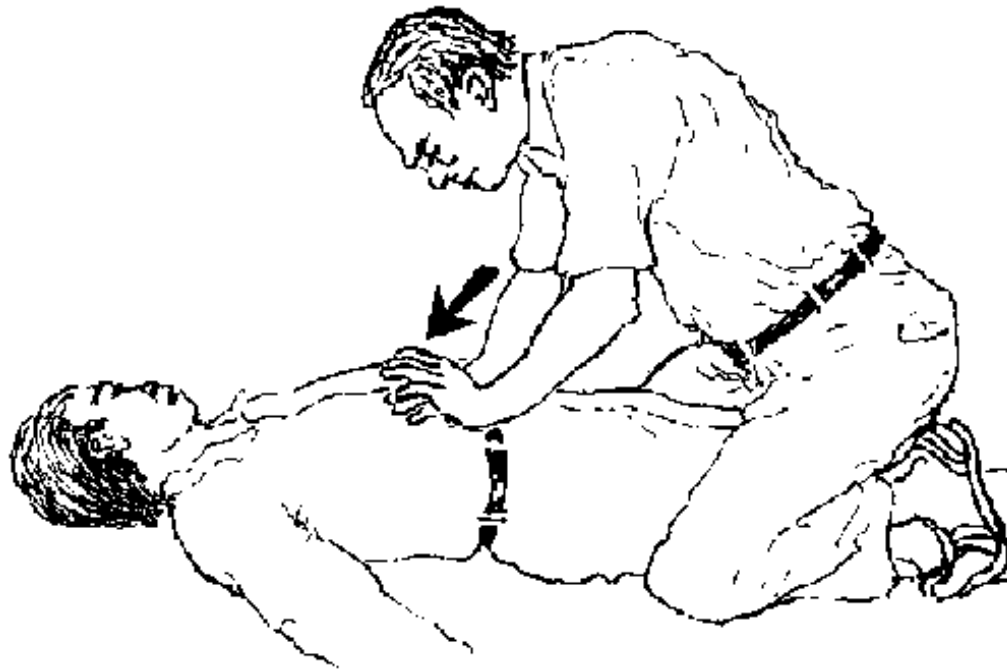
Figure

- **put your fist against his belly above the navel and below the ribs,**
- **and 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.

If the person is a lot bigger than you, or is already unconscious, quickly do this:

- **Lay him on his back.**
- **Tilt his head to one side.**
- **Sit over him like this, with the heel of your lower hand on his belly between his navel and ribs. (For fat persons, pregnant women, persons in wheelchairs, or small children, place hands on the chest, not the belly.)**
- **Make a quick, strong upward push.**
- **Repeat several times if necessary.**
- **If he still cannot breathe, try mouth-to-mouth breathing.**



Figure

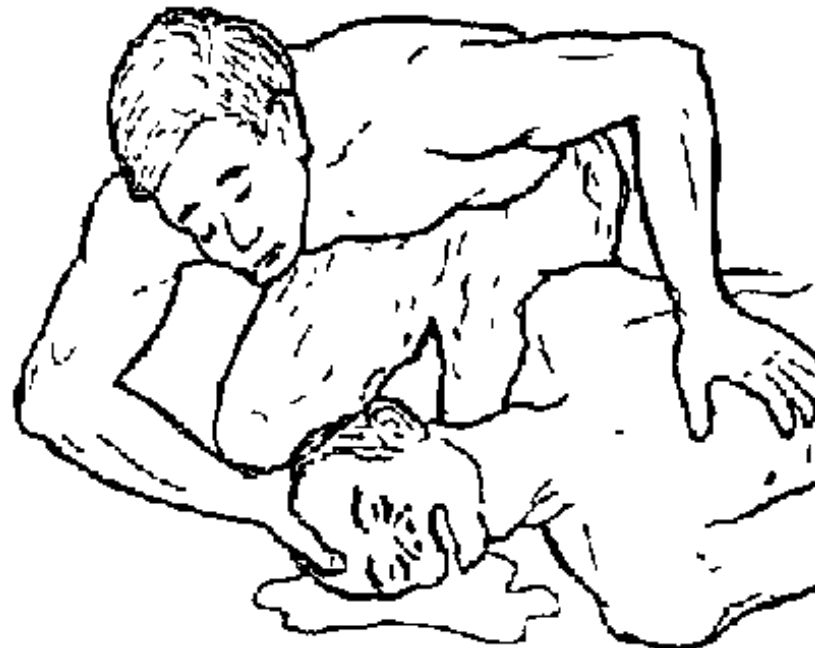
Drowning

A person who has stopped breathing has only 4 minutes to live! You must 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.

If you cannot blow air into his lungs, when you reach the shore, quickly put him on his side with his head lower than his feet and push his belly as described above. Then continue mouth-to-mouth breathing at once.

ALWAYS START MOUTH-TO-MOUTH BREATHING AT ONCE before trying to get water out of the drowning person's chest.



Figure

What to Do When Breathing Stops: Mouth-to-Mouth Breathing

Common causes for breathing to stop are:

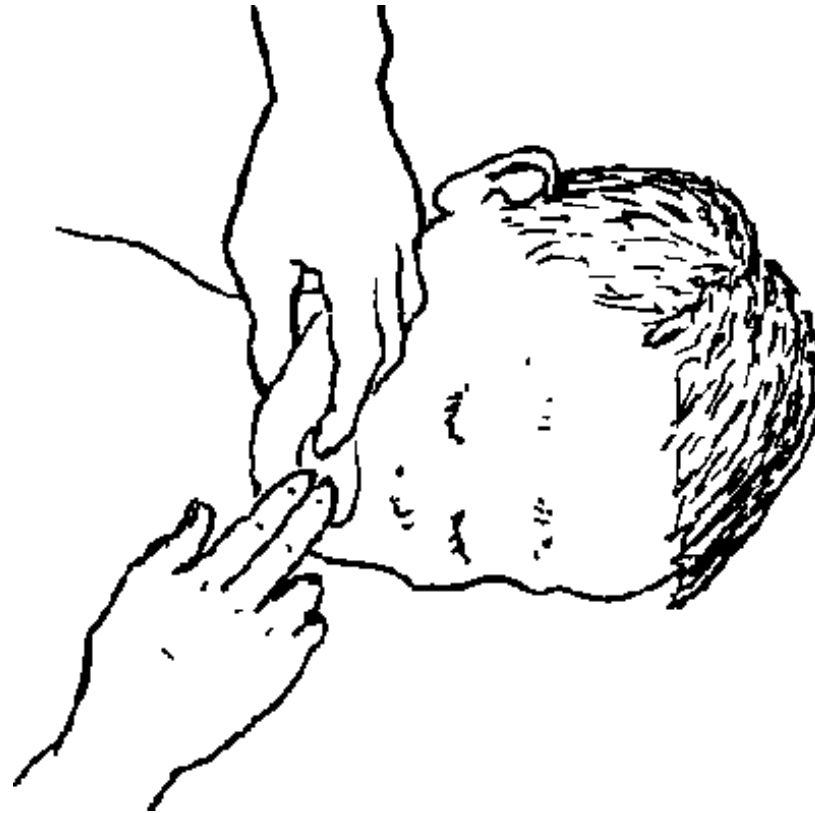
- something stuck in the throat
- the tongue or thick mucus blocking the throat of an unconscious person
- drowning, choking on smoke, or poisoning
- a strong blow to the head or chest
- a heart attack

A person can die within 4 minutes if he does not breathe.

If a person stops breathing, begin mouth-to-mouth breathing IMMEDIATELY.

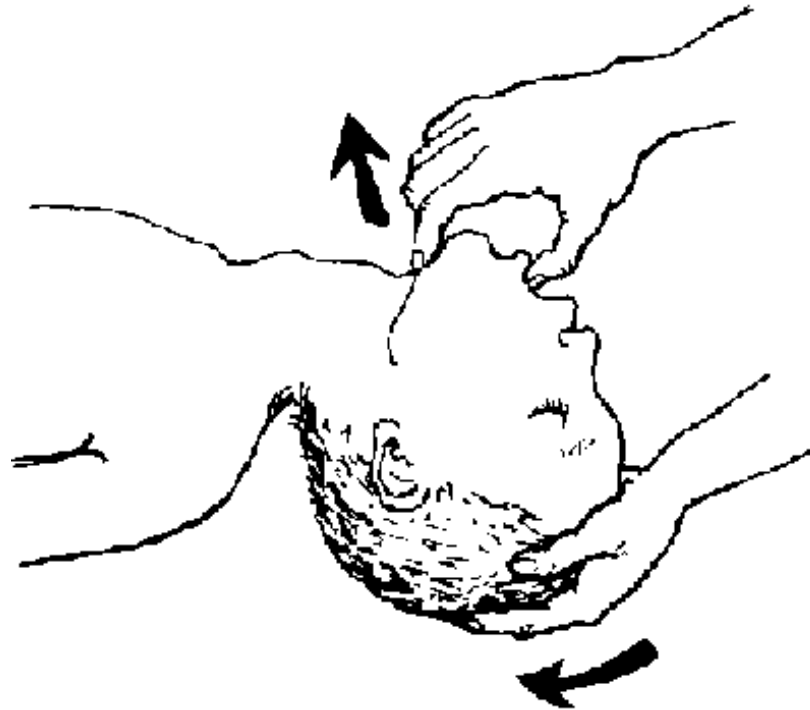
Do all of the following as quickly as you can:

Step 1: Quickly use a finger to remove anything stuck in the mouth or throat. Pull the tongue forward. If there is mucus in the throat, quickly try to clear it out.



Figure

Step 2: Quickly but gently lay the person face up. Gently tilt his head back, and pull his jaw forward.



Figure

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.



Figure

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.

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. 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.



Figure

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 is usually normal.

Treatment: Have the person lie down in a cool place, raise his feet, and rub his legs. Give salt water to drink: 1 teaspoon of salt in a liter of water. (Give nothing by mouth

while the person is unconscious.)

Heat Stroke

Heat stroke is not common, but is very dangerous. It occurs especially in older people and *alcoholics* during hot weather.

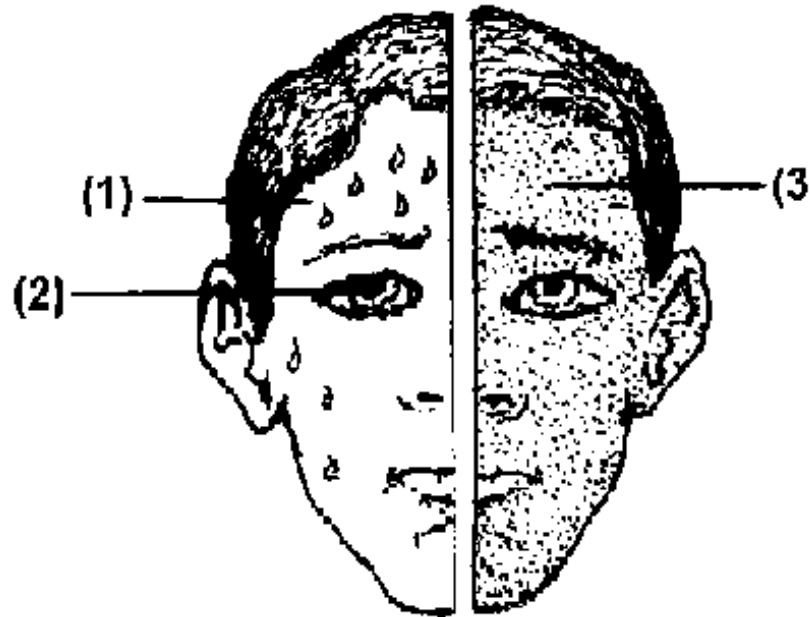
***Signs:* The skin is red, very hot, and dry. Not even the armpits are moist. The person has a very high fever, sometimes more than 42°C. Often he is unconscious.**

***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 'HEATSTROKE':

HEAT EXHAUSTION

- sweaty, pale, cool skin (1)
- large pupils (2)
- no fever
- weakness



HEAT STROKE

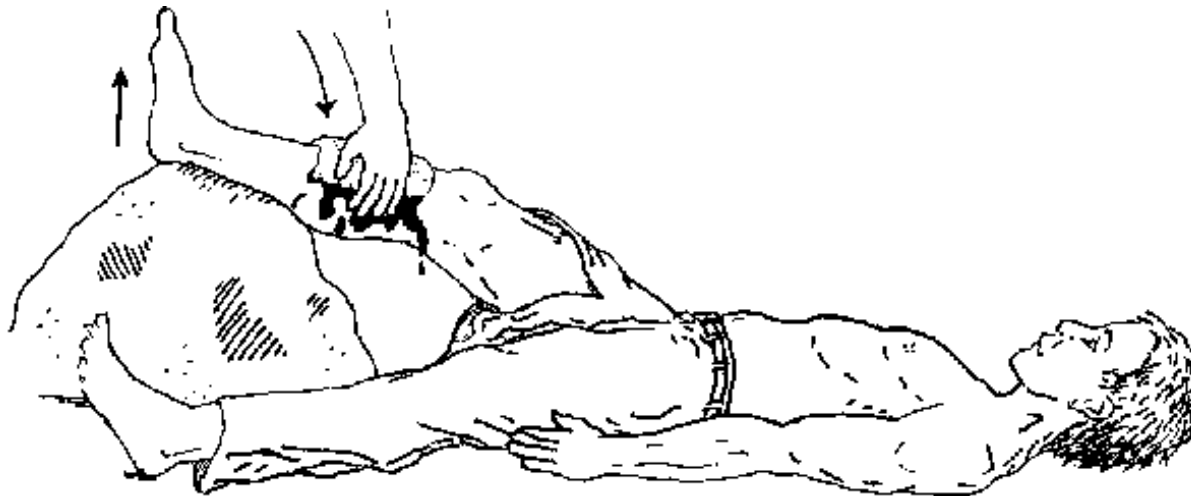
- dry, red, hot skin (3)
- high fever
- the person is very ill or unconscious

Figure

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 15 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.



Figure

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, and the person is in danger of bleeding to death, do the following:

- Keep pressing on the wound.
- Keep the wounded part as high as possible.

- **Tie the arm or leg as close to the wound as possible - between the wound and the body. Tighten by twisting the stick enough to control the bleeding.**
- **For the tie, use a folded cloth or a wide belt; never use thin rope, string, or wire.**



Figure

PRECAUTIONS:

- **Tie the limb only if bleeding is severe and cannot be controlled by pressing directly on the wound.**
- **Loosen the tie for a moment every half hour to see if it is still needed and to let the blood circulate. Leaving it too long may damage the arm or leg so much it must be cut off.**
- **Never use dirt, kerosene, lime, or coffee to stop bleeding.**
- **If bleeding or injury is severe, raise the feet and lower the head to prevent shock.**

How to Stop Nosebleeds

- 1. Sit quietly.**
- 2. Blow the nose gently to remove mucus and blood.**
- 3. Pinch the nose firmly for 10 minutes or until the bleeding has stopped.**



Figure

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 hydrogen peroxide, *Vaseline*, carbon cactus juice, or lidocaine with epinephrine.



Figure

Then pinch the nose firmly again. Do not let go for 10 minutes or more. Do not tip the head back.



Figure

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.)



Figure

Prevention:

If a person's nose bleeds often, smear a little *Vaseline* inside the nostrils twice a day. Or sniff water with a little salt in it.

Eating oranges, tomatoes, and other fruits may help to strengthen the veins so that the nose bleeds less.

Cuts, Scrapes, and Small Wounds

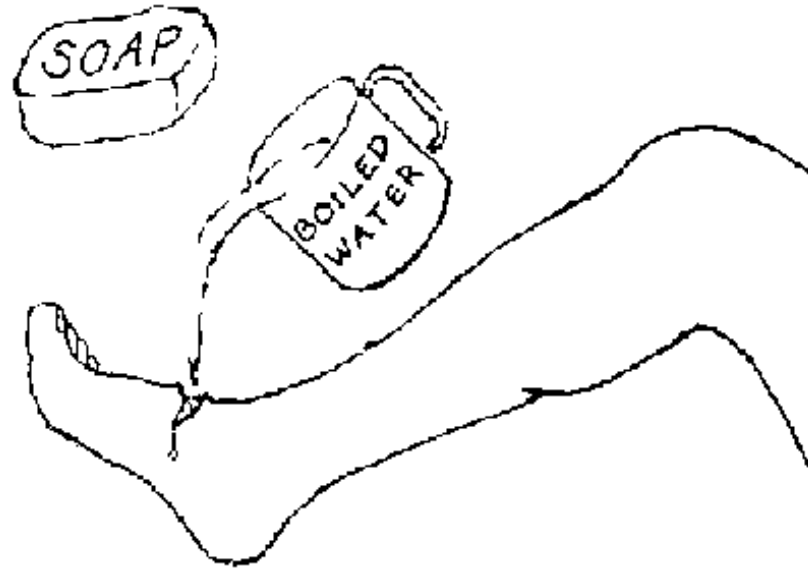
Cleanliness is of first importance in preventing infection and helping wounds to heal.

To treat a wound...

First, wash your hands very well with soap and water.

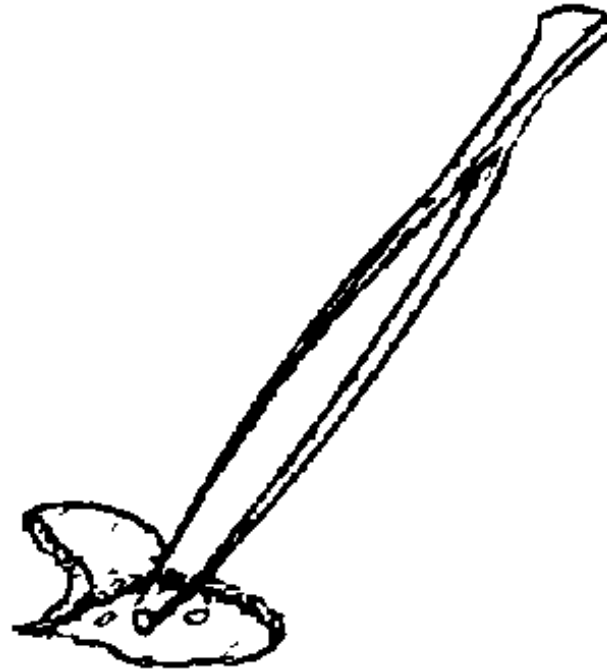
Then wash the skin around the wound with soap and cool, boiled water.

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).



Figure

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.



Figure

If possible, squirt out the wound with boiled water in a syringe or suction bulb.

Any bit of dirt that is left in a wound can cause an infection.



Figure

After the wound has been cleaned, 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.

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.

Large Cuts: How to Close Them

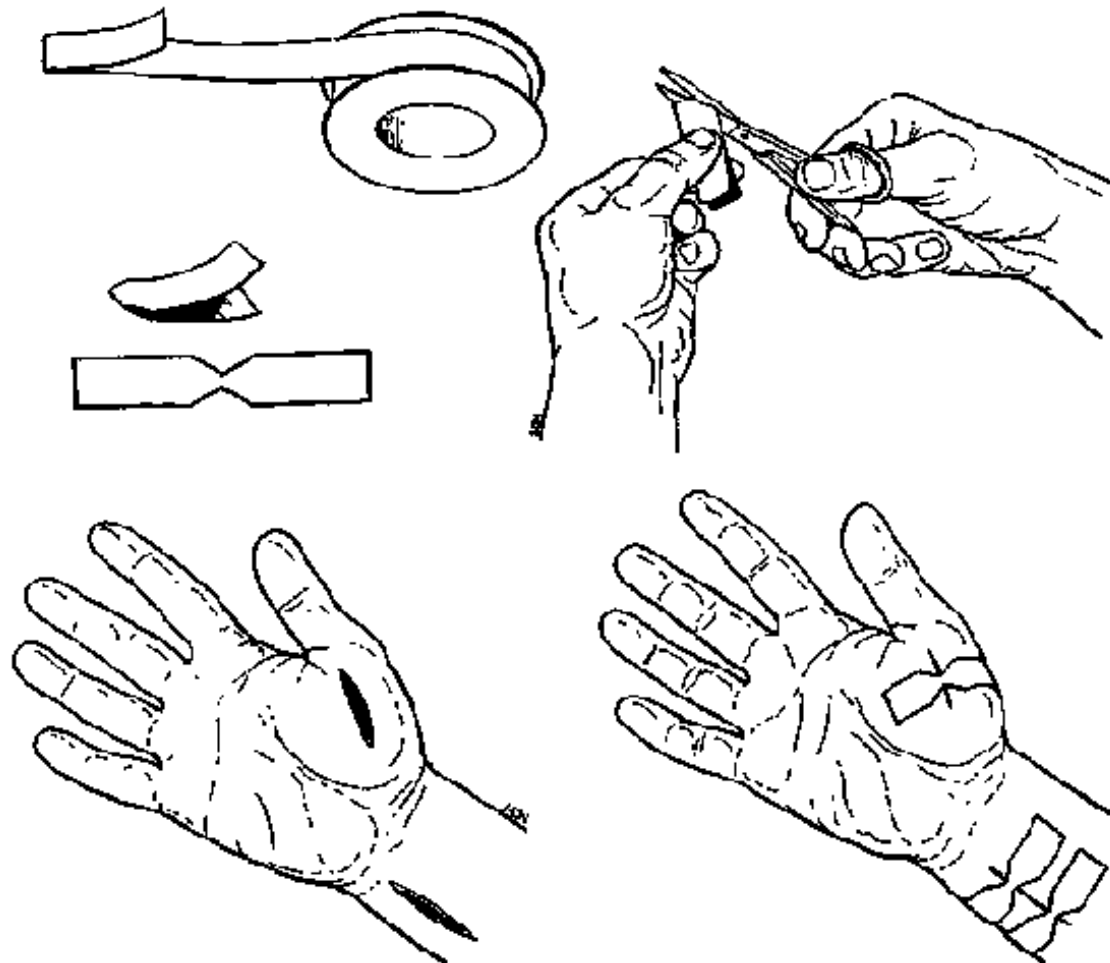
A recent cut that is very clean will heal faster if you bring the edges together so the cut stays closed.

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

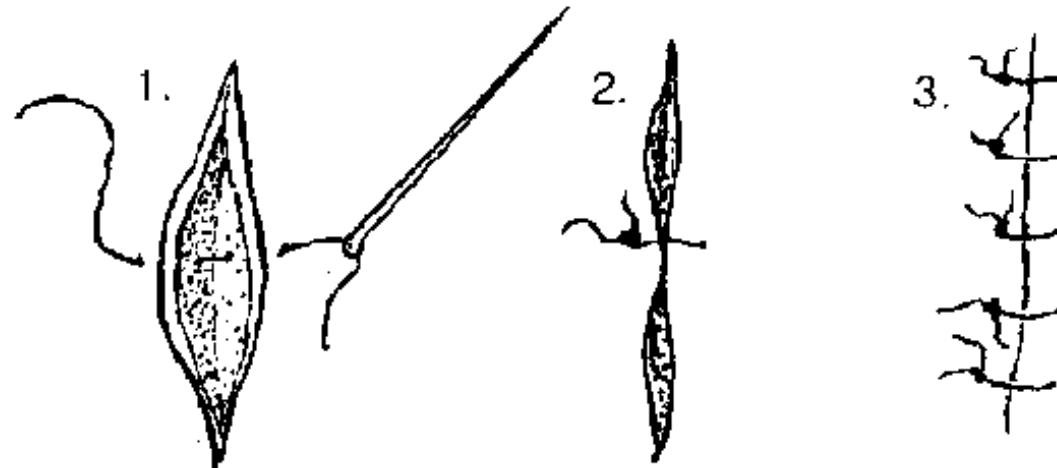
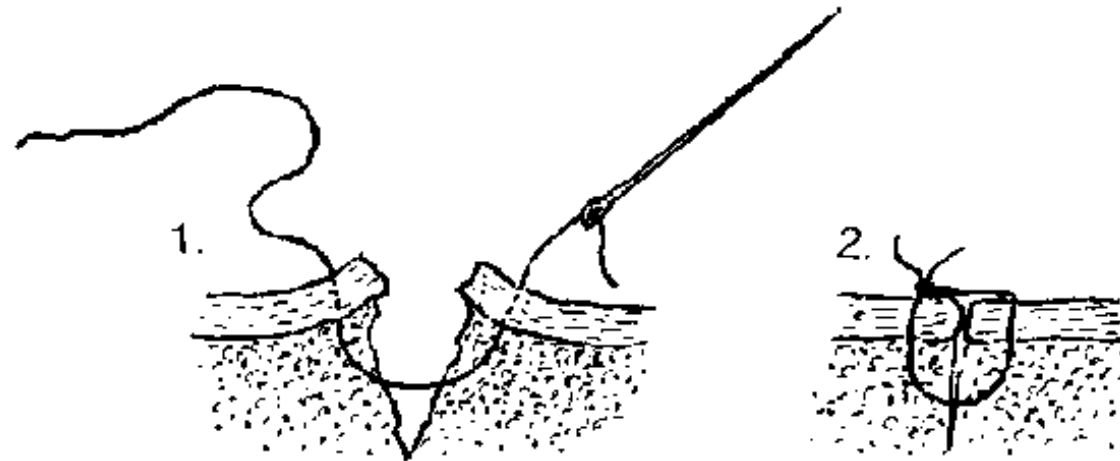
STITCHES OR SUTURES WITH THREAD

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:

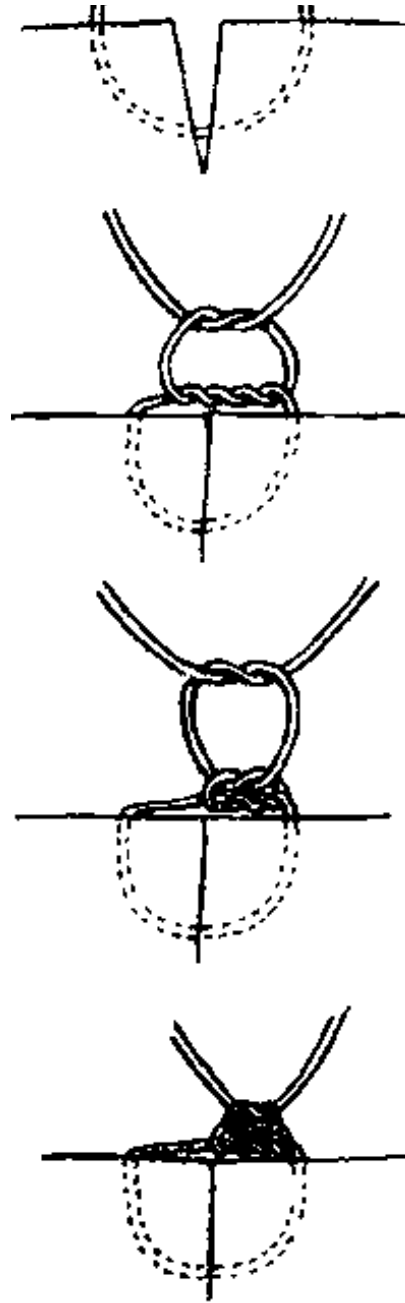
- **Boil a sewing needle and a thin thread (nylon or silk is best) for 20 minutes.**

- **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:**



Figure





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.

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.

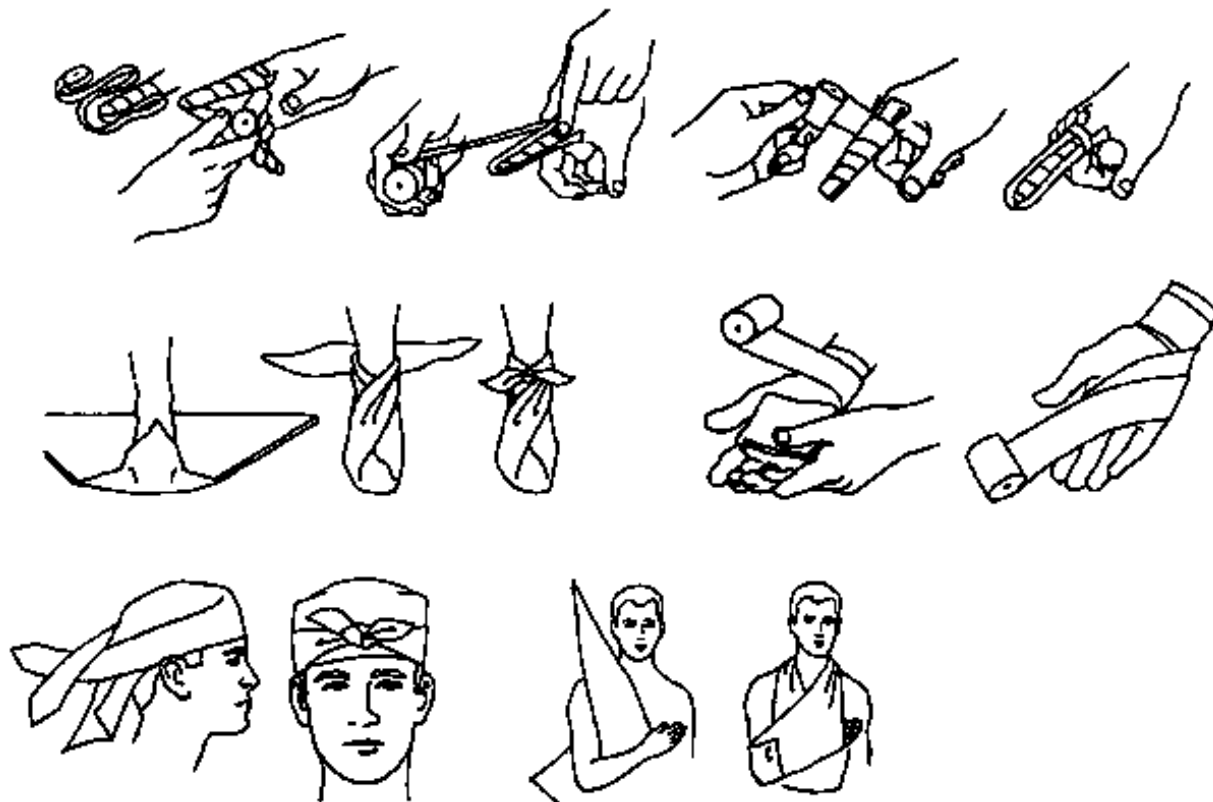
Make sure the wound has first been cleaned. If possible, cover the wound with a sterile gauze pad before-bandaging. These pads are often sold in sealed envelopes in pharmacies.

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.

It is better to have no bandage at all than one that is dirty or wet.!

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.



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.

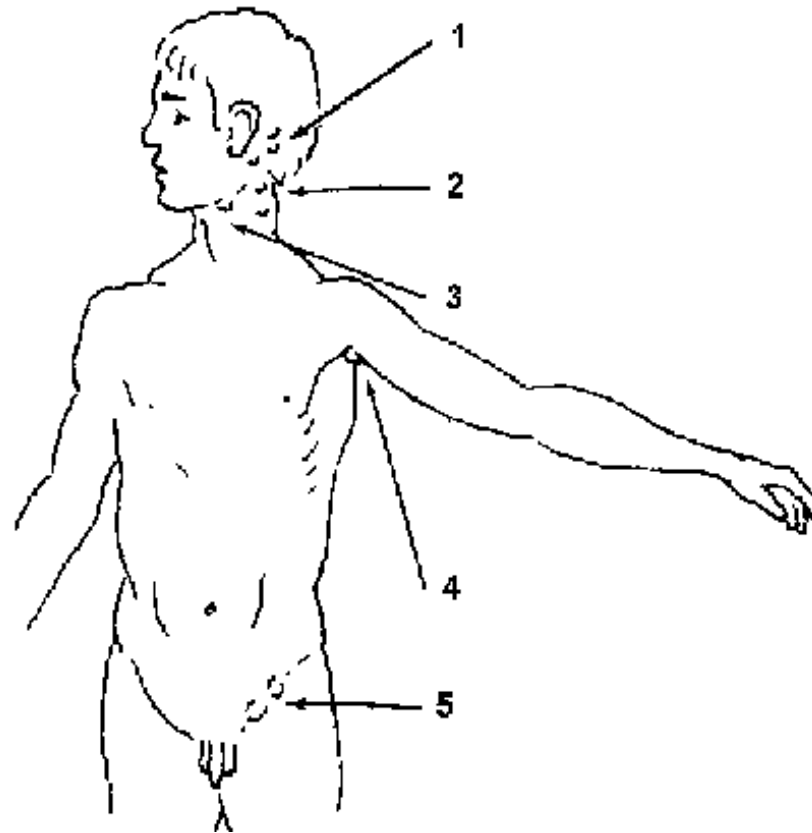
Infected Wounds: How to Recognize and Treat Them

A wound is infected if:

- **it becomes red, swollen, hot, and painful,**
- **it has pus,**
- **or if it begins to smell bad.**

The infection is spreading to other parts of the body if:

- **it causes fever,**
- **there is a red line above the wound,**
- **or if the lymph nodes become swollen and tender. Lymph nodes - often called 'glands' - are little traps for germs that form small lumps under the skin when they get infected.**



Figure

Swollen lymph nodes behind the ear are a sign of an infection on the head or scalp, often caused by scores of lice. Or German measles may be the cause. (1)

Swollen nodes below the ear and on the neck indicate infections of the ear, face, or head (or tuberculosis). (2)

Swollen nodes below the jaw indicate infections of the teeth or throat. (3)

Swollen nodes in the armpit indicate an infection of the arm, head, or breast (or sometimes breast cancer). (4)

Swollen nodes in the groin indicate an infection of the leg, foot, genitals, or anus. (5)

Treatment of infected wounds:

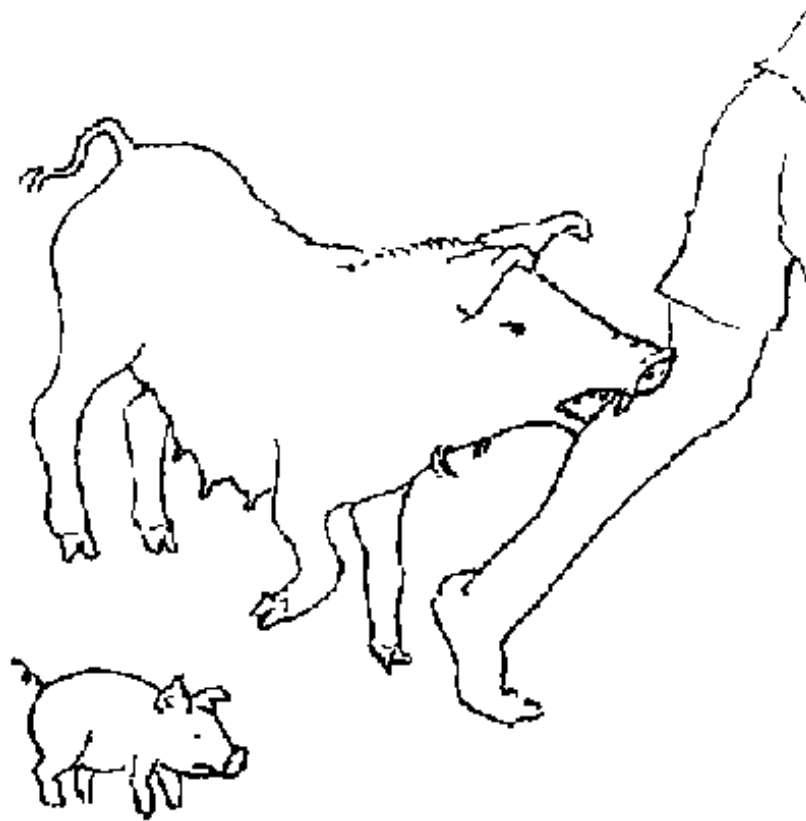
- **Put hot compresses over the wound for 20 minutes 4 times a day. Or hold an infected hand or foot in a bucket of hot water.**
- **Keep the infected part at rest and elevated (raised above the level of the heart).**
- **If the infection is severe or if the person has not been vaccinated against tetanus, use an antibiotic like penicillin.**

***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.**

WOUNDS THAT ARE LIKELY TO BECOME DANGEROUSLY INFECTED

These wounds are most likely to become dangerously infected:

- **dirty wounds, or wounds made with dirty objects**
- **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**



Figure

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, if it is a bite, or if there is a chance that it still has dirt in it, use an antibiotic. The best is penicillin. If you do not have penicillin, use ampicillin, erythromycin, tetracycline, co-trimoxazole, or a sulfa. For dosages, see the GREEN PAGES.**

3. 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 vaccinated against tetanus should use penicillin or ampicillin immediately after receiving a wound of this type, even if the injury is small.

If the wound of this type is very severe, a person who has not been vaccinated against tetanus should take large doses of penicillin or ampicillin for a week or more. An antitoxin for tetanus should also be considered - but be sure to take precautions if using tetanus antitoxin made from horse serum.

Bullet, Knife, and Other Serious Wounds



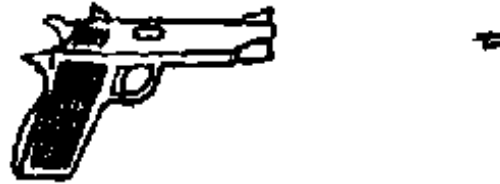
Figure

***Danger of infection:* Any deep bullet or knife wound runs a high risk of dangerous infection. For this reason an antibiotic, preferably penicillin or ampicillin should be used at once.**

Persons who have not been vaccinated against tetanus should, if possible, be given an injection of an antitoxin for tetanus, and also be vaccinated against tetanus.

If possible, seek medical help.

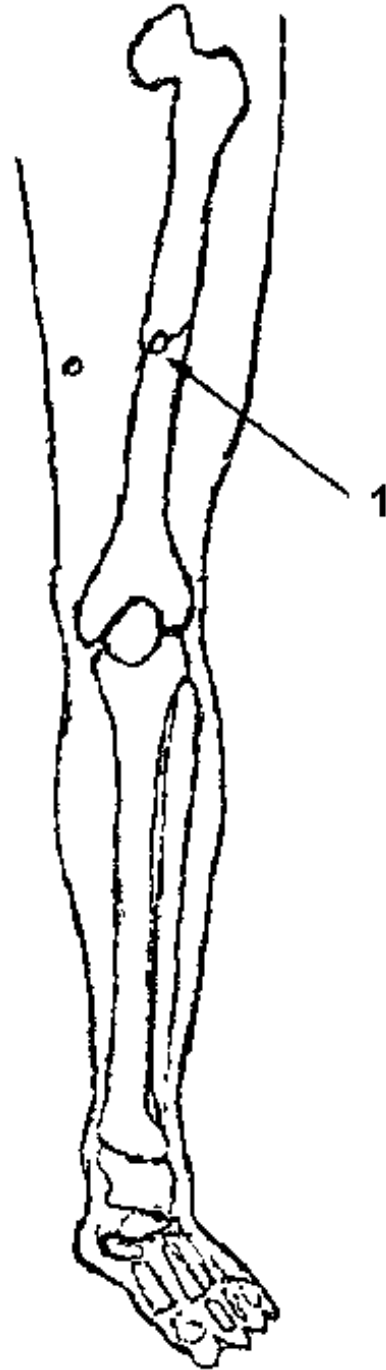
Bullet Wounds in the Arms or Legs



Figure

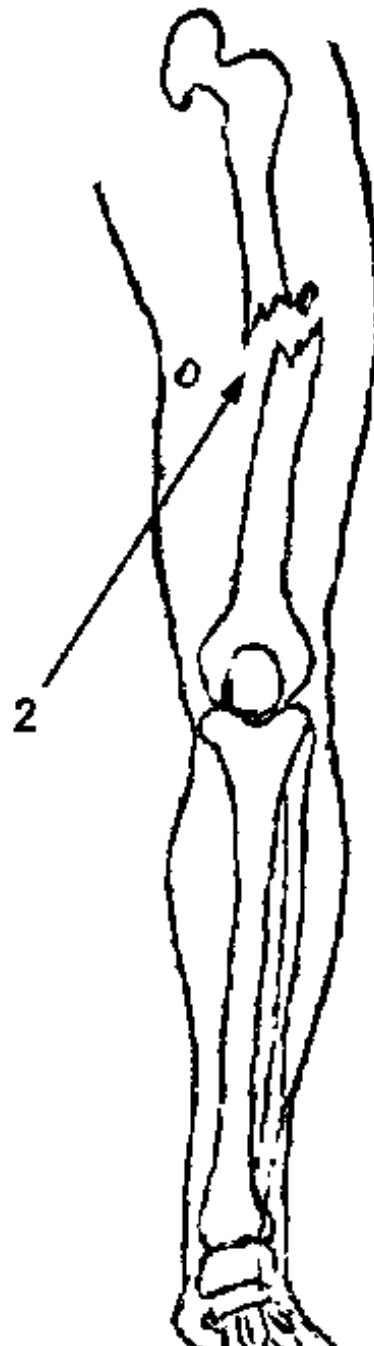
- **If the wound is bleeding a lot, control the bleeding.**
- **If the bleeding is not serious, let the wound bleed for a short while. This will help clean it out.**
- **Wash the wound with cool, boiled water and apply a clean bandage. In the case of a gunshot wound, wash the surface (outside) only. It is usually better not to poke anything into the hole.**
- **Give antibiotics.**

CAUTION:



Figure

If there is any possibility that the bullet has hit a bone, the bone may be broken. (1)

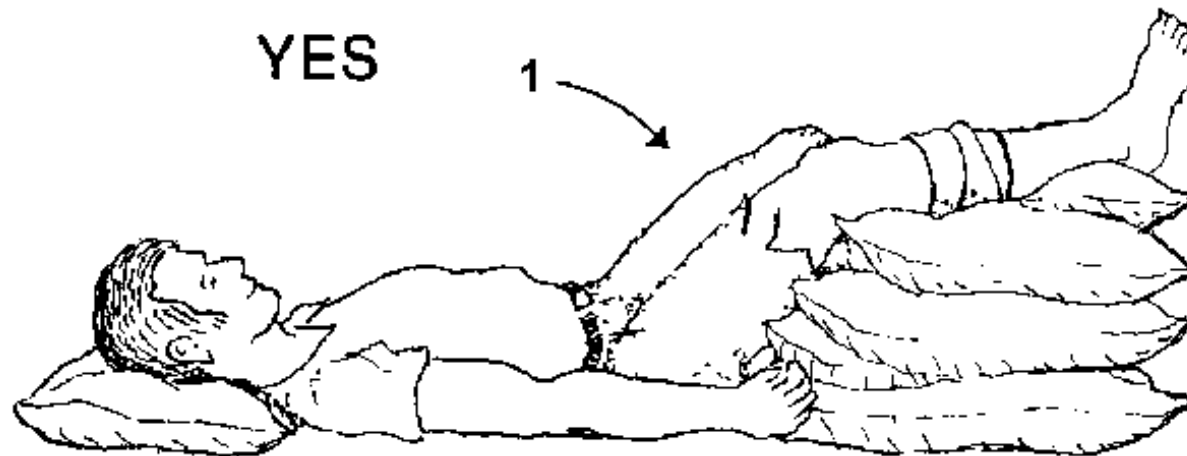


**Figure**

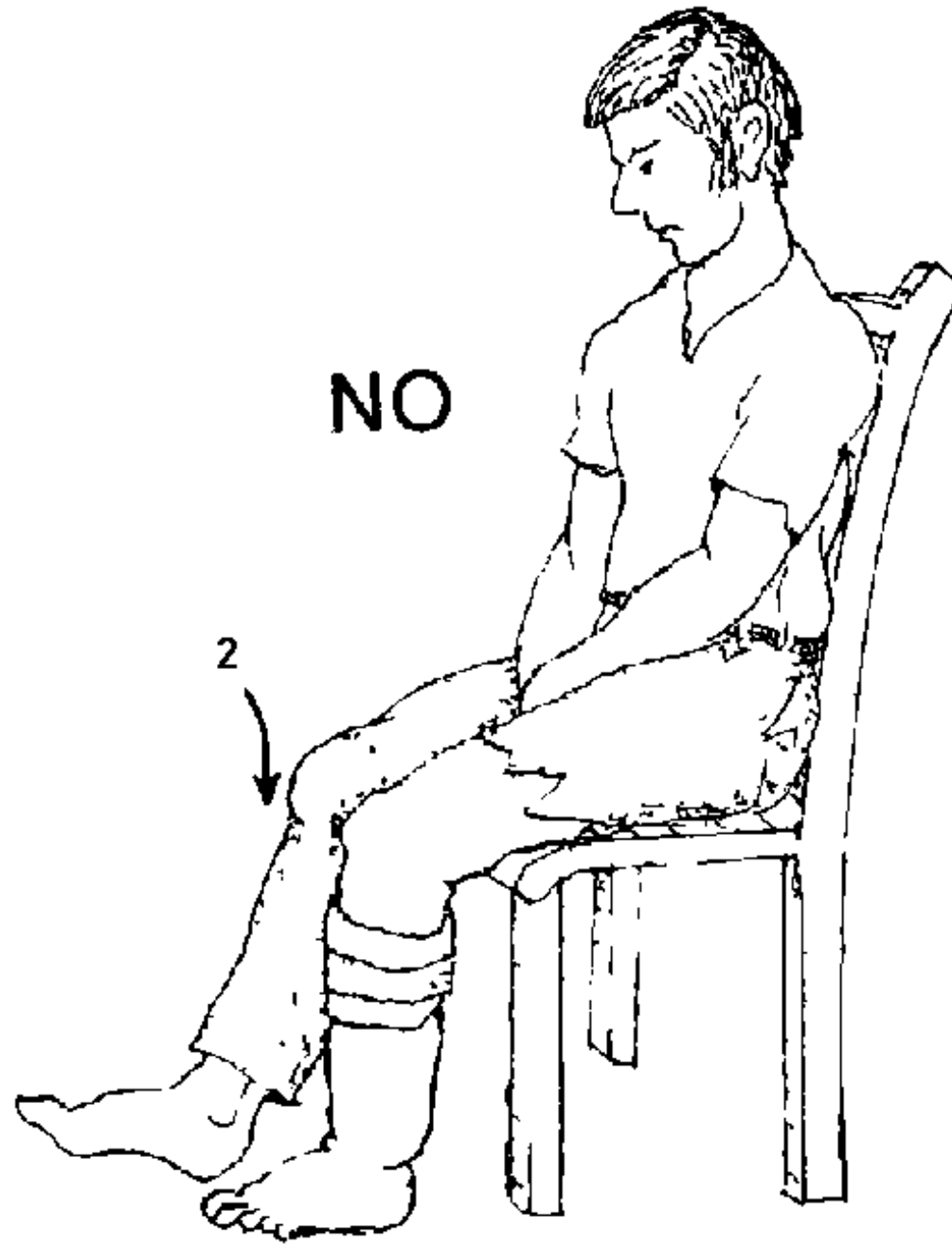
Using or putting weight on the wounded limb (standing, for example) might cause a more serious break, like this: (2)

If a break is suspected, it is best to splint the limb and not to use it for several weeks.

When the wound is serious, raise the wounded part a little higher than the heart and keep the injured person completely still.

**Figure**

This way the wound will heal faster and is less likely to become infected. (1)



Figure

Walking on an injured leg or sitting with the leg hanging down will slow healing and encourage infection. (2)



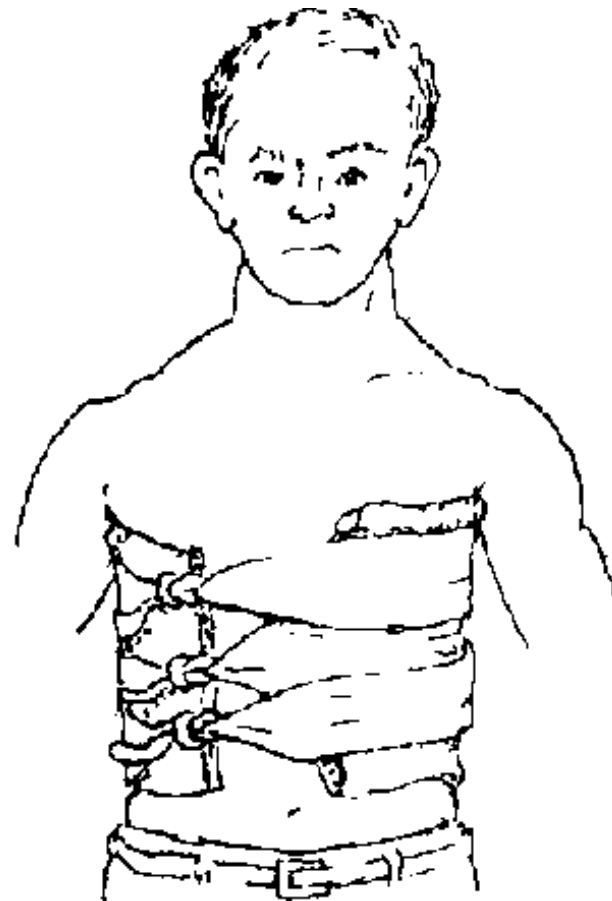
Figure

Make a sling like this to support an arm with a gunshot wound or other serious injury. (3)

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.)**



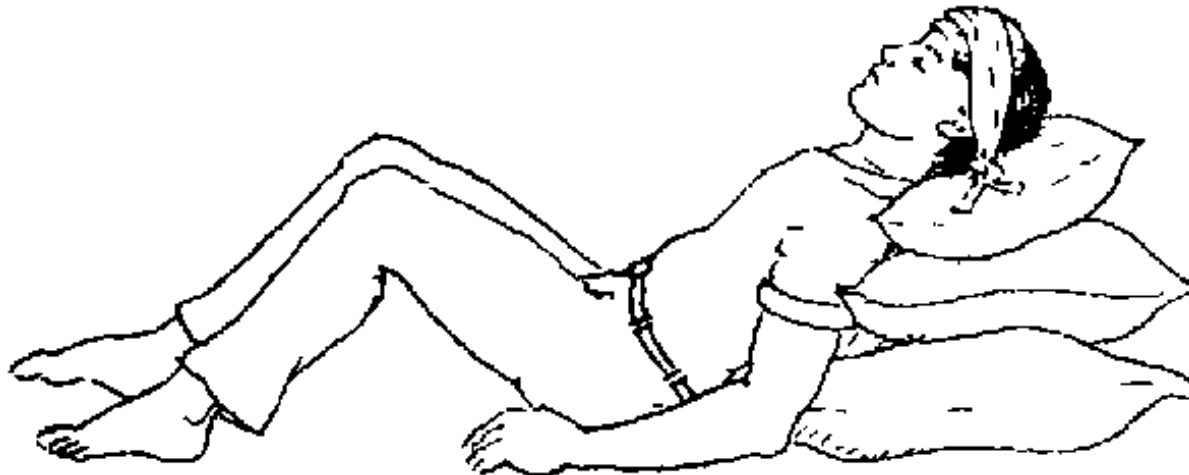
Figure

- **Put the injured person in the position in which he feels most comfortable.**
- **If there are signs of shock, give proper treatment.**

- **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.**



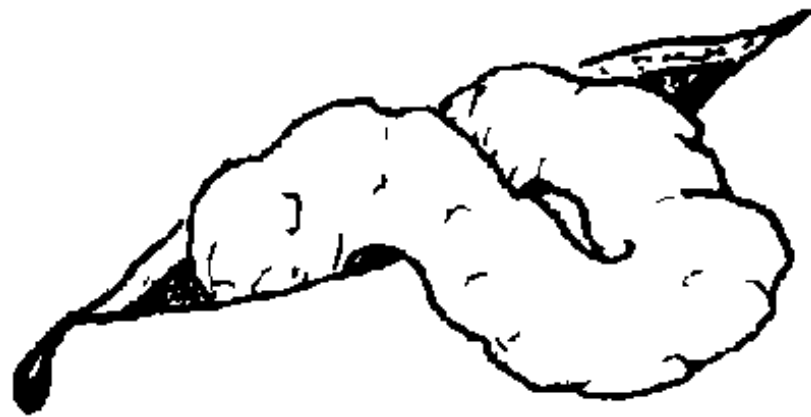
Figure

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.



Figure

If the wounded person is in shock, raise his feet higher than his head.



Figure

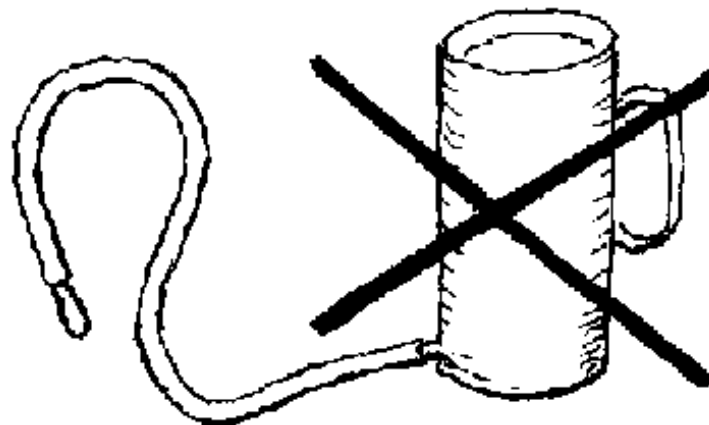
Give absolutely nothing by mouth: no food, no drink, not even water - unless it will take more than 2 days to get to a health center. Then give water only, in small sips.



Figure

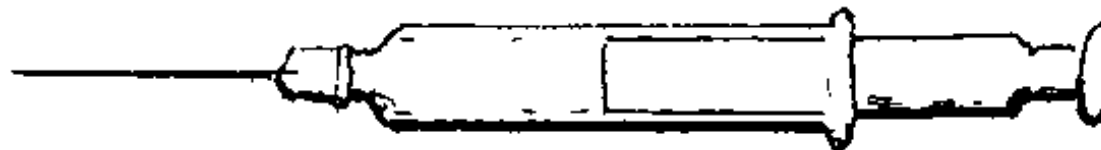
If the wounded person is awake and thirsty, let him suck on a piece of cloth soaked in water.

Never give an enema, even if the stomach 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.



Figure

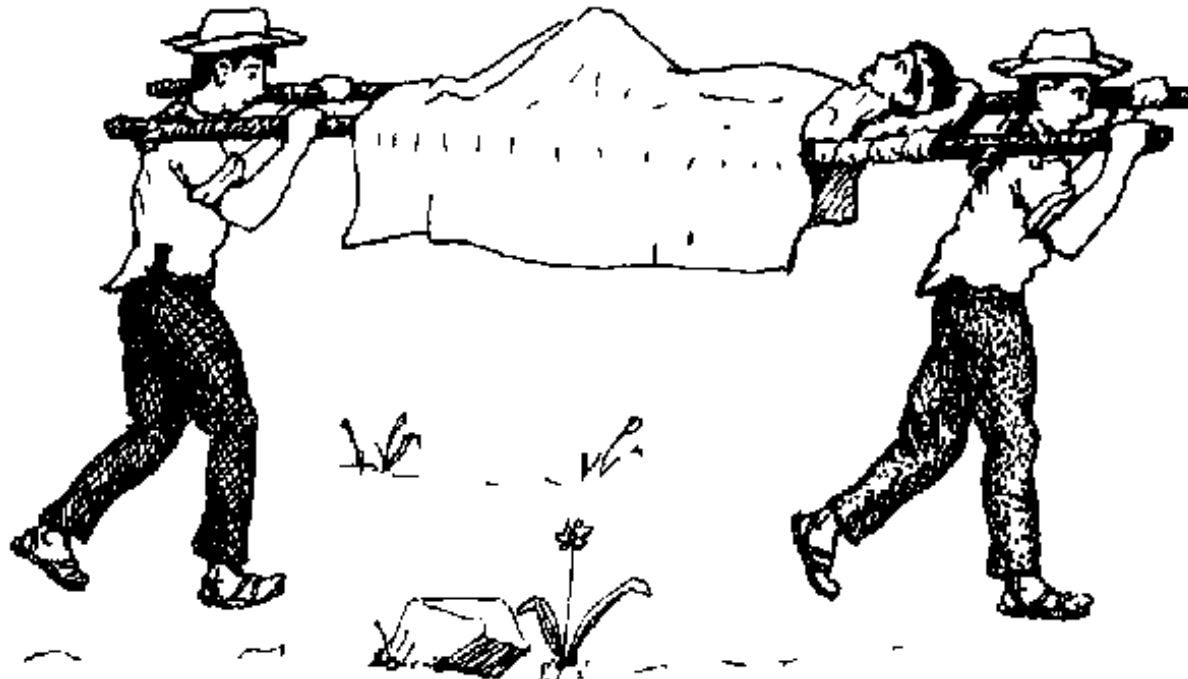
Inject antibiotics (see the following page for instructions).



Figure

DO NOT WAIT FOR A HEALTH WORKER.

IMMEDIATELY TAKE THE INJURED PERSON TO THE CLOSEST HEALTH CENTER OR HOSPITAL. He will need an operation.



Figure

MEDICINE FOR A WOUND THAT GOES INTO THE GUT
(Also for appendicitis or peritonitis)

Until you can get medical help, do the following:

Inject ampicillin, 1 gm. (four 250 mg. ampules) every 4 hours.

If there is no ampicillin:

Inject penicillin (crystalline, if possible), 5 million units immediately; after that, 1 million units every 4 hours.

Together with the penicillin, give an injection of either: streptomycin, 2 ml. (1 gm.), 2 times a day or chloramphenicol, 2 ampules of 250 mg. every 4 hours.

If you cannot obtain these antibiotics in injectable form, give ampicillin or penicillin by mouth together with chloramphenicol or tetracycline, 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. In women, pelvic inflammatory disease, or an out-of-place pregnancy can also cause an acute abdomen. Often the exact cause of acute abdomen will 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

LESS SERIOUS ILLNESS:

Probably can be treated in the home or health center

- pain that comes and goes (cramps)

getting worse

- constipation and vomiting
- belly swollen, hard, person protects it
- severely ill

• moderate or severe diarrhea

- sometimes signs of an infection, perhaps a cold or sore throat
- he 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.

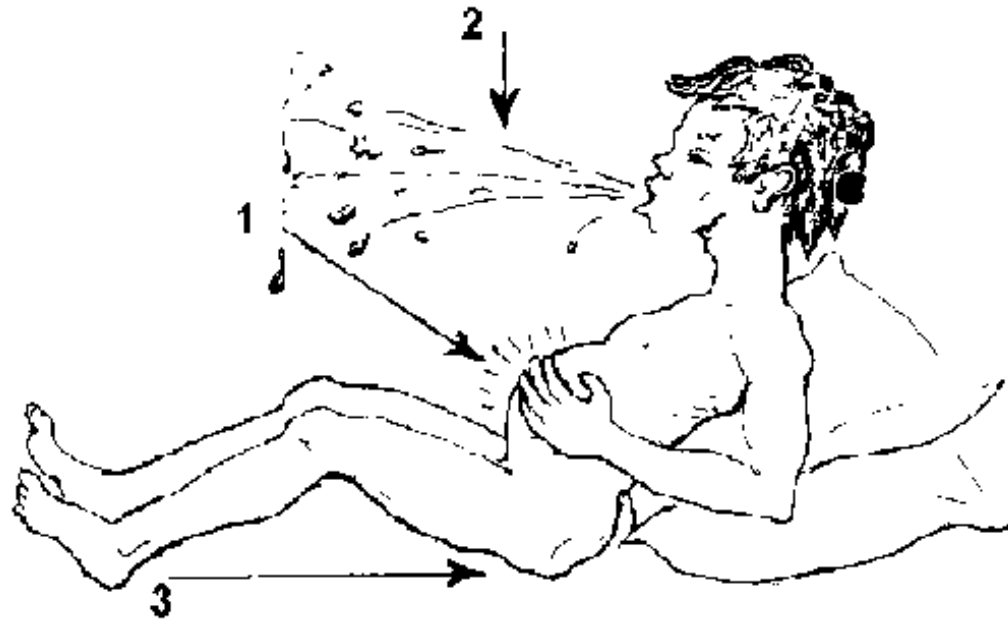
Obstructed Gut

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)**
- **a loop of gut that is pinched in a hernia**
- **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:



Figure

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 normal gurgles.) (1)

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. (2)

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. (3)

Get this person to a hospital as fast as possible. His life is in danger and surgery may

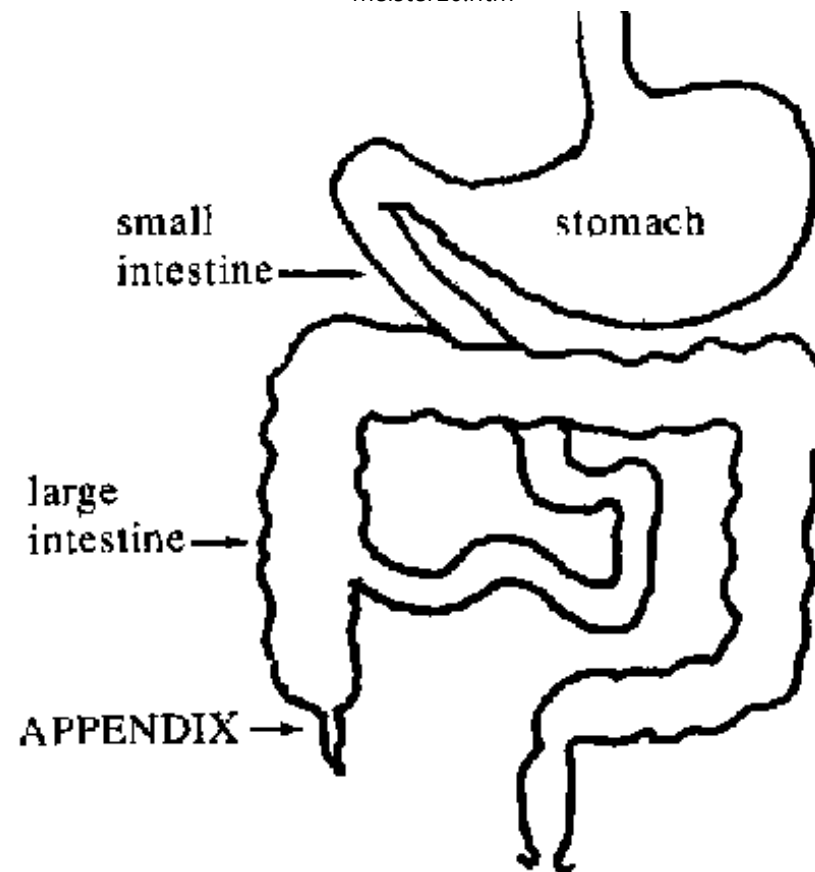
be needed.

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*.

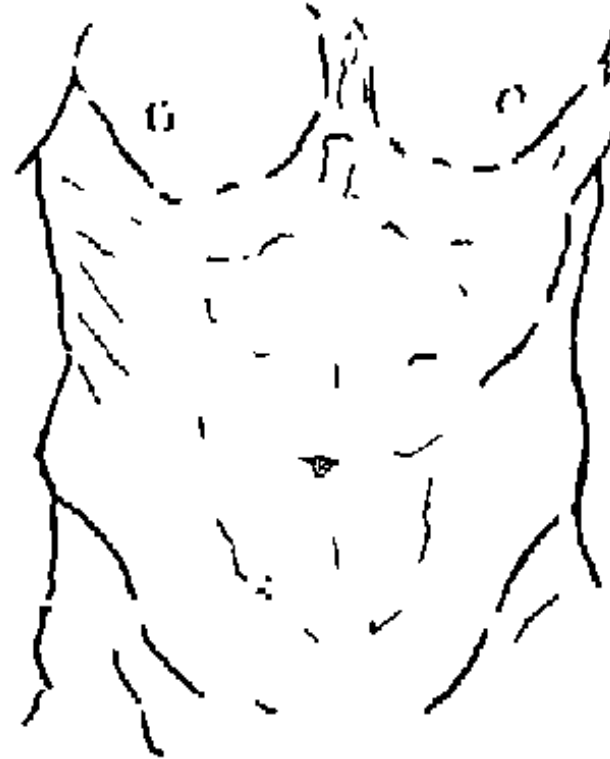
Peritonitis is an acute, serious infection of the lining of the cavity or bag that holds the gut. It results when the appendix or another part of the gut bursts or is torn.



Figure

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 ('bellybutton'), but it soon moves to the lower right side.**
- **There may be loss of appetite, vomiting, constipation, or a mild fever.**

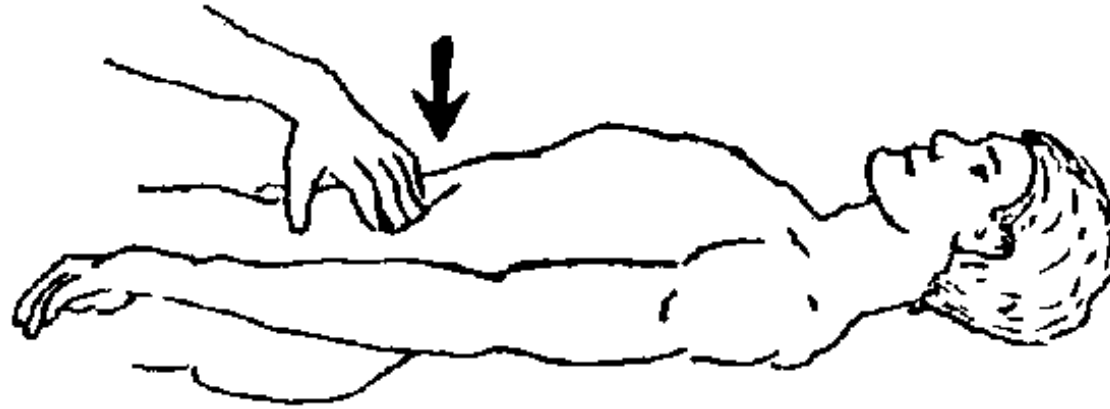


Figure

TESTS FOR APPENDICITIS OR PERITONITIS:

Have the person cough and see if this causes sharp pain in the belly.

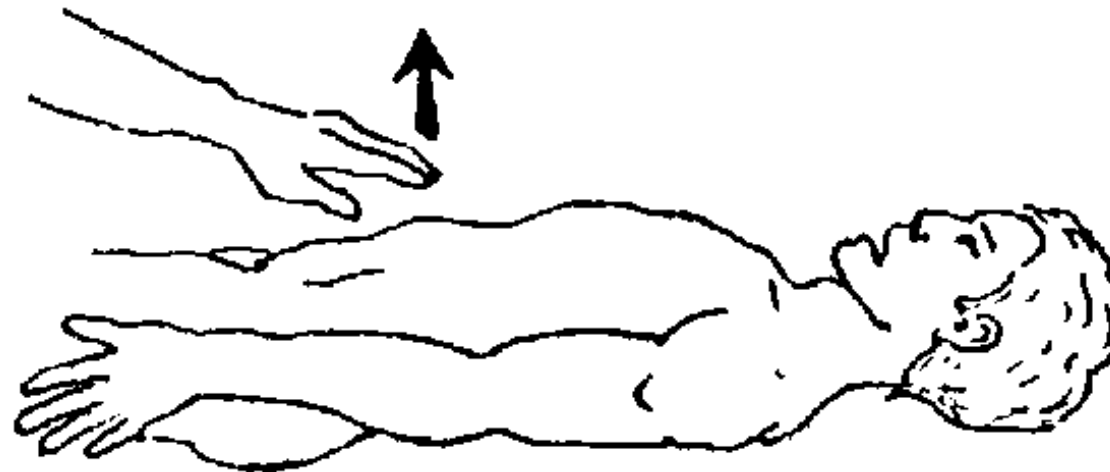
Or, slowly but forcefully, press on the abdomen a little above the left groin until it hurts a little.



Figure

Then quickly remove the hand.

If a very sharp pain (*rebound pain*) occurs when the hand is removed, appendicitis or peritonitis is likely.



Figure

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.**



Figure

- **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 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 box: "MEDICINE FOR A WOUND THAT GOES INTO THE GUT (Also for appendicitis or peritonitis)"

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.**
- **Turn handles of pans on the stove so children cannot reach them.**



Figure

Minor Burns that Do Not Form Blisters (1st degree)

To help ease the pain and lessen the damage caused by a minor burn, put the burned part in cold water at once. No other treatment is needed. Take aspirin for pain.

Burns that Cause Blisters (2nd degree)

Do not break blisters.

If the blisters are broken, wash gently with soap and boiled water that has been cooled. Sterilize a little *Vaseline* by heating it until it boils and spread it on a piece of sterile gauze. Then put the gauze on the burn.

If there is no *Vaseline*, leave the burn uncovered. Never smear on grease or butter.

It is very important to keep the burn as clean as possible. Protect it from dirt, dust, and flies.

If signs of infection appear - pus, bad smell, fever, or swollen lymph nodes - apply compresses of warm salt water (1 teaspoon salt to 1 liter water) 3 times a day. (If possible, add 2 tablespoons of bleach to the salt water.) Boil both the water and cloth before use. With great care, remove the dead skin and flesh. You can spread on a little antibiotic ointment such as *Neosporin*. In severe cases, consider taking an antibiotic such as penicillin or ampicillin.

Deep Burns (3rd degree) that destroy the skin and expose raw or charred flesh are always serious, as are any burns that cover large areas of the body. Take the person to a health center at once. In the meantime wrap the burned part with a very clean cloth or towel.

If it is impossible to get medical help, treat the burn as described above. If you do not have *Vaseline*, leave the burn in the open air, covering it only with a loose cotton cloth or sheet to protect it from dust and flies. Keep the cloth very clean and change it each time it gets dirty with liquid or blood from the burn. Give penicillin.

Never put grease, fat, hides, coffee, herbs, or feces on a burn.

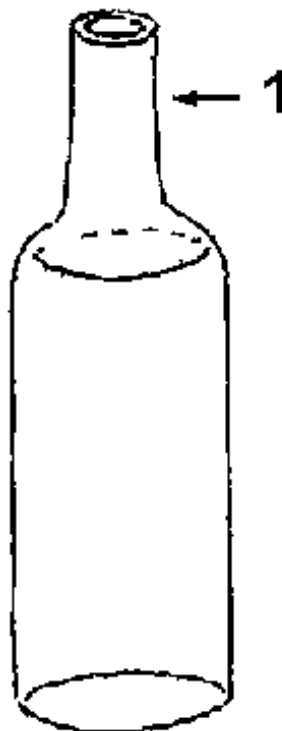
Covering the burn with honey helps prevent and control infection and speed healing. Gently wash off the old honey and put on new at least twice a day.

Special Precautions for Very Serious Burns

Any person who has been badly burned can easily go into *shock* because of combined pain, fear, and the loss of body fluids from the oozing burn.

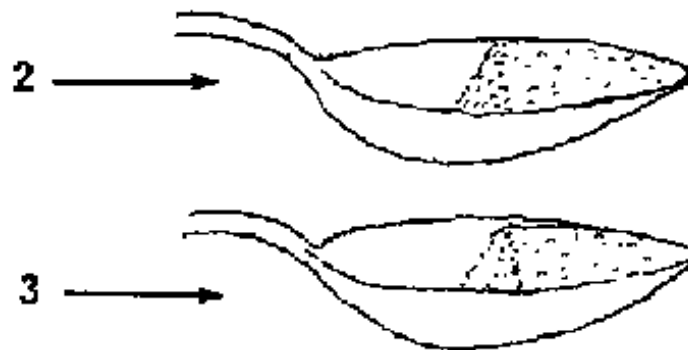
Comfort and reassure the burned person. Give him aspirin for the pain and codeine if you can get it. Bathing open wounds in slightly salty water also helps calm pain. Put 1 teaspoon of salt for each liter of cool, boiled water.

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:



Figure

To a liter of water add: (1)



Figure

half a spoon of salt (2)

and half a teaspoon of bicarbonate of soda. (3)

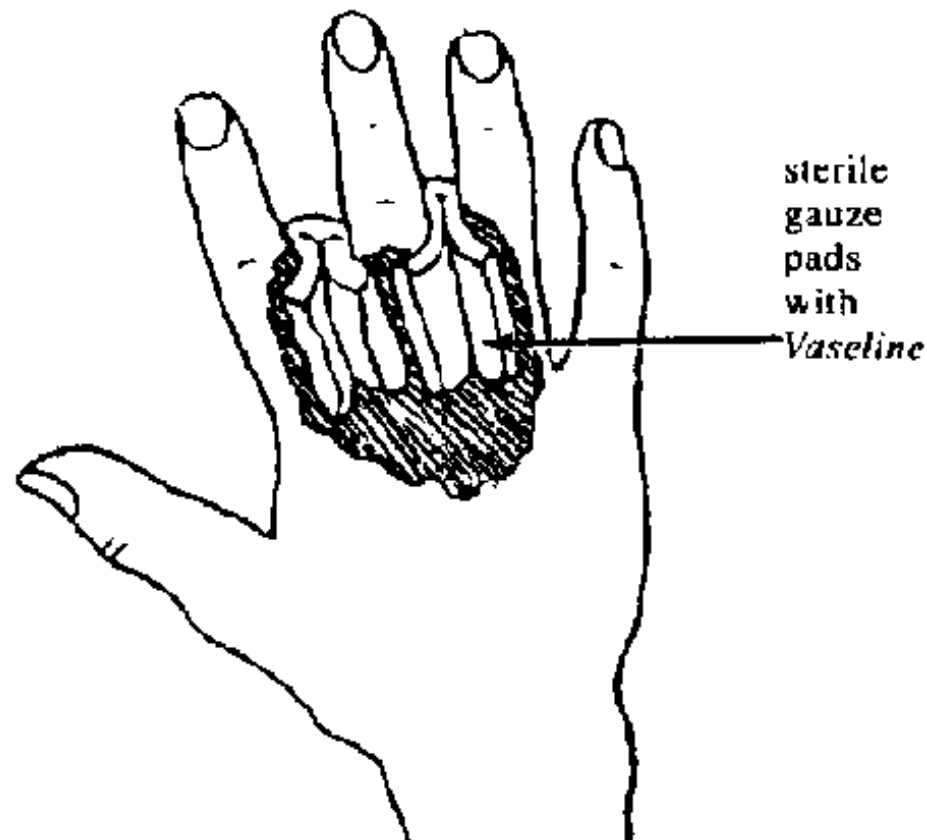
Also put in 2 or 3 tablespoons of sugar or honey and some orange or lemon juice if possible.

The burned person should drink this as often as possible, especially until he urinates frequently. He should try to drink 4 liters a day for a large burn, and 12 liters a day for a very large burn.

It is important for persons who are badly burned to eat foods rich in protein. 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.



Figure

Broken Bones (Fractures)

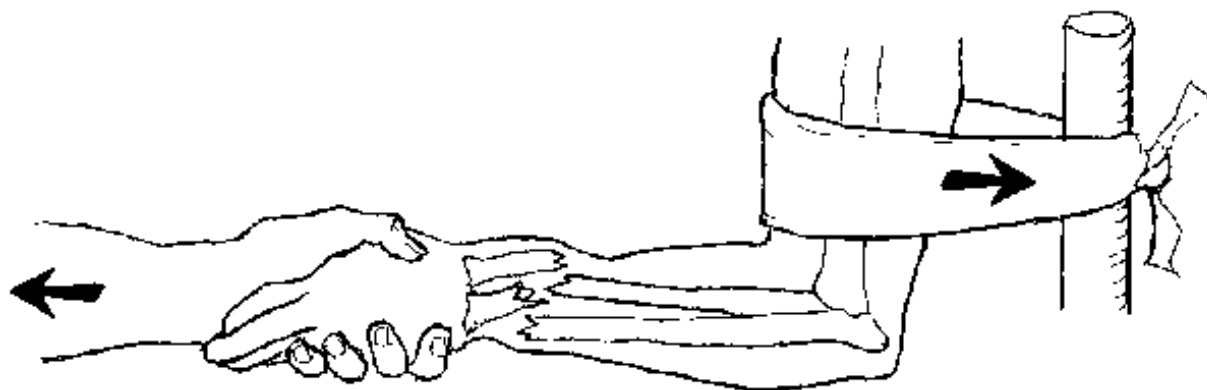
When a bone is broken, the most important thing to do is keep the bone in a fixed position. This prevents further damage and lets it mend.

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.

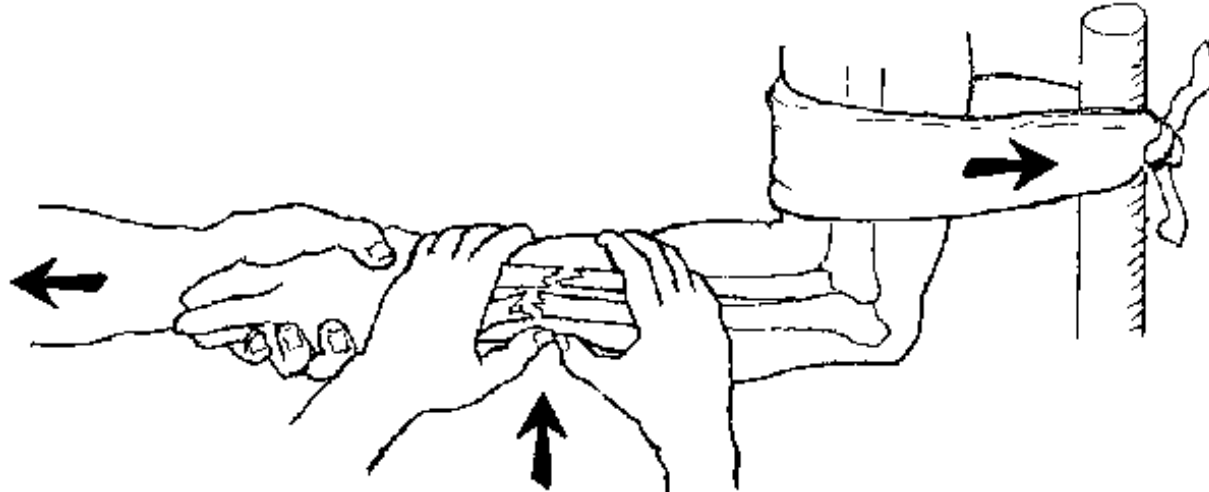
Setting broken bones: If the bones seem more or less in the right position, it is better not to move them - this could do more harm than good.

If the bones are far out of position and the break is recent, you can try to 'set' or straighten them before putting on a cast. The sooner the bones are set, the easier it will be. Before setting, if possible inject or give diazepam to relax the muscles and calm pain. Or give codeine.

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.

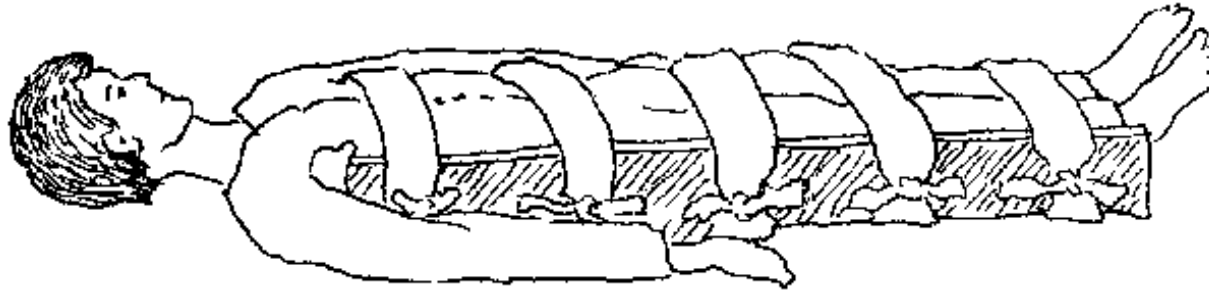
***WARNING:* It is possible to do a lot of damage while trying to set a bone. Ideally, it should be done with the help of someone with experience. Do not jerk or force.**

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.

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:



Figure

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 - 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 normally. 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 (penicillin or ampicillin) 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. 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.



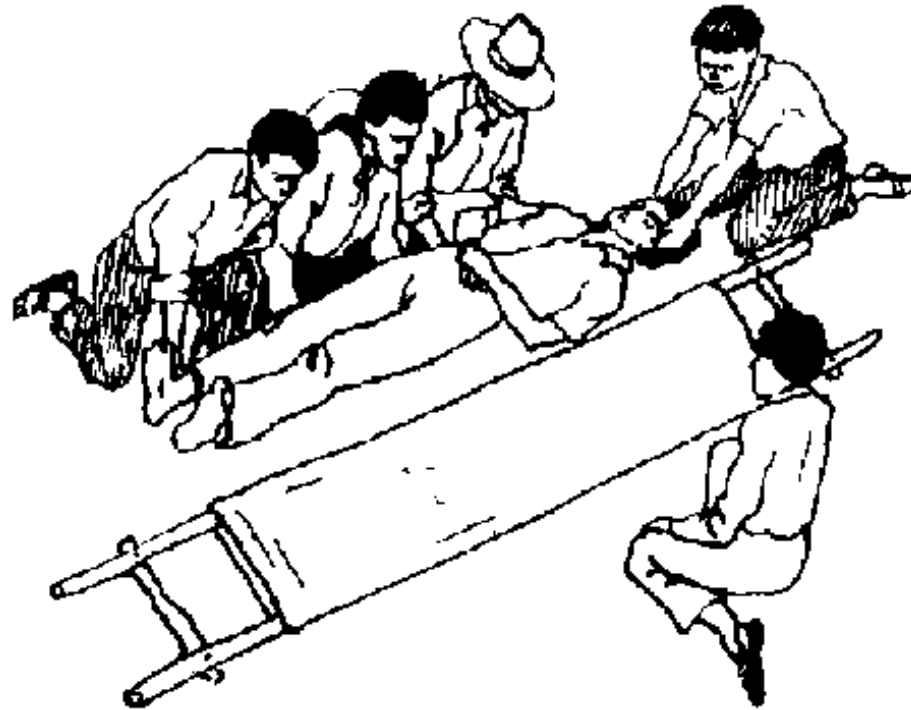
Figure

Splint the limb to prevent more injury.

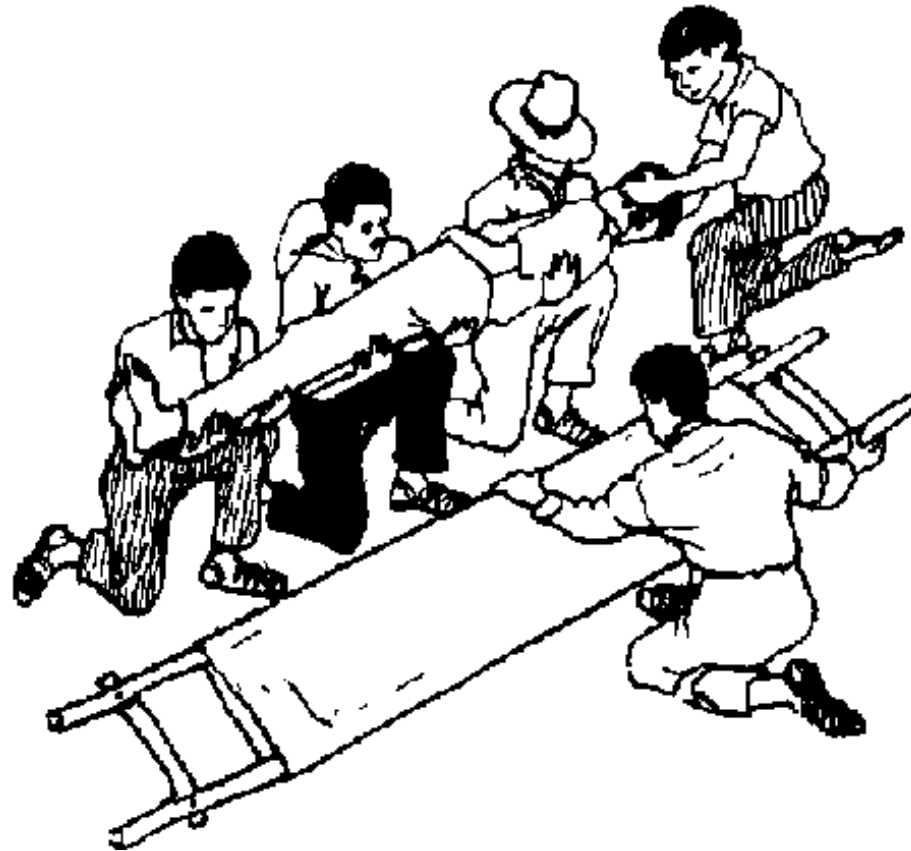
If the bone has broken the skin, use an antibiotic immediately to help prevent infection: penicillin, ampicillin, or tetracycline.

***CAUTION:* Never rub or massage a broken limb or a limb that may possibly be broken.**

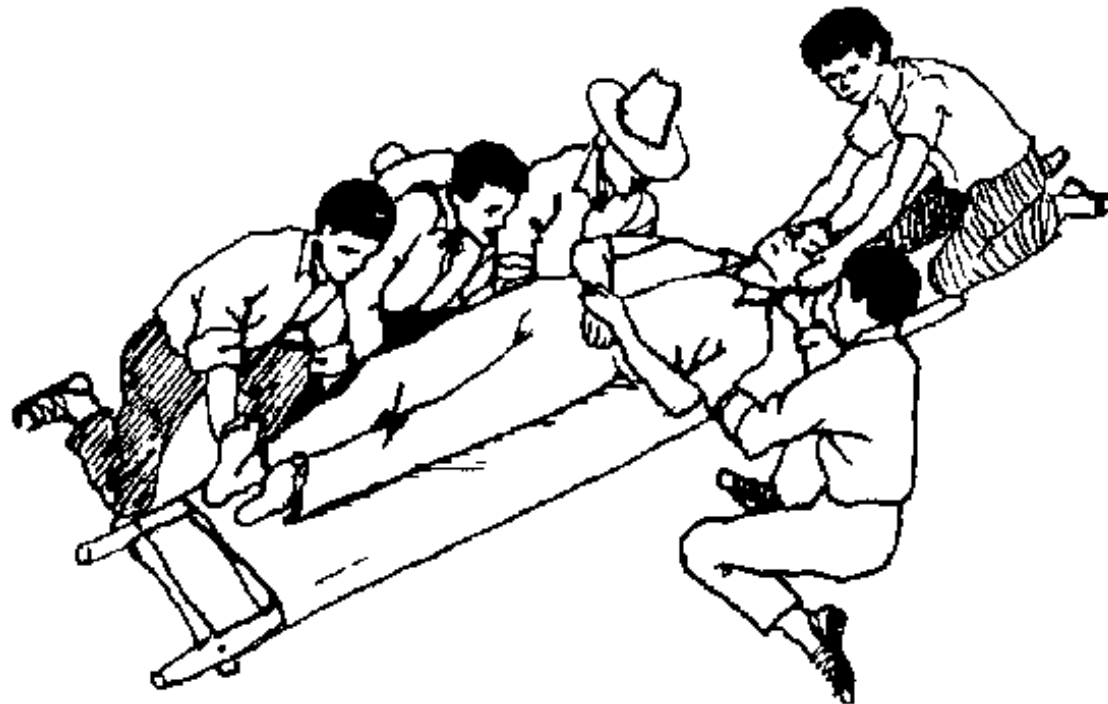
How to Move a Badly Injured Person



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.



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.

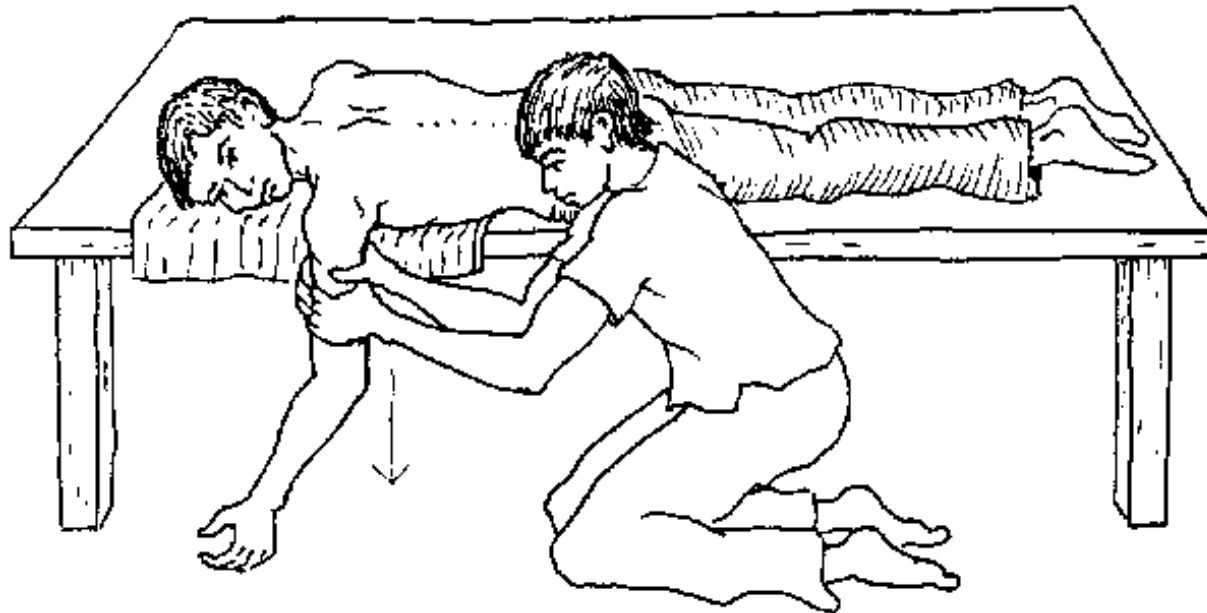
Dislocations (Bones that Have Come Out of Place at a Joint)

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.



Figure

Or attach something to the arm that weighs 10 to 20 lbs. (start with 10 lbs., but do not go higher than 20 lbs.) 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 month. To prevent the shoulder from becoming completely stiff, older persons should 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.



Figure

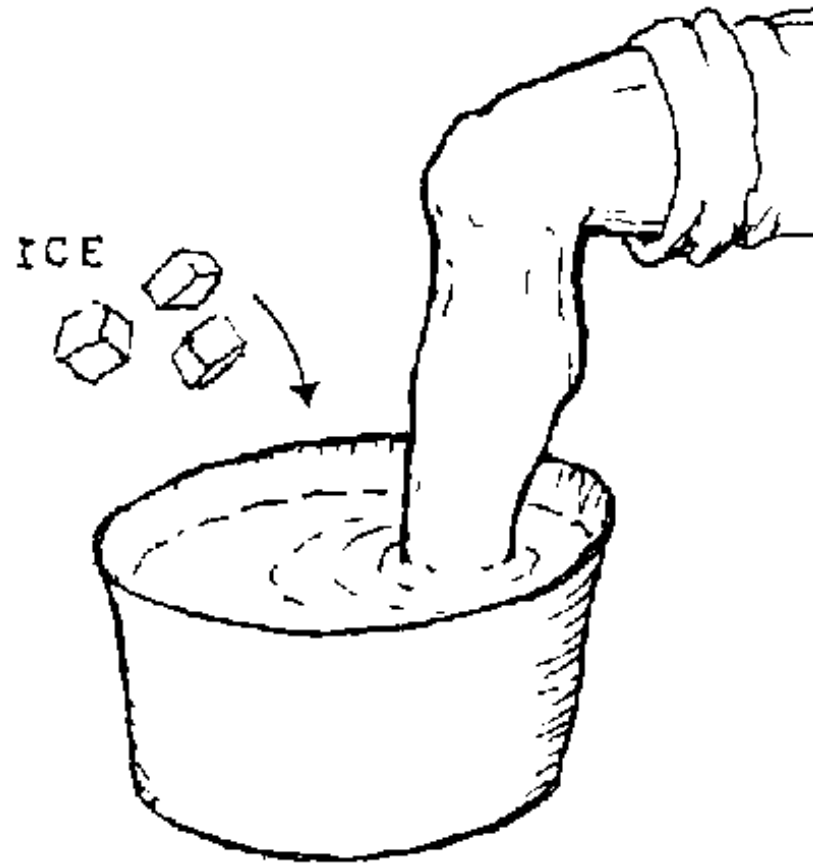
If you cannot put the dislocated limb back in place, look for medical help at once. The longer you wait, the harder it will be to correct.

Strains and Sprains (Bruising or Tearing in a Twisted Joint)

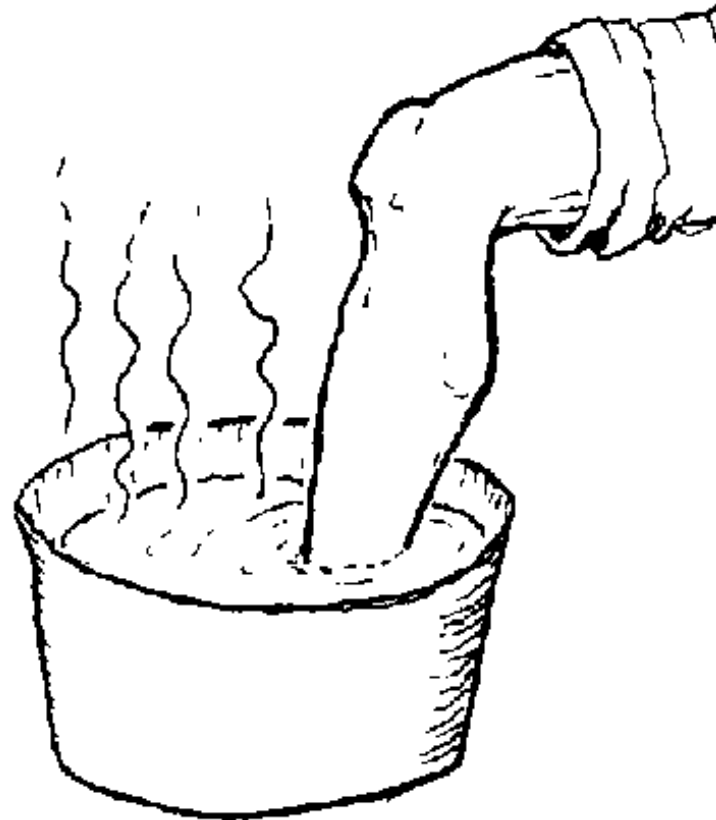
Many times it is impossible to know whether a hand or foot is bruised, sprained, or broken. It helps to have an X-ray taken.

But usually, breaks and sprains are treated more or less the same. Keep the joint motionless. Wrap it with something that gives firm support. 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.



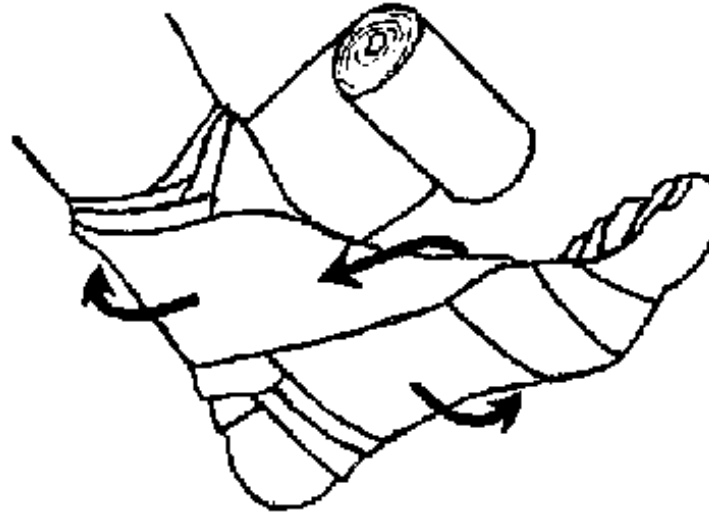
For the first day soak the sprained joint in cold water.



After one or two days use hot soaks.

You can keep the twisted joint in the correct position for healing by using a homemade cast 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.



Figure

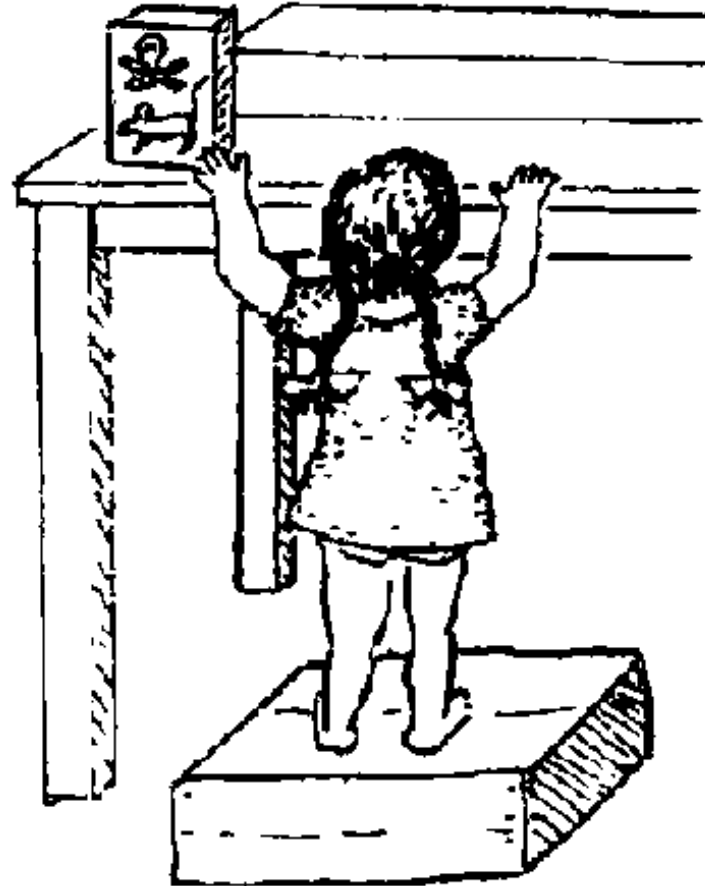
If the pain and swelling do not start to go down after 48 hours, seek medical help.

***CAUTION:* Never rub or massage a sprain or broken bone. If does no good and can do more harm.**

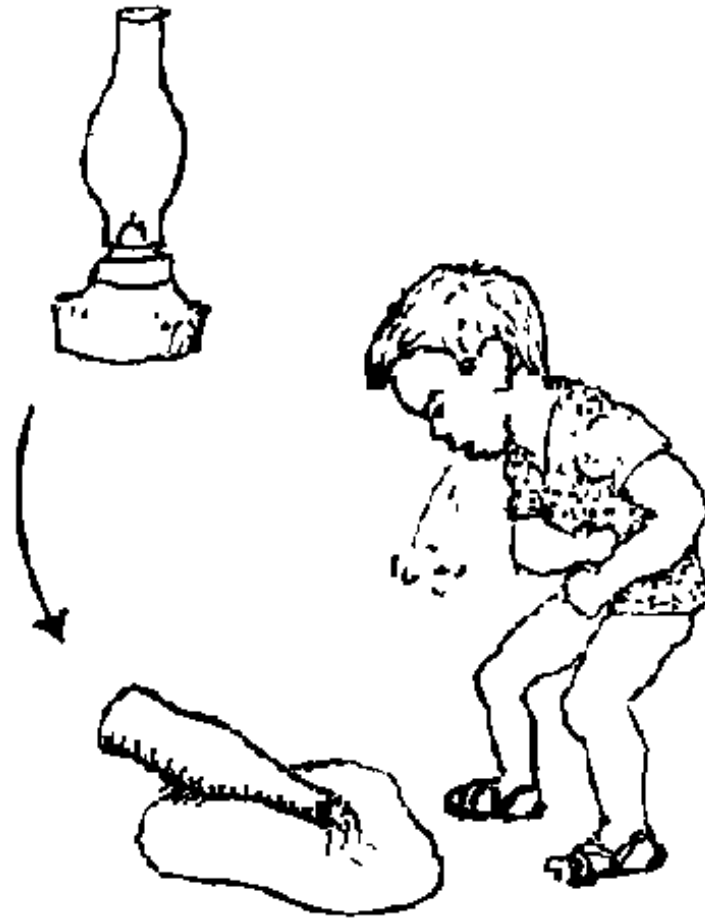
If the foot seems very loose or 'floppy' or if the person has trouble moving his toes, look for medical help. Surgery may be needed.

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**

Treatment:

If you suspect poisoning, do the following immediately:

- **If the child is awake and alert, make him vomit. Put your finger in his throat or give him a tablespoon of syrup of ipecac followed by 1 glass of water. Or make him drink water with mild soap or salt in it (6 teaspoons salt to 1 cup water).**
- **If you have it, give him a cup of *activated charcoal*, or a tablespoon of powdered charcoal, mixed into a cup of water, (For an adult, give 2 glasses of this mixture.)**

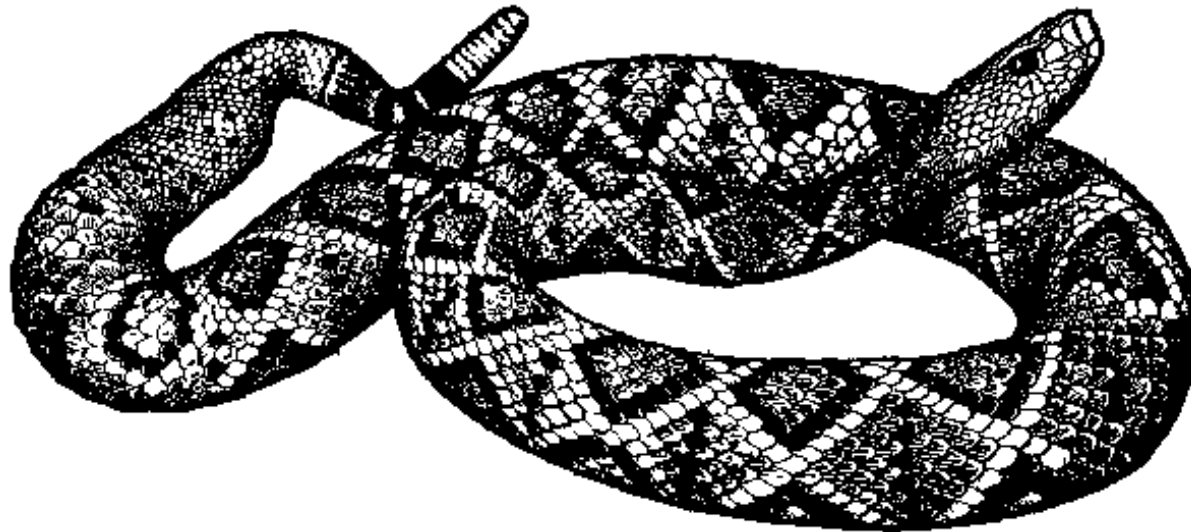
***CAUTION:* Do not make a person vomit if he has swallowed kerosene, gasoline (petrol), or strong acids or corrosive substances (lye), or if he is unconscious. If he is awake and alert, give him plenty of water or milk to dilute the poison. (For a child, give 1 glass of water every 15 minutes.)**

Cover the person if he feels cold, but avoid too much heat. If poisoning is severe, look

for medical help.

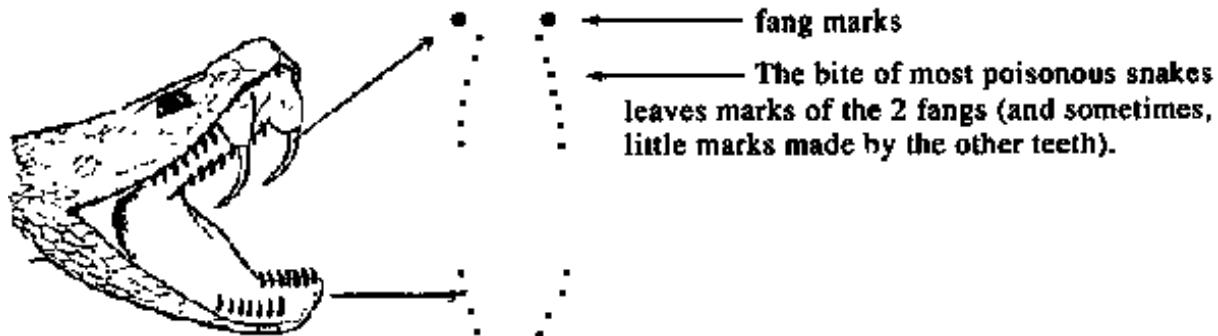
Snakebite

Note: Try to get information on the kinds of snakes in your area and put it on this page.

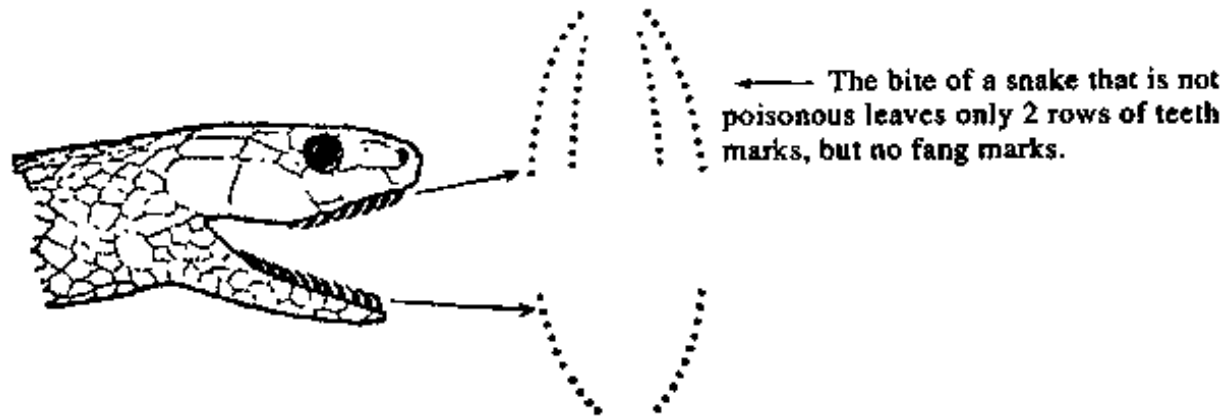


RATTLESNAKE - North America, Mexico, and Central America

When someone has been bitten by a snake, try to find out if the snake was poisonous or harmless. Their bite marks are different:



POISONOUS SNAKE

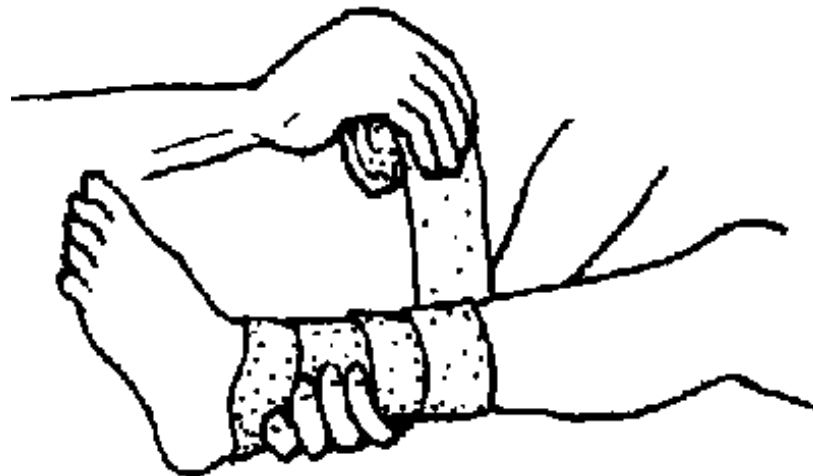


NON-POISONOUS SNAKE

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.

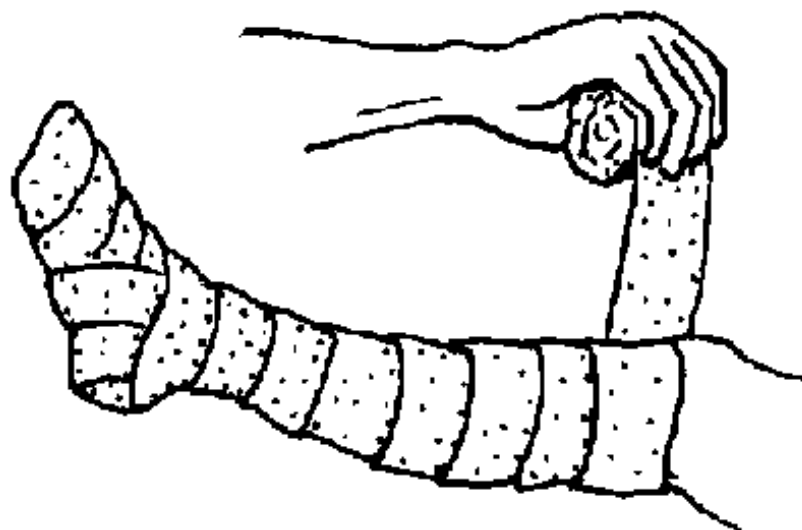
Treatment for poisonous snakebite:

- 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. 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.**



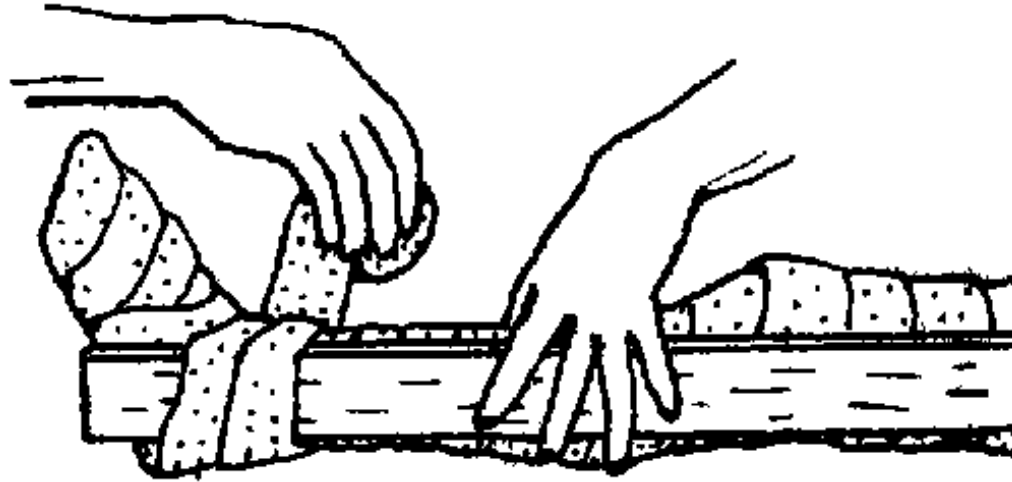
Figure

3. Wind the bandage over the hand or foot, and up the whole arm or leg. Make sure you can still feel the pulse.



Figure

4. Then, put on a splint to prevent the limb from moving.



Figure

5. 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). If an antivenom is needed, leave the bandage on until the injection is ready, and take all precautions for ALLERGIC SHOCK. If there is no antivenom, remove the bandage.

6. Give acetaminophen, not aspirin, for pain. If possible, give tetanus vaccine. If the bite becomes infected, give penicillin.

7. Also, ice helps to reduce pain and slow the poison. Wrap the arm or leg with a plastic sheet and a thick cloth. Then pack crushed ice around it. (*Caution:* Too much cold can damage skin and flesh. When it is getting too cold it begins to ache. So let the person decide when to remove the ice for a few minutes.)

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.

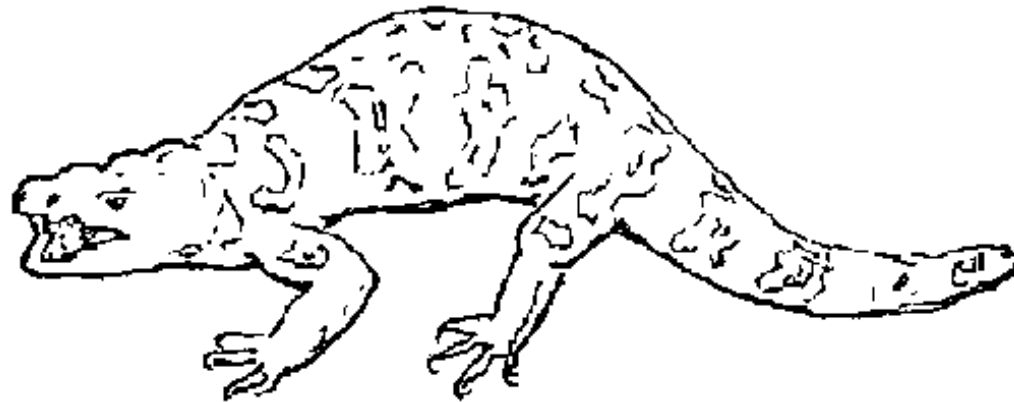
Most folk remedies for snakebite do little if any good.

Never drink alcohol after a snakebite. It makes things worse!

Other Poisonous Bites and Stings

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.



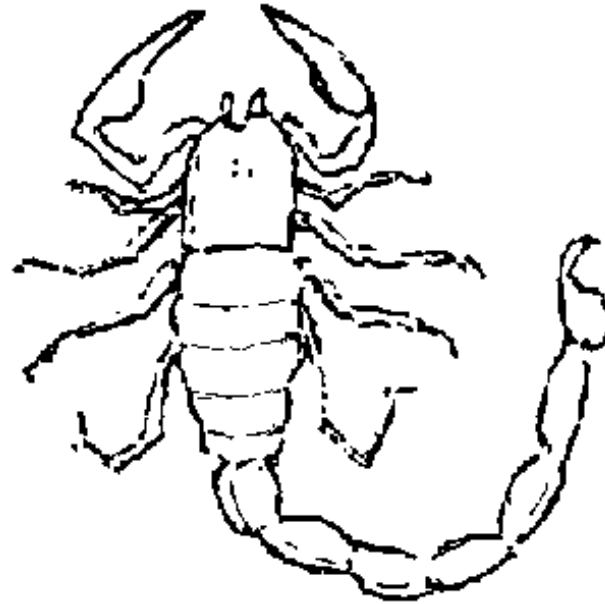
Figure

Southern U.S.A. and Northern Mexico

SCORPION STING

Some scorpions are far more poisonous than others. To adults, scorpion stings are

rarely dangerous. Take aspirin 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.



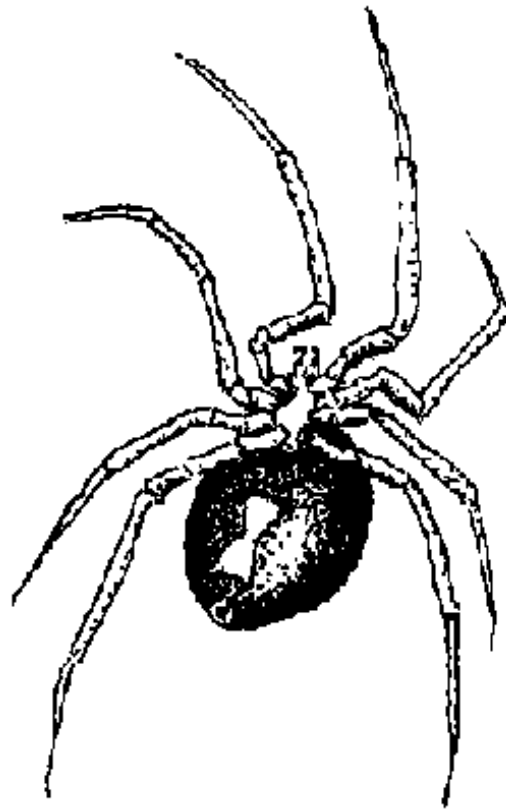
Figure

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. (In Latin America it is called *Antialacrn.*) To do much good it must be injected within 2 hours after the child has been stung. Give acetaminophen or aspirin for the pain. If the child stops breathing, use mouth-to-mouth breathing. 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!)



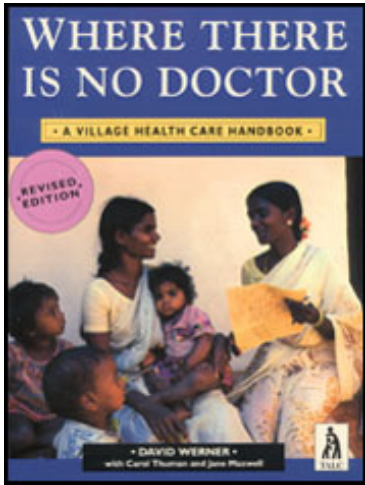
Figure


Give acetaminophen or aspirin and look for medical help. The most useful medicines are not found in village stores. (Injection of 10% calcium gluconate, 10 ml., injected intravenously very slowly over a 10-minute period, helps to reduce the muscular spasms. Also diazepam, may be helpful. If signs of shock develop, treat for allergic

shock. Injections of cortisone may be needed in children.) A good antivenom exists but is hard to get.























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 **Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)**

➔  **Chapter 11 - NUTRITION: WHAT TO EAT TO BE HEALTHY**

-  **Sicknesses Caused by Not Eating Well**
-  **Why It is Important to Eat Right**
-  **Preventing Malnutrition**
-  **Main Foods and Helper Foods**
-  **Eating Right to Stay Healthy**
-  **How to Recognize Malnutrition**
-  **Ways of Eating Better When You Do Not Have Much Money or Land**
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-  **Things to Avoid in Our Diet**
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-  **Harmful Ideas about Diet**
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-  **Goiter (A Swelling or Lump on the Throat)**

Where There Is No Doctor - A Village Health Care Handbook (Hesperian Foundation, 1993, 516 p.)

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.



Figure

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

- **failure of a child to grow or gain weight normally**
- **slowness 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**
- **'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)**

Poor nutrition during pregnancy causes weakness and anemia in the mother and increases the risk of her dying during or after childbirth. It is also a cause of miscarriage, or of the baby being born dead, too small, or defective.

Eating right helps the body resist sickness.

Not eating well may be the direct cause of the health problems just listed. But most important, poor nutrition weakens the body's ability to resist all kinds of diseases, especially infections:

- **Poorly nourished children are much more likely to get severe diarrhea, and to die from it, than are children who are well nourished.**
- **Measles is especially dangerous where many children are malnourished.**
- **Tuberculosis is more common, and gets worse more rapidly, in those who are malnourished.**
- **Cirrhosis of the liver, which comes in part from drinking too much alcohol, is more common and worse in persons who are poorly nourished.**

- **Even minor problems like the common cold are usually worse, last longer, or lead to pneumonia more often in persons who are poorly nourished.**

Eating right helps the sick get well.

Not only does good 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.
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 (getting too fat).

Anyone can develop general malnutrition, but it is especially dangerous for:

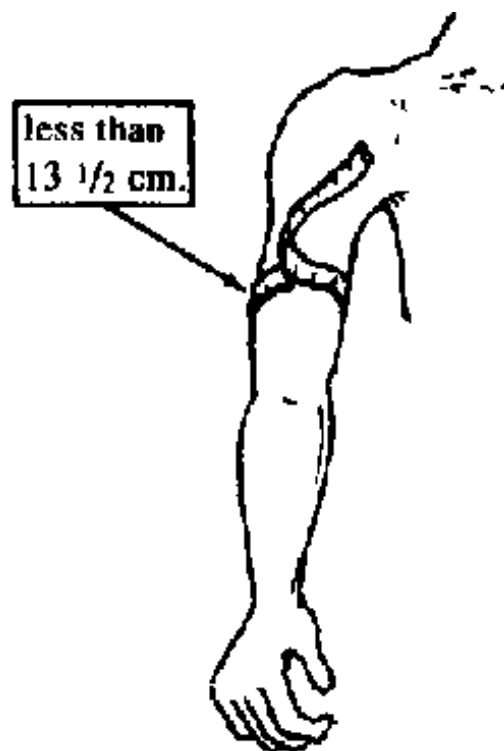
- **children, because they need lots of food to grow well and stay healthy;**
- **women of child-bearing age, especially if they are pregnant or breast feeding, because they need extra food to stay healthy, to have healthy babies, and to do their daily work;**
- **elderly persons, because often they 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.**

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 13 ½ cm. around is malnourished - no matter how 'fat' his feet, hands, and face may look. If the arm measures less than 12 ½ cm., he is severely malnourished.



Figure

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.

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 breast feeding, 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.



Figure



Figure

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.

If the child's belly fills up before her energy needs are met, the child will become thin and weak.





To meet her energy needs, a child would need to eat this much boiled rice.



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.

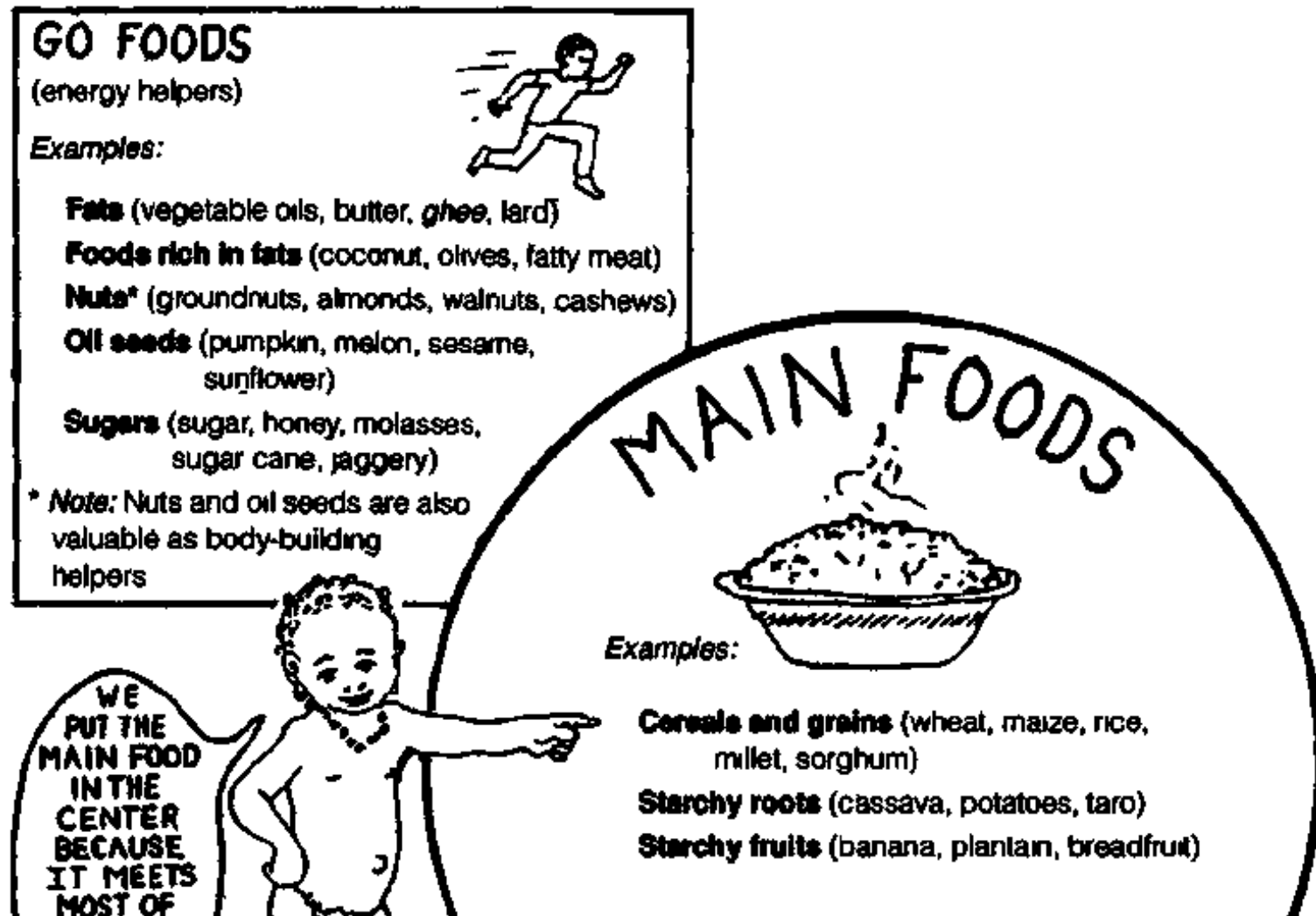
Also try to add protective foods such as orange or yellow fruits and vegetables, and also dark green leafy vegetables. Protective foods supply important vitamins and minerals.

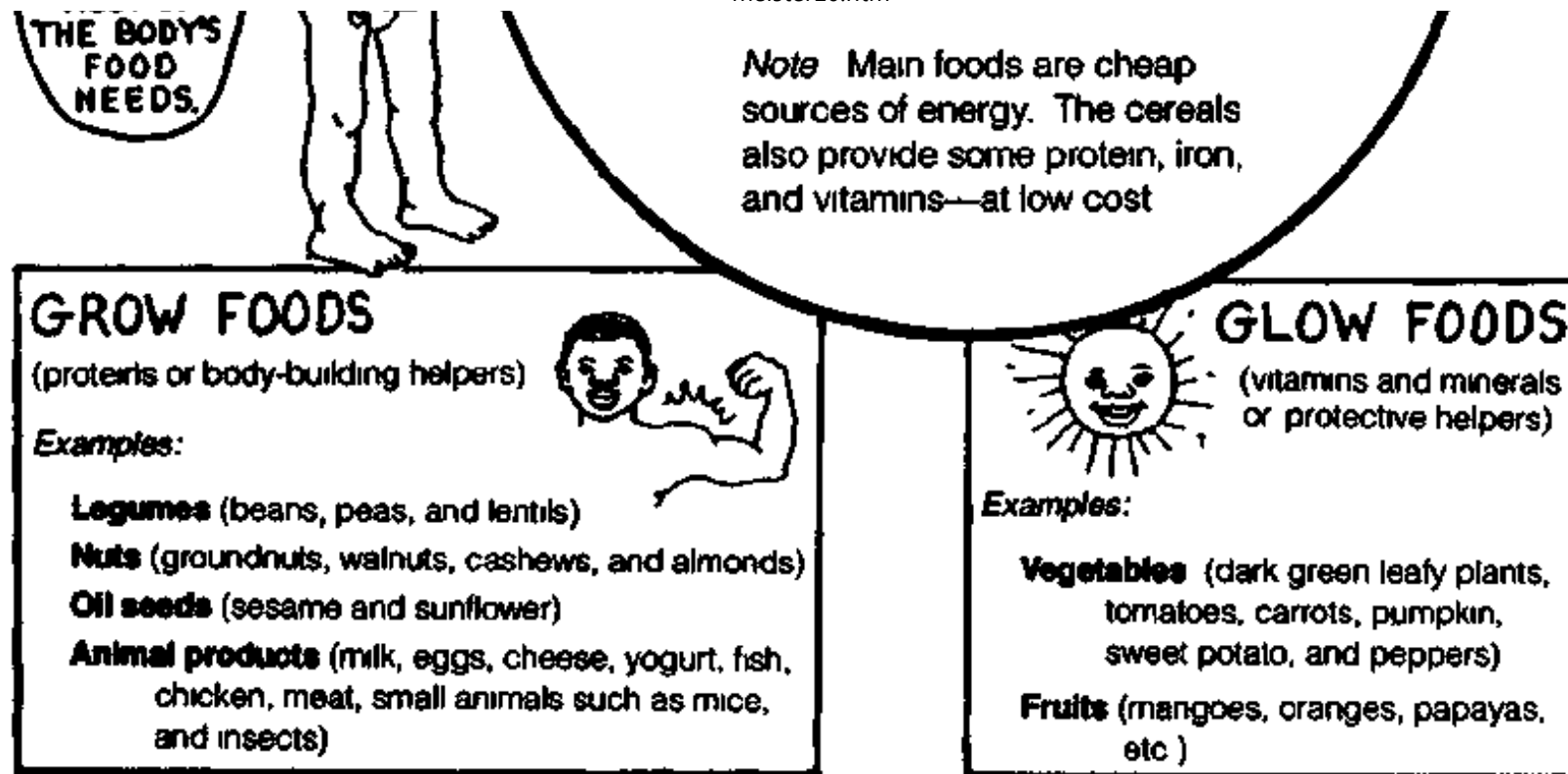
Eating Right to Stay Healthy

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.

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.





Figure

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.

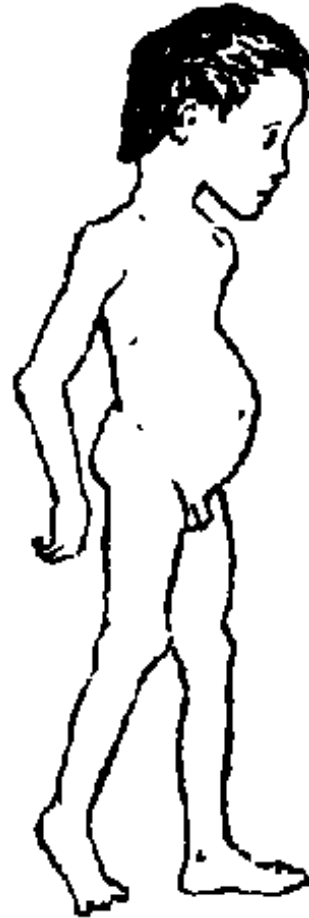
This approach is more adaptable to the resources and limitations of poor families.

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.



Figure

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 this 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 breast feeding 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 IS JUST *SKIN AND BONES*.

This child needs more food - especially energy foods.

WET MALNUTRITION - OR KWASHIORKOR

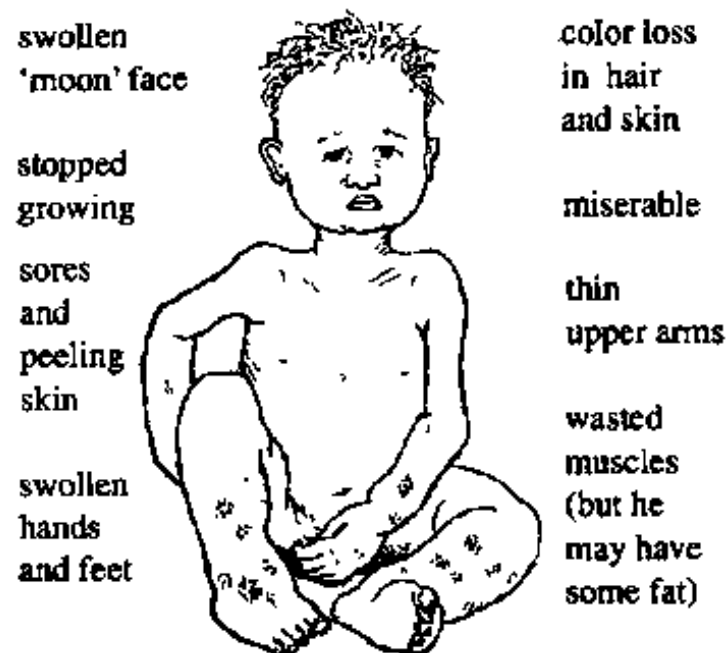
This child's condition is called wet malnutrition because his feet, hands, and face are swollen. This can happen when a child does not eat enough 'body-building' helper foods - or proteins. More often it happens when he does not get enough energy foods, and his body burns up whatever proteins he eats 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.

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

Among poor people the most common forms of severe malnutrition are due either to hunger (marasmus) or lack of protein (kwashiorkor). However, 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.**

- **Rickets from lack of vitamin D.**
- **Various skin problems, sores on the lips and mouth, or bleeding gums from not eating enough fruits, vegetables, and other foods containing certain vitamins.**
- **Anemia in people who do not get enough iron.**
- **Goiter from lack of iodine.**

For more information about health problems related to nutrition, see *Helping Health Workers Learn*, Chapter 25, and *Disabled Village Children*, Chapters 13 and 30.



Figure

This mother and child are from a poor family and are both poorly nourished. The father works hard, but he does not earn enough to feed the family well. The patches on the mother's arms are a sign of pellagra, a type of malnutrition. She ate mostly maize and not enough nutritious foods such as beans, eggs, fruit, meat, and dark green vegetables.

The mother did not breast feed her baby. She fed him only maize porridge. Although this filled his belly, it did not provide enough nutrition for him to grow strong. As a

result, this 2-year-old child is severely malnourished. He is very small and thin with a swollen belly, his hair is thin, and his physical and mental development will be slower than normal. To prevent this, mothers and their children need to eat better.

Ways of Eating Better When You Do Not Have Much Money or Land



Figure

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 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 mothers 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 mothers and look for solutions.

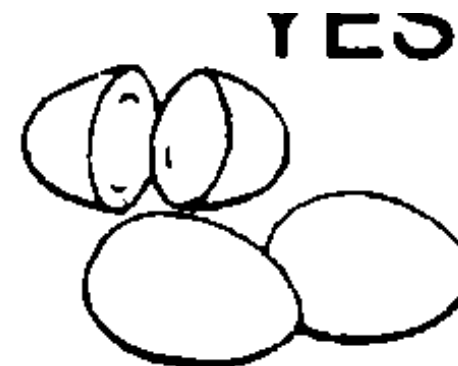
IF YOU HAVE A LITTLE MONEY AND WANT TO HELP
YOUR CHILD GROW STRONG:



NO

Figure

DO NOT BUY HIM A SOFT DRINK OR SWEETS-BUY HIM 2 EGGS OR A HANDFUL OF NUTS.



Figure

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.

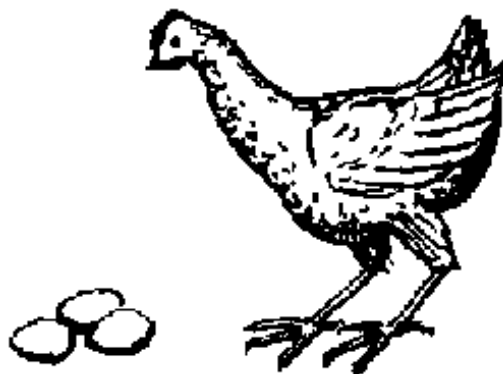
Here are some suggestions for getting more vitamins, minerals, and proteins at low cost.

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. Breast feeding is not only best for the baby, it saves money and prevents diseases!



Figure

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.



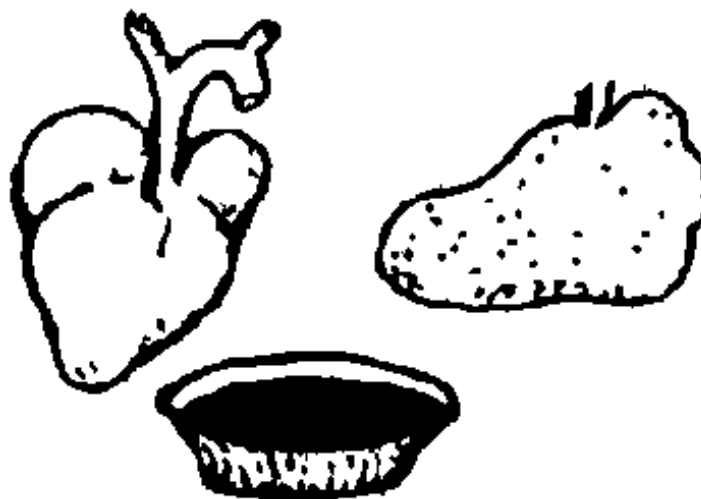
Figure

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.

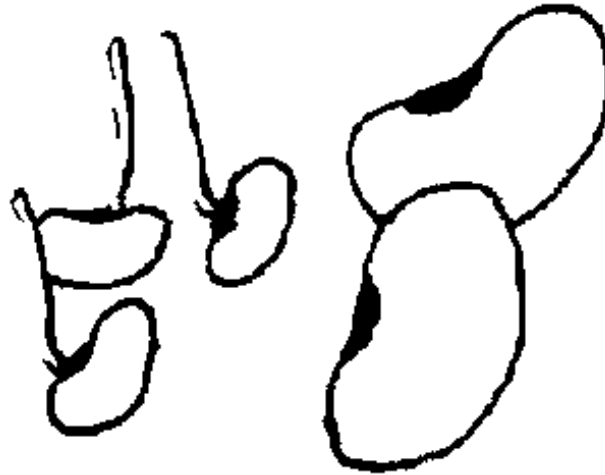
Chicken is a good, often fairly cheap form of animal protein - especially if the family raises its own chickens.

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.



Figure

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.



Figure

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.

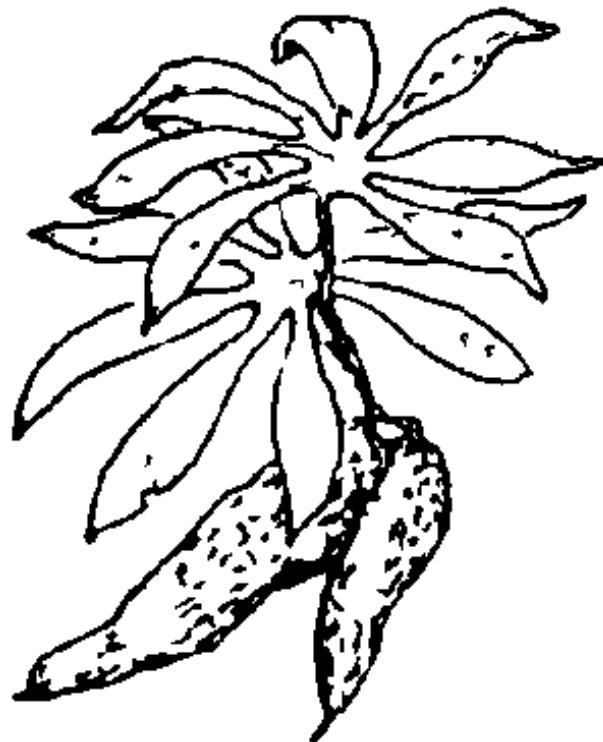
5. Dark green leafy vegetables have some iron, a lot of vitamin A, and some protein. The leaves of sweet potatoes, beans and peas, pumpkins and squash, and baobab are especially nutritious. They can be dried, powdered, and mixed with babies' gruel.



Figure

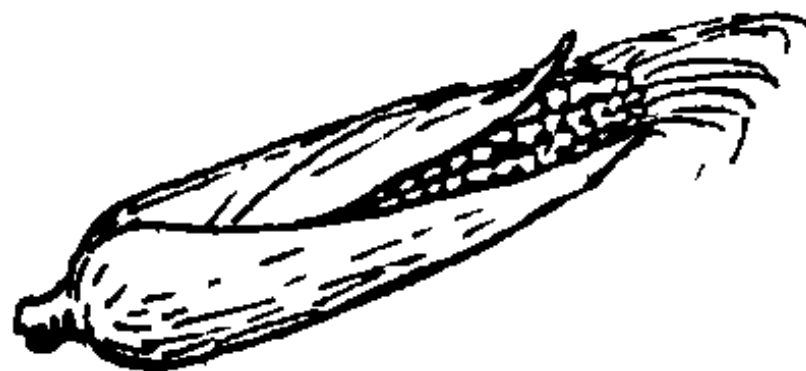
***Note:* Light green vegetables like cabbage and lettuce have less nutritional value. It is better to grow ones with dark-colored leaves.**

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.



Figure

7. Lime-soaked maize (corn). When soaked in lime 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.



Figure

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.



Figure

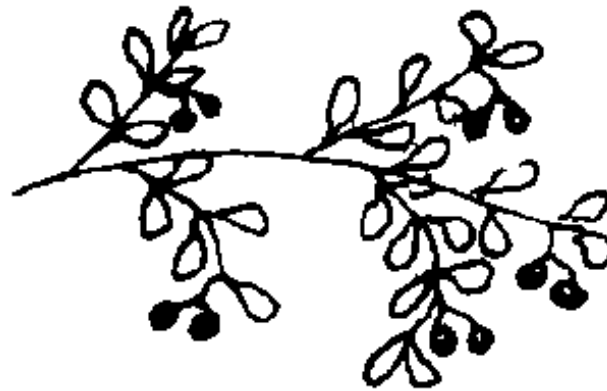
***NOTE:* The protein in wheat, rice, maize, and other grains can be better used by the body when they are eaten with beans or lentils.**

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.



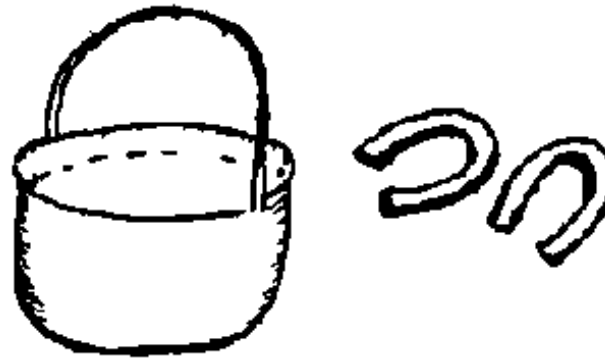
Figure

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.)



Figure

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.



Figure

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.



Figure

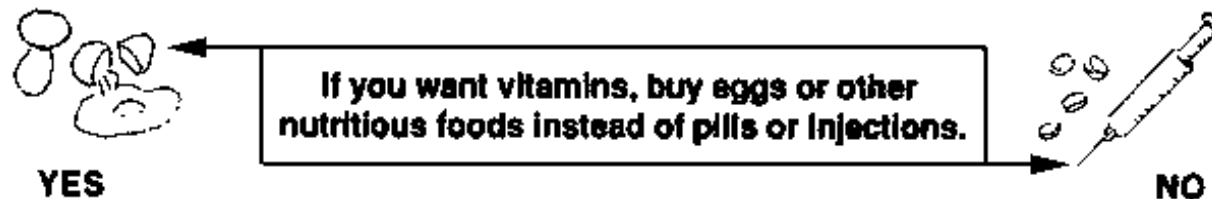
12. In some countries, low-cost baby food preparations are available, made from different combinations of soybean, cotton seed, skim milk, or dried fish. Some taste better than others, but most are well-balanced foods. When mixed with gruel, cooked cereal, or other baby food, they add to its nutrition content - at low cost.



Figure

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.



Figure

Sometimes nutritious foods are scarce. If a person is already poorly nourished, 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 B₁ (thiamine)
- Vitamin B₂ (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, for small children
- Vitamin C (ascorbic acid), for small children
- 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 breast feeding mothers who do not get enough calcium in foods

such as milk, cheese, or foods prepared with lime

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:



alcoholic drinks



tobacco



a lot of sugar and sweets



greasy food



too much coffee

- **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. Smoking is especially bad for people with lung diseases like tuberculosis, asthma, and bronchitis.**
- **Too much greasy food or coffee 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.

The Best Diet for Small Children

THE FIRST 4 MONTHS OF LIFE:

For the first 4 months give the baby mother's milk and nothing else.



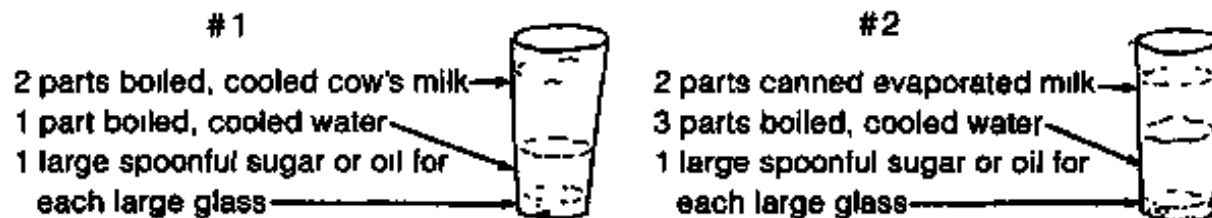
Figure

Breast milk is the best and purest food for babies. It is better than any baby food or milks you can buy. If you give the baby only breast milk during the first 4 to 6 months, this helps protect him against diarrhea and many infections. It is best not to give extra water or teas, even in hot weather.

Some mothers stop breast feeding early because they think that their milk is not good enough for their baby, or that their breasts are not making enough milk. However, a mother's milk is always very nutritious for her baby, even if the mother herself is thin and weak. Also, 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 breast feed the baby often. Do not begin to feed the baby other foods before he is 4 months old. After the baby begins to eat other foods, always breast feed him before giving other foods.**
- **If a mother's breasts produce little or no milk, she can often start producing plenty of milk again. She should eat well, drink lots of liquid, and let her baby suck her breasts often, before giving other foods. After each breast feeding, 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 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:



Figure

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. If a bottle is used, boil it and the nipple each time before the baby is fed.

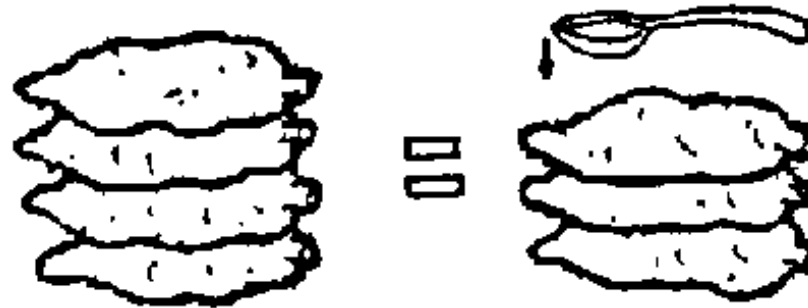
• If you cannot buy milk for the child, make a porridge from rice, cornmeal, or other cereal. Always add to this some skinned beans, eggs, meat, chicken, or other protein. Mash these well and give them as a liquid. If possible add sugar and oil.

***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.**

FROM 4 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 between 4 and 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 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. But start with just a little of the new food, and add only 1 at a 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. 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 $\frac{3}{4}$ 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 breast feeding, 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 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.



Figure

ONE YEAR AND OLDER:

After a child is 1 year old, he can eat the same foods as adults, but should continue to breast feed (or drink milk whenever possible).

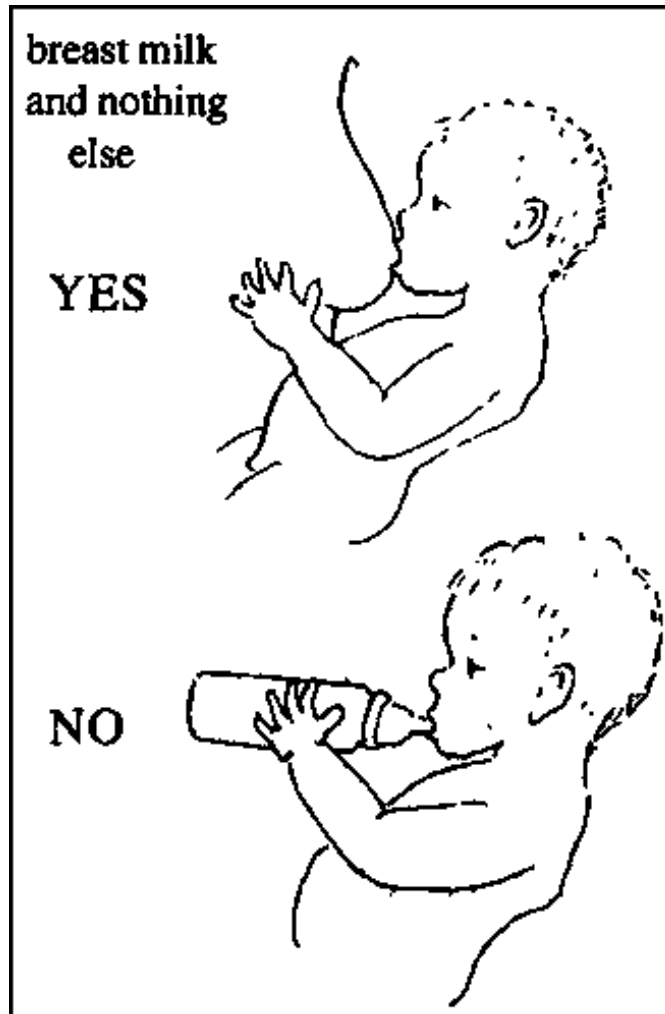
Every day, try to give the child plenty of the main food that people eat, together with 'helper' foods that give added high energy, proteins, vitamins, iron, and minerals so that he will grow up strong and healthy.

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.

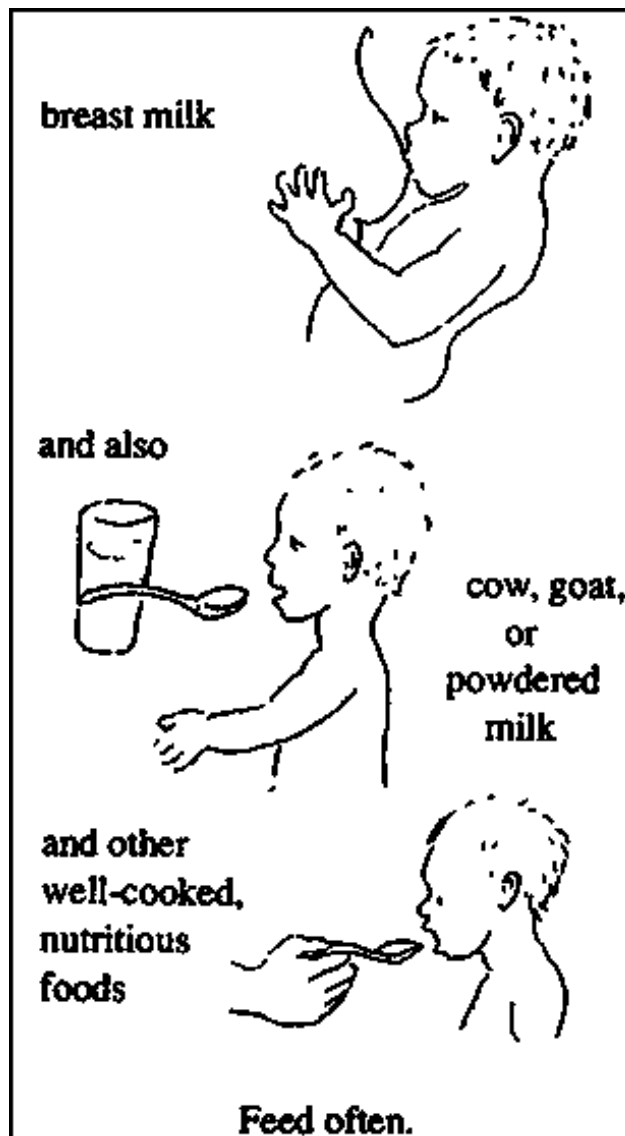
Children and candy: Do not accustom small children to eating a lot of candy and sweets or drinking soft drinks (colas). When they have too many sweets, they no longer want enough of the other foods they need. Also, sweets are bad for their teeth.

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 CHILDREN



THE FIRST 4 TO 6 MONTHS



FROM 6 MONTHS TO 2 YEARS

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.

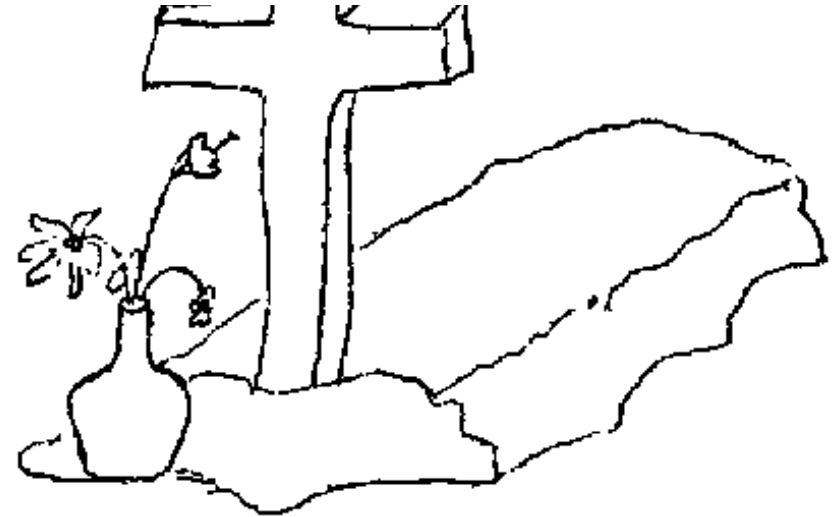
After giving birth a mother needs to eat the most nutritious foods she can get.

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 afraid to eat 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 a 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.

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.

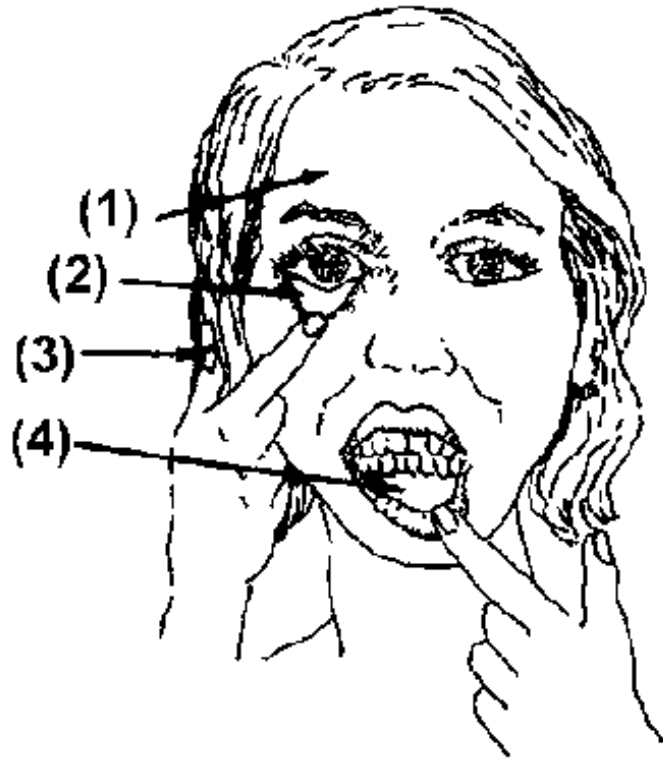
Women can become anemic from blood loss during monthly bleeding (menstrual periods) or childbirth if they do not eat the foods their bodies need. Pregnant women are at risk of becoming severely anemic, because they need to make extra blood for their growing babies.

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, chronic diarrhea, and dysentery.

The signs of anemia are:

- pale or transparent skin (1)**
- pale insides of eyelids (2)**
- white fingernails (3)**
- pale gums (4)**
- 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.**



Figure

Treatment and prevention of anemia:

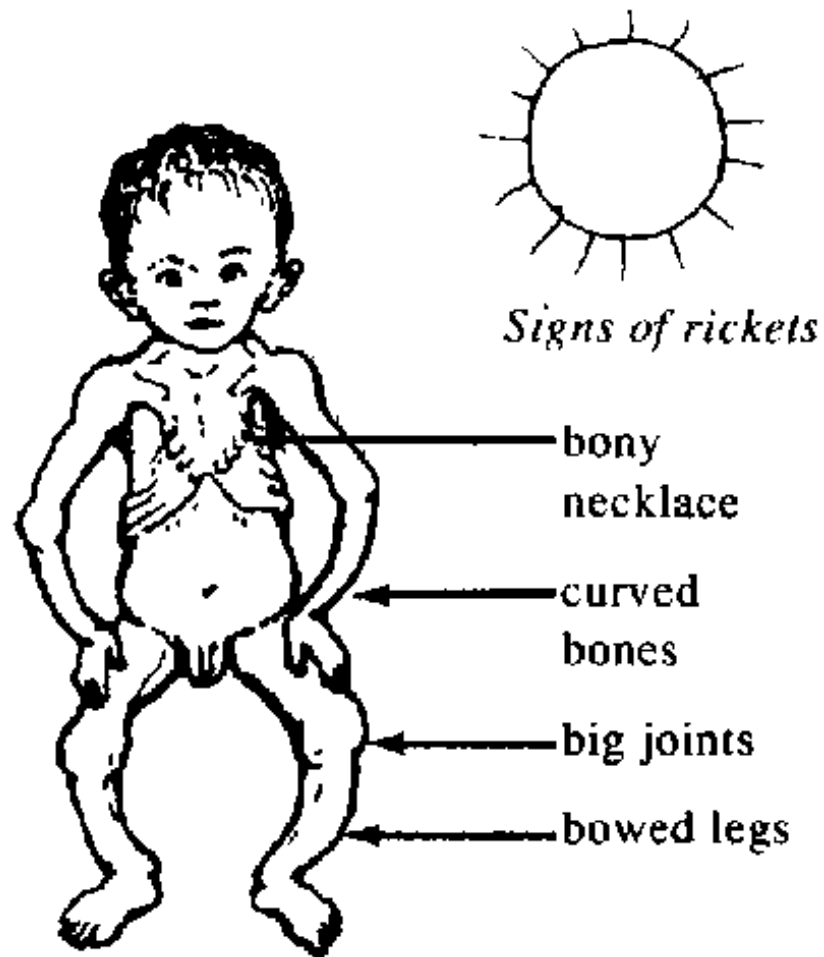
- **Eat foods rich in iron. Meat, fish, and chicken are high in iron. Liver is especially high. Dark green leafy vegetables, beans, peas, and lentils also have some iron. It also helps to cook in iron pots. To help the body absorb more iron, eat raw vegetables and fruit with meals, and avoid drinking coffee and tea with food.**

- **If the anemia is moderate or severe, the person should take iron (ferrous sulfate pills). 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 B₁₂. 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 in childbirth. It is very important that women eat as much of the foods high in iron as possible, especially during pregnancy. Allowing 2 to 3 years between pregnancies lets the woman regain strength and make new blood (see Chapter 20).

Rickets

Children whose skin is almost never exposed to the sunlight may become bowlegged and develop other bone deformities (rickets). This problem can be combatted by giving the child fortified milk and vitamin D (found in fish liver oil). However, the easiest and cheapest form of prevention is to be sure direct, sunlight reaches the child's skin for at least 10 minutes a day or for longer periods more often. (Be careful not to let his skin burn.) Never give large doses of vitamin D over long periods, as it can poison the child.



SUNLIGHT IS THE BEST PREVENTION AND TREATMENT OF RICKETS.

High Blood Pressure (Hypertension)

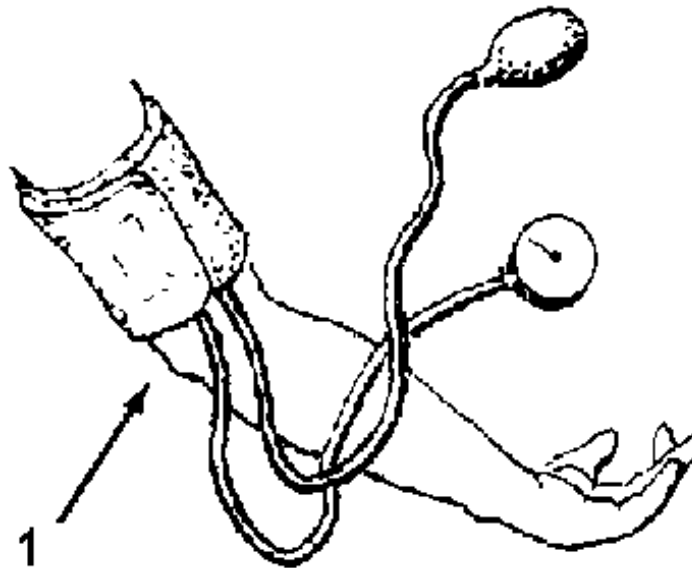
High blood pressure can cause many problems, such as heart disease, kidney disease, and stroke. Fat people are especially likely to have high blood pressure.

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. (1)



A BLOOD PRESSURE CUFF for measuring blood pressure

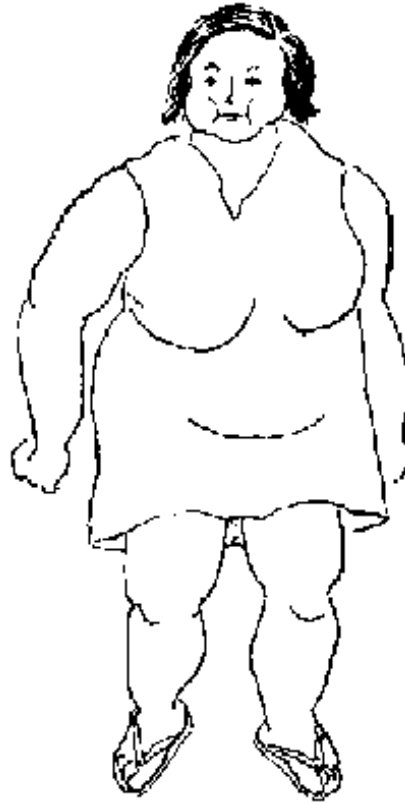
WARNING: High blood pressure at first causes no signs, and it should be lowered before danger signs develop. People who are overweight or suspect they might have high blood pressure should have their blood pressure checked regularly. For instructions on measuring blood pressure.

What to do to prevent or care for high blood pressure:

- **If overweight, lose weight.**
- **Avoid fatty foods, especially pig fat, and foods with a lot of sugar or starch. Always use vegetable oil instead of pig fat.**
- **Prepare and eat food with little or no salt.**
- **Do not smoke. Do not drink much alcohol, coffee, or tea.**
- **When the blood pressure is very high, the health worker may give medicines to lower it. Many people can lower their blood pressure by losing weight if they are fat (next page), and by learning to relax.**

Fat People

To be very fat is not healthy. Too much fat helps cause high blood pressure, heart disease, stroke, gallstones, diabetes, arthritis in legs and feet, and other problems.



Figure

Fat people should lose weight by:

- **eating less greasy, fatty, or oily foods..**
- **eating less sugar or sweet foods.**
- **getting more exercise.**
- **not eating so much of anything, especially starchy foods, like corn, bread, potatoes, rice, pasta, cassava, etc. Fat people should not eat more than one piece of bread, tortilla, or chapati with each meal. However, they can eat more**

fruit and vegetables.

***Prevention:* When you begin to get overweight, start following the above guidelines.**

To lose weight, eat only half of what you now eat.

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, put a little cooking oil up the rectum (asshole). Or, if necessary, gently break up and remove the hard shit with a greased finger.

Never use strong laxatives or purgatives - especially if there is stomach pain.

Diabetes

Persons with diabetes have too much sugar in their blood. This can start when a person is young (juvenile diabetes) or older (adult diabetes). It is usually more serious in young people, and they need special medicine (insulin) to control it. But it is most common in people over age 40 who eat too much and get fat.

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. (CAUTION: Do not taste urine if there is any chance****

she has AIDS.)

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.

When a person gets diabetes after he is 40 years old, it can often be best controlled without medicines, by eating correctly. The diabetic person's diet is very important and must be followed carefully for life.

***The diabetic diet:* Fat people with diabetes should lose weight until their weight is normal. Diabetics must not eat any sugar or sweets, or foods that taste sweet. It is important for them to eat lots of high-fiber foods, such as whole grain breads. But diabetics should also eat some other starchy foods, like beans, rice, and potatoes, and also foods high in protein.**

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.

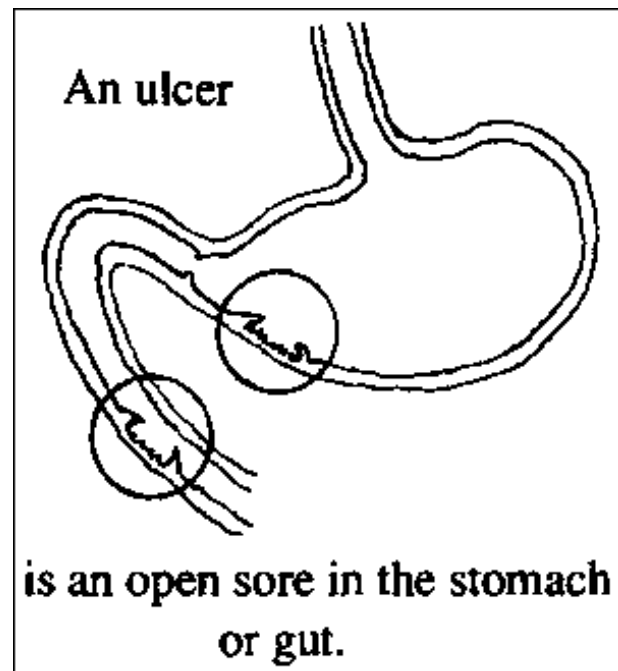
Acid Indigestion, Heartburn, and Stomach Ulcers

Acid indigestion and 'heartburn' often come from eating too much heavy or greasy food or from drinking too much alcohol or coffee. 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 stomach or small intestine, caused by too much acid.

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.



Figure

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:

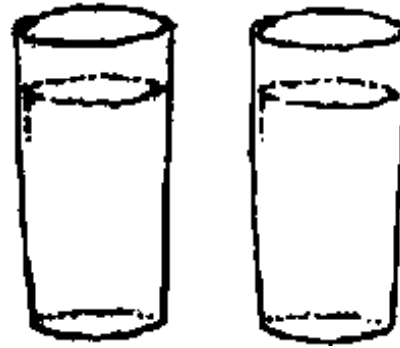
Whether stomach or chest pain is caused by heartburn, acid indigestion, or an ulcer, a few basic recommendations will probably help calm the pain and prevent it from coming back.

- **Do not eat too much. Eat small meals and eat frequent snacks between meals. Eat mainly foods that seem to calm and not to cause the pain.**
- **Notice what foods or drinks make the pain worse and avoid them. These usually include alcoholic drinks, coffee, spices, pepper, carbonated 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.**



Figure

- **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.**



Figure

- **Avoid tobacco. Smoking or chewing tobacco increases stomach acid and makes the problem worse.**



Figure

- **Take antacids. The best, safest antacids contain magnesium and aluminum hydroxide.**
- **For severe pain or ulcers that do not get better, try to get cimetidine (*Tagamet*), or ranitidine. These are very costly but usually very effective at calming the pain and helping to heal the sore. But the ulcer may come back.**
- **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.**



Figure

CAUTION:

- 1. Many doctors used to recommend milk for treatment of ulcers. But although milk may calm the pain at first, it causes an increase in stomach acid which can make an ulcer worse. Most doctors now say do not drink milk as a treatment for ulcers.**
- 2. Like milk, 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.**
- 3. Some medicines, such as aspirin and iron salts, make ulcers worse. Persons with signs of heartburn or acid indigestion should avoid them - or take them with extra care (with meals, lots of water, and perhaps antacids). Cortico-steroids also make ulcers worse, or cause them.**

It is important to treat an ulcer early. Otherwise it may lead to dangerous bleeding or peritonitis. Ulcers usually 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. Continued care is necessary to prevent the ulcer from

returning.

Better still, avoid problems caused by stomach acid by not eating too much, by not drinking much alcohol or coffee, and by not smoking.

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 mentally slow and/or deaf (cretinism). This can happen even though the mother does not have a goiter.

Goiter and cretinism 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 cretinism:

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, use tincture of iodine. Put 1 drop in a glass of water each day and drink. BE CAREFUL: Too much tincture of iodine is poisonous. More than the recommended amount of 1 drop a day can make a goiter worse. Keep the bottle where children cannot reach it. Iodized salt is much safer.

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

IONIZED SALT
costs only a little more than other
salt and is much better.



NEVER use regular salt.



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.

