

Nutrition: What to Eat to Be Healthy

CHAPTER

11

SICKNESSES CAUSED BY NOT EATING WELL

Good food is needed for a person to grow well, work hard, and stay healthy. Many common sicknesses come from not eating enough.

A person who is weak or sick because he does not eat enough, or does not eat the foods his body needs, is said to be poorly nourished—or malnourished. He suffers from *malnutrition*.

Poor nutrition can result in the following health problems:



in children

- failure of a child to grow or gain weight normally (see p. 297)
- 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 with a disability.

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, see p. 126).

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

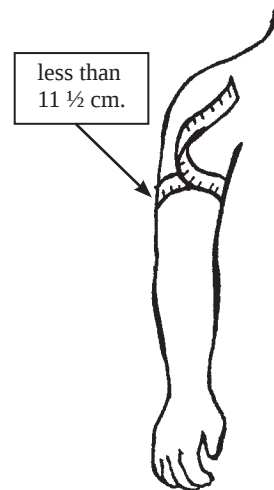
- **children**, because they need lots of food to grow well and stay healthy;
- **women** of child bearing age, especially if they are pregnant or breastfeeding, because they need extra food to stay healthy, to have healthy babies, and to do their daily work;
- **elderly persons**, because often they lose their teeth and their taste for food, so they cannot eat much at one time, even though they still need to eat well to stay healthy;
- **people with HIV**, because they need more food to fight their infection.

A malnourished child does not grow well. She generally is thinner and shorter than other children. Also, she is more likely to be irritable, to cry a lot, to move and play less than other children, and to get sick more often. If the child also gets diarrhea or other infections, she will lose weight. A good way to check if a child is poorly nourished is to measure the distance around her upper arm.

Checking Children for Malnutrition: The Sign of the Upper Arm

After 1 year of age, any child whose middle upper arm measures less than 11 ½ cm. around is malnourished — no matter how 'fat' his feet, hands, and face may look. If the arm measures between 11 ½ and 12 ½ cm., he is at risk of becoming malnourished.

Another good way to tell if a child is well nourished or poorly nourished is to weigh him regularly: once a month in the first year, then once every 3 months. A healthy, well nourished child gains weight regularly. The weighing of children and the use of the Child Health Chart are discussed fully in Chapter 21.



PREVENTING MALNUTRITION

To stay healthy, our bodies need plenty of good food. The food we eat has to fill many needs. First, it should provide enough **energy** to keep us active and strong. Also, it must help **build**, **repair**, and **protect** the different parts of our bodies. To do all this we need to eat a combination of foods every day.

MAIN FOODS AND HELPER FOODS

In much of the world, most people eat **one main low-cost food** with almost every meal. Depending on the region, this may be rice, maize, millet, wheat, cassava, potato, breadfruit, or banana. **This main food usually provides most of the body's daily food needs.**

However, the **main food** alone is not enough to keep a person healthy. Certain **helper foods** are needed. This is especially true for growing children, women who are pregnant or breastfeeding, and older people.

Even if a child regularly gets enough of the main food to fill her, she may become thin and weak. This is because the main food often has so much water and fiber in it, that the child's belly fills up before she gets enough energy to help her grow.

We can do 2 things to help meet such children's energy needs:

1. **Feed children more often**—at least 5 times a day when a child is very young, too thin, or not growing well. Also give her snacks between meals.



CHILDREN, LIKE CHICKENS,
SHOULD ALWAYS BE PECKING.

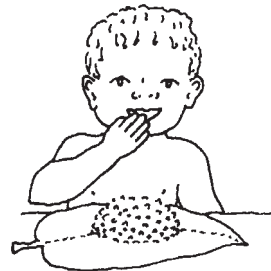


2. **Also add high energy 'helper foods'** such as oils and sugar or honey to the main food. It is best to add vegetable oil or foods containing oils—nuts, groundnuts (peanuts), or seeds, especially pumpkin or sesame seeds.



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

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



But she needs only this much rice when some vegetable oil is mixed in.

High energy foods added to the main food help to supply extra energy. Also, **2 other kinds of helper foods** should be added to the main food:

When possible, add **body-building foods** (proteins) such as beans, milk, eggs, groundnuts, fish, and meat.

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

EATING RIGHT TO STAY HEALTHY

The 'main food' your family eats usually provides **most—but not all**—of the body's energy and other nutritional needs. By adding **helper foods** to the **main food** you can make low cost nutritious meals. You do not have to eat all the foods listed here to be healthy. **Eat the main foods you are accustomed to, and add whatever 'helper foods' are available in your area.** Try to include 'helper foods' from each group, as often as possible.

GO FOODS

(energy helpers)

Examples:

- Fats** (vegetable oils, butter, *ghee*, lard)
- Foods rich in fats** (coconut, olives, fatty meat)
- Nuts*** (groundnuts, almonds, walnuts, cashews)
- Oil seeds** (pumpkin, melon, sesame, sunflower)
- Sugars** (sugar, honey, molasses, sugar cane, jaggery)

* *Note:* Nuts and oil seeds are also valuable as body-building helpers.



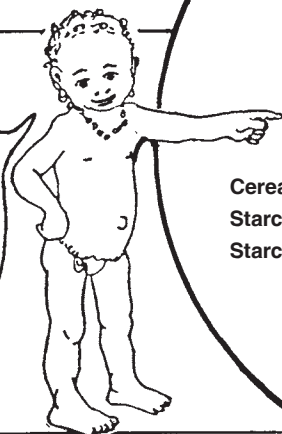
REMEMBER: Feeding children **enough** and feeding them **often** (3 to 5 times a day) is usually more important than the types of food you feed them.

MAIN FOODS*Examples:*

- Cereals and grains** (wheat, maize, rice, millet, sorghum)
- Starchy roots** (cassava, potatoes, taro)
- Starchy fruits** (banana, plantain, breadfruit)

Note: Main foods are cheap sources of energy. The cereals also provide some protein, iron, and vitamins—at low cost.

WE PUT THE MAIN FOOD IN THE CENTER BECAUSE IT MEETS MOST OF THE BODY'S FOOD NEEDS.

**GROW FOODS**

(proteins or body-building helpers)

Examples:

- Legumes** (beans, peas, and lentils)
- Nuts** (groundnuts, walnuts, cashews, and almonds)
- Oil seeds** (sesame and sunflower)
- Animal products** (milk, eggs, cheese, yogurt, fish, chicken, meat, small animals such as mice, and insects)

**GLOW FOODS**

(vitamins and minerals or protective helpers)

Examples:

- Vegetables** (dark green leafy plants, tomatoes, carrots, pumpkin, sweet potato, and peppers)
- Fruits** (mangoes, oranges, papayas)



Note to nutrition workers: This plan for meeting food needs resembles teaching about 'food groups', but places more importance on giving enough of the traditional 'main food' and **above all, giving frequent feedings with plenty of energy-rich helpers.** This approach is more adaptable to the resources and limitations of poor families.

HOW TO RECOGNIZE MALNUTRITION

Among poor people, **malnutrition is often most severe in children, who need lots of nutritious food to grow well and stay healthy.** There are different forms of malnutrition:

MILD MALNUTRITION

This is the most common form, but it is not always obvious. The child simply does not grow or gain weight as fast as a well-nourished child. Although he may appear rather small and thin, he usually does not look sick. However, because he is poorly nourished, he may lack strength (resistance) to fight infections. So he **becomes more seriously ill** and takes longer to get well than a well nourished child.

Children with this form of malnutrition suffer more from diarrhea and colds. Their colds usually last longer and are more likely to turn into pneumonia. Measles, tuberculosis, and many other **infectious diseases are far more dangerous** for these malnourished children. More of them die.

It is important that children like these get special care and enough food **before** they become seriously ill. This is why regular weighing or measuring around the middle upper arm of young children is so important. It helps us to recognize mild malnutrition early and correct it.

Follow the guidelines for preventing malnutrition.

SEVERE MALNUTRITION

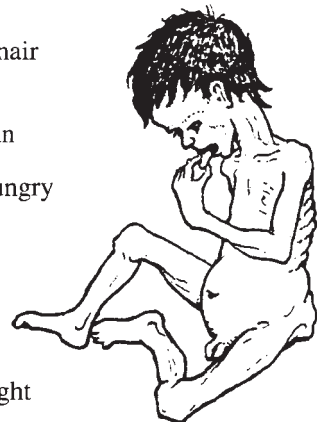
This occurs most often in babies who stopped breastfeeding early or suddenly, and who are not given sufficient high energy foods often enough. Severe malnutrition often starts when a child has diarrhea or another infection. We can usually recognize children who are severely malnourished without taking any measurements. The 2 main examples are:

DRY MALNUTRITION—OR MARASMUS

This child does not get enough of any kind of food. He is said to have **dry malnutrition** or *marasmus*. In other words, he is starved. His body is small, very thin and wasted. He is little more than skin and bones.

This child needs more food—especially energy foods.

may have
thinning hair
face of
an old man
always hungry
potbelly
very thin
very
underweight



THIS CHILD IS JUST SKIN AND BONES.

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 (see p. 111).

Also, try to avoid foods that are old, and may be spoiled or moldy.

swollen
'moon' face

stopped
growing

sores
and
peeling
skin

swollen
hands
and feet



color loss
in hair
and skin

miserable

thin
upper arms

wasted
muscles
(but he
may have
some fat)

First the child becomes swollen. The other signs come later.

THIS CHILD IS SKIN, BONES, AND WATER.

OTHER FORMS OF MALNUTRITION

Other forms of malnutrition may result when certain vitamins and minerals are missing from the foods people eat. Many of these specific types of malnutrition are discussed more fully later in this chapter and in other parts of this book:

- **Night blindness** in children who do not get enough vitamin A (see p. 226).
- **Rickets** from lack of vitamin D (see p. 125).
- Various **skin problems, sores on the lips and mouth, or bleeding gums** from not eating enough fruits, vegetables, and other foods containing certain vitamins (see p. 208 and 232).
- **Anemia** in people who do not get enough iron (see p. 124).
- **Goiter** from lack of iodine (see p. 130).

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



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 breastfeed 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



There are many reasons for hunger and poor nutrition. One main reason is poverty. In many parts of the world a few people own most of the wealth and the land. They may grow crops like coffee or tobacco, which they sell to make money, but which have no food value. Or the poor may farm small plots of borrowed land, while the owners take a big share of the harvest. **The problem of hunger and poor nutrition will never be completely solved until people learn to share with each other fairly.**

But there are many things people can do to eat better at low cost—and by eating well gain strength to stand up for their rights. On pages w13 and w14 of “Words to the Village Health Worker” are several suggestions for increasing food production. These include improved use of land through **rotating crops, contour ditches, and irrigation**; also ideas for **breeding fish, beekeeping, grain storage, and family gardens**. If the whole village or a group of families works together on some of these things, a lot can be done to improve nutrition.

When considering the question of food and land, it is important to remember that a given amount of land can feed only a certain number of persons. For this reason, some people argue that ‘the small family lives better’. However, for many poor families, to have many children is an economic necessity. By the time they are 10 or 12 years old, children of poor families often produce more than they cost. Having a lot of children increases the chance that parents will receive the help and care they need in old age.

In short, lack of social and economic security creates the need for parents to have many children. Therefore, the answer to gaining a balance between people and land does not lie in telling poor people to have small families. It lies in redistributing the land more fairly, paying fair wages, and taking other steps to overcome poverty. Only then can people afford small families and hope to achieve a lasting balance between people and land. (For a discussion of health, food, and social problems, see *Helping Health Workers Learn*.)

When money is limited, it is important to use it wisely. This means cooperation and looking ahead. Too often the father of a poor family will spend the little bit of money he has on alcohol and tobacco rather than on buying nutritious food, a hen to lay eggs, or something to improve the family’s health. Men who drink together would do well to get together sometime when they are sober, to discuss these problems and look for a healthy solution.

Also, some parents buy sweets or soft drinks (fizzy drinks) for their children when they could spend the same money buying eggs, milk, nuts or other nutritious foods. This way their children could become more healthy for the same amount of money. Discuss this with the families and look for solutions.

NO



IF YOU HAVE A LITTLE MONEY
AND WANT TO HELP YOUR CHILD GROW STRONG:
DO NOT BUY HIM A SOFT DRINK OR SWEETS—
BUY HIM 2 EGGS OR A HANDFUL OF NUTS.

YES



Better Foods at Low Cost

Many of the world's people eat a lot of bulky, starchy foods, without adding enough helper foods to provide the extra energy, body building, and protection they need. This is partly because many helper foods are expensive—especially those that come from animals, like milk and meat.

Most people cannot afford much food from animals. Animals require more land for the amount of food they provide. A poor family can usually be better nourished if they **grow or buy plant foods like beans, peas, lentils, and groundnuts together with a main food such as maize or rice, rather than buy costly animal foods like meat and fish.**

**People can be strong and healthy
when most of their proteins and other helper foods come from plants.**

However, where family finances and local customs permit, it is wise to eat, when possible, some food that comes from animals. This is because even plants high in protein (body-building helpers) often do not have all of the different proteins the body needs.

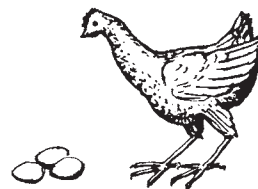
Try to **eat a variety of plant foods.** Different plants supply the body with different proteins, vitamins, and minerals. For example, beans and maize together meet the body's needs much better than either beans or maize alone. And if other vegetables and fruits are added, this is even better.

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

1. **Breast milk.** This is the cheapest, healthiest, and most complete food for a baby. The mother can eat plenty of plant foods and turn them into the perfect baby food—breast milk. Breastfeeding is not only best for the baby, it saves money and prevents diseases!



2. **Eggs and chicken.** In many places eggs are one of the cheapest and best forms of animal protein. They can be cooked and mixed with foods given to babies who cannot get breast milk. Or they can be given along with breast milk as the baby grows older.



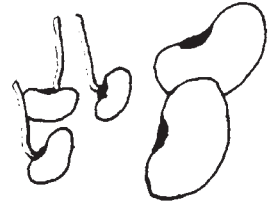
Eggshells that are boiled, finely ground, and mixed with food can provide needed calcium for pregnant women who develop sore, loose teeth or muscle cramps.

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

3. **Liver, heart, kidney, and blood.** These are especially high in protein, vitamins, and iron (for anemia) and are often cheaper than other meat. Also **fish** is often cheaper than other meat, and is just as nutritious.



4. **Beans, peas, lentils, and other legumes** are a good cheap source of protein. If allowed to sprout before cooking and eating, they are higher in vitamins. Baby food can be made from beans by cooking them well, and then straining them through a sieve, or by peeling off their skins, and mashing them.



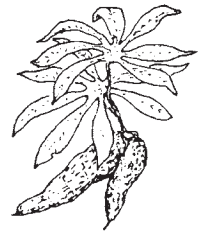
Beans, peas, and other legumes are not only a low-cost form of protein. Growing these crops makes the soil richer so that other crops will grow better afterwards. For this reason, crop rotation and mixed crops are a good idea (see p. w13).

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



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

6. **Cassava (manioc) leaves** contain 7 times as much protein and more vitamins than the root. If eaten together with the root, they add food value—at no additional cost. The young leaves are best.



7. **Lime soaked maize (corn).** When soaked in lime (cal) before cooking, as is the custom in much of Latin America, maize is richer in calcium. Soaking in lime also allows more of the vitamins (niacin) and protein to be used by the body.



8. **Rice, wheat, and other grains** are more nutritious if their outer skins are not removed during milling. Moderately milled rice and whole wheat contain more proteins, vitamins, and minerals than the white, over milled product.

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



9. **Cook vegetables, rice, and other foods in little water.** And do not overcook. This way fewer vitamins and proteins are lost. Be sure to drink the leftover water, or use it for soups or in other foods.



10. Many **wild fruits and berries** are rich in vitamin C as well as natural sugars. They provide extra vitamins and energy. (Be careful not to eat berries or fruit that are poisonous.)



11. **Cooking in iron pots** or putting a piece of old iron or horseshoe in the pan when cooking beans and other foods adds iron to food and helps prevent anemia. More iron will be available if you also add tomatoes.



For another source of iron, put some iron nails in a little lemon juice for a few hours. Then make lemonade with the juice and drink it.



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



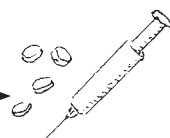
WHERE TO GET VITAMINS: IN PILLS, INJECTIONS, SYRUPS—OR IN FOODS?

Anyone who eats a good mixture of foods, including vegetables and fruits, gets all the vitamins he needs. It is always better to eat well than to buy vitamin pills, injections, syrups, or tonics.



YES

If you want vitamins, buy eggs or other nutritious foods instead of pills or injections.



NO

Sometimes nutritious foods are scarce. If a person is already poorly nourished, or has a serious illness like HIV, he should eat as well as he can and perhaps take vitamins besides.

Vitamins taken by mouth work as well as injections, cost less, and are not as dangerous. **Do not inject vitamins! It is better to swallow them—preferably in the form of nutritious foods.**

If you buy vitamin preparations, be sure they have all these vitamins and minerals:

- ◆ Niacin (niacinamide)
- ◆ Vitamin 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:

- | | | |
|---|----------------------|--|
| <ul style="list-style-type: none"> ◆ Folic Acid (folicin), for pregnant women ◆ Vitamin A ◆ Vitamin C (ascorbic acid) ◆ Vitamin D ◆ Iodine (in areas where goiter is common) | } for small children | <ul style="list-style-type: none"> ◆ Vitamin B6 (pyridoxine), for small children and persons taking medicine for tuberculosis ◆ Calcium, for children and breastfeeding mothers who do not get enough calcium in foods such as milk, cheese, or foods prepared with lime |
|---|----------------------|--|

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:

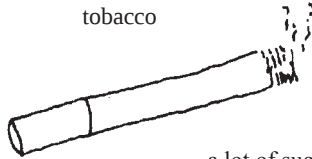
**The same foods that are good for us when we are healthy
are good for us when we are sick.**

Also, the things that harm us when we are healthy do us even more harm when we are sick. Avoid these things:

alcoholic drinks



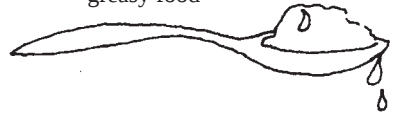
tobacco



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 (see p. 149). 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 (see pages 127 and 128).

THE BEST DIET FOR SMALL CHILDREN

THE FIRST 6 MONTHS OF LIFE

For the first 6 months give the baby breast milk and nothing else. It is better than any baby food or milks you can buy. Breast milk helps protect the baby against diarrhea and many infections. It is best not to give extra water or teas, even in hot weather.



Some mothers stop breastfeeding early because they think that their milk is not good enough for their baby, or that their breasts are not making enough milk. **However, a mother's milk is always very nutritious for her baby, even if the mother herself is thin and weak.**

If a woman has HIV, sometimes she can pass HIV to a baby in her breast milk. But if she does not have access to clean water, her baby is more likely to die from diarrhea, dehydration, and malnutrition than AIDS. Now medicines can prevent the spread of HIV to babies through breast milk (see p. 398). But only you can evaluate the conditions in your home and community and decide what to do.

Nearly all mothers can produce all the breast milk their babies need:

- ◆ The best way for a mother to keep making enough breast milk is to breastfeed the baby often, eat well, and drink lots of liquids.
- ◆ Do not give the baby other foods before he is 6 months old, and always breastfeed before giving the other foods.
- ◆ If a mother's breasts produce little or no milk, she should continue to eat well, drink lots of liquids and let the baby suck her breasts often. After each breastfeeding, give the baby, by cup (not bottle), some other type of milk—like boiled cow's or goat's milk, canned milk, or powdered milk. (Do not use 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:

# 1		# 2
2 parts boiled, cooled cow's milk	→	2 parts canned evaporated milk
1 part boiled, cooled water	→	3 parts boiled, cooled water
1 large spoonful sugar or oil for each large glass	→	1 large spoonful sugar or oil for each large glass

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 (see p. 154). If a bottle is used, boil it and the nipple each time before the baby is fed.
- ◆ If you cannot buy milk for the child, make a porridge from rice, cornmeal, or other cereal. Always add to this some skinned beans, eggs, meat, chicken, or other protein. Mash these well and give them as a liquid. If possible add sugar and oil.

WARNING: Cornmeal or rice water alone is not enough for a baby. The child will not grow well. He will get sick easily and may die. The baby needs a main food with added helper foods.

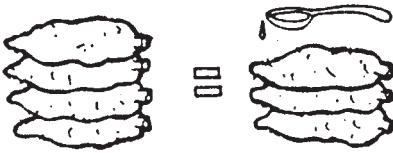
FROM 6 MONTHS TO 1 YEAR OF AGE:

1. **Keep giving breast milk**, if possible until the baby is 2 or 3 years old.

2. When the baby is 6 months old, **start giving her other foods in addition to breast milk**. Always give the breast first, and then the other foods. It is good to start with a gruel or porridge made from the main food (p. 111) such as maize meal or rice cooked in water or milk. Then start adding a little **cooking oil** for extra energy. After a few days, start adding **other helper foods** (see p. 110). 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 (see p. 110). Most important is to add foods that give extra energy (such as oil) and—whenever possible—extra iron (such as dark green leafy vegetables).

Remember, a young child's stomach is small and cannot hold much food at one time. So **feed her often**, and **add high-energy helpers** to the main food:



A spoonful of cooking oil added to a child's food means he has to eat only 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 breastfeeding, the child is even more likely to become malnourished.

For a child of this age to be healthy we should:

- ◆ Keep feeding her breast milk as much as before.
- ◆ Feed her other nutritious foods also, always starting with just a little.
- ◆ Feed her at least 5 times a day and also give her snacks between meals.
- ◆ Make sure the food is clean and freshly prepared.
- ◆ Filter, boil, or purify the water she drinks.
- ◆ Keep the child and her surroundings clean.
- ◆ When she gets sick, feed her extra well and more often, and give her plenty of liquids to drink.



For mothers infected with HIV: After 6 months, your baby will be bigger and stronger, and will have less danger of dying from diarrhea. If you have been breastfeeding her, now you should switch to other milks and feed the baby other foods. This way the baby will have less risk of getting HIV.

ONE YEAR AND OLDER:

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

Every day, try to give the child plenty of the main food that people eat, together with 'helper' foods that give added high energy, proteins, vitamins, iron, and minerals (as shown on p. 111) so that he will grow up strong and healthy.

To make sure that the child gets enough to eat, **serve him in his own dish**, and let him take as long as he needs to eat his meal.

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

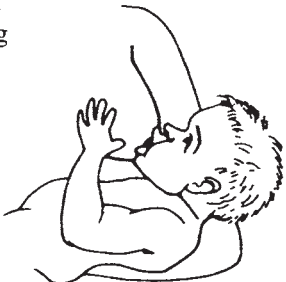
However, when food supply is limited or when the main foods have a lot of water or fiber in them, adding a little sugar and vegetable oil to the main food provides extra energy and allows children to make fuller use of the protein in the food they get.

THE BEST DIET FOR SMALL CHILDREN

THE FIRST 6 MONTHS

breast milk
and nothing
else

YES

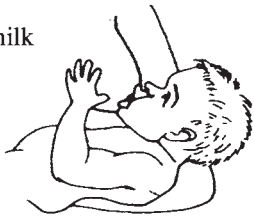


NO



FROM 6 MONTHS TO 2 YEARS

breast milk

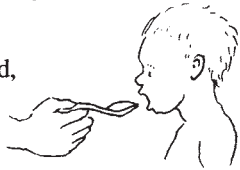


and also



cow, goat,
or
powdered
milk

and other
well-cooked,
nutritious
foods



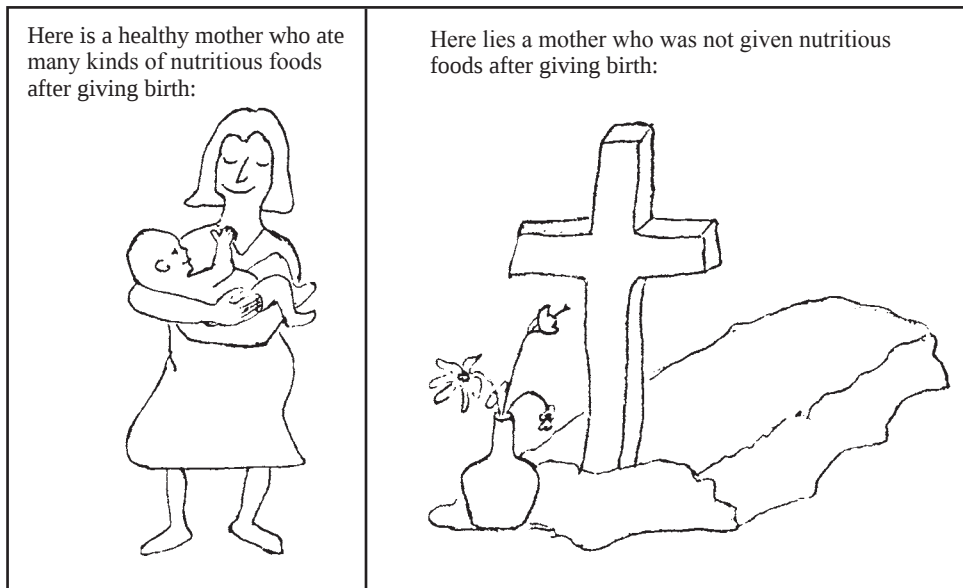
HARMFUL IDEAS ABOUT DIET

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.



2. It is not true that oranges, guavas, or other fruits are bad for a person who has a cold, the flu, or cough. In fact, fruits like oranges and tomatoes have a lot of vitamin C, which may help fight colds and other infections.

3. It is not true that certain foods like pork, spices, or guavas cannot be eaten while taking medicine. However, when a person has a disease of the stomach or other parts of the digestive system, eating a lot of fat or greasy foods may make this worse whether or not one is taking medicines.

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 (see p. 142), chronic diarrhea, and dysentery.

The signs of anemia are:

- pale or transparent skin
- pale insides of eyelids
- white fingernails
- pale gums
- weakness and fatigue



- If the anemia is very severe, face and feet may be swollen, the heartbeat rapid, and the person may have shortness of breath.
- Children and women who like to eat dirt are usually anemic.

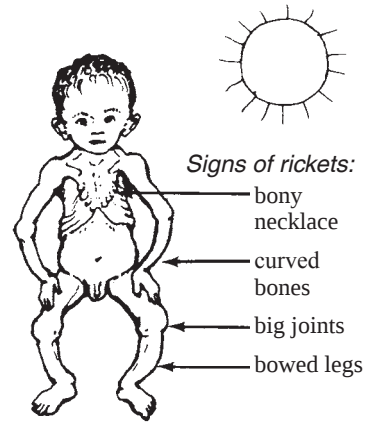
Treatment and prevention of anemia:

- ◆ **Eat foods rich in iron.** Meat, fish, and chicken are high in iron. Liver is especially high. Dark green leafy vegetables, beans, peas, and lentils also have some iron. It also helps to cook in iron pots (see p. 117). To help the body absorb more iron, eat raw vegetables and fruit with meals, and avoid drinking coffee and tea with food.
- ◆ If the anemia is moderate or severe, the person should take iron (ferrous sulfate pills, p. 392). 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.

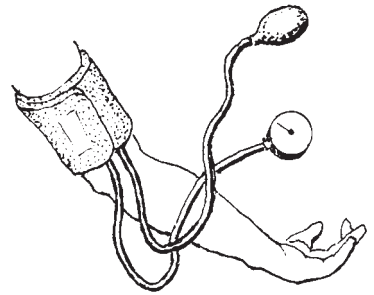
High Blood Pressure (Hypertension)

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.



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, see pages 410 and 411.

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

- ◆ If overweight, lose weight (see next page).
- ◆ 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.
- ◆ 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.

People Who Are Too Heavy

To be very fat is not healthy. Very heavy people are more likely to get high blood pressure, stroke, gallstones, some kinds of diabetes, arthritis in legs and feet, and other problems. Sometimes being too heavy brings on illness, and sometimes illness may cause you to become too heavy.

As our diets change and traditional foods are replaced by processed foods, especially “junk foods” high in calories but low in nutrition, people tend to gain weight in ways that are not healthy.

Losing weight may help with the illnesses mentioned above. Losing weight is also important if you are having difficulty doing your daily activities. You can lose weight by:



- ◆ eating less greasy, fatty, or oily foods.
- ◆ eating less sugar or sweet foods.
- ◆ getting more exercise.
- ◆ **stop eating processed foods** and eat fresh fruits and vegetables instead.



Constipation

A person who has hard stools and has not had a bowel movement for 3 or more days is said to be constipated. Constipation is often caused by a poor diet (especially not eating enough fruits, green vegetables, or foods with natural fiber like whole grain bread) or by lack of exercise.

Drinking more water and eating more fruits, vegetables, and foods with natural fiber like whole grain bread, cassava, wheat bran, rye, carrots, turnips, raisins, nuts, pumpkin or sunflower seeds, is better than using laxatives. It also helps to add a little vegetable oil to food each day. Older people especially may need to walk or exercise more in order to have regular bowel movements.

A person who has not had a bowel movement for 4 or more days, if he does not have a sharp pain in his stomach, can take a mild salt laxative like milk of magnesia.

But do not take laxatives often.

Do not give laxatives to babies or young children. If a baby is severely constipated, gently put a little cooking oil in her rectum. Or, if necessary, gently break up and remove the hard stool (feces) with a greased finger.

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

Diabetes

Persons with diabetes have too much sugar in their blood. This problem can start when a person is young (Type 1 diabetes) or older (Type 2 diabetes). Type 1 diabetes is usually more serious, and young people need a medicine called insulin to control it. But most people with diabetes have Type 2, starting after age 40.

Early signs of diabetes:

- always thirsty
- urinates (pees) often and a lot
- always tired
- always hungry
- weight loss

Later, more serious signs:

- itchy skin
- periods of blurry eyesight
- some loss of feeling in hands or feet
- frequent vaginal infections
- sores on the feet that do not heal
- loss of consciousness (in extreme cases)

All these signs may be caused by other diseases. In order to find out whether a person has diabetes, test her urine to see if there is sugar in it. One way to test the urine is to taste it. If it tastes sweet to you, have 2 other persons taste it. Have them also taste the urine of 3 other people. If everyone agrees that the same person's urine is sweeter, she is probably diabetic.

Another way of testing urine is to use special paper strips (for example, *Uristix*). If these change color when dipped in the urine, it has sugar in it.

If the person is a child or young adult, he should be seen by an experienced health worker or doctor.

When a person gets diabetes after he is 40 years old, it can often be best controlled without medicines, by eating correctly and getting plenty of exercise. **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 fresh vegetables and 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 (p. 175).

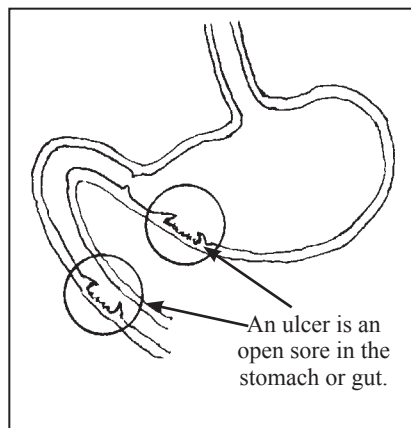
Acid Indigestion, Heartburn, and Stomach Ulcers

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 digestive system, usually caused by bacteria. Too much acid in the stomach prevents it from healing.

It may cause a chronic, dull (sometimes sharp) pain in the pit of the stomach. As with acid indigestion, often the pain lessens when the person eats food or drinks a lot of water. The pain usually gets worse an hour or more after eating, if the person misses a meal, or after he drinks alcohol or eats fatty or spicy foods. Pain is often worse at night. Without a special examination (endoscopy) it is often hard to know whether a person with frequent stomach pain has an ulcer or not.



If the ulcer is severe, it can cause vomiting, sometimes with fresh blood, or with digested blood that looks like coffee grounds. Stools with blood from an ulcer are usually black, like tar.

WARNING: Some ulcers are painless or 'silent', and the first sign is **blood in vomit, or black, sticky stools**. This is a medical emergency. The person can quickly bleed to death. **GET MEDICAL HELP FAST.**

Prevention and Treatment:

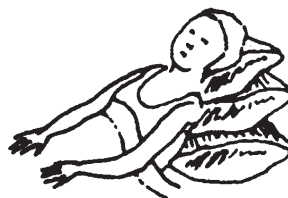
Whether stomach or chest pain is caused by heartburn, acid indigestion, or an ulcer, a few basic recommendations will probably help calm the pain and prevent it from coming back.

♦ **Do not eat too much.** Eat small meals and eat frequent snacks between meals.

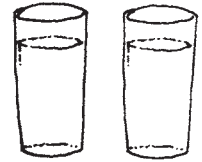
♦ **Notice what foods or drinks make the pain worse and avoid them.**

These usually include alcoholic drinks, 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.



♦ **Drink a lot of water.** Try to drink 2 big glasses of water both before and after each meal. Also drink a lot of water frequently between meals. If the pain comes often, keep drinking water like this, even in those times when you have no pain.



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



♦ **Take antacids.** The best, safest antacids contain magnesium and aluminum hydroxide. (See p. 380 for information, dose, and warnings about different antacids.)

♦ If the above treatments do not work, you may have an ulcer. Use 2 medicines to treat the bacteria that causes the ulcer: either amoxicillin (p. 352) or tetracycline (p. 355); and metronidazole (p. 368). Also take omeprazole (*Prilosec*, p. 381) or ranitidine (*Zantac*, see p. 381) to reduce the production of acid in the stomach. These medicines help to calm the pain and heal the sore.



♦ **Aloe vera** is a plant found in many countries that is said to heal ulcers. Chop the spongy leaves into small pieces, soak them in water overnight, and then drink one glass of the slimy, bitter water every 2 hours.

CAUTION:

1. Some antacids, such as **sodium bicarbonate** (baking soda) and *Alka-Seltzer* may quickly calm acid indigestion, but soon cause more acid. They should be used only for occasional indigestion, never for ulcers. This is also true for antacids with calcium.

2. Some **medicines**, such as aspirin and ibuprofen, make ulcers worse. Persons with signs of heartburn or acid indigestion should avoid them—use acetaminophen instead of aspirin. Cortico-steroids also make ulcers worse (see p. 51).

It is important to **treat an ulcer early**. Otherwise it may lead to dangerous bleeding or peritonitis. Ulcers sometimes get better if the person is careful with what he eats and drinks. Anger, tension, and nervousness increase acid in the stomach. Learning to relax and keep calm will help. Treatment with antibiotics is necessary to prevent the ulcer from returning.

Avoid having minor stomach problems get worse by not eating too much, by not drinking much alcohol or coffee, and by not smoking or using tobacco.

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 (hypothyroidism, p. 318). This can happen even though the mother does not have a goiter.

Goiter and hypothyroidism are most common in mountain areas where there is little natural iodine in the soil, water, or food. In these areas, eating a lot of certain foods like cassava makes it more likely for a person to get a goiter.

How to prevent or cure a goiter and prevent hypothyroidism:

Everyone living in areas where people get goiters should use **iodized salt**. Use of iodized salt prevents the common kind of goiter and will help many goiters go away. (Old, hard goiters can only be removed by surgery, but this is usually not necessary.)

If it is not possible to get iodized salt, it may be possible to get iodine oil to take by mouth or injection. Or, mix 1 drop of povidone iodine in 1 liter of water and drink a glass of the mixture every week.

Most home cures for goiter do not do any good. However, eating crab and other seafood can do some good because they contain iodine. Mixing a little seaweed with food also adds iodine. But the easiest way is to use **iodized salt**.

HOW TO KEEP FROM GETTING A GOITER

NEVER use regular salt.

ALWAYS use iodized salt.



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



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.