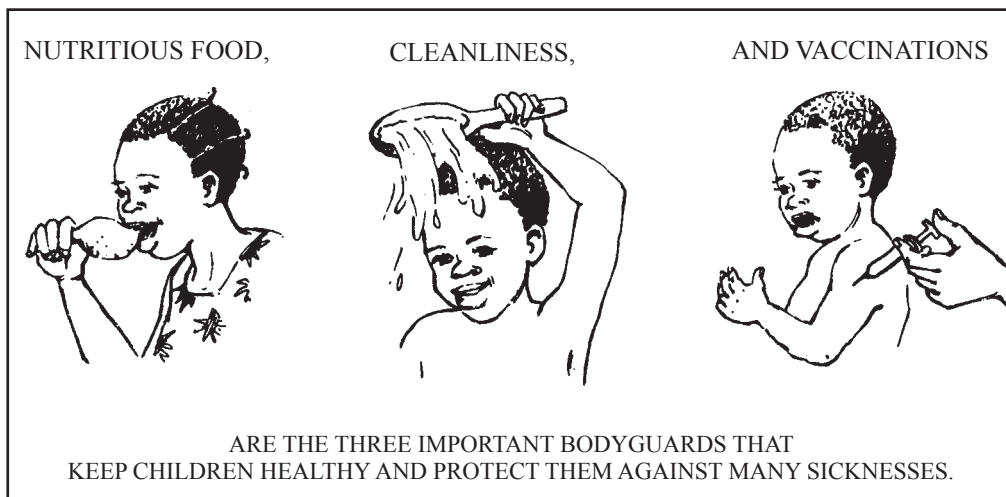


# Health and Sickesses of Children

## CHAPTER 21

### WHAT TO DO TO PROTECT CHILDREN'S HEALTH



Chapters 11 and 12 tell more about the importance of nutritious food, cleanliness, and vaccination. Parents should read these chapters carefully and use them to help care for—and teach—their children. The main points are briefly repeated here.

### Nutritious Food

It is important that children eat the most nutritious foods they can get, so that they grow well and do not get sick.

The best foods for children at different ages are:

- ◆ in the first 6 months: **breast milk** and nothing more.
- ◆ from 6 months to 1 year: **breast milk** and also **other nutritious foods**—such as boiled cereals, mashed-up beans, eggs, meat, cooked fruits and vegetables.
- ◆ from 1 year on: the child should eat the **same foods as adults**—but **more often**. To the main food (rice, maize, wheat, potatoes, or cassava) add helper foods as discussed in Chapter 11.
- ◆ Above all, children should get **enough** to eat—several times a day.
- ◆ All parents should watch for signs of malnutrition in their children and should give them the best food they can.

## Cleanliness

Children are more likely to be healthy if their village, their homes, and they themselves are kept clean. Follow the Guidelines of Cleanliness explained in Chapter 12. Teach children to follow them—and to understand their importance. Here the most important guidelines are repeated:

- ◆ Bathe children and change their clothes often.
- ◆ Teach children always to wash their hands when they get up in the morning, after they have a bowel movement, and before they eat or handle food.
- ◆ Make latrines or outhouses—and teach children to use them.
- ◆ Where hookworm exists, do not let children go barefoot; use sandals or shoes.
- ◆ Teach children to brush their teeth; and do not give them a lot of candies, sweets, or carbonated drinks.
- ◆ Cut fingernails very short.
- ◆ Do not let children who are sick or have sores, scabies, lice, or ringworm sleep with other children or use the same clothing or towels.
- ◆ Treat children quickly for scabies, ringworm, intestinal worms, and other infections that spread easily from child to child.
- ◆ Do not let children put dirty things in their mouths or let dogs or cats lick their faces.
- ◆ Keep pigs, dogs, and chickens out of the house.
- ◆ Use only pure, boiled, or filtered water for drinking. This is especially important for babies.
- ◆ Do not feed babies from baby bottles because these are hard to keep clean and can cause illness. Feed babies with a cup and spoon.

## Vaccinations

Vaccinations protect children against many of the most dangerous diseases of childhood—whooping cough, diphtheria, tetanus, polio, measles, tuberculosis, hepatitis, and rotavirus.

Children should be given the different vaccinations at different ages, as shown on page 147. Several vaccines are now combined to lower the number of injections and clinic visits needed to protect your child.

Tetanus of the newborn can be prevented by vaccinating mothers against tetanus during pregnancy (see p. 250).



**Be sure your children get all the vaccinations they need.**

## CHILDREN'S GROWTH—AND THE “ROAD TO HEALTH”

A healthy child grows steadily. If he eats enough nutritious food, and has no serious illness, a child gains weight each month.

**A child who grows well is healthy.**



A child who takes longer to gain weight than other children, stops gaining weight, or is losing weight is not healthy. He may not be eating enough or he may have a serious illness, or both.

A good way to check whether a child is healthy and is getting enough nutritious food is to weigh him each month and see if he gains weight as expected. If a monthly record of the child's weight is kept on a Child Health Chart, it is easy to see at a glance whether the child is gaining weight as expected.

When used well, the charts tell mothers and health workers when a child is not growing as expected, so they can take early action. They can make sure the child gets more to eat, and can check for and treat any illness the child may have.

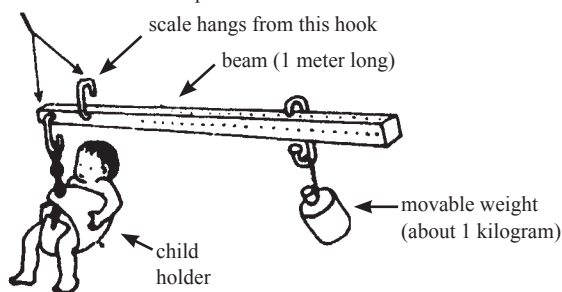
On the next page is a typical Child Health Chart showing the “Road to Health.” This chart can be cut out and copied. Or larger, ready-made cards can be obtained (in English, Spanish, Portuguese, or Zulu) from Health Books International (see p. 432 for address). Similar charts are produced in local languages by the Health Departments in many countries.

It is a good idea for every mother to keep a Child Health Chart for each of her children under 5 years of age. If there is a health center or under-fives clinic nearby, she should take her children, with their charts, to be weighed and to have a check-up each month. The health worker can help explain the Chart and its use. To protect the Chart, keep it in a plastic envelope.

### HOMEMADE BEAM SCALE

You can make a beam scale of dry wood or bamboo. Place all hooks as shown and hang the scale. To make kg marks on the beam, fill 2 plastic one-liter bottles with water. Place the first bottle where baby would hang. Hang the second bottle, and where beam balances, make the 1 kg mark, and so on. With a ruler, measure the distance between the marks, and make marks for 200, 400, 600, and 800 grams.

two hooks about 5 cm apart



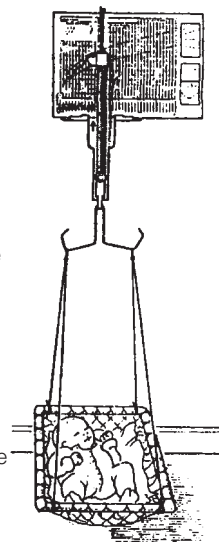
Weight is correct when beam stays horizontal.

### DIRECT RECORDING SCALE

available from Health Books International (see p. 433)

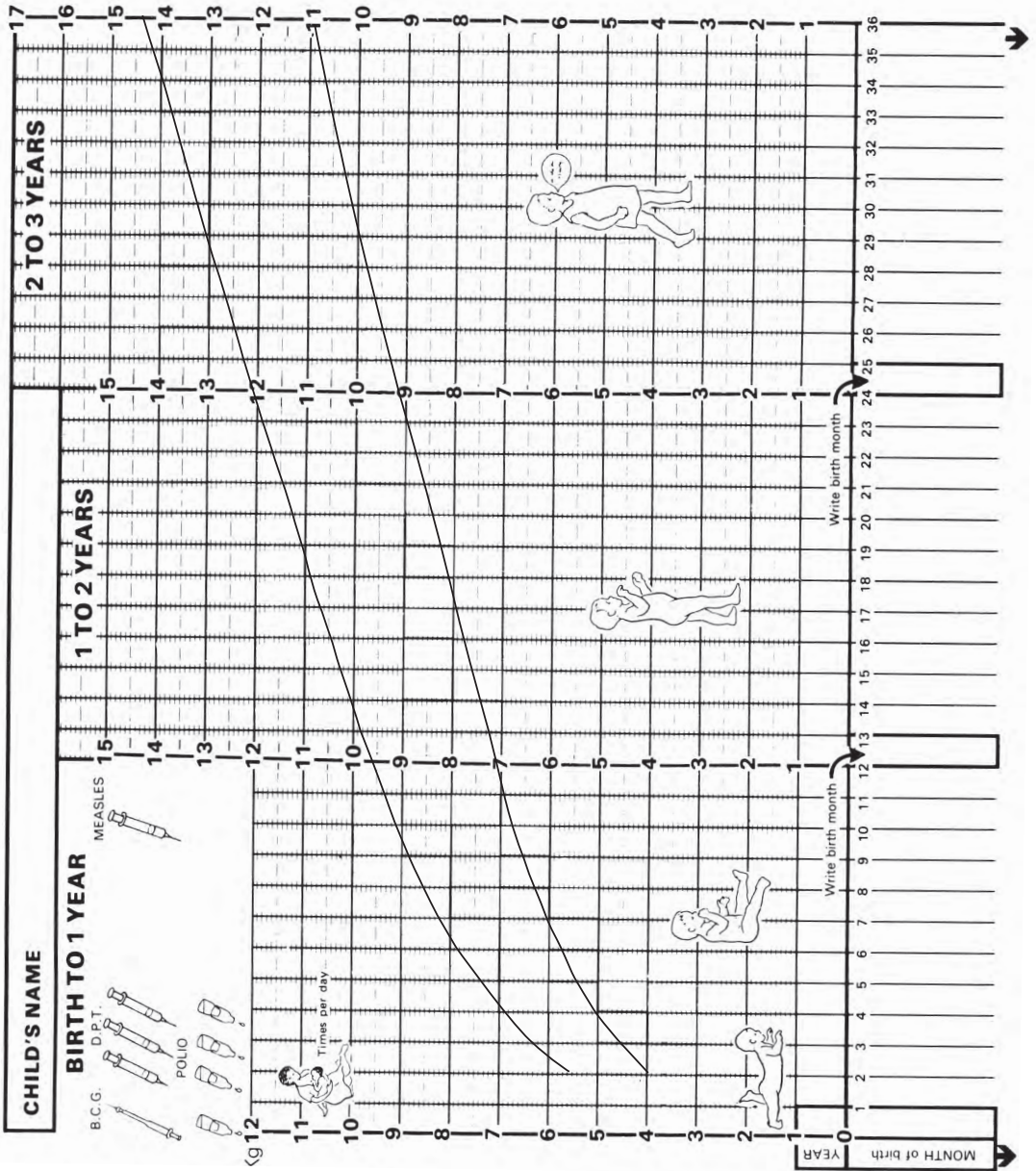
The growth chart slips in behind the scales so you can mark the child's weight directly onto the chart.

It is best to hang this and other scales close to the ground. A baby may be scared of hanging up high.





SIDE TWO



**WATCH THE DIRECTION OF THE LINE SHOWING THE CHILD'S GROWTH**

- GOOD**  
Child growing well
- DANGER**  
Not gaining weight; find out why
- VERY DANGEROUS**  
Losing weight. May be ill; needs extra care

**WRITE ON THE CHART**  
Any illness e.g. diarrhoea, measles

Admission to hospital  
Solids introduced  
Breast feeding stopped  
Birth of next child

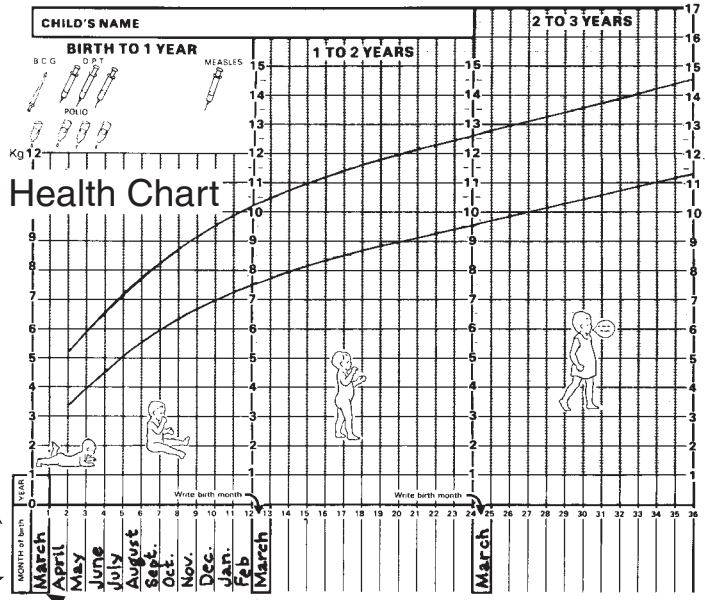
*like this -*

Measles	Diarrhoea	Admitted to hospital	Extra meals given	Worm medicine
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## How to Use the Child Health Chart

**FIRST**, write the months of the year in the little squares at the bottom of the chart.



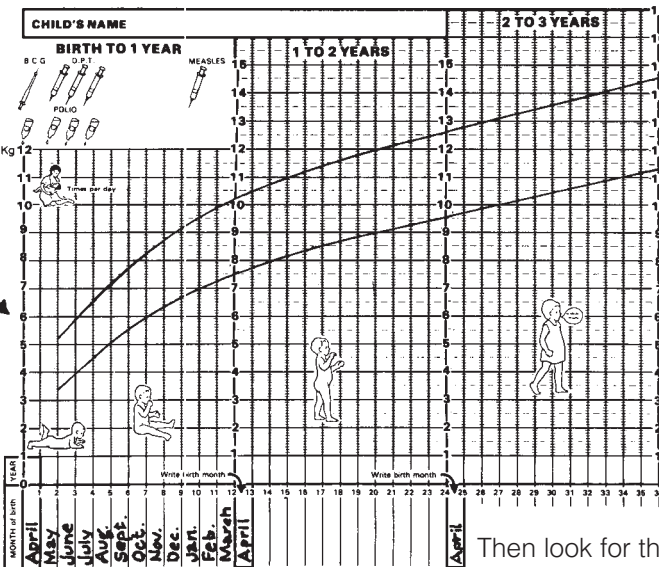
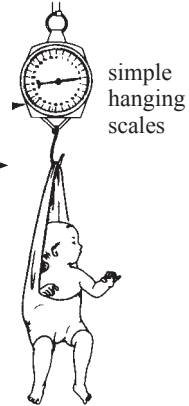
Write the month the baby was born in the first square for each year. This chart shows the baby was born in March.

**SECOND**, weigh the child.

Let us suppose that a child was born in April. It is now August, and the child weighs 6 kilograms.

**THIRD**, look at the card.

Kilograms are written on the side of the card. Look for the number of kilograms the child weighs (in this case, 6).



WATCH THE DIRECTION OF THE LINE SHOWING THE CHILD'S GROWTH

- GOOD**  
Child growing well
- DANGER**  
Not gaining weight find out why
- VERY DANGEROUS**  
Losing weight. May be ill, needs extra care.

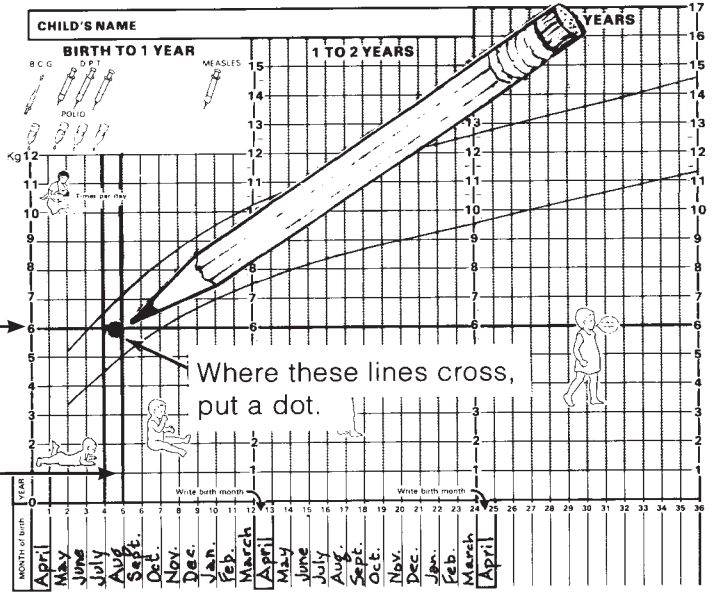
WRITE ON THE CHART  
Any illness e.g. diarrhoea, measles  
Admission to hospital  
Solids introduced  
Breastfeeding stopped  
Birth of next child  
like this—

At 1 year Measles  
At 1 year 6 months Diarrhoea  
At 1 year 8 months Diagnosed to hospital  
At 2 years 3 months Active measles given  
At 2 years 6 months Worms given

Then look for the present month at the bottom of the cart (in this case, August of the baby's first year).

**FOURTH**, follow the line that goes out from the 6

and  
the lines that go up from August.



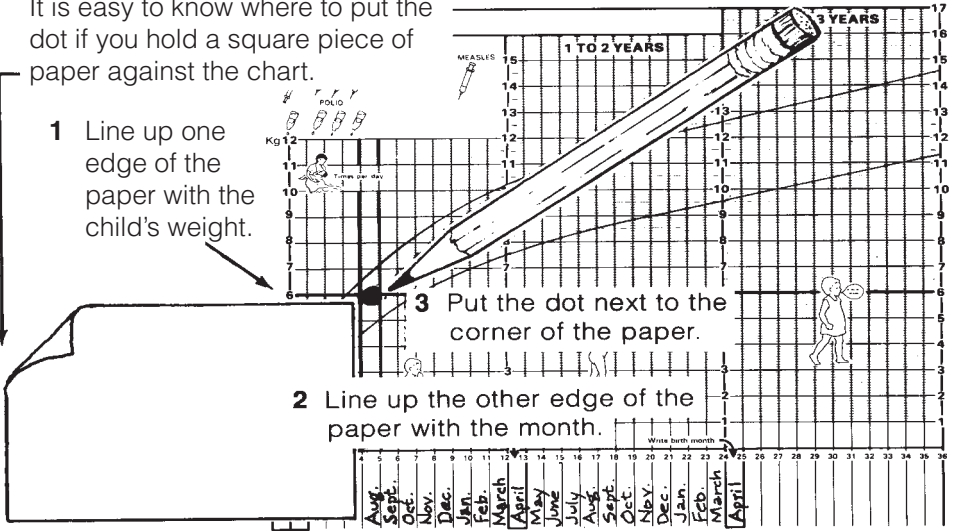
Where these lines cross, put a dot.

It is easy to know where to put the dot if you hold a square piece of paper against the chart.

**1** Line up one edge of the paper with the child's weight.

**3** Put the dot next to the corner of the paper.

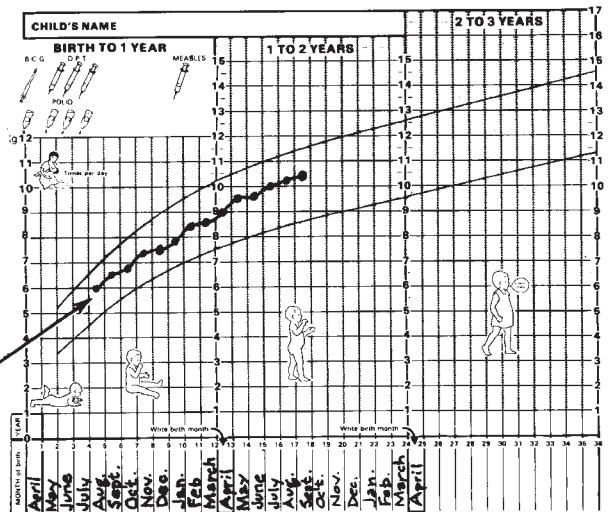
**2** Line up the other edge of the paper with the month.



Each month weigh the child and put another dot on the chart.

If the child is healthy, each month the new dot will be higher on the chart than the last.

To see how well the child is growing, join the dots with lines.



# How to Read the Child Health Chart

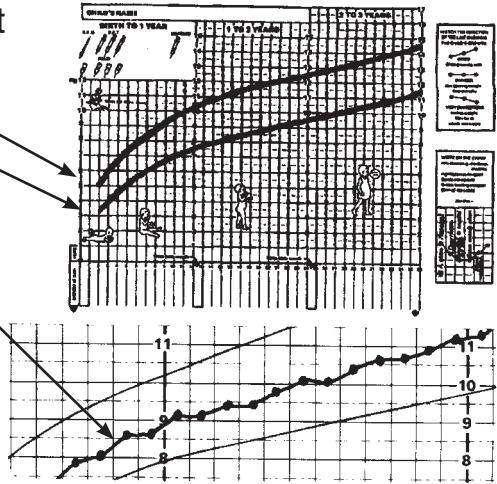
The 2 long curved lines on the chart mark the Road to Health that a child's weight should follow.

The line of dots marks the child's weight from month to month, and from year to year.

In most healthy children, the line of dots falls between the 2 long curved lines. That is why the space between these lines is called the Road to Health.

If the line of dots rises steadily, month after month, in the same direction as the long curved lines, this is also a sign that the child is healthy.

**A healthy child** who gets enough nourishing food usually begins to sit, walk, and speak at about the times shown here.



## Typical chart of THE HEALTHY, WELL-NOURISHED CHILD

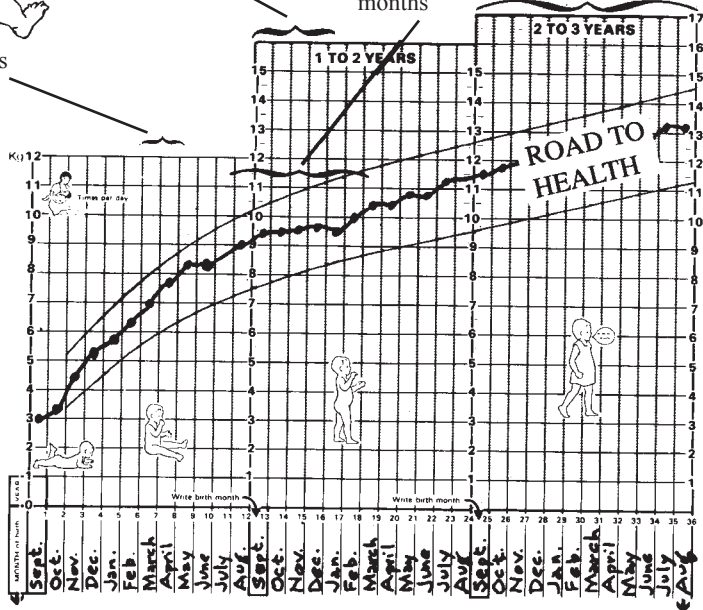
Sits without help. 6 to 8 months

Walks 10 steps without help. 12 to 16 months

Single words. 11 to 18 months  
"cow, daddy."

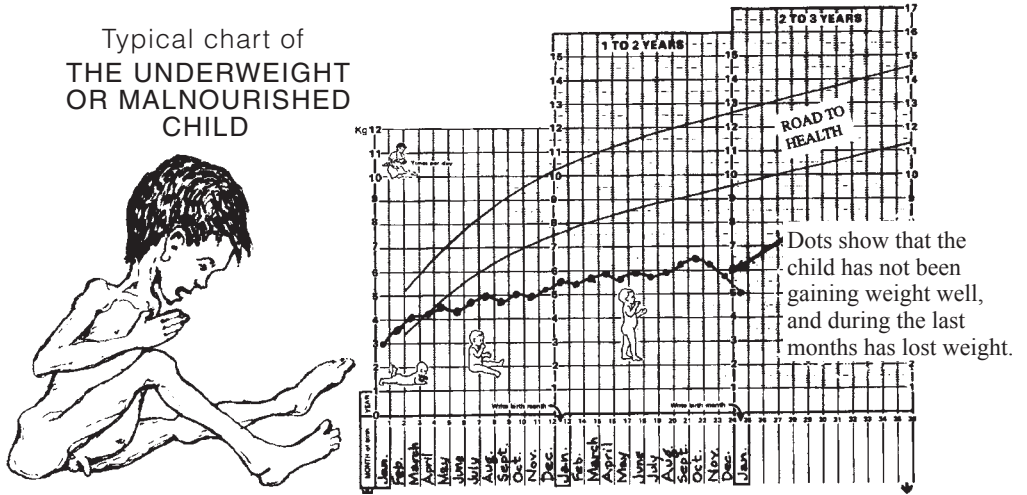
Short phrases. third year  
"Daddy go work."

In the healthy, well-nourished child, the weight rises steadily. The dots usually lie inside the lines that mark the Road to Health.





**A malnourished, sickly child** may have a chart like the one below. Notice that the line of dots (his weight) is below the Road to Health. The line of dots is also irregular and does not rise much. This shows the child is in danger.

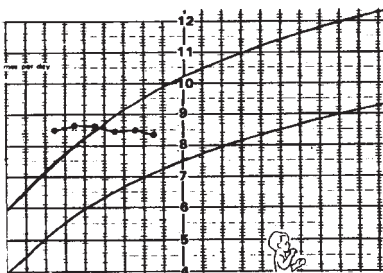


A child with a chart like the one above is seriously underweight. Perhaps he is not getting enough food. Or perhaps he has a disease like tuberculosis, HIV, or malaria. He should be given **more energy-rich foods more often**. He should also be checked or tested for possible illnesses, and visit a health worker frequently until his chart shows he is gaining weight well.

**IMPORTANT: Watch the direction of the line of dots.**


The direction of the line of dots tells more about the child's health than whether the dots are inside or below the two curved lines. For example:


**DANGER!** This child is not gaining weight.




Although the dots for this child are within the curved lines, the child has not been gaining weight well for several months.

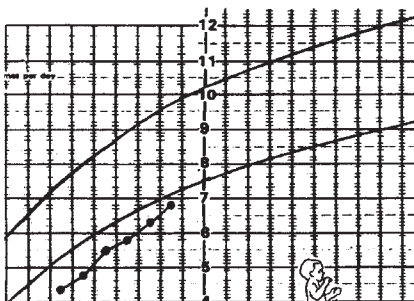
WATCH THE DIRECTION OF THE LINE SHOWING THE CHILD'S GROWTH

  
**GOOD**  
 Child growing well

  
**DANGER**  
 Not gaining weight  
 find out why

  
**VERY DANGEROUS**  
 Losing weight.  
 May be ill;  
 needs extra care

**GOOD!** This child is gaining weight well.



Although the dots for this child are below the 2 curved lines, their upward direction shows the child is growing well. Some children are naturally smaller than others. Perhaps this child's parents are also smaller than average.

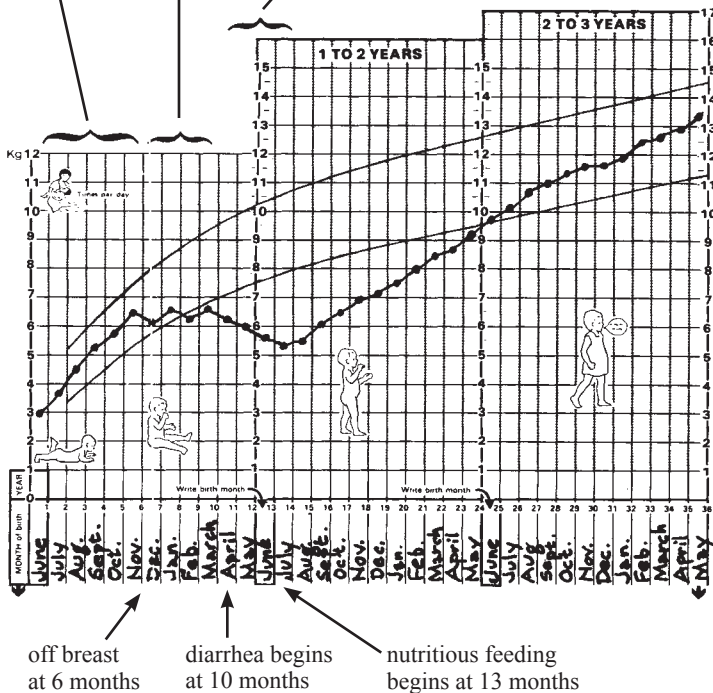
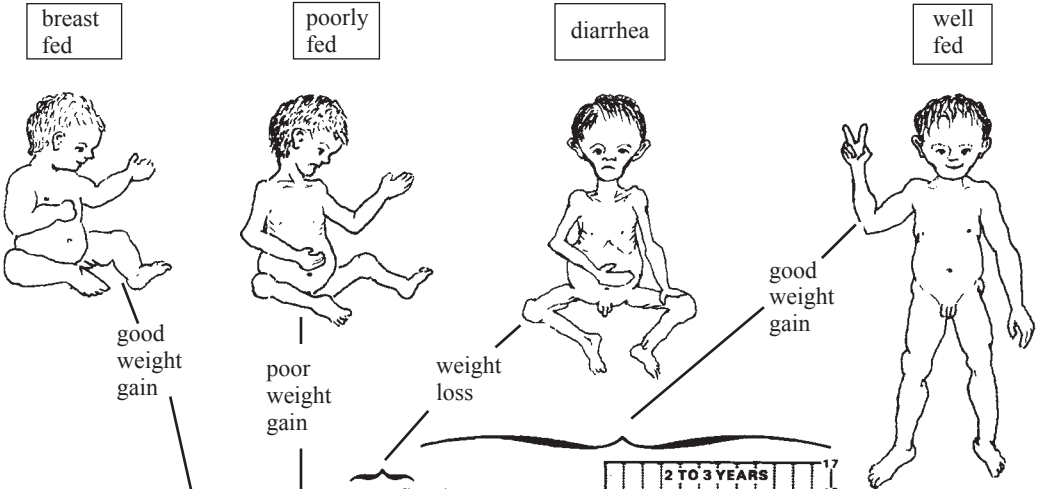
A TYPICAL CHILD HEALTH CHART SHOWING A CHILD'S PROGRESS:

This baby was healthy and gained weight well for the first 6 months of life, because his mother breastfed him.

At 6 months, the mother became pregnant again and stopped breastfeeding him. The baby was fed little more than corn and rice. He stopped gaining weight.

At 10 months he developed chronic diarrhea and began losing weight. He became very thin and sick.

When the child was 13 months old, his mother learned about ways to give the child enough good food, even without a lot of money or land. He began gaining weight fast. By age 2 he was back on the Road to Health.



Child Health Charts are important. **When used correctly, they help mothers know when their children need more nutritious food and special attention.** They help health workers better understand the needs of the child and his family. They also let the mother know when she is doing a good job.

## REVIEW OF CHILDREN'S HEALTH PROBLEMS DISCUSSED IN OTHER CHAPTERS

Many of the sicknesses discussed in other chapters of this book are found in children. Here some of the more frequent problems are reviewed in brief. For more information on each problem, see the pages indicated.

For special care and problems of newborn babies, see p. 270 to 275, and p. 407.

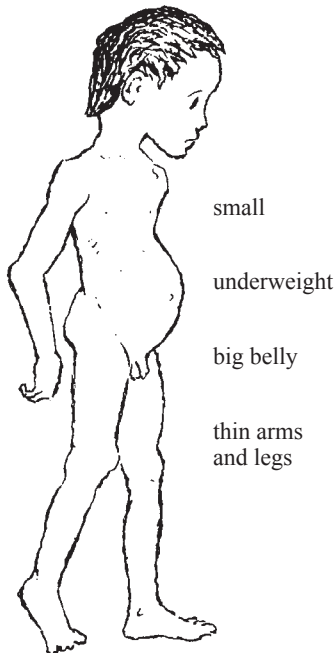
**Remember:** In children, sicknesses often become serious very quickly. An illness that takes days or weeks to severely harm or kill an adult may kill a small child in hours. So, it is important to **notice early signs of sickness and attend to them right away.**

### Malnourished Children

Many children are malnourished because they do not get enough to eat. Or if they eat mainly foods with a lot of water and fiber in them, like cassava, taro root, or maize gruel, their bellies may get full before they get enough energy food for their bodies' needs. Also, some children may lack certain things in their food, like Vitamin A (see p. 226) or iodine (see p. 130). For a fuller discussion of the foods children need, read Chapter 11, especially pages 120 to 122.

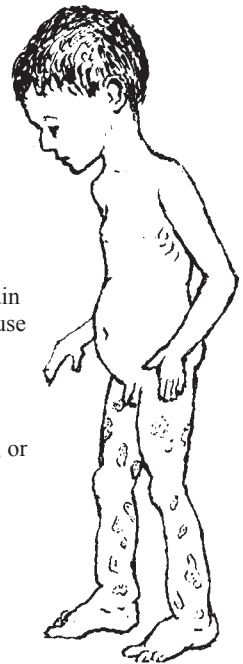
#### THESE TWO CHILDREN ARE MALNOURISHED

##### NOT VERY SERIOUS



small  
underweight  
big belly  
thin arms  
and legs

##### SERIOUS



sad  
underweight (he may gain  
weight for a while because  
of swelling)  
dark spots, peeling skin, or  
open sores  
swollen feet

Malnutrition may cause many different problems in children, including:

**In mild cases:**

- slower growth
- swollen belly
- thin body
- loss of appetite
- loss of energy
- paleness (anemia)
- desire to eat dirt (anemia)
- sores in corners of mouth
- frequent colds and other infections
- night blindness

**In more serious cases:**

- little or no weight gain
- swelling of feet (sometimes face also)
- dark spots, bruises, or open peeling sores
- thinness or loss of hair
- lack of desire to laugh or play
- sores inside mouth
- cognitive delay
- dry eyes (xerophthalmia)
- blindness (p. 226)

Severe forms of general malnutrition are “dry malnutrition” or marasmus, and “wet malnutrition” or kwashiorkor. Their causes and prevention are discussed on p. 112 and 113.

Signs of malnutrition are often first seen after an acute illness like diarrhea or measles. A child who is sick, or who is getting well after a sickness, has an even greater need for enough good food than a child who is well.

**Prevent and treat malnutrition by giving your children ENOUGH TO EAT and by feeding them MORE OFTEN. Add some high energy food, such as oil or fat, to the main food the child eats. Also try to add some body-building and protective foods like beans, lentils, fruits, vegetables, and if possible, milk, eggs, fish or meat.**

## Diarrhea and Dysentery

(For more complete information see p. 153 to 160.)

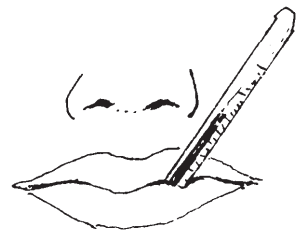
The greatest danger to children with diarrhea is **dehydration**, or losing too much liquid from the body. The danger is even greater if the child is also vomiting. Give **Rehydration Drink** (p. 152). If the child is breastfeeding, **continue giving breast milk**, but give Rehydration Drink also.

The second big danger to children with diarrhea is malnutrition. **Give the child nutritious food as soon as he will eat.**



## Fever (see p. 75)

In small children, high fever (over 39°) can easily cause seizures. To lower fever, **take the clothes off** the child. If she is crying and seems unhappy, give her **acetaminophen** (paracetamol) or ibuprofen in the right dosage (see p. 380), and give her lots of liquids. If she is very hot and shaky, **wet her with cool (not cold) water and fan her**. Also try to find the cause of the fever and treat it.



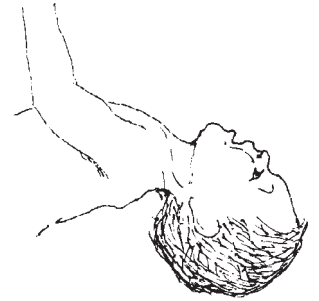
## Seizures (Convulsions) (see p. 178)

Common causes of seizures or convulsions in children are high fever, dehydration, epilepsy, malaria, and meningitis. If fever is high, lower it rapidly (see p. 76). Check for signs of dehydration (p. 151), malaria (p. 186), and meningitis (p. 185). Seizures that come suddenly without fever or other signs are probably epilepsy (p. 178), especially if the child seems well between them. Seizures or spasms in which first the jaw and then the whole body become stiff may be tetanus (p. 182).



## Meningitis (see p. 185)

This dangerous disease may come as a complication of measles, mumps, or another serious illness. Children of mothers who have tuberculosis may get tubercular meningitis. A very sick child who lies with his head tilted way back, whose neck is too stiff to bend forward, and whose body makes strange movements (seizures) may have meningitis.



## Anemia (see p. 124)

### *Common signs in children:*

- pale, especially inside eyelids, gums, and fingernails
- weak, tires easily
- likes to eat dirt

### *Common causes:*

- diet poor in iron (p. 124)
- chronic gut infections (p. 145)
- hookworm (p. 142)
- malaria (p. 186)

### *Prevention and Treatment:*

- ◆ Eat iron-rich foods like meat and eggs. Beans, lentils, groundnuts (peanuts), and dark green vegetables also have some iron.
- ◆ Treat the cause of anemia—and do not go barefoot if hookworm is common.
- ◆ If you suspect hookworm, a health worker may be able to look at the child's stools under a microscope. If hookworm eggs are found, treat for hookworm (pages 375 to 377).
- ◆ If necessary, give iron salts by mouth (ferrous sulfate, p. 394).



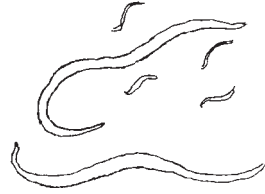
**CAUTION: Do not give iron tablets to a baby or small child. They could poison her. Instead, give iron as a liquid. Or crush a tablet into powder and mix it with food.**



## Worms and Other Parasites of the Gut (see p. 140)

If one child in the family has worms, all the family should be treated. To prevent worm infections, children should:

- ◆ Observe the Guidelines of Cleanliness (p. 133).
- ◆ Use latrines.
- ◆ Never go barefoot.
- ◆ Never eat raw or partly raw meat or fish.
- ◆ Drink only boiled or pure water.



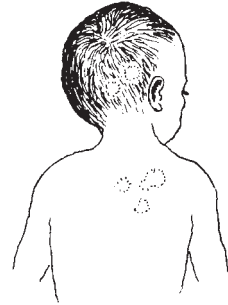
## Skin Problems (see Chapter 15)

### Those most common in children include:

- scabies (p. 199)
- infected sores and impetigo (pages 201 and 202)
- ringworm and other fungus infections (p. 205)

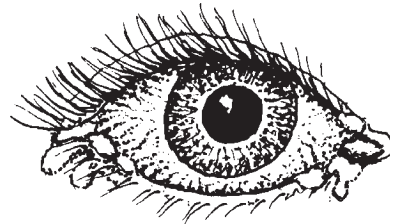
*To prevent skin problems, observe the Guidelines of Cleanliness (p. 133).*

- ◆ Bathe and delouse children often.
- ◆ Control bedbugs, lice, and scabies.
- ◆ Do not let children with scabies, lice, ringworm, or infected sores play or sleep together with other children. Treat them early.



## Pink Eye (Conjunctivitis) (see p. 219)

Wipe the eyelids clean with a clean wet cloth several times a day. Put an antibiotic eye ointment (p. 378) **inside** the eyelids 3 or 4 times a day. Do not let a child with pink eye play or sleep with others. If he does not get well in a few days, see a health worker.



## Colds and the Flu (see p. 163)

The common cold, with runny nose, mild fever, cough, often sore throat, and sometimes diarrhea is a frequent but not a serious problem in children.

Treat with lots of liquids. Give acetaminophen (see p. 381). Let children who want to stay in bed do so. Good food and lots of fruit help children avoid colds and get well quickly.

Penicillin, tetracycline, and other antibiotics do no good for the common cold or flu. Injections are not needed for colds.

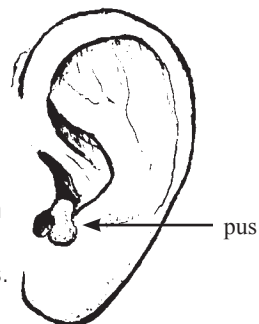
If a child with a cold becomes very ill, with high fever and shallow, rapid breathing, he may be getting **pneumonia** (see p. 171), and antibiotics should be given. Also watch for an ear infection (next page) or strep throat (p. 310).



## HEALTH PROBLEMS OF CHILDREN NOT DISCUSSED IN OTHER CHAPTERS

### Earache and Ear Infections

Ear infections are common in small children. The infection often begins after a few days with a cold or a stuffy nose. The fever may rise, and the child often cries or rubs the side of his head. Sometimes pus can be seen in the ear. In small children an ear infection sometimes causes vomiting or diarrhea. So when a child has diarrhea and fever, be sure to check his ears.



#### *Treatment:*

- ◆ An ear infection may be very painful. But if the child is generally healthy, the infection usually goes away on its own. Give acetaminophen (p. 381) for pain.
- ◆ If the child is already in poor health, or if the ear infection does not go away after a few days, or if there is pus or blood, give amoxicillin (p. 352) or erythromycin (p. 354). **Always give antibiotics to a baby 6 months or younger with an ear infection.**
- ◆ Carefully clean pus out of the ear with cotton, but do not plug the ear with cotton, a stick, leaves, or anything else. Children with pus coming from an ear should bathe regularly but should not swim for at least 2 weeks after they are well.

#### *Prevention:*

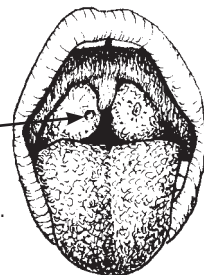
- ◆ Teach children to wipe but **not** to blow their noses when they have a cold.
- ◆ Do not bottle feed babies—or if you do, do not let baby feed lying on his back, as the milk can go up his nose and lead to an ear infection.
- ◆ When children's noses are plugged up, use salt drops and suck the mucus out of the nose as described on p. 164.

#### **Infection in the ear canal:**

To find out whether the canal or tube going into the ear is infected, gently pull the ear. If this causes pain, the canal is infected. Put drops of water with vinegar in the ear 3 or 4 times a day. (Mix 1 spoon of vinegar with 1 spoon of boiled water.) If there is fever or pus, also use an antibiotic.

### Sore Throat and Inflamed Tonsils

These problems often begin with the common cold. The throat may be red and hurt when the child swallows. The tonsils (two lymph nodes seen as lumps on each side at the back of the throat) may become large, painful or drain pus. Fever may reach 40°C.



#### *Treatment:*

- ◆ Gargle with warm salt water (1 teaspoon of salt in a glass of water).
- ◆ Take acetaminophen for pain.
- ◆ Be sure the child drinks enough, even if it hurts to swallow. Try giving tea or watered down fruit juice.

If pain and fever come on suddenly or continue for more than 3 days, see the following page.

## Sore throat and the danger of rheumatic fever:

For the sore throat that often comes with the common cold or flu, antibiotics should usually not be used and will do no good. Treat with gargles and acetaminophen.

However, one kind of sore throat—called **strep throat**—should be treated with penicillin. It is most common in children and young adults. It usually begins suddenly with severe sore throat and high fever, often without signs of a cold or cough. The back of the mouth and tonsils become very red, and the lymph nodes under the jaw or in the neck may become swollen and tender.

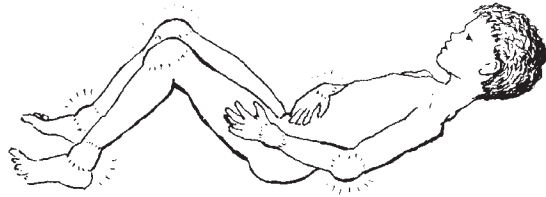
Give penicillin V (p. 351). If penicillin is given early and continued for 10 days, there is less danger of getting rheumatic fever. A child with strep throat should eat and sleep far apart from others, to prevent their getting it also.

## Rheumatic Fever

This is a disease of children and young adults. It usually begins 1 to 3 weeks after the person has had a strep throat (see above).

### *Principal signs (usually only some of these signs are present):*

- high fever
- joint pain, especially in the wrists and ankles, later the knees and elbows. Joints become swollen, and often hot and red.
- curved red lines or lumps under the skin
- uncontrolled movements
- in more serious cases, weakness, shortness of breath, and perhaps chest pain



### *Treatment:*

- ◆ If you suspect rheumatic fever, see a health worker quickly. Early treatment can lessen the risk that the heart is damaged.
- ◆ Treat the infection. Give penicillin V (p. 351) by mouth for 10 days or benzathine benzylpenicillin (p. 352) by injection all at once. If allergic to penicillin, give azithromycin (p. 354) by mouth for 3 days.

### *Prevention:*

- ◆ A child who has had rheumatic fever may get it again, and heart damage is worse each time. For these children, treat any sore throat quickly with antibiotics (see above).
- ◆ For children who already have heart damage from rheumatic fever, give benzathine benzylpenicillin injections (p. 352) once a month for 10 years or until the child turns 21. For children under 30 kg, inject 600,000 units. For children 30 kg and over, inject 1.2 million units.

For more information about rheumatic fever, see *Disabled Village Children*, Chapter 17.

## INFECTIOUS DISEASES OF CHILDHOOD

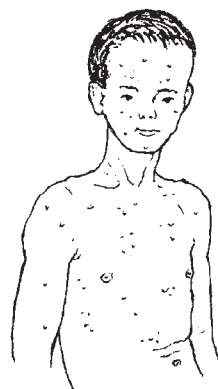
### Chickenpox

This mild virus infection begins 2 to 3 weeks after a child is exposed to another child who has the disease.

*Signs:*



spots,  
blisters, and  
scabs



First many small, red, itchy spots appear. These turn into little pimples or blisters that pop and finally form scabs. Usually they begin on the body, and later on the face, arms, and legs. There may be spots, blisters, and scabs, all at the same time. Fever is usually mild.

*Treatment:*

The infection usually goes away in a week. Bathe the child daily with soap and warm water. To calm itching, apply cool cloths soaked in water from boiled and strained oatmeal. Cut fingernails very short. If the scabs get infected, keep them clean. Apply hot, wet compresses, and put an antibiotic ointment on them. Try to keep the child from scratching.

### Measles

This severe virus infection is **especially dangerous in children** who are **poorly nourished** or have **tuberculosis**. Ten days after being near a person with measles, it begins with signs of a cold—fever, runny nose, red sore eyes, and cough.

The child becomes increasingly ill. The mouth may become very sore and he may develop diarrhea.

After 2 or 3 days a few tiny white spots like salt grains appear in the mouth. A day or 2 later the rash appears—first behind the ears and on the neck, then on the face and body, and last on the arms and legs. After the rash appears, the child usually begins to get better. The rash lasts about 5 days. Sometimes there are scattered black spots caused by bleeding into the skin (“black measles”). This means the attack is very severe. Get medical help.



*Treatment:*

- ◆ The child should stay in bed, drink lots of liquids, and be given nutritious food. If she cannot swallow solid food, give her liquids like soup. If a baby cannot breastfeed, give breast milk in a spoon (see p. 120).
- ◆ If possible, give vitamin A to prevent eye damage (p. 393).
- ◆ For fever and discomfort, give acetaminophen (or ibuprofen).
- ◆ If earache develops, give an antibiotic (p. 350).
- ◆ If signs of pneumonia, meningitis, or severe pain in the ear or stomach develop, get medical help.
- ◆ If the child has diarrhea, give Rehydration Drink (p. 152).

*Prevention of measles:*

Children with measles should keep far away from other children, even from brothers and sisters. Especially try to protect children who are poorly nourished or who have tuberculosis or other chronic illnesses. Children from other families should not go into a house where there is measles. If children in a family where there is measles have not yet had measles themselves, they should not go to school or into stores or other public places for 10 days.

**To prevent measles from killing children, make sure all children are well-nourished. And have your children vaccinated against measles.**

**German Measles (Rubella)**

German measles are not as severe as regular measles. They last 3 or 4 days. The rash is mild. Often the lymph nodes on the back of the head and neck become swollen and tender. There is often a low fever.

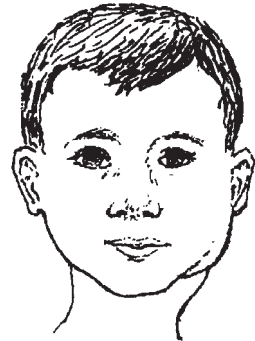
The child should stay in bed and take acetaminophen or ibuprofen if necessary.

Getting German measles in the first 3 months of pregnancy increases the chance of giving birth to a child with a disability. For this reason, people who are pregnant who have not yet had German measles—or are not sure—should keep far away from children who have this kind of measles. A vaccine preventing German measles is part of the common vaccine against mumps, measles and rubella (MMR). Vaccinating all children protects them and helps keep rubella away from anyone who is pregnant.

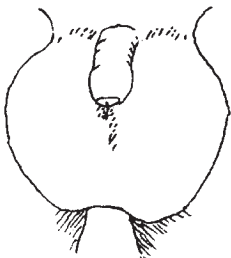
**Mumps**

The first symptoms begin 2 or 3 weeks after being exposed to someone with mumps.

Mumps begin with fever and pain on opening the mouth or eating. In 2 days, a soft swelling appears below the ears at the angle of the jaw. Often it comes first on one side, and later on the other side.

*Treatment:*

The swelling goes away by itself in about 10 days, without need for medicine. Acetaminophen or ibuprofen can be taken for pain and fever. Feed the child soft, nourishing foods and keep his mouth clean.

*Complications:*

In adults and children over 11 years of age, after the first week there may be pain in the belly or a painful swelling of the testicles in men. Persons with such swelling should stay quiet and put ice packs or cold wet cloths on the swollen parts to help reduce the pain and swelling.

If signs of meningitis or hearing problems appear, get medical help (p. 185).



## Whooping Cough (Pertussis)

Whooping cough begins a week or two after being exposed to a child who has it. It starts like a cold with fever, a runny nose, and cough.

Two weeks later, the whoop begins. The child coughs rapidly many times without taking a breath, until she coughs up a plug of sticky mucus, and the air rushes back into her lungs with a loud whoop. While she is coughing, her lips and nails may turn blue for lack of air. After the whoop, she may vomit. Between coughing spells the child seems fairly healthy.

Whooping cough often lasts 3 months or more.

Whooping cough is especially dangerous in babies under 1 year of age, so vaccinate children early. Small babies do not develop the typical whoop so it is hard to be sure if they have whooping cough or not. If a baby gets fits of coughing and swollen or puffy eyes when there are cases of whooping cough in your area, treat her for whooping cough at once.



### *Treatment:*

- ◆ Antibiotics are helpful only in the early stage of whooping cough, before the whoop begins. It is especially important to treat babies under 6 months at the first sign. Use erythromycin (p. 354). If you do not have erythromycin, try cotrimoxazole (p. 357), but only use cotrimoxazole for children over 8 weeks old.
- ◆ If the cough causes convulsions, phenobarbital (p. 391) may help.
- ◆ If the baby stops breathing after a cough, turn her over and pull the sticky mucus from her mouth with your finger. Then slap her on the back with the flat of your hand.
- ◆ To avoid weight loss and malnutrition, be sure the child gets enough nutritious food. Have her eat and drink shortly after she vomits.

### *Complications:*

A bright red hemorrhage (bleeding) inside the white of the eyes may be caused by the coughing. No treatment is necessary (see p. 225). If seizures or signs of pneumonia develop (p. 171), get medical help.

**Vaccinate all children against whooping cough. Babies get a series of 3 injections of the combined diphtheria, pertussis and tetanus (DPT) vaccine.**

## Diphtheria

This begins like a cold with fever, sore throat, and hoarse voice. A yellow-gray coating or membrane may form in the back of the throat, and sometimes in the nose and on the lips. The child's neck may become swollen. His breath smells very bad.



*If you suspect that a child has diphtheria:*

- ◆ Put him to bed in a room separate from other persons.
- ◆ Get medical help quickly. There is special antitoxin for diphtheria.
- ◆ Give procaine penicillin by injection (p. 352) or give erythromycin (p. 354).
- ◆ Have him gargle warm water with a little salt.
- ◆ Have him breathe hot water vapors often or continually (p. 168).
- ◆ Have him sip liquids often, even if it hurts to swallow.
- ◆ If the child begins to choke and turn blue, try to remove the membrane from his throat using a cloth wrapped around your finger.

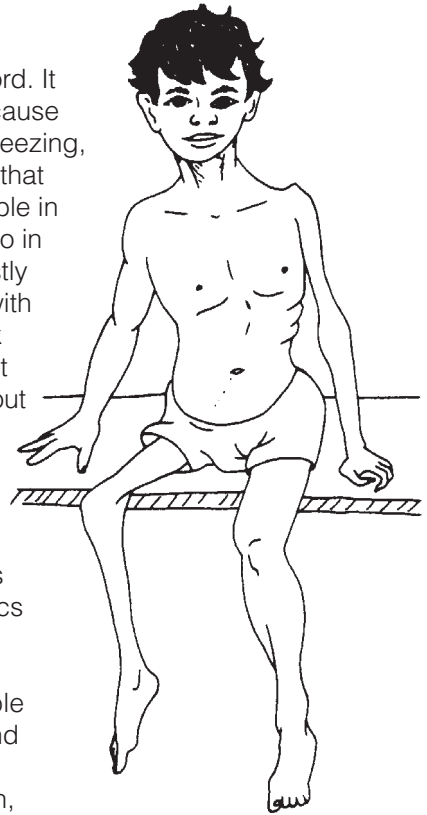
Diphtheria is a dangerous disease that can easily be prevented with the DPT vaccine. **Be sure your children are vaccinated.**

**Polio (Poliomyelitis)**

Polio is caused by a virus that attacks the spinal cord. It damages the nerves that control movement and can cause *paralysis*. The virus spreads through coughing and sneezing, or when a healthy child gets something in their mouth that has touched the stool (shit) of an infected child, possible in areas with poor sanitation. Vaccination has ended polio in most of the world, but where it is still a problem, it mostly affects children under 5. Most who become infected with polio show no signs. When there are signs, it may look like a bad cold with fever, vomiting, and diarrhea. Most children with polio do not become paralyzed, only about 1 in every 100.

**Treatment:**

There is no cure for polio, and once paralysis has started, no medicine will stop it. (However, sometimes part or all of the lost strength slowly returns.) Antibiotics do not help. For early treatment, calm the pain with acetaminophen or ibuprofen and put hot compresses on painful muscles. Position the child to be comfortable and avoid *contractures*. Gently straighten his arms and legs so that the child lies as straight as possible. Put cushions under his knees, if necessary to reduce pain, but try to keep his knees straight. For more information see *Disabled Village Children*, Chapter 7.

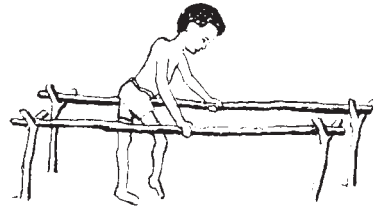
**Prevention:**

- ◆ Vaccination against polio is the best protection (see p. 147).
- ◆ Breastfeed your baby as long as possible. Breast milk protects your baby against infections, including polio.

**Vaccinate all children against polio.**

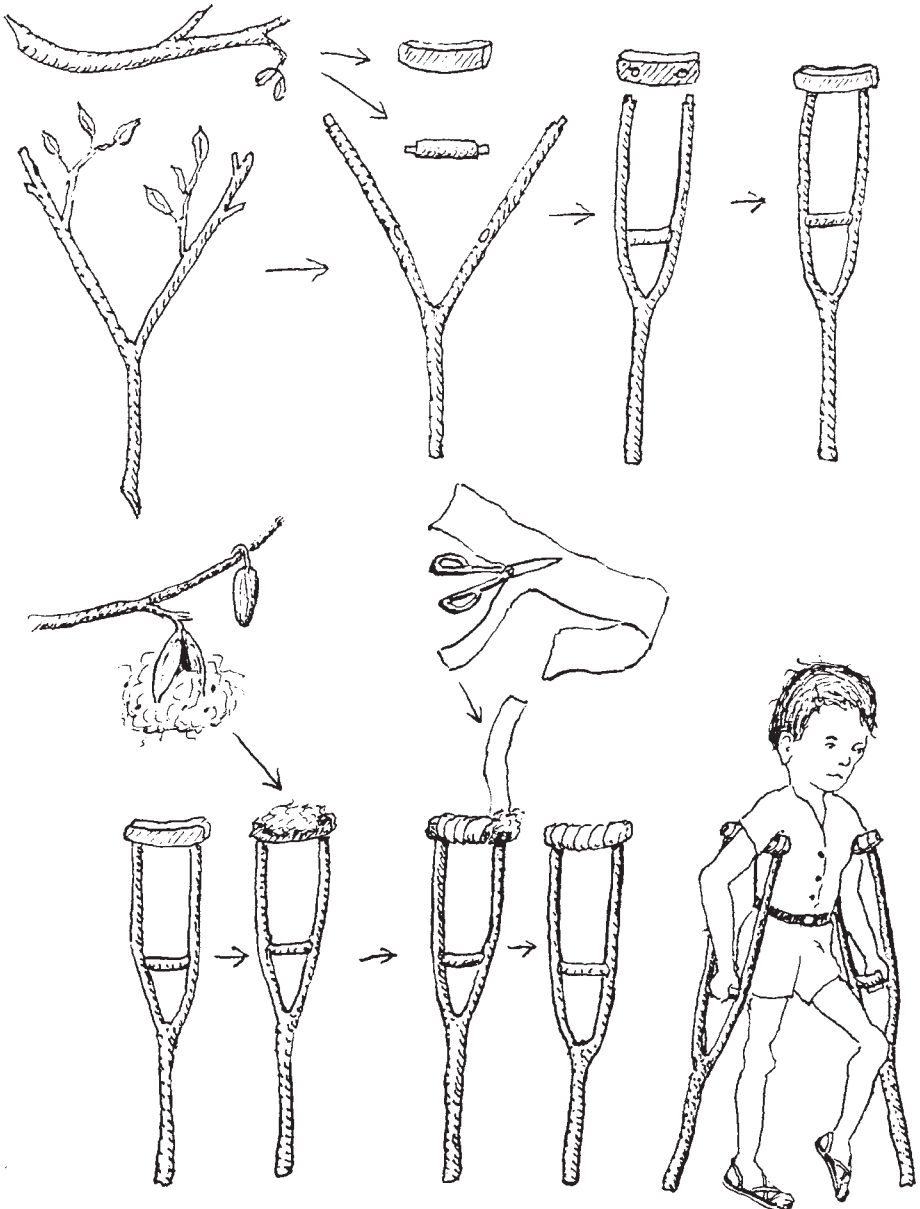
A child with paralysis caused by polio should eat nutritious food and do exercises to strengthen his other muscles.

Help the child learn to walk as best he can. Fix 2 poles for support, like these, and later make him some crutches. Leg braces (calipers), crutches, and other aids may help the child to move better and may prevent further disabilities from developing.



For more information about helping children with disabilities, see *Disabled Village Children*.

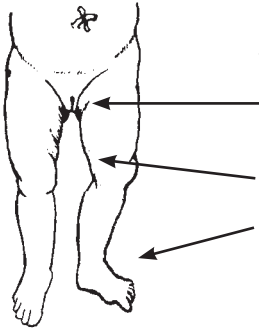
### HOW TO MAKE SIMPLE CRUTCHES



## PROBLEMS CHILDREN ARE BORN WITH

### Dislocated Hip

Some children are born with a dislocated hip—the leg has slipped out of its joint in the hip bone. If treatment is given early, the child will later walk without a limp. So babies should be checked for possible hip dislocation at about 10 days after birth.



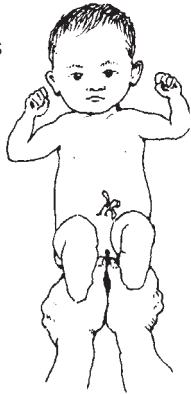
1. Compare the 2 legs. If one hip is dislocated, that side may show:

The upper leg partly covers this part of the body on the dislocated side.

There are fewer folds here.

The leg seems shorter or the knee and foot point outwards.

2. Hold both legs with the knees doubled, like this,



and open them wide like this.



If one leg stops early or makes a jump or click when you open it wide, the hip is dislocated.

#### **Treatment:**

Keep the baby with knees high and wide apart. There are several ways to do this.

The best option is a Pavlik Harness, which holds the baby's hips in the correct position and is only removed for bathing.



If you do not have access to this, use 2 to 3 diapers (nappies) at the same time. The extra layers will help hold the baby's hips in the correct position.



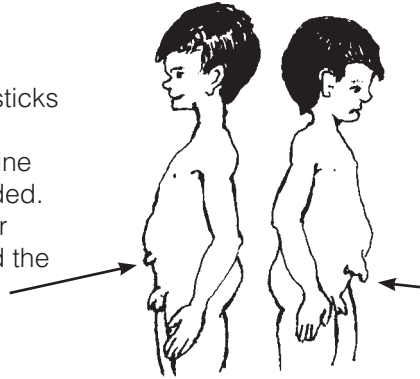
You can also carry the baby with legs apart on your hips or back.



For more information see *Disabled Village Children*, Chapter 18.

## Umbilical Hernia (Belly Button that Sticks Out)

A belly button that sticks out like this is no problem. No medicine or treatment is needed. Tying a tight cloth or "belly band" around the belly will not help.



Even a big umbilical hernia like this one is not dangerous and will often go away by itself. If it is still there after age 5, an operation may be needed. Get medical advice.

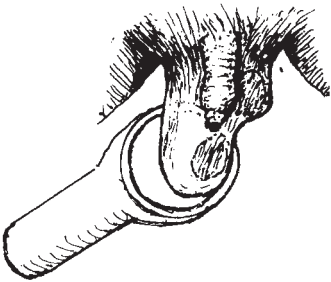
## A Swollen Testicle (Hydrocele or Hernia)

If a baby's *scrotum*, or bag that holds his testicles, is swollen on one side, this is usually because it is filled with liquid (a hydrocele) or because a loop of gut has slipped into it (a hernia).

To find out which is the cause, shine a light through the swelling.

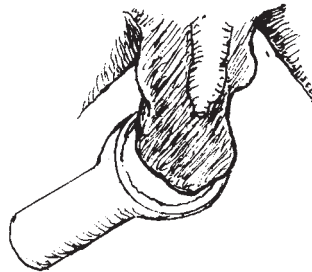


If light shines through easily, it is probably a **hydrocele**.



A hydrocele usually goes away in time, without treatment. If it lasts more than a year, get medical advice.

If light does not shine through, and if the swelling gets bigger when the baby coughs or cries, it is a **hernia**.



A hernia needs surgery (see p. 177).

Sometimes the **hernia** causes a swelling here in either a boy or a girl.



You can tell this from a swollen lymph node (p. 88) because the hernia swells when the baby cries or is held upright and disappears when he lies quietly.



## CHILDREN WITH PHYSICAL DISABILITIES OR COGNITIVE DELAY

Sometimes parents will have a child who is born with a physical disability or with cognitive delay. Often no reason can be found. No one should be blamed. Often it just seems to happen by chance.

However, certain things greatly increase the chance of disabilities present at birth.

1. **Lack of nutritious food** during pregnancy can cause disabilities present at birth or cognitive delay. To have healthy babies, pregnant women must eat enough nutritious food (see p. 110).

2. **Lack of iodine** in a pregnant woman's diet can cause *hypothyroidism* in her baby. The baby's face is puffy, and he looks dull. His skin and eyes may remain yellow (jaundiced) for a long time after he is born. His tongue hangs out, and his forehead may be hairy. He is weak, feeds poorly, cries little, and sleeps a lot. He has cognitive delay, may have hearing loss, and usually has an umbilical hernia. He will take longer to start walking and talking than other children his age.

**To help prevent hypothyroidism, pregnant women should use iodized salt instead of ordinary salt (see p. 130).**

If you suspect your baby may have hypothyroidism, take him to a health worker or doctor at once. Early and continued treatment with thyroid medicine helps improve growth and physical appearance, and may reduce or prevent cognitive delay.



HYPOTHYROIDISM

3. **Smoking or drinking alcohol** during pregnancy causes babies to be born small or to have other problems (see p. 149). **Do not drink or smoke—especially during pregnancy.**

4. **After age 35**, there is more chance that a mother will have a child with disabilities. Down syndrome, which looks somewhat like hypothyroidism, is more likely to occur in babies of older mothers. Be aware of your risk of having children born with certain disabilities so you can take this into account when building a family.

5. The mother had Zika (p. 187) while pregnant.

6. **Many medicines** can harm the baby developing inside a pregnant mother. **Use as little medicine as possible during pregnancy—and only those known to be safe.**

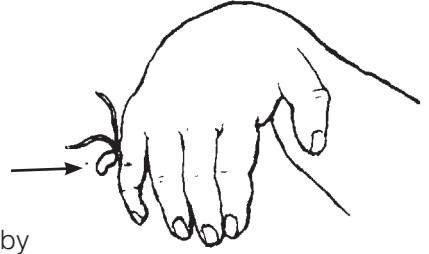
7. **Living near factories or industrial farms** can expose you to toxic chemicals that can cause disabilities present at birth. See *A Community Guide to Environmental Health*.

8. **When parents are blood relatives** (cousins, for instance), there is a higher chance that their children will have disabilities present at birth or cognitive delay. **Cross-eyes, extra fingers or toes, club feet, cleft lip, and cleft palate** are common. To lower the chance of these and other problems, do not marry a close relative.

If your child is born with a disability, take him to a health center. There are many ways a child can be helped.

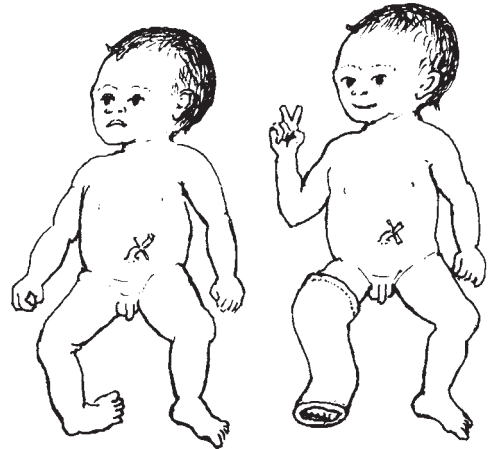
- ◆ For cross-eyes, see p. 223.

- ◆ If an extra finger or toe is very small with no bone in it, tie a string around it very tightly. It will dry up and fall off. If it is larger or has bone in it, either leave it or have it taken off by surgery.



- ◆ If a newborn baby's feet are turned inward or bent (clubbed), try to bend them to a typical shape. If you can do this easily, repeat this several times each day. The feet (or foot) should slowly straighten out by themselves in the first few years of life.

If you cannot bend the baby's feet, take him **at once** to a health center where his feet can be strapped in a correct position or put in casts. For the best results, it is important to **do this within 2 days after birth**.



CLUB FOOT

WITH CAST

- ◆ If a baby's lip or the top of his mouth (*palate*) is divided (*cleft*), he may have trouble breastfeeding and need to be fed with a spoon or dropper. Surgery can improve the child's looks, eating ability, and speech. The best age for surgery is usually at 4 to 6 months for the lip, and at 18 months for the palate.

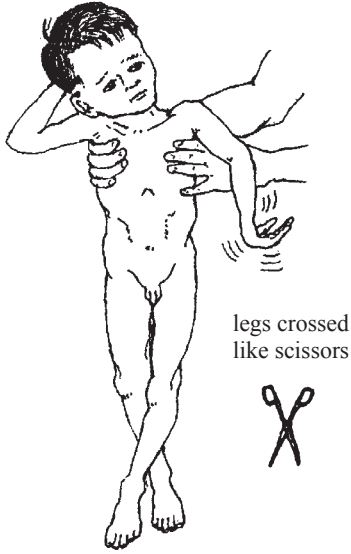
CLEFT LIP AND  
CLEFT PALATE

8. **Difficulties before and during birth** sometimes result in **brain injury** that causes a child to develop cerebral palsy or have **seizures (convulsions)**. The chance of injury is greater if at birth the baby takes longer to start breathing, or if the midwife or doctor injected the mother with medicine to speed up the birth or to "give force" to the mother (p. 266) before the baby was born.

**Be careful in your choice of a doctor or midwife—and do not let them use medicines to speed up the birth.**

For more information on children born with disabilities, see *Disabled Village Children*, Chapter 12.

## Children with Spasticity (Cerebral Palsy)



A child with spasticity has tight, stiff muscles that he has difficulty controlling. His face, neck, or body may twist, and his movements may be jerky. Often the tight muscles on the inside of his legs cause them to cross like scissors.

At birth the child may seem typical or perhaps floppy. The stiffness comes as he gets older. He may or may not have cognitive delay.

Cerebral palsy often results from brain injury at birth, caused by the baby not breathing soon enough, or from meningitis in early childhood.

There are no medicines that cure the brain injury that causes spasticity. But the child needs special care. To help prevent tightening of muscles in the legs or in a foot, straighten and bend them **very slowly** several times a day.

Help the child learn to roll over, sit, stand—and if possible to walk (as on p. 314). Encourage him to use both his mind and body as much as he can (see p. 322). **Help him to help himself.**

For more information on cerebral palsy, see *Disabled Village Children*, Chapter 9.

### TO HAVE A HEALTHY BABY, A PREGNANT PERSON SHOULD:

1. Not have children with a cousin or other close relative.
2. Eat as well as possible during pregnancy: as much beans, fruit, vegetables, meat, eggs, and milk products as you can.
3. Use iodized salt instead of regular salt, especially during pregnancy.
4. Not smoke or drink during pregnancy (see p. 149).
5. Avoid medicines as much as possible during pregnancy—use only those known to be safe.
6. Not work in factories which use a lot of chemicals and avoid using strong chemical cleaners at home.
7. Keep away from persons with German measles during pregnancy.
8. Be careful in the selection of a midwife or doctor—and do not let them use medicines to speed up the birth or “give strength” to the mother (see p. 266).
9. Be aware that risk of having children born with certain disabilities increases as parents get older, and if family members have certain conditions.

## Delayed Development in the First Months of Life

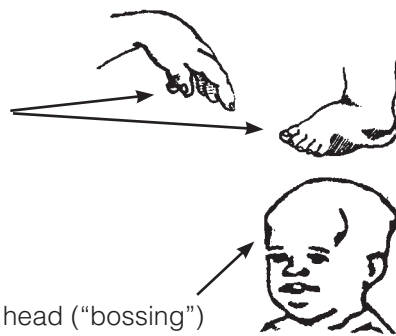
Some children who are born healthy take longer to develop because they do not eat enough nutritious food. During the first few months of life the brain develops more rapidly than at any other time. For this reason the nutrition of the newborn is of great importance. Breast milk is the best food for a baby (see *The Best Diet for Babies*, p. 120). Test babies for HIV if they are slow to develop or sickly.

## Sickle Cell Disease (Sickle Cell Anemia)

Some children, most commonly of African or Indian ancestry, are born with a condition called sickle cell disease. This disease is passed on from the parents, who often do not know they carry the sickle cell trait. Signs may not appear in a baby until 6 months of age or later.

### *Signs:*

- fever and crying
- occasional swelling of the feet and fingers which lasts for 1 or 2 weeks
- big belly that feels hard at the top
- anemia, and sometimes yellow color in the eyes (jaundice)
- child frequently sick (cough, diarrhea)
- child grows slowly
- by age 2, bony bumps may appear on the head ("bossing")



Malaria or other infections can bring on a sickle cell crisis with high fever and severe pain in the arms, legs, or belly. Anemia becomes much worse. Swellings on the bones may discharge pus. The child may die.

### *Treatment:*

There is no way to change the weakness in the blood. Protect the child from malaria and other diseases and infections that can bring on a crisis. Take the child for regular monthly visits to a health worker for an examination and medicines.

- ◆ **Malaria.** In areas where malaria is common, the child may need ongoing malaria medicines to help prevent the disease. Add to this a daily dose of folic acid (p. 394) to help build up the blood. Iron supplements (ferrous sulfate) are not usually necessary.
- ◆ **Infections.** The child should be vaccinated against measles, whooping cough, and tuberculosis at the earliest recommended time. If the child shows signs of fever, cough, diarrhea, passing urine too often, or pains in the belly, legs or arms, take him to a health worker as soon as possible. Antibiotics may be necessary. Give plenty of water to drink, and acetaminophen (p. 381) for pain in the bones.
- ◆ **Avoid exposure to cold.** Keep warm with a blanket at night when necessary. Use a foam mattress if possible.

## HELPING CHILDREN LEARN

As a child grows, she learns partly from what she is taught. Knowledge and skills she learns in school may help her to understand and do more later. School can be important.

But a child does much of her learning at home or in the forest or fields. She learns by watching, listening, and trying for herself what she sees others do. She learns not so much from what people tell her, as from how she sees them act.

**Some of the most important things a child can learn—such as kindness, responsibility, and sharing—can be taught only by setting a good example.**

A child learns through adventure. She needs to learn how to do things for herself, even though she makes mistakes. When she is very young, protect a child from danger. But as she grows, help her learn to care for herself. Give her some responsibility. Respect her judgment, even if it differs from your own.

When a child is young, she thinks mostly of filling only her own needs. Later, she discovers the deeper pleasure of helping and doing things for others. Welcome the help of children and let them know how much it means.

Children who are not afraid ask many questions. If parents, teachers, and others take the time to answer their questions clearly and honestly—and to say they do not know when they do not—a child will keep asking questions, and as she grows may look for ways to make her surroundings or her village a better place to live.



Some of the best ideas for helping children learn and become involved in community health care have been developed through the Child to Child program. This is described in *Helping Health Workers Learn*, Chapter 24.



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