



## CHAPTER 7

# How to Keep Children Healthy

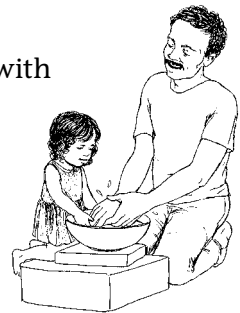
The most important ways to keep all children healthy are to give them lots of love, nutritious food, and safe water to drink, and take steps to prevent childhood illnesses. Children with HIV need the same things to stay healthy, but extra attention to all of them. This is because their defenses against sickness (their immune systems) are weakened by HIV. See page XXX.

To help children with HIV avoid illness:

- give them more food



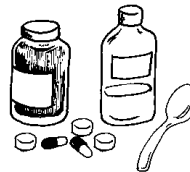
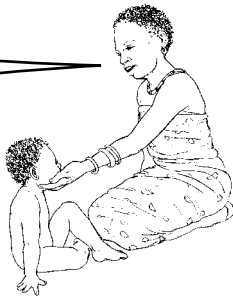
- take extra care with cleanliness



- notice and treat illnesses quickly

- give medicines that prevent illnesses

*Mercy, what a cough! Are you well? Let me see if you are too hot.*



- help them feel accepted and cared about



## 2 Helping Children Live With HIV

All young children depend on adults for their survival. So to keep children well, we must keep mothers and fathers healthy, and help them be able to provide and care for their children. See Chapter X for ways to help caregivers and Chapter X for some ideas on how the community can work together to keep families strong.



**Keep mothers healthy, and we will have healthier children.**

### **Keep babies healthy (birth to 6 months)**

To keep babies healthy from birth to 6 months:

- breastfeed often
- watch for signs your baby is cold or ill and act quickly, see pages 10 and 11
- if your baby might have HIV, give cotrimoxazole, see page 34
- hold and play with your baby

Young babies cannot fight illness well by themselves. Breastfeeding helps because breast milk gives babies protection from many common illnesses. Even though HIV can sometimes spread through breast milk, it more often does not.

To make it safer for a woman with HIV to breastfeed, see page 4.

### **Breast is best**

Breast milk is better for a baby than any mix or formula.

Breastfeeding is best for ALL babies because:



- it is free and has all the nutrition your baby needs
- it is always fresh, ready-to-eat, and at the right temperature, unlike formulas
- it does not need water or bottles, which are difficult to keep clean
- it protects your baby from diarrhea, pneumonia, and other illnesses

The skin-to-skin touch between the mother and baby also helps the baby feel safe and loved, comforts a baby who is fussy or in pain, keeps the baby warm, and helps the mother and baby get to know each other.

## How to breastfeed

Help your baby feed well by holding him so he can milk the breast and swallow easily. Support the baby's head with your hand or arm, and hold his body straight and turned completely towards you. The baby should have a big mouthful of the breast, with the nipple deep inside his mouth.



Give only breast milk for the first 6 months, and feed the baby as often as he wants, usually every 2 or 3 hours. The more you breastfeed the baby, the more milk you will make. A baby who is wetting a nappy several times a day is getting enough milk. Try not to let anyone make you feel that you cannot make enough milk—even your own crying baby.

Except for medicines, avoid giving the baby anything besides breast milk for the first 6 months. Giving drinks such as teas, starch or sugar water, plain water, juice, cola, or formula, provides less nutrition, makes the baby breastfeed less, and makes the mother produce less milk.



Other drinks can also irritate the baby's insides, and sometimes cause diarrhea. Serious diarrhea causes malnutrition and also can kill a baby. Irritation inside the baby also means HIV can infect the baby more easily if there is any HIV in the mother's breast milk.

Whether to breastfeed or not is often not up to the mother alone to decide, but also the father and the grandmother. You can help the mother by discussing the decision with both her and her family.



### To make breastfeeding most safe

#### Feed the baby either breast milk or formula—not both.

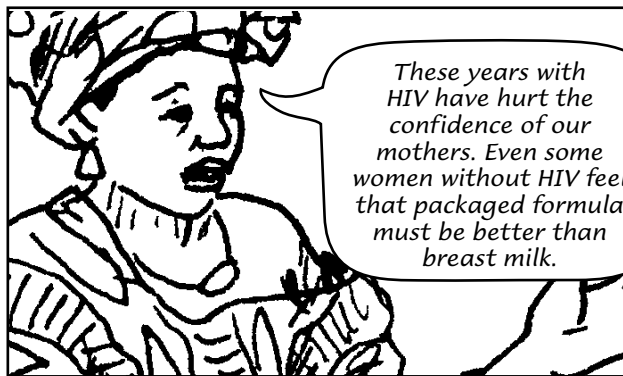
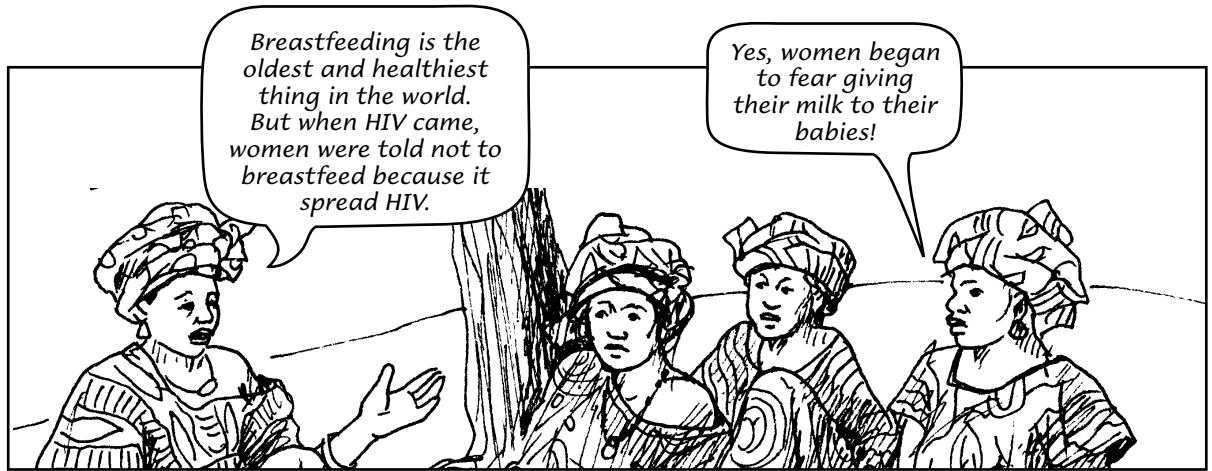
If you have HIV, you can help to protect your baby from it in these ways:

- Eat as well as you can to keep yourself healthy.
- Take medicines called Antiretroviral Therapy, or ART. Women who are on ART and take their medicine every day rarely have their HIV spread to their babies from breastfeeding. Taking ART also means you will be healthier and better able to take care of your baby and the rest of your family.
- Use a good feeding position to prevent problems like cracked nipples and breast infections. If you do develop problems, treat them quickly. See page 8.
- Use condoms during sex to protect yourself from sexually transmitted infections. This is because having other infections makes your HIV stronger, and it is then able to spread more easily.



See Chapter 5 for more information about how to prevent HIV from infecting a baby.

## Help mothers with HIV think about how to feed their babies





## Breast milk or formula

Many women with HIV worry about what is best for their babies—breast milk or formula. It might seem like formula is safer. It is true there is no HIV in it. However, there may be other harmful germs. Women also think formula is safer because health workers have told mothers to use it if they have HIV. Sometimes clinics even give formula to mothers who have HIV. Unfortunately, clinics often do not give enough, or they run out.

Formula companies promote their products with words and pictures that promise healthy babies. But many babies who are fed formula are not healthy. They may not become infected with HIV, but they die from other diseases, or grow very poorly.

Some formula-fed babies die because unclean water was all the family had to make the formula or wash the bottles. Some babies do not grow well because there is not enough formula. If a baby is not given enough to eat, he will not gain enough weight, or will develop poorly in other ways, and he may only show this slowly. For these reasons, and because breast milk is so good for a baby, breastfeeding is almost always the safest way to feed your baby.



Families may add more water to make formula last longer. Then the baby will not get enough food.

It is normal to feel worry—there is no perfect choice, without any risk at all.

What should I do? I know there is HIV in my milk. I am afraid to breastfeed. But formula costs so much, and I am afraid of our water too. Formula is not safe either!

I understand. This would not be easy for me either. Let's find out if you can start ART. If you can, the risk will be very small.



### Other ways to give breast milk

If you must leave your baby to go to work or for some other reason, you can squeeze your milk from your breasts by hand. The caregiver can feed it to your baby while you are away.

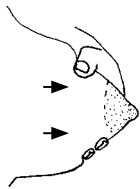
To milk your breast, first wash your hands and a jar with a wide opening. If possible, boil the jar.

It can help to give your breast a little massage before you begin. Sit comfortably and think about your baby—this will help the milk come down.



Avoid using bottles to feed a baby. A cup is easier to keep clean.

Hold your breast with your thumb on top. Gently press back toward your chest. Then press your thumb and fingers together and forward toward your nipple. After a few squeezes breast milk should start to come out. It should not hurt. As you squeeze out the milk, move your hand around your breast and squeeze different parts. Keep on until the milk slows and comes out a bit thicker. Change to your other breast and do the same thing. Do this to both breasts again, until they feel soft.

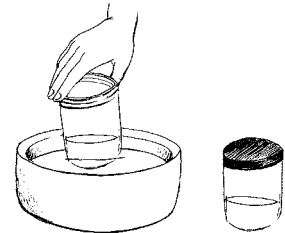


Breast milk will keep about 8 hours if it is not too hot outside. It will keep longer if it can be kept cold.

### Heating breast milk kills HIV

Gently heating breast milk will kill any HIV in the milk.

To heat-treat breast milk, put the milk in a glass jar that can be covered later with a lid. Place the jar in a pot of water. The water should be above the level of milk in the jar, but not as high as the opening. Heat the pot until the water reaches a rolling boil. Then take the pot off the heat and carefully take out the jar. Cover the jar and let the milk cool before you feed it to the baby.



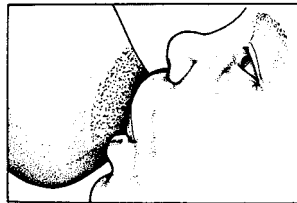
You can store heat-treated breast milk at room temperature for 8 hours. Heat-treated breast milk can also be stored in a refrigerator for 3 days, or in a freezer for 6 months.

### Common problems with breastfeeding

A few common breastfeeding problems are more serious for women with HIV. This is because the problems can let HIV spread more easily to the baby. These problems can usually be prevented, and treating them quickly lessens the risk.

- **Sore or cracked nipples:** If you feel pain when the baby feeds, she probably does not have enough of your breast in her mouth. Be sure to hold her close so she can get a good mouthful. Do not pull your breast from the baby's mouth while she is suckling. Use a clean finger to loosen the baby's hold.

This baby has a good mouthful of the breast.



This baby does not have enough nipple in his mouth, which can cause painful cracked nipples.

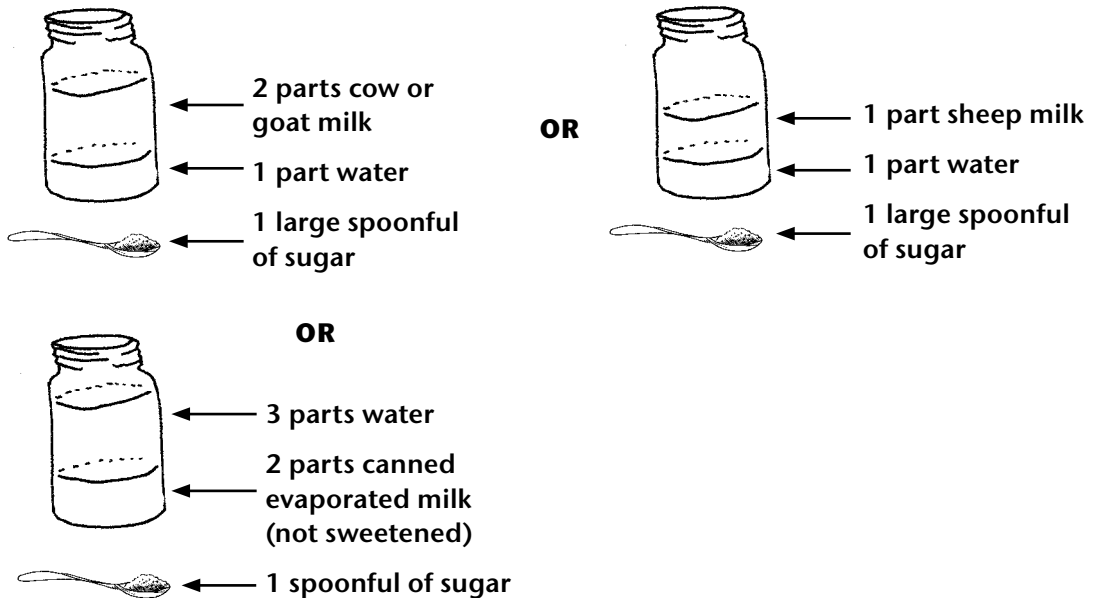
- If you do get sores or cracks, soothe nipples with breast milk at the end of feeding by squeezing out a few drops of milk and rubbing them on the sore places. Do not use soap or cream on your nipples. Avoid rough or tight clothing and leave your breasts open to the air when possible. Try to continue breastfeeding from both sides. If the pain is too great, remove the milk by hand and feed the baby with a cup and spoon. See page 7.
- **Pain, swelling, or infection:** Your breasts can become swollen or painful when they are too full of milk. This can also lead to a blocked milk duct or breast infection (mastitis). To prevent this, make sure you empty your breasts. Feed your baby often and as much as the baby will take.
- If you do have swelling and pain, place a warm, wet cloth on your breast for 15 minutes before feeding. Do this at least 3 times a day. Also, squeeze your breast so a little milk comes out before you start feeding. This can soften your breast and make it easier for the baby to get enough breast in her mouth. If the pain continues, or you develop a fever, you may need antibiotics. Talk to a health worker.
- **Thrush on your nipple or baby's mouth:** If you have burning or itching nipple pain that lasts longer than a week, or spots or sores on your nipples, you may have thrush. Look in your baby's mouth to see if there are white spots or sores inside on the baby's cheeks. To treat thrush, see page XXX. You must also treat your baby.



### What to do if breastfeeding is not possible

Other milk may need to be given if the mother dies, is separated from her baby for a long time, or in the rare case that she truly is not making enough milk. One option is to ask another mother to breastfeed the baby. It is safer if she does not have HIV.

Another option is to make an animal milk formula. Here are 2 recipes using milk from different animals, and 1 recipe using canned milk.



Briefly boil your formula to kill germs. Then let it cool and feed it to the baby with a clean cup or spoon.

### If you use canned or powdered formula

If you decide to use formula, you should give only formula. And it is difficult to start breastfeeding later, after giving formula for some time. So you must be sure you will have enough formula to feed the baby well for many months. To make formula less dangerous for your baby:

- Do not mix formula with extra water to make it go farther. This is very dangerous for a baby, especially babies with HIV, because it means they do not get enough food.
- Unless you are sure your water is safe, filter and disinfect the water you use so it causes less irritation and diarrhea. See page 24.

## Help small babies stay warm

Babies born to mothers with HIV are often born too early and weigh too little (under 2.5 kg). Small or early babies get cold easily, which can be very dangerous. These babies need help to stay warm.

The best source of heat for a small baby is the mother or caregiver. Wrap the baby next to your skin as much as possible, day and night. Sleep with the baby close.

Check the baby regularly to see if her hands and feet are warm. When they are cold, wrap the baby close, skin-to-skin, to warm her.

When no skin-to-skin contact is possible, keep the baby clothed or covered as much as you can. Dress the baby with extra clothing, loosely wrap her in a soft dry cloth, and cover her with a blanket. Keep babies diapered and cover their heads and feet. Change any wet clothing or diapers quickly.

Avoid bathing a small or weak baby often. When washing or bathing a baby, do it in a very warm room with warm water, and dry the baby well right away. Quickly wrap the baby close again, skin-to-skin.



## Watch babies for signs of illness

Some common illnesses, like diarrhea, malaria, and pneumonia, are dangerous for any young baby, and should always be treated quickly.

When a baby has HIV, these illnesses can become life-threatening very fast.

Signs of illness to look for:

- low weight, or not growing, see page XX
- fevers over 37.5°C (99.5°F)
- diarrhea often
- difficulty breathing or fast breathing, see page XX
- cough that lasts more than a month
- white spots in the mouth (thrush), see page XX
- infections and skin rashes that do not heal
- swollen glands
- sores and cracks around the mouth



See Chapter 9 for more information about these signs of illness and what to do.

If your baby is sickly, this might be a sign the baby has HIV, especially if the baby's mother, father, or brother or sister has HIV. If possible, test the baby—see Chapter 6.

A baby who has HIV, or who might have HIV, will stay healthier if you give him a medicine called cotrimoxazole. See page 34.

## Good nutrition for children

Good nutrition is important for all children. It helps them develop in both body and mind, and protects them from illness.

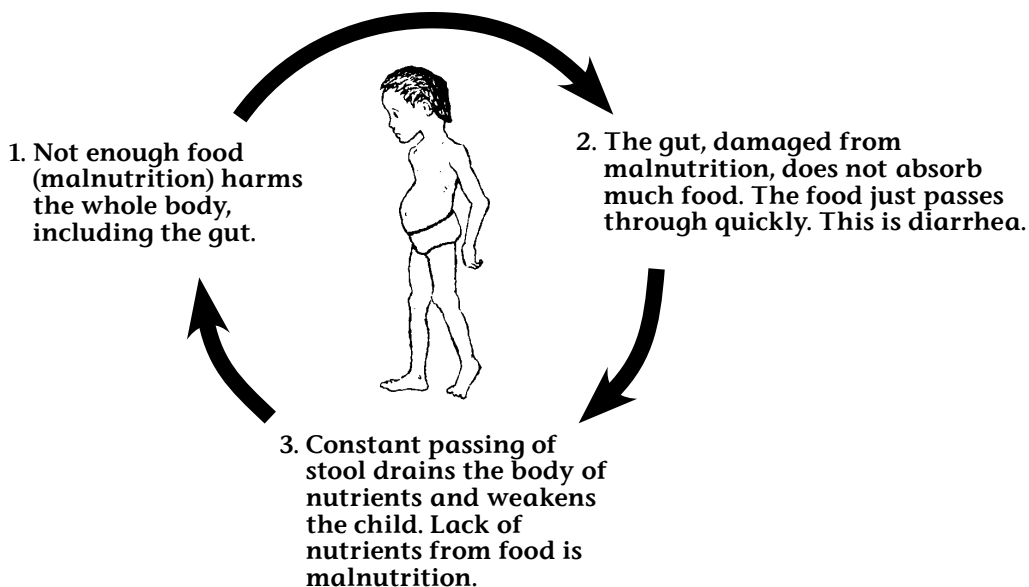
Good nutrition is even more important for children living with HIV. HIV infection means children simply need more food to stay healthy. The body of a child with HIV is working very hard to fight HIV even though you cannot see it. So the child needs extra food to grow and develop while also fighting HIV. Medicines for HIV also work better when children have enough to eat.



### Malnutrition causes diarrhea – diarrhea causes malnutrition

Not having enough to eat (malnutrition) and being ill each make the other worse. This is because sick bodies cannot make use of all the nutrition from the food they eat. And when children are ill, they often eat less. This makes them even weaker, and more likely to stay ill, or become ill again soon.

Malnutrition can be caused by not having enough food, not having enough different kinds of food, or because an illness like diarrhea makes it hard to absorb food correctly. Malnutrition is very dangerous for children with HIV because it makes their weak immune systems even weaker. A child who is malnourished gets other infections much more easily.



Some other signs that a child may be malnourished besides diarrhea:

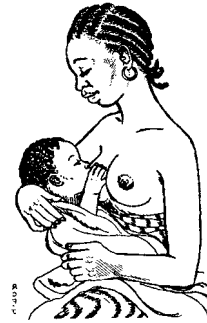
- he is not growing normally or developing skills other children his age are
- he is always tired and moves slowly
- he loses weight or cannot gain weight
- he is dizzy and confused
- his hair falls out

For signs of healthy growth and development, see the charts starting on page XXX. To learn how to treat malnutrition, see page XX.



## What to feed young babies

From birth to 6 months, the best food for babies is breast milk, even if the mother has HIV. To help a baby grow well, breastfeed often and avoid giving other foods and drinks. For more about breastfeeding and HIV, see pages 3 and 4.

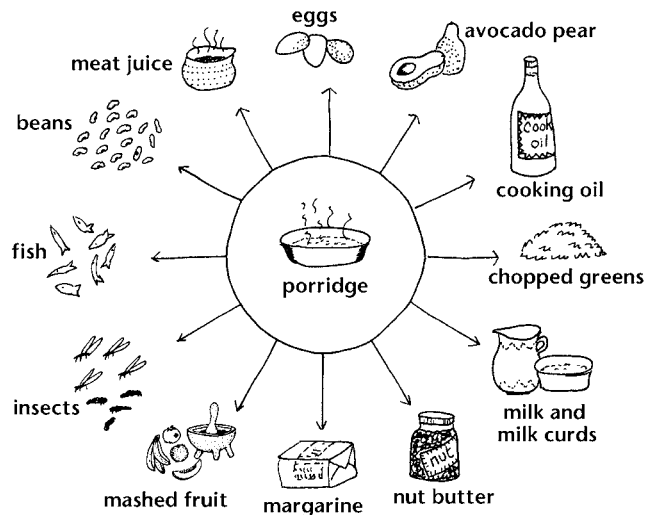


## Feeding babies older than 6 months

When a baby is about 6 months old, giving breast milk alone is not enough. It is time to add other foods. But also keep breastfeeding! To add foods, start with 1 or 2, like adding a little oil to a porridge made from your main food, such as rice, maize, cassava, wheat, or millet. If you add water later, after making your porridge, use boiled or treated water. See page 24.

Soon add a spoonful or so of other foods, including:

- soft cooked beans or ground bean meal, pounded groundnuts, eggs, dairy, or dried fish flour. These protein foods help the baby's body and mind grow well.
- vegetables and fruits, such as well-cooked squash, peas, carrots, shredded or pounded green leafy plants or tomatoes. Add mashed fruits such as papaya, bananas and mangoes. Use whatever orange or green foods are eaten where you live. Vegetables and fruits have vitamins and minerals that help us stay healthy and fight infection.



Foods should be clean and unspoiled, soft and easy for the child to eat, and not too spicy or salty. Choose foods that are easy to buy or grow where you live, and easy to prepare.

**When a baby feeds himself, he learns how to use his hands and fingers to hold small things.**



Babies have small stomachs so they need to eat many small meals during the day as well as breastfeeding. Usually 3 to 5 small meals are enough. If you are not breastfeeding, add 2 extra meals.

Different foods help our bodies in different ways, so eating a variety of foods is important. But new foods sometimes upset a baby's stomach. Try to give your baby one new food at a time. First give her only a little bit, then slowly give more. When the baby is used to the new food, then start another new food.

### **How and when should a woman with HIV stop breastfeeding?**

The year or so when a child is older than 6 months but younger than 2 is a risky time for malnutrition. Many women stop breastfeeding, even though they do not have enough food to give their children. The risk of malnutrition is worse for children with HIV.



If you are on ART, it is usually best to keep breastfeeding for a year or more, because breast milk is so healthy and protects the baby so much. Taking ART means you have very little HIV in your milk, so HIV is not likely to spread from breastfeeding.

If you are able to give plenty of healthy foods and other milks to your baby, and you want to stop breastfeeding, you can stop when your baby is between 6 months and 1 year old. You should do this slowly, over about 3 weeks. Feed your baby soft, mashed, healthy foods 5 or 6 times a day (or more). You can also give the baby boiled animal milk if it is available.



If there is not enough food or enough different foods to give the baby, it is better to keep breastfeeding. You can keep breastfeeding until your baby is 2 years old or more.

If you know your baby has HIV, there is no reason to stop breastfeeding. Breastfeeding helps babies with HIV stay healthy because of the protections breast milk provides against infections. Also, a baby with HIV needs more food to stay healthy than a baby without HIV. Breastfeeding makes this easier.

## Nutrition after the first year

Children need the same variety of healthy foods anyone needs—starchy main foods that give us energy, protein that helps us grow and develop our minds, and vegetables and fruits to help us stay healthy and fight infections. Sugar and oil are good for us in small amounts, but too much can cause serious health problems.



**proteins** like meat, eggs, beans, fish, nuts, seeds, yogurts, milk



**starchy food** like rice, cassava, maize, wheat, millet

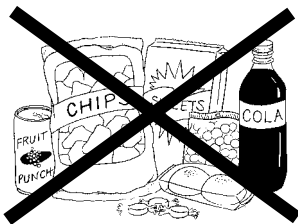


**fruits and vegetables** like leafy greens, carrots, peppers, bananas, tomatoes, mangos, melon, squash, cucumbers

Eat enough food and different kinds of foods to stay healthy!

To make sure children get enough food:

- For extra energy, add a small spoon of oil to your child's food. Many small children cannot eat enough starch to get all the energy they need.
- Give smaller or disabled children their own food in small bowls. Check to see that each child has gotten her share.
- Give children several small meals throughout the day. Four meals is usually good. Try to give more if the child is not breastfeeding.
- Treat diarrhea right away with rehydration drink, see page XXX. Diarrhea means children do not absorb all they should from their food.



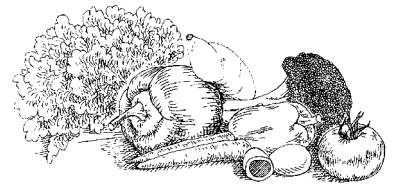
Many foods that come in packages have too much fat and sugar in them, and little nutrition. Eat locally prepared foods as much as possible.

## Vegetables and fruits protect our bodies

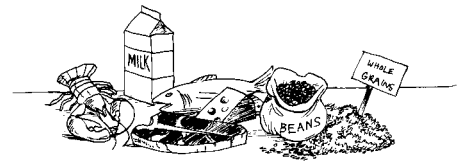
Fruits and vegetables are full of vitamins and minerals, which our bodies need to be healthy. A child will get all the vitamins and minerals she needs if you give her lots of vegetables and fruits of different colors, especially the orange colored ones and leafy greens. Local vegetables and fruits are just as healthy as imported ones.

Certain foods, and the vitamins and minerals in them, are especially good for people with HIV. This is because they help build a strong immune system, which helps people with HIV fight infection and disease.

**Vitamin A** helps fight infection. It also helps us have healthy skin and bones and protects our ability to see. Foods that have a lot of vitamin A include most orange vegetables and fruits, such as carrots, pumpkin, sweet potatoes, papaya, and mango, and green vegetables, such as leafy greens and green peas. Eggs also have vitamin A.



**Zinc** is a mineral that helps children grow well and also fight infections, especially diarrhea and pneumonia. It also helps us have healthy skin and nails. Foods with zinc include wild spinach, meats, oysters, eggs, milk products, nuts and seeds, such as pumpkin or squash seeds, and whole grains. For information about zinc supplements, see page XXX.



**Selenium** is a trace mineral (we only need a little) that helps our bodies fight infections. Foods with selenium include Brazil nuts and sunflower seeds, many types of sea fish, coconuts, some fortified cereals, and aloe leaves or juice. Just one of these foods each week is enough.

If you have these foods in your community, it is good to feed them to your children. Eat some yourself too. Dark leafy greens, for example, grow all over the world and many have lots of vitamins or help make the body strong and healthy. Talk to healers and midwives about local plants that are especially good for health.



### Working together to feed babies the very best

In Zambia, many children 2 years old and younger are sickly and do not grow well. Sometimes they become very weak from malnutrition, or even die. Those who live are too small, and often lack skills and abilities they would have if they had been given enough food in their first few years. A group of parents, caregivers, health workers, and others formed to work on this problem in Luapula province.



To understand why so many children were not doing well, group members visited many villages and homes and asked what everyone fed their babies. One problem was that families were not sure how much food to give children under 2. Another was not knowing what foods were good to give them. Since HIV came to Zambia, the advice about breastfeeding has also confused families.

The group decided to create a recipe book for babies 6 months to 2 years old. As they developed and tested the recipes, they held meetings in the community and learned how to explain what foods children need at these ages, and how different foods help a child stay healthy and grow well. Then they used what they learned in the meetings to explain these ideas in the book. The recipes are based on local Zambian foods that most families are able to grow or buy. There are recipes for both rainy and dry seasons, and recipes for feeding sick children. Families and children tested all the recipes to make sure they tasted good and worked well for families. See page XXX for how to get a copy of this cookbook.

### Teach children about healthy eating

If you teach your children about foods that keep them healthy, they will eat these foods with less fuss. Doing this also promotes healthy eating habits as they grow older. Have children help grow, collect, wash and prepare food. Be a good example by choosing healthy foods over sweets and fried food yourself.

*These greens will make such good sukuma wiki. Do you know why we eat sukuma wiki every day?*

*Yes, Mama! It makes us strong and helps us grow big.*



## How to feed a sick child

Sick children need food, but do not try to force a sick child to eat. If the child gags or pushes food out, stop feeding her. But keep offering small amounts of food every few minutes and gently encourage her to eat. Children can take in more food than you think, even by eating only a spoonful at a time. Be patient. It can be frustrating, especially if you are feeling sick too. Ask for help if you become tired.

Give the foods your child most likes. When children are eating only very small amounts, add a few drops of vegetable oil to their main food to increase the energy in the food. Even better is to add a little protein such as beans or egg to the main food if possible.

Do not feed a child lying down—this can cause choking. It is best to hold the child on your lap or sit her up in bed.

If your child vomits, wait 10 minutes and continue offering fluids or food.

Offer a breastfeeding baby the breast often, even if she takes only a little milk at a time. When a baby is very weak and cannot suck on the breast, you can squeeze milk from your breast and feed the baby with a cup and spoon.

Children with HIV often have a sore mouth from thrush or herpes. These children eat less, because eating is painful. See page XXX for how to care for problems in the mouth.



## When a child is recovering from illness

Good nutrition is most important when children are recovering from illness. This is especially true for HIV-positive babies and children. They need a lot of extra food for a long while after they recover. A child often has a growth spurt after an illness and may need up to twice the amount of food he usually eats. Try to give extra meals or snacks for 2 weeks, especially if the child is acting hungry and is willing to eat.

Try to give children with tuberculosis (TB) extra food. Without it they have a much higher risk of dying from their TB. For how to treat TB, see page XXX.



## Avoid germs and worm eggs in food

Many illnesses are caused by germs. These germs are too small to see with our eyes alone, only with a microscope. But germs are all around us. You might know to avoid something like rotten food or feces, even though you cannot see the germs in them. But germs can also be on things that look clean and safe.

### How do germs get into us?



See the story on page 26 for more about how germs spread.

Germs and worm eggs in our food, on our hands when we eat, or in the water we use to prepare food, cause many illnesses, including diarrhea, vomiting, and worms. A child who is strong and well fed can fight off many of these illnesses. But weaker or poorly nourished children cannot fight germs or worms well, especially small children with HIV. To avoid germs and worms from food or eating:

### Wash hands often

We prepare food with our hands and often eat with our hands. So to keep germs out of our food and our mouths, it helps to wash children's hands before they eat, and wash our own hands before we touch or prepare food. See page 28 for more about children and handwashing.



### Keep flies away from food

Flies that land on your food can leave eggs or other germs that cause illness. See page XXX for how to treat these illnesses.



Cover food with lids or screens to keep away flies.

### Keep animals away from food

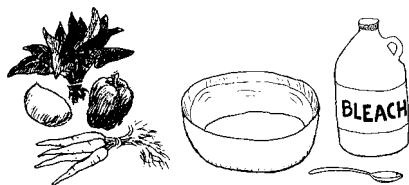
Animals such as mice and rats, and their feces, carry germs. So do animals kept for food, such as goats, chickens, and cows. Keep animals out of the house, and away from food and the areas where you prepare and cook food. To keep food away from animals, store it sealed in something they cannot chew through.

### Cook foods well

Raw meats, fish, shellfish, eggs, and milk often contain dangerous germs. These germs can harm anyone, but they are worse for people with HIV. To prevent illness, cook these foods fully, so there are no raw parts inside. This kills germs and makes these foods safe to eat. Wash your hands with clean water after handling these foods and before eating. See page XXX for how to treat illness from uncooked foods.

### Wash and peel vegetables and fruit

Fresh fruits and vegetables may have germs (or pesticides) on their skins from the dirt or water used to grow them. Peel fruits and vegetables before eating them or wash them in water with a little bleach in it.



1 spoon of bleach in a basin of water will kill any germs on fruits and vegetables.

Juices and unbottled drinks can also carry germs. It is better to make these yourself from foods and water that you know are clean, rather than buy them at markets or roadside stands.

### Avoid spoiled foods

Do not eat food that looks or smells bad, or from a can that is swollen or squirts when you open it. Before eating leftover cooked foods, heat them again until very hot. If possible, give only freshly prepared foods to children with HIV.

## Eating enough when you don't have money or land

Many people struggle to have enough food. Reasons for this include the terrible and unjust inequalities in our world between people who have too much and people who have too little, whether it is land, money, or power. People with HIV need even more food but so many farmers and wage earners have fallen ill or died. How can people get enough food?

Many things need to change for everyone to be fed enough. But one family or one community can usually eat better even if they have little. Here are some ideas that may help (also see Chapter 11).

- Buy healthy foods that are less costly, such as beans and grains.
- Buy foods in bulk if you are able to properly store them (in a dry place where no insects or animals can get to the food).
- Keep chickens for both eggs and meat.
- Feed babies breast milk instead of formulas. It is healthier for them, and it costs nothing!
- Do not waste what you have. After cooking beans and vegetables in water, save the water. It is full of vitamins and is very good for you to drink or use to cook grains.



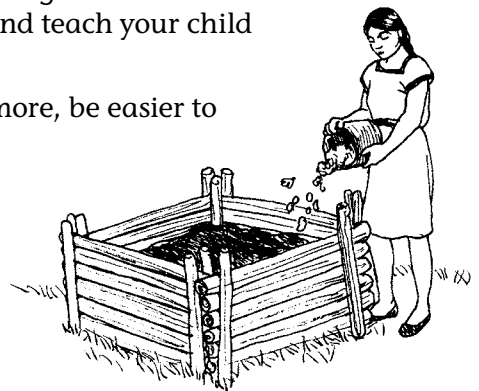
## Grow more of your own food

Many people already grow food on whatever land they have available. You might be able to grow a bit more, or plant greens between other crops.

Even if you live in a city, you can still grow food. You can use a rooftop, a small area near your house, or organize with others to make a garden in a vacant area. You can even grow a few things in a sack or pot on a window sill or just in front of your home. You may not be able to grow enough food for the whole family, but you can still have some fresh vegetables and teach your child about healthy foods.

Here are some tips to make a home garden produce more, be easier to care for, and need less water:

Use compost. Mix food and plant waste, such as leaves or grass, with some soil and manure. After several months, mix this compost into the ground where you plant. Compost makes your soil stronger and your vegetables grow bigger.



**Make compost from food waste.**

Change or combine your crops. Some vegetables make the soil weak and some make the soil strong. Beans, peanuts, and peas make your soil strong. You can grow different crops next to each other, or plant different crops after one another in the same soil. Combining the crops you grow also helps fight pests and plant diseases.



For more information on growing your own food, see *A Community Guide to Environmental Health*, Chapter 15.

### Help those who have less

Many communities have ways to help those who are hungry and lack other basic needs. Some do this through their religious organizations. Some use government bodies to provide food or money to people who need it. Schools or child care programs often provide meals for young children who would not eat otherwise.



## Clean water

We all need water. Drinking plenty of water keeps us healthy. We also need clean water for washing and preparing food. But in many places, water has dangerous germs and worm eggs in it that cause diarrhea and other diseases, including cholera and worms. For how to treat these diseases, see page XXX.

People with HIV are easily made sick by water that has germs in it. Even if everyone else in the house drinks the water without problems, the person with HIV drinking that water may get diarrhea from germs his body is not strong enough to fight. Young children also get sick more easily from germs in water.



### How to know when water is OK to drink

You cannot tell that water is safe to drink by how it looks. Water that looks clean may still contain harmful germs, worms, and other sources of health problems. Unless you know it is safe, water should be treated or boiled before it is used for drinking or preparing food.

In most cases, spring water and deep well water are safe, unless there is contamination upstream from field or factory pollution, waste dumps, deep pit toilets, or other sources of germs and toxic chemicals.

Local universities, government agencies, or NGOs may be able to help you test your water for safety. If you doubt the safety of your water, treat it before using it.



**Fight illness with a good water supply.**

## How to remove germs from your water

To make water safe for drinking, cooking, and washing food or utensils, follow these 2 steps.

### 1. Filter the water

- Let the water settle, then pour the clear part out to a new, clean container, or filter it.



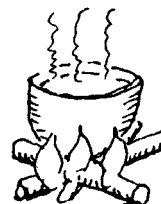
### 2. Disinfect the water

- Chlorine bleach (5%). Mix 8 drops bleach into 4 liters (1 gallon) of water in a container with a narrow mouth. Let the water and bleach mix together for 30 minutes before using. If the water looks dirty, use 16 drops of bleach and shake the mixture several times during the 30 minutes.



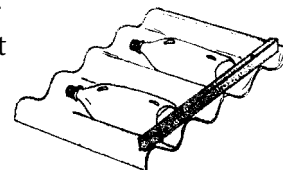
OR

- Boiling. Boil water for 1 minute to kill germs. At elevations over 2000 meters, 3 minutes are needed because boiling water is not as hot. If you do not have enough fuel to boil water, heat the water so it is too hot to touch—this will kill most germs.



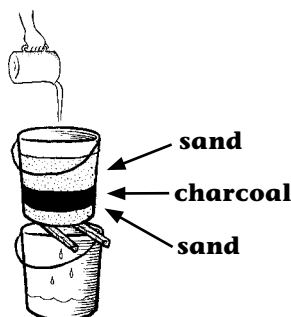
OR

- Sunlight. Fill clean, clear plastic bottles with water, and close them. Place the bottles where they will be in the sun all day, away from dust, children, and animals. Leave them in the sun for at least 6 full hours, or for 2 days if the weather is cloudy. Water can be stored for 1 or 2 days in the same bottle. Sunlight purification works best in very hot places.



OR

- A filter like this, with sand and charcoal, is slow but makes water safe to drink in one step.



Many books and pamphlets explain how to make water clean enough to drink. *A Community Guide to Environmental Health* from Hesperian shows how to build filters, how to make stoves that use less fuel for boiling water, and has many other ideas for making water safe.

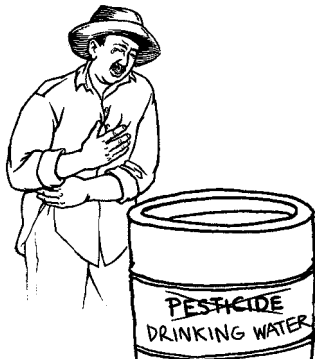
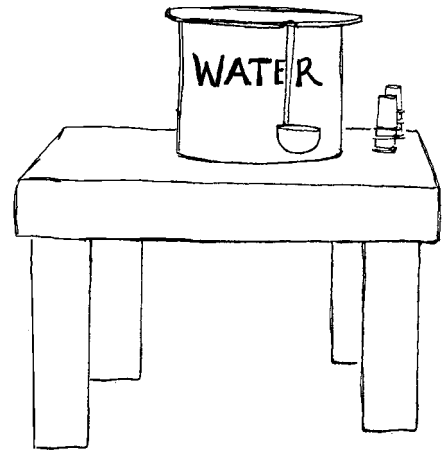
Note: The methods shown here do not make water safe from toxic chemicals. Water polluted with toxic chemicals is never safe for drinking, bathing or washing clothes. See *A Community Guide to Environmental Health*, pages 59 to 63, for more about toxic chemicals and water.

### How to store clean water

Stored water can get germs in it when someone touches it with dirty hands or dips a dirty cup in it, when clean water is poured into a dirty cup or other vessel, and when dirt or dust gets into the water.

To prevent water from becoming unsafe while stored or served:

- Wash your hands before collecting and carrying water.
- Clean the containers that you use to carry and store water.
- Carry water in a covered container.
- Keep water containers off the floor and away from animals.
- When you pour water out, do not touch the mouth of the container with your hands. Or use a clean, long-handled dipper to take water out.
- Clean all cups used for drinking.
- Treat only the water you need for a day or 2, so it does not sit too long.

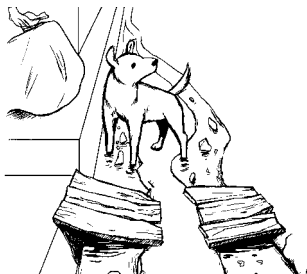


Do not store water in containers that have been used for pesticides or dangerous chemicals – even if they have been cleaned.

## Sanitation, cleanliness, and toilets

### How Anu and Ravi got sick

Anu and Ravi live with their mother and father in a crowded area of a city in India. Anu is 7 and her brother Ravi is 3. It is not easy to keep clean in the city. There are few latrines, and people often use the open trenches that run through the streets between the houses.



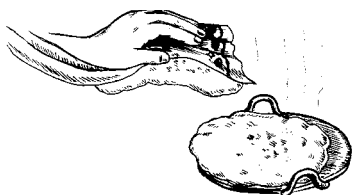
1. One day, heavy rains flooded the open sewers and dirty water spread everywhere. A dog walked through the streets and sniffed things, looking for food scraps. The dog got feces on its feet and nose.



2. The dog went into Ravi's house and Ravi played with him. He patted the dog, getting dirt and feces on his hands, and found an old shoe to throw so the dog could chase it. The dog ran in and out of the house a few times until Ravi's mother chased him off.



3. Ravi cried, and his mother squatted down to comfort him. Ravi held onto his mother's sari and the dirt and feces on his hands got on the cloth.



4. The busy mother prepared food for the family and used her soiled skirt--which did not look dirty--to handle the hot food.



5. The family ate the food, and soon everyone had diarrhea. Ravi and his sister were very ill.

Making sure human waste and feces are not left in the open is very important for the health of the entire community. Feces and urine have germs and worm eggs that can get into our water and food. This makes all people sick, but especially children and people with HIV. The diseases caused by these germs include diarrhea, cholera, worms, schistosomiasis, and bladder infections. For how to treat many of these diseases, see Chapter 9.

Keeping the germs in human and animal waste away from people is called sanitation. To stay healthy, we also need to keep our bodies clean, especially our hands.

Diarrhea is bad for Anu because she is still young. Diarrhea in young children makes them weak, less nourished, and more easily ill with other illnesses. Diarrhea is even worse for Ravi because he has HIV. The weakness from having diarrhea makes him less able to fight HIV and his medicines do not work as well.

### What could have prevented the family's illness?

If any of these was true, the spread of illness could have been prevented:

- If the community did not have open sewers
- If the dog was not allowed to come inside the house
- If the family helped Ravi wash his hands
- If Ravi had not wiped his hands on his mother's skirt
- If Ravi's mother had clean cloths to protect her hands

Cleanliness and sanitation can help keep communities healthy. Teach children how and when to wash their hands. By working together to provide children and families with safe toilets and ways to wash you can prevent many illnesses.



## Wash children's hands often

When babies are between 6 and 12 months old, they begin to put everything in their mouths. This is one way they learn about the world at that age. Try to keep your baby's hands clean by wiping them often. And give your baby clean things to hold and play with.

Teach children to wash their hands often, especially after using the toilet and before eating or touching food. When children are small you must still wash their hands for them. And you will need to help them until they are old enough to reach and use the water and soap. Even then, watch and guide them for a while to make sure they wash well.

When possible, use clean water to wash hands. Water can be treated with bleach, boiling or the sun. See page 24 for how to treat water. As much as possible, use soap every time you wash hands. If you do not have soap, you can use sand or ashes.



**Teach children how to wash their hands well.**

For clean hands, rinse with clean, moving water, like from a tap or pitcher. If you use the same bowl to wash and rinse hands, you or your children will still have some germs on your hands after rinsing them. This is most likely to cause illness for children with HIV.

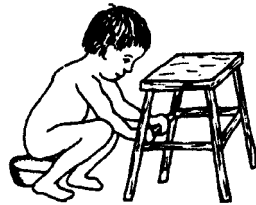
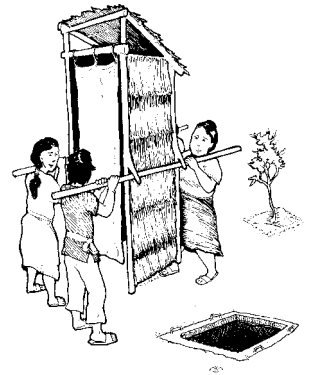
Also, try to use clean water for bathing children who have HIV. If you cannot use clean water, try not to let any of the water get into your child's mouth.

## Toilets

Feces and urine that are left in the open can spread germs. These germs are especially dangerous for small children and anyone with HIV. Toilets and latrines keep feces away from our water and food, and from the animals, flies, and our own feet that spread germs from feces.

There are toilets to meet the needs of every setting and community. For how to build different kinds of toilets, see *A Community Guide to Environmental Health*, Chapter 7.

Until a child is big enough to use a toilet, put the child's feces in a toilet yourself. Show the child where feces go—this prepares him for using the toilet later. Make sure to wash a baby's bottom after he defecates. And wash your own hands after wiping the baby or handling feces.



**You can keep a special toilet pot in the house for small children. Empty it into a latrine after the child uses it.**

## Learning to use toilets

Children need toilets they can use and feel safe using. For example, sometimes children are scared of pit toilets because of the large, dark hole. If children can help build a toilet, they may be less afraid.

Teaching a child to use a toilet happens over many months. Every child is different, but most children are ready to start learning between 18 and 24 months. Here are some signs that show your child may be ready:

- Children point to wet or soiled clothes and ask to be changed.
- Children stay dry for longer amounts of time, or overnight.
- Children have words for using the toilet.
- Children stand and sit well on their own.
- Children pull their pants up and down by themselves.



In the beginning you will need to clean the child yourself. Then you can help your child clean herself with paper or water. Girls should be taught to wipe themselves from front to back. This will keep germs from being wiped into the vagina and urinary tract where they can cause infections.



It can take as long as 2 years or more for children to learn to use the toilet by themselves. Be patient. It is normal for children to have accidents even after they have learned to use the toilets. Even when children are 4, 5 or 6 years old they may occasionally have accidents, especially at night. That is normal. Keep encouraging your child.

Children who have lost their parents or moved to a new household may have more accidents than other children their age. Because this means more work, it is understandable to feel upset when this happens. Try not to be angry with the child.

*It's OK Lin, let's get you some clean pants.*



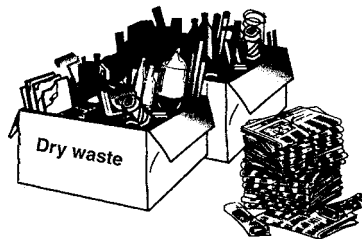
## Get rid of trash

Open piles of trash breed disease. Trash attracts and holds germs, along with rats, flies, cockroaches and other insects, which carry disease into homes.

To make trash easier to handle, separate it:

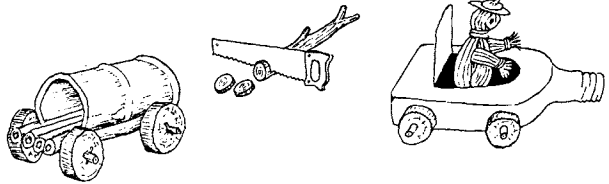
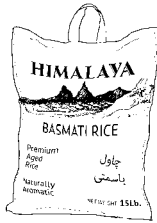


- Wet waste can become compost.

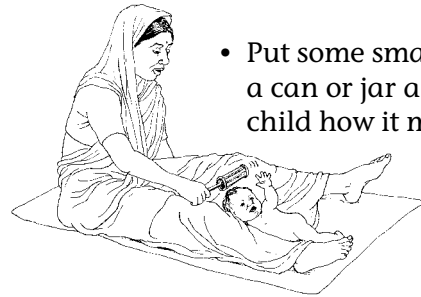


- Sort dry waste into things you can reuse or recycle, as well as trash.

## Reuse trash to make toys



- With rice bags you can teach children letters and numbers.
- Children love to get into and out of boxes, or put small things into containers.
- With cans or bottles you can make toy cars or boats—cover anything sharp with strong tape.
- Put some small rocks into a can or jar and show a child how it makes noise.



For more ways to recycle and reuse many things you might think are trash, see *A Community Guide to Environmental Health*.



- Managing trash is usually easier if the community takes responsibility for it together and does not leave it all up to each household.

To get rid of trash you cannot reuse or recycle, it is safer and better to bury it than to leave it in an open pile. Make sure your trash pit is deep enough to keep animals and bugs away.

Only burn trash as a last resort. Do not burn plastic. Plastic fumes can be toxic.


## Treat illnesses quickly

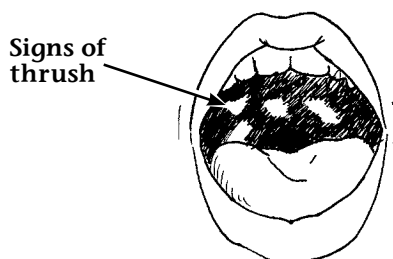
As a parent, you know that all children get sick sometimes. They may have a slight cold or some diarrhea. If children are generally healthy and well fed, they often get better on their own, with rest and healthy food and drink.

If a child is not strong and well fed, or if she has HIV, she will not be able to fight off as many illnesses. And some illnesses, such as pneumonia, malaria, and tuberculosis, are serious in any child, and must be treated as quickly as possible. See Chapter 9.

Young children with HIV especially need to be protected from illness. This means you should treat even milder illnesses quickly, and also take steps to keep children from getting ill. See the section starting on the next page.

Signs of illness to watch for:

- low weight, weakness, or not growing
- fevers that come and go
- diarrhea often
- sores and cracks around the mouth → 
- other infections and skin rashes that do not heal
- fast breathing (more than about 50 breaths a minute for a baby under a year old, more than 40 breaths a minute for a child age 1 to 5)
- cough that lasts more than a month
- swollen glands under the child's jaw



- white spots in the mouth (thrush)

See Chapter X for more information about these signs and what to do.

If a child is not growing well or is often ill, think about whether the child might have HIV. If possible, test the child—see Chapter 6.

## How to prevent common illnesses

You can prevent many illnesses by feeding children enough nutritious food, washing their hands (and yours), and safely disposing of feces in toilets. Taking certain medicines for prevention and using bed nets also prevent infections that can be very dangerous for small children, especially children with HIV.

A child who has HIV, or who might have HIV, will be ill less often and less seriously if you give him a medicine called cotrimoxazole. See page 34. And the sooner a child with HIV can start taking ART, the better his growth, health and development will be. See Chapter 8.

### Prevent worms

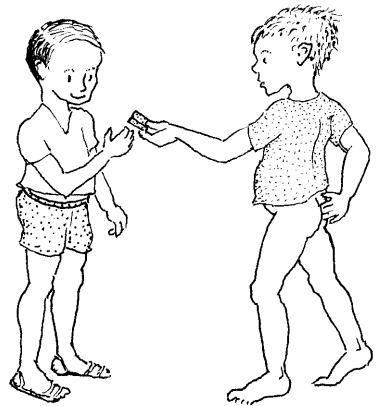
Seeing worms in a child's stool is common, and especially common in children with HIV. A child can also have worms without you ever seeing them. Worms can also sometimes cause severe rash and skin reactions. Children with worms may feel hungry more often.

Having worms is more serious when a child has HIV, because worms eat part of what the child eats, and children with HIV already need to eat more food than children without HIV. Worms may also cause bleeding in the child's stomach and intestines, increasing the chance of HIV infection from breastfeeding. Having a worm infection also overworks the immune system, which can worsen a child's HIV infection.

Give a child regular doses of anti-worm medications every 6 months to prevent worm infections. The same medication will treat several types of common worm infections including roundworm, pinworm, and hookworm. Tapeworm needs a different medicine. See page XXX for medicines and doses.

Most worm infections are spread through lack of cleanliness when it is difficult to use latrines, wash hands, or purify water. These problems cause food to become contaminated with worm eggs from an infected person's feces.

Hookworm spreads through bare feet. Children should wear shoes to prevent contact with worms. Keep the toilet area clean, and make sure no food spills or scraps are left on the ground.



Here is one way worms are spread.

Cotrimoxazole

Some medicines can be used to keep children from getting ill (and adults also). Cotrimoxazole, also called *Bactrim* or *Septrim* among other brand names, is a very low-cost antibiotic that prevents pneumonia, malaria, diarrhea, and other infections in people with HIV. Cotrimoxazole can be a big help in keeping children with HIV healthy.

However, any child with HIV will need ART eventually to stay healthy, and should be given ART as soon as possible. See Chapter 8.

Who should be given cotrimoxazole?

- Any baby under age 2 who has a positive HIV antibody test, or whose mother has HIV. (These both mean the baby might have HIV.)
- Any child 2 years or older with a positive HIV test.
- A child who might have HIV because of illnesses he has, see page XX.

You can give a baby cotrimoxazole starting as soon as 4 to 6 weeks after birth. Keep giving the medicine until you are sure the baby is not HIV positive, and cannot still become HIV positive through breastfeeding. To be sure a breastfeeding baby does not have HIV, you must test him 6 weeks after he stops breastfeeding. See Chapter 6 for how to know if a baby or child has HIV.

Children who are HIV positive should keep taking cotrimoxazole until at least age 5. For more about this medicine, see page XXX.

To give cotrimoxazole to babies and children who do or may have HIV, find the right dose in this chart and give it to the child once each day:

Child’s age	Using suspension (liquid)	Using single-strength adult tablet
6 weeks to 6 months	2.5 ml	⚖ 1/4 tablet mix with breast milk or other milk
6 months to 5 years	5 ml	⚖ Half tablet
6 years to 14 years	10 ml	⚖ One tablet
Older than 14 years		⚖⚖ 2 tablets

1 single-strength tablet has 80 mg of trimethoprim and 400 mg of sulfamethoxazole. If you have a different strength tablet, see the medicine pages for doses.

## Prevent malaria

Malaria is an infection of the blood spread by mosquitoes. It is a serious problem for anyone, and is most dangerous for pregnant women and children.

When children with HIV get malaria, they become more ill than other children, and may quickly develop other serious illnesses. For how to recognize and treat malaria in a child see page XXX.

### To prevent malaria

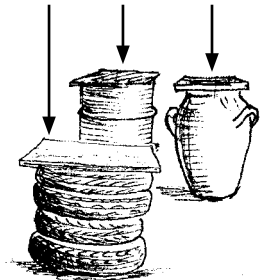
- Sleep under a bed net. One of the best ways to prevent malaria is to sleep under a bed net treated with insecticide. Caregivers and children should both sleep under bed nets. Keeping mothers healthy helps the whole family. And children learn by watching what adults do.
- Re-treat bed nets after 3 washes, or 1 or 2 times a year. Check nets often for holes.
- Cover windows and doors with screens or cloths.
- If you have a fan, use it at night while sleeping or sitting around the house.
- Cover your skin when you go outdoors after the sun goes down.
- Treat anyone with malaria quickly. Signs include fever, headache, pain in joints, vomiting, loss of appetite, and diarrhea. If you suspect malaria, treat it as quickly as possible with the right medicines (see page XXX).
- Spray insecticides inside where mosquitoes rest—on walls, in corners, on the undersides of tables, and in closets. Do not spray insecticides on people, animals, or near water sources.



### Community projects to prevent malaria

- Cover or drain standing water, which is where mosquitos breed. Get rid of old tires, cover empty barrels, and create drainage channels for water.
- Plant trees to give homes to bats and birds that eat mosquitoes.
- Breed fish that eat mosquito eggs in ponds and lakes, such as guppies, gambusia, koi, or tilapia.

Cover water containers.



## Prevent tuberculosis (TB)

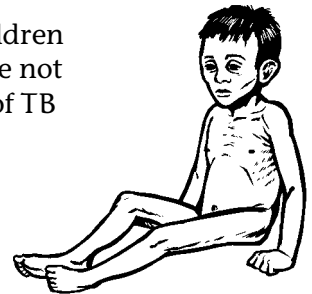
Tuberculosis, or TB, is a dangerous disease that spreads easily and hurts the lungs and often causes a long-lasting cough. TB can also spread to other parts of the body, which happens more often in people with HIV than in people without HIV. TB can spread very easily between an adult who has it and a child living in the same house.

Having both TB and HIV infection together means illness develops much faster than it does when someone has only TB or only HIV. TB is the most common cause of death for people with HIV.

Children can get TB at any age, but it is most common in children between ages 1 and 4 years. Young children with TB often are not diagnosed or treated for TB. This is partly because the signs of TB can be difficult to see in children.

Signs in adults include a long-lasting cough (more than 3 weeks). Other signs are fever, sweating at night and weight loss. In children, there may be cough, but the only signs of TB may be steady weight loss or not growing well.

See page XX for more information about TB and how to treat it.



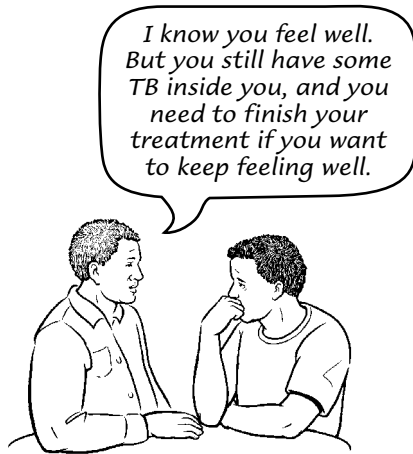
### To prevent TB in children:

- Give children lots of nutritious food. Children who are well fed do not as easily get sick from TB. See page xx.
- Treat pregnant women and other caregivers who have TB or HIV. Help people take the full treatment for TB.
- Use isoniazid, a medicine that can prevent TB. Any child under 5 years old who is living in a household where someone has TB should be given isoniazid. Children over 5 who have HIV should also take isoniazid. See page XXX for more about this medicine.
- Keep fresh air flowing through your house.
- Keep children away from people who are coughing or who have TB. Children should sleep separately from people who have TB, until those people have started treatment and have taken it for 2 to 4 weeks.
- Encourage everyone to cover their coughs. Cough into your elbow, not your hand, so you do not pass germs by hand later.



- If possible, stay away from crowded or confined areas. TB spreads most easily when people are crowded close together.
- Wash your hands often, especially after you cough.
- Do not spit indoors. Spit into a cup. If you spit outside, cover it with dirt.

Treat anyone who has signs of TB immediately. Treatment for TB takes a long time. You must keep taking TB medicine for several months, long after you feel better. If you stop taking the medicine, the TB will come back, and it will be more difficult and costly to treat.



## Give ART medicines every day

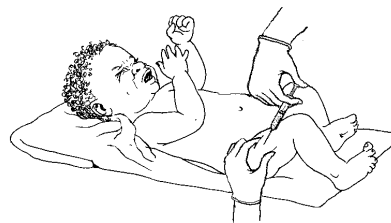
HIV medications are called ART (Anti Retroviral Treatment). In order for them to work, they must be taken every day, and usually at the same time each day. If a child is being given ART, you must give the medicine every day at the right time (this is called adherence). Missing just 3 pills in a month can cause the child's medicine to work much less well to fight HIV.

Giving your children their medication at the right times each day is very important for their health. As they get older, they can be more responsible for taking their medicine. See Chapter 8 for more about children and ART.



## Immunizations

Immunizations (vaccines) protect children from serious diseases such as polio, measles, tetanus, and hepatitis. They must be given correctly and at the right times. Immunizations are especially important for children with HIV, because having HIV means their immune systems are weak. The medicines help these children fight or avoid infections.

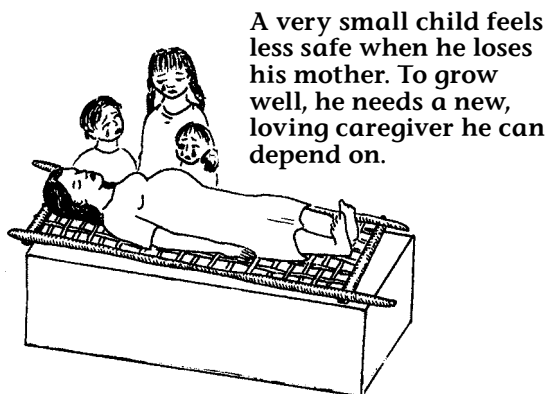


Some immunizations are “live” forms, and these may be less safe for a child with HIV. Make sure the health worker who gives an immunization knows your child is HIV positive or was born to an HIV-positive mother. Every country has guidelines for immunizing children with HIV. See page XXX for a list of recommended immunizations.

## Keep your child’s spirit strong

Good health is not just in our bodies. It is in our minds and spirits. Feelings like being happy, afraid, sad, hopeful, proud, angry, or ashamed are a part of our health. Feelings can also make it easier or harder for our bodies to be healthy.

Even babies and small children have feelings that help or harm their health. It may seem like babies cannot feel something like worry, because they are too young to understand that idea yet. But some feelings can affect us even when we are too young to know what the feeling is. For example, feelings of fear and insecurity make any person’s body work harder, even a child’s. When we are feeling afraid and insecure, we are less able to fight illness. And a child who feels afraid and insecure also has less energy and ability to grow and develop.



A very small child feels less safe when he loses his mother. To grow well, he needs a new, loving caregiver he can depend on.



Children’s spirits are strongest when they feel safe and accepted, and able to explore, learn, and become more skilled as they grow. Affection, guidance, and support with problems are all ways caregivers help a child have a strong spirit.

Most ways to support a strong spirit in young children will also help older children and even adults be healthier.

For more on supporting children emotionally, see Chapters 2, 3, and 4. For more ways to have a stronger spirit as a caregiver, see Chapter 12.

### **A sense of belonging**

A sense of belonging means children know they have people who like them, care about them, and who will help them with difficulties and hurts. When children feel they have family and friends they can depend on, they feel secure and able to grow and learn. You can help a child who is insecure, withdrawn, afraid, or sad because of HIV by reaching out to her and showing that you care for her.

Help children with HIV lead as normal a life as possible. They can play with other children and go to daycare or school. Give them the same responsibilities and privileges as other children their age. Treat a child you bring in to your family as kindly and fairly as you do your other children.



### **Play**

Caregivers can help children with HIV live happier and healthier lives by making sure they have ways to play and have fun.

Play is how children learn and develop. The skills they develop through play give them pleasure and confidence—these are important for a strong spirit. Play is how children learn to communicate and how friendships develop. Play is also one way children learn their culture, through games, songs, dances and art. In all these ways, play also helps children feel a sense of belonging.



**Give your baby small things she can hold or make noise with.**

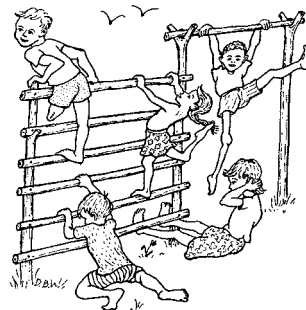


**Allow children to run around, climb, and play football and other games. Exercise will help keep them healthy.**

HIV sometimes makes it more difficult for children to play. Some children with HIV will be sick more often and spend more time in bed, or at clinics and hospitals.

Sometimes people wrongly fear HIV infection can spread among children and will try to keep children with HIV away from others. This is called stigma, and can mean children with HIV are excluded from play activities, or miss celebrations, community gatherings, or school. You may need to teach other parents that children with HIV cannot easily spread HIV infection.

Community based child care, games, and playgrounds can help children play together and develop well. Playgrounds that welcome all children also fight stigma, and they can offer chances to educate families. For more on fighting stigma, see Chapter 11.



**Make a place for children to play.**

## Routines

Children (and many adults) like knowing that some things stay the same and happen the same way each day. A routine means that a child has a regular time each day when he eats, does chores, takes medicine, washes, or goes to sleep. When these activities happen each day at about the same time, it helps children feel safe and secure. Babies benefit greatly from routines—eating, sleeping, and going out at similar times each day. Also, when a baby has one main caregiver, this is a kind of routine.

Illness in the family means that there is worry and no one can know for sure what will happen. Routines can be especially helpful for children in these families.

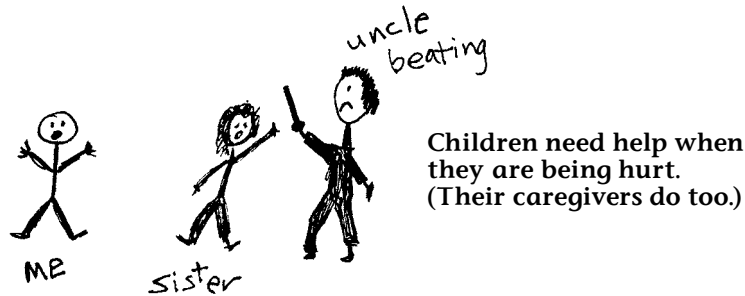
When possible, it is good to prepare a child for a change in routine. Talk to your child ahead of time about how things will happen differently. Often, the child will have less trouble when it happens.

*Tomorrow we will have a big day! We will wake up, wash and dress, have our tea, and take our medicine as always. But Uncle is coming to visit, and we will make a big dinner to welcome him.*



## Protection

Children need help when they are being mistreated. This can be serious mistreatment, like being physically or sexually abused. Or it can be milder but still harmful mistreatment, like not being fed as much as other children in the family, or being kept separate needlessly, or being ignored or treated meanly.



Becoming involved in a family's life to protect a child is not easy. But young children cannot protect themselves—they need the help of others when they are being harmed. See Chapter 11 for ideas about how to work with families, Chapter 13 for how to protect a child from sexual abuse, and Chapter 12 for ways to support caregivers to have more patience, energy, and understanding.

## Role models

Good role models help children develop a hopeful attitude and healthy habits. Knowing older children and adults living well with HIV gives children hope for the future. And knowing people who are fighting for the rights of people with HIV gives us all hope for the future, including children.

## Children learning and playing together support each other

In Rwanda, young people raising their younger brothers and sisters after their parents died formed an association to help each other. Each week for many years, local groups gather all the children and their older brothers and sisters together for part of a day, to play games, sing, dance, eat together, and take part in discussions and skits. Children look forward to these gatherings all week. Many leaders of this children's association are older children who have grown up in the group. Children who are dealing with the same problems because of HIV can provide a lot of support for each other.

