

CHAPTER 4  
Helping women stay healthy

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# Helping women stay healthy

## CHAPTER 4

A woman who eats well and takes good care of her body is much more likely to have a healthy pregnancy and healthy baby. In fact, the ways to stay healthy listed in this chapter can be used by women and their families to stay well throughout their whole lives.

## Eating well

Eating well means eating **enough food** and eating **a variety of healthy foods**.

Eating well:

- helps a woman resist illness and stay healthy.
- keeps a woman's teeth and bones strong.
- gives a woman strength to work.
- helps the baby grow well in the mother's womb.
- helps prevent heavy bleeding after birth.
- helps a mother recover her strength quickly after birth.



Eating well helps a woman and her baby stay healthy and strong.

## Problems from poor nutrition (not eating well)



Poor nutrition can cause tiredness, weakness, difficulty fighting infections, and other serious health problems.

Poor nutrition during pregnancy is especially dangerous. It can cause miscarriage or cause a baby to be born very small or with birth defects. It also increases the chances of a baby or a mother dying during or after birth.

## Talking to women about food

Talk to women about the food they eat. The earlier women start eating healthier foods, the better chance they have to stay healthy, to have normal births, and to have healthy babies.

To find out whether a woman is eating well, ask her what she usually eats, and how much. For example: "What did you eat yesterday?" Be sure to tell her what is healthy about what she eats. Then make a suggestion for how she could eat better.

*I eat cassava every day, and I usually have some fish — or beans cooked with onions and tomatoes, and I drink soda pop.*

*That sounds good. Cassava gives energy. Beans and fish give strength. If you drink fruit juice instead of soda pop, and you also eat some green vegetables, you will get more vitamins.*



Even if a woman knows the best foods for health, she may not eat them. Many families cannot afford to buy enough food or a wide variety of foods. Other women simply may not like the taste of some foods. To help a woman eat better, suggest healthy foods that she can and will choose to eat.

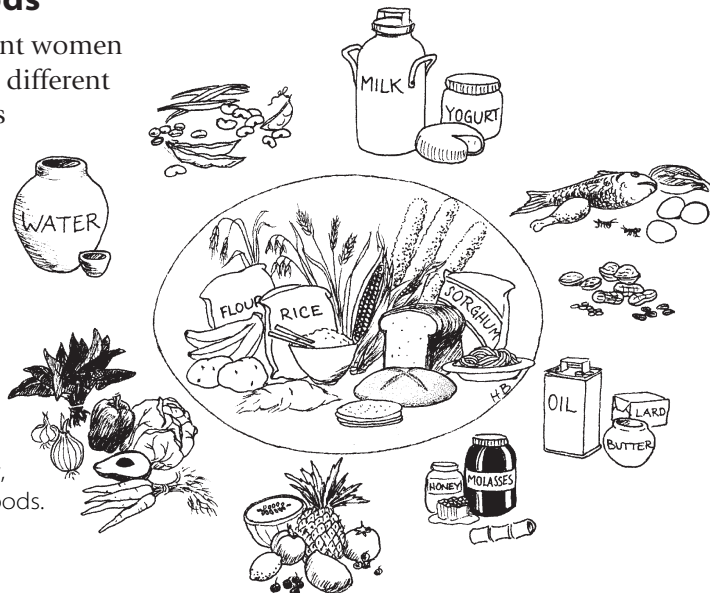
## Eat more food

Pregnant women and women who are breastfeeding need to eat more than usual. The extra food gives them enough energy and strength, and helps their babies grow.

Some pregnant women feel nauseated and do not want to eat. But pregnant women need to eat enough — even when they do not feel well. Simple foods like chapatis, tortillas, or rice can be easier for these women to eat.

## Eat a variety of foods

It is important for pregnant women (like everyone else) to eat different kinds of food: main foods (carbohydrates), grow foods (proteins), glow foods (vitamins and minerals), and go foods (fats, oils, and sugar), along with plenty of fluids.



For a healthier body, eat many kinds of foods.

### **Main foods (carbohydrates)**

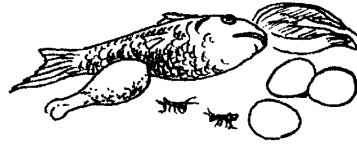
In most parts of the world, people eat one main food at each meal. This main food may be rice, maize, wheat, millet, cassava, taro, plantain, breadfruit, or another low-cost starchy food. These foods give the body energy. But to grow and stay healthy, the body needs other types of food too.

### **Grow foods (proteins)**

Grow foods contain protein, which is needed for the growth of muscles, bones, and strong blood. Everyone needs protein to be healthy and to grow.

#### **Some grow foods high in proteins:**

- legumes (beans, peas, and lentils)
- nuts and seeds
- meat, fish, and insects
- eggs
- cheese, milk, and yogurt



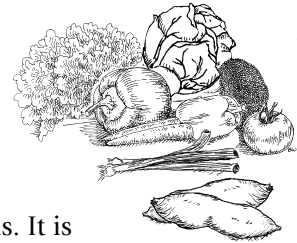
**Note:** Meat, fish, and cheese are nutritious foods but they can carry parasites or disease when they are eaten raw. Pregnant women should only eat fish, meat, or cheese that is well cooked or pasteurized.

Fish, especially fatty fish, can also contain mercury and other poisons because water is often contaminated. Pregnant women should avoid fatty fish, to be safe.

### **Glow foods (vitamins and minerals)**

Glow foods contain vitamins and minerals, which help the body fight infection and keep the eyes, skin, and bones healthy and strong.

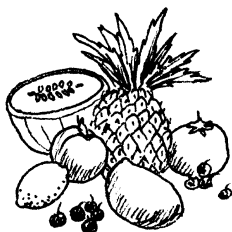
Fruits and vegetables are high in vitamins and minerals. It is important for women to eat as many different fruits and vegetables as they can.



### **Go foods (sugars and fats)**

Go foods contain sugars and fats, which give the body energy. Everyone needs these foods to be healthy.

These days, many people eat more sugars and fats than they need. That is because more people drink sugary soda pop, or eat foods that come from packages instead of foods made at home. These packaged, sugary foods are expensive and not as healthy. They also damage the teeth. It is better to eat go foods that are natural, not packaged.

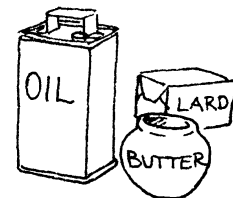


#### **Some healthy go foods high in sugars:**

- fruit
- honey
- molasses

#### **Some go foods high in fats:**

- nuts and seeds
- avocados
- vegetable oil, butter, ghee, and lard
- fatty meat



## Eat these 5 important vitamins and minerals every day

Pregnant and breastfeeding women need more of five vitamins and minerals — iron, folic acid, calcium, iodine, and vitamin A — than other people do. Pregnant women should try to get these vitamins and minerals every day because the baby needs them to grow and be healthy. Every pregnant woman needs enough for the baby and for herself.

### Iron

Iron helps make blood healthy and prevents anemia (weak blood, see page 116). A pregnant woman needs a lot of iron to have enough energy, to prevent too much bleeding at the birth, and to make sure that the growing baby can form healthy blood and store iron for the first few months after birth.

#### These foods contain a lot of iron:

- meat (especially liver, kidney, and other organ meats)
- poultry (birds)
- grasshoppers, crickets, and termites
- fish, clams, and oysters
- eggs
- beans, peas, and lentils
- sunflower, pumpkin, and squash seeds
- dark green leafy vegetables
- breadfruit
- yams
- hard squash
- blackstrap molasses

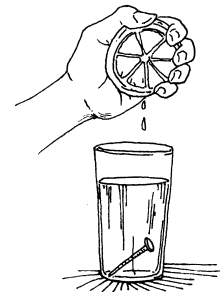


Other ways to get more iron:

- Eat iron foods with citrus fruits or tomatoes. The vitamin C in these foods helps a woman absorb iron into her system.
- Cook food in iron pots or add a clean piece of iron — like an iron nail — to the cooking pot. Only use a nail that you know is made of pure iron, not a mix of metals.
- Put a clean piece of pure iron, like an iron nail, in a little lemon juice for a few hours. Drink the juice mixed with clean water.

It can be difficult for a pregnant woman to get enough iron, even if she eats iron-rich foods every day. If possible, she should also take iron pills or iron syrup. These medicines may be called ferrous sulfate, ferrous gluconate, ferrous fumarate, or other names.

In many places health centers will give iron pills to pregnant women. Sometimes iron pills are combined with folic acid. The iron pills may make it hard for the woman to pass stool (constipation), and her stool may turn black. These problems should get better in a few days. (See page 76.)



### Hookworm and malaria can cause anemia

Women with **hookworm** are likely to have anemia. Hookworm can easily be treated with mebendazole or albendazole, though these drugs should not be taken in the first 3 months of pregnancy. These drugs have not been tested enough to be sure that they are safe for women who are in the later months of pregnancy or who are breastfeeding. However, most doctors believe that the benefit of treating hookworm is greater than the possible harm of these medicines.

If hookworm is common in your community, ask your local health authority what treatment is recommended for pregnant women.

**Malaria** can also cause anemia and other serious problems in pregnancy. See page 98 for how to prevent or treat malaria.

### Folic acid (folate)

Lack of folic acid can cause anemia in the mother and severe birth defects in the baby. To prevent these problems, it is most important for a woman to get enough folic acid before she gets pregnant and in the first few months of pregnancy.

#### These foods contain a lot of folic acid:

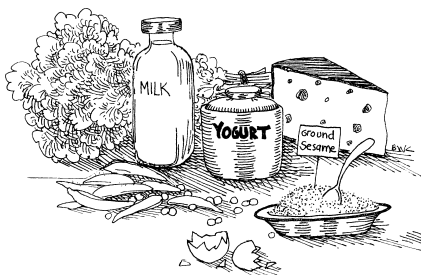
- dark green leafy vegetables
- meat (especially liver, kidney, and other organ meats)
- peas and beans
- sunflower, pumpkin, and squash seeds
- whole grains (brown rice, whole wheat)
- fish
- eggs
- mushrooms



Some women also take folic acid pills.

#### Folic acid pills

- take 0.5 to 0.8 mg (500 to 800 mcg) folic acid.....by mouth, 1 time each day



### Calcium

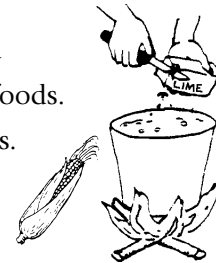
A growing baby needs a lot of calcium to make new bones, especially in the last few months of pregnancy. Women need calcium for strong bones and teeth.

**These foods contain a lot of calcium:**

- milk, curd, yogurt, and cheese
- ground sesame (tahini)
- almonds
- green leafy vegetables
- yellow vegetables (hard squash, yams)
- shellfish
- lime (carbon ash)
- bone meal and eggshells

Women can also get more calcium in these ways:

- Soak bones or eggshells in vinegar or lemon juice for a few hours. Then use the liquid to make soup or eat with other foods.
- Add lemon juice, vinegar, or tomatoes when cooking bones.
- Grind eggshells into a fine powder and mix into food.
- Soak maize in lime (carbon ash) before cooking it.



**Iodine**

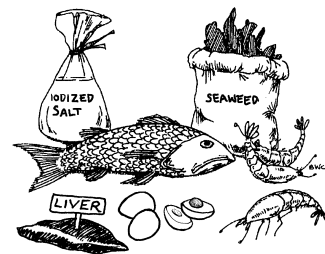
Iodine prevents goiter (swelling of the throat) and other problems in adults. Lack of iodine in a pregnant woman can cause her child to have cretinism, a disability that affects thinking.



The easiest way to get enough iodine is to use iodized salt instead of regular salt.

**These foods contain a lot of iodine:**

- shellfish (like shrimp)
- fish
- seaweed
- egg yolks
- liver



If cretinism or goiter are common in your area, find out if the local health ministry will give iodized oil by mouth or iodine by injection. If not, women can make iodine solution at home with polyvidone iodine.

**To make an iodine solution to drink**

Add 1 drop of Lugol's iodine to 1 glass of clean drinking water or milk.



In places where goiter or cretinism are common, everyone except breastfeeding babies should drink 1 glass of this iodine solution every month of his or her life. This is especially important for children and pregnant women. Do not take more iodine than this. Too much is dangerous.

Store iodine at room temperature, and in dark containers to protect it from light.

## Vitamin A

Vitamin A prevents night blindness and helps fight infections. Lack of vitamin A also causes blindness in children. A woman needs to eat plenty of vitamin A during pregnancy and while breastfeeding.



Dark yellow and green leafy vegetables and yellow fruits have vitamin A.



Along with eating healthy foods, women should drink plenty of clean water and other fluids every day. Fruit juices, coconut water, animal milks, and many herbal teas are all healthy fluids to drink.

## Ideas about food affect women's health

Some beliefs about foods are harmful — especially when people believe that women should not eat as much as men do, or should not eat a variety of foods.

### ***It is not safe for girls to be fed less than boys***

Girls need as much food as boys — to grow and learn and work. If a girl does not get enough food, her bones may not grow well. This can cause serious problems during labor when the girl becomes a woman and has babies of her own.

### ***When a woman must feed her family first, she may not get enough to eat***

A woman may be taught to feed her family before herself. She eats only what is left and often does not get as much as others in the family. This is never healthy. And when a woman is pregnant, or has just had a baby, it can be very dangerous.

If the family will not help the woman eat enough, she may need to hide food, eat while she is cooking, or eat while her husband is out of the house.



### ***Packaged and processed foods are rarely as good as homemade***

People are eating more and more packaged and processed foods. Some people like the taste, and some people think that packaged foods are healthier.

Packaged foods may be advertised as the healthiest choice, but this is rarely the truth! Advertisers will say anything just to sell products. Some packaged foods are fortified with vitamins and minerals, but our bodies cannot use these added-on vitamins as well as our bodies use the vitamins that we get from eating whole, fresh foods. Most packaged foods contain more sugar, salt, and fat than we need. Many are full of chemicals to keep the food looking and tasting fresh, and some of these chemicals have not been carefully tested to be sure of their safety.

### **Avoiding foods can be dangerous**

In many places, pregnant women are told not to eat certain foods. In these communities, people believe that these foods will harm the baby. At the same time, a doctor or a midwife may tell a woman it is important to eat those same foods. This can be confusing for the woman.

Avoiding foods can be dangerous. For a woman to be healthy during and after pregnancy, she must eat a wide variety of foods — main foods, grow foods, glow foods, and go foods. Eating only one kind of food is not enough.

If a woman does choose to avoid certain foods, make sure she is getting enough of each kind of food, and enough vitamins and minerals from her food.

Everyone needs to eat a wide variety of foods.



### **Finding creative answers**

Beliefs about food can be hard to change. But you may find ways to help women eat better without working against their beliefs. This example is based on a true story:



Maria is a midwife in Guatemala. She and her people believe that some foods are “hot” foods, and some foods are “cold” foods. They believe that pregnant women should not eat cold foods.

To Maria and her people, beans and eggs are cold foods (even when they are cooked). But Maria knows that beans and eggs are good, low-cost ways for pregnant women to get the protein and iron they need.

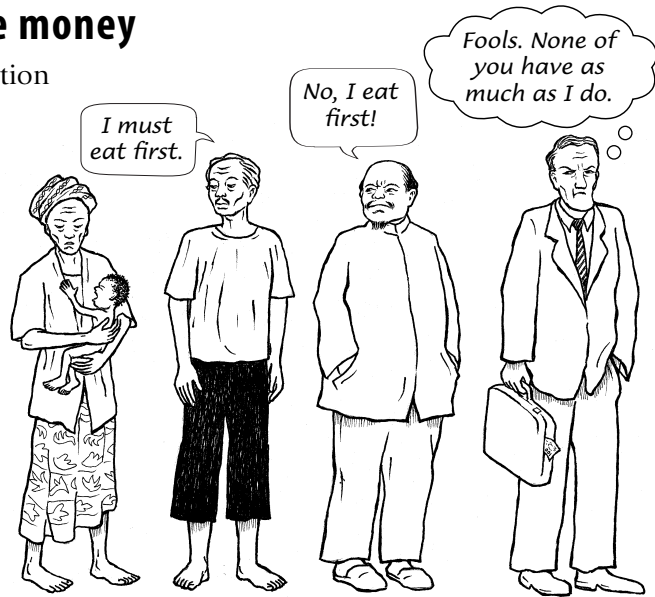
Maria wants pregnant women to eat well, but they will not eat cold foods. And Maria too thinks that cold foods may not be good for pregnant women to eat. Her solution is simple and smart. She tells pregnant women to eat beans and eggs with a little hot pepper or another hot food. This way, the foods will not be cold anymore.

Maria has found a creative answer to a problem. She has found a way for pregnant women to eat better and has shown respect for the beliefs of her community.

## Eating well with little money

The biggest cause of poor nutrition is poverty. Rich people in wealthy countries can buy any foods they want, while those in poor communities cannot. And within each community, some can afford to eat better than others. A few people own most of the land or businesses, and make money off of the work of others. Even within each family, a father may eat better than his wife or children.

To learn more about the root causes of poverty and ways to work for change, see the books *Where There Is No Doctor* and *Helping Health Workers Learn*.



The problems of hunger and poor nutrition will not be solved until we all share with each other fairly.



Even a very poor family can eat better by spending money wisely. A father who buys alcohol and tobacco could instead buy nutritious food or he could buy a hen to lay eggs. A mother who buys her children sweets or soda pop could instead buy eggs, beans, or other low-cost healthful foods.

Here are some ideas that families can use to eat better with little money:

### Breast milk

Breast milk costs nothing, and has all the nutrition a baby needs. Young children do not need fortified milks — especially if they are still breastfeeding and eating other foods.

### Beans, peas, and lentils

Beans and other legumes have a lot of protein and vitamins, and they usually do not cost much. They have even more vitamins if they are sprouted before being eaten.

Planting legumes makes soil richer. Other crops will grow better in a field where legumes once grew.



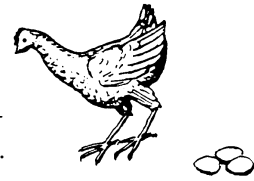
Grow beans this year.



Next year, maize.

### **Less expensive meats and animal products**

Blood and organ meats like liver, heart, and kidney have a lot of iron and may cost less than other meats. Fish and chicken are as healthy as other meats, and usually cost less — especially for a family that fishes or raises their own chickens.



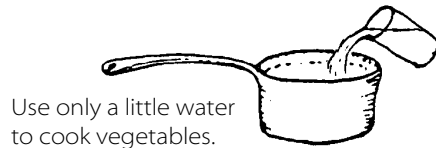
Eggs have a lot of protein, iron, and vitamin A. Eggs give more protein for less money than almost any other food.

### **Whole grains**

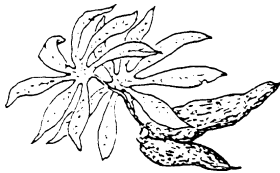
Grains, like wheat, rice, and corn, are more nutritious when they have not been refined (processed to take out the color). Taking out the color takes out healthy things too. White bread and white rice have less vitamins, minerals, and proteins than brown bread or brown rice.

### **Vegetables and fruits**

When vegetables are boiled or steamed, some of the vitamins from the foods go into the cooking water. Use this water to make soups.



The outside leaves of plants are usually thrown away, but sometimes they can be eaten. The leaves of the cassava plant have more vitamins and protein than the root.



Many wild fruits and berries are rich in vitamins and natural sugars that give energy.

### **Avoid buying vitamins**

Most of the time people can get enough vitamins and minerals by eating a variety of foods. Buying vitamins is usually a waste of money.

But pregnancy and breastfeeding are times that women may need to take extra vitamins — more than what they can get from food. Vitamin pills work as well as vitamin injections, and cost less.

## **Caring for the body for good health**

For a woman to stay healthy in pregnancy — or anytime — it is wise for her to keep clean, exercise, and get plenty of rest.

### **Keep clean**

Keeping the body clean helps prevent infections. If possible, the mother should regularly wash her body, including her genitals, with clean water.

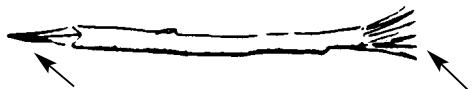
## Care for the teeth and mouth

Healthy teeth help a person's whole body be healthy, and care for the teeth is especially important in pregnancy because unhealthy teeth can lead to gum infections. This can cause a baby to be born too early.

In some places there is a saying, "Have a baby, lose a tooth." But this does not have to be true! A woman can protect her teeth in these ways:

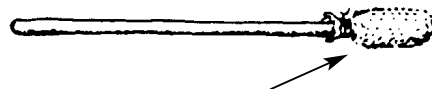
- Eat calcium-rich foods.
- Avoid sweets, candy, and soda pop.
- Clean the teeth after every meal with a soft brush, tooth stick, or rough cloth. Toothpaste, salt, or plain water on the brush are helpful but not necessary.

To make a tooth-cleaning stick:

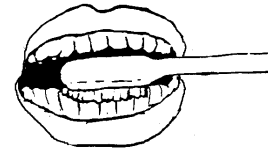


Sharpen this end to clean between the teeth.

Chew on this end and use the fibers as a brush.



Or tie a piece of rough cloth on the end of a stick.



Clean the surfaces of all the teeth, between the teeth, and the gums every day.

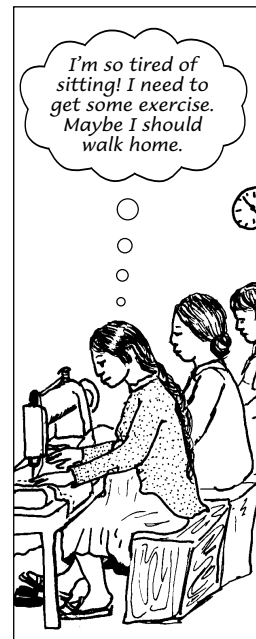
If possible, everyone should see a dentist or dental worker regularly.

## Exercise

Exercise makes a woman's body stronger. During pregnancy, exercise helps her body get ready for labor and birth. Exercise can also help a woman have energy and feel happy.

Many women get all the exercise they need by hauling water, working in the fields, milling grain, chasing after children, and walking up and down hills.

Women who work sitting or standing (in offices, stores, or factories, for example) or who do not move around much during the day usually need more exercise. They can take long walks, dance, do physical work, or find another way to move.



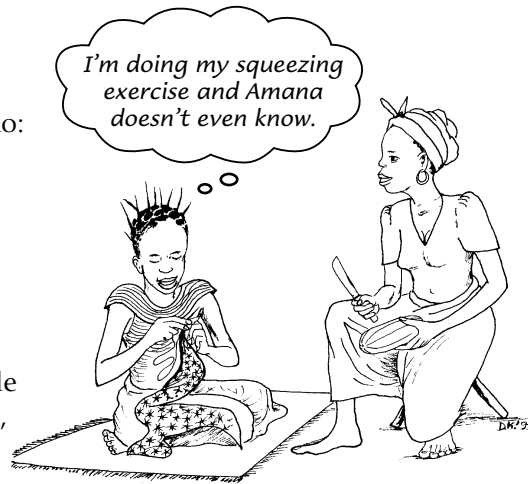
## Squeezing exercise (Kegels)

The squeezing exercise strengthens muscles in the pelvis and vagina. Doing the squeezing exercise can help to:

- prevent leaking urine.
- prevent the vagina from tearing during birth.
- speed healing after birth.
- increase sexual pleasure.

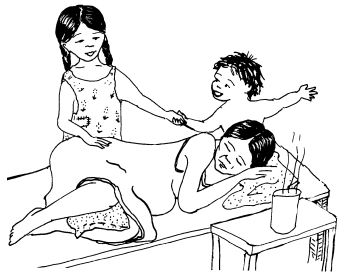
A woman can learn this exercise while she is urinating. As the urine comes out, she should squeeze the muscles in her vagina until the urine stops. Once she learns how to squeeze these muscles, she should only do it when she is not urinating.

The squeezing exercise is helpful at all times, not just during pregnancy. If possible, women should practice at least 4 times a day, doing at least 10 squeezes each time.



## Sleep, rest, and relax

Sleep and rest help women stay strong and resist sickness. Getting enough rest also helps prevent high blood pressure, sick babies, and other problems.



Many women must work all day in fields, factories, or stores. Then they must also haul water, find fuel, mill grain, cook, clean, and care for their families. This can be very hard at any time. It can be especially hard for pregnant women who need more rest than usual.

Explain to pregnant women that it is important for them to rest for a few minutes every 1 or 2 hours. Help the woman's family understand why it is important for her to rest and sleep.

## Enjoy the pregnancy

If women have enough food, rest, and care, pregnancy can be a wonderful time.

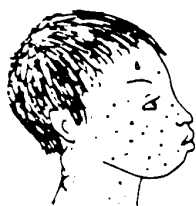
Many communities have rituals and practices that honor a pregnant woman. People help her with her work, bring her special foods, or give her massages or gifts. Customs like these help a woman get the food and rest she needs, and help her feel good about herself and her pregnancy.



## Things to avoid during pregnancy and breastfeeding

Sicknesses, drugs, and poisonous chemicals are not healthy for anyone. They are particularly dangerous in pregnancy and while breastfeeding. The following things are the most dangerous in the first 3 months of pregnancy, but they can be dangerous at all times.

### Stay away from people with rubella and other sicknesses



Pregnant women should stay away from people with sicknesses or rashes.

It is best for pregnant women to stay away from people who are sick. This will help protect them from becoming sick themselves.

Some sicknesses are particularly dangerous to pregnant women or their babies. Rubella (German measles) is one sickness that can cause serious birth defects or disabilities in the baby, including deafness and heart problems, and can even cause death.

### Avoid taking medicines

When a woman takes medicines, they pass through her blood to her baby. Medicines that are safe for a grown woman or even a child can be dangerous to the tiny baby inside the womb.

Cough syrups, pain relievers, some modern medicines, and some plant medicines can all be dangerous. Some of them can cause birth defects or disabilities in the baby, including disabilities that affect thinking or the brain.

If possible, pregnant women and women who are breastfeeding should not take medicines. If a woman is sick and needs medicine, find out if this medicine is safe in pregnancy or while breastfeeding. Look in the green medicine pages at the end of this book (see page 463) or ask a doctor if the medicine is safe. If plant medicines are used in your community, try to learn which ones are safe during pregnancy and breastfeeding.

Most of the medicines we recommend in this book are safe to take during pregnancy or breastfeeding. (If they are not safe, we will include a warning about when they can be dangerous.) But even drugs that are safe should only be taken when they are truly needed. Rest, water, and healthful foods are often enough to cure sicknesses and other problems.



Pregnant women should only take medicines that are safe in pregnancy and that are truly needed.

## Avoid smoking, alcohol, and other drugs

Cigarette smoke, alcohol, and other drugs are all harmful to the mother. When a woman smokes, drinks, or takes drugs, they also pass through her blood to her baby.

Smoking is dangerous for anyone. It can lead to serious problems including cancer. When a pregnant woman smokes, or even when she breathes the smoke from someone near her, her blood vessels get smaller and do not carry as much air or food to her baby. Because of this, babies of women who smoke are more likely to be small or sick.

Drinking a lot of alcohol can be dangerous for anyone. Heavy drinking can lead to many illnesses including serious problems of the liver. When a pregnant woman drinks, even just 1 or 2 drinks a day, her baby can have birth defects or disabilities that affect the brain.

Some drugs, particularly opium, heroin, cocaine, and barbiturates, are very addictive and dangerous. When a pregnant woman takes these drugs, her baby can be born with a drug addiction or with other serious health problems.

If you work with a woman who may be addicted to alcohol or other drugs, try to find help for her. She may be able to stop if she understands the risks to her and her baby. Advise her to stay away from people who are smoking, drinking, or taking drugs.

You may be able to help her find others in your community who have stopped using alcohol or drugs and who meet to support each other. The book *Where Women Have No Doctor* has more ideas about how to help someone stop abusing alcohol and drugs.



Whatever a mother puts into her body passes to her baby.



## Stay away from chemicals and fumes

Strong chemicals used for cleaning, and poisons used to kill pests in the fields or at home, are dangerous for everyone. They are especially dangerous to women who are pregnant or breastfeeding. These chemicals can cause miscarriage, infertility, birth defects, cancer, and other illnesses.

Any chemical with a strong smell is probably not safe. Many dangerous chemicals have no smell at all.

If possible, everyone should avoid these dangerous chemicals. But a pregnant woman should have no contact with them. She should not use them herself or breathe chemical fumes or dust. Her family should not store food in containers that once had chemicals inside. Tiny amounts of the chemicals — enough to cause harm — can stay in the container even after it is washed.

Families should try not to use chemicals at all. But many people who work with chemicals have no choice. It is part of their job at a factory, on a farm, cleaning, or somewhere else. People who use chemicals at work may be able to talk to the other workers about the problem. Maybe all the workers together can talk to the owner about using fewer chemicals or using safer ones.

### Poisonous chemicals include:

- pesticides (chemicals that kill bugs or weeds) used in farming.
- pesticides used at home to kill bugs or rodents.
- strong cleaners and solvents.
- some kinds of glue and paint.
- gasoline, oil, and other fuels.



### If someone in the family must work with chemicals, he or she should:

- use as few chemicals, and as little of each one, as possible.
- keep chemicals away from places where food is stored.
- keep chemicals away from children.
- avoid breathing chemicals. Wear a mask or at least cover the mouth and nose, and try to work where there is a good air flow.
- avoid getting chemicals on the skin. Wear gloves, long sleeves, and closed shoes.
- after working with chemicals, change clothes before coming in the house. Pregnant women should not wash these clothes.

CHAPTER 5  
Preventing infection

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# Preventing infection



## Preventing infection saves lives

Infection makes people sick and can even kill them. It is one of the most common causes of death after childbirth. Procedures that involve putting medical tools inside a woman's womb, like inserting an intrauterine device (IUD) or doing manual vacuum aspiration (MVA), can also cause infection. Much of the work of a midwife, and any procedure inside the womb (invasive procedure), can only be safe if you are able to follow the steps we outline in this chapter to prevent infection.



Germs can live on tools, even tools that look clean.

This chapter explains how to avoid infection by killing or controlling harmful germs. Germs are organisms that carry sickness. Germs are everywhere, but they are so small that they can only be seen with a microscope. The dangerous germs in blood, stool, body fluids (like semen and amniotic waters), and dirt can cause serious sickness when they get into someone's body.



Germs live in body fluids, like blood.

## Infection is caused by germs

Some sicknesses, like arthritis, diabetes, asthma, and epilepsy, are not caused by germs. They cannot be passed from one person to another.

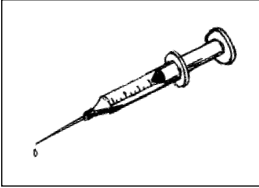
Other sicknesses, like measles, hepatitis, tetanus, womb infection, HIV/AIDS, and malaria, are called infections and are caused by germs. People get sick when the germs that cause these infections get inside their bodies.

## How germs get into the body

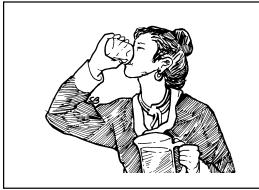
Germs can get inside the body in different ways.



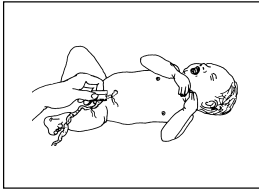
**Some germs pass through semen or vaginal mucus** (body fluids) when people have sex. HIV and other sexually transmitted infections like chlamydia and gonorrhea can spread this way.



**Some germs pass through blood** when the blood or body fluid of an infected person get into a cut or through the skin — like with a needle that has been used for piercing or injections. HIV/AIDS, hepatitis B, and hepatitis C can spread this way.



**Some germs live in dirty water** and pass when people drink it. Cholera and diarrheal diseases spread this way.



**Some germs live in dirt, on skin, or in the air**, and are not dangerous unless they get into a person's blood. These germs can get into the blood when an instrument that has germs on it is used inside a woman's womb, or to cut the skin or a baby's cord. Tetanus and womb infection can spread this way.



**Some germs pass through the air** when a sick person coughs or sneezes. Colds, flu, and tuberculosis can spread this way.

### **Keep sick people away from births**

One simple thing midwives can do to prevent infection is to keep sick people away from women who are pregnant or giving birth. Keep anyone who has a sore throat, cough, fever, or other illness that passes through germs away from births. And do not let anyone with a sore on his or her hands or face touch a new baby.





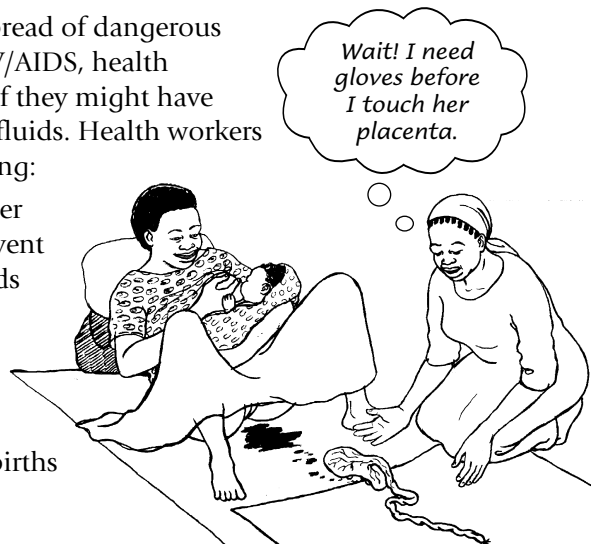
If you are sick but you must go to a birth, wash your hands often and cover your mouth if you sneeze or cough. Be sure to wash your hands after each time you sneeze or cough. Try not to touch the new baby too much.

### Anyone may carry germs that cause sickness

People do not always know that they have an infection. And there is no way to tell for sure what germs a person has just by looking at her. Some people have germs in their blood or other body fluids but do not seem sick.

To be safe, and to stop the spread of dangerous infections like hepatitis and HIV/AIDS, health workers must treat everyone as if they might have dangerous germs in their body fluids. Health workers can prevent germs from spreading:

- by wearing gloves and other protective clothing, to prevent blood and other body fluids that contain germs from getting on themselves or others.
- by cleaning and sterilizing the tools they use during births and other procedures.

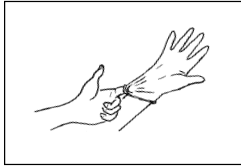


**Note:** Good general health can help avoid infection. Healthy eating, enough rest, and emotional and spiritual well-being are all important for staying healthy. Sometimes they are enough to help people fight germs that get inside the body so the person does not get sick.

But during birth and invasive medical procedures, a woman's body is more open and vulnerable to infection, and good general health is usually not enough. Germs that are usually kept out of the body can get into the womb. Any cut in the skin also makes a person more vulnerable to infection because the skin usually helps keep germs out of the body. Even an injection can cause an infection if the syringe has harmful germs on it.

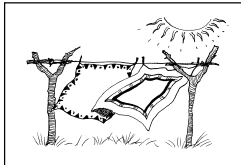
## Prevent infection by keeping germs away

Here are the basic rules to prevent infection.



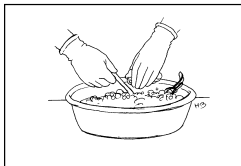
### Clean your hands and wear protective clothing.

Wash your hands often and wear protective clothing to prevent spreading germs from one person to another and to keep germs away from yourself (see page 53).



### Clean the space and bedding.

Clean the area where births and exams happen, to keep germs away (see page 57).



### Clean and sterilize tools.

Wash and sterilize tools to kill any germs on them (see page 59).



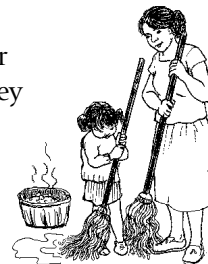
### Get rid of wastes safely.

Throw away waste products carefully to prevent people in the community from getting sick from the germs left on them (see page 67).

**Remember:** Infection can spread most easily when a health worker is caring for many people. For example, if her hands are not clean or her tools are not sterile, she will pass germs from one woman to another to another. For this reason, a woman giving birth at a hospital or maternity center with many other women has more risk of infection than a woman giving birth at home.

### Adapt this book to work for you

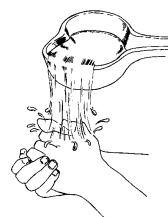
This chapter contains many detailed instructions for preventing infection. They are all important, but they may not all be possible. You will have to decide which you are able to do, or if there are ways you can adapt the instructions to work for you.



# Clean your hands and wear protective clothing

## Wash your hands often

Washing your hands is one of the most important things you can do to prevent infection. It prevents you from spreading germs to another person, and it helps protect you from germs, too. If you can do nothing else to prevent infection, you must wash your hands.



Wash your hands with soap and clean water. If you do not have soap, you can use ash (but not dirt!). Be sure to rinse all the soap or ash off. When you wash your hands, and especially when you rinse them, use clean water that is flowing, not water sitting in a bowl. When you wash your hands in a bowl, the germs that come off into the water will get back onto your hands again.

Wash your hands each time before you touch a woman's body. Wash after you touch her body, or after you touch anything that has her blood or fluid (like the placenta) on it. Wash before you put on gloves and after you take gloves off. If you are helping more than one woman at once, like at a hospital, it is very important to wash between helping each person.

Normal hand washing removes most germs. But sometimes to remove more germs, you should wash your hands for a full 3 minutes, and scrub under your fingernails.

### How to do a 3-minute hand wash

Before you start, take off rings, bracelets, and other jewelry.

1



Wash your hands and arms with soap and clean water — all the way up to your elbows.

2



Make sure to scrub in between your fingers.

3



If you have a clean brush, scrub your fingernails.

4



Keep scrubbing, brushing, and washing your hands and arms for 3 minutes! Spend most of this time on your hands.

5



Rinse with clean, running water.

6



Dry your hands in the air instead of using a towel. Do not touch anything until your hands are dry.

### Always do a 3-minute hand wash

#### before you:

- touch the mother's vagina
- do a pelvic exam
- deliver the baby
- sew up a tear
- insert an IUD (see Chapter 21, page 388)
- do an MVA (see Chapter 23, page 416)



#### after you:

- clean up after the birth
- touch any blood or other body fluids
- urinate or pass stool

### Alcohol and glycerine hand cleaner

You can make a simple hand cleaner to use if you do not have water to wash your hands. When used correctly, this cleaner will kill most of the germs on your hands.

Mix 2 milliliters glycerine with 100 milliliters of ethyl or isopropyl alcohol 60% to 90%.

To clean your hands, rub about 5 milliliters (1 teaspoon) of the hand cleaner into your skin. Be sure to clean between your fingers and under your nails. Keep rubbing until your hands are dry. Do not rinse your hands or wipe them with a cloth.

#### Clean water

Throughout this book we talk about how important it is to wash your hands and wash your tools. But the water you use must be clean to be of any use. If the water in your community may carry germs, be sure that water is boiled before using it to wash your hands or to wash tools before a birth.



### Wear gloves

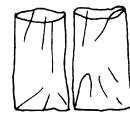
Latex and other plastic gloves protect women from any germs that may be hiding under your fingernails or on your skin. They also protect you from getting infections. Wear clean gloves whenever you touch the mother's genitals, or any blood or body fluid.

If you are doing invasive procedures, or if you are touching any tools that have been sterilized, you must wear sterile gloves.

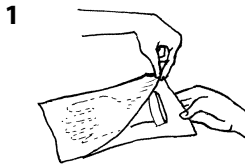


#### Plastic bag gloves

If you do not have gloves, use plastic bags that have been washed in disinfectant soap instead. Bags are harder to use than gloves, but they are better than nothing. In the rest of this book, we will only mention gloves. But **be sure to use plastic bags if you do not have gloves.**



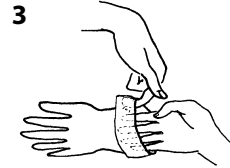
### How to put on sterile gloves



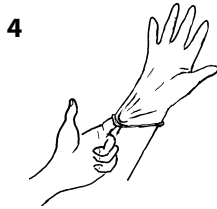
**1**  
Open the package without touching the gloves. Do not touch the outside of a sterile glove with your hand or it will not be sterile anymore.



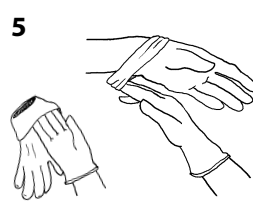
**2**  
Carefully wash your hands. Let them dry in the air.



**3**  
The gloves should be folded out at the cuff. Pick up one glove under the cuff on the inside of the glove and slip your hand into it. Do not touch the outside of the glove.



**4**  
Wiggle your hand in while you pull with your finger tucked inside the glove.



**5**  
Pick up the second glove by slipping your gloved fingers into the fold of the cuff. Slide your hand into the glove.



**6**  
Once the gloves are on, do not touch anything that is not sterile — or the gloves will not be sterile anymore either!

Practice with the same pair of gloves over and over again until it feels easy.

### REMEMBER:



If you carefully wash your hands ...



and put on sterile gloves ...



and then scratch your head ...



your glove is not sterile anymore!

Of course, when you touch a woman you will get germs on your gloves, but do not move germs from one part of her body to another. For example, if you touch a woman's anus where there are many germs, do not put your fingers inside the vagina with the same gloves. Germs from the anus can make a woman sick if they get into the vagina or womb.

After you use a pair of gloves one time, throw them away, or sterilize them before you use them again (see page 66).

## Protect yourself from infection

Midwives must protect themselves from germs and infection. You will not be able to help women if you are sick. And if you are infected with dangerous germs, you can easily spread them to the women you are trying to help.

Some germs that cause serious illnesses, like AIDS and hepatitis B, only live in blood, urine, stool, the bag of waters, and other body fluids. That means you do not get these illnesses just by touching someone's skin. But the germs that cause AIDS and hepatitis B can infect you if an infected person's blood gets into a cut or opening in your skin — even a cut so small that you cannot see it (see page 99 for all the ways HIV can spread). Keep blood and other body fluids off your clothing and skin, and if they do get onto you, wash them off right away with soap and water.

### Wear protective clothing

You do not need expensive equipment to keep body fluids off your skin, out of cuts, and out of your mouth and eyes. You can wear an apron or an extra shirt to keep fluid off your body. Protect your eyes with eyeglasses or plastic goggles. Cover your feet so that you do not step into blood or other fluids.

Wash all your clothing after any blood, waters, or other body fluids gets on it.



If you do not have clothing made to protect you from blood and fluids, you can make it from what you already have.

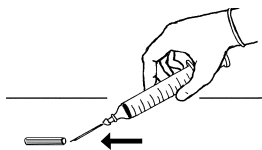
### Be careful with needles

If a syringe is used to give an injection, or a needle was used for sewing a vaginal tear, the needle has blood on it. If you accidentally stick yourself with that used needle, you will be exposed to germs. Carry needles carefully with the point away from your body. Do not leave needles lying around.

Use each needle only once and then throw it away in a box like the one on page 68. You may be able to get needles that can only be used once and do not need a cap. If you must reuse a needle, put the cap on very carefully and then put the needle in a bucket filled with bleach solution (see page 57) until you are ready to clean and sterilize it.

### How to avoid puncturing your skin with a needle

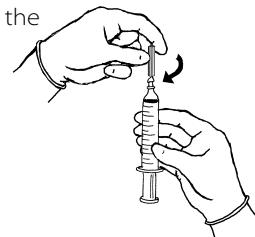
Do not use your hand to put the cap on the needle.



Instead, use the needle to pick up the cap.



Then close the cap all the way.



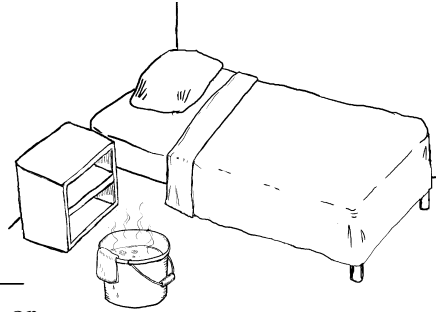
**Note:** If you do get stuck by a needle, immediately wash the area with soap and water or alcohol.

# Clean the space and bedding

## Clean the space

### At home

One reason that birth or medical procedures can happen as safely in a woman's home as in a medical center is that there are not as many germs in a clean house as in a hospital. But the home should still be cleaned carefully — especially the area where the baby will be born or where procedures such as a pelvic exam or IUD insertion will be done.



Sweep these areas free of dust and dirt, and wash surfaces with soap and water. Put your tools or birth kit on a clean surface.

Move animals out of the house and do not do any medical procedures in places where animals sleep or pass stool, or where people urinate or pass stool. If the floor in the house is made of animal waste (dung), do not let the woman's body or any of your tools touch the floor. Dung has many germs in it that can easily spread to pregnant women. You can cover the floor with clean straw, cloth, or plastic.

### In a hospital, maternity center, or clinic

Be extra careful. Germs can easily be passed from one person to another.

After each birth, wash floors and surfaces. If possible, use a bleach (sodium hypochlorite) solution to wash the floor.

#### How to make a disinfecting solution of 5% bleach

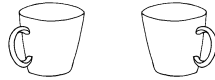
If your bleach says:

**5%** available chlorine



use undiluted,  
straight bleach

**10%** available chlorine



use 1 part  
bleach and 1 part  
water

**15%** available chlorine



use 1 part  
bleach and 2 parts  
water

Mix just enough solution for 1 day. **Do not use it again the next day.** It will not be strong enough to kill germs anymore.



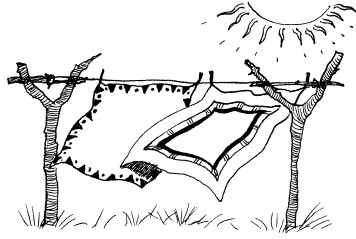
If you do not have bleach, you can wash the floor with:

- ethanol (medical alcohol) 70%
- isopropyl alcohol 70%
- hydrogen peroxide 6%
- soapy water
- ammonia  
(But do not ever mix bleach with ammonia — when mixed they make a poison.)

## Clean or sterilize the bedding

### At home

Wash cloth for covering the bed (bedding) in soap and water, and dry it thoroughly by hanging it in the sun or ironing it. Do not dry bedding on the ground; it will pick up germs.



### In a hospital, maternity center, or clinic

Bedding must be sterilized after each birth. Use one of these methods to kill the germs:

- Wash the bedding with soap and water. Then boil for 30 minutes. Dry thoroughly in a clean place.
- or
- Wash bedding with soap and water. Then use a hot iron to dry it.



If neither of these methods is possible, wash the bedding in soap and water and hang it in the sun until it is fully dried. Turn the bedding so the sun shines on both sides, and take care to keep it clean.

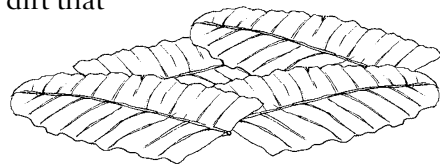
## Store bedding to keep germs away

If you are not going to use the bedding right away, keep it clean and dry until you are ready to use it. Put it in a clean bag or wrap it in clean paper and store it in a clean, dry place.

—● **Note:** Do not store bedding that is damp or wet. Germs will come back!

## Other kinds of underpadding

Sometimes there is no bed or bedding. The birth or procedure happens on the floor. In these cases, it is useful to have some kind of underpadding. This protects the baby and the mother from the germs and dirt that are on the floor. Find a way to clean the underpadding before it is used. For example, banana leaves can be washed with a disinfectant solution, and then smoked or dried in the sun. Cloth rags or sacks can be boiled and then dried.



# Clean and sterilize tools

All the tools used at a birth, exam, or procedure must be cleaned and sterilized. Cleaning and sterilizing the tools gets rid of germs. This protects women from getting sick.

## 1. Soak your tools

Tools that have been used must be soaked for at least 20 minutes in bleach solution (see page 57).

## 2. Clean your tools

All tools and equipment you use at a birth or a procedure must be clean. Wash them well after each birth, using a brush to remove any blood or dirt in the hinges or rough edges of your tools. Clean off any rust, and get rid of tools that are dull or damaged. To protect yourself, wear heavy gloves when you clean your tools.

After everything is washed, any tools that you use inside a woman's body must also be sterilized to kill germs.



Carefully wash all the dirt off your tools.

## 3. Sterilize your tools

To sterilize means to kill all the germs on something. If your tools are sterilized, they will not spread germs to women when you use them. This will protect women from getting infections.

### What do we mean when we say "sterile"?

**Sterilize** means kill **all** the germs that cause infections. To sterilize a tool you must use baking or pressure steaming.

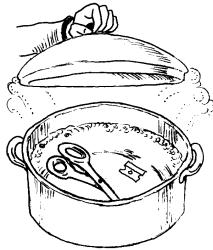
**Disinfect** means to kill **most** of the germs that cause infections. Some soaps and cleaning products are called "disinfectant." But to disinfect medical tools or instruments you cannot simply clean something with a disinfectant soap — you must boil, steam, or soak the tool in disinfectant chemicals. This kind of disinfection is called High Level Disinfection (HLD).

All the procedures in this book can be done safely with tools that are either sterile or HLD. To be simple, we only use the word "sterilize" or "sterile" throughout the book. But any time we say that a tool should be sterile, we really mean it can be sterile **or** HLD.

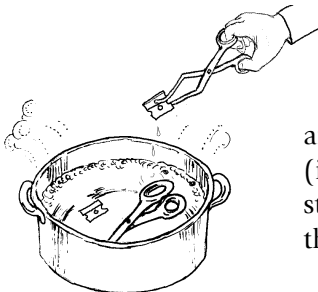
Sterilize everything that will go inside a woman's body, will cut her skin, or will be used to cut the cord at birth.

**Sterilize these items:**

- syringes and needles
- scissors or razor blade for cutting the cord
- materials for sewing tears
- clamps or hemostats
- gloves
- gauze
- compress cloths
- bulb syringe or mucus trap
- MVA cannula (see page 420)
- speculums, in some cases



**Note:** You do not need to sterilize tools that are used only on the outside of the body. Stethoscopes, measuring tape, and blood pressure cuffs must be clean but do not need to be sterile.



When you sterilize a tool, the germs on it are killed and it is safe to use. But if that tool touches anything (including the bed, a table, or you!) it is no longer sterile. Germs from whatever it touched are on it, and those germs can cause an infection when the tool is used.

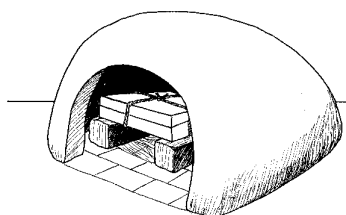
The next few pages explain 5 different ways to sterilize your tools: baking, pressure steaming, boiling, steaming, and soaking in chemicals. Baking and pressure steaming are best — they kill the most germs. If you cannot use either of those methods, boiling, steaming, or using disinfectant chemicals is fine. Use the ways that work best for you.



**WARNING!** If you cannot sterilize your tools, then do not use them. Unsterilized tools will do more harm than good.

## Baking

Use baking to sterilize metal tools, and string for tying the cord. Do not bake rubber or plastic. It will melt.



Wash and rinse all the tools well, then put them into 4 layers of clean cloth or heavy paper. Wrap the cloth up around the instruments and tie it shut.



Put the packet of tools or string into a container or on a pan.

Bake on a medium-high heat (170°C or 340°F) for 1 hour.

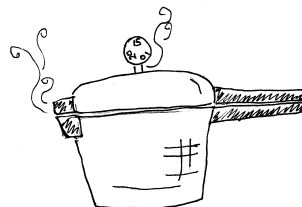
This is a little longer than it takes to bake a big potato or yam. If you cannot make your oven hot enough, bake items longer.

Let the packet cool, then store it in a clean, dry place.

## Pressure steaming

Use pressure steaming to sterilize metal tools or rubber or plastic equipment.

Some clinics and hospitals have a machine for sterilizing called an autoclave. Autoclaves sterilize instruments using pressure and steam. If you have a pressure cooking pot, you can sterilize your tools in the same way that an autoclave does.

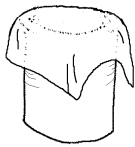


Put a steamer basket and water in the pressure cooking pot. Put your tools into the steamer, close the lid on the pot, and put the pot on a flame to boil.

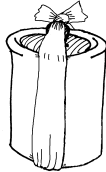
After it comes to a boil, cook at 15 or 20 pounds of pressure for 20 minutes.

After sterilizing tools, let them dry. Do not touch them, or they will not be sterile anymore!

Use sterilized tongs, chopsticks, or spoons to pick the tools out of the pot. Move them directly to a sterilized container. Remember, if the tool touches anything, including your hands, it is no longer sterile.



Let the tools dry in the sterilized container. Cover the container with a sterilized cloth or paper to keep dust out.



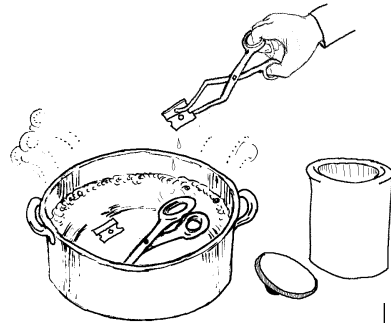
When the tools are all dry, put the lid on the container and seal it with tape or some other material to keep the germs out.

## Boiling

Use boiling to sterilize metal tools, rubber or plastic equipment (like mucus bulbs), and cloth.

After you wash and rinse your tools, cover with water and boil for 20 minutes.

Start counting the 20 minutes when the water starts boiling.



Use sterilized tongs, chopsticks, or spoons to pick the tools out of the pot. Move them directly to a sterilized container. Remember, anything you touch is no longer sterile.

## Steaming

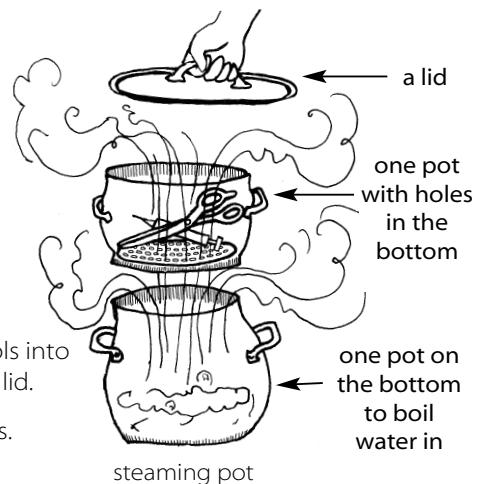
Use steaming to sterilize metal tools, gloves, plastic equipment, and other tools.

A steaming pot has 3 parts that fit together tightly: one pot on the bottom to boil water in, one pot in the middle that has holes in its bottom, and a lid.

Boil a little water in the bottom pot. Put the tools into the steamer pot with the holes. Cover with the lid.

Steam over boiling water for at least 20 minutes.

Start counting the 20 minutes when the water starts boiling.





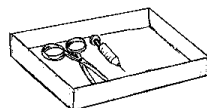
Wait for the tools to dry, and then use sterilized tongs to move the tools from the steamer into a sterilized container, and seal the container.

Steaming uses less water than boiling, and tools that are steamed do not get dull or broken as quickly as tools that are boiled.

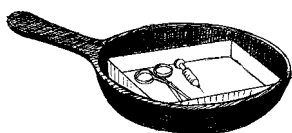
### A method from the Philippines

The Medical Mission Sisters in the Philippines have developed a method to sterilize tools with steam:

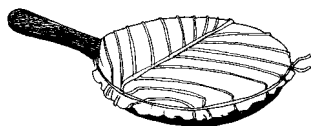
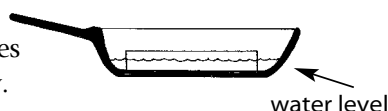
1. Put your clean tools into a metal tray.



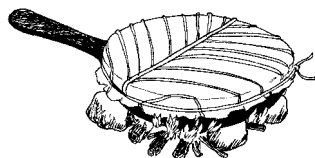
2. Place the tray in a cooking pan.



3. Fill the pan with water until it reaches halfway up the tray.

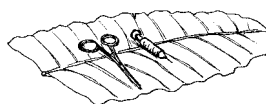


4. Cover the pan with 8 layers of clean green banana leaves. Bind the leaves tightly in place with strips of banana leaf or bark. Be careful not to spill water into the tray when you do this.



5. Put the pan on a low fire and boil for about 1 hour.

6. Throw away the top layer of the leaves. You can use one of the inner layers to put your instruments on.



### Using chemicals

Some people use chemicals to sterilize metal, rubber, or plastic tools and equipment. We do not recommend using chemicals to sterilize.

Most chemicals used to sterilize are poisonous. They poison the ground and the water when they are thrown away. They are poisonous to the people who work in factories making them, and they are poisonous to the people who use them to clean tools.

But some tools can only be sterilized with chemicals. Thermometers and some kinds of gloves cannot be baked, boiled, or steamed.



**If you do need to use chemicals:**

- mix up the bleach solution on page 57.

**or** If you do not have bleach, use one of the following chemicals:

- ethanol (medical alcohol) 70%
- isopropyl alcohol 70%
- hydrogen peroxide 6%

**or** If you cannot get any of these chemicals, you can use:

- strong drinking alcohol like gin, or a strong local brew.



Be sure that all of your tools are very clean before sterilizing them with chemicals. Even a little blood or body fluid left on the tool can stop the chemicals from working. Do not use chemicals to sterilize tools that will go inside the womb.

Soak in bleach or disinfecting chemicals for at least 20 minutes.

**or**

Soak in strong drinking alcohol for a whole day.

After soaking, pour the chemicals off and let the tools dry.

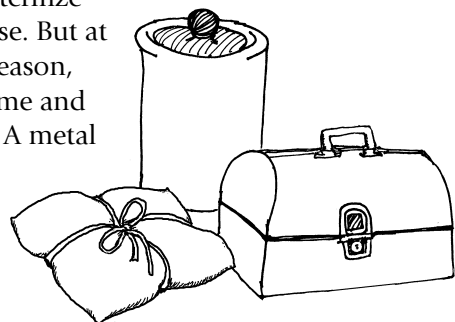


**WARNING! Glutaraldehydes and formaldehyde are chemicals that we think are too dangerous to ever use.** Many clinics and hospitals use these to sterilize, but they are very toxic. Formaldehyde, for example, causes cancer. Try to find a different way to sterilize.

If you use chemicals, keep them off your skin, and wear gloves when you use them. Get rid of chemicals carefully. You may have to dump bleach or other chemicals into a latrine to be sure animals and children do not drink it.

**Storing tools and supplies**

At some births there will be plenty of time to sterilize your tools and equipment at the mother's house. But at other births, you may not have time. For this reason, try to sterilize your tools and equipment at home and keep them in a sterilized container in your kit. A metal box or pot with a tight-fitting lid is best. Use any of the above methods to sterilize a container and tools to move equipment. Do not touch the inside of the container.



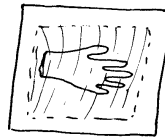
If you cannot get such a container, wrap the tools and equipment in 4 layers of cloth or heavy paper before sterilizing them. Then keep the sterilized tools wrapped up until you are ready to use them. (You can only use cloth or heavy paper to wrap your tools if you are sterilizing by baking.)

Remember that germs grow in moisture, and they will come back if the instruments are put away while they are wet. But if you are going to use the tools right away, it is OK to use them when they are wet. Germs need time to grow.

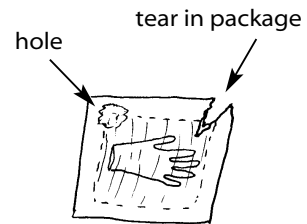
## Some equipment needs special care

### **Sterile packets**

Gauze, compresses, gloves, and other equipment sometimes come in sterile packets. Because the inside of the packet is sterile too, you can use this equipment directly out of the packet. But remember: once you take something out of its sterile packet and use it, or if the packet gets wet or gets holes in it, the equipment is not sterile anymore.



This glove is sterile.

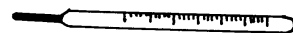


This glove is not sterile.

Things in sterile packets are often meant to be used only once and then thrown away (disposable). But some of these things can be used again if they are carefully cleaned and sterilized before each use. Gloves can be boiled or steamed. Gauze and compresses can be washed and then boiled or baked.

### **Thermometers**

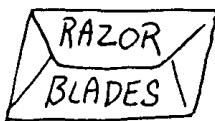
Wash the thermometer in soap and rinse with cool, clean water before and after you use it. Do not use hot water because the thermometer may break.



After washing, it is best to soak the thermometer in alcohol for 20 minutes. You can use ethyl, isopropyl, or medical alcohol (ethanol). Do not reuse the alcohol. Rinse the thermometer in clean water before you use it again.

### **Razor blades**

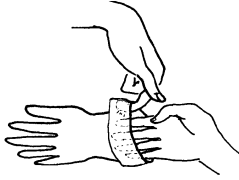
Razor blades for cutting cords often come inside of a sterile packet. To keep the packet sterile, wrap it in clean paper or cloth, or keep it in a clean dry box. If the packet gets wet or dirty, it is not safe to use the razor blade unless you sterilize it again.



Try not to reuse razor blades — but if you do, they must be sterilized first. Razor blades can be sterilized by any method.

## Gloves

Most plastic gloves can be boiled or steamed, but some will fall apart in the water. Get strong gloves that can be boiled and reused a few times.



Only touch the inside of the glove.

Before boiling or steaming gloves, turn the cuff inside out. After sterilizing a glove, touch only the inside part of it. If you touch the outside, it will not be sterile anymore.

If the gloves you have cannot be boiled, wash them carefully and soak them in bleach or medical alcohol. Then rinse them in clean water before using them again.

## Mucus bulb (bulb syringe)

When you wash out a mucus bulb, make sure to fill it with soapy water and then squeeze the water out. Do this several times. Then rinse it out well.

If you sterilize the mucus bulb by boiling, make sure to let water into the inside of the bulb before boiling and then squeeze out all the water afterward.



## Needles

Many people get sick with serious illnesses like hepatitis or HIV/AIDS from using unsterilized needles.

### Reusable syringes and disposable syringes

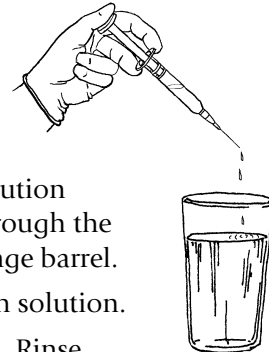
Reusable syringes can be used again and again. Reusable syringes make less waste and can save money, but they must be washed very carefully and sterilized after every use.

Disposable syringes are made to be thrown out after one use. Some disposable syringes can be taken apart, boiled or steamed, and reused several times. But we do not recommend this, because needles that are not completely sterilized can spread disease.

**Never reuse a needle or syringe without cleaning and sterilizing it first!**

#### How to wash and sterilize a syringe and needle for reuse:

1. Put on a pair of heavy gloves to protect your hands from germs.
2. Draw 5% bleach solution (see page 57) up through the needle into the syringe barrel.
3. Squirt out the bleach solution.
4. Repeat several times. Rinse everything several times with clean water.
5. Take the syringe and needle apart and boil or steam them. (See page 62.)



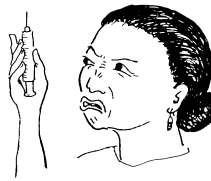
**REMEMBER:**



If you take a sterile syringe out of boiling water ...



and put it in your pocket ...

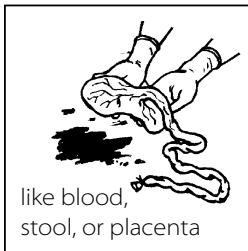


it is not sterile anymore. Instead, it is dangerous!

## Get rid of wastes safely

There are three different kinds of waste after a birth or procedure:

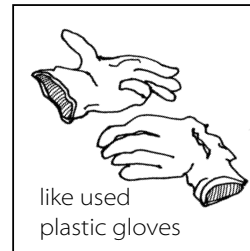
### body wastes



### sharp wastes



### other wastes



These wastes carry germs and can spread infections to you and to people in the family and community. Wear gloves when you touch wastes, and get rid of them carefully.

### Body wastes

The simplest way to dispose of body wastes is to put them in a latrine or to bury them deep in the ground.

In many communities, families bury the placenta, sometimes with other special objects. Burying the placenta is an important ritual for many people, and is also a way to protect the community from germs that may grow in the placenta.

### Sharp wastes

Sharp wastes must be put into a container so they will not injure anyone who finds them. A container made of metal or heavy plastic, with a lid or tape to close it, works well.

When the container is half full, add bleach if possible, then seal it closed and bury it deep in the ground (see page 68).



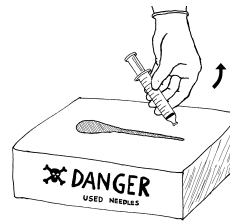
### Make a box to dispose of needles safely

Find a metal or hard plastic box. Make a long hole in the lid of the box that is wide on one side and gets narrower on the other side.



When you have finished using a disposable syringe, put the needle into the box and slide it down to the narrowest point.

Then pull up on the syringe and the needle will fall off into the box. The plastic syringe can be sterilized and thrown into a waste pit (see below).



When the box is half full, pour 5% bleach solution into the box, seal it closed, and then bury it deep in the ground.

### Other wastes

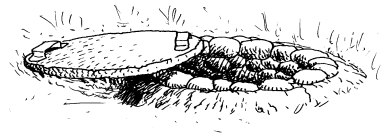
Other wastes, like plastic gloves, syringe barrels, or cloth soaked in blood, should be sterilized and then buried deep in the ground. You can sterilize them by soaking them in bleach for 20 minutes.



**WARNING!** Do not burn plastic gloves, syringes, or any other plastics. Burning plastic wastes is dangerous — when plastic burns, it makes smoke and ash that is very poisonous.

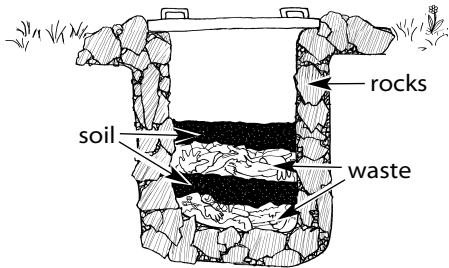
### Burying wastes

Find a place away from where people get their drinking water and away from where children play. Dig a safe waste pit to bury wastes.



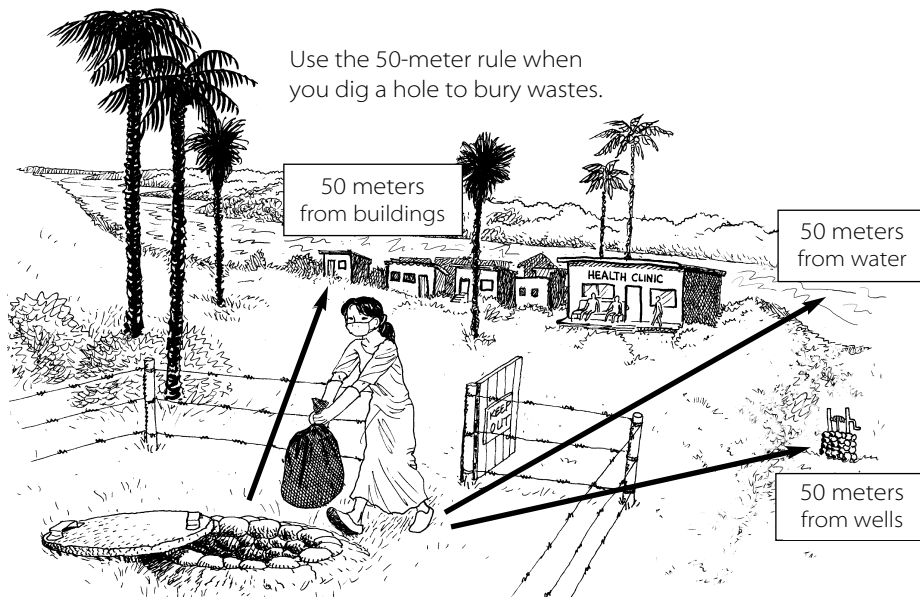
### A safe waste pit

1. Dig a pit 1 to 2 meters wide and 2 to 5 meters deep. The bottom of the pit should be at least 1½ meters above the water table.
2. Line the inside of the pit with a layer of clay or rocks at least 10 centimeters thick.
3. Build up a ridge of earth around the top of the pit to prevent surface water from running in.
4. Build a fence around the area where the pit is located to keep animals out.



Each time waste is put in the pit, cover the waste with 10 centimeters of soil, or a mix of soil and lime. Lime helps disinfect the waste, and will also keep animals away while the pit is in use.

When the waste rises to ½ meter from the surface, cover it with ½ meter of soil and seal it with a layer of concrete at least 90 centimeters thick. If the pit is used only for medical waste and not for regular garbage, it will not fill up too quickly.



### Garbage dumps

When wastes are sent to a garbage dump, they can spread infections there. In many places, people pick through garbage to find things to sell, like used syringes. This is dangerous for the people picking through the garbage, and for the people who buy the syringes to use them again.

When a syringe is not usable anymore, dispose of it safely. If you must send needles to the garbage dump, sterilize them first, and seal them in a box or tin.

## CHAPTER 6

# Common changes in pregnancy

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# Common changes in pregnancy



During pregnancy a woman's body changes. These changes can sometimes be uncomfortable, but most of the time they are normal. In this chapter, we describe some of these changes, and discuss ways to help women feel better. We also explain how to tell when a woman's discomfort may be a sign that something dangerous is happening with her pregnancy.

There are many ideas about how to treat the discomforts of pregnancy. We cannot explain all of these ideas here. If you know remedies or treatments for these problems which we do not explain, use the remedies that work for you. We do not have all the answers. But use the ideas on page 19 to help you decide if remedies are helpful or if they may be harmful. Not all remedies work.

## Changes in eating and sleeping

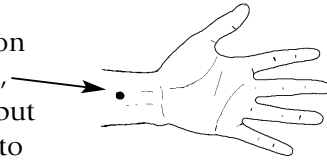
### Upset stomach (nausea) and dislike of some foods

Many women have nausea in the first months of pregnancy. Sometimes it is called morning sickness. No one knows for sure what causes morning sickness, but for many women, the way they eat affects it. If the nausea is mild, encourage the woman to try any of these remedies:

- Eat a food that has protein before bed or in the night. Some good foods with protein are beans, nuts, and cheese.
- Eat a few crackers, dry bread, dry tortillas, dry chapatis, or other grain food when she first wakes up in the morning.
- Eat many small meals instead of 2 or 3 larger ones, and take small sips of liquid often.
- Take 50 milligrams vitamin B-6, 2 times each day. (Do not take more.)



- Use acupuncture to relieve nausea. Find the spot 3 fingers above the wrist between the 2 tendons on the inside of the woman's arm. Press on this spot, moving your finger in small circles. Press firmly but not hard enough to hurt. If acupuncture is going to help, the woman should start to feel better within 5 minutes.



- Drink a cup of ginger, mint, or cinnamon tea 2 or 3 times a day, before meals. To make mint or cinnamon tea, put a teaspoon of mint leaves or a stick of cinnamon in a cup of boiled water. Let the tea sit for a few minutes before drinking it. To make ginger tea, boil crushed or sliced ginger root in water for at least 15 minutes.

A pregnant woman may suddenly dislike a food that she usually likes. It is OK not to eat that food, and she will probably begin to like it again after the birth. She should be careful that the rest of her diet contains a lot of nutritious food.

## Food cravings

A food craving is a strong desire to eat a certain food, or even something that is not food at all, like dirt, chalk, or clay.

If a woman gets a craving for nutritious foods (like beans, eggs, fruits, and vegetables), it is OK for her to eat as much as she wants. But if she wants a lot of "junk food" (like candy, soda, or packaged snacks) she should eat nutritious food first.

A woman who craves things that are not food, like dirt or clay, should **not** eat them. They may poison her and her baby. They may also give her parasites, like worms, that can make her sick. Encourage her to eat iron-rich foods (see page 36) and calcium-rich foods (see page 38) instead.

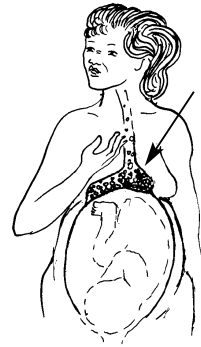


## Burning or pain in the stomach or between the breasts (heartburn)

A burning feeling or pain in the stomach or between the breasts is called indigestion or heartburn. Heartburn happens because the growing baby crowds the mother's stomach and pushes it higher than usual. The acids in the mother's stomach that help digest food are pushed up into her chest, where they cause a burning feeling. This is not dangerous and usually goes away after the birth.

Here are some things a woman can try to make herself more comfortable:

- Keep her stomach less full by eating smaller meals more often and by eating foods and drinking liquids separately.
- Avoid eating spicy or greasy foods, drinking coffee, or smoking cigarettes — all of which can irritate the stomach.
- Regularly eat papaya or pineapple, which have enzymes that help the stomach digest food.
- Keep her head higher than her stomach when lying down or sleeping. This will keep her stomach acids in her belly and out of her chest.
- Calm the acids in the stomach by drinking milk or taking a low-salt antacid that contains no aspirin. (Antacids are not dangerous but they cost money and they make it harder for the body to use nutrients from food. Try other methods before using antacids.)



As the baby grows, he pushes the woman's stomach up.

## Sleepiness

Some pregnant women feel sleepy much of the day. This is most common during the first 3 months.

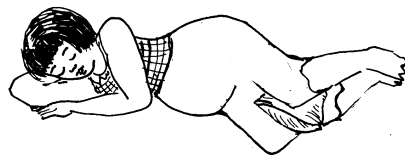
It is normal for pregnant women to feel sleepy. Their bodies are telling them to slow down and rest. But if a woman also feels weak, she may have other problems, like a sickness, depression (see page 274), or anemia (see page 116).



## Difficulty sleeping

If a woman cannot sleep because she is uncomfortable or restless, it may help if:

- she lies on her side with something comfortable between her knees and at her lower back. She can use a pillow, a rolled-up blanket, banana leaves, or some other padding.
- someone gives her a massage.
- she drinks herbal teas that help her sleep.



Fighting, worry, and unhappiness in a woman's house or family can make it difficult for her to sleep. If possible, a family should avoid arguing before going to sleep.

## Body changes and discomforts

### Swollen breasts

A woman's breasts get bigger during pregnancy because they are getting ready to make milk for the baby. Sometimes the breasts are also itchy or sore.

During the last months of pregnancy, a watery, yellowish fluid may leak out of the nipples. This is normal. The fluid is colostrum — the first milk for the baby.



### Swollen feet

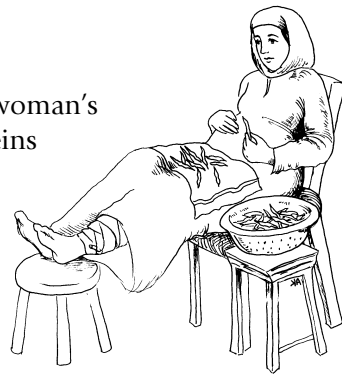
Swelling of the feet is very common, especially in the afternoon or in hot weather. Swelling of the feet is usually not dangerous, but severe swelling when the mother wakes up in the morning, or swelling of the hands and face anytime, can be signs of pre-eclampsia (see page 125).

Swelling in the feet may improve if the woman puts her feet up for a few minutes at least 2 or 3 times a day, eats fewer packaged foods that are very salty, and drinks more water or fruit juices.

### Swollen veins (varicose veins)

Swollen blue veins that appear in the legs or on the woman's genitals are called varicose veins. Sometimes these veins hurt. If the swollen veins are in the legs, they may feel better if the mother puts her feet up often. Strong stockings or elastic bandages may also help.

If the swollen veins are around the genitals, they can cause bleeding problems if they tear during birth. Putting a cool cabbage leaf on the genitals may help.

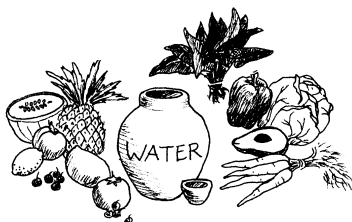


### Constipation (difficulty passing stool)

Some pregnant women have difficulty passing stool. This is called constipation.

To prevent or treat constipation, a woman should:

- eat more vegetables and fruits.
- eat whole grains (brown rice and whole wheat instead of white rice or white flour).
- drink at least 8 cups of clean water a day.
- walk, move, and exercise every day.



Home or plant remedies that soften the stool or make it slippery (like remedies made from psillium seed or certain fruits or fiber plants) may also help.



**WARNING! Pregnant women should not take medicines called laxatives or purgatives for constipation.** These work by making the bowels tighten or contract — and they may cause labor to start too soon. Some can harm the baby.

Also, pregnant women should not wash out the bowels with water (enema). This could also start labor too soon.

## Hemorrhoids (piles)

Hemorrhoids are swollen veins around the anus. They may burn, hurt, or itch. Sometimes they bleed when the woman passes stool, especially if she is constipated. The woman should try to avoid getting constipated by eating a lot of fruit and vegetables and drinking plenty of fluids.

Sitting or standing a lot can make hemorrhoids worse. But sitting in a cool bath or lying down can help. Some women say it helps to soak a clove of garlic in vegetable oil and then insert it into the anus.

If you have heard of other remedies, ask an experienced health worker whether they are safe. Some remedies are dangerous for pregnant women and may hurt the baby.



Pregnant women need to urinate much more often.

## Needing to urinate often

Needing to urinate (pee) often is normal, especially in the first and last months of pregnancy. This happens because the growing womb presses against the bladder (the place where the body stores urine). It is so common that some midwives joke: "A man who cannot find his pregnant wife should wait near the place where she urinates. If she is not there, she will be soon!"

If urinating hurts, itches, or burns, the woman may have a bladder infection (see page 128) or a vaginal infection (see Chapter 18, page 320). Be sure to treat these infections right away — they can cause early labor and other problems.

## Discharge (wetness from the vagina)

Discharge is the wetness all women have from the vagina. A woman's body uses this discharge to clean itself from the inside. For most women the discharge changes during their monthly cycle. Pregnant women often have a lot of discharge, especially near the end of pregnancy. It may be clear or yellowish. This is normal.

Changes in the discharge can be a sign of an infection if the discharge is gray, green, lumpy, or has a bad smell, or if the vagina itches or burns (see Chapter 18, page 320).

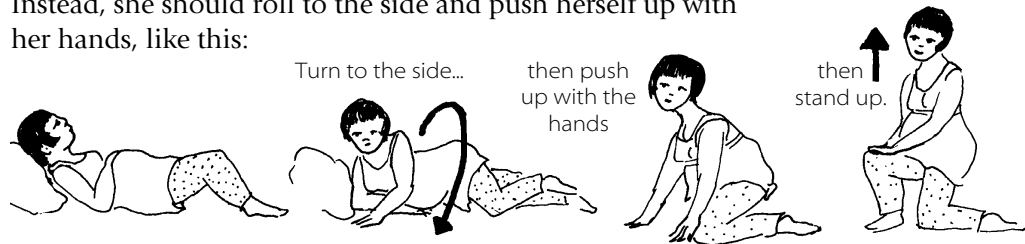
## Difficulty getting up and down

It is better if a pregnant woman does not lie flat on her back. When a woman is on her back, the weight of the womb presses on the big blood vessels that bring food and oxygen to the baby. If the mother wants to be on her back, she should put something behind her so she is not lying completely flat.

A pregnant woman should also be careful how she gets up. She should not sit up like this:



Instead, she should roll to the side and push herself up with her hands, like this:



## Shortness of breath

Many women get short of breath (cannot breathe as deeply as usual) when they are pregnant. This is because the growing baby crowds the mother's lungs and she has less room to breathe. Reassure her that this is normal.

But if a woman is also weak and tired, or if she is short of breath **all of the time**, she should be checked for signs of sickness, heart problems, anemia (see page 116), or poor diet (see page 117). Get medical advice if you think she may have any of these problems.

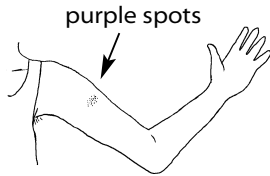
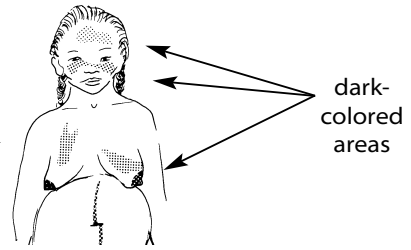
## Feeling hot or sweating a lot

Feeling hot is very common, and as long as there are no other warning signs (such as signs of bladder infection, see page 128), the woman should not worry. She can dress in cool clothes, bathe frequently, and drink plenty of water and other fluids.



## The mask of pregnancy

The mask of pregnancy is a name for dark-colored areas that may appear on the face, breasts, and belly of some pregnant women. This mask is not harmful. Usually most of the color goes away after the birth. A woman may be able to avoid dark areas on her face by wearing a hat when she goes out in the sun.



## Purple spots on the skin

Purple spots come from small groups of veins under the skin. They sometimes happen when blood vessels swell. They are not harmful and usually go away after the birth.

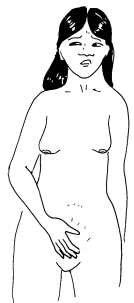
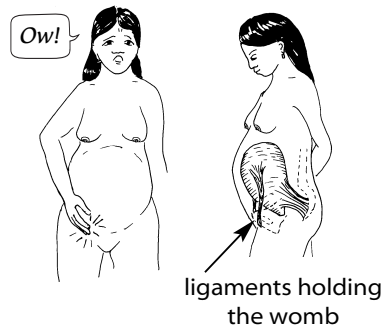
## Aches and pains in the joints

A pregnant woman's body gets soft and loose so the baby can get bigger, and so she can give birth. Sometimes her joints also get loose and uncomfortable, especially the hips. This is not dangerous, but she can more easily sprain her ankles or other joints. So she should move more carefully. Her joints will feel better after the birth.

## Sudden pain in the side of the lower belly

The womb is held in place by ligaments on each side. Ligaments are like ropes that attach the womb to the mother's bones.

A sudden movement will sometimes cause a sharp pain in these ligaments. This is not dangerous. The pain will stop in a few minutes. It may help to stroke the belly gently, or to put a warm cloth on it.



## Cramps in early pregnancy

It is normal to have **mild** cramps (like mild monthly bleeding cramps) at times during the first 3 months of pregnancy. These cramps happen because the womb is growing.

Cramps that are regular (come and go in a pattern) or constant (always there), are very strong or painful, or come with spotting or bleeding are warning signs. The woman may have a tubal pregnancy (see page 113) or may be having a miscarriage (see page 91). She should get medical help immediately.

## Baby's kicks hurt the mother

Most of the baby's movements feel good. But sometimes babies kick very hard or always in the same place. And sometimes the baby's head bounces against the mother's back or bladder during the last weeks of pregnancy. These movements may make the mother sore or uncomfortable, but they are not harmful.



**WARNING!** The mother usually feels regular kicks every day by the 6th or 7th month. If the baby stops kicking for a few hours, it is OK. But **if the mother feels no movement for more than a day and a night, there may be a problem.** The mother should meet with her midwife or get medical help.

## Back pain

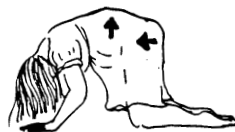
Many women get back pain. The weight of the baby, the womb, and the waters puts a strain on the woman's bones and muscles. Too much standing in one place or leaning forward can cause back pain. Hard work can also cause back pain. Most kinds of back pain are normal. But it can be caused by a kidney infection (see page 128).

Encourage husbands, children, other family members, or friends to massage the woman's back. A warm cloth or hot water bottle on her back may also feel good. Her family can also help by doing some of the heavy work (carrying small children, washing clothes, farming, and milling grain) for her.

A woman can also do an exercise — called the angry cat exercise — to reduce lower back pain. She should do this exercise several times in a row, 2 times a day, and whenever her back hurts her.



Start on hands and knees with the back flat.



Push the lower back up.



Return to flat back. Repeat.

## Leg cramps

Many women get foot or leg cramps — sharp sudden pain and tightening of a muscle. These cramps especially come at night, or when women stretch and point their toes. To stop the cramp: flex the foot (point it upward) and then gently stroke the leg to help it relax (do not stroke hard).

See page 273 to learn when leg pain can be dangerous.

Point the toe up,



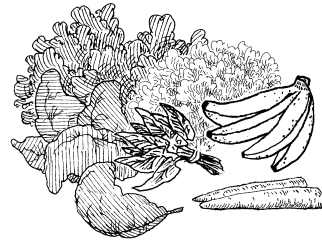
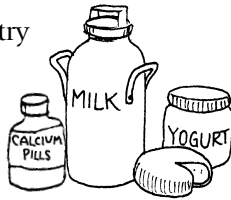
then stroke the leg.



Do not point the toe down.



To prevent more cramps, a woman should not point her toes (even when stretching), and she should eat more foods high in calcium and potassium. The woman can also try taking calcium, magnesium, and potassium pills.



Foods rich in calcium and potassium can help prevent leg cramps.

## Headaches

Headaches are common in pregnancy but are usually harmless. Headaches may stop if the mother rests and relaxes more, drinks more juice or water, or gently massages her temples. It is OK for a pregnant woman to take 2 paracetamol tablets with water once in a while.



Some women have migraine headaches. These are strong headaches, often on the side of the head. The woman may see spots and feel nauseated. Bright light or sunshine can make them worse. Migraines may get worse in pregnancy.

Unfortunately, migraine medicine is very dangerous in pregnancy. It can cause labor to start too soon, and it may also harm the baby. It is better for a pregnant woman with migraines to take 500 to 1000 milligrams paracetamol, and rest in a dark room. Although coffee and black tea are usually not healthy in pregnancy, they are OK occasionally and they may help cure a migraine.

**Headaches late in pregnancy are a warning sign of pre-eclampsia, especially if there is also high blood pressure or swelling of the face or hands.** See page 125.

## Other pains

It is common to have other small aches and pains during pregnancy. Get medical advice for pain that is not normal in pregnancy, such as:

- red, swollen joints.
- severe pain.
- signs of anemia with joint pain (see page 116 on anemia).



**WARNING!** If there is pain in one leg that will not go away, it may be a blood clot. See page 273 and get medical help.

## Changing feelings and emotions

Pregnancy is an important time in a woman's life. Her baby is growing inside her, her body is changing, and she needs more food and more rest. As a woman's body changes, her relationships, her sexuality, and her work life can change too.

### Sudden changes in feelings

Pregnancy can make women very emotional. Some women laugh or cry for no clear reason. Some feel depressed, angry, or irritable.

Odd laughing or crying and other sudden mood changes or strong feelings are normal. They usually pass quickly. But do not ignore a woman's feelings simply because she is pregnant. Her feelings are real.

### Worry and fear

Many women worry when they are pregnant, especially about the baby's health and about giving birth. A woman's worries about other problems in her life may also become stronger when she is pregnant.

Such worries are normal. They do **not** mean that something bad will happen. Women with these feelings need emotional support, like someone to listen to their worries and encourage them to feel hopeful. They may also need help to solve the problems they are having in their lives, like problems with their partners, money, drugs or alcohol, or other issues.



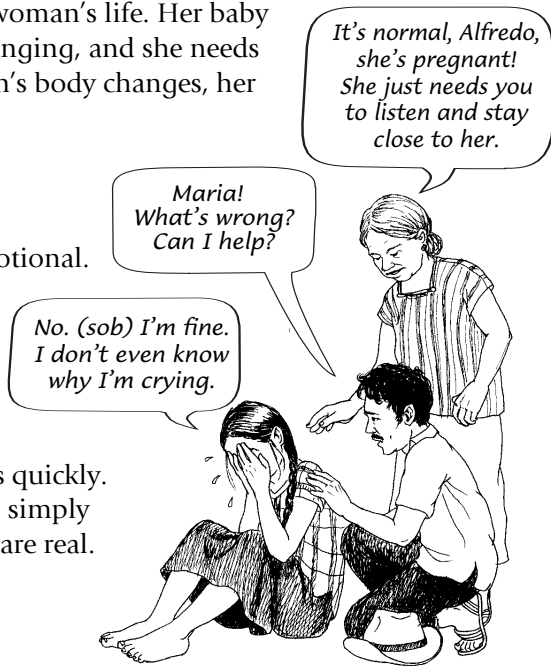
### Strange dreams and nightmares

Pregnant women may have strong, vivid dreams. They can be beautiful, strange, or frightening.

For many people, dreams are an important way of understanding themselves and the world. Some people believe that dreams can tell us about the future or give us messages from spirits.

But usually, when something happens in a dream, that does not mean that it will happen to us in life.

The events in the dream may be telling us what we are afraid of or what we desire. Or they may simply be stories our minds make up while we sleep. Women who are having frightening dreams may need someone to talk to about their hopes, fears, and feelings.





## Forgetfulness

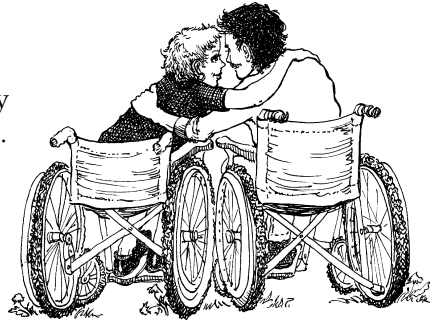
Some women forget things when they are pregnant. For most women, this is not a big problem. But some may worry if they do not know it is normal. No one knows why women become more forgetful when they are pregnant, but it is common.

## Feelings about sex

Some women do not want much sex when they are pregnant. Others want sex more than usual. Both feelings are normal. Having sex and not having sex are both OK for the woman and her baby. Sex is not dangerous for the baby.

Sometimes sex is uncomfortable in pregnancy. A woman and her partner can try different positions for making love. It may feel better with the woman on top, or in a sitting or standing position, or with the woman lying on her side.

There are other ways, besides sexual intercourse, for couples to be close and please each other. Some couples touch and massage each other's bodies. Some talk about hopes and fears together.



## Safer sex

When a pregnant woman has sex, it is important to avoid infection by making sure that anything put inside her body is clean. This includes the penis and hands.

A man who is having sex with more than one woman must **always** use condoms — including with his pregnant partner. Condoms are a good way to prevent infections, HIV/AIDS, and other illnesses. See Chapter 18, page 320 to learn more about HIV/AIDS and other sexually transmitted infections.

### Sex and early labor

A woman who has gone into early labor in other pregnancies might choose to avoid sex after the 6th month. This may help prevent going into labor too early.



# Pregnancy

## INTRODUCTION

All women need care and attention during pregnancy. This care is usually called prenatal or antenatal care. Prenatal care helps pregnant women be healthier and have fewer problems in birth. Prenatal care should come from the woman herself, from her family and the community, and from a midwife or someone else who is experienced in helping pregnant women.



In some places, midwives only care for women when they are in labor or giving birth, not during pregnancy. This may be because most of the time, people only go to a healer or doctor when they are sick or if something is wrong. Pregnancy is usually normal and healthy, so people may not think that prenatal care is important. But most midwives know that women who have good care during pregnancy are more likely to have safer births and healthier babies.



### **Care in pregnancy has 2 purposes:**

1. **Observing and listening** to the pregnant woman by checking her body for healthy signs and warning signs and by asking her about problems or listening to her questions.
2. **Teaching** a woman how to have a healthier pregnancy (for example, how to eat a healthy diet and how to avoid harmful things).

Midwives should start prenatal care as soon as a woman knows she is pregnant, and should examine the woman regularly during the pregnancy. We call these meetings “checkups.” If possible, every woman should have at least 4 checkups.

Doing more checkups will give you more chances to share important information and to prevent health problems. And any woman who has warning signs should have checkups more often.

This section is divided into 3 different chapters:

- Chapter 6 explains the changes a woman may go through in pregnancy.
- Chapter 7 explains how to learn about a woman’s health history during the first checkup.
- Chapter 8 explains how to check a woman for healthy signs and warning signs at each checkup.

