

Health Care Skills

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This book refers to many skills that can help a person give the best care, including how to prevent infections, how to get information about someone's body by doing exams, how to give life-saving fluids, and how to give injections.

This section gives more complete information about these skills. You may think of these as skills for a doctor or nurse, but they are all skills that anyone can learn with time and practice. Some skills, like giving an exam or an injection, are best learned by having a skilled person show you how. Once learned, all of these skills can make a careful person better able to help others safely.

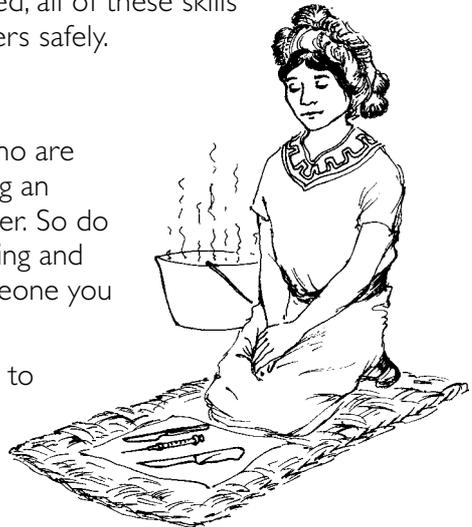
Preventing Infection

Infections cause many kinds of sickness. People who are already sick or hurt are often more at risk for getting an infection, and getting one can make them much sicker. So do everything you can to keep infections from developing and protect yourself from getting an infection from someone you care for.

Infections are caused by germs that are too small to see, such as bacteria or viruses. Germs can live on unwashed hands and on tools used to care for a sick person. These germs can easily spread between people.

You can *prevent* infection by following the guidelines in this chapter. For other ways to prevent infection, see page 149.

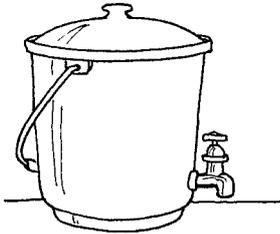
IMPORTANT *Follow these guidelines every time you help someone, whether you use your hands, tools, or special equipment. If you do not, you may get a dangerous infection, or pass an infection to the people you are helping.*



WASHING YOUR HANDS

Wash your hands with soap and water before and after caring for another person. It the most important way to kill germs. You need to wash your hands even more thoroughly and for a longer time:

- before and after helping someone give birth.
- before and after touching a wound or broken skin.
- before and after giving an injection, or cutting or piercing a body part.
- after touching blood, *urine, stool, mucus*, or fluid from the *genitals*.
- after removing gloves.



Use water that flows.

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



Use soap to remove dirt and germs. Count to 30 as you scrub your hands all over with the soapy lather. Use a brush or soft stick to clean under your nails. Then rinse. Use water that flows. Do not reuse water if your hands must be very clean.

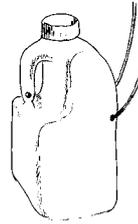
If you do not have a piped water supply, you can make a Tippy Tap. It will save water and makes it easy to keep a supply of clean water for washing hands.

Use a large, clean plastic bottle with a handle.

1. Pinch the handle together here with a pair of hot pliers or a hot knife.



2. Make a small hole in the handle, just above where you sealed it.



3. To hang the Tippy Tap, make 2 more holes in the other side of the bottle and pass a string through them. Now you can hang it on a peg or tree branch.

4. Fill the bottle with clean water and replace the lid.

5. When you tip the bottle forward, the water will flow out, so you can wash your hands. Do not make the hole too large or it will waste water.



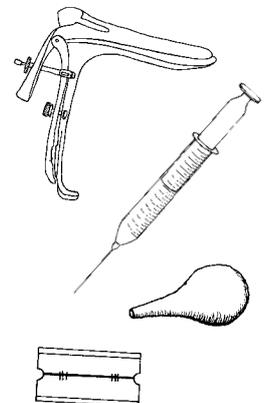
You can also hang a bar of soap from the string.

CLEANING, DISINFECTING, AND STERILIZING TOOLS

All the tools used to care for sick people must be cleaned and then disinfected or sterilized. This gets rid of germs and protects against infection.

Disinfecting kills most of the germs that cause infections. Sterilizing kills all the germs that cause infections. Which you do depends on the tool and how it is used.

Note: You do not need to disinfect or sterilize tools that are used only on the outside of the body on unbroken skin. Stethoscopes and blood pressure cuffs must be clean but do not need to be sterile.



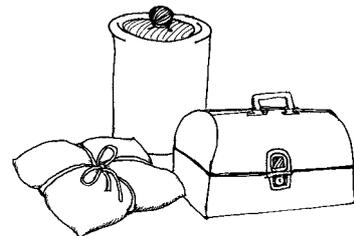
Do steps 1 and 2 right after using your tools. Try not to let blood or mucus dry on them. Do step 3 right before you use the tools again. All the steps can be done together if you can store your tools so they will stay disinfected or sterilized (see box below).

1. **Take apart your tools:** Tools that have been used should be taken apart so all their surfaces can be cleaned and then disinfected or sterilized.
2. **Clean your tools:** Wash all tools with clean water, soap or detergent, and a brush to remove any blood, mucus, or dirt. Remove any rust and get rid of tools that are dull or damaged. Be careful with sharp edges or points. If possible, use gloves to protect your hands from cuts and from the detergent. 
3. **Remove germs from your tools:** Remove germs from your tools by disinfecting or sterilizing (see page 528). **Disinfect** tools that touch mucous membranes (like wet areas inside the mouth or inside the vagina) or broken skin, and tools that can be damaged by high heat. This includes bulb syringes and speculums. **Sterilize** tools that are used to cut into the body, or that come in contact with blood or wounds. This includes syringes and needles, blades for cutting the cord after birth, and gauze for covering wounds.

Storing your tools

Before you begin cleaning and disinfecting or sterilizing your tools, think about how you will store them, and prepare a container. If you store your tools properly, you can do steps 1, 2, and 3 all at once, and the tools will be ready to use whenever you need them.

- Keep tools you have disinfected in a container that you have also disinfected. A metal box or pot with a tight-fitting lid is best. Do not touch the inside of the container. Keep the container closed until you are ready to use the tools inside.
- Keep tools you have sterilized sealed in the packet or container you sterilized them in until you are ready to use them.
- Germs grow in moisture and will come back if tools are put away while 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.
- Remember, anything you touch is no longer disinfected or sterilized.



Disinfecting by boiling or steaming

Use boiling to disinfect metal tools, rubber or plastic equipment, and cloth. Use steaming to disinfect metal tools, gloves, plastic equipment, and other tools. Steaming uses less water than boiling, and tools that are steamed do not get dull or break as quickly as those that are boiled.

Take your tools apart and clean them (see page 527). To boil them, place them in a pot and cover with water. To steam them, put water in the bottom part of the steamer pot, place tools in the basket, and cover the pot with the lid. The water does not need to cover the tools when steaming.

Steam or boil the tools for 20 minutes. For both steaming and boiling, start to count the 20 minutes when the water is fully boiling. Do not add anything new to the pot once you begin to count.

Let the tools cool and dry. Use disinfected tongs, chopsticks, or spoons to remove the tools from the pot. Move them directly to a disinfected container with a lid.



Sterilizing by baking

Use baking (dry heat) to sterilize metal tools and string for tying the cord at birth. Do not bake gloves or tools made of rubber or plastic—they will melt!

Take your tools apart and clean them (see page 527). Then wrap them in 4 layers of clean cloth or heavy paper and tie the packet shut. Put into a container or pan and bake at 170°C (305°F) or higher for 2½ hours. Then let the packet cool and store it in a clean, dry place. Do not open the packet or remove the tools until you are ready to use them, and then touch them only when wearing sterile gloves.

Sterilizing by pressure steaming

If you have a pressure-cooking pot, you can use this to sterilize your tools by pressure steaming. Use pressure steaming to sterilize metal or rubber tools and some plastic equipment.

Take your tools apart and clean them (see page 527). Then wrap in 2 layers of non-woven paper or crepe paper and close with autoclave tape (see page 563). Or put tools in a heat-safe container with a lid. Put a steamer basket and water in the pot. Put your packets in the steamer basket and be sure they are above the water. Close the lid of the pot, make sure the gasket seals, and put the pot on to boil. Once boiling, cook at 15 to 20 pounds of pressure at 121°C (250°F) for 20 minutes. Then let the packets cool and dry, and store in a clean, dry place. Do not remove the tools until you are ready to use them, and then touch them only when wearing sterile gloves.

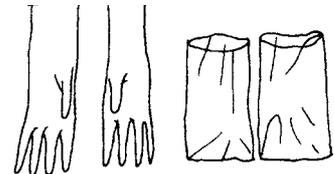
Tools that need special care

Thermometers. Wash thermometers in soap and rinse with cool, clean water before and after you use them. Do not wash glass thermometers with hot water because they may break.

After washing, soak the thermometer in alcohol for 20 minutes. You can use ethyl alcohol (ethanol) or isopropyl alcohol (isopropanol, rubbing alcohol). Rinse the thermometer in clean water before using it again.

Gloves. Gloves protect both you and the people you help against the spread of infection. If you do not have gloves, use clean plastic bags to cover your hands.

As with other tools, whether gloves need to be clean, disinfected, or sterilized depends on how they will be used. Clean gloves that are not disinfected or sterilized are OK when used only on the outside of the body on unbroken skin. When touching broken skin or the inside of the vagina, use disinfected gloves. During surgery, or when touching wounds, use sterile gloves. The sterilization methods on page 528 will not work for gloves—they will melt. Buy already sterilized gloves if you can.



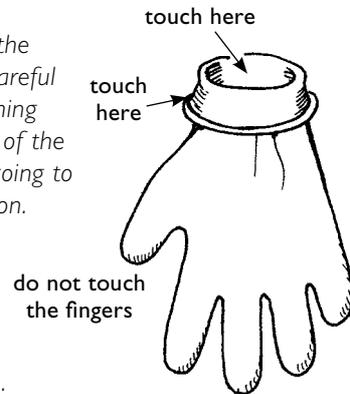
If you do not have gloves, you can use clean plastic bags to cover your hands.

Using high-level disinfected gloves:



Be careful not to touch other gloves as you remove a pair from the jar or container where they have been stored.

When putting the gloves on, be careful not to let anything touch the part of the gloves that is going to touch the person.



► If you have a pair of sterile gloves in a package, save them for a time when you must be especially careful not to spread infection.

If you use gloves more than one time, be sure to clean, disinfect, and store them following the instructions on pages 527 and 528. Always check cleaned gloves for holes and throw away any that are torn.

Cloth dressings. If you do not have sterile gauze, use cloth dressings. Follow the instructions to sterilize and store them on pages 527 and 528.



Any contaminated items (that have touched blood or other body fluids, such as saliva or spit, urine, stool, semen, fluid from the bag of waters, or pus) should be disposed of carefully so that children or animals will not find them. This includes supplies that are no longer useful such as syringes, torn gloves or gloves that can only be used once, gauze, or cotton.



How to Take Temperature, Pulse, Respiration, | and Blood Pressure

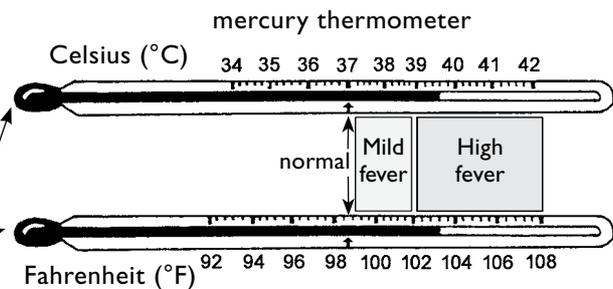
When a person is sick or has a health problem, their basic physical signs may change. The next few pages tell how to measure these signs to know if a person has a problem.

TEMPERATURE

If you need to know a person's temperature and do not have a thermometer, touch the back of your hand to the person's skin, and compare it with your own skin. If their skin feels much warmer, they probably have a fever. To learn what to do for a fever, see page 297.



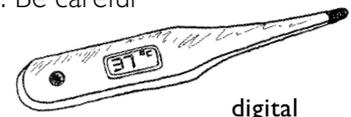
If you have a thermometer, you can take a person's temperature in the mouth, armpit, or rectum. A person's temperature is normally cooler in the armpit, warmer in the mouth, and warmest in the rectum. There are 2 kinds of thermometer scales. Here is how they compare. Either can be used to measure a person's temperature.



The levels listed here for normal and fever temperatures are for the mouth.

Use a digital thermometer

Glass thermometers are filled with mercury, a poisonous metal. Be careful with glass thermometers, and if they break, do not pick up the mercury with your bare hands. Sweep the mercury into a jar and bury it. Do not let children play with thermometers or mercury. Use a digital thermometer instead.



digital thermometer

How to take the temperature

1. Clean the thermometer well with soap and cold water, or alcohol. For a digital thermometer, push the button to turn it on. For a mercury thermometer, hold it at the end without the silver (or red) and shake it hard, with a snap of the wrist, until it reads less than 36°C / 96°F.

2. Put the thermometer . . . *under the tongue (keep the mouth closed around it)*



OR

in the armpit if there is danger that the person might bite the thermometer



3. Leave it there for 3 or 4 minutes. A digital thermometer will “beep” when it is ready.

4. Read the temperature (see above).

5. Wash the thermometer well with soap and cold water. Then wipe it with alcohol and put it away.

PULSE (HEARTBEAT)

The pulse tells you how fast the heart is beating and how hard it is working. After hard work or exercise, a healthy person's heart beats fast, but slows back to normal in a few minutes. A higher body temperature (fever) also causes the heart to beat faster. The heart usually increases 20 beats a minute for each degree (°C) rise in fever.

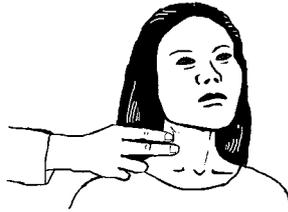
A normal pulse in an adult is between 60 and 90 beats per minute. A fast pulse can be a sign of:

- blood loss, fluid loss, or *shock* (see page 254).
- fever and infection.
- problems with the lungs and breathing system, or with the heart.
- *thyroid* problems.

To take the pulse, put your fingers on the wrist as shown (do not use your thumb).



If you cannot find the pulse in the wrist, feel for it in the neck under the corner of the jaw,



or put your ear directly on the chest and listen for the heartbeat.



It can help to have someone else keep track of a minute for you on a watch, clock or phone while you focus on counting the number of heartbeats.

RESPIRATION (BREATHING RATE)

The breathing rate tells you about health of the lungs and breathing system. It can also give information about a person's general health. To take the breathing rate, watch the chest rise and fall when a person is at rest. Normal breathing in an adult is 12 to 20 total breaths per minute (a complete breath is one breath in and one breath out).

Breathing usually speeds up (along with the pulse) when there is infection, fever, blood loss or *dehydration*, shock, lung problems, or other emergencies.

Very slow pulse and breathing in a very sick person can mean the person is near death.

Fast, shallow breathing can be a sign of infection of the breathing system. A breathing rate of more than 30 breaths per minute may be a sign of *pneumonia* (see page 304).

BLOOD PRESSURE

Blood pressure is a measure of how hard the blood presses on the inside of the blood vessels.

It is useful to know blood pressure:

- during pregnancy, childbirth, miscarriage, or abortion.
- while choosing or using birth control pills.
- in emergencies, such as shock, severe abdominal pain, or a difficult birth.



What the numbers mean

A blood pressure measurement (BP) has two numbers:

BP $\frac{120}{80}$ or BP 120/80

120 is the top (systolic) reading

80 is the bottom (diastolic) reading

Normal blood pressure for an adult is from 90/60 to 120/80.

If a person has blood pressure in this range, there is no need to worry. If the blood pressure is between 120/80 and 140/90, a person should exercise more and eat less salt. If the blood pressure is over 140/90, the person also needs to take medicines. A person who has diabetes or heart disease should take medicine if the blood pressure is over 130/80.

For blood pressure over 140/90 during pregnancy, see a health worker for medicines that are safe to use when pregnant (see page 74).

A **sudden drop in blood pressure** is a danger sign, especially if it falls below 90/60. Watch for any sudden drop in the blood pressure of anyone who is losing blood or at risk of shock. If you get an abnormal blood pressure reading and you do not think the person is in shock, wait a few minutes and take the blood pressure again.

You will often need to watch a person's blood pressure over time (for example, during pregnancy) to see how it changes. It will help to keep a record:

Sept 13	$\frac{100}{60}$
Oct 12	$\frac{110}{62}$
Nov 15	$\frac{90}{58}$
Dec 10	$\frac{112}{60}$
Jan 12	$\frac{110}{70}$

Blood pressure goes up and down a little from month to month. This is normal.

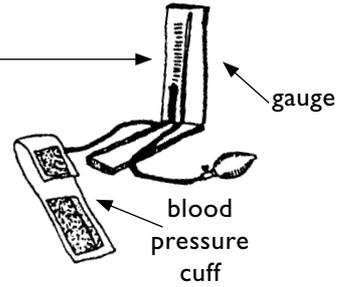
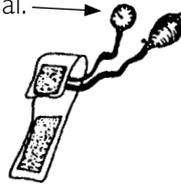
How to take blood pressure

There are several types of blood pressure equipment. Some have a tall gauge that looks like a thermometer.



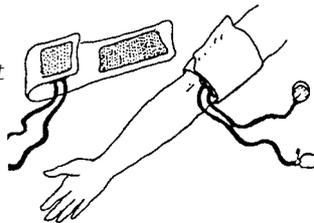
Electronic ones are easy to use.

Others have a round dial.

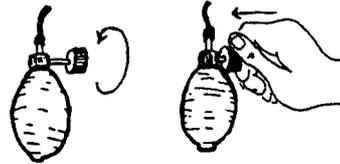


First explain what you are going to do. To avoid wrong results, make sure the person has not exercised or had coffee in the previous 30 minutes, and have them sit at rest for 5 minutes, before you measure. Then:

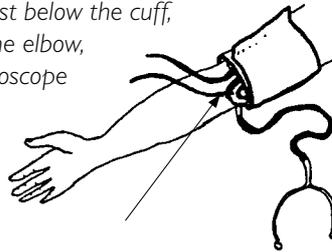
1. Fasten the cuff around the bare upper arm about 2 finger widths above the elbow crease.



2. Close the valve on the rubber bulb by turning the screw to the right. The screw will get shorter.



3. Feel for a pulse just below the cuff, on the inside of the elbow, and put the stethoscope over the pulse. If you cannot feel a pulse, put the stethoscope on the middle of the elbow crease.



4. Pump the cuff up by squeezing the bulb.

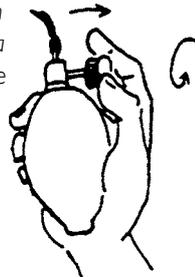


5. As you pump, the needle will move.



When it reaches 200, stop pumping.

6. Then open the valve a little so the air leaks out slowly.



7. The needle will begin to go back down. (If the valve is closed, it will stay at 200.)

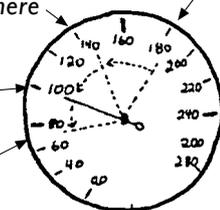


As the air leaks out, watch the dial or gauge. When you first hear the person's pulse in your stethoscope, notice what number the needle or silver bar is at. This is the top number. Then listen for when the pulse disappears or gets very soft. Where the needle or bar is then is the bottom number.

You may not hear anything when the needle is here...

...or here

If you start to hear a pulse here and then no longer hear it when the needle is here



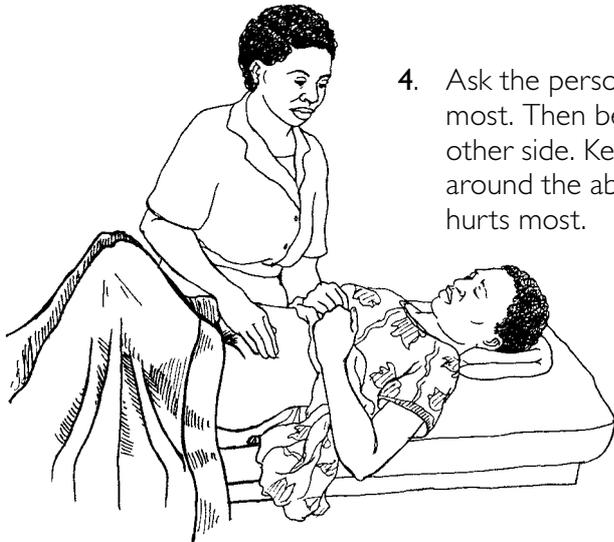
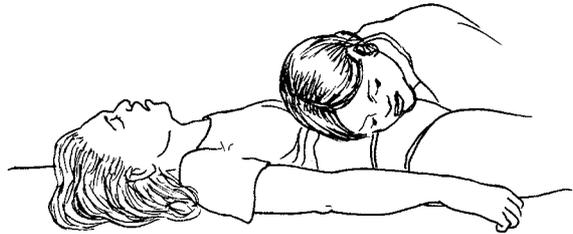
then the blood pressure is: 100/70.

How to Examine the Abdomen

To find out why there is pain in the lower *abdomen*, first read Chapter 21, “Pain in the Lower Abdomen” and ask the questions on page 357.

Then examine the abdomen:

1. Ask the person to undress enough so you can see the area from below the breasts to where the pubic hair begins.
2. Have the person lie flat on their back on a firm bed, a table, or a clean floor. Ask them to relax their abdominal muscles as much as possible. This may be difficult for someone who is in pain.
3. Listen for bubbling and gurgling noises by putting your ear on their abdomen. If you do not hear anything for 2 minutes, this is a danger sign (see page 354).



4. Ask the person to point to where it hurts most. Then begin pressing gently on the other side. Keep pressing gently as you move around the abdomen and notice where it hurts most.

5. As you press the abdomen, feel for lumps. Also, feel if the abdomen is soft or hard, and ask if the person can soften or relax it under your hand.

6. Notice if the person has a very sharp pain if you press the abdomen and then quickly remove your hand (rebound pain). This may be a sign of a serious infection. If the person has rebound pain, or severe pain in the lower right part of the abdomen, go immediately to a health center or hospital to see if surgery is needed. Otherwise, continue your examination by looking at the outside of the genitals for sores, discharge, bleeding, or other signs of sexually transmitted infections (STIs), which could be the cause of the pain. For signs and treatment of STIs, see page 261. If you know how, do a pelvic exam (see the next page).

How to Examine the Genitals (the Pelvic Exam)

Knowing how to do a pelvic exam can save lives. It is necessary for using some *family planning* methods and for finding out about many serious health problems, such as *pregnancy in the tubes*, *cancer of the cervix* and of the *womb (uterus)*, many STIs, and complications from abortion. It is not difficult to learn. With practice, you can learn to:

- examine the outer genitals.
- feel the *reproductive parts* inside the abdomen.

But only do a *pelvic exam* if it is really necessary. Any time you put something inside someone's vagina, you increase the possibility of infection.

IMPORTANT Do not do a pelvic examination:

- when a person is pregnant and bleeding, or after their waters have broken.
- after a normal birth or uncomplicated abortion.

Before you start:

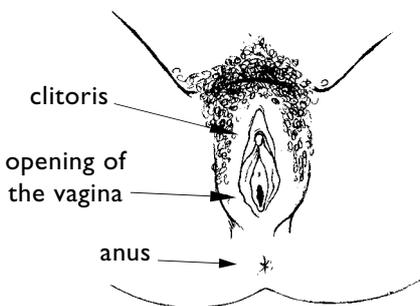
1. Ask if the person needs to pass urine.
2. Wash your hands well with clean water and soap.
3. After clothing is removed or loosened, use a sheet or clothing to cover the genitals.
4. Ask the person to lie back with knees up and apart, and to relax as much as possible. Explain what you are about to do.
5. Put a clean glove on the hand you will put inside the vagina.



Always do a pelvic exam where others cannot see.



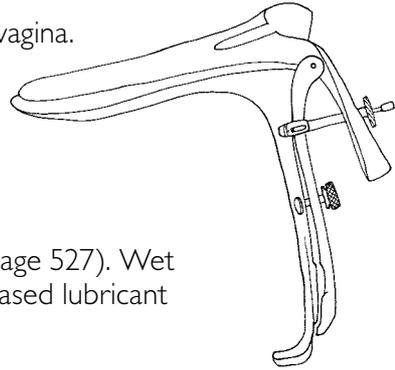
Look at the outside genitals:



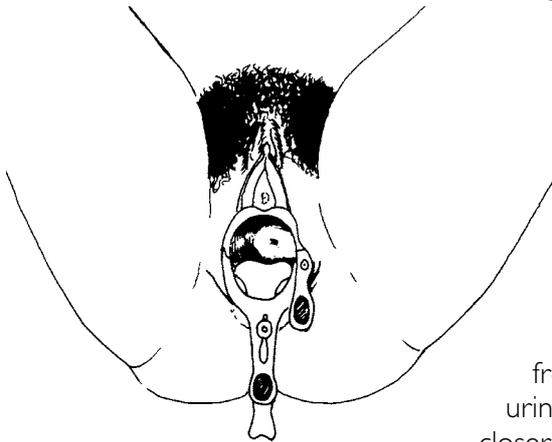
Using your gloved hand to touch gently, look for lumps, swelling, unusual discharge, sores, tears, and scars around the genitals and in between the skin folds of the *vulva*. Some diseases have signs that appear on the outside of the genitals (see the chapter on STIs).

How to do a speculum exam

A speculum is useful for looking at the cervix and vagina. If you have one, follow the steps below and then continue with the exam on the next page. If you do not have a speculum, you can get much of the same information by following the steps on the next page.



1. Be sure the speculum has been disinfected (see page 527). Wet the speculum with warm, clean water or water-based lubricant before using it. Warming it is helpful and kind.
2. Put the first finger of your gloved hand in the vagina. As you put your finger in, push gently downward on the muscle surrounding the vagina. (Work slowly, waiting for the muscles to relax.) Use this finger to find the cervix, which feels firm, like the tip of the nose.
3. With the other hand, hold the speculum blades together between the pointing finger and the middle finger. Turn the blades sideways and slip them into the vagina. (Be careful not to press on the urine hole or *clitoris*, which are very sensitive.) When the speculum is halfway in, turn it so the handle is down. Remove your gloved finger.
4. Gently open the blades a little and look for the cervix. Move the speculum slowly and gently until you can see the cervix between the blades. Tighten the screw on the speculum so it will stay in place.

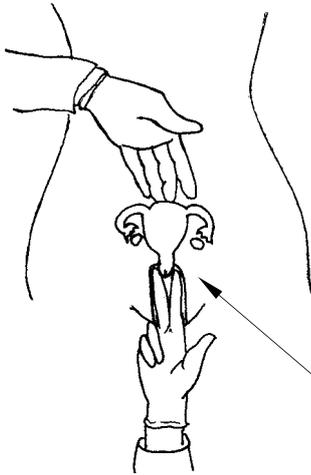
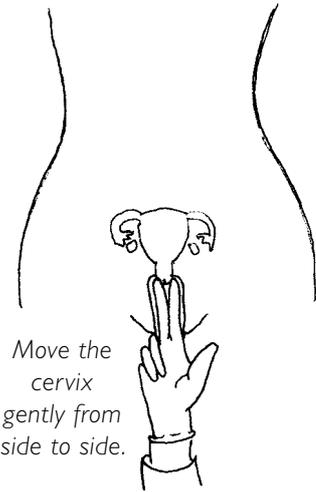


5. Check the cervix, which should look pink and round and smooth. Notice if the opening is open or closed, and whether there is any discharge or bleeding. If you are doing the exam because there is bleeding from the vagina after birth, abortion, or miscarriage, look for tissue coming from the opening of the cervix. If you think there is an infection, check for green or yellow discharge, or bleeding from the cervix. If there has been leaking urine or stool, bring the speculum blades closer together and gently turn the speculum to look at the walls of the vagina.

6. To remove the speculum, gently pull it toward you until the blades are away from the cervix. Then bring the blades together and gently pull back. Be sure to disinfect your speculum again.

How to feel the reproductive parts inside the abdomen

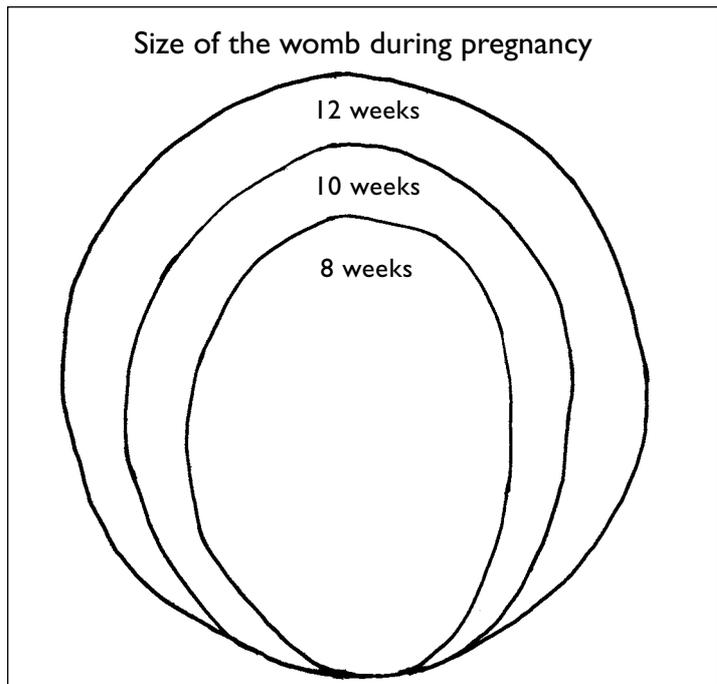
1. Put the pointing finger of your gloved hand in the vagina. As you put your finger in, push gently downward on the muscle surrounding the vagina. After the muscle relaxes, put the middle finger in too. Turn the palm of your hand up.
2. Feel the opening of the womb (cervix) to see if it is firm and round. Then put one finger on either side of the cervix and move the cervix gently. It should move easily, without causing pain. If it does cause pain, there may be an infection of the womb, tubes, or ovaries. If the cervix feels soft, it may be a sign of pregnancy.



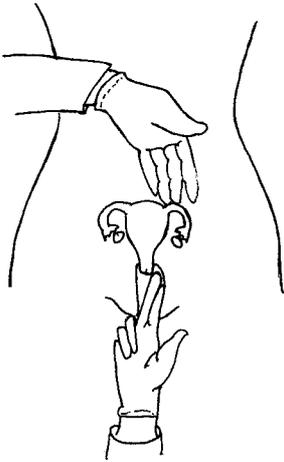
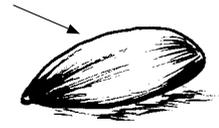
3. Feel the womb by gently pushing on the lower abdomen with your outside hand. This moves the inside parts (womb, tubes, and ovaries) closer to your inside hand. The womb may be tipped forward or backward. If you do not feel it in front of the cervix, gently lift the cervix and feel around it for the body of the womb. If you feel it under the cervix, it is pointed to the back.
4. When you find the womb, feel for its size and shape. Move your inside fingers to the sides of the cervix again, and then “walk” your outside fingers around the womb, pressing gently to feel its shape. It should feel firm, smooth, and smaller than a lemon.

If the womb:

- feels soft and large, this is a sign of pregnancy.
- feels lumpy and hard, this is a sign of a *fibroid* or other growth (see page 380).
- hurts when you touch it, this is a sign of an infection inside.
- does not move freely, this may be caused by scars from an old infection (*pelvic inflammatory disease* or *PID*, see page 276).



5. Feel for the tubes and ovaries. If these are normal, it will be hard to feel them. If you feel any lumps that are bigger than an almond (this size) or that cause severe pain, it could be an infection or other emergency. If there is a painful lump and the person's menstrual period is late, it could be an ectopic pregnancy (pregnancy in the tube). Get medical help right away.



6. Move your finger to feel along the inside of the vagina. If the person has a problem with leaking urine or stool, check for a tear (see page 370). Make sure there are no unusual lumps or sores.
7. Ask the person to cough or to push down as if passing stool. Watch to see if something bulges out of the vagina. If it does, it could be a fallen womb or fallen *bladder* (see page 131).
8. When you are finished, dispose of your glove or clean and disinfect it if you will reuse it (see page 529). Wash your hands well with soap and water.

Caring for Burns

Burns are a common injury. Keep burns as clean as possible. Never put grease, fat, animal skins, coffee, herbs, or stool on a burn. Anyone who has been burned should eat more body-building foods (protein), see page 166. No foods need to be avoided.

IMPORTANT To prevent infection, wash your hands carefully before caring for burns.

MINOR BURNS

A minor burn does not form blisters, is not on the face, hands, feet, or genitals, does not cross a major joint (like the elbow, shoulder, knee, or hip), and is not part of another injury. To lessen pain and further injury, put the burned area in clean, cool water (not ice water or ice) right away for 20 minutes (but no longer). Then keep the area clean and dry. Take aspirin, paracetamol (acetaminophen), or ibuprofen for pain. Minor burns should heal by themselves in about 2 weeks.



SEVERE BURNS

Severe burns affect large areas or specific parts of the body (face, hands, feet, genitals, major joints), affect many layers of skin, or are combined with other injuries. Treat burns on children especially carefully.

To prevent infection, wash a severe burn with water that has been boiled and cooled, and add povidone-iodine if you have it (mix 4 parts boiled and cooled water with 1 part povidone-iodine). Scrub gently so the burn will not bleed, and rinse with more boiled and cooled water. Then dry the burn by blotting with sterile gauze or sterilized cloth.

Wearing sterile gloves, kill germs to prevent infection by covering the burn with one of these:

- a thin layer of silver sulfadiazine. Do not use for burns on eyelids or lips, or for burns on children younger than 2 months old.
- a thin layer of honey.
- granulated sugar. Pour the sugar over the burn and throw away any sugar that does not stick.

Then gently cover the burn with sterile gauze or sterilized cloth and hold it in place with tape or bandages. If the burn is on an arm or leg, keep it elevated to lessen swelling. Clean the burn every day and put on another layer of infection prevention and a clean, sterile gauze or cloth. If signs of infection appear—pus, a bad smell, fever, or swollen lymph nodes—put an antibiotic ointment on the burn and get medical attention as soon as possible.

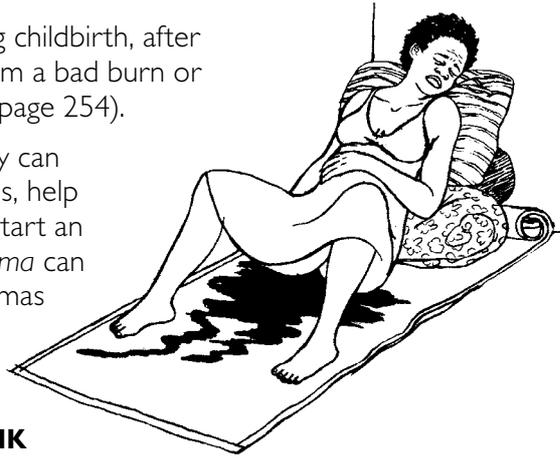
Someone who has been badly burned can go into shock from the loss of body fluids. Give rehydration drink (see page 540) as often as possible until the person passes urine frequently. If the person is unconscious or cannot swallow, give rehydration drink in the rectum (see page 541 for how to do this).

Comfort and reassure the burned person, and treat for shock if necessary. Give codeine or any strong pain medicine you have. For more information about treating severe burns and preventing contractures during healing, see Hesperian's *Disabled Village Children*, Chapter 28. For how to order it see the last pages of this book.

How to Give Fluids to Treat Shock

Losing a lot of blood—for example, during childbirth, after a complicated miscarriage or abortion, or from a bad burn or wound—can send someone into shock (see page 254).

Someone in shock needs fluids fast or they can die. If the person is awake and can drink fluids, help them drink. Also, if you know how, you can start an *intravenous drip* (IV). In an emergency, an *enema* can be used instead (see the next page). But enemas should be used for emergencies only. Using too many enemas can be harmful.



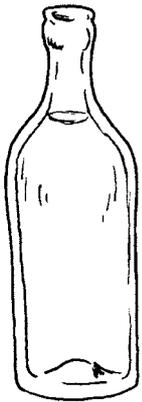
HOW TO MAKE REHYDRATION DRINK

2 ways to make rehydration drink

If you can, add half a cup of fruit juice, coconut water, or mashed ripe banana to either drink. These contain potassium, a mineral which helps a sick person accept more food and drink.

1. With sugar and salt. (You can use raw sugar or molasses instead of sugar.)

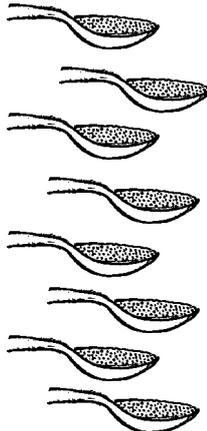
In 1 liter of clean WATER



put half of a level teaspoon of SALT



and 8 level teaspoons of SUGAR.



CAUTION: Before adding the sugar, taste the drink and be sure it is less salty than tears.

2. With powdered cereal and salt.

(Powdered rice is best. But you can use finely ground maize, wheat flour, sorghum, or cooked and mashed potatoes.)

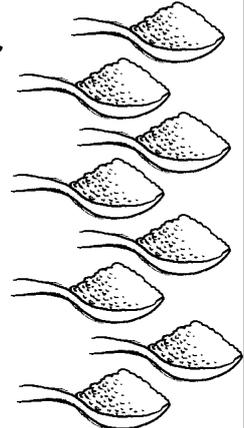
In 1 liter of clean WATER



put half of a level teaspoon of SALT



and 8 heaping teaspoons of powdered CEREAL.



Boil for 5 to 7 minutes to form a liquid gruel or watery porridge. Cool the drink quickly and begin to give it to the sick person.

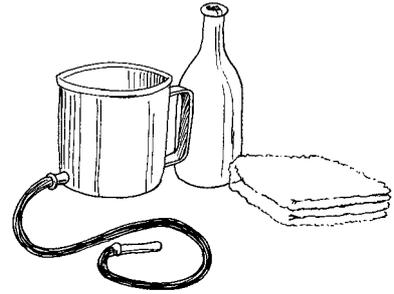
CAUTION: Taste the drink each time before you give it to make sure that it has not spoiled. Cereal drinks can spoil within a few hours in hot weather.

Rehydration drink will also help treat and prevent dehydration, especially in cases of severe watery *diarrhea*.

HOW TO GIVE RECTAL FLUIDS

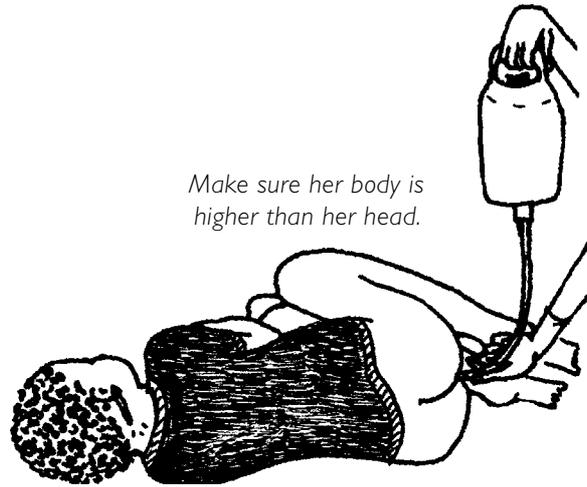
You will need:

- a clean enema bag, or a can or tin with tubing.
- a cloth to place under the person.
- 600 ml (a little more than ½ a liter bottle) of warm (not hot) drinking water. If you have them, sugar and salt rehydration drink or a bag of IV solution can be used instead.



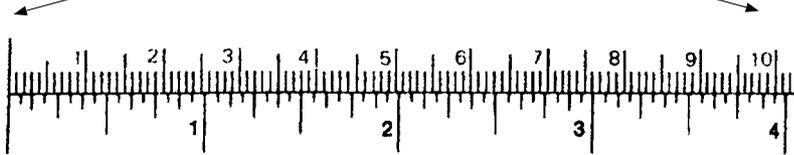
What to do:

1. Explain what you are doing and why.
2. Wash your hands.
3. Have the person lie on their left side. Put a pillow or cloth under their head for comfort.
4. If you have them, put on clean gloves.
5. Let the water come down to the end of the tube to get the air out. Then pinch the tubing to stop the flow.
6. Wet the end of the tube with water, and slide it into the anus. Help the person relax by telling them to take slow, deep breaths.



Make sure her body is higher than her head.

Do not put the tube in more than this much.



7. Hold the bag or can near the person's hip, just high enough for the water to run very slowly into their body. It should take about 20 minutes. If the water does not stay in, the bag may be too high. Lower the bag so the water runs in more slowly.
8. Gently remove the tube. Tell the person to try and keep the water inside, and that the urge to pass stool will go away soon. If the person is unconscious, you can hold their *buttocks* together.
9. Clean and dry the person. Then remove your gloves and wash your hands.
10. Transport the person for medical help right away. If they are still in shock, you can give another enema one hour later. If they are not in shock, try to give sips of rehydration drink during transport.

How to Give an Injection

Injections are not needed often. Many medicines sometimes given by injection are safer when given by mouth. But it can be necessary to give an injection:

- when the medicine does not come in a form that can be given by mouth.
- when the person cannot swallow or keep medicine down without *vomiting*.
- in some emergencies, such as bleeding or infections after childbirth or abortion.

It is important to give injections properly. They can be dangerous when given in the wrong place, in the wrong way, or without properly cleaning the syringe, hands, and injection site. Carefully follow all of the instructions on page 544, "How to inject."

Preventing infection

Needles and syringes that are not cleaned and disinfected properly can pass a disease like *HIV* or *hepatitis* to another person. They can also cause a serious infection at the injection site or in the blood.

- **Never** use the same needle and syringe to inject more than one person without cleaning and disinfecting the needle and syringe first. Follow the steps on page 528.
- After the needle has boiled, do not touch it with anything that has not been disinfected.
- If needles are for one-time use only, see page 529 for how to dispose of them safely.

WHERE TO GIVE AN INJECTION

There are 3 basic kinds of injections:

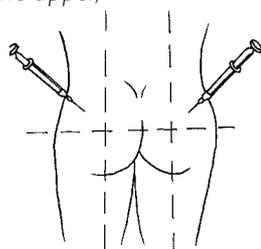
- injections into the fatty layer under the skin (subcutaneous).
- injections into a muscle (intramuscular or IM).
- injections into a vein (intravenous or IV).

Where you choose to inject depends on how much medicine you need to inject, the size of the person receiving the injection, the medicine you are using, and your training. For information about how to give intramuscular and subcutaneous injections, see page 544. Giving intravenous injections requires special training.

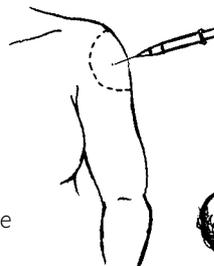
Most of the medicines in this book that need to be injected should go into the muscle. IM injections can be given in a large muscle in the buttock, the upper arm, or the thigh. It is best to use the buttock or thigh instead of the arm if:

- the amount to inject is more than 2 ml (2 cc). Never inject more than 3 ml (3 cc) in a single dose. Use 2 injections instead.
- the medicine is likely to cause pain when injected.

In the buttock, always inject in the upper, outer quarter.



In the upper arm, keep the arm relaxed against the body. Measure 2 finger widths down from the bone at the edge of the shoulder.



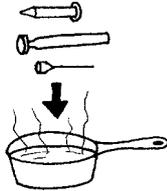
In the thigh, inject into the upper outer part. (This is the best way to inject babies.)



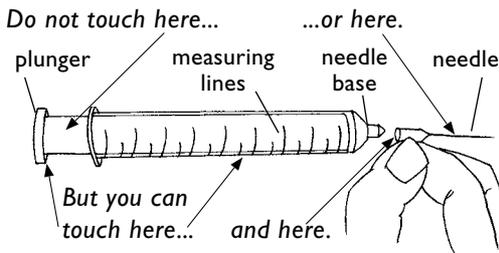
HOW TO PREPARE A SYRINGE FOR INJECTION

Before preparing a syringe, **wash your hands with soap and water**. If the syringe is reusable, start with step 1. If you have a disposable syringe, open the package carefully and start with step 2.

1. Follow the instructions for disinfecting syringes on page 528.

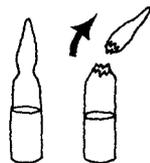


2. Put the needle and syringe together, touching only the base of the needle and the end of the plunger.

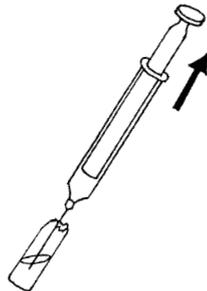


3. Some medicines come ready to use. If you have this kind of medicine, follow steps 4, 5, and 10. If the medicine needs to be mixed with distilled water, follow steps 4 through 10.

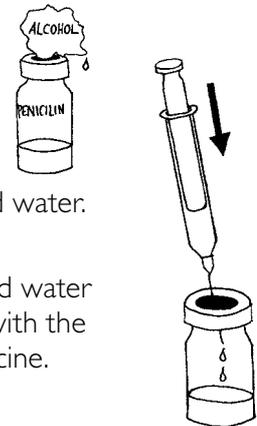
4. Clean the glass container (ampule) of medicine or distilled water. Then break off the top.



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

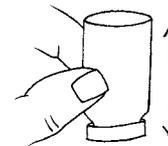


6. Rub the rubber top of the medicine bottle with a clean cloth or cotton that is wet with alcohol or boiled water.



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

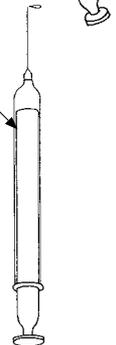
8. Shake until the medicine mixes completely with the water.



9. Fill the syringe again.



10. Remove all air from the syringe. To do this, hold the syringe with the needle upright and tap it lightly here to make any air bubbles rise to the top. Then slowly push a little on the plunger until all the air comes out through the needle.

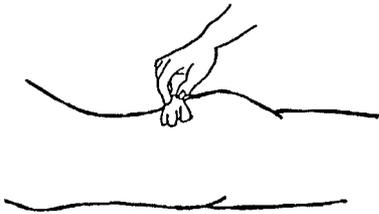


Be very careful not to touch the needle with anything—not even the cloth or cotton that is wet with alcohol. If the needle touches anything, boil it again.

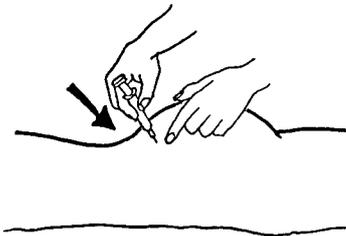
HOW TO INJECT INTO THE MUSCLE (INTRAMUSCULAR OR IM)

The pictures below show how to inject into the buttock. Steps 2 through 6 are the same for injections into the arm or thigh.

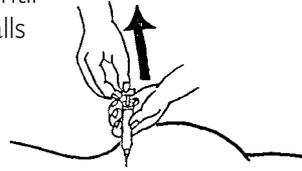
1. The person should sit or lie down. Pointing the toes together will relax the muscle to be injected.
2. Clean the skin with alcohol, or soap and water (it will hurt less if you let the alcohol dry before injecting).



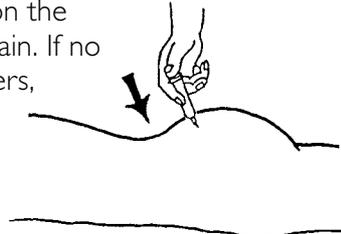
3. Put the needle straight in, all the way. If it is done with one quick movement, it hurts less.



4. Before injecting the medicine, gently pull back on the plunger a little bit (do not pull until the plunger falls out). If blood enters the syringe, take the needle out and put it back in somewhere else close by in the area you have cleaned.



5. Pull back on the plunger again. If no blood enters, inject the medicine slowly.



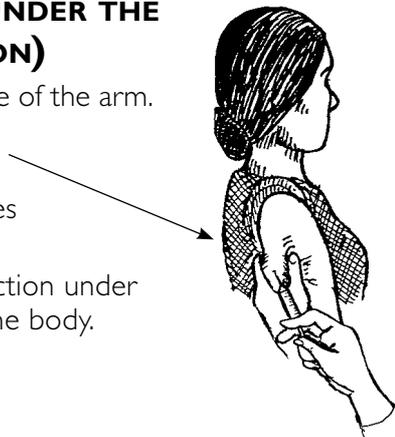
6. Remove the needle and clean the skin again.



HOW TO GIVE AN INJECTION UNDER THE SKIN (SUBCUTANEOUS INJECTION)

- Grab the fatty part on the underside of the arm. Hold the skin like this:
- Put the needle under the skin at this angle. Make sure the needle does not go into the muscle.

Use these same instructions for injection under the skin of the thigh or other part of the body.



Acupressure Massage

Pressing on specific points on the body can help relieve some common health problems. These points come from an ancient and still widely used Chinese way of healing called acupressure. Local healers may know other kinds of massage.

Use your own sense of how long and how often to press on these points (an average amount of time is 3 to 10 minutes). Many people feel tender at these points. If a point is very tender, be careful not to irritate it. If there is an injury, do not use acupressure in that area.

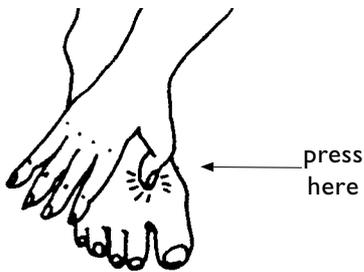
Sometimes there are several points to help the same problem. You can try all these points. If one seems tender or makes you feel better, focus on that point. If not, use all of the points in any order.

IMPORTANT *Pressing on some of these points can cause problems during pregnancy. If you are pregnant, watch for the warnings mentioned below.*

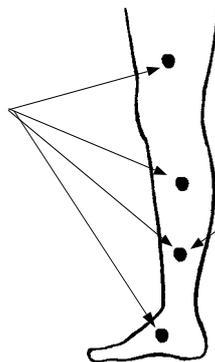
General menstrual pain

(For information about the menstrual cycle, see page 48.)

1. To help prevent general discomfort during your period, such as sore breasts, feeling tired, and a full feeling in the lower abdomen:
2. To lessen pain and cramps during your period, firmly hold and massage the tender place on your hand you will find between your thumb and first finger. Pressing hard on this spot can ease many kinds of pain.



You can also press on these points on the inside of the foot and leg.



But do not press too hard on this point or it will cause injury. Do not press on this point during pregnancy. This point can cause labor to begin.

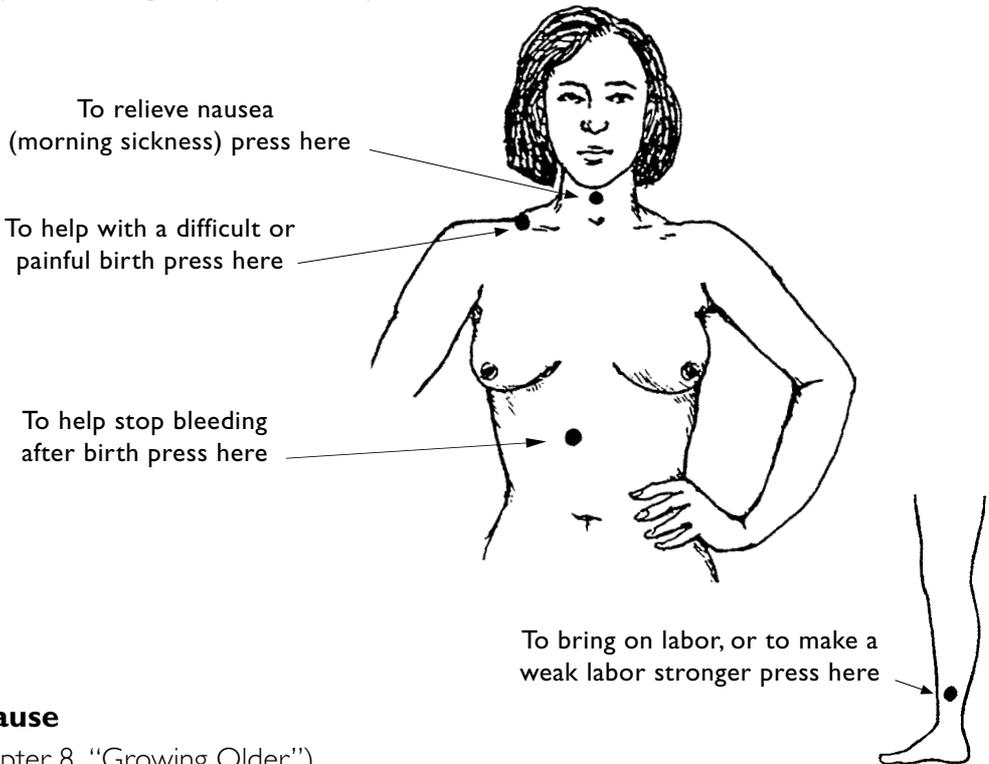
The following massage is also useful to relieve pain and *cramps*, as well as signs of premenstrual syndrome (PMS). See page 51.

Massage in between the toes, around the ankle bones, and up the ankles on the outside of the feet. Look for areas that are sensitive and massage these places longer. **During pregnancy, do not massage the outside of the big toe, the arch or the middle of the bottom of the foot or above the outside of the ankle. It can make labor start.**

Hand, wrist, and ear massage can also help with pain or signs of PMS.

Pregnancy and birth

(See Chapter 6, "Pregnancy and Birth.")



Menopause

(See Chapter 8, "Growing Older.")

To help relieve general discomfort, press the following points about once a day for 10 minutes:

