

First Aid

Anaphylaxis:

A severe allergic reaction (anaphylaxis) can produce shock and life-threatening respiratory distress. In sensitive people, anaphylaxis can occur within minutes or up to several hours after exposure to a specific allergy-causing substance. Almost any allergy-causing substance — including insect venom, pollen, latex, certain foods and drugs — can cause anaphylaxis. Some people have anaphylactic reactions from unknown causes.

If you're extremely sensitive, you might break out in hives, and your eyes or lips might swell severely. The inside of your throat might swell as well, even to the point of causing difficulty breathing and shock. Dizziness, mental confusion, abdominal cramping, nausea, vomiting or diarrhea also may accompany anaphylaxis.

If you've had an anaphylactic reaction in the past, carry medications with you as an antidote. Epinephrine is the most commonly used drug for severe allergic reactions. It comes only as an injection that must be prescribed by your doctor. You should also carry an antihistamine pill, such as diphenhydramine (Benadryl, others), because the effects of epinephrine are only temporary. Seek emergency medical attention immediately after taking these medications.

If you observe someone having an allergic reaction with signs of anaphylaxis:

1. Call 911 or your local medical emergency number.
2. Check for special medications that the person might be carrying to treat an allergic attack, such as an auto-injector of epinephrine (for example, EpiPen). Administer the drug as directed — usually by pressing the auto-injector against the person's thigh and holding it in place for several seconds. Massage the injection site for 10 seconds to enhance absorption. If your doctor prescribed an auto-injector of epinephrine, read the instructions before a problem develops and also have your household members read them. After administering epinephrine, have the person take an antihistamine pill if he or she is able to do so without choking.
3. Have the person lie still on his or her back with feet higher than the head.
4. Loosen tight clothing and cover the person with a blanket. Don't give anything to drink.
5. If there's vomiting or bleeding from the mouth, turn the person on his or her side to prevent choking.
6. If there are no signs of circulation (breathing, coughing or movement), begin CPR.

Bleeding, severe:

If possible, before you try to stop severe bleeding, wash your hands to avoid infection and put on synthetic gloves. Don't reposition displaced organs. If the wound is abdominal

and organs have been displaced, don't try to push them back into place. Cover the wound with a dressing.

For other cases of severe bleeding, follow these steps:

1. Have the injured person lie down. If possible, position the person's head slightly lower than the trunk or elevate the legs. This position reduces the risk of fainting by increasing blood flow to the brain. If possible, elevate the site of bleeding.
2. While wearing gloves, remove any obvious dirt or debris from the wound. Don't remove any large or more deeply embedded objects. Don't probe the wound or attempt to clean it at this point. Your principal concern is to stop the bleeding.
3. Apply pressure directly on the wound. Use a sterile bandage, clean cloth or even a piece of clothing. If nothing else is available, use your hand.
4. Maintain pressure until the bleeding stops. Hold continuous pressure for at least 20 minutes without looking to see if the bleeding stopped. You can maintain pressure by binding the wound tightly with a bandage (or even a piece of clean clothing) and adhesive tape.
5. Don't remove the gauze or bandage. If the bleeding continues and seeps through the gauze or other material you are holding on the wound, don't remove it. Instead, add more absorbent material on top of it.
6. Squeeze a main artery if necessary. If the bleeding doesn't stop with direct pressure, apply pressure to the artery delivering blood to the area of the wound. Pressure points of the arm are on the inside of the arm just above the elbow and just below the armpit. Pressure points of the leg are just behind the knee and in the groin. Squeeze the main artery in these areas against the bone. Keep your fingers flat. With your other hand, continue to exert pressure on the wound itself.
7. Immobilize the injured body part once the bleeding has stopped. Leave the bandages in place and get the injured person to the emergency room as soon as possible.

If you suspect internal bleeding, seek emergency help. Signs of internal bleeding may include:

- * Bleeding from body cavities (such as the ears, nose, rectum or vagina)
- * Vomiting or coughing up blood
- * Bruising on neck, chest, abdomen or side (between ribs and hip)
- * Wounds that have penetrated the skull, chest or abdomen
- * Abdominal tenderness, possibly accompanied by rigidity or spasm of abdominal muscles
- * Fractures
- * Shock, indicated by weakness, anxiety, thirst or skin that's cool to the touch

Blisters

Common causes of blisters include friction and burns. If the blister isn't too painful, do everything possible to keep it intact. Unbroken skin over a blister provides a natural

barrier to bacteria and decreases the risk of infection. Cover a small blister with an adhesive bandage, and cover a large one with a porous, plastic-coated gauze pad that absorbs moisture and allows the wound to breathe.

Don't puncture a blister unless it's painful or prevents you from walking or using one of your hands. If you have diabetes or poor circulation, call your doctor before considering the self-care measures below.

To relieve blister-related pain, drain the fluid while leaving the overlying skin intact. Here's how:

- * Wash your hands and the blister with soap and warm water.
- * Swab the blister with iodine or rubbing alcohol.
- * Sterilize a clean, sharp needle by wiping it with rubbing alcohol.
- * Use the needle to puncture the blister. Aim for several spots near the blister's edge. Let the fluid drain, but leave the overlying skin in place.
- * Apply an antibiotic ointment to the blister and cover with a bandage or gauze pad.
- * After several days, use tweezers and scissors sterilized with rubbing alcohol to cut away all the dead skin. Apply more ointment and a bandage.

Call your doctor if you see signs of infection around a blister — pus, redness, increasing pain or warm skin.

To prevent a blister, use gloves, socks, a bandage or similar protective covering over the area being rubbed. Special athletic socks are available that have extra padding in critical areas. You might also try attaching moleskin to the inside of your shoe where it might rub, such as at the heel.

Shoe-shopping tips

Remember the following when you shop for shoes:

- * Shop during the middle of the day. Your feet swell throughout the day, so a midday fitting will probably give you the best fit.
- * Wear the same socks you'll wear when walking, or bring them with you to the store.
- * Measure your feet. Shoe sizes change throughout adulthood.
- * Measure both feet and try on both shoes. If your feet differ in size, buy the larger size.
- * Go for flexible but supportive shoes with cushioned insoles.
- * Be sure that you can comfortably wiggle your toes.
- * Avoid shoes with seams in the toe box, which may irritate bunions or hammertoes.

Burns:

To distinguish a minor burn from a serious burn, the first step is to determine the degree and the extent of damage to body tissues. The three classifications of first-degree burn, second-degree burn and third-degree burn will help you determine emergency care:

First-degree burn

The least serious burns are those in which only the outer layer of skin (epidermis) is burned. The skin is usually red, with swelling and pain sometimes present. The outer layer of skin hasn't been burned through. Treat a first-degree burn as a minor burn unless it involves substantial portions of the hands, feet, face, groin or buttocks, or a major joint.

Second-degree burn

When the first layer of skin has been burned through and the second layer of skin (dermis) also is burned, the injury is termed a second-degree burn. Blisters develop and the skin takes on an intensely reddened, splotchy appearance. Second-degree burns produce severe pain and swelling.

If the second-degree burn is no larger than 2 to 3 inches in diameter, treat it as a minor burn. If the burned area is larger or if the burn is on the hands, feet, face, groin or buttocks, or over a major joint, get medical help immediately.

For minor burns, including second-degree burns limited to an area no larger than 2 to 3 inches in diameter, take the following action:

- * Cool the burn. Hold the burned area under cold running water for at least 5 minutes, or until the pain subsides. If this is impractical, immerse the burn in cold water or cool it with cold compresses. Cooling the burn reduces swelling by conducting heat away from the skin. Don't put ice on the burn.
- * Cover the burn with a sterile gauze bandage. Don't use fluffy cotton, which may irritate the skin. Wrap the gauze loosely to avoid putting pressure on burned skin. Bandaging keeps air off the burned skin, reduces pain and protects blistered skin.
- * Take an over-the-counter pain reliever. These include aspirin, ibuprofen (Advil, Motrin, others), naproxen (Aleve) or acetaminophen (Tylenol, others). Never give aspirin to children or teenagers.

Minor burns usually heal without further treatment. They may heal with pigment changes, meaning the healed area may be a different color from the surrounding skin. Watch for signs of infection, such as increased pain, redness, fever, swelling or oozing. If infection develops, seek medical help. Avoid re-injuring or tanning if the burns are less than a year old — doing so may cause more extensive pigmentation changes. Use sunscreen on the area for at least a year.

Caution

- * Don't use ice. Putting ice directly on a burn can cause frostbite, further damaging your skin.
- * Don't break blisters. Broken blisters are vulnerable to infection.

Third-degree burn

The most serious burns are painless and involve all layers of the skin. Fat, muscle and even bone may be affected. Areas may be charred black or appear dry and white. Difficulty inhaling and exhaling, carbon monoxide poisoning or other toxic effects may occur if smoke inhalation accompanies the burn.

For major burns, dial 911 or call for emergency medical assistance. Until an emergency unit arrives, follow these steps:

1. Don't remove burnt clothing. However, do make sure the victim is no longer in contact with smoldering materials or exposed to smoke or heat.
2. Don't immerse severe large burns in cold water. Doing so could cause shock.
3. Check for signs of circulation (breathing, coughing or movement). If there is no breathing or other sign of circulation, begin cardiopulmonary resuscitation (CPR).
4. Cover the area of the burn. Use a cool, moist, sterile bandage; clean, moist cloth; or moist towels.

Cardiopulmonary resuscitation (CPR):

Cardiopulmonary resuscitation (CPR) is a lifesaving technique useful in many emergencies, including heart attack or near drowning, in which someone's breathing or heartbeat has stopped. CPR involves a combination of mouth-to-mouth rescue breathing and chest compression that keeps oxygenated blood flowing to the brain and other vital organs until more definitive medical treatment can restore a normal heart rhythm.

When the heart stops, the absence of oxygenated blood can cause irreparable brain damage in only a few minutes. Death will occur within eight to 10 minutes. Time is critical when you're helping an unconscious person who isn't breathing.

To learn CPR properly, take an accredited first-aid training course, including CPR and how to use an automated external defibrillator (AED).

Before you begin

Assess the situation before starting CPR:

- * Is the person conscious or unconscious?
- * If the person appears unconscious, tap or shake his or her shoulder and ask loudly, "Are you OK?"
- * If the person doesn't respond, call 911 (or your local emergency number), or have someone else do it. But if you're alone and the victim is an infant or a child age 1 to 8 who needs CPR, perform two minutes of CPR before calling for help.

Remember the ABCs

Airway, Breathing and Circulation — to remember the steps explained below.

AIRWAY: Clear the airway

1. Put the person on his or her back on a firm surface.
2. Kneel next to the person's neck and shoulders.
3. Open the person's airway using the head tilt-chin lift. Put your palm on the person's forehead and gently push down. Then with the other hand, gently lift the chin forward to open the airway.
4. Check for normal breathing, taking no more than 10 seconds: Look for chest motion, listen for breath sounds, and feel for the person's breath on your cheek and ear. Do not consider gasping to be normal breathing. If the person isn't breathing normally or you aren't sure, begin mouth-to-mouth breathing.

BREATHING: Breathe for the person

Rescue breathing can be mouth-to-mouth breathing or mouth-to-nose breathing if the mouth is seriously injured or can't be opened.

1. With the airway open (using the head tilt-chin lift), pinch the nostrils shut for mouth-to-mouth breathing and cover the person's mouth with yours, making a seal.
2. Prepare to give two rescue breaths. Give the first rescue breath — lasting one second — and watch to see if the chest rises. If it does rise, give the second breath. If the chest doesn't rise, repeat the head tilt-chin lift and then give the second breath.
3. Begin chest compressions — go to "CIRCULATION" below.

CIRCULATION: Restore blood circulation

1. Place the heel of one hand over the center of the person's chest, between the nipples. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands.
2. Use your upper body weight (not just your arms) as you push straight down on (compress) the chest 1 1/2 to 2 inches. Push hard and push fast — give two compressions per second, or about 100 compressions per minute.
3. After 30 compressions, tilt the head back and lift the chin up to open the airway. Prepare to give two rescue breaths. Pinch the nose shut and breathe into the mouth for one second. If the chest rises, give a second rescue breath. If the chest doesn't rise, repeat the head tilt-chin lift and then give the second rescue breath. That's one cycle. If someone else is available, ask that person to give two breaths after you do 30 compressions.
4. If the person has not begun moving after five cycles (about two minutes) and an automated external defibrillator (AED) is available, open the kit and follow the prompts. If you're not trained to use an AED, a 911 operator may be able to guide you in its use. Trained staff at many public places are also able to provide and use an AED. Use pediatric pads, if available, for children ages 1 to 8. If pediatric pads aren't available, use adult pads. Do not use an AED for infants younger than age 1. If an AED isn't available, go to Number 5 below.
5. Continue CPR until there are signs of movement or until emergency medical personnel take over.

To perform CPR on a child:

The procedure for giving CPR to a child age 1 through 8 is essentially the same as that for an adult. The differences are as follows:

- * Perform five cycles of compressions and breaths on the child — this should take about two minutes — before calling 911 or the local emergency number, unless someone else can call while you attend to the child.
- * Use only one hand to perform heart compressions.
- * Breathe more gently.
- * Use the same compression/breath rate as is used for adults: 30 compressions followed by two breaths. This is one cycle. Following the two breaths, immediately begin the next cycle of compressions and breaths. Continue until the victim moves or help arrives.

To perform CPR on a baby:

Most cardiac arrests in infants occur from lack of oxygen, such as from drowning or choking. If you know the infant has an airway obstruction, perform first aid for choking. If you don't know why the infant isn't breathing, perform CPR.

To begin, assess the situation. Stroke the baby and watch for a response, such as movement, but don't shake the child.

If there's no response, follow the ABC procedures below and time the call for help as follows:

- * If you're the only rescuer and CPR is needed, do CPR for two minutes — about five cycles — before calling 911 or your local emergency number.
- * If another person is available, have that person call for help immediately while you attend to the baby.

AIRWAY: Clear the airway

1. Place the baby on his or her back on firm, flat surface, such as a table. The floor or ground also will do.
2. Gently tip the head back by lifting the chin with one hand and pushing down on the forehead with the other hand.
3. In no more than 10 seconds, put your ear near the baby's mouth and check for breathing: Look for chest motion, listen for breath sounds, and feel for breath on your cheek and ear.

If the infant isn't breathing, begin mouth-to-mouth breathing immediately.

BREATHING: Breathe for the infant

1. Cover the baby's mouth and nose with your mouth.

2. Prepare to give two rescue breaths. Use the strength of your cheeks to deliver gentle puffs of air (instead of deep breaths from your lungs) to slowly breathe into the baby's mouth one time, taking one second for the breath. Watch to see if the baby's chest rises. If it does, give a second rescue breath. If the chest does not rise, repeat the head tilt-chin lift and then give the second breath.
3. If the chest still doesn't rise, examine the mouth to make sure no foreign material is inside. If the object is seen, sweep it out with your finger. If the airway seems blocked, perform first aid for a choking infant.
4. Begin chest compressions — go to "CIRCULATION" below.

CIRCULATION: Restore blood circulation

1. Imagine a horizontal line drawn between the baby's nipples. Place two fingers of one hand just below this line, in the center of the chest.
2. Gently compress the chest to about one-third to one-half the depth of the chest.
3. Count aloud as you pump in a fairly rapid rhythm. You should pump at a rate of about 100 times a minute.
4. Give two breaths after every 30 chest compressions.
5. Perform CPR for about two minutes before calling for help unless someone else can make the call while you attend to the baby.
6. Continue CPR until you see signs of life or until a professional relieves you.

Choking:

Choking occurs when a foreign object becomes lodged in the throat or windpipe, blocking the flow of air. In adults, a piece of food often is the culprit. Young children often swallow small objects. Because choking cuts off oxygen to the brain, administer first aid as quickly as possible.

The universal sign for choking is hands clutched to the throat. If the person doesn't give the signal, look for these indications:

- * Inability to talk
- * Difficulty breathing or noisy breathing
- * Inability to cough forcefully
- * Skin, lips and nails turning blue or dusky
- * Loss of consciousness

If choking is occurring, begin to perform the Heimlich maneuver. If you're the only rescuer, perform the Heimlich maneuver before calling 911 (or your local emergency number) for help.

If another person is available, have that person call for help while you perform the Heimlich maneuver.

To perform the Heimlich maneuver on someone else:

- * Stand behind the person. Wrap your arms around the waist. Tip the person forward slightly.
- * Make a fist with one hand. Position it slightly above the person's navel.
- * Grasp the fist with the other hand. Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
- * Repeat until the blockage is dislodged.

To perform the Heimlich maneuver on yourself:

- * Place a fist slightly above your navel.
- * Grasp your fist with the other hand and bend over a hard surface — a countertop or chair will do.
- * Shove your fist inward and upward.

Clearing the airway of a pregnant woman or obese person:

- * Position your hands a little bit higher than with a normal Heimlich maneuver, at the base of the breastbone, just above the joining of the lowest ribs.
- * Proceed as with the Heimlich maneuver, pressing hard into the chest, with a quick thrust.
- * Repeat until the food or other blockage is dislodged or the person becomes unconscious.

Clearing the airway of an unconscious person:

- * Lower the person on his or her back onto the floor.
- * Clear the airway. If there is a visible blockage at the back of the throat or high in the throat, reach a finger into the mouth and sweep out the cause of the blockage. Be careful not to push the food or object deeper into the airway, which can happen easily in young children.
- * If the object remains lodged and the person doesn't respond after you take the above measures, begin cardiopulmonary resuscitation (CPR). The chest compressions used in CPR may dislodge the object. Remember to recheck the mouth periodically.

Clearing the airway of a choking infant younger than age 1:

- * Assume a seated position and hold the infant facedown on your forearm, which is resting on your thigh.
- * Thump the infant gently but firmly five times on the middle of the back using the heel of your hand. The combination of gravity and the back blows should release the blocking object.
- * If this doesn't work, hold the infant faceup on your forearm with the head lower than the trunk. Using two fingers placed at the center of the infant's breastbone, give five quick chest compressions.

* If breathing doesn't resume, repeat the back blows and chest thrusts. Call for emergency medical help.

* If one of these techniques opens the airway but the infant doesn't resume breathing, begin infant CPR.

If the child is older than age 1, give abdominal thrusts only.

To prepare yourself for these situations, learn the Heimlich maneuver and CPR in a certified first-aid training course.

Chest pain:

The specific cause of chest pain is often difficult to interpret. Causes of chest pain can vary from minor problems, such as indigestion or stress, to serious medical emergencies, such as a heart attack or pulmonary embolism.

As with other sudden, unexplained pains, chest pain may be a signal for you to get medical help. Use the following information to help you determine whether your chest pain is a medical emergency.

Heart attack

A heart attack occurs when an artery that supplies oxygen to your heart muscle becomes blocked. A heart attack generally causes chest pain for longer than 15 minutes. But a heart attack can also be silent and produce no signs or symptoms.

Many people who suffer a heart attack have warning symptoms hours, days or weeks in advance. The earliest predictor of an attack may be recurrent chest pain that's triggered by exertion and relieved by rest.

Someone having a heart attack may experience any or all of the following:

* Uncomfortable pressure, fullness or squeezing pain in the center of his or her chest lasting more than a few minutes

* Pain spreading to the shoulders, neck or arms

* Lightheadedness, fainting, sweating, nausea or shortness of breath

If you or someone else may be having a heart attack:

* Dial 911 or call for emergency medical assistance. Don't "tough out" the symptoms of a heart attack for more than five minutes. If you don't have access to emergency medical services, have someone drive you to the nearest hospital, such as a neighbor or friend. Drive yourself only as a last resort, if there are absolutely no other options. Driving yourself puts you and others at risk if your condition suddenly worsens.

- * Take nitroglycerin, if prescribed. If you think you're having a heart attack and your doctor has previously prescribed nitroglycerin for you, take it as directed. Do not take anyone else's nitroglycerin.
- * Begin CPR. If the person suspected of having a heart attack is unconscious, a 911 dispatcher or another emergency medical specialist may advise you to begin cardiopulmonary resuscitation (CPR). Even if you're not trained, a dispatcher can instruct you in CPR until help arrives.

Pulmonary embolism

An embolus is an accumulation of foreign material — usually a blood clot — that blocks an artery. Tissue death occurs when the tissue supplied by the blocked artery is damaged by the sudden loss of blood. Pulmonary embolism describes the condition that occurs when a clot — usually from the veins of the leg or pelvis — lodges in an artery of the lung.

Signs and symptoms of pulmonary embolism include:

- * Sudden, sharp chest pain that begins or worsens with a deep breath or a cough, often accompanied by shortness of breath
- * Sudden, unexplained shortness of breath, even without pain
- * Cough that may produce blood-streaked sputum
- * Rapid heartbeat
- * Anxiety and excessive perspiration

As with a suspected heart attack, dial 911 or call for emergency medical assistance immediately.

Pneumonia with pleurisy

Frequent signs and symptoms of pneumonia are chest pain accompanied by chills, fever and a cough that may produce bloody or foul-smelling sputum. When pneumonia occurs with an inflammation of the membranes that surround the lung (pleura), you may have considerable chest discomfort when inhaling or coughing. This condition is called pleurisy.

One sign of pleurisy is that the pain is usually relieved temporarily by holding your breath or putting pressure on the painful area of your chest. This is not true of a heart attack. See your doctor if a cough and a fever or chills accompany your chest pain.

Pleurisy alone, however, isn't a medical emergency.

Chest wall pain

One of the most common varieties of harmless chest pain is chest wall pain. One kind of chest wall pain is costochondritis. It consists of pain and tenderness in and around the cartilage that connects your ribs to your breastbone (sternum).

Often, placing pressure over a few points along the margin of the sternum results in considerable tenderness limited to those small areas. If the pressure of a finger duplicates your chest pain, you probably can conclude that a serious cause of chest pain, such as a heart attack, isn't responsible.

Other causes of chest wall pain include:

- * Strained muscles from overuse or excessive coughing
- * Muscle bruising from minor trauma

Corneal abrasion (scratch):

The most common types of eye injury involve the cornea — the clear, protective "window" at the front of the eye. Contact with dust, dirt, sand, wood shavings, metal particles or even an edge of a piece of paper can scratch or cut the cornea. Usually the scratch is superficial, and this is called a corneal abrasion. Some corneal abrasions become infected and result in a corneal ulcer, which is a serious problem.

Everyday activities can lead to corneal abrasions. Examples are playing sports, doing home repairs or being scratched by children who accidentally brush your cornea with a fingernail. Other common injuries to the cornea include splash accidents — contact with chemicals ranging from antifreeze to household cleaners.

Because the cornea is extremely sensitive, abrasions can be painful. If your cornea is scratched, you might feel like you have sand in your eye. Tears, blurred vision, increased sensitivity or redness around the eye can suggest a corneal abrasion.

In case of injury, seek prompt medical attention. Other immediate steps you can take for a corneal abrasion are to:

- * Use clean water or saline solution to rinse the eye. Use an eyecup or small, clean glass positioned with its rim resting on the bone at the base of your eye socket. If your work site has an eye-rinse station, use it to run lukewarm tap water over the eye or splash the eye. Rinsing the eye may wash out an offending foreign body.
- * Blink several times. This movement may remove small particles of dust or sand.
- * Pull the upper eyelid over the lower eyelid. The lashes of the lower eyelid can brush a foreign body from the undersurface of the upper eyelid.

Take caution to avoid certain actions that may aggravate the injury:

- * Don't try to remove an object that's imbedded in the eyeball. Also avoid trying to remove a large object that makes closing the eye difficult.
- * Don't rub your eye after an injury. Touching or pressing on the eye can worsen a corneal abrasion.

Dislocation:

A dislocation is an injury in which the ends of your bones are forced from their normal positions. The cause is usually trauma, such as a blow or fall, but dislocation can be caused by an underlying disease such as rheumatoid arthritis.

Dislocations are common injuries in contact sports, such as football and hockey, and in sports that may involve falls, such as downhill skiing and volleyball. Dislocations may occur in major joints such as your shoulder, hip, knee, elbow or ankle or in smaller joints such as your finger, thumb or toe. The injury will temporarily deform and immobilize your joint and may result in sudden and severe pain. A dislocation requires prompt medical attention to return your bones to their proper positions.

If you believe you have dislocated a joint:

1. Don't delay medical care. Get medical help immediately.
2. Don't move the joint. Until you receive help, splint the affected joint into its fixed position. Don't try to move a dislocated joint or force it back into place. This can damage the joint and its surrounding muscles, ligaments, nerves or blood vessels.
3. Put ice on the injured joint. This can help reduce swelling by controlling internal bleeding and the buildup of fluids in and around the injured joint.

Fever:

Fever is one of your body's reactions to infection. What's normal for you may be a little higher or lower than the average temperature of 98.6 F (37 C). That's why it's hard to say just what a fever is. But a "significant" fever is usually defined as an oral or ear temperature of 102 F or a rectal temperature of 103 F. For very young children and infants, however, even slightly elevated temperatures may indicate a serious infection. In newborns, a subnormal temperature — rather than a fever — also may be a sign of serious illness.

Don't treat fevers below 101 F with any medications unless advised to do so by your doctor. If you have a fever of 101 F or higher, your doctor may suggest taking over-the-counter medications such as acetaminophen (Tylenol, others) or ibuprofen (Advil, Motrin, others). Adults may also use aspirin. But don't give aspirin to children. It may trigger a rare, but potentially fatal, disorder known as Reye's syndrome.

Temperature conversion table

How to take a temperature

You can choose from several types of thermometers. Today most have digital readouts. Some take the temperature quickly from the ear canal and can be especially useful for young children and older adults. Other thermometers can be used rectally, orally or under

the arm. If you use a digital thermometer, be sure to read the instructions, so you know what the beeps mean and when to read the thermometer. Under normal circumstances, temperatures tend to be highest around 4 p.m. and lowest around 4 a.m.

Because of the potential for mercury exposure or ingestion, glass mercury thermometers have been phased out and are no longer recommended.

Rectally (for infants)

To take your child's temperature rectally:

- * Place a dab of petroleum jelly or other lubricant on the bulb.
- * Lay your child on his or her stomach.
- * Carefully insert the bulb one-half inch to one inch into the rectum.
- * Hold the bulb and child still for three minutes. To avoid injury, don't let go of the thermometer while it's inside your child.
- * Remove and read the temperature as recommended by the manufacturer.
- * A rectal temperature reading is generally 1 degree F higher than an oral reading.

Orally

To take your temperature orally:

- * Place the bulb under your tongue.
- * Close your mouth for the recommended amount of time, usually three minutes.
- * If you're using a nondigital thermometer, remove it from your mouth and rotate it slowly until you can read the temperature accurately.

Under the arm (axillary)

Although it's not the most accurate way to take a temperature, you can also use an oral thermometer for an armpit reading:

- * Place the thermometer under your arm with your arm down.
- * Hold your arms across your chest.
- * Wait five minutes or as recommended by your thermometer's manufacturer. Then remove the thermometer and read the temperature.
- * An axillary reading is generally 1 degree F less than an oral reading

Get medical help for a fever in these cases:

- * If a baby is younger than 2 months of age and has a rectal temperature of 100.4 F or higher. Even if your baby doesn't have other signs or symptoms, call your doctor just to be safe.
- * If a baby is older than 2 months of age and has a temperature of 102 F or higher.
- * If a newborn has a lower-than-normal temperature — less than 95 F rectally.
- * If a child younger than age 2 has a fever for longer than one day, or a child age 2 or older has a fever for longer than three days. If your child has a fever after being left in a very hot car, seek medical care immediately.

* If an adult has a temperature of more than 104 F or has had a fever for more than three days.

Call your doctor immediately if any of these signs or symptoms accompanies a fever:

- * A severe headache
- * Severe swelling of the throat
- * Unusual skin rash
- * Unusual eye sensitivity to bright light
- * A stiff neck and pain when the head is bent forward
- * Mental confusion
- * Persistent vomiting
- * Difficulty breathing or chest pain
- * Extreme listlessness or irritability
- * Abdominal pain or pain when urinating
- * Any other unexplained symptoms

Fractures (broken bones):

A fracture is a broken bone. It requires medical attention. If the broken bone is the result of a major trauma or injury, call 911 or your local emergency number. Also call for emergency help if:

- * The person is unresponsive, isn't breathing or isn't moving. Begin cardiopulmonary resuscitation (CPR) if there's no respiration or heartbeat.
- * There is heavy bleeding.
- * Even gentle pressure or movement causes pain.
- * The limb or joint appears deformed.
- * The bone has pierced the skin.
- * The extremity of the injured arm or leg, such as a toe or finger, is numb or bluish at the tip.
- * You suspect a bone is broken in the neck, head or back.
- * You suspect a bone is broken in the hip, pelvis or upper leg (for example, the leg and foot turn outward abnormally, compared with the uninjured leg).

Take these actions immediately while waiting for medical help:

- * Stop any bleeding. Apply pressure to the wound with a sterile bandage, a clean cloth or a clean piece of clothing.
- * Immobilize the injured area. Don't try to realign the bone, but if you've been trained in how to splint and professional help isn't readily available, apply a splint to the area.
- * Apply ice packs to limit swelling and help relieve pain until emergency personnel arrive. Don't apply ice directly to the skin — wrap the ice in a towel, piece of cloth or some other material.

* Treat for shock. If the person feels faint or is breathing in short, rapid breaths, lay the person down with the head slightly lower than the trunk and, if possible, elevate the legs.

Frostbite:

When exposed to very cold temperatures, skin and underlying tissues may freeze, resulting in frostbite. The areas most likely to be affected by frostbite are your hands, feet, nose and ears.

You can identify frostbite by the hard, pale and cold quality of the skin that has been exposed to the cold. As the area thaws, the flesh becomes red and painful.

If your fingers, ears or other areas suffer frostbite:

1. Get out of the cold.
2. Warm your hands by tucking them under your arms. If your nose, ears or face is frostbitten, warm the area by covering it with dry, gloved hands.
3. Don't rub the affected area. Never rub snow on frostbitten skin.
4. If there's any chance of refreezing, don't thaw out the affected areas. If they're already thawed out, wrap them up so they don't refreeze.
5. Get emergency medical help if numbness remains during warming. If you can't get help immediately, warm severely frostbitten hands or feet in warm — not hot — water.

Head trauma:

Most head trauma involves injuries that are minor and don't require hospitalization. However, dial 911 or call for emergency medical assistance if any of the following signs are apparent:

- * Severe head or facial bleeding
- * Change in level of consciousness for more than a few seconds
- * Black-and-blue discoloration below the eyes or behind the ears
- * Cessation of breathing
- * Confusion
- * Loss of balance
- * Weakness or an inability to use an arm or leg
- * Unequal pupil size
- * Repeated vomiting
- * Slurred speech

If severe head trauma occurs:

- * Keep the person still. Until medical help arrives, keep the person who sustained the injury lying down and quiet in a darkened room, with the head and shoulders slightly elevated. Don't move the person unless necessary and avoid moving the person's neck.
- * Stop any bleeding. Apply firm pressure to the wound with sterile gauze or a clean cloth. But don't apply direct pressure to the wound if you suspect a skull fracture.
- * Watch for changes in breathing and alertness. If the person shows no signs of circulation (breathing, coughing or movement), begin CPR.

Heatstroke:

Heatstroke is similar to heat cramps and heat exhaustion. It's one of the heat-related problems that often result from heavy work in hot environments, usually accompanied by inadequate fluid intake. Older adults, people who are obese and people born with an impaired ability to sweat are at high risk of heatstroke. Other risk factors include dehydration, alcohol use, cardiovascular disease and certain medications.

What makes heatstroke much more severe and potentially life-threatening is that the body's normal mechanisms for dealing with heat stress, such as sweating and temperature control, are lost. The main sign of heatstroke is a markedly elevated body temperature — generally greater than 104 F — with changes in mental status ranging from personality changes to confusion and coma. Skin may be hot and dry, although in heatstroke caused by exertion, the skin is usually moist.

Other signs and symptoms may include:

- * Rapid heartbeat
- * Rapid and shallow breathing
- * Elevated or lowered blood pressure
- * Cessation of sweating
- * Irritability, confusion or unconsciousness
- * Fainting, which may be the first sign in older adults

If you suspect heatstroke:

- * Move the person out of the sun and into a shady or air-conditioned space.
- * Dial 911 or call for emergency medical assistance.
- * Cool the person by covering him or her with damp sheets or by spraying with cool water. Direct air onto the person with a fan or newspaper.

Hypothermia:

Under most conditions your body maintains a healthy temperature. However, when exposed to cold temperatures or to a cool, damp environment for prolonged periods, your

body's control mechanisms may fail to keep your body temperature normal. When more heat is lost than your body can generate, hypothermia can result.

Wet or damp clothing, an uncovered head and inadequate clothing during cold, winter weather can increase your chances of hypothermia, as can falling into cold water.

Hypothermia is defined as an internal body temperature less than 95 F. Signs and symptoms include:

- * Shivering
- * Slurred speech
- * Abnormally slow breathing
- * Cold, pale skin
- * Loss of coordination
- * Fatigue, lethargy or apathy

Symptoms usually develop slowly. Someone with hypothermia typically experiences gradual loss of mental acuity and physical ability, and so may be unaware of the need for emergency medical treatment.

Older adults, infants, young children and people who are very lean are at particular risk. Other people at higher risk for hypothermia than the general public include those whose judgment may be impaired by mental illness or Alzheimer's disease and people who are intoxicated, homeless or caught in cold weather because their vehicles have broken down. Other conditions that may predispose people to hypothermia are malnutrition, cardiovascular disease and an underactive thyroid (hypothyroidism).

To care for someone with hypothermia:

1. Dial 911 or call for emergency medical assistance. While waiting for help to arrive, monitor the person's breathing. If breathing stops or seems dangerously slow or shallow, begin cardiopulmonary resuscitation (CPR) immediately.
2. Move the person out of the cold. If going indoors isn't possible, protect the person from the wind, cover his or her head, and insulate his or her body from the cold ground.
3. Remove wet clothing. Replace wet things with a warm, dry covering.
4. Don't apply direct heat. Don't use hot water, a heating pad or a heating lamp to warm the victim. Instead, apply warm compresses to the neck, chest wall and groin. Don't attempt to warm the arms and legs. Heat applied to the arms and legs forces cold blood back toward the heart, lungs and brain, causing the core body temperature to drop. This can be fatal.
5. Don't give the person alcohol. Offer warm nonalcoholic drinks, unless the person is vomiting.
6. Don't massage or rub the person. Handle people with hypothermia gently, because they're at risk of cardiac arrest.

Insect bites and stings:

Signs and symptoms of an insect bite result from the injection of venom or other substances into your skin. The venom triggers an allergic reaction. The severity of your reaction depends on your sensitivity to the insect venom or substance.

Most reactions to insect bites are mild, causing little more than an annoying itching or stinging sensation and mild swelling that disappear within a day or so. A delayed reaction may cause fever, hives, painful joints and swollen glands. You might experience both the immediate and the delayed reactions from the same insect bite or sting. Only a small percentage of people develop severe reactions (anaphylaxis) to insect venom. Signs and symptoms of a severe reaction include facial swelling, difficulty breathing and shock.

Bites from bees, wasps, hornets, yellow jackets and fire ants are typically the most troublesome. Bites from mosquitoes, ticks, biting flies and some spiders also can cause reactions, but these are generally milder.

For mild reactions:

- * Move to a safe area to avoid more stings.
- * Scrape or brush off the stinger with a straight-edged object, such as a credit card or the back of a knife. Wash the affected area with soap and water. Don't try to pull out the stinger; doing so may release more venom.
- * To reduce pain and swelling, apply a cold pack or cloth filled with ice.
- * Apply 0.5 percent or 1 percent hydrocortisone cream, calamine lotion or a baking soda paste — with a ratio of 3 teaspoons baking soda to 1 teaspoon water — to the bite or sting several times a day until your symptoms subside.
- * Take an antihistamine containing diphenhydramine (Benadryl, Tylenol Severe Allergy) or chlorpheniramine maleate (Chlor-Trimeton, Teldrin).

Allergic reactions may include mild nausea and intestinal cramps, diarrhea or swelling larger than 2 inches in diameter at the site. See your doctor promptly if you experience any of these signs and symptoms.

For severe reactions:

Severe reactions may progress rapidly. Dial 911 or call for emergency medical assistance if the following signs or symptoms occur:

- * Difficulty breathing
- * Swelling of your lips or throat
- * Faintness
- * Dizziness
- * Confusion
- * Rapid heartbeat
- * Hives

* Nausea, cramps and vomiting

Take these actions immediately while waiting with an affected person for medical help:

1. Check for special medications that the person might be carrying to treat an allergic attack, such as an auto-injector of epinephrine (for example, EpiPen). Administer the drug as directed — usually by pressing the auto-injector against the person's thigh and holding it in place for several seconds. Massage the injection site for 10 seconds to enhance absorption.
2. After administering epinephrine, have the person take an antihistamine pill if he or she is able to do so without choking.
3. Have the person lie still on his or her back with feet higher than the head.
4. Loosen tight clothing and cover the person with a blanket. Don't give anything to drink.
5. If there's vomiting or bleeding from the mouth, turn the person on his or her side to prevent choking.
6. If there are no signs of circulation (breathing, coughing or movement), begin CPR.

If your doctor has prescribed an auto-injector of epinephrine, read the instructions before a problem develops and also have your household members read them.

Poisoning:

Many conditions mimic the signs and symptoms of poisoning, including seizures, alcohol intoxication, stroke and insulin reaction. So look for the signs and symptoms listed below if you suspect poisoning, but check with the Poison Control Center at (800) 222-1222 (in the United States) before giving anything to the affected person.

Signs and symptoms of poisoning:

- * Burns or redness around the mouth and lips, which can result from drinking certain poisons
- * Breath that smells like chemicals, such as gasoline or paint thinner
- * Burns, stains and odors on the person, on his or her clothing or on the furniture, floor, rugs or other objects in the surrounding area
- * Empty medication bottles or scattered pills
- * Vomiting, difficulty breathing, sleepiness, confusion or other unexpected signs

When to call for help:

Call 911 (or your local emergency number) immediately if the person is:

- * Drowsy or unconscious
- * Having difficulty breathing or has stopped breathing
- * Having seizures

If the person seems stable and has no symptoms, but you suspect poisoning, call the Poison Control Center at (800) 222-1222. Provide information about the person's symptoms and, if possible, information about what he or she ingested, how much and when.

What to do while waiting for help:

- * If the person has been exposed to poisonous fumes, such as carbon monoxide, get him or her into fresh air immediately.
- * If the suspected poison is a household cleaner or other chemical, read the label and follow instructions for accidental poisoning. If the product is toxic, the label will likely advise you to call the Poison Control Center at (800) 222-1222. Also call this 800 number if you can't identify the poison, if it's medication or if there are no instructions.
- * Follow treatment directions that are given by the Poison Control Center.
- * If the poison spilled on the person's clothing, skin or eyes, remove the clothing. Flush the skin or eyes with cool or lukewarm water, such as by using a shower for 20 minutes or until help arrives.
- * Take the poison container (or any pill bottles) with you to the hospital.

What NOT to do

Don't administer ipecac syrup or do anything to induce vomiting. In 2003, the American Academy of Pediatrics advised discarding ipecac in the home, saying there's no good evidence of effectiveness and that it can do more harm than good.

Puncture wounds:

A puncture wound doesn't usually cause excessive bleeding. Often the wound seems to close almost instantly. But these features don't mean treatment isn't necessary.

A puncture wound — such as results from stepping on a nail or being stuck with a tack — can be dangerous because of the risk of infection. The object that caused the wound may carry spores of tetanus or other bacteria, especially if the object had been exposed to the soil. Puncture wounds resulting from human or animal bites, including those of domestic dogs and cats, may be especially prone to infection. Puncture wounds on the foot are also more vulnerable to infection.

If the bite was deep enough to draw blood and the bleeding persists, seek medical attention. Otherwise, follow these steps:

1. Stop the bleeding. Minor cuts and scrapes usually stop bleeding on their own. If they don't, apply gentle pressure with a clean cloth or bandage. If bleeding persists — if the blood spurts or continues to flow after several minutes of pressure — seek emergency assistance.

2. Clean the wound. Rinse the wound well with clear water. A tweezers cleaned with alcohol may be used to remove small, superficial particles. If larger debris still remains more deeply embedded in the wound, see your doctor. Thorough wound cleaning reduces the risk of tetanus. To clean the area around the wound, use soap and a clean washcloth.
3. Apply an antibiotic. After you clean the wound, apply a thin layer of an antibiotic cream or ointment (Neosporin, Polysporin) to help keep the surface moist. These products don't make the wound heal faster, but they can discourage infection and allow your body to close the wound more efficiently. Certain ingredients in some ointments can cause a mild rash in some people. If a rash appears, stop using the ointment.
4. Cover the wound. Exposure to air speeds healing, but bandages can help keep the wound clean and keep harmful bacteria out.
5. Change the dressing regularly. Do so at least daily or whenever it becomes wet or dirty. If you're allergic to the adhesive used in most bandages, switch to adhesive-free dressings or sterile gauze and hypoallergenic paper tape, which doesn't cause allergic reactions. These supplies are generally available at pharmacies.
6. Watch for signs of infection. See your doctor if the wound doesn't heal or if you notice any redness, drainage, warmth or swelling.

If the puncture is deep, is in your foot, is contaminated or is the result of an animal or human bite, see your doctor. He or she will evaluate the wound, clean it and, if necessary, close it. If you haven't had a tetanus shot within five years, your doctor may recommend a booster within 48 hours of the injury.

If an animal — especially a stray dog or a wild animal — inflicted the wound, you may have been exposed to rabies. Your doctor may give you antibiotics and suggest initiation of a rabies vaccination series. Report such incidents to county public health officials. If possible, the animal should be confined for 10 days of observation by a veterinarian.

Shock:

Shock may result from trauma, heatstroke, allergic reactions, severe infection, poisoning or other causes. Various signs and symptoms appear in a person experiencing shock:

- * The skin is cool and clammy. It may appear pale or gray.
- * The pulse is weak and rapid. Breathing may be slow and shallow, or hyperventilation (rapid or deep breathing) may occur. Blood pressure is below normal.
- * The eyes lack luster and may seem to stare. Sometimes the pupils are dilated.
- * The person may be conscious or unconscious. If conscious, the person may feel faint or be very weak or confused. Shock sometimes causes a person to become overly excited and anxious.

If you suspect shock, even if the person seems normal after an injury:

1. Dial 911 or call your local emergency number.

2. Have the person lie down on his or her back with feet higher than the head. If raising the legs will cause pain or further injury, keep him or her flat. Keep the person still.
3. Check for signs of circulation (breathing, coughing or movement). If absent, begin CPR.
4. Keep the person warm and comfortable. Loosen belt(s) and tight clothing and cover the person with a blanket. Even if the person complains of thirst, give nothing by mouth.
5. If the person vomits or bleeds from the mouth, turn the person on his or her side to prevent choking.
6. Seek treatment for injuries such as bleeding or broken bones.

Snakebites:

Most snakes aren't poisonous. Some exceptions include the rattlesnake, coral snake, water moccasin and copperhead.

Most poisonous snakes have slitlike eyes. Their heads are triangular, with a depression, or pit, midway between the eyes and nostrils.

Other characteristics are unique to certain poisonous snakes:

- * Rattlesnakes make a rattling sound by shaking the rings at the end of their tail.
- * Water moccasins have a white, cottony lining in their mouth.
- * Coral snakes have red, yellow and black rings along the length of their body.

To reduce your risk of snakebite, avoid picking up or playing with any snake. Most snakes usually avoid people if possible and bite only when threatened or surprised.

If you've experienced a snakebite:

- * Remain calm.
- * Don't try to capture the snake.
- * Immobilize the bitten arm or leg and try to stay as quiet as possible.
- * Remove jewelry, because swelling tends to progress rapidly.
- * Apply a loose splint to reduce movement of the affected area, but make sure it is loose enough that it won't restrict blood flow.
- * Don't use a tourniquet or apply ice.
- * Don't cut the wound or attempt to remove the venom.
- * Seek medical attention as soon as possible, especially if the bitten area changes color, begins to swell or is painful.

Sprain:

Your ligaments are tough, elastic-like bands that attach to your bones and hold your joints in place. A sprain is an injury to a ligament caused by excessive stretching. The ligament can have tears in it, or it can be completely torn apart.

Sprains occur most often in your ankles, knees or the arches of your feet. Sprained ligaments swell rapidly and are painful. Generally the greater the pain, the more severe the injury. For most minor sprains, you can probably treat the injury yourself.

Follow the instructions for P.R.I.C.E.

1. Protect the injured limb from further injury by not using the joint. You can do this using anything from splints to crutches.
2. Rest the injured limb. But don't avoid all activity. Even with an ankle sprain, you can usually still exercise other muscles to prevent deconditioning. For example, you can use an exercise bicycle, working both your arms and the uninjured leg while resting the injured ankle on another part of the bike. That way you still get three-limb exercise to keep up your cardiovascular conditioning.
3. Ice the area. Using a cold pack, a slush bath or a compression sleeve filled with cold water will limit swelling after an injury. Try to apply ice as soon as possible after the injury. If you use ice, be careful not to use it for too long, as this could cause tissue damage.
4. Compress the area with an elastic wrap or bandage. Compressive wraps or sleeves made from elastic or neoprene are best.
5. Elevate the injured limb whenever possible to help prevent or limit swelling.

Call for emergency medical assistance if:

- * You heard a popping sound when your joint was injured, or you can't use the joint. This may mean the ligament was completely torn apart. On the way to the doctor, apply a cold pack.
- * You have a fever, and the area is red and hot. You may have an infection.
- * You have a severe sprain. Inadequate or delayed treatment may cause long-term joint instability or chronic pain.
- * You aren't improving after the first two or three days.

Sunburn:

Signs and symptoms of sunburn usually appear within a few hours of exposure, bringing pain, redness, swelling and occasional blistering. Because exposure often affects a large area of your skin, sunburn can cause headache, fever and fatigue.

If you have a sunburn:

- * Take a cool bath or shower.
- * Apply an aloe vera lotion several times a day.

- * Leave blisters intact to speed healing and avoid infection.
- * If needed, take an over-the-counter pain reliever such as aspirin, ibuprofen (Advil, Motrin, others), naproxen (Aleve) or acetaminophen (Tylenol, others). Don't give children or teenagers aspirin. It may cause Reye's syndrome, a rare, but potentially fatal, disease.

If your sunburn begins to blister or if you experience immediate complications, such as rash, itching or fever, see your doctor.

Toothache:

Tooth decay is the primary cause of toothaches for most children and adults. Bacteria that live in your mouth thrive on the sugars and starches in the food you eat. These bacteria form a sticky plaque that clings to the surface of your teeth.

Acids produced by the bacteria in plaque can eat through the hard, white coating on the outside of your teeth (enamel), creating a cavity. The first sign of decay may be a sensation of pain when you eat something sweet, very cold or very hot. A toothache often indicates that your dentist will need to work on your teeth.

Until you can see your dentist, try these self-care tips for a toothache:

- * Use dental floss to remove any food particles wedged between your teeth.
- * Take an over-the-counter (OTC) pain reliever to dull the ache.
- * Apply an OTC antiseptic containing benzocaine directly to the irritated tooth and gum to temporarily relieve pain. Direct application of oil of cloves (eugenol) also may help. Don't place aspirin or another painkiller directly against your gums, as it may burn your gum tissue.

Swelling, pain when you bite, a foul-tasting discharge and redness indicate infection. See your dentist as soon as possible.

Call your dentist if:

- * The pain persists for more than a day or two
- * You have fever with the toothache
- * You have trouble breathing or swallowing

Source:

The Mayo Clinic

<http://www.mayoclinic.com>