

Unit 6: First Aid: Emergency Care

Introduction

Every day thousands and thousands of people suffer from a life-threatening injury or illness. Life-threatening injuries or illnesses are **medical emergencies**. In *medical emergencies*, victims must be given medical treatment immediately, or they may die or suffer serious, permanent health problems.

Most of these injuries or illnesses happen outside a hospital or where there is no medical professional to provide immediate treatment. In those cases, victims may not survive if the people who first reach the scene of an accident or illness cannot give **first aid**.

First aid is exactly what the phrase describes. It is the help, or *aid*, that is given *first*. Those persons who arrive first at the scene of a medical emergency will only be able to give first aid if they know a few important techniques. Some of the most important techniques are **rescue breathing, cardiopulmonary resuscitation (CPR), abdominal thrust** (also known as the *Heimlich maneuver*), treatment for severe bleeding, and treatment for **shock**.



Reading descriptions of these techniques is only the first step in being able to use them.

All of us should take a first aid and CPR course. Your local American Red Cross agency and American Heart Association offer training courses.

Learning life-saving techniques and treatments will help both victims and those persons who find themselves at the scene of a medical emergency. Victims will receive the immediate attention they need. Persons who give the treatment will feel the joy and satisfaction of knowing they helped others survive. Imagine finding yourself in the middle of a medical emergency and not knowing what to do. Learn to use your body and mind to save a life.

Responding to an Accident: Look First; Act Second



Imagine that you are driving down an empty highway. As you come over a rise, you discover a car accident. A few people have been thrown from their cars and lie on the side of the road. A few other people are limping around, but they are bleeding and confused. A few others seem unhurt and may not have been involved in the accident. What will you do?

If you are like most people, your heart will begin to beat very fast, and your adrenaline will start pumping. You will begin to feel your body ready itself to respond to this medical emergency. You can train yourself to stay calm and think before you act. To help those who are injured, you will need to keep your head and follow a plan.

Three Basic Steps in an Emergency

- CHECK the scene and the victim.
- CALL 9-1-1 or your local emergency number.
- CARE for the victim.



Look: Collect Information

First, you will want to *look* and survey the accident scene. Don't be reckless and just rush in to danger. Ask yourself: Is this scene safe for me to enter? Are there any dangers present? Is there a puddle of gasoline leaking from a car or truck? Can you smell gas? Has a power line fallen? Have chemicals been spilled? If you find the scene is not dangerous to yourself, enter the scene carefully.

Next you will begin to *collect information*. This information will be relayed over the phone to the **emergency medical service (EMS)**. EMS is the team of people who responds to emergencies. Whenever you see an ambulance speeding by, you are looking at one part of EMS. In most areas, the phone

number for EMS is 9-1-1. In some areas, however, EMS is contacted by dialing “0” and asking the operator to make the connection. Find out your local EMS number and commit it to memory.



Responding to an Accident

1. Look and survey the accident scene—is the scene safe for me to enter?
2. Collect information—how many victims; how did it happen?
3. Do not move the person unless it is necessary to prevent further injury—moving a victim could cause paralysis.
4. Send for help—go for help yourself only if no one else is around.
5. Treat life-threatening conditions—breathing stopped, heartbeat stopped, severe bleeding—with first aid.
6. Remain with victim until medical help arrives.

If there are any bystanders, ask them what has happened. Ask one of the bystanders to call EMS. Ask another bystander to alert and direct traffic. If you are alone, you should begin your survey of the scene before going in search of a telephone. Ask one of the victims what has happened. “Are there victims trapped or hidden? How many victims are there?”

Do not move any of the victims. If they have neck or spinal injuries, moving them could cause paralysis or even death. However, you may find that you must move a victim to save his life. For example, he may be floating in water or trapped near fire. In these cases, move his body in a way that will put the least strain on the neck or spine. Position yourself at the head end of the person. Use the victim’s shirt, sweater, or jacket. Gather the victim’s clothes tightly behind the neck. Support the victim’s head with the clothes and your hands. Then drag the victim to safety by

pulling the clothes. Keep his head and body in a straight line. If you cannot use the victim’s clothes, place your hands under the shoulders and rest the victim’s head on

your arms. Pull the victim in a straight line. Always pull the victim the shortest distance needed to escape the danger.



When you come upon a victim, always speak to him. Tap the victim's shoulder. Do not shake the victim. You may further injure the victim's head, neck, or spine. In a loud voice, ask: "Are you OK?" A person who is conscious will answer you. Anyone who can speak has *not* stopped breathing. If he can answer, he is **conscious**. Use a positive and reassuring tone of voice. How a victim feels about his injuries can make a difference in whether he survives. If a victim loses hope, his body may not work as hard as it can to survive.

Tell a victim that you are there to help him. Ask him for any information about the accident. For example, ask him the following questions: "Can you tell me what has happened? Are you hurt? Where does it hurt?" And ask him *not to move* until help arrives. You will want to pass the answers to these questions on to the EMS team. If the victim's answers do not make sense, he may have suffered a head injury. If he tells you he was thrown from a car and landed on his head, you can assume he has a head and neck injury. Continue asking the person questions. If the person stops answering, she may have lost consciousness.

If at any time the victim does not answer questions or appears **unconscious**, shout "Help! Call 9-1-1!" Try to get the attention of anyone nearby who may be able to help you and who can call for an EMS team. Whenever you find a person who is unconscious, use the **A-B-C-S checklist** to be sure his injury is not life-threatening.



In many accidents, more than one person has been hurt. In such a case, you must decide who needs your help most. Use the *A-B-C-S checklist* to decide who has suffered a life-threatening injury. Help those victims first.

A B C S Checklist	
(A)irway	Is the victim's airway blocked?
(B)reathing	Has the victim's breathing stopped?
(C)irculation	Has the victim's heartbeat stopped?
(S)evere Bleeding	Is blood pulsing or gushing from a victim's wound?

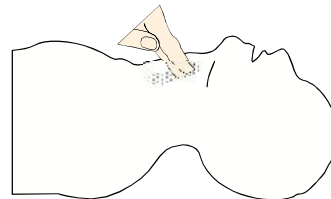
LOOK

LISTEN

FEEL

To check for a *blocked airway* and *breathing*, place your ear and cheek close to the victim's mouth and nose. Use your cheek to *feel* for air. Use your ear to *listen* for breathing. And use your eyes to *see* if the person's chest rises and falls. A good way to remember this is the phrase "look, listen, and feel."

To check for **circulation** or tell if the person's heart is beating, take the **carotid pulse**. The *carotid pulse* is located on either side of the neck, just below the ear. To find the carotid artery, place the tips of your first two fingers into the groove on either side of the neck by the windpipe, or *trachea*. Then slide your fingers until they are about one inch below the top of the jaw bone. Press gently on only *one* side until you feel regular pressure just below the skin. Check the pulse for at least five seconds but *not* for more than 10 seconds.

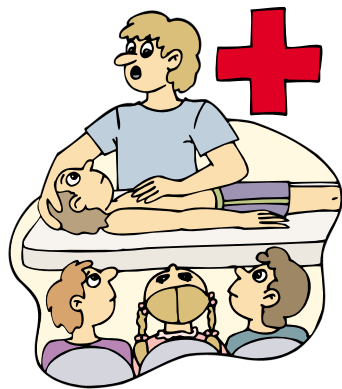


checking the *carotid pulse*

Severe bleeding will usually be evident. However, if a victim is bundled in clothes or otherwise covered, you should check for bleeding.

You may come upon an accident scene but find no bodies or find no one who can tell you what has happened. Use the clues you find to figure out what has happened. Is there an overturned car near a body of water? If so,

begin to check the water for victims. Is there an overturned car near an incline? If so, look down the incline to see if someone was thrown from the car. If you find a young child who is unconscious near a power line, assume the child has been electrocuted.



You can get training by taking courses in first aid and CPR, such as those offered by the American Red Cross or the American Heart Association.

If the victim can talk, tell him or her you want to help and ask for *permission* to begin first aid. Tell the victim if you have had training in first aid. Remember, you can get training by taking courses in first aid and CPR, such as those offered by the American Red Cross or the American Heart Association. This unit, however, does not count as training—it is only a description of first aid techniques and CPR.

If any of the victims *cannot breath, has no pulse, or is bleeding severely* and you are alone, you should give them aid before stopping to phone for help. Once you have given aid or if the victims do not need immediate attention, find a phone and call the EMS team.

Act: Call for Help

The phone call you or someone else makes to the EMS team can be the difference between saving lives and losing lives. The call should quickly give the person on the other end *all* the necessary information. The information should be relayed in a specific order to the *dispatcher*, or the person who answers calls for the EMS team. Commit this order to memory.

1. **Tell the dispatcher the *location of the accident*.** Be as specific as possible. Name the nearest cross streets. For example, you might say: "I'm near the intersection of Gaines Street and Macomb Street." If you are using a pay phone, the cross streets or the address are often listed on the phone.
2. **Tell the dispatcher the *telephone number from which you are calling*.** Simply say: "The number here is" Read the number directly from the telephone.
3. **Tell the dispatcher *what has happened*.** Be as specific as possible. Explain what you know about *how the accident happened*. Tell the dispatcher *how many victims* there are and *how badly each is hurt*.

For example, you might say: "There has been a car accident. One car hit another from the side. One car has flipped over and is lying on its roof. There are four victims. One victim is trapped under the flipped car. He can breathe, but he cannot move his legs. One victim was thrown from the flipped car. She is unconscious but breathing. The two victims from the other car, a man and a woman, are bleeding severely, but they are conscious. One of the cars is leaking gasoline onto the street." From this information, a dispatcher can decide how many ambulances to send. She can also decide whether a fire truck or other emergency vehicle is needed.



In another situation, you might say: “An elderly man appears to have had a heart attack. He has fallen and hit his head. He is not breathing and has no pulse. He is pale.”

The dispatcher now has a good picture of the medical emergency.

4. **Tell the dispatcher *what is being done for the victims.*** For example, you might say: “I have the two victims who are bleeding applying pressure to their wounds. The bleeding has slowed down. I have not been trained in first aid. What should I do?”

In the case of the heart attack victim, you might say: “I have laid the victim on his back and covered him with a blanket. What should I do?”

The dispatcher now has a good picture of what is being done for the victims. She can direct you to do more or to leave the victims until the EMS team arrives.

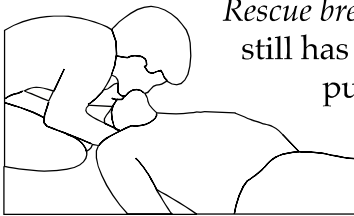
5. **Wait for the dispatcher to hang up.** *Never hang up first.* The dispatcher may have important questions or directions for you.

This phone call has prepared the EMS team for what it will find once it arrives at the accident scene. The EMS team will arrive on the scene prepared to jump into action. In a medical emergency, minutes or even seconds can be the difference between life and death.

Rescue Breathing: The Breath of Life

Accidents or illnesses can cause a person to stop breathing or to be unable to inhale enough oxygen to stay alive. These accidents and illnesses include the following:

- heart disease or heart attack
- poisonous gases
- suffocation
- shock or severe bleeding
- strangulation
- stroke
- electrocution
- drowning
- overdose of drugs
- airway blocked by food, an object, or the tongue



Rescue breathing helps a victim who is not breathing but still has a pulse. Rescue breathing is a technique used to push air in and out of the lungs of a person who has stopped breathing. When you perform rescue breathing, you breathe air from your own lungs into the victim's lungs.

Rescue breathing can keep a person alive.

Without air, a person can suffer brain damage in as little as four minutes. A person can die from lack of air in as little as five minutes. No person can survive longer than *10 minutes* without air. However, as long as a victim's heart is beating and he is suffering from no other life-threatening injuries, rescue breathing can keep a person alive.

Whenever possible, use a breathing barrier, such as a special protective face shield or resuscitation mask to avoid direct contact with body fluids. However, do not delay care if one is not available or you do not know how to use it.

The First Step: Positioning the Victim

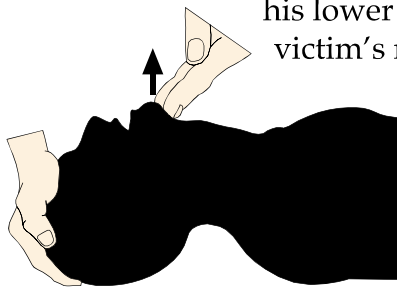
If the victim is not breathing, perform either *rescue breathing*, *CPR*, or the *abdominal thrust* (also known as the *Heimlich maneuver*). *CPR* and the abdominal thrust will be described later in this unit.

Rescue breathing is much easier to give if the victim is lying on his back. If you are fairly sure the victim collapsed and was not injured, turn him onto his back if he is not already. If, however, the victim has suffered an accident, check to see if he is breathing. If he is breathing, don't move him onto his back.

If the victim is not breathing, you must be very careful as you roll him onto his back. Your goal is to roll the victim as a unit, all at once, without twisting any body parts. First, straighten his arms and legs so they won't get in the way. Then roll the victim toward you. Support his head and neck with one hand, and pull with your other hand just under the victim's arm. **Remember:** Keep the victim's body from twisting so you do not damage the neck or spine.

The Second Step: Opening the Airway

Once the victim is on his back, his *airway* must be opened. Kneel down at the side of the victim's head. Then place your palm on the victim's forehead and apply backward pressure. Place the fingertips of your other hand under the jaw near his chin. Then support and lift his lower jaw with your fingertips, but do not close the victim's mouth. If necessary, pull the lower lip down slightly with your thumb to keep the mouth open. When you are done, his head should be tilted back, and the chin should point straight up. This maneuver will open the victim's mouth and airway, and move the tongue away from the back of throat.



Do not use this *head-tilt chin-lift maneuver* if you suspect a head, neck, or back injury. For a suspected head, neck, or back injury, the *jaw-thrust maneuver* is used to open the airway on an adult or on a child. Try to open the airway by lifting the chin *without* tilting the head.

There are four key points to remember for opening the victim's airway.

1. Place one of your palms across the victim's forehead.
2. Using your other hand, place your fingertips under the bony part of the jaw near the chin.
3. Support and lift the jaw with your fingertips, but avoid closing the victim's mouth.
4. If necessary, pull the lower lip down slightly with your thumb to keep the mouth open.

The Third Step: Mouth-to-Mouth Breathing

Continue holding the victim's head tilted back. Put your ear just above his mouth and look at his chest. Look, listen, and feel for any signs of breathing. Do this for three to five seconds. If he is breathing, you will see his chest rise and fall, hear air at his mouth and nose, or feel air on your cheek.

If the victim is not breathing, you should begin filling his lungs with air. Use the hand you have on his forehead to pinch his nose shut. This will keep the air you blow into his mouth from escaping through his nose. Take a deep breath and open your mouth wide. Cover the victim's mouth with your own mouth. Make a tight seal. Give the victim two full slow, gentle breaths. Each breath should last about two seconds.



Pause and take a breath between rescue breaths given to the victim. Remove your mouth from the victim's mouth between breaths long enough to allow his lungs to *deflate*, or to breathe out the air. Each rescue breath should cause the victim's chest to clearly rise.

If air will not go into his lungs when you give two full, slow, gentle breaths, retilt the head and try again. You may not have tilted the head back far enough, the tongue may be blocking the airway, or an unseen object could be blocking the airway.

Alternate Third Step: Mouth-to-Nose Breathing

On some victims you will not be able to make a tight seal over their mouth. When you blow air into their mouth, the air may leak out. Or, the victim's mouth or jaw may be injured. In some cases, the victim's jaw may be shut tight, and you cannot open his mouth.

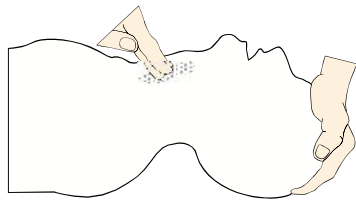
If you cannot make a tight mouth-to-mouth seal, give mouth-to-*nose* breathing. Tilt the victim's head back. Close his mouth by pushing on the *chin*. *Do not push on his throat*. Blow two full, slow, gentle breaths into his nose. Each breath should last about two seconds. Pause and take a breath between rescue breaths given to the victim. Remove your mouth from the victim's nose between breaths long enough to allow his lungs to deflate. Each rescue breath should cause the victim's chest to clearly rise.

The Fourth Step: Look, Listen, and Feel for Signs of Circulation

After you have given two full breaths, check the victim for signs of circulation. Signs of circulation include normal breathing, coughing or movement in response to rescue breaths, and a pulse. If the person has a pulse, his heart is still beating. If he does not have a pulse, his heart has stopped and needs to be started again.

Signs of Circulation
<ul style="list-style-type: none">• normal breathing• coughing or movement in response to rescue breaths• a pulse
Remember: Do not spend more than 10 seconds doing the check.

Check the *carotid pulse*. It is located on either side of the neck by the windpipe, or *trachea*. Place the hand you used to pinch the victim's nose closed back on his forehead. Place the fingertips of the other hand on either side of his neck, just below the ear. Then slide the fingertips of your first two fingers into the groove on either side of the neck by the windpipe. Press gently on only *one* side until you feel regular pressure just below the skin. Check the pulse for at least five seconds but for *not* more than 10 seconds. (Try to find your own carotid pulse right now.)



If the victim is not breathing and *does not have a pulse*, you should begin giving CPR. (If you have *not* been trained in CPR, continue giving rescue breathing.) If, however, the victim is not breathing but *has a pulse*, you should continue giving rescue breathing.

The Fifth Step: Continuing Rescue Breathing

To continue rescue breathing, use the following steps:

1. Make sure the victim's head is still tilted back or tilt his head back again. (See "The Second Step: Opening the Airway.")
2. Pinch the victim's nose shut again.
3. Take a deep breath, open your mouth wide, and make a tight seal over the victim's mouth, or nose if you can't seal the mouth.

4. Blow to fill up the victim's lungs. Watch to be sure his chest is rising.
5. Listen and feel for air. Watch to be sure his lungs are deflating, or breathing out the air.

Do these five steps every five seconds as you continue rescue breathing. It may help you to count to yourself as you do each step: "one-one-thousand ... two-one-thousand ... three-one-thousand ... four-one-thousand ... five-one-thousand ..." and breathe into the victim on the five-one-thousand count.

Stop after one minute or 12 breaths to check for signs of circulation. Look, listen, and feel. *Do not spend more than 10 seconds doing the check.* Check every few minutes after the first minute for signs of circulation. If at any time you cannot find a pulse, give the victim CPR if you know it.

Troubleshooting: Avoid Getting Air in the Stomach

Sometimes when a victim is given rescue breathing, his stomach will fill with air. When this happens, his lungs cannot fill with air. To avoid filling the victim's stomach with air, remember the following key points:

- Keep the victim's head tilted all the way back.
- Blow just hard enough to make his chest rise.
- Pause between breaths long enough to let his lungs empty and for you to get another breath.

Troubleshooting: Vomiting

If the victim should vomit, carefully turn his head *and* body to the side. Then quickly wipe the vomit out of the victim's mouth and continue where you left off.

Follow-Up Care for Rescue Breathing

Continue rescue breathing until an EMS team or professional health-care person arrives. You may need to continue rescue breathing for a long time. Some victims can be kept alive by rescue breathing but will not begin to breathe on their own without medical treatment.

If a person begins to breathe after you've given rescue breathing, stay with him. He may stop breathing, and you may need to again begin rescue breathing.



The Special Case: Infants and Children Rescue Breathing



Most techniques used to give rescue breathing to adults are also used for infants and children.

Infants, or babies, are under one year of age. *Children* are between one and eight years of age. Most of the techniques you use to give rescue breathing to adults are also used for infants and children. However, you will need to make small changes in the technique because the bodies of infants and children are smaller.

The First Step: Check for Foreign Material in Mouth. Hold the baby securely in crook of your arm, face up. If you see foreign material, use your finger to remove it. Do not blindly sweep your finger in the baby's mouth.

The Second Step: Opening the Airway. Tilt the baby's or child's head back gently but *not* as far as you would an adult's head.

The Third Step: Mouth-to-Mouth-and-Nose Breathing. Put your mouth over the mouth *and* nose of a baby or child. Use a slow, gentle breath on a baby or child. Each breath should last about 1½ seconds. Pause and take a breath between rescue breaths given to the victim. Each rescue breath should cause the victim's chest to clearly rise.

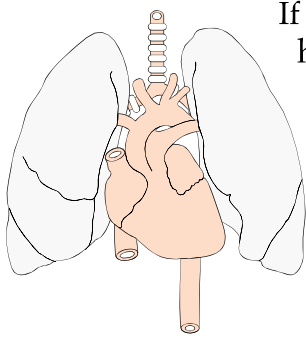
The Fourth Step: Look, Listen, and Feel for Signs of Circulation. Check for the signs of circulation: normal breathing, coughing or movement in response to rescue breathing, and a pulse. Do not spend more than 10

seconds doing the check. Check the pulse of a baby or child by placing your fingertips on the inside of the upper arm. This pulse is called the *brachial pulse*. Place the tips of two fingers halfway between the elbow and the shoulder. Place your thumb on the opposite side of the arm and squeeze gently.

If a baby or child is not breathing but does have a pulse, give one slow, gentle breath every three seconds for an infant or baby and every four seconds for a child.

If the victim is not breathing and does not have a pulse, he needs CPR.

CPR: Keeping the Lungs *and* Heart Working



*Cardio refers to the heart;
pulmonary refers to the lungs.*

If a heart attack, illness, or injury makes a person's heart stop beating, he or she will not continue to *breathe*. If this happens, a person must be given cardiopulmonary resuscitation (CPR). CPR may be the victim's only chance for survival until professional medical care arrives. *Cardio* refers to the heart; *pulmonary* refers to the lungs. CPR is a combination of rescue breathing and **chest compression**. Rescue breathing provides the lungs oxygen. Chest compression keeps the blood flowing through the body. When you give CPR, you breathe oxygen and circulate blood for a person whose heart and lungs have stopped working.

CPR has saved thousands and thousands of lives. When you learn CPR, you are doing your community a great service. You become someone who can save a life in an emergency. Call your local American Red Cross agency or American Heart Association to sign up for a CPR course.

Recognizing a Heart Attack

A heart attack will often cause a person's heart to stop beating. The instant you think someone is suffering a heart attack, call an EMS team.

The most common signal that someone is having a heart attack is a feeling of uncomfortable squeezing or pain in the center of the chest. Sometimes

the pain seems to be indigestion. The pain may travel out from the center of the chest to the shoulders, arms, neck, and jaw. Other signals include sweating, nausea, shortness of breath, and feeling weak.



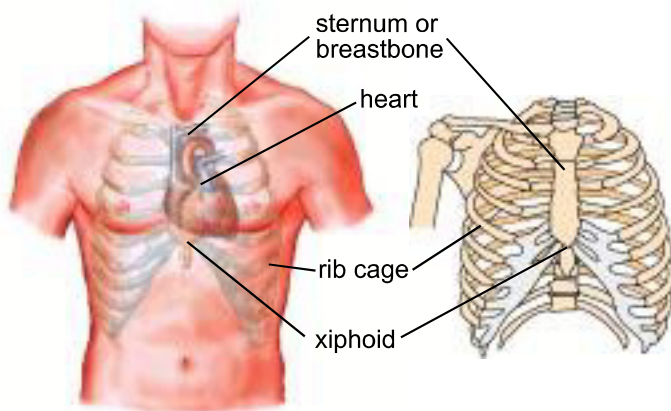
Steps for Treating a Heart Attack

1. The victim should sit or lie down with his head propped up.
2. If the victim is conscious, administer any heart medication he may take.
3. Send for an ambulance immediately. Be sure to tell them the victim has had a heart attack so the EMS team will have oxygen with them.
4. Stay with the victim in case he stops breathing and rescue breathing is necessary.
5. If the victim goes into cardiac arrest, perform CPR.
6. Treat the victim for shock by elevating the feet and covering him with a blanket if he begins getting cold.

Chest Compression: Pumping Blood through the Body

The heart is a large muscle that works like a pump. It pumps blood through the body by closing and opening. When the heart stops beating, it no longer pumps blood. *Chest compression* forces the heart to open and close.

The heart lies between the *sternum*, or breastbone, and backbone. The sternum runs down the front of the chest. When you give chest compressions, you push on the lower half of the sternum. This push squeezes the heart between the sternum and the backbone. Blood is then pushed through the body.



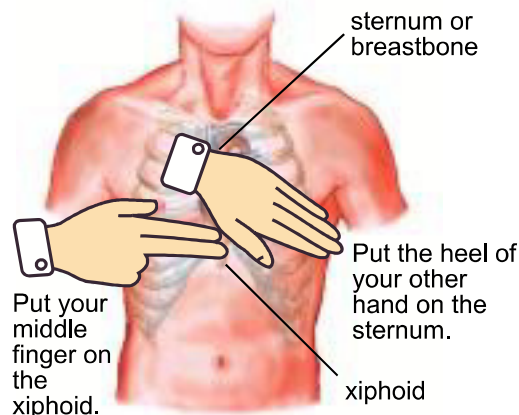
It is very important to find the right spot on the sternum to push. Find your own sternum—it is the bone in the center of your chest to which your ribs attach. Then trace it down to its tip. The tip of your sternum is called the *xiphoid*.



Another way to find the xiphoid is to locate the lower edge of the rib cage. With your middle and index fingers, trace the edge of the ribs up to the notch where the ribs meet the sternum. This notch or center point is the xiphoid.

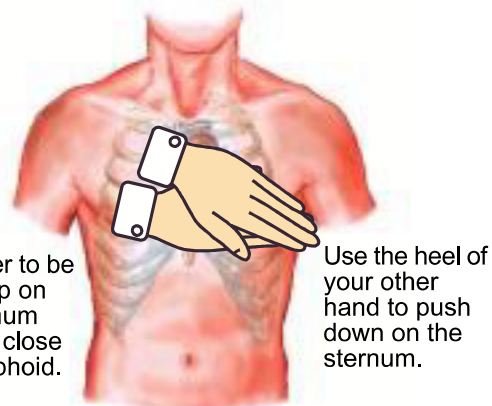
Once you've found the victim's xiphoid, put your middle finger on it. Then rest

your index next to your middle finger. Your index finger should now be closer to the victim's heart than your middle finger is. Put the heel of your other hand on the sternum next to your two fingers. You will use the heel of your other hand to push down on the sternum. If, by accident, you push down on the xiphoid, it may damage the victim's liver. It is better to be too far up on the sternum than too close to the xiphoid.



Next, put your other hand on top of the hand now resting on the sternum. Keep the fingers of both hands off the victim's chest. You are more likely to break the ribs if you push with fingers. Use only the heel of your hand to push. Either lace the fingers on both hands

It is better to be too far up on the sternum than too close to the xiphoid.



together, hold them pointing up in the air, or grasp your wrist with your other hand. Choose the method that is most comfortable for you and helps to keep your fingers off the victim's ribs.

The victim should be on a firm surface before receiving CPR. If the victim is on a soft bed or in the water, your chest compressions will not squeeze the heart between the sternum and backbone. If the victim is on a soft surface and cannot be moved, place a board or other firm surface beneath the victim's back.

The victim's head should be placed at the level of his heart or slightly lower than his heart. If his head is higher than his heart, blood will not flow to the brain.

Now you are ready to follow the steps for chest compression.

1. On your knees, bend over the victim. Do not sit on your heels. Spread your knees about shoulder-width apart. Shift your shoulders so they are directly over the sternum and your hands. Push straight down! Use your body weight. Keep your elbows straight. If you do not push straight down, the victim's heart will not be squeezed between his sternum and backbone.
2. As you push, bend from your hips, not your knees. This will help you push straight down. If you find yourself rocking back and forth on your knees, you are not pushing straight down.
3. Be sure to push straight down with your fingers pointing directly away from you. If your hand is at an angle, you will push on the victim's ribs rather than his sternum. This may injure the victim and will not squeeze his heart.
4. Compress the chest of an adult 1½ inches to 2 inches. Push smoothly. Do not jerk your weight. Do not stop at the top or at the bottom of your push.
5. Compress the chest at a rate of 100 compressions per minute. To help you give compressions at the proper rate, count aloud: "One-and-two-and-three-and-four-and" Each count should be a little faster than a second. Practice counting using a watch with a second hand.

Combining Chest Compression *and* Rescue Breathing: 15-2 ... 15-2

Remember: CPR uses chest compression to keep the blood flowing. Use rescue breathing to provide the lungs with oxygen.

During CPR you will give 15 chest compressions—at the rate of 100 per minute. After 15 chest compressions, give the victim two full, slow, gentle breaths. Each breath should last two seconds.



Keep repeating this pattern: 15 chest compressions followed by two slow, gentle breaths. Remember the CPR numbers—15-2 ... 15-2 ... 15-2 ... 15-2 ... Each time you begin chest compressions, measure up from the xiphoid to the correct spot on the sternum. It is extremely important to locate the correct hand position each time you begin chest compressions.

The Goal: Reviving the Pulse and Breathing

Don't lose sight of your goal. You are trying to help the victim regain his breathing and pulse. When you come upon an unconscious person who is not breathing, give him two full, slow, gentle breaths. Then check for signs of circulation: normal breathing, coughing or movement in response to rescue breaths, and a pulse. Spend between five and 10 seconds checking for signs of circulation and a pulse on his neck. *Do not spend more than 10 seconds doing the check.*

- If you find a pulse and the victim begins breathing, stop rescue breathing. Continue to check his breathing and pulse often.
- If you find a pulse but no breathing, continue to give rescue breathing. Continue to check for a pulse often.
- If you find no pulse, begin CPR—rescue breathing with chest compressions. Call for help. If someone responds, have the person call for an EMS team.
- Once you have started CPR, check the pulse and breathing after the first minute. Then check it every few minutes after that. Always check for pulse and breathing *after you have given the two breaths*. Do not stop CPR for more than five seconds.

- If you find no pulse or breathing, continue CPR. To continue CPR give two breaths first and then 15 chest compressions.
- If you find a pulse but no breathing, stop chest compressions but continue to give rescue breathing. Continue checking for pulse and breathing.
- If you find a pulse and breathing, stop CPR. Continue checking for pulse and breathing. Either one may stop at any time. Get the person to a hospital or medical professional quickly.

If a second rescuer arrives on the scene. If you have been performing CPR by yourself and another person arrives, you should do the following:

1. Check to be sure an EMS team has been called.
2. Ask whether the other person knows CPR.
3. Finish the 15 chest compressions and two breaths you are giving.
4. If you need rest and the other person knows CPR, ask him or her to take over.
5. While the other person performs CPR, continue checking the victim for a pulse.

If you arrive on a scene where someone is giving CPR.

1. Call an EMS team if one has not been called.
2. Tell the person whether or not you know CPR and can take over.
3. If she asks you to take over, wait until she has completed chest compressions and the two breaths.
4. Check for pulse and breathing.
5. If there is no pulse or breathing, begin CPR.

Training in CPR: Responsible Citizenship

What you have just read is a description of CPR. It will prepare you to take a course in CPR. What you have just read, however, does not make you trained in CPR. Only a course given by the American Red Cross, the American Heart Association, or some other certified agency can train you.

Learning how to give CPR is a part of responsible *citizenship*. We owe it to each other to learn the techniques and skills that may save a life. CPR training does not take very long. Taking CPR training is a great gift we can give to our communities. It is a way of showing that we care about others.

The Special Case: Giving CPR to Infants and Children

Giving Chest Compression to an Infant or Baby, from Birth to Under One Year of Age. To find the right spot on an infant for chest compressions, first place your index finger across the chest so that it touches both of the infant's nipples. Below your index finger, place your middle and ring fingers. Then compress with your middle and rings fingers. Be sure not to push too closely to the *xiphoid* or tip of the *sternum*. The sternum is the bone on the center of the chest to which the ribs are attached. (See pages 247-248.)

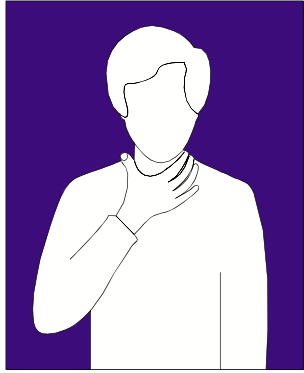
- Compress an infant's or baby's chest $\frac{1}{2}$ inch to 1 inch.
- Push smoothly and gently at a rate of 100 times a minute, or about two times a second.
- Give five chest compressions followed by one breath: 5-1 ... 5-1 ... 5-1 ...
- Pause 1-1½ seconds after each breath for the infant or baby to exhale.

Giving Chest Compression to a Child between One and Eight Years of Age. Compress a child's chest with the heel of *one* hand. Use the same hand position as you would on an adult. Compress at a rate of 100 times per minute or about two times a second. Compress a child's chest a little more than you would a baby's chest—about 1 inch to 1½ inches.

- Give five chest compressions followed by one breath, just as you would for an infant or baby.
- Pause 1-1½ seconds after each breath, as you would for an infant or baby.

The Abdominal Thrust: Opening a Blocked Airway

A person may be unable to breathe because food or an object is blocking



Grasping the throat is the universal signal that a person is choking.

his airway. Some of the signs that a person is having trouble breathing are gasping, choking, coughing, wheezing, and grasping the throat. Grasping the throat is the universal signal that a person is choking. Use it if you ever find yourself unable to breathe.

If you think someone cannot breathe, ask him: “Are you choking?” A person who has a completely blocked airway cannot breathe, cough, or speak. He will only be able to answer by nodding his head “yes.” If you get no response at all, assume that the person *is* choking.

If the airway is *almost* completely blocked, you may hear a high-pitched noise when the person inhales. Or you may hear a very weak cough. First aid is the same for a completely blocked airway and an almost completely blocked airway.

If a person is coughing forcefully, you should let him alone. Encourage the person to continue coughing. Do *not* slap the person on the back. Strong coughing is the best method for getting rid of food or an object stuck in an airway. In addition, if a person *can talk*, do not try to remove an object from the airway.

Helping the Conscious Choking Victim

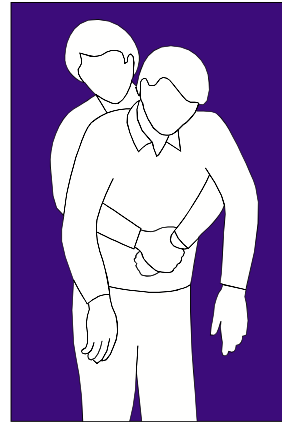
If the person cannot speak, cough, or breathe, have someone call for an EMS team. Then begin using the *abdominal thrust*. The abdominal thrust is a technique used to force food or objects out of an airway. People have used the abdominal thrust thousands of times to free blocked airways.



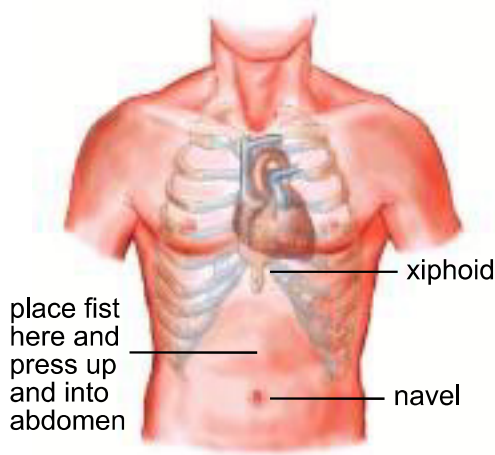
abdominal thrust

The abdominal thrust is also known as the *Heimlich maneuver*. The *abdomen* refers to the stomach. In this technique, you will perform a thrust on the abdomen. The air trapped below the food or object will then force or pop it out of the airway.

Begin by standing behind the victim. Try to have the victim stand with his feet about shoulder-width apart. While standing behind the person, place one of your feet between his two feet and place your other foot slightly behind you to brace yourself. Then hug the victim by putting your arms under his arms.



The abdominal thrust is also known as the Heimlich maneuver.



You want to give the abdominal thrust at a point on the abdomen slightly above the navel, or belly button, and well below the tip of the xiphoid. Remember that pressing on the xiphoid can injure the victim.

Make your hand into a fist. Then put your thumb side against the victim's abdomen. Grasp your fist with your other hand. Then press it up and into the victim's abdomen with a *quick upward thrust*.

Repeat quick upward thrusts until the food or object pops out or until the victim becomes unconscious.

What to Do If the Victim Becomes Unconscious

If the victim is choking and becomes unconscious, gently lay him on the floor. Position him on his back with his face up.

Perform a *finger sweep*. During a finger sweep you will sweep your fingers through his mouth to check for food or an object. The finger sweep must be done carefully. If you just stick your fingers into his mouth, you may push the food or object further into his airway.

Grasp the victim's tongue and lower jaw between your thumb and fingers. Pull his jaw and tongue down towards his chest. With the index finger of your other hand, follow down along the inside of one cheek. Slide your finger until you touch the base of his tongue or his throat. Then sweep across from one side to the other side. Use a hooking action to loosen and remove any object. Do not attempt to pull out any lodged item unless it sweeps out freely.

If the finger sweep does not remove the object and the airway remains blocked, begin rescue breathing. If the breaths won't go in, begin abdominal thrusts again. However, you will perform these thrusts while the victim continues to lie on the ground. Straddle the victim's thighs. Then put the heel of one hand on the victim's abdomen—on the same spot at which you gave abdominal thrusts when the victim was standing. Put your other hand on top of the hand already positioned on his abdomen. Press on the abdomen with a quick upward thrust. Give five quick thrusts. Make each thrust separate from the others.

After giving the five thrusts, do the following:

1. Move back to the victim's head and perform another finger sweep.
2. Give two full breaths.
3. If air still does not go in, perform another six to 10 abdominal thrusts.
4. Repeat steps 1-3 until you are successful at removing the object and the victim begins breathing or until EMS arrive.

What to Do If Your Own Airway Becomes Blocked

If your own airway becomes blocked by food or an object, first signal to the people around you that you are choking. Use the universal signal—grasp your throat with one or both of your hands.

If you are alone, give yourself abdominal thrusts. Press your fist slightly above your navel and give quick, inward and upward thrusts. You can also give yourself thrusts by leaning over any firm object, such as the back of a chair or a porch railing.

What If a Choking Person Is Pregnant or Too Large?

If a pregnant woman begins choking or if the person is too large for you to reach around his waist, use *chest thrusts*. To perform chest thrusts, do the following:

1. Reach around the person's chest from behind, with your arms directly under the victim's armpits.
2. Place the thumb side of your fist on the middle of the sternum at about the level of the person's armpits.
3. Grasp your fist with your other hand and pull straight back with quick thrusts.



Severe Bleeding: Life-Threatening Loss of Blood

Severe bleeding must be treated immediately. A victim can die from blood loss in a few minutes or even a few seconds. Severe bleeding is defined as blood that is spurting or gushing from a wound. You may think that a person has lost a lot of blood when this isn't the case. Even a small amount of blood can be shocking and may look like much more than it really is.



Apply continuous and direct pressure to the bleeding wound.

Before treating severe bleeding, put on a pair of rubber gloves, if they are available. Whenever possible, do not come into contact with another person's blood. After you've treated a bloody wound, wash your hands with soap and warm water.

To stop severe bleeding, place a thick pad or a sterile dressing on the wound. Then apply continuous and direct pressure—press hard on the wound and do not stop pressing to check the wound.

If there are no broken bones near the wound, elevate the wound. Raising it higher than the heart will slow down the bleeding.

After the bleeding stops, dress the wound with an antiseptic and a sterile gauze. Seek medical attention immediately.



Steps for Stopping Bleeding

1. Cover your hands with something the blood will not soak through, such as rubber gloves. Whenever possible, do not come into contact with another person's blood.
2. Cover wound with a thick pad or sterile dressing.
3. Apply continuous and direct pressure—press hard on the wound and do not stop pressing to check the wound.
4. If there are no broken bones, elevate the wound higher than the heart to slow down the bleeding.
5. After bleeding stops, dress the wound with an antiseptic and sterile gauze and wrap a pressure bandage tightly over the dressing.
6. Seek medical attention immediately.

Shock: The Body's Response to Severe Injury or Illness

In some cases, after an injury or illness, a person will go into shock. When a person experiences shock, her blood begins to flow so slowly that it threatens her life. The body's vital *organs* such as the brain, heart, and lungs cannot survive for long without if blood is not circulating.

Always consider shock when a person has suffered an injury or illness. Shock can be caused by bleeding, poisoning, insect bites and stings, snakebites, electrical shock, burns, heart attacks, severe injuries, and even psychological trauma. A person may go into shock after seeing an accident or someone die. Shock can sometimes be difficult to recognize. If there is any chance a person has gone into shock, treat the person immediately and call an EMS team.

The Signs of Shock: Changes in Behavior and the Body

Shock has many signs. During shock, a person may behave in a confused way. Her pulse or breathing may be very rapid or very slow. Her arms and legs may tremble or be very weak. Her skin may become cool and moist. Her lips or skin may become blue or pale, or her pupils may become enlarged.



Steps for Treating Shock

1. The victim should lie on her back with feet elevated eight to 12 inches to help the blood flow to the important organs.
2. If the victim begins vomiting, place her on her side so her airway does not become blocked.
3. If the victim has trouble breathing, place her in a semi-sitting position.
4. Keep the victim from getting cold by putting blankets underneath and around her—be sure to not overheat the victim.
5. If victim is outside on a hot day, put some shade over her and loosen her clothing.
6. Seek medical attention immediately.

Treating Shock: Improving Blood Flow and Maintaining Temperature

To treat shock, you want to help the victim's blood flow to the important organs—brain, heart, and lungs. If you do not think the victim has head or neck injuries, put the victim on her back. Raise her feet off the ground from eight to 12 inches. Use any available object to rest her legs on, such as a blanket, piece of wood, box, or books.

If you think or know the victim has a head or neck injury, keep her lying flat on her back and wait for an EMS team. Do not move the victim unless there is immediate danger, such as a fire, electrical wires, or poisonous gas.

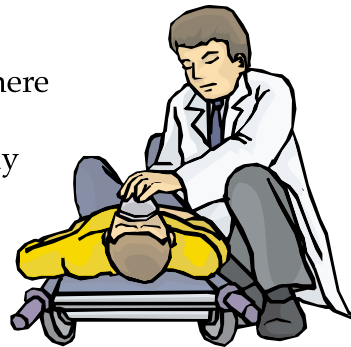
Sometimes a victim in shock will begin vomiting. If this happens, place the victim on her side so her airway does not become blocked.

If the victim has trouble breathing, place her in a semi-sitting position, using boxes, pillows, or blankets to raise her head and back. This position will ease her breathing.

When a victim is in shock, her temperature may drop. A lower temperature than normal slows the flow of blood. Keep the victim from getting cold by putting blankets underneath and around her. However, do not overheat the victim. Too much heat will draw blood away from the vital organs. If the victim is outside on a hot day, put some shade over her and loosen her clothing.

Summary

First aid is the help that is given first in a *medical emergency*. Most injuries and illnesses happen where there is no health-care professional to provide immediate treatment. In these cases, a victim may not survive if the people who first reach the scene of an accident or illness cannot give first aid until an *emergency medical service (EMS)* team arrives.



First aid is the help that is given first in a medical emergency.

Some of the most important first aid techniques are *rescue breathing*, *cardiopulmonary resuscitation (CPR)*, *abdominal thrust*, treatment for severe bleeding, and treatment for *shock*. Your local American Red Cross agency or American Heart Association offer training in CPR and first aid.

When you find a victim who is injured, ill, or unconscious, use the *A-B-C-S checklist*. (A) Is his airway blocked? (B) Has his breathing stopped? (C) Has his heartbeat and circulation stopped? (S) Is he bleeding severely from a wound?

If the victim has a blocked airway or is giving the universal signal for choking, use abdominal thrusts to free his airway. If the victim has stopped breathing, begin giving rescue breathing. Rescue breathing will

supply the victim's lungs with oxygen and may help the victim begin breathing on his own. If the victim has no heartbeat or pulse, begin giving CPR. CPR combines rescue breathing and *chest compressions*. CPR is used to keep the blood circulating in a person whose heart has stopped working. If the victim is bleeding severely, apply direct pressure to the wound. Always check for shock in a person who has been injured, who is suffering from a sudden illness, or who has experienced a psychological trauma.