

Part 2: Medical Emergencies

Some conditions are life threatening. Acting quickly can help someone stay alive.

At the most basic level, people need to breathe and keep blood pumping inside their bodies. With a little bit of knowledge, first aid rescuers often can help people do just that.

In this part, we look at first aid actions for medical emergencies, including breathing problems, severe choking, heart attack, and stroke.

Your actions in the first few minutes when you see the signs of any of these conditions could help save a life!

Topics Covered

Topics covered in this part are

- Breathing problems
- Choking
- Allergic reactions
- Heart attack
- Fainting
- Diabetes and low blood sugar
- Stroke
- Seizure

As you read and study this part, pay particular attention to this skill that you will be asked to demonstrate during the course:

- Using an epinephrine pen

Breathing Problems

Someone may develop mild or severe blockage of the air passages. Someone having a heart attack, having a stroke, or experiencing certain injuries also may have breathing problems.

Asthma

Asthma is a disease of the air passages. A person who is having an asthma attack will have trouble breathing.

Signs of Breathing Problems

You can tell if someone is having trouble breathing if the person

- Is breathing very fast or very slowly
- Is having trouble with every breath
- Has noisy breathing—you hear a sound or whistle as the air enters or leaves the lungs
- Can only make sounds or speak no more than a few words at a time in between breaths although the person is trying to say more

Someone with a medical condition involving breathing problems, such as asthma, usually knows about the condition and what to do. He often carries inhaler medicine, which can help him breathe more easily within minutes of using it.

At times, the person can have such a hard time breathing that he needs help using his inhaler. For this reason, you should be ready to assemble the inhaler and help him use it.

Assemble and Use an Inhaler

Inhalers are made up of 2 parts: the medicine canister and the mouthpiece. A spacer can be attached that makes it easier for the person with the breathing problem to inhale all the medicine (Figure 9).

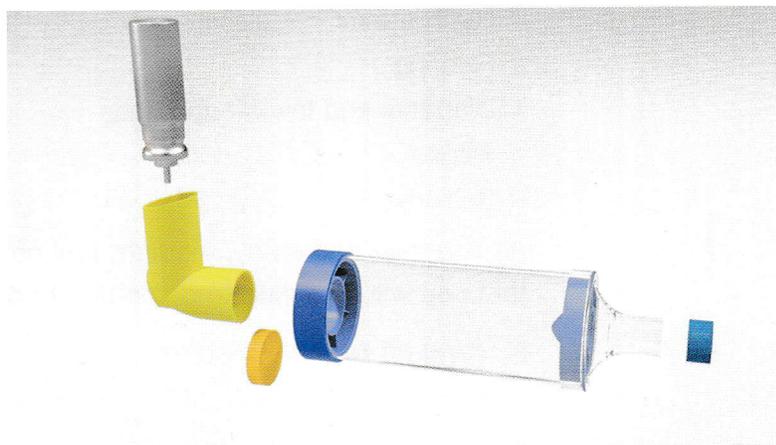


Figure 9. Parts of an inhaler are the medicine canister, mouthpiece, and spacer.

Actions for Assembling and Using an Inhaler

Follow these steps to assemble and use an inhaler:

Actions for Assembling and Using an Inhaler

To assemble the inhaler:

- First, shake the medicine.
- Put the medicine canister into the mouthpiece.
- Remove the cap from the mouthpiece.
- Attach a spacer if there is one available and if you know how.

To help someone use an inhaler, ask him to do the following:

- Tilt his head back slightly and breathe out slowly.
- Place the inhaler or spacer in his mouth (Figure 10).
- Push down on the medicine canister.
- Breathe in very deeply and slowly.
- Hold his breath for about 10 seconds.
- Then, breathe out slowly.



Figure 10. Using an inhaler with a spacer.

Actions for Helping Someone With Breathing Problems

If someone is having breathing problems, follow these first aid action steps to help him:

Actions for Helping Someone With Breathing Problems

- Make sure the scene is safe.
- Ask the person if he needs help. If he does, ask if he has medicine.
- If he has medicine, get it for him. Then, assemble and help him use the inhaler.

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Actions for Helping Someone With Breathing Problems

- Phone 9-1-1 if
 - The person has no medicine
 - The person does not get better after using his medicine
 - The person's breathing gets worse
 - The person has trouble speaking
 - The person becomes unresponsive
- Stay with the person until someone with more advanced training arrives and takes over.

Choking in an Adult, Child, or Infant

What You Will Learn

In this section, you will learn to assess whether someone has a mild or severe block in the airway and how to take action to help.

Overview

Choking is when food or another object gets stuck in the airway in the throat. The object can block the airway and stop air from getting to the lungs.

In adults, choking is often caused by food. In children, choking can be caused by food or another object.

Mild vs Severe Airway Block

Assess Choking and Take Action

The block in the airway that causes choking can be either mild or severe. If the airway block is severe, act quickly. Get the object out so that the person can breathe.

Here is how to assess if someone has a mild or severe airway block and what you should do:

	If Someone	Then Take Action
Mild airway block	<ul style="list-style-type: none">• Can talk or make sounds• Can cough loudly	<ul style="list-style-type: none">• Stand by and let the person cough.• If you're worried about the person's breathing, phone 9-1-1.
Severe airway block	<ul style="list-style-type: none">• Cannot breathe, talk, or make sounds <i>or</i>• Has a cough that has no sound <i>or</i>• Makes the choking sign	<ul style="list-style-type: none">• Act quickly.• Follow the steps to help an adult, child, or infant with a severe airway block.

The Choking Sign

If someone is choking, he might use the choking sign, which is holding the neck with one or both hands (Figure 11).

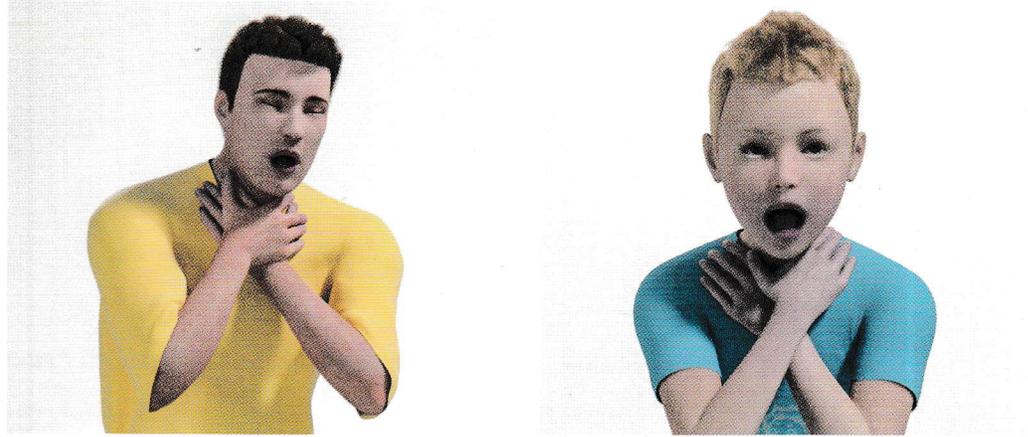


Figure 11. The choking sign: holding the neck with one or both hands.

How to Help an Adult, Child, or Infant Who Has a Severe Airway Block

When an adult or child has a severe airway block, give thrusts slightly above the belly button. These thrusts are called *abdominal thrusts* or the *Heimlich maneuver*. Like a cough, each thrust pushes air from the lungs. This can help move or remove an object that is blocking the airway.

Any person who has received abdominal thrusts for choking should see a healthcare provider as soon as possible.

How to Help a Choking Adult or Child With a Severe Airway Block

Follow these steps to help a choking adult or child who has a severe airway block:

How to Help a Choking Adult or Child With a Severe Airway Block

- If you think someone is choking, ask, “Are you choking? Can I help you?”
- If the person nods yes, tell him you are going to help.
- Stand firmly or kneel behind the person (depending on your size and the size of the person choking). Wrap your arms around the person’s waist so that your fists are in front.
- Make a fist with one hand.
- Put the thumb side of your fist slightly above the belly button and well below the breastbone.
- Grasp the fist with your other hand and give quick upward thrusts into the abdomen (Figure 12).
- Give thrusts until the object is forced out and the person can breathe, cough, or speak, or until he becomes unresponsive.



Figure 12. Giving abdominal thrusts (Heimlich maneuver).

How to Help a Choking Pregnant Woman or Large Adult or Child With a Severe Airway Block

If the person who has a severe airway block is pregnant or very large, give chest thrusts instead of abdominal thrusts.

Follow these steps to help a pregnant woman or large adult or child who has a severe airway block:

How to Help a Choking Pregnant Woman or Large Adult or Child With a Severe Airway Block

- If you can't wrap your arms fully around the waist, give thrusts on the chest (chest thrusts) instead of on the abdomen.
- Put your arms under the armpits and your hands on the lower half of the breastbone.
- Pull straight back to give chest thrusts (Figure 13).



Figure 13. Giving chest thrusts to a choking pregnant woman or large adult or child.

How to Help a Choking Infant With a Severe Airway Block

When an infant has a severe airway block, use back slaps and chest thrusts to help remove the object. *Give only back slaps and chest thrusts to an infant who is choking.* Giving thrusts to an infant's abdomen can cause serious harm.

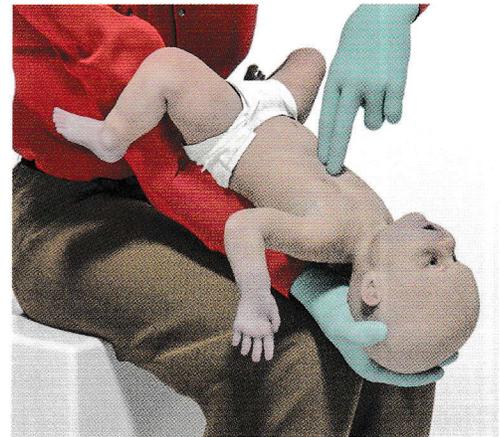
Follow these steps to help an infant who has a severe airway block:

How to Help a Choking Infant With a Severe Airway Block

- Hold the infant facedown on your forearm. Support the infant's head and jaw with your hand.
- Give up to 5 back slaps with the heel of your other hand, between the infant's shoulder blades (Figure 14A).
- If the object does not come out after 5 back slaps, turn the infant onto his back, supporting the head.
- Give up to 5 chest thrusts, using 2 fingers of your other hand to push on the chest in the same place you push during CPR (Figure 14B).
- Repeat giving 5 back slaps and 5 chest thrusts until the infant can breathe, cough, or cry, or until he becomes unresponsive.



A



B

Figure 14. How to help an infant who has a severe airway block. **A**, Back slaps. **B**, Chest thrusts.

Help a Choking Adult, Child, or Infant Who Becomes Unresponsive

If you can't remove the object blocking the airway, the person will become unresponsive. Always give CPR to anyone who is unresponsive and not breathing normally or only gasping. Giving both compressions and breaths is very important for someone with a severe airway block who becomes unresponsive.

You will learn how to provide CPR and use an AED in the "CPR and AED" part of this workbook.

Remember

Unresponsive
+
No breathing
or only gasping
= Provide
CPR

How to Help a Choking Adult Who Becomes Unresponsive

Follow these steps to help an adult with a severe airway block who becomes unresponsive:

How to Help a Choking Adult Who Becomes Unresponsive

- Shout for help.
- Phone or have someone else phone 9-1-1 and get an AED. Put the phone on speaker mode so that you can talk to the dispatcher.
- Provide CPR, starting with compressions.
- After each set of 30 compressions, open the airway to give breaths.
- Look in the mouth. If you see an object in the mouth, take it out.
- Give 2 breaths and then repeat 30 compressions.
- Continue CPR until
 - The person moves, speaks, blinks, or otherwise reacts
 - Someone with more advanced training arrives and takes over

Remember

Every time you open the airway to give breaths, look for the object in the back of the throat. If you see an object in the mouth, take it out.

Do not perform a blind finger sweep. This could cause the object to get lodged further back in the airway.

How to Help a Choking Child or Infant Who Becomes Unresponsive

A child or infant who has a severe airway block and becomes unresponsive needs immediate CPR. If you are alone without a cell phone, it is important to provide 5 sets of 30 compressions and 2 breaths first. Then, leave the child to phone 9-1-1 and get an AED if one is available.

Follow these steps to help a child or infant with a severe airway block who becomes unresponsive:

How to Help a Choking Child or Infant Who Becomes Unresponsive

- Shout for help. Make sure the child or infant is lying on his back on a firm, flat surface.
- Begin CPR, phone 9-1-1, and get an AED.

If someone comes to help and a cell phone is available

- Ask the person to phone 9-1-1 on the cell phone, put it on speaker mode, and go get an AED while you begin CPR.

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How to Help a Choking Child or Infant Who Becomes Unresponsive

If someone comes to help and a cell phone is not available

- Ask the person to phone 9-1-1 and go get an AED while you begin CPR.

If you are alone and do have a cell phone or nearby phone

- Phone 9-1-1 and put the phone on speaker mode while you begin CPR.
- Give 5 sets of 30 compressions and 2 breaths.
- Go get an AED.*
- Return to the child or infant and continue CPR.

If you are alone and don't have a cell phone

- Give 5 sets of 30 compressions and 2 breaths.
- Phone 9-1-1 and get an AED.*
- Return to the child or infant and continue CPR.

*If the small child or infant isn't injured and you're alone, after 5 sets of 30 compressions and 2 breaths, you may carry him with you to phone 9-1-1 and get an AED.

Provide CPR.

- Give sets of 30 compressions and 2 breaths.
- After each set of 30 compressions, open the airway to give breaths.
- Look in the mouth (Figure 15). If you see an object in the mouth, take it out.
- Give 2 breaths.

Continue CPR and looking in the mouth after each set of compressions until

- The child or infant moves, cries, speaks, blinks, or otherwise reacts
- Someone with more advanced training arrives and takes over

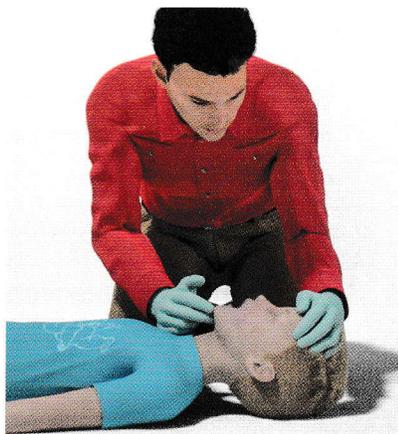


Figure 15. Look in the mouth for objects.

Allergic Reactions

Allergies are quite common. A severe allergic reaction can quickly turn into a medical emergency.

Some things that can cause a severe allergic reaction are

- Eggs
- Peanuts
- Chocolate
- Some medications
- Insect bites and stings, especially bee stings

Mild vs Severe Allergic Reaction

Allergic reactions can be mild or severe. However, some reactions that seem mild can become severe within minutes. Here are some signs of mild and severe allergic reactions:

Mild Allergic Reaction	Severe Allergic Reaction
<ul style="list-style-type: none">• A stuffy nose, sneezing, and itching around the eyes	<ul style="list-style-type: none">• Trouble breathing
<ul style="list-style-type: none">• Itching of the skin	<ul style="list-style-type: none">• Swelling of the tongue and face
<ul style="list-style-type: none">• Raised, red rash on the skin (hives)	<ul style="list-style-type: none">• Signs of shock

Epinephrine Pen for a Severe Allergic Reaction

Epinephrine is a drug that can stop a severe allergic reaction. It is available by prescription in a self-injectable pen device called an *epinephrine pen*. People who are known to have severe allergic reactions are encouraged to carry epinephrine pens with them at all times.

There are 2 types of epinephrine pens—spring activated and electronic. They are different for children and adults. So, be sure you are using the correct prescribed device.

If a person has an epinephrine pen, he will generally know how and when to use it. You may help give the person the injection if you have been trained and your state and employer allow it. The epinephrine injection is given in the side of the thigh.

How to Use an Epinephrine Pen

A severe allergic reaction can be life threatening. Follow these steps to help someone with signs of a severe allergic reaction use his epinephrine pen:

How to Use an Epinephrine Pen

- Follow the instructions on the pen. Make sure you are holding the pen in your fist without touching either end because the needle comes out of one end. You may give the injection through clothes or on bare skin.
- Take off the safety cap (Figure 16A).
- Press the tip of the injector hard against the side of the person's thigh, about halfway between the hip and the knee (Figure 16B).
- Hold the pen in place for about 10 seconds.
- Pull the pen straight out, making sure you don't put your fingers over the end that has been pressed against the person's thigh.
- Either the person getting the injection or the person giving the injection should rub the injection spot for about 10 seconds.
- Note the time of the injection. Give the pen to the emergency responders for proper disposal.
- Call 9-1-1 if the person doesn't get better or if there is a delay greater than 10 minutes for advanced help to arrive. Consider giving a second dose, if available.



A



B

Figure 16. Using an epinephrine pen. **A**, Take off the safety cap. **B**, Press the tip of the injector hard against the side of the person's thigh, about halfway between the hip and the knee.

Dispose of the Epinephrine Pen Correctly

It's important to dispose of needles correctly so that no one gets stuck. Follow your company's sharps disposal policy. If you don't know what to do, give the needle to someone with more advanced training.

If possible, save a sample of what caused the reaction.

Heart disease is the leading cause of death in the world.

If someone has signs of a possible heart attack, you must act and phone 9-1-1 right away—even if the person doesn't want you to. The first minutes of a heart attack are the most important. That's when a person is likely to get worse or even die. Also, many of the treatments for heart attack will be most successful if they are given quickly.

If a person says she has chest pain, make sure she stays calm and rests. It's best if the person doesn't drive herself to the hospital. Stay with her until someone with more advanced training arrives and takes over.

Life Is Why



Education Is Why

Heart disease is the No. 1 cause of death in the world—with more than 17 million deaths per year. That's why the AHA is continuously transforming our training solutions as science evolves, and driving awareness of how everyone can help save a life.

Difference Between Heart Attack and Cardiac Arrest

People often use the terms *sudden cardiac arrest* and *heart attack* to mean the same thing—but they are not the same.

- *Sudden cardiac arrest* is a “rhythm” problem. It occurs when the heart malfunctions and stops beating unexpectedly.
- A *heart attack* is a “clot” problem. It occurs when a clot blocks blood flow.

Sudden Cardiac Arrest

Sudden cardiac arrest results from an abnormal heart rhythm. This abnormal rhythm causes the heart to quiver so that it can no longer pump blood to the brain, lungs, and other organs.

Within seconds, the person becomes unresponsive and is not breathing or is only gasping. Death occurs within minutes if the victim does not receive immediate lifesaving treatment.

Heart Attack

A heart attack occurs when blood flow to part of the heart muscle is blocked by a clot. Typically, during a heart attack, the heart continues to pump blood.

A person having a heart attack may have discomfort or pain in the chest. There may be an uncomfortable feeling in one or both arms, the neck, the jaw, or the back between the shoulder blades.

The longer the person with a heart attack goes without treatment, the greater the possible damage to the heart muscle. Occasionally, the damaged heart muscle triggers an abnormal rhythm that can lead to sudden cardiac arrest.

Signs of a Heart Attack

Typical signs of a heart attack include the following:

Chest discomfort	Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes or that goes away and comes back. It can feel like uncomfortable pressure, squeezing, fullness, or pain.
Discomfort in other areas of the body	Discomfort also may appear in other areas of the upper body. Symptoms can include pain or discomfort in one or both arms, the back, neck, jaw, or stomach.
Other signs	Other signs of a heart attack are shortness of breath (with or without chest discomfort), breaking out in a cold sweat, nausea, or light-headedness.

Less Typical Signs in Women, the Elderly, and People With Diabetes

Women, the elderly, and people with diabetes are more likely to have less typical signs of a heart attack. These may include

- An ache in the chest, heartburn, or indigestion
- An uncomfortable feeling in the back, jaw, neck, or shoulder
- Shortness of breath
- Nausea or vomiting

Admitting Discomfort

Many people won't admit that their discomfort may be caused by a heart attack. People often say the following:

- "I'm too healthy."
- "I don't want to bother the doctor."
- "I don't want to frighten my spouse."
- "I'll feel silly if it isn't a heart attack."

If you suspect someone is having a heart attack, act quickly and phone 9-1-1 right away. Don't hesitate, even if the person doesn't want to admit discomfort.

Actions to Help Someone With Signs of a Heart Attack

Follow these first aid action steps if someone has any signs of a possible heart attack:

Actions to Help Someone With Signs of a Heart Attack

- Make sure the person stays calm and rests. Phone or have someone phone 9-1-1.
- Ask someone to get the first aid kit and AED if available.
- If the person has no allergy to aspirin, no serious bleeding, and no signs of a stroke, have the person chew and swallow 1 adult or 2 low-dose aspirins.
- If the person becomes unresponsive, be prepared to give CPR.

Fainting

Fainting is a short period of time, usually less than a minute, when a person briefly stops responding and then seems fine. Often, a person who faints gets dizzy and then becomes unresponsive.

Fainting may occur when someone

- Stands without moving for a long time, especially if it's hot
- Has a heart condition
- Suddenly stands after squatting or bending down
- Receives bad news

Actions to Help a Person Who May Faint

Follow these first aid action steps if a person is dizzy but still responds:

Actions to Help a Person Who May Faint

- Help the person lie flat on the floor.
- Phone 9-1-1 if the person doesn't improve or becomes unresponsive.
- If the person becomes unresponsive, give CPR.

Actions to Help a Person Who Has Fainted and Is Responsive

Follow these first aid action steps if a person faints and then starts to respond:

Actions to Help a Person Who Has Fainted and Is Responsive

- Ask the person to continue to lie flat on the floor until he can sit up and feels normal.
- If the person fell, look for injuries caused by the fall.
- Phone 9-1-1.

Diabetes and Low Blood Sugar

Diabetes is a disease that affects the levels of sugar in the blood. Too much or too little sugar causes problems. Some people with diabetes take medication, such as insulin, to maintain their sugar levels.

Low blood sugar can occur if a person with diabetes has not eaten or is vomiting, has not eaten enough food for the level of activity, or has injected too much insulin.

Signs of Low Blood Sugar in a Person With Diabetes

If the person's blood sugar does get too low, behavior can change. Signs of low blood sugar can come on quickly. When a person with diabetes has low blood sugar, the person may become

- Irritable or confused
- Hungry, thirsty, or weak
- Sleepy
- Sweaty

In some cases, the person might even have a seizure.

Actions to Take for a Responsive Person Who Has Low Blood Sugar

Follow these first aid action steps if the person is responsive and shows signs of low blood sugar:

Actions to Take for a Responsive Person Who Has Low Blood Sugar

If the person can sit up and swallow

- Ask the person to eat or drink something with sugar that can rapidly restore blood glucose levels. These items include glucose tablets, orange juice, soft chewy candy, jelly beans, fruit leather, or whole milk.

If the person can't sit up or swallow, don't force her.

- Have the person sit quietly or lie down.
- If the person does not improve within 15 minutes, phone or have someone phone 9-1-1.

Stroke

Stroke is another medical emergency for which you may need to use your first aid skills. Strokes occur when blood stops flowing to a part of the brain. This can happen if a blood vessel in the brain is blocked or leaks.

Many people can be given treatments in the first hours after a stroke that can reduce the damage and improve recovery. Therefore, it's important to recognize the signs of stroke quickly and get immediate medical care.

Warning Signs of Stroke

You can use the FAST method to recognize and remember the warning signs of stroke. *FAST* stands for face, arms, speech, and time.

F	Face drooping: Does one side of the face droop or is it numb?
A	Arm weakness: Is one arm weak or numb?
S	Speech difficulty: Is speech slurred?
T	Time to phone 9-1-1: If someone shows any of these symptoms, phone 9-1-1 immediately.

Actions to Help a Person Who May Have Had a Stroke

Follow these first aid action steps if you think someone is having a stroke:

Actions to Help a Person Who May Have Had a Stroke

- Phone or have someone phone 9-1-1 and get the first aid kit and AED.
- Note the time when the stroke signs first appeared.
- Remain with the person until someone with more advanced training arrives and takes over.
- If the person becomes unresponsive and is not breathing normally or only gasping, give CPR.

Seizure

A seizure is abnormal electrical activity in the brain. Most seizures stop within a few minutes and are often caused by a medical condition called epilepsy. Seizures also can be caused by head injury, low blood sugar, heat-related injury, poisoning, or sudden cardiac arrest.

Signs of a Seizure

Signs of a seizure may differ. Some people who are having a seizure may

- Lose muscle control
- Have jerking movement of the arms, legs, and sometimes other parts of the body
- Fall to the ground
- Stop responding

However, not all seizures look like this. Other people might become unresponsive and have a glassy-eyed stare.

During the seizure, a person may bite her tongue, cheek, or mouth. You can give first aid for that injury after the seizure is over. After a seizure, it isn't unusual for the person to be slow to respond or confused, or even to fall asleep.

Caution

The most important first aid action for a person having a seizure is to protect the person from injury.

There are some myths about what you should do to help someone who is having a seizure. Some of these can actually harm a person instead of helping. The correct information for how to help a person who is having a seizure is discussed in this workbook and during the course.

Actions to Help a Person Who Is Having a Seizure

Follow these first aid action steps to help someone during a seizure:

Actions to Help a Person Who Is Having a Seizure

- Move furniture or other objects out of the way.
- Place a small pad or towel under the person's head.
- Phone 9-1-1 and get the first aid kit.

Actions to Help a Person After a Seizure

Follow these first aid action steps to help someone after a seizure:

Actions to Help a Person After a Seizure

- Quickly check to see if the person is responsive and breathing.
- Stay with the person until someone with more advanced training arrives and takes over.
 - If the person is having trouble breathing because of vomiting or fluids in her mouth, roll the person onto her side.
 - If she is unresponsive and is not breathing normally or only gasping, give CPR.

Bleeding From the Mouth

If the person has bitten her tongue, cheek, or mouth and is bleeding, give first aid after the seizure. See “Bleeding From the Mouth” in “Part 4: Injury Emergencies.”

Medical Emergencies: Review Questions

Question	Your Notes
<p>1. When giving abdominal thrusts to an adult who is choking, you should</p> <ul style="list-style-type: none">a. Place your hands near the throatb. Place your hands near the left side of the lower abdomenc. Put the thumb side of your fist slightly above her navel (belly button) and well below the breastbone	
<p>2. Signs of a severe allergic reaction include trouble breathing, swelling of the face and tongue, and the person may stop responding.</p> <p style="text-align: center;">True False</p>	
<p>3. A person with a _____ is usually awake and can talk but may have an uncomfortable feeling, such as pain or pressure, in the chest.</p> <ul style="list-style-type: none">a. Strokeb. Seizurec. Heart attack	
<p>4. The warning signs of _____ include sudden numbness or weakness of the face, arm, or leg, especially on one side of the body.</p> <ul style="list-style-type: none">a. Faintingb. Strokec. Heart attackd. Seizure	
<p>5. If someone with low blood sugar is responding and can sit up and swallow, give her something that contains sugar to eat or drink.</p> <p style="text-align: center;">True False</p>	

Answers: 1. c, 2. True, 3. c, 4. b, 5. True