

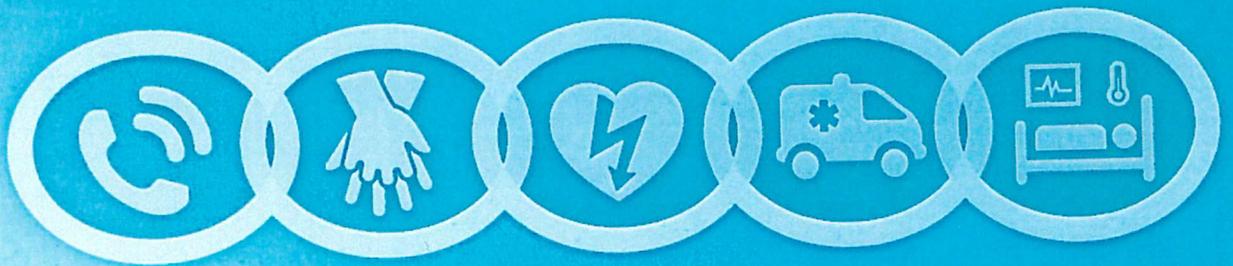
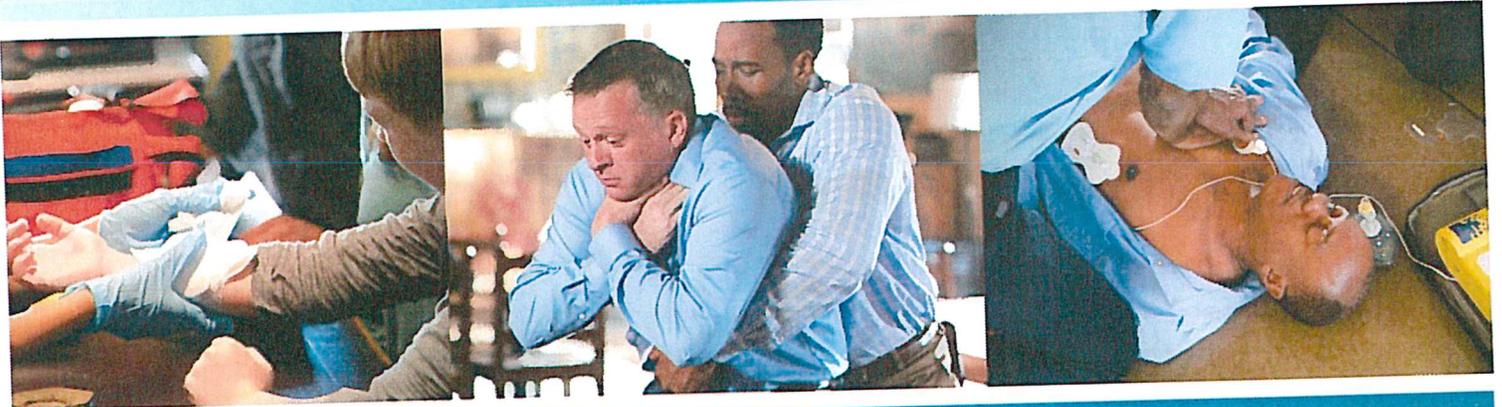


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FIRST AID CPR AED



STUDENT WORKBOOK

Part 1: First Aid Basics

Topics Covered

Topics covered in this part are

- Duties, roles, and responsibilities of the first aid rescuer
- Steps of first aid

As you read and study this part, pay particular attention to these 2 skills that you will be asked to demonstrate during the course:

- Removing protective gloves
- Finding the problem

Duties, Roles, and Responsibilities of First Aid Rescuers

Some people may be required to perform first aid while working. For example, law enforcement officers, firefighters, flight attendants, lifeguards, and park rangers may have a duty to give first aid when they are working. When off duty, they can choose whether or not to provide first aid.

It's important for you to know that you may learn private things about the person you are helping. Keep private information private. Share information about an ill or injured person only with emergency responders when they take over.

Your Role in the EMS System

Your role as a first aid rescuer is to

- Recognize that an emergency exists
- Make sure the scene is safe for you and the ill or injured person
- Phone 9-1-1
- Provide care until someone with more advanced training arrives and takes over

When you phone 9-1-1, you activate the network of emergency responders, or emergency medical services (EMS). Getting help on the way quickly in an emergency can save a life.

Deciding to Provide First Aid

Providing first aid may be part of your job description. If so, you must help while you're working. However, when you're off duty, you can choose whether or not to provide first aid.

Asking to Give First Aid

When you come upon an ill or injured person and the person responds, introduce yourself as a first aid provider before you touch the person. Ask if you may help. Anyone has the right to refuse.

Asking to Give First Aid

- When you come upon an ill or injured person and the person responds, introduce yourself as a first aid provider before you touch the person.
- Ask if you may help.
 - If the person agrees, give first aid.
 - If the person refuses, phone 9-1-1 and stay with him until help arrives.
 - If the person is confused or can't answer, assume the person wants help.

Maintaining the First Aid Kit

One of the responsibilities of a first aid provider is to maintain the first aid kit. It's important that the first aid kit contain the supplies you'll need for most common emergencies.

See "Part 6: First Aid Resources" for a list of what is usually kept in a kit. Your kit may be different, however, so please check the first aid kit against the list to see if there are additional items you need to add. Be sure to restock it after any emergency.

Maintaining the First Aid Kit

- Keep the supplies in a sturdy, watertight container that is clearly labeled.
- Know where the first aid kit is.
- Replace what you use so that the kit will be ready for the next emergency.
- Check the kit at the beginning of each work period for expired supplies and to make sure it is complete and ready for an emergency.

Good Samaritan Laws

If you have questions about whether or not it's legal to provide someone first aid, you should know that all states have Good Samaritan laws. These laws protect anyone who provides first aid. They differ from state to state, so be sure to check the laws in your area.

Key Steps of First Aid

For every emergency, follow the key steps of first aid:

- Assess the scene.
- Phone for help.
- Take universal precautions.
- Find the problem.
- Protect the person's privacy.

Assess the Scene

First, make sure the scene is safe. Be aware of any danger for you, the ill or injured person, and anyone else nearby.

This is an important step. Do it every time you are providing help. Continue to assess the scene while you provide first aid to be aware of anything that might change and make it unsafe. You can't help anyone if you're injured yourself.

The first step in any first aid action is to make sure the scene is safe.

Questions for Assessing the Scene

When you look around, ask yourself these questions:

	Question	Explanation
Danger	Is there danger for you or the ill or injured person?	Move an injured person only if he is in danger or if you need to move him to safely provide first aid or CPR.
Help	Are others around to help?	If so, have someone phone 9-1-1. If no one else is near, phone for help yourself.
Who	Who is ill or injured?	Can you tell how many people are hurt and what happened?
Where	Where are you?	You'll need to tell others how to get to you—in particular, the 9-1-1 dispatcher. If there are other bystanders at the scene, send one of them to meet the emergency responders and lead them to the scene.

Phone for Help

As you assess the need for first aid, it's important to know when and how to phone for help. Phoning 9-1-1 activates the EMS network of responders.

Make sure you know the nearest location of a phone to use in an emergency (Figure 1). Often, the first aid kit and AED are stored at the same location as the emergency phone.



Figure 1. Know the location of the nearest phone to use in an emergency. You also should know where the first aid kit and AED are stored.

When to Phone for Help

Your company may have some instructions about when you should phone the emergency response number (or 9-1-1).

As a general rule, you should phone 9-1-1 and ask for help whenever someone is seriously ill or injured or you are not sure what to do in an emergency.

Some examples of when you should phone 9-1-1 are if the ill or injured person

- Doesn't respond to voice or touch
- Has chest discomfort, signaling possible heart attack
- Has signs of a stroke
- Has a problem breathing
- Has a severe injury or burn
- Has severe bleeding
- Has a seizure
- Suddenly can't move a part of the body
- Has received an electric shock
- Has been exposed to poison

You will learn more about the signs and first aid actions for these medical and injury emergencies later in this workbook.

How to Phone for Help

It's also important for you to know how to phone for help from your location. Do you know how to activate the emergency response number in your workplace? For example, is it necessary to dial 9 for an outside line, or is there an internal number to phone that will notify responders who are on-site? For the purposes of this course, we will say "phone 9-1-1" as the emergency response number.

Write the emergency response number on your Quick Reference Guide, in the first aid kit, and near the telephone. You should also write it here.

Write your emergency response number here:

Who Should Phone for Help

If other people are available, you can ask someone else to phone 9-1-1 and get the first aid kit and AED. If you are alone and have a cell phone, call 9-1-1 and put the phone on speaker mode so that you can follow the dispatcher's instructions. Here is a summary:

If you are	Then you should
Alone	<ul style="list-style-type: none"><input type="checkbox"/> Shout for help.<input type="checkbox"/> If no one answers and the person needs immediate care and you have a cell phone, phone 9-1-1 and put the phone on speaker mode.<input type="checkbox"/> The dispatcher will provide further instruction, such as how to give first aid, give CPR, or use an AED.
With others	<ul style="list-style-type: none"><input type="checkbox"/> Stay with the ill or injured person and be prepared to give first aid or CPR if you know how.<input type="checkbox"/> Send someone else to phone 9-1-1 and get the first aid kit and AED if available.<input type="checkbox"/> Have the person put the phone on speaker mode so that you can receive further instruction from the dispatcher.

Follow the Dispatcher's Instructions

When you're on the phone with the dispatcher, don't hang up until the dispatcher tells you to. Answering the dispatcher's questions won't delay arrival of help. Always be aware of your surroundings—knowing the address of your location will help emergency responders reach you more quickly.

Take Universal Precautions

Once you have assessed scene safety, there are universal precautions you should take. These precautions are called *universal* because you should treat all blood and other body fluids as if they contain germs that can cause diseases.

Personal Protective Equipment

Your first aid kit includes personal protective equipment (PPE), such as eye protection and medical gloves. While you are giving first aid, these help keep you safe from blood and body fluids, such as saliva and urine. The first aid kit also contains a mask for giving breaths in case you need to give CPR.

Because some people are allergic to latex or have developed sensitivity to latex that can cause serious reactions, you should use nonlatex gloves if at all possible.

Actions for Universal Precautions

Take the following actions to protect yourself from disease and injury:

Actions for Universal Precautions

- Wear PPE whenever necessary (Figure 2).
 - Wear protective gloves whenever you give first aid.
 - Wear eye protection if the ill or injured person is bleeding.
- Place all disposable equipment that has touched blood or body fluids containing blood in a biohazard waste bag (Figure 3) or as required by your workplace.
- To dispose of the biohazard waste bag, follow your company's plan for disposing of hazardous waste.
- After properly removing your gloves, wash your hands well with soap and lots of water for 20 seconds.



Figure 2. Wear protective gloves whenever you give first aid, and wear eye protection if the ill or injured person is bleeding.



Figure 3. Place all disposable equipment that has touched body fluids, including the gloves you wore, in a biohazard waste bag if one is available. Dispose of the bag according to company policy.

Actions for Exposure to Blood

You should always wear PPE whenever possible. However, if the person's blood does make contact with your skin, or splashes in your eyes or mouth, take these steps:

Actions for Exposure to Blood

- Remove your gloves if you are wearing them.
- Immediately wash your hands and rinse the contact area with soap and lots of water for 20 seconds.
- Rinse your eyes, your nose, or the inside of your mouth with plenty of water if body fluids splattered in any of these areas.
- Contact a healthcare provider as soon as possible.

Remove Protective Gloves Properly

Because of the risk of infection, using protective gloves and taking them off correctly are important steps when it comes to your safety and the safety of others.

Always dispose of protective gloves properly so that anyone else who comes in contact with the biohazard waste bag does not get exposed to blood or body fluids.

Actions for Removing Protective Gloves

Here is the correct way to remove protective gloves (Figure 4):

Actions for Removing Protective Gloves

- Grip one glove on the outside near the cuff, and peel it down until it comes off inside out (Figure 4A).
- Cup it with your other gloved hand (Figure 4B).
- Place 2 fingers of your bare hand inside the cuff of the glove that is still on your other hand (Figure 4C).
- Peel that glove off so that it comes off inside out with the first glove inside it (Figure 4D).
- If blood or blood-containing material is on the gloves, dispose of the gloves properly.
 - Put the gloves in a biohazard waste bag.
 - If you do not have a biohazard waste bag, put the gloves in a plastic bag that can be sealed before you dispose of it.
- Wash your hands well. You should always wash your hands after removing gloves, just in case some blood or body fluids came in contact with your hands.

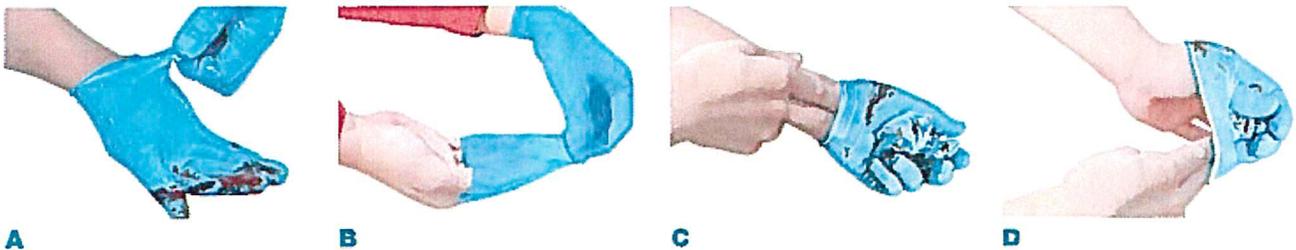


Figure 4. Proper removal of protective gloves without touching the outside of the gloves.

Practice Good Hand Hygiene

Even if you've been wearing protective gloves, you should always wash your hands just in case some blood or body fluids came in contact with your hands. Also, good hand hygiene helps prevent the spread of germs. Washing your hands well is one of the most important protections you have against infection.

Actions for Washing Hands Well

Actions for Washing Hands Well

- Wet your hands with clean running water (warm if available) and apply soap.
- Rub hands together and scrub all surfaces of hands and fingers over for at least 20 seconds (Figure 5).
- Rinse hands with lots of running water.
- Dry your hands using a paper towel or air dryer. If possible, use your paper towel to turn off the faucet.



Figure 5. Wash your hands well with soap and lots of water after taking off your gloves.

Using Waterless Hand Sanitizer

If you can't wash your hands right away, use waterless hand sanitizer. Rub your hands together so that the sanitizer covers the tops and bottoms of both hands and all fingers. Then, let the sanitizer air dry.

As soon as you can, wash your hands with soap and water.

Find the Problem

Before you give first aid, you must assess the ill or injured person to find out what the problem is.

- Check to see if the person is responsive or unresponsive (Figure 6). If the person is unresponsive, check for breathing.
- If the person is breathing and doesn't need immediate first aid, look for any obvious signs of injury, such as bleeding, broken bones, burns, or bites.
- Look for any medical information jewelry (Figure 7). This tells you if the person has a serious medical condition.
- Follow the actions outlined in the "Actions for Finding the Problem" section:



Figure 6. Check to see if the person is responsive or unresponsive. Tap and shout; "Are you OK?"

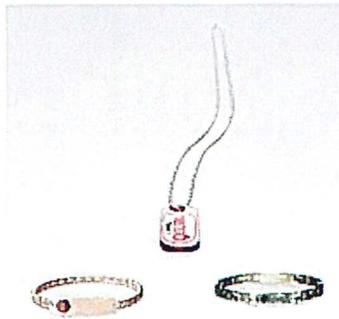


Figure 7. Look for medical information jewelry.

Actions for Finding the Problem

The following steps will help you find out what the problem is. They are listed in order of importance, with the most important step listed first.

Actions for Finding the Problem

- Make sure the scene is safe.
- Check to see if the person responds. Approach the person, tap him, and shout, "Are you OK? Are you OK?"

If the person is <i>responsive</i>	If the person is <i>unresponsive</i>
<ul style="list-style-type: none"> <input type="checkbox"/> Ask what the problem is. 	<ul style="list-style-type: none"> <input type="checkbox"/> Shout for help and phone 9-1-1. <ul style="list-style-type: none"> • Phone or send someone to phone 9-1-1 and get a first aid kit and AED. • If you are alone and have a cell phone, put it on speaker mode and phone 9-1-1. Go get the first aid kit and AED yourself.

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If the person is responsive	If the person is unresponsive
<ul style="list-style-type: none">□ If the person only moves, moans, or groans, shout for help. Phone or send someone to phone 9-1-1 and get the first aid kit and AED.	<ul style="list-style-type: none">□ Check for breathing.<ul style="list-style-type: none">• If the person is breathing normally, stay with him until advanced help arrives. Check for injuries and medical information jewelry.• If the person is not breathing normally or only gasping, begin CPR and use an AED. See the "CPR and AED" part of this workbook.
<ul style="list-style-type: none">□ Check for breathing.<ul style="list-style-type: none">• If the person is breathing and doesn't need immediate first aid, look for any obvious signs of injury, such as bleeding, broken bones, burns, or bites.• Look for any medical information jewelry. This tells you if the person has a serious medical condition.	<ul style="list-style-type: none">□ Stay with the person until advanced help arrives.

Use Caution When Moving an Ill or Injured Person

When giving first aid, you might wonder, "Should I move an ill or injured person?"

The answer is generally no. This is especially important if you suspect that the person may have a pelvic or spinal injury.

However, there are times when the person should be moved, such as the following:

- If the area is unsafe for you or the ill or injured person, move to a safe location.
- If a person is unresponsive and breathing normally, you may roll the person onto his side. By rolling the person onto his side, you may help keep his airway open in case he vomits.

One way to move someone is to drag the person by his clothes (Figure 8). Place your hands on the person's shoulders, grab his clothes, and pull him to safety.



Figure 8. The shoulder pull is a way to move an ill or injured person.

Protect the Person's Privacy

As a first aid rescuer, you may learn private things about the people you help, such as their medical conditions. Give all information about an ill or injured person to EMS rescuers. If you are in your workplace, also give this information to your company's emergency response program supervisor. You may need to fill out a report for your company.

If an emergency does happen in your workplace, you must not share this information with other coworkers. Keep private things private.

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).

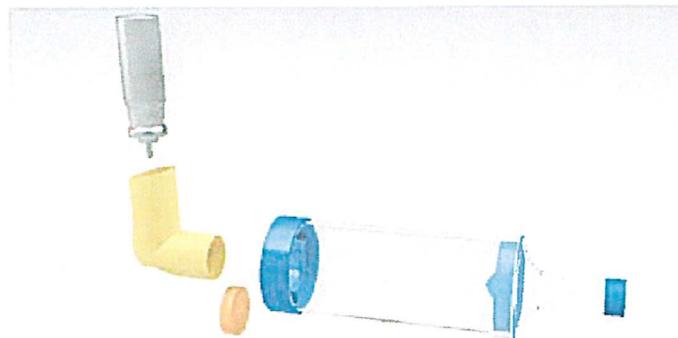


Figure 9. Parts of an inhaler are the medicine canister, mouthpiece, and spacer.

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.

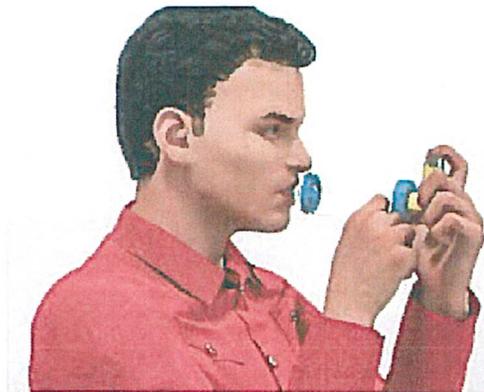


Figure 10. Using an inhaler with a spacer.

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.

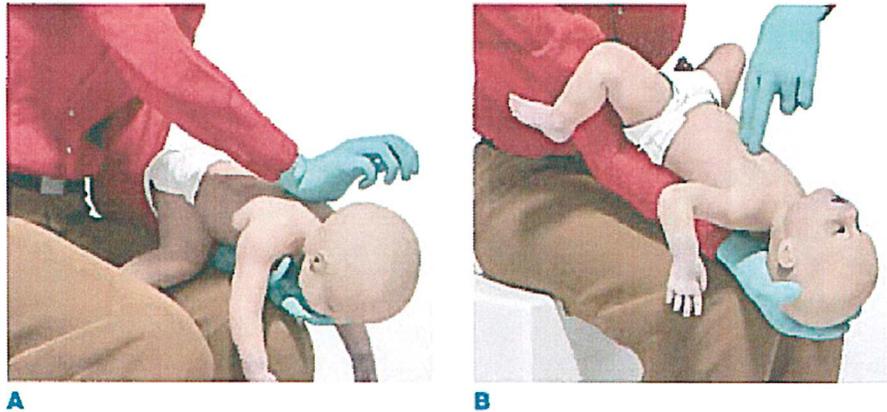


Figure 14. How to help an infant who has a severe airway block. **A**, Back slaps. **B**, Chest thrusts.

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

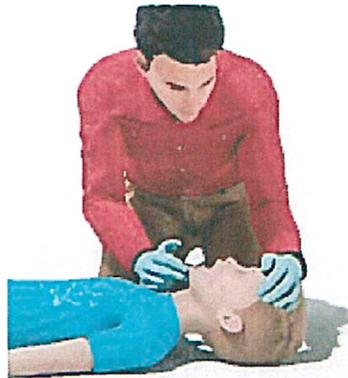


Figure 15. Look in the mouth for objects.

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.



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 Attack

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.

Part 3: Injury Emergencies

The injuries discussed in this section are those you are most likely to encounter. In some cases, the injury may not seem urgent, but some injuries can become serious if not treated.

Topics Covered

Topics covered in this part are

- External bleeding
- Wounds
- Internal bleeding
- Head, neck, and spinal injuries
- Broken bones and sprains
- Burns and electrical injuries

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

- Controlling bleeding by direct pressure and bandaging
- Splinting (optional)

External Bleeding

Bleeding can be either external or internal. Bleeding can quickly become life threatening if not controlled.

Severe bleeding occurs when a large blood vessel is cut or torn. When this happens, a person can lose a lot of blood within minutes.

Minor bleeding occurs from small cuts or scrapes. Most bleeding can be stopped with pressure. It's important to stay calm. Bleeding often looks worse than it is.

Dressing vs Bandage

Many people confuse the terms *dressing* and *bandage*. Here is what they mean and how they work together:

- A *dressing* is a clean material used directly on a wound to stop bleeding. It can be a piece of gauze or any other clean piece of cloth.
- A *bandage* is material used to protect or cover an injured body part. A bandage may also be used to help keep pressure on a wound.

If necessary, you can hold gauze dressings in place over a wound with a bandage (Figure 17).



Figure 17. Placing a bandage over a dressing.

When to Phone 9-1-1 for Bleeding

Phone or ask someone to phone 9-1-1 if

- There is a lot of bleeding
- You cannot stop the bleeding
- You see signs of shock
- You suspect a head, neck, or spine injury
- You are not sure what to do

Control Bleeding by Direct Pressure and Bandaging

Actions to Control Bleeding

Follow these first aid action steps to help someone who is bleeding:

Actions to Control Bleeding

- Make sure the scene is safe.
- Send someone to get the first aid kit.
- Put on PPE.
- If possible, have the person apply direct pressure to the wound while you put on your PPE.

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Actions to Control Bleeding

- Apply dressings from the first aid kit. Put direct pressure on the dressings over the bleeding area. Use the flat part of your fingers or the palm of your hand (Figure 18).
- If the bleeding doesn't stop, you'll need to add a second dressing and press harder. Do not remove a dressing once it's in place because this could cause the wound to bleed more. Keep pressure on the wound until it stops bleeding.
- Once the bleeding has stopped or if you can't keep pressure on the wound, wrap a bandage firmly over the dressings to hold them in place.
- For minor cuts, wash the area with soap and water. Then, apply a dressing to the wound.



Figure 18. Controlling bleeding. **A**, A dressing can be a gauze pad or pads. **B**, It can be any other clean piece of cloth. **C**, If you do not have a dressing, use your gloved hand.

Use a Tourniquet

If an arm or leg has severe bleeding and you can't stop the bleeding with direct pressure, you can use a tourniquet. You should make sure you call 9-1-1 and get an AED, if available, because uncontrolled bleeding can lead to more complications.

The first aid kit should contain a premade or manufactured tourniquet. It includes a strap that you wrap around the injured person's arm or leg and a straight, stick-like object called a windlass. The windlass is used to tighten the tourniquet. If applied correctly, a tourniquet should stop the bleeding.

If you apply the tourniquet correctly, it will cause pain as it stops the bleeding.

Once you have the tourniquet in place, note the time and leave it alone until someone with more advanced training arrives and takes over.

Actions to Apply a Premade Tourniquet

Follow these first aid action steps to apply a premade tourniquet from your first aid kit (Figure 19):

Actions to Apply a Premade Tourniquet

- Make sure the scene is safe.
- Phone 9-1-1 and get the first aid kit (if you do not already have it) and an AED.
- Wear PPE.
- Place the tourniquet about 2 inches above the injury if possible.
- Tighten the tourniquet until the bleeding stops.
- Note what time the tourniquet was placed on the body.
- Once you have the tourniquet in place and the bleeding has stopped, leave it alone until someone with more advanced training arrives and takes over.

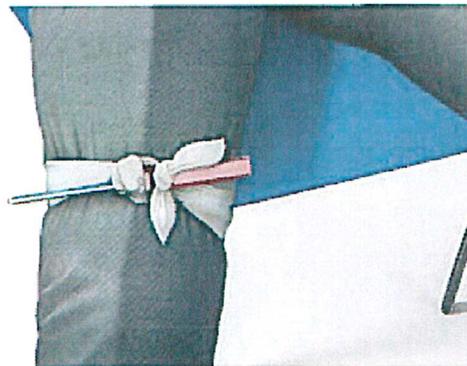


Figure 19. A tourniquet applied to a leg.

Actions to Make and Apply a Tourniquet

If you don't have a tourniquet, you can make one. Follow these actions to make and apply a tourniquet:

Actions to Make and Apply a Tourniquet

- Make sure the scene is safe.
- Phone 9-1-1 and get the first aid kit (if you do not already have it) and an AED.
- Wear PPE.
- Fold a cloth or bandage so that it's long and at least 1 inch wide.

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Actions to Make and Apply a Tourniquet

- Wrap the bandage 2 inches above the injury if possible.
- Tie the ends of the bandage around a small hand tool, stick, or something similar.
- Turn the item to tighten the tourniquet.
- Continue tightening until the bleeding stops.
- Secure the hand tool or stick so that the tourniquet stays tight.
- Note what time the tourniquet was placed.
- Once you have the tourniquet in place and the bleeding has stopped, leave it alone until someone with more advanced training arrives and takes over.

Shock

Losing a large amount of blood can lead to shock. Besides loss of blood, shock can be caused by other types of emergencies, such as a heart attack or severe allergic reaction.

Signs of Shock

A person in shock may

- Feel weak, faint, or dizzy
- Feel nauseated or thirsty
- Have pale or grayish skin
- Be restless, agitated, or confused
- Be cold and clammy to the touch

Actions to Help a Person in Shock

Follow these first aid action steps to help a person in shock (Figure 20):

Actions to Help a Person in Shock

- Make sure the scene is safe.
- Phone 9-1-1 and get the first aid kit and AED if available.
- Help the person lie on his back.
- Cover the person with a blanket to keep him warm.
- Check to see if CPR is needed. If so, give CPR.

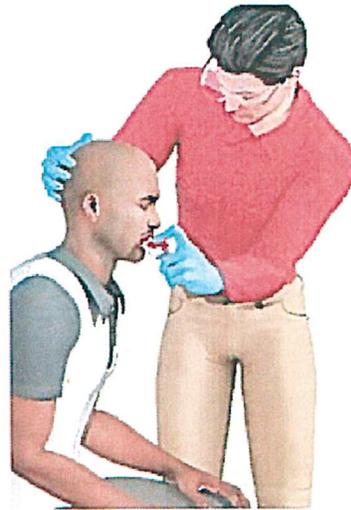


Figure 22. If the bleeding is from the tongue, lip, or cheek, press the bleeding area with sterile gauze or a clean cloth.

Tooth Injuries

Sometimes, when a person suffers a mouth injury, one or more teeth may be broken, become loose, or have been knocked out. This can be a choking hazard.

Actions to Help Someone With a Tooth Injury

Follow these steps when giving first aid to a person with a tooth injury:

Actions to Help Someone With a Tooth Injury

- Make sure the scene is safe.
- Get the first aid kit.
- Wear PPE.
- Check the person's mouth for any missing or loose teeth or parts of teeth.
- If a tooth is chipped, gently clean the injured area and call a dentist.
- If a tooth is loose, have the person bite down on a piece of gauze to keep the tooth in place, and call a dentist.
- If a tooth has come out, it may be possible for a dentist to reattach the tooth. So, when you hold it, hold it by the crown—the top part of the tooth (Figure 23). Do not hold it by the root.
- Apply pressure with gauze to stop any bleeding in the empty tooth socket.

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Actions to Help Someone With a Tooth Injury

- Clean the area where the tooth was located with saline or clean water.
- Put the tooth in one of the following: egg white, coconut water, or whole milk.
- If none of these is available, store the tooth in the injured person's saliva—not in the mouth.
- Immediately take the injured person and tooth to a dentist or emergency department.

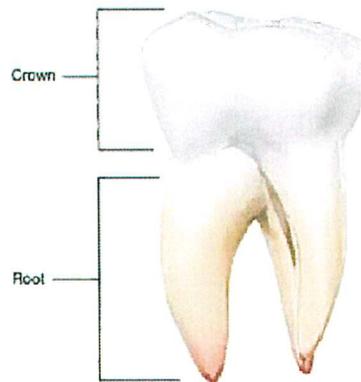


Figure 23. Hold the tooth by the crown.

Eye Injuries

Eye injuries are a fairly common first aid emergency. Any direct hit, such as a punch to the eye or chemical in the eye, can create big problems. If the eye is hit hard or punctured, phone 9-1-1 and tell the person to keep both eyes closed.

Signs of an Eye Injury

Signs of an eye injury include

- Pain
- Trouble seeing
- Bruising
- Bleeding
- Redness or swelling

Actions to Help Someone With an Eye Injury

Follow these first aid action steps to help someone with an eye injury:

Actions to Help Someone With an Eye Injury

- Make sure the scene is safe.
- Get the first aid kit.
- Wear PPE.
- If something small like sand gets in a person's eye, rinse with lots of running water.
- Phone 9-1-1 if
 - The sand or object doesn't come out
 - The person has extreme pain
 - The person still has trouble seeing
- Tell the person to keep his eyes closed until someone with more advanced training arrives and takes over.

Actions to Help Someone With a Toxic Eye Injury

Follow these first aid action steps if someone gets a toxic chemical in the eye:

Actions to Help Someone With a Toxic Eye Injury

- Make sure the scene is safe.
- Get the first aid kit.
- Wear PPE.
- If chemicals get in a person's eyes, rinse with lots of water (Figure 24). Rinse for at least 15 minutes or until someone with more advanced training arrives and takes over.
 - *Caution:* If only one eye is affected, make sure the eye with the chemicals in it is the lower eye as you rinse. Try not to rinse the chemicals into the unaffected eye.
- If an eyewash station is nearby or you have access to an eyewash kit, use it.
- If neither is available, use water from the tap or normal saline or contact lens solution.
- Phone 9-1-1.



Figure 24. Help the person wash his eyes and face under water flowing from a faucet or hose, or use an eyewash station.

Penetrating and Puncturing Injuries

Penetrating and puncturing injuries to the body are treated differently from more common bleeding injuries.

An object such as a knife, nail, or sharp stick can wound a person by penetrating the body or puncturing the skin. If the object is stuck in the body, leave it there until a healthcare provider can treat the injury. Taking it out may cause more bleeding and damage.

Actions to Take for a Penetrating or Puncturing Injury

Follow these first aid action steps for penetrating and puncturing injuries:

Actions to Take for a Penetrating or Puncturing Injury

- Make sure the scene is safe.
- Phone or send someone to phone 9-1-1 and get the first aid kit and the AED.
- Wear PPE.
- Try to stop any bleeding you can see. Do not try to remove the object if it is stuck in the body.

Amputation

One external bleeding injury that may seem overwhelming is traumatic amputation.

Amputation occurs when any part of an arm or leg is cut or torn off. It may be possible to reattach amputated fingers or toes. Because of this, it's important to know first aid actions to first stop bleeding by using pressure and possibly a tourniquet and then to protect the amputated part.

Actions to Give First Aid to a Person With an Amputation

Follow these first aid action steps when giving first aid to a person with an amputation:

Actions to Give First Aid to a Person With an Amputation

- Make sure the scene is safe.
- Phone or send someone to phone 9-1-1 and get the first aid kit and the AED.
- Wear PPE.
- Stop the bleeding from the injured area with pressure. You may have to press for a long time with very firm pressure to stop the bleeding.
- If you find the amputated part, follow the "Actions to Protect an Amputated Part" section.

Actions to Protect an Amputated Part

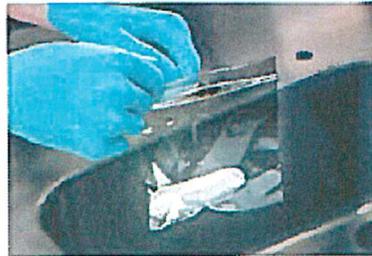
Follow these first aid action steps to protect an amputated part:

Actions to Protect an Amputated Part

- Make sure the scene is safe.
- Rinse the amputated part with clean water (Figure 25A).
- Cover it with a clean dressing.
- Place it in a watertight plastic bag (Figure 25B).
- Place the bag in another container with ice or ice and water (Figure 25C). Label it with the injured person's name, the date, and the time.
- Make sure the body part gets to the hospital with the injured person.
Remember: Do not place the amputated body part directly on ice because extreme cold can injure it.



A



B



C

Figure 25. **A**, If you can find the amputated part, rinse it with clean water. **B**, If it will fit, place the wrapped part in a watertight plastic bag. **C**, Place that bag in another labeled bag with ice or ice water.

Internal Bleeding

Internal bleeding is bleeding inside the body. When bleeding occurs inside the body, you may be able to see a bruise under the skin, or you may not see any signs at all. When bleeding is internal, you can't tell how much bleeding has occurred.

Signs of Internal Bleeding

You should suspect internal bleeding if a person has

- An injury from a car crash, been hit by a car, or fallen from a height
- An injury in the abdomen or chest (including bruises such as seat belt marks)
- Sports injuries, such as slamming into other people or being hit with a ball
- Pain in the abdomen or chest after an injury
- Shortness of breath after an injury
- Coughed up or vomited blood after an injury
- Signs of shock without external bleeding
- A knife or a gunshot wound

Actions to Help a Person With Suspected Internal Bleeding

If you suspect internal bleeding, follow these first aid action steps:

Actions to Help a Person With Suspected Internal Bleeding

- Make sure the scene is safe.
- Phone or send someone to phone 9-1-1 and get the first aid kit and the AED.
- Wear PPE.
- Have the person lie down and keep still.
- Check for signs of shock.
- Give CPR if needed.

Head, Neck, and Spinal Injuries

With any kind of head, neck, or spinal injury, be cautious about moving an injured person.

Suspect a head, neck, or spinal injury if the person

- Fell from a height
 - Was injured by a strong blow to the head
 - Was injured while diving
 - Was involved in a car crash
 - Was riding a bicycle or motorbike involved in a crash, especially when not wearing a helmet or the helmet broke in the crash
-

Signs of a Head Injury

Suspect a head injury if an injured person

- Does not respond or only moans
- Acts sleepy or confused
- Vomits
- Has trouble seeing, walking, or moving any part of the body
- Has a seizure

If a person has a head injury that results in a change in consciousness, worsening signs or symptoms, or other cause for concern, the person should be evaluated by a healthcare provider or EMS personnel as soon as possible. Phone 9-1-1 if the person becomes unresponsive.

A person with these signs should not play sports, drive a car, ride a bike, or work with heavy machinery until a healthcare provider says it's OK to do so.

Concussion

A concussion is a type of head injury. Concussions usually happen because of falls, motor vehicle accidents, and sports injuries. A concussion may occur when the head or body is hit so hard that the brain moves inside the skull.

Possible signs of concussion are

- Feeling stunned or dazed
 - Confusion
 - Headache
 - Nausea or vomiting
 - Dizziness, unsteadiness, or difficulty in balance
 - Double vision or flashing lights
 - Loss of memory of events that happened before or after the injury
-

Spinal Injury

If a person falls, an injury to the spine is possible. The spine protects the spinal cord.

Suspect possible spinal damage if an injured person

- Was in a car or bicycle crash
- Has fallen
- Has tingling or is weak in the extremities
- Has pain or tenderness in the neck or back
- Appears intoxicated or not fully alert
- Is 65 years of age or older
- Has other painful injuries, especially to the head or neck

Caution

When a person has a spinal injury, *do not twist or turn the head or neck* unless it's necessary to do any of the following:

- Turn the person faceup to give CPR
- Move the person out of danger
- Reposition the person because of breathing problems, vomiting, or fluids in the mouth

Actions to Help a Person With a Possible Head, Neck, or Spinal Injury

Follow these first aid action steps when giving first aid to a person with a possible head, neck, or spinal injury:

Actions to Help a Person With a Possible Head, Neck, or Spinal Injury

- Make sure the scene is safe.
- Phone or send someone to phone 9-1-1 and get the first aid kit and the AED.
- Have the person remain as still as possible. Wait for someone with more advanced training to arrive and take over.
- Do not twist or turn the person's head or neck unless absolutely necessary.

With this type of injury, you may have to control external bleeding. This is why it is important to get the first aid kit. Getting the AED is also important in case the person's condition worsens and you need to give CPR before someone with more advanced training arrives and takes over.

Broken Bones and Sprains

Injuries to bones, joints, and muscles are common. But without an x-ray, it may be impossible to tell whether a bone is broken or the injury is a sprain. Either way, you'll take the same first aid actions.

Actions to Take for a Person With a Possible Broken Bone or Sprain

Follow these first aid action steps for a person with a possible broken bone or sprain:

Actions to Take for a Person With a Possible Broken Bone or Sprain

- Make sure the scene is safe.
- Get the first aid kit.
- Wear PPE.
- Cover any open wound with a clean dressing.
- Put a towel on top of the injured body part. Place a bag filled with ice and water on top of the towel over the injured area (Figure 26). Keep the ice in place for up to 20 minutes.
- Phone 9-1-1 if
 - There is a large open wound
 - The injured body part is abnormally bent
 - You're not sure what to do
- If the injured body part hurts, the person should avoid using it until checked by a healthcare provider.



Figure 26. Put a plastic bag filled with ice and water on the injured area with a towel between the bag and the skin.

Splinting

A splint keeps an injured body part from moving. If a broken bone has come through the skin or is bent, it shouldn't be straightened. The injury needs to be protected until someone with more advanced training arrives and takes over.

Caution

If the injured part is bleeding, apply direct pressure to stop the bleeding. Apply a dressing to the wound before applying the splint.

Leave bent and deformed body parts in their bent or deformed positions as you apply the splint. If a broken bone has come through the skin, cover the wound with a clean dressing and splint as needed.

Actions to Apply a Splint

Follow these first aid action steps to apply a splint:

Actions to Apply a Splint

- Make sure the scene is safe.
- Get the first aid kit.
- Wear PPE.
- Find an object that you can use to keep the injured arm or leg from moving.
- Rolled-up towels, magazines, and pieces of wood can be used as splints. Splint in a way to reduce pain and limit further injury. The splint should be longer than the injured area and should support the joints above and below the injury (Figure 27).
- After covering any broken skin with a clean or sterile cloth, tie or tape the splint to the injured limb so that it supports the injured area.
- Use tape, gauze, or cloth to secure it. It should fit snugly but not cut off circulation.
- If you're using a hard splint, like wood, make sure you pad it with something soft, like clothing or a towel.
- Keep the limb still until the injured person can be seen by a healthcare provider.



Figure 27. Use stiff material, such as a rolled-up magazine, to splint injured body parts.

Actions to Take to Self-Splint an Arm

If you don't have anything to use as a splint, a person can use his other arm to hold the injured one in place. Follow these steps to self-splint an arm:

Actions to Take to Self-Splint an Arm

- Have the injured person place his hand across his chest and hold it in place with his other arm.

Burns and Electrical Injuries

Burns

Burns are injuries that can be caused by contact with heat, electricity, or chemicals. Specifically, heat burns are caused when a person comes in contact with a hot surface, hot liquids, steam, or fire.

The only thing you should put on a burn is cool water and clean dressings—never use ice. It can actually damage a burned area. Follow any further instructions by a healthcare provider.

Actions to Take for Small Burns

Follow these first aid action steps for small burns:

Actions to Take for Small Burns

- Make sure the scene is safe.
- Get the first aid kit.
- Wear PPE.
- Cool the burn area immediately with cold, but not ice-cold, water for at least 10 minutes (Figure 28).

(continued)

Actions to Take for Small Burns

- If you do not have cold water, use a cool or cold, but not freezing, clean compress.
- Run cold water on the burn until it doesn't hurt.
- You may cover the burn with a dry, nonstick sterile or clean dressing.



Figure 28. If possible, hold the burned area under cold running water.

Actions to Take for Large Burns

Follow these first aid action steps for large burns:

Actions to Take for Large Burns

- Make sure the scene is safe.
- If there is a fire, the burn area is large, or you're not sure what to do, phone 9-1-1.
- If the person or his clothing is on fire, put the fire out. Have the person stop, drop, and roll. Then, cover the person with a wet blanket.
- Once the fire is out, remove the wet blanket. Carefully remove jewelry and clothing that is not stuck to the skin.
- For large burns, cool the burn area immediately with cold water for at least 10 minutes.
- After you cool the burns, cover them with dry, nonstick, sterile or clean dressings.
- Cover the person with a dry blanket.

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Actions to Take for Large Burns

- Check for signs of shock.
- A person with a large burn should be seen by a healthcare provider as soon as possible.
- A healthcare provider can determine if additional treatment is necessary.

Electrical Injuries

Electricity can cause burns on the outside of the body and on the inside, injuring organs. You may see marks or wounds where the electricity has entered and left the body. The damage can be severe, but there's no way to tell how severe based on the marks on the outside. Electricity can stop breathing or cause a deadly abnormal heart rhythm and cardiac arrest.

If an electrical injury is caused by high voltage, like a fallen power line, immediately notify the proper authorities, and phone 9-1-1. Don't enter the area or try to move wires until the power has been turned off.

Caution

Electricity can travel from the power source through the person to you. Because of this, don't touch a person if he is still in contact with the power source. It's best to turn the power off, but only attempt this if you are trained to do so. Once the power is off, you may touch the injured person.

Actions to Take for an Electrical Injury

Follow these first aid action steps for someone with an electrical injury:

Actions to Take for an Electrical Injury

- Make sure the scene is safe.
- Get the first aid kit and AED.
- Wear PPE.
- Phone 9-1-1.
- When it is safe to touch the injured person, give CPR if it is needed.
- A healthcare provider should check anyone who has an electrical injury as soon as possible.

Part 4: Environmental Emergencies

What You Will Learn Topics covered in this part are

- Bites and stings
- Heat-related emergencies
- Cold-related emergencies
- Poison emergencies

Bites and Stings

Animal and Human Bites

When an animal bite breaks the skin, the wound can bleed and become infected.

Not only is the bite a concern, the risk of rabies from dogs or wild animals must be considered. Rabies in wild animals is most frequently reported in raccoons, skunks, and bats. Dogs bitten by infected animals can become infected.

Also, because of the risk of rabies, anyone who has had direct contact with a bat or has been alone in a room with a bat should contact a healthcare provider as soon as possible.

Actions to Take for an Animal or Human Bite

Follow these first aid action steps for a person with an animal or human bite:

Actions to Take for an Animal or Human Bite

- Make sure the scene is safe for you and the person who has been bitten.
- With animal bites, be sure to wash the wound with plenty of soap and water.
- Apply a bag of ice and water wrapped in a towel to help with bruising and swelling.
- If there is a bruise or swelling, place a bag of ice and water wrapped in a towel on the bite for up to 20 minutes.
- For all bites that break the skin, phone a healthcare provider as soon as possible.

Snakebites

If someone has been bitten by a snake, you can sometimes identify the snake from its color or bite mark. But if you're not sure, assume that the snake is poisonous.

Signs of poisonous snakebites are

- Pain at the bite area that keeps getting worse
- Swelling of the bite area
- Nausea, vomiting, sweating, or weakness

Scene Safety and Snakebites

When making sure the scene is safe, be very careful around any snake, even if it's wounded. Back away and go around the snake.

If the snake has been killed or hurt, don't handle it. A snake can bite even when severely hurt or close to death.

Actions to Take for a Snakebite

Follow these first aid action steps to help a person bitten by a snake:

Actions to Take for a Snakebite

- Make sure the scene is safe for you and the person who has been bitten.
- Get the first aid kit.
- Wear PPE.
- Ask another adult to move any other people away from the area and phone 9-1-1.
- Ask the injured person to stay as still and calm as possible and avoid moving the part of the body that was bitten.
- Remove any tight clothing and jewelry.
- Gently wash the area with running water and soap.
- Keep the person still and calm until someone with more advanced training arrives and takes over.

Insect, Bee, and Spider Bites and Stings

Usually, insect bites and stings cause only mild pain, itching, and swelling at the bite. However, some insect bites can be serious and even fatal if

- The person bitten has a severe allergic reaction to the bite or sting
- Poison (venom) is injected into the person from the bite or sting

Bees are the only insects that leave behind their stingers. If you or someone you know gets stung by a bee, you should look for the stinger and remove it.

Actions to Help a Person With a Bite or a Sting

Follow these first aid action steps for a person who has a bite or sting:

Actions to Help a Person With a Bite or a Sting

- Make sure the scene is safe for you and the person who has been stung or bitten.
- Get the first aid kit.
- Wear PPE.
- If the person was stung by a bee, scrape the stinger and venom sac away with something hard and dull that won't squeeze it—like the edge of a credit card or photo ID card.
- Wash the sting or bite area with running water and soap.
- Put a bag of ice and water wrapped in a towel over the area for up to 20 minutes.
- Watch the person for at least 30 minutes for signs of a severe allergic reaction. Be prepared to use the person's epinephrine pen if needed.

Allergic Reactions to Bee Stings

People who have had severe allergic reactions to an insect bite or sting usually have an epinephrine pen and know how to use it. They often wear medical identification jewelry.

Phone or send someone to phone 9-1-1 and get the first aid kit if the person develops a severe allergic reaction. Use the skills you learned earlier to help the person inject the epinephrine pen.

Poisonous Spider Bites and Scorpion Stings

The bite of nonpoisonous insects can cause mild signs of redness and itching at the bite area. However, the bite or sting of a poisonous spider or scorpion can cause a person to become ill.

Signs of poisonous spider bites and scorpion stings are

- Severe pain at the site of the bite or sting
 - Muscle cramps
 - Headache
 - Fever
 - Vomiting
 - Breathing problems
 - Seizures
 - Lack of response
-

Actions to Help a Person Who Is Bitten or Stung by a Poisonous Spider or Scorpion

If you know that a person has been bitten or stung by a poisonous spider or scorpion or has any of these signs listed above after such a bite or sting, then follow these first aid action steps:

Actions to Help a Person Who Is Bitten or Stung by a Poisonous Spider or Scorpion

- Make sure the scene is safe for you and the person who was bitten or stung.
- Get the first aid kit.
- Wear PPE.
- Phone 9-1-1.
- Wash the bite or sting area with lots of running water and soap.
- Put a bag of ice and water wrapped in a towel on the bite.

Tick Bites

Many ticks are harmless, but some carry serious diseases. They are found in wooded areas and attach themselves to exposed parts of the body.

If you find a tick, remove it as soon as possible. The longer the tick stays attached to a person, the greater the chance of catching a disease.

Actions to Help a Person Who Has a Tick Bite

The first aid actions for a tick bite begin with removing it from the person's body. Follow these first aid action steps for a person who has a tick bite:

Actions to Help a Person Who Has a Tick Bite

- Get the first aid kit.
- Wear PPE.
- Use tweezers to grab the tick by its mouth or head, as close to the skin as possible.
- Try to avoid pinching the tick.
- Lift the tick straight out. If you lift the tick until the person's skin tents and wait for several seconds, the tick may let go.
- Place the tick in a plastic bag in case the person needs to take it with him when getting medical care.
- Wash the bite area with running water and soap.
- If you are in an area where you know there is tick-borne illness, suggest that the person see a healthcare provider as soon as possible.

Marine Bites and Stings

Just as it's important to be aware of ticks and other insects and animals when you're in the wilderness, it's important to be aware of marine fish and animals when swimming in the ocean.

Bites and stings from jellyfish, stingray, or stonefish may cause pain, swelling, redness, or bleeding. Some marine bites and stings can be serious and even fatal if a person has a severe allergic reaction to the sting or the venom.

Actions to Help a Person Who Has a Marine Bite or Sting

Follow these first aid action steps for a marine bite or sting:

Actions to Help a Person Who Has a Marine Bite or Sting

- Make sure the scene is safe for you and the person who has been stung.
- Get the first aid kit.
- Wear PPE.
- Keep the injured person quiet and still.
- Wipe off stingers or tentacles with a gloved hand or towel.
- If the sting is from a jellyfish, rinse the injured area for at least 30 seconds with lots of vinegar. If vinegar is not available, use a baking soda and water solution instead.
- Put the part of the body that was stung in hot water. You may also have the person take a shower with water as hot as he can bear for at least 20 minutes or as long as pain persists.
- Phone 9-1-1 if
 - A person has been bitten or stung by a marine animal and has signs of a severe allergic reaction
 - A person was bitten or stung while in an area known to have poisonous marine animals
- For all bites and stings that break the skin, see a healthcare provider.

Heat-Related Emergencies

Dehydration

Working, training, or playing in extreme heat can be dangerous. If a person doesn't take the proper care, exposure to extremely hot environments can lead to life-threatening medical conditions.

Dehydration occurs when a person loses water or fluids through

- Heat exposure
- Too much exercise

- Vomiting, diarrhea, fever, or decreased fluid intake
- If not responded to early, dehydration may lead to shock.
-

Signs of Dehydration

Signs of heat-related or environmental dehydration include

- Weakness
 - Thirst or dry mouth
 - Dizziness
 - Confusion
 - Less urination than usual
-

Actions to Take for Dehydration

If you suspect that a person is dehydrated, contact a healthcare provider right away. The best first aid for dehydration is prevention: make sure a person drinks and eats enough to stay hydrated.

Heat Cramps

Heat cramps are painful muscle spasms, most often occurring in the calves, arms, stomach muscles, and back.

Signs of Heat Cramps

Signs of heat cramps are

- Muscle cramps
- Sweating
- Headache

Heat cramps are a sign that heat-related problems may continue to get worse if the person doesn't take action.

Actions to Help a Person Who Has Heat Cramps

Follow these first aid action steps to help someone with heat cramps:

Actions to Help a Person Who Has Heat Cramps

- Get the first aid kit.
 - Wear PPE.
 - Have the person rest and cool off.
 - Have the person drink something with sugar and electrolytes, such as a sports drink or juice, or water if these aren't available.
 - If the person can tolerate it, apply a bag with ice and water wrapped in a towel to the cramping area for up to 20 minutes.
-

Heat Exhaustion

A milder condition, such as heat cramps, can quickly turn into heat exhaustion. That's why it's important to recognize and give first aid for heat-related emergencies early.

Signs of Heat Exhaustion

The signs of heat exhaustion are similar to those of heat stroke:

- Nausea
- Dizziness
- Vomiting
- Muscle cramps
- Feeling faint or fatigued
- Heavy sweating

Actions to Help a Person Who Has Heat Exhaustion

Follow these first aid action steps for heat exhaustion:

Actions to Help a Person Who Has Heat Exhaustion

- Get the first aid kit.
- Wear PPE.
- Phone 9-1-1.
- Have the person lie down in a cool place.
- Remove as much of the person's clothing as possible.
- Cool the person with a cool water spray. If a cool water spray is not available, place cool, damp cloths on the neck, armpits, and groin.
- If the person is responsive and can drink, have the person drink something with sugar and electrolytes, such as a sports drink or juice, or water if these aren't available.

Heat Stroke

Heat-related conditions can progress quickly if not recognized and treated. Heat stroke is a dangerous condition that is life threatening.

It's important to begin cooling a person who might have heat stroke immediately—every minute counts. If you can't immerse the person in water, try to cool him with a cool water spray.

If the person starts behaving normally again, stop cooling him. If you keep cooling the person, it could actually lead to low body temperature.

Signs of Heat Stroke

Signs of heat stroke are

- Confusion
- Feeling faint or fatigued
- Dizziness
- Fainting
- Nausea or vomiting
- Muscle cramps
- Seizure

Actions to Help a Person Who Has Heat Stroke

Follow these first aid action steps to help someone with heat stroke:

Actions to Help a Person Who Has Heat Stroke

- Phone 9-1-1.
- Put the person in cool water up to his neck if possible, or spray him with cool water.
- If the person becomes unresponsive and is not breathing normally or only gasping, give CPR.

Cold-Related Emergencies

Frostbite

Frostbite typically occurs outside in cold weather. But it can also occur inside or in a workplace if people are exposed to extremely cold materials, such as cold gases, without wearing gloves.

Signs of Frostbite

Frostbite affects parts of the body that are exposed to the cold, such as the fingers, toes, nose, and ears.

The signs of frostbite are the following:

- The skin over the frostbitten area is white, waxy, or grayish-yellow.
- The frostbitten area is cold and numb.
- The frostbitten area is hard, and the skin doesn't move when you push it.

Actions to Help a Person Who Has Frostbite

Follow these first aid action steps for frostbite:

Actions to Help a Person Who Has Frostbite

- Make sure the scene is safe for you and the person with frostbite.
- Move the person to a warm place.
- Get the first aid kit.
- Wear PPE.
- Phone 9-1-1.
- Remove wet or tight clothing and pat the body dry.
- Put dry clothes on the person and cover him with a blanket.
- Remove tight rings or any bracelets from the frostbitten part.

Caution

These are things you *should not do* for frostbite:

- Do not try to thaw the frozen part if you think there may be a chance of the body refreezing before the person can get to medical care.
- Do not rub the frostbitten area. Rubbing it may cause damage. If you need to touch the area, do so gently.

Low Body Temperature (Hypothermia)

Hypothermia is another name for low body temperature. Staying too long in a cold, pouring rain or other wet and cold conditions can lead to hypothermia. A person can develop low body temperature even when the outside temperature is above freezing.

When hypothermia occurs, it can cause serious problems or even death.

Signs of Low Body Temperature

The signs of low body temperature may include

- Skin that's cool to the touch
- Shivering, which stops when the body temperature is very low
- Confusion
- Personality change
- Sleepiness and the person's lack of concern about his condition
- Stiff, rigid muscles while the skin becomes ice-cold and blue

As the person's body temperature continues to drop, it may be hard to tell if the person is breathing. The person may become unresponsive and even appear to be dead.

Actions to Help a Person Who Has Hypothermia

Follow these first aid action steps for a person with low body temperature:

Actions to Help a Person Who Has Hypothermia

- Make sure the scene is safe for you and the person who has hypothermia.
- Get the person out of the cold.
- Remove wet clothing, pat the person dry, and cover with a blanket.
- Get the first aid kit and AED.
- Phone 9-1-1.
- Put dry clothes on the person.
 - Cover the body and head, but not the face, with blankets, towels, or even newspapers.
- 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.

Poison Emergencies

A poison is anything that someone swallows or breathes or that gets into the eyes or on the skin and that causes sickness or death. Many products can poison people.

Poison Control Hotline

The phone number for the poison control center should be in the first aid kit or prominently displayed in the areas where chemicals are used.

Contact your local poison center by phoning the American Association of Poison Control Centers (Poison Control) at

1-800-222-1222

Questions the Poison Control Center Dispatcher May Ask

When you call the Poison Control Center, the dispatcher may ask for the following information:

- What is the name of the poison?
- Can you describe it if you can't name it?
- How much poison did the person touch, breathe, or swallow?
- How old is the person?
- How much does the person weigh?
- When did the poisoning happen?
- How is the person feeling or acting now?

Actions to Take for Scene Safety in a Poison Emergency

If someone has been exposed to a poison, first make sure the scene is safe. For example, you may need to look for spills of liquids or powders that might be poison.

Follow these actions steps before doing anything else:

Actions to Take for Scene Safety in a Poison Emergency

- Make sure the scene is safe for you and the ill or injured person before you approach.
- Look for signs that warn you that poisons are nearby (Figure 29).
- Look for spilled or leaking containers.
- If the scene seems unsafe, do not approach. Tell everyone to move away.
- Stay out of the scene if you see multiple people who may have been poisoned.
- If the scene is safe, get the first aid
- Phone 9-1-1.
- Tell the dispatcher the name of the poison if you know it. Some dispatchers may connect you to a poison control center. Give only those antidotes that the poison control center or dispatcher tells you to. The first aid instructions on the poison itself can be helpful but may be incomplete.

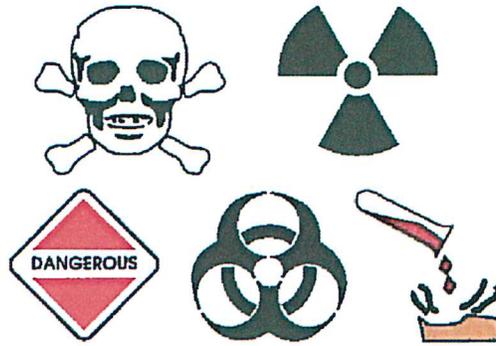


Figure 29. Look for symbols of poisons, such as these.

Safety Data Sheet

Some places have a safety data sheet, or SDS, that provides a description of how a specific chemical or poison can be harmful. It may have first aid recommendations as well.

Actions to Help a Person Who Has Poison on the Skin or in the Eyes

Follow these first aid action steps to remove poison from a person's skin or eyes.

Actions to Help a Person Who Has Poison on the Skin or In the Eyes

- Make sure the scene is safe for you and the ill or injured person by following the "Actions to Take for Scene Safety in a Poison Emergency" section.
- If you approach the scene, wear PPE.
- Move the person from the scene of the poison if you can, and help the person move to an area with fresh air.
- As quickly and as safely as you can, wash or remove the poison from the person's skin and clothing. Help the person to a faucet, safety shower, or eyewash station.
- Remove clothing and jewelry from any part of the body touched by the poison. Use a gloved hand to brush off any dry powder or solid substance from the person's skin (Figure 30).
- Run lots of water over the affected area until someone with more advanced training arrives and takes over.

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Actions to Help a Person Who Has Poison on the Skin or in the Eyes

- If an eye is affected, ask the person to blink as much as possible while rinsing the eyes. If only one eye is affected, make sure the eye with the poison in it is the lower eye so that you don't rinse the poison into the unaffected eye.
- Give CPR if the person becomes unresponsive and isn't breathing normally or is only gasping. Use a mask for providing breaths. This is especially important if the poison has contaminated the person's lips or mouth.



Figure 30. Brush off any dry powder or solid substances from the person's skin with your gloved hand.

Part 6: First Aid Resources

Sample First Aid Kit

The following table lists sample first aid kit contents. This is a kit that follows the standards of the American National Standards Institute (ANSI). Different workplaces may have different requirements.

Item	Minimum Size or Volume	Quantity per Package	Unit Package Size
List of important local emergency telephone numbers, including police, fire department, EMS, and poison control center*			
Absorbent compress	32 sq. in.	1	1
Adhesive bandage	1 in. × 3 in.	16	1
Adhesive tape	2.5 yd. (total)	1 or 2	1 or 2
Antibiotic treatment	0.14 fl. oz.	6	1
Antiseptic swab	0.14 fl. oz.	10	1
Antiseptic wipe	1 in. × 1 in.	10	1
Antiseptic towelette	24 sq. in.	10	1
Bandage compress (2 in.)	2 in. × 36 in.	4	1
Bandage compress (3 in.)	3 in. × 60 in.	2	1
Bandage compress (4 in.)	4 in. × 72 in.	1	1
Burn dressing	4 in. × 4 in.	1	1 or 2
Burn treatment	1/32 oz.	6	1
CPR barrier		1	1 or 2
Cold pack	4 in. × 5 in.	1	2
Eye covering, with means of attachment	2.9 sq. in.	2	1
Eye/skin wash	4 fl. oz. total	1	2
Gloves		2 pairs	1 or 2
Roller bandage (4 in.)	4 in. × 4 yd.	1	1

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Item	Minimum Size or Volume	Quantity per Package	Unit Package Size
Roller bandage (2 in.)	2 in. × 4 yd.	2	1
Sterile pad	3 in. × 3 in.	4	1
Triangular bandage	40 in. × 40 in. × 56 in.	1	1
Heartsaver First Aid Quick Reference Guide*			

*Items meet the ANSI Z308.1-2009 standard, except those marked with an asterisk.