

Injury Emergencies

For any injury emergency, your first steps will be to make sure the scene is safe, get the first aid kit, and put on PPE.

External Bleeding

Minor bleeding occurs from small cuts or scrapes. With all bleeding injuries, your first action should be to identify 2 factors to guide your care:

- The amount of bleeding
- The location of the bleeding

Minor bleeding is easily controlled, often with a simple adhesive bandage. For minor cuts anywhere on the body, wash the area with soap and water, and then apply a dressing to the wound. Once the bleeding has stopped, you can apply an antibiotic ointment, if the person has no known allergies, and an adhesive bandage. This method has been proven to help wounds heal faster and more effectively.

If the wound is bleeding more than can easily be stopped with an adhesive bandage, you will need to determine whether it is non-life-threatening or life-threatening bleeding.

Consider a wound to be life-threatening if the flow of blood is continuous and steady and if the volume of loss appears large, about equal to half of a 12-ounce can. You do not want to wait for blood to accumulate to take action because cuts that may seem more moderate at first can become severe if the person is on certain types of blood-thinning medications, like aspirin. It is important to not underestimate the amount of blood loss; be prepared to take action.

Call 9-1-1 or ask someone else 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

Direct Pressure and Bandaging

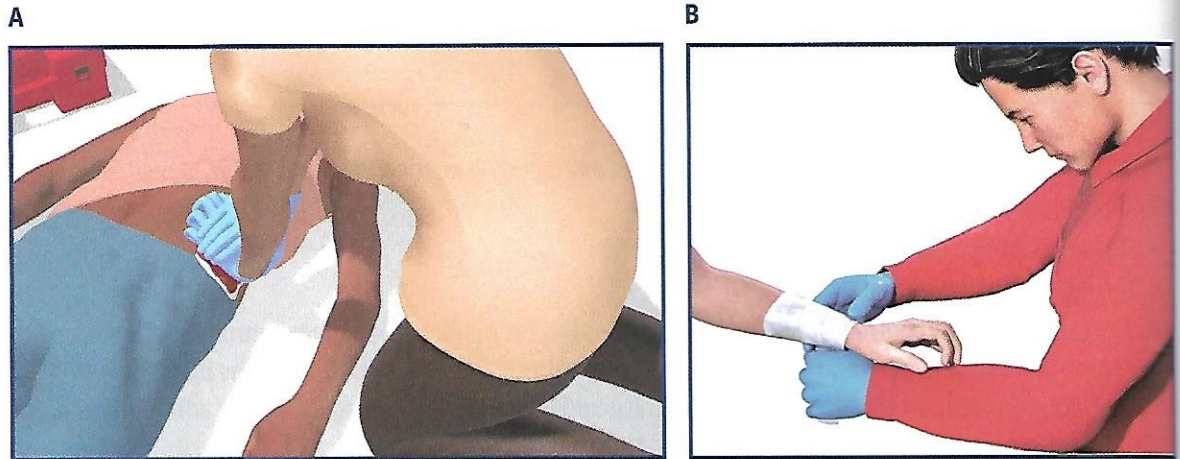
Many people confuse the terms *dressing* and *bandage*. Here is what they mean and how they work together:

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 can 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 58).

Figure 58. Using dressings and a bandage on a wound. **A,** Apply dressings over the bleeding area, and put direct pressure on the dressings. Use the heel of your hand to apply pressure directly to the wound. **B,** Place a bandage over the dressings.



Actions to Take: Control Non-Life-Threatening Bleeding With Direct Pressure and Bandaging

- Apply dressings over the bleeding area, and put direct pressure on the dressings.
 - Use the heel of your hand to apply pressure directly to the wound.
- If the bleeding is not life-threatening, apply a dressing to the bleeding area.
 - Put direct pressure on the dressings by using the heel of one hand, with the other hand stacked on top of the first. If possible, keep your arms straight while applying pressure downward onto the wound. Direct pressure should be firm, steady, and constant.
- Do not remove pressure from the wound to add more dressings. Also, do not remove a dressing once it's in place because this could cause the wound to bleed more. Continue holding firm pressure until help arrives or the bleeding stops. Releasing pressure too soon can allow the wound to start bleeding again.
- If the bleeding does not stop, press harder. Keep pressure on the wound until it stops bleeding.
- Once the bleeding stops, or if you cannot keep pressure on the wound, wrap a bandage firmly over the dressings to hold them in place.
- A person who is bleeding should be seen by a healthcare provider as soon as possible because the person may need stitches or a tetanus shot.

Tourniquet

If the person has severe bleeding on an arm or a leg, you'll need to use a tourniquet. Because uncontrolled bleeding can lead to more complications, phone 9-1-1 and get an AED, if one is available. Life-threatening bleeding can occur from a variety of traumatic injuries, such as car accidents, cuts from glass, accidents involving saws or other tools, knife penetration injuries, gunshot wounds, or falls from a height. You should always phone 9-1-1 first when there is life-threatening bleeding.

The first aid kit should contain a premade or manufactured tourniquet. If it doesn't, we recommend adding it to your kit, especially if your workplace meets the requirements of Class B locations. If applied correctly, a tourniquet should stop the bleeding. Tightening the tourniquet may cause pain, but it will minimize blood loss.

Actions to Take: Use a Manufactured Tourniquet

Apply the tourniquet 2 to 3 inches above the bleeding site.

Do not place the tourniquet on a joint.

Pull the free end of the tourniquet to make it as tight as possible, and then secure it.

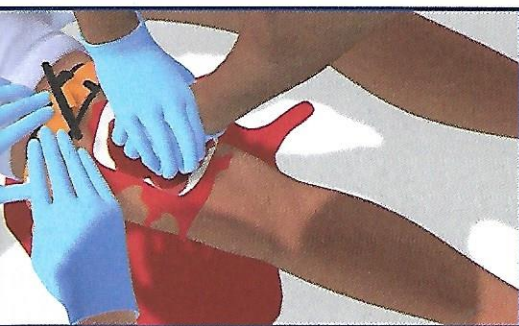
Twist the windlass, or knob, until the bleeding stops.

You need to twist the windlass as tight as possible to stop the life-threatening bleeding. This may cause the person discomfort or pain.

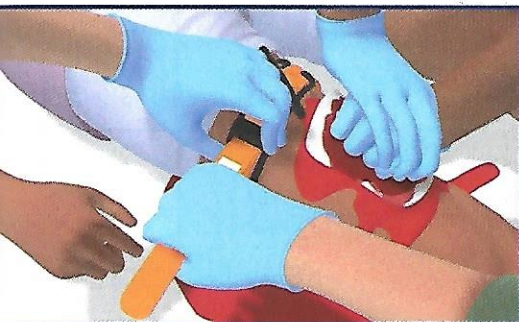
Secure the windlass in the clip and note the time the tourniquet was applied.

For more information on how to use a premade tourniquet, see Figure 59.

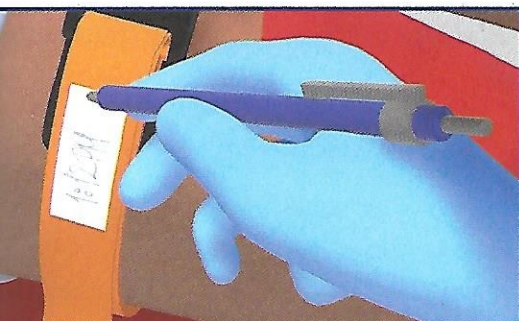
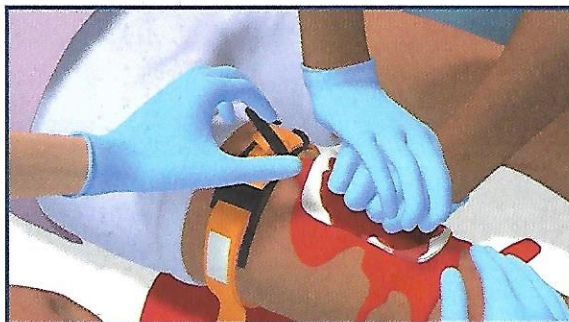
Figure 59. Using a manufactured tourniquet. **A**, Put direct pressure on the dressings using the heel of one hand, with the other hand stacked on top of the first. Direct pressure should be firm, steady, and constant. **B**, Apply the tourniquet 2 to 3 inches above the bleeding site on the person's arm or leg, closer to the heart. **C**, Pull the free end of the tourniquet to make it as tight as possible, and then secure it. **D**, Twist the windlass, or knob, as tight as possible until the bleeding stops. **E**, Secure the windlass and note the time the tourniquet was applied.



B



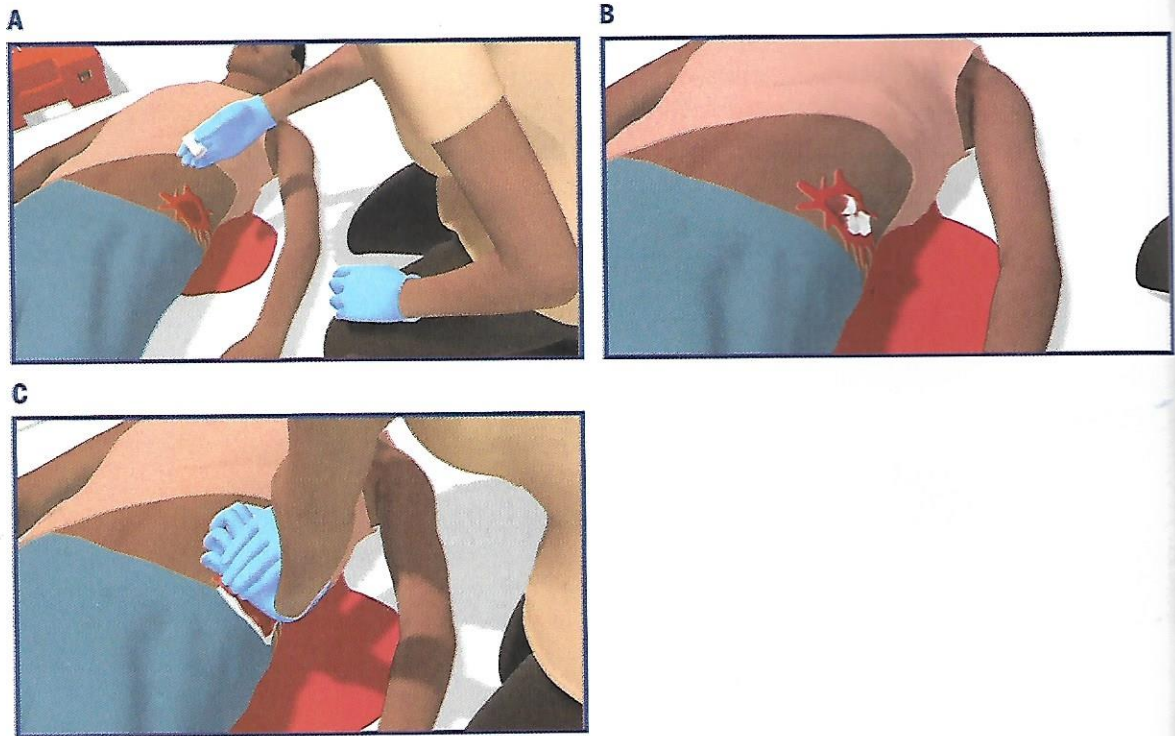
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If you do not have a manufactured tourniquet or if one fails to stop bleeding, apply direct pressure with a hemostatic dressing, if available. A *hemostatic dressing* is a wound dressing that contains an agent that promotes blood clotting. If direct pressure with or without a hemostatic dressing fails to stop the life-threatening bleeding, a first aid provider trained in the use of an improvised tourniquet may consider using one.

If the bleeding is severe and is located on a body part that is not the arm or leg, such as the head, neck, chest, abdomen, shoulders, or hips, you can pack the wound and then apply pressure as noted above. *Packing the wound* means to take a material like gauze or clothing and place it tightly into the wound (Figure 60). You would then apply pressure and a compression dressing.

Figure 60. Packing the wound. **A**, Pack the wound with gauze or a clean cloth. **B**, Place it tightly in the wound. **C**, Continue to apply direct pressure until the bleeding stops.



Shock

Losing a large amount of blood can lead to a life-threatening condition called *shock*. Shock happens when the body's tissues and organs are not getting enough blood. Besides loss of blood from a severe injury, shock can be caused by other types of emergencies, such as a heart attack or a severe allergic reaction. An injury that causes internal bleeding can also lead to shock.

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 Take: Shock

- Phone 9-1-1 and get the first aid kit and AED, if available.
- Help the person lie down on their back.
- Cover the person with a blanket to keep them warm.
- Check to see if CPR is needed. If so, give CPR.

Wounds

Wounds are common first aid emergencies. A *wound* is an injury of the soft tissue in the body. Wounds can range from minor injuries, such as scrapes and small cuts, to more serious ones, such as penetrating wounds.

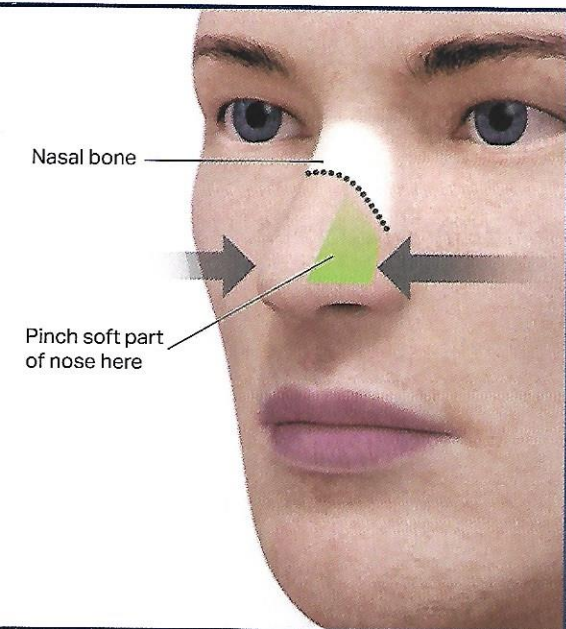
Bleeding From the Nose

A person with a nosebleed should lean forward, not backward. Leaning backward will not help stop the bleeding. You will see less blood when a person leans back because the blood drains down the throat. But swallowed blood can lead to vomiting.

Actions to Take: Nosebleed

- Have the person sit down and lean forward.
- Pinch the soft part of the nose on both sides (Figure 61) with a clean dressing.
- Place constant pressure on the nostrils for a few minutes until the bleeding stops. If bleeding continues, press harder.
- Phone 9-1-1 if
 - You can't stop the bleeding in about 15 minutes
 - The bleeding is heavy, such as gushing blood
 - The injured person has trouble breathing

Figure 61. Press on both sides of the nostrils.



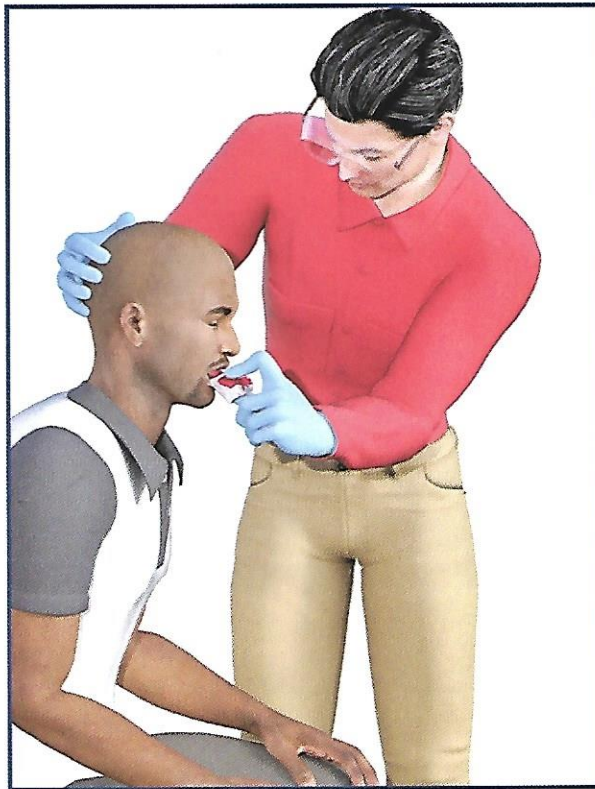
Bleeding From the Mouth

Bleeding from the mouth can usually be stopped with pressure. If a mouth injury is severe, blood or broken teeth can block the airway and cause breathing problems.

Actions to Take: Control Bleeding From the Mouth

- If bleeding is coming from the tongue, lip, or cheek and you can reach it easily, apply pressure with gauze or a clean cloth (Figure 62).
- If you haven't phoned 9-1-1 and you can't stop the bleeding in 5 to 10 minutes, or if the person has trouble breathing, phone or ask someone else to phone 9-1-1.

Figure 62. If the bleeding is from the tongue, lip, or cheek, press the bleeding area with sterile gauze or a clean cloth.



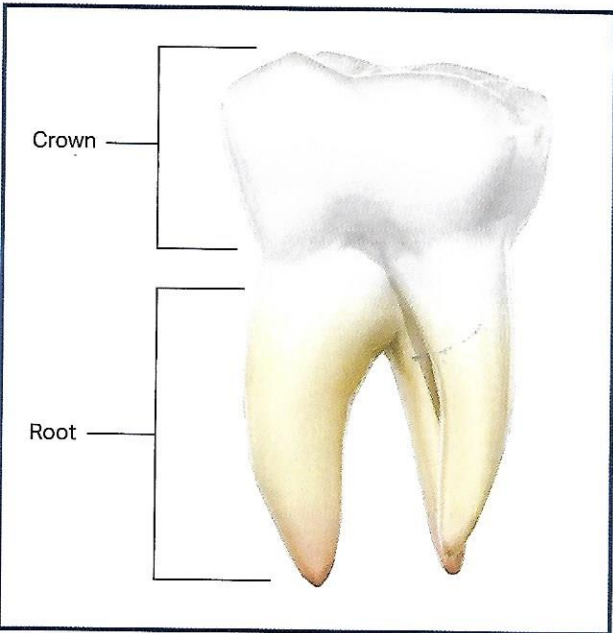
Tooth Injuries

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

Actions to Take: Tooth Injury

- 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 contact a dentist.
 - If a tooth is loose, have the person bite down on a piece of gauze to keep the tooth in place, and contact a dentist.
 - If a tooth has come out, a dentist may be able to reattach the tooth. So when you hold it, hold it by the crown—the top part of the tooth (Figure 63). Do not hold it by the root.
- Apply pressure with gauze to stop any bleeding in the empty tooth socket.
- Clean the area where the tooth was located with saline or clean water.
- Put the tooth in an oral rehydration salt solution, or wrap the tooth in cling film.
 - As a last resort, you can store the tooth in cow's milk or the injured person's saliva—but not in the mouth. Do not store the tooth in tap water.
- Immediately take the injured person and the tooth to a dentist or emergency department.

Figure 63. Hold the tooth by the crown.



Eye Injuries

A direct hit to the eye or a 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 include

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

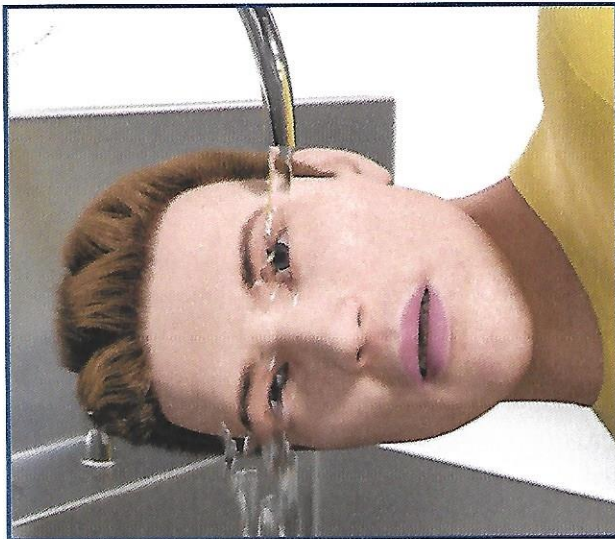
Actions to Take: Eye Injury

- If something small like sand gets in a person's eye, rinse with lots of running water.
- Tell the person not to rub their eye.
- 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 their eyes closed until someone with more advanced training arrives and takes over.

Actions to Take: Chemical Eye Injury

- Rinse the eyes with lots of water (Figure 64). Rinse for at least 15 minutes or until someone with more advanced training arrives and takes over.
 - If an eyewash station or kit is nearby, use it.
 - If neither is available, use water from the tap or normal saline or contact lens solution.
 - *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.
- Contact your local poison control center or, if a poison control center is not available, seek help from a medical provider or phone 9-1-1.

Figure 64. Help the person wash their eyes and face under water flowing from a faucet or hose, or use an eyewash station.



Penetrating and Puncturing Injuries

An object such as a knife, nail, or sharp stick can wound a person by puncturing the skin or penetrating the body. 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: Penetrating or Puncturing Injury

- Phone 9-1-1 and get the first aid kit and AED.
- Try to keep the injured person from moving.
- Put on gloves, and try to stop any bleeding you can see.
- If the object is stuck in the body, leave it there.
- Be prepared to give CPR and use the AED if the person becomes unresponsive and stops breathing.

Amputation

Amputation occurs when any part of an arm or leg is cut or torn off.

traumatic amputation may seem overwhelming, but you need to act quickly. Your first action should be to stop the bleeding by using a tourniquet or direct pressure. Then, you can take steps to protect the amputated part, which is also important because surgeons may be able to reattach amputated fingers or toes.

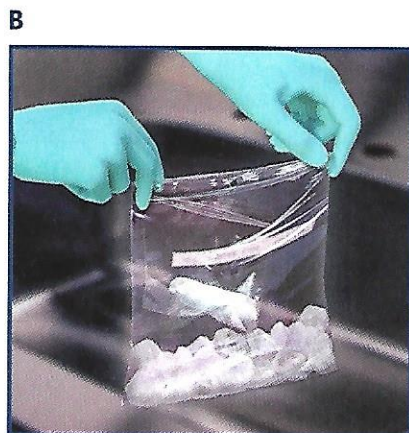
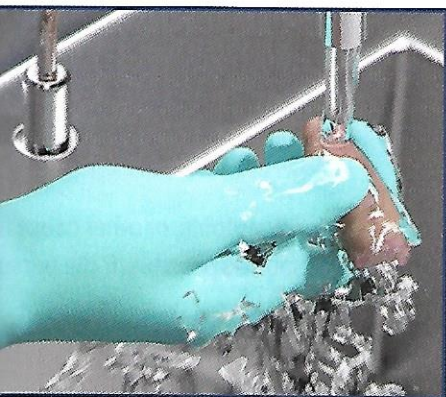
Actions to Take: Control Bleeding From Amputation

- Make sure the scene is safe.
- Phone 9-1-1 and get the first aid kit and AED.
- Use a tourniquet to stop the bleeding (refer to the External Bleeding section for details on how to use a tourniquet).
- If a tourniquet is unavailable, or if does not stop the bleeding, apply dressings from the first aid kit and put direct pressure on the dressings over the bleeding area.

Actions to Take: Protect an Amputated Part

- Rinse the amputated part with clean water (Figure 65A).
- Cover it with a clean dressing (Figure 65B).
- Place it in a watertight plastic bag (Figure 65B).
- Place that bag inside a separate container that contains ice or ice water (Figure 65C). 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.

Figure 65. **A,** If you find the amputated part, rinse it with clean water. **B,** Wrap the part with a dressing and place it in a watertight plastic bag, if it will fit. **C,** Place that bag in another labeled bag that contains 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.

You should suspect internal bleeding if a person

- Was injured in a car crash or was hit by a car
- Fell from a height
- Was injured in the abdomen or chest (including bruises such as seat belt marks)
- Was injured during a sporting event, such as slamming into other people or being hit with a ball
- Has pain in the abdomen or chest after an injury
- Has shortness of breath after an injury
- Is coughing up or vomiting blood after an injury
- Shows signs of shock without external bleeding
- Was stabbed or shot

Actions to Take: Suspected Internal Bleeding

- Phone 9-1-1, and get the first aid kit and AED.
- If the person is responsive, have the person lie down and keep still while you treat any external injuries.
- Check for signs of shock and provide first aid as needed.
- Be prepared to provide CPR if the person becomes unresponsive and stops breathing normally.

Head, Neck, and Spine Injuries

With any kind of head, neck, or spine injury, be cautious about moving the injured person. Suspect a head, neck, or spine 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 when the helmet broke in the crash

A person with a head injury may show these signs:

- 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's head injury results in a change in consciousness, worsening signs or symptoms, or other cause for concern, a healthcare provider or EMS personnel should evaluate the person as soon as possible. If the person becomes unresponsive, phone 9-1-1.

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

Spine Injury

Suspect possible spine damage if an injured person

- Is 65 years or older
- 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
- Has other painful injuries, especially to the head or neck

Caution

The spine protects the spine cord, so when a person has a spine 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 Take: Possible Head, Neck, or Spine Injury

- Phone 9-1-1 and get the first aid kit and AED.
- Have the person remain as still as possible. Do not twist or turn the person's head or neck unless absolutely necessary.
- Stay with the person until advanced help arrives.

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 until someone with more advanced training arrives and takes over.

Broken Bones and Sprains

Injuries to bones, joints, and muscles are common.

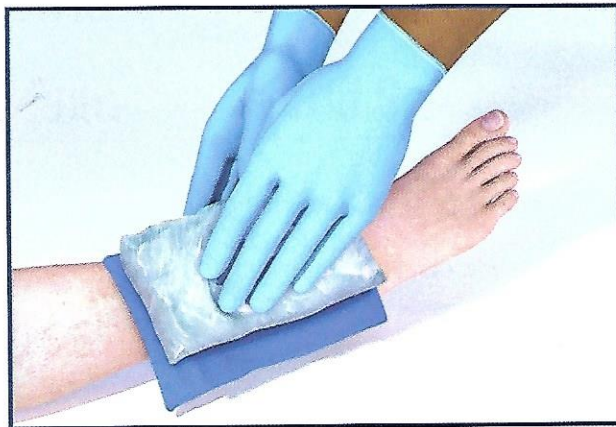
Signs of Broken Bones

If a person's arm or leg looks deformed after a fall or an accident, a bone might be broken. But other signs of broken bones—such as swelling or bruising, pain when moving, or pain when trying to bear weight—can also be signs of a sprain. Without an x-ray, it may be impossible to tell whether the injury is a broken bone or a sprain. But either way, you'll take the same first aid actions.

Actions to Take: Possible Broken Bone or Sprain

- 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 66). Keep the ice in place for up to 20 minutes.
- The person should avoid using the injured body part until checked by a healthcare provider.
- 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.

Figure 66. 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.

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 to protect it, and splint as needed.

Actions to Take: Splint

- 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 serve 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 67).
- After covering any broken skin with a clean or sterile cloth, secure 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.
- If you don't have anything to use as a splint, have the person place their injured arm across their chest and hold it in place with their other arm.
- Keep the limb still until the injured person can be seen by a healthcare provider.

Figure 67. Use stiff material, such as a stick or a rolled-up magazine, to splint injured body parts.



Burns and Electrical Injuries

Burns

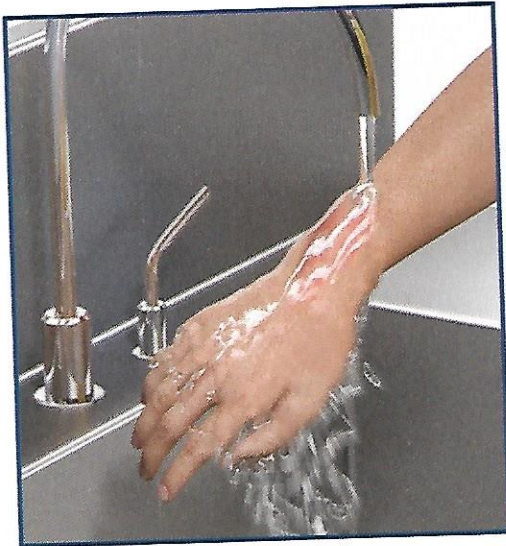
Burns can be caused by contact with heat, electricity, or chemicals. Specifically, heat burns are caused when a person comes into contact with a hot surface, hot liquids, steam, or fire.

The only thing you should put on a burn is cool water and clean dressings. Never use ice because it can damage a burned area.

Actions to Take: Small Burns

- Cool the burn area immediately with cold, but not ice-cold, running water for at least 10 minutes (Figure 68).
 - Run cold water on the burn until it doesn't hurt.
 - If you do not have cold water, use a cool or cold, but not freezing, clean compress.
- Cover the burn with a dry, nonstick sterile or clean dressing.
- Follow any further instructions from a healthcare provider.

Figure 68. If possible, hold the burned area under cold running water.



Actions to Take: Large Burns

- 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 their 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.
- 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 by the marks on the outside. Electricity can stop a person from 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 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 an injured person who is still touching the power source. It's best to turn the power off, but only if you are trained to do so. Once the power is off, you can touch the injured person.

Actions to Take: Electrical Injury

- Don't enter the area or try to move wires until the power has been turned off.
- Phone 9-1-1, and get the first aid kit and AED.
- When it is safe to touch the injured person, give CPR if it is needed.
- If the person is responsive, and they have burns or other injuries, treat them.
- A healthcare provider should check anyone who has an electrical injury as soon as possible.

Injury Emergencies: Review Questions

1. To help stop non-life-threatening bleeding that you can see, put firm pressure on a dressing over the bleeding area.
 - a. True
 - b. False
2. A person with a nosebleed should lean
 - a. Forward
 - b. Backward
3. If a large stick or a knife has punctured someone's body, you should
 - a. Remove it as quickly as possible
 - b. Leave it in and get help
4. If someone falls and then becomes sleepy or confused, vomits, or complains of a headache, the person may have a head injury.
 - a. True
 - b. False
5. If a person twists an ankle, apply a heating pad or heat pack over the injured area for 20 minutes to help reduce swelling.
 - a. True
 - b. False
6. To give first aid for a small burn on the arm, cool the burn with
 - a. Lukewarm water
 - b. Ice directly on the skin
 - c. Cold, but not ice-cold, water
7. If someone was struck in the abdomen and begins showing signs of shock, suspect internal bleeding.
 - a. True
 - b. False
8. If someone falls and cuts their leg, you should apply pressure to the nearest pressure point of the leg.
 - a. True
 - b. False

9. How do you protect an amputated body part?
 - a. Place it directly on ice in a sealed bag, and send it to the hospital.
 - b. Wrap it in gauze, place it in an airtight bag, and send it to the hospital.
 - c. Place it in a watertight plastic bag inside another container with ice or ice and water.
10. If you suspect a concussion, it's OK to let the person play sports until they can see a healthcare provider.
 - a. True
 - b. False

Answers: 1. a, 2. a, 3. b, 4. a, 5. b, 6. c, 7. a, 8. b, 9. c, 10. b