

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.

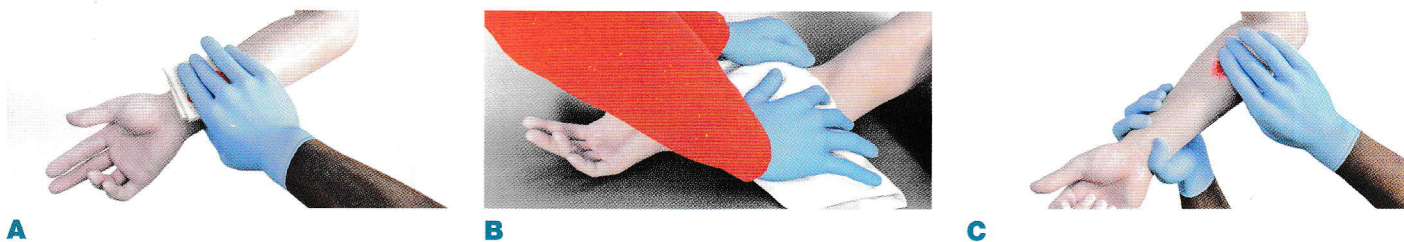


Figure 18. Controlling bleeding. **A**, A dressing can be a gauze pad or pads. **B**, It can be any other clean piece of cloth. **C**, If you do not have a dressing, use your gloved hand.

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.

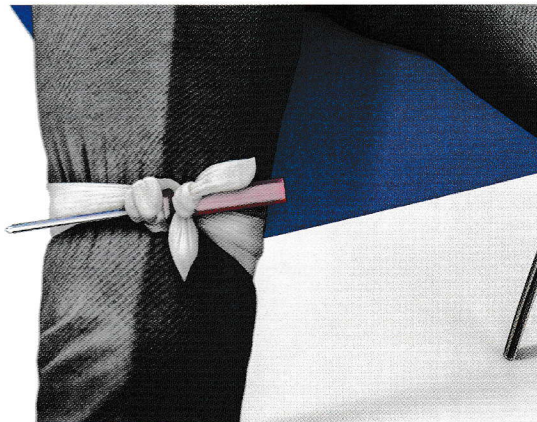


Figure 19. A tourniquet applied to a leg.

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.

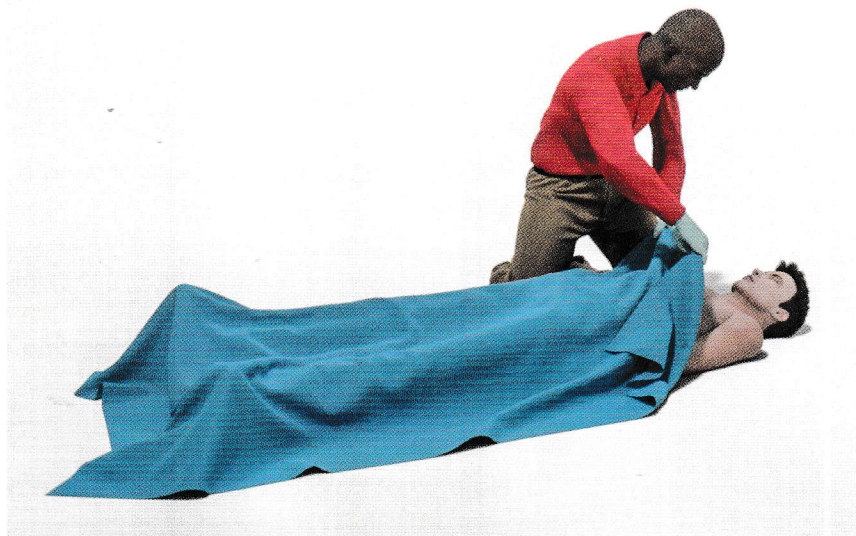


Figure 20. A person in shock.

Wounds

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

Bleeding From the Nose

Actions to Help Someone With a Nosebleed

To stop a nosebleed, apply pressure. Follow these first aid action steps:

Actions to Help Someone With a Nosebleed

- Make sure the scene is safe.
- Wear PPE.
- Have the person sit and lean forward.
- Pinch the soft part of the nose on both sides (Figure 21) 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

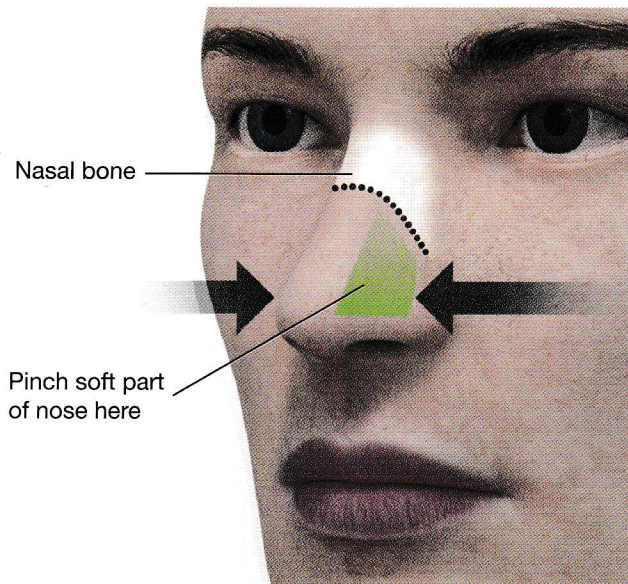


Figure 21. Press on both sides of the nostrils.

Leaning Forward

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 tilts his head back, because the blood drains down the person's throat. Swallowed blood can lead to vomiting.

Bleeding From the Mouth

When a person has a mouth injury, it can be serious if blood or broken teeth block the airway and cause breathing problems.

Bleeding from the mouth can usually be stopped with pressure.

Actions to Help Someone With Bleeding From the Mouth

Follow these first aid action steps when giving first aid to a person with bleeding from the mouth:

Actions to Help Someone With Bleeding From the Mouth

- Make sure the scene is safe.
- Get the first aid kit.
- Wear PPE.
- 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 22).
- If you haven't phoned 9-1-1 and you can't stop the bleeding or the person has trouble breathing, phone or ask someone else to phone 9-1-1.

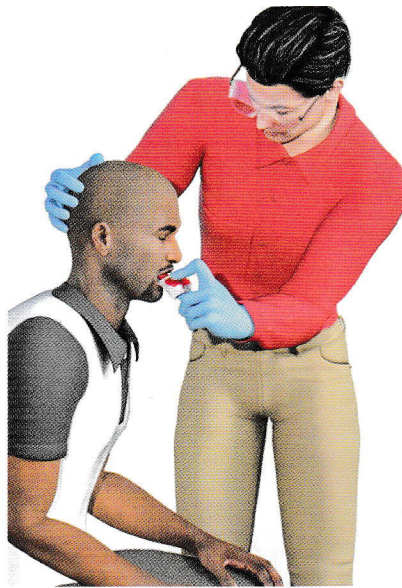


Figure 22. If the bleeding is from the tongue, lip, or cheek, press the bleeding area with sterile gauze or a clean cloth.

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.

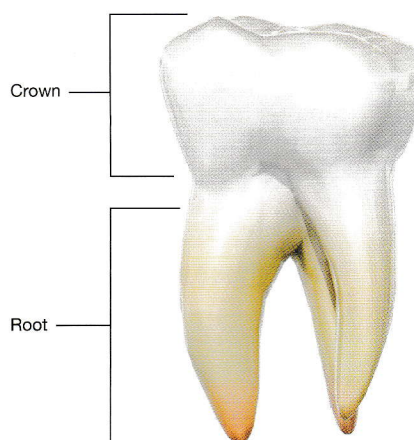


Figure 23. Hold the tooth by the crown.

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.

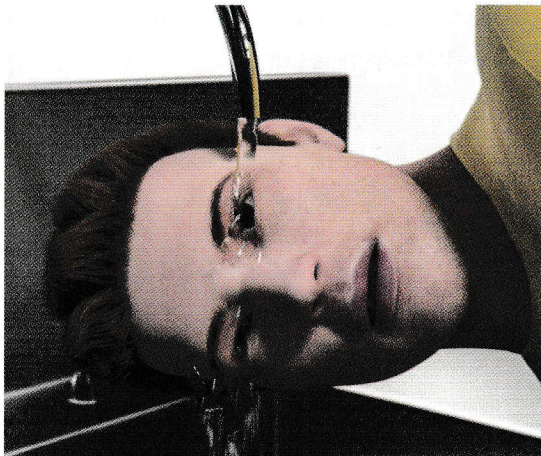


Figure 24. Help the person wash his eyes and face under water flowing from a faucet or hose, or use an eyewash station.

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

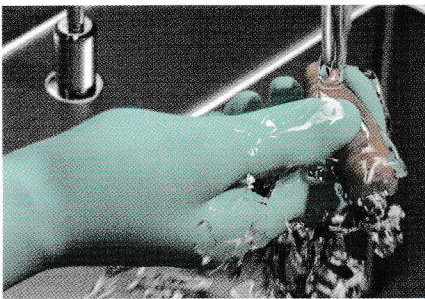
- Make sure the scene is safe.
- Phone or send someone to phone 9-1-1 and get the first aid kit and the AED.
- Wear PPE.
- Stop the bleeding from the injured area with pressure. You may have to press for a long time with very firm pressure to stop the bleeding.
- If you find the amputated part, follow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

Actions to Protect an Amputated Part

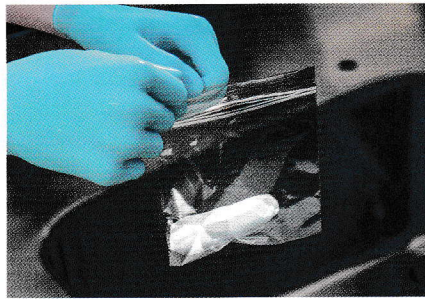
Follow these first aid action steps to protect an amputated part:

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).

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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.

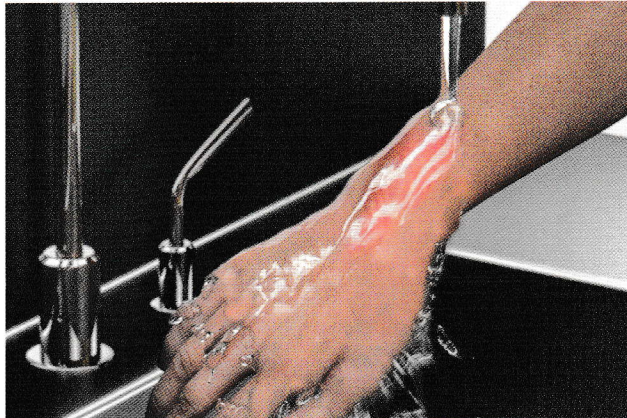


Figure 28. If possible, hold the burned area under cold running water.

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.

Injury Emergencies: Review Questions

| Question | Your Notes |
|---|------------|
| <p>1. To help stop bleeding that you can see, put firm pressure on a dressing or bandage over the bleeding area.</p> <p>True False</p> | |
| <p>2. <i>Mark an X by the correct response.</i></p> <p>A person with a nosebleed should lean</p> <p>___ forward.</p> <p>___ backward.</p> | |
| <p>3. <i>Mark an X by the correct response.</i></p> <p>If a large stick or a knife has been pushed into someone's body, you should</p> <p>___ remove it as quickly as possible.</p> <p>___ leave it in and get help.</p> | |
| <p>4. If someone falls down and then becomes sleepy or confused, vomits, or complains of a headache, the person may have a head injury.</p> <p>True False</p> | |
| <p>5. As soon as a person twists his ankle, apply a heating pad or heat pack over the injured area for 20 minutes to help reduce swelling.</p> <p>True False</p> | |
| <p>6. To give first aid for a small burn on the arm, cool the burn with</p> <p>a. lukewarm water.</p> <p>b. ice directly on the skin.</p> <p>c. cold, but not ice-cold, water.</p> | |

Answers: 1. True, 2. True, 3. Leave it in, 4. True, 5. False, 6. c