# Control of Bleeding

Sudden injuries occur quickly, often from traumatic events, and may become life threatening.

Bleeding occurs when blood vessels, found throughout the body, are damaged. Heavy bleeding is likely if a large blood vessel is involved.

Arterial bleeding is bright red and will often spurt from a wound. It can be difficult to control due to the pressure created by the heart's contractions. If blood is dark red and flowing steadily, it is likely coming from a damaged vein.

Clot-forming fibers naturally collect at a wound site to try to stop bleeding, but heavy bleeding can overwhelm this and prevent clotting from occurring. Bleeding reduces the amount of oxygen that can be delivered to the body. If heavy or uncontrolled, bleeding can quickly become life threatening.

Pressure applied directly to a bleeding site until bleeding stops is the standard method for controlling external bleeding. Activate EMS immediately for any heavy bleeding.

Bleeding exposes you, the provider, to potentially infectious body fluids. Always use disposable gloves as a barrier to protect both you and the injured person. When gloves are not available, an improvised barrier, such as a plastic bag, can be used.

## *Tourniquets*

If direct pressure is unable to control bleeding on a limb, use a tourniquet. Tourniquets utilize a simple binding method around a limb to stop blood flow.

Commercially made tourniquets are ready and easier to use than improvised ones. A compressing band is snugly placed around a limb a few inches above the open injury. A solid handle, connected to the band, is twisted to tighten the band evenly around the limb until bleeding stops. The handle is secured in place to maintain the constriction.

Improvised tourniquets, using the same concept, can be created with nearby materials such as triangular bandages and something solid to twist with.

A tourniquet can also be considered as a primary step to control severe limb bleeding when it is clear direct pressure cannot be applied effectively, such as in a mass casualty event, for a person with large or multiple injuries, in a dangerous environment, or for an inaccessible wound.

Training in the application of a tourniquet is helpful for its effective use.

## Hemostatic Dressings

When direct pressure is unable to control bleeding, and the injury is located where a tourniquet cannot be applied, you can consider the use of a hemostatic dressing.

A hemostatic dressing is a unique dressing impregnated with an agent that speeds up the clotting process. A hemostatic dressing is packed into an open wound and held in place with direct pressure or a pressure bandage. Pressure is maintained until bleeding has stopped.

Training is essential to learn the proper application of a hemostatic dressing.

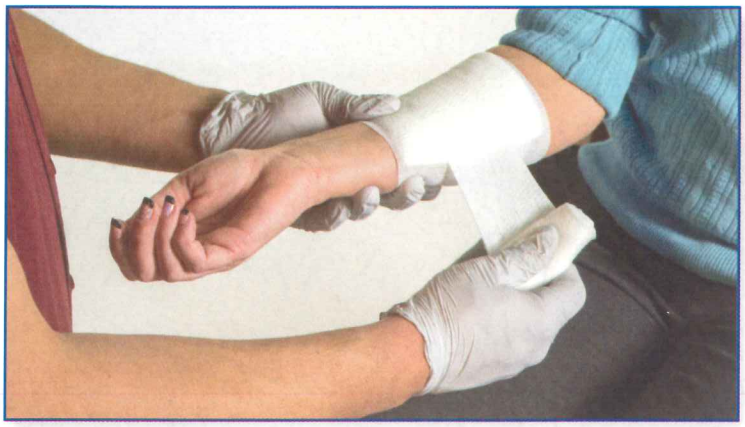
### Knowledge Check

What is the standard method for controlling external bleeding?

# Control of Bleeding

## Apply Direct Pressure

- Quickly expose and inspect wound.
- Using a clean pad, apply pressure directly on point of bleeding. Use just gloved hand if pad not available.
- If blood soaks through pad, leave in place. Apply second pad on top of first.
- When controlled, maintain continuous direct pressure.



## If Bleeding is Controlled

- Consider a pressure bandage. Wrap a conforming bandage around limb and over dressings to provide continuous direct pressure.
- Avoid wrapping so tight that skin beyond bandage becomes cool to the touch or blue in color.

## If Bleeding Continues on a Limb

- Apply a commercial tourniquet. If not available, use an improvised one instead.
- Snugly place compressing band a few inches above injury. Twist handle and tighten band until bleeding stops. Secure handle in place.

## If Bleeding Continues on Torso

- Consider using a hemostatic dressing if one is available and you are trained to use it.
- Pack dressing tightly into open wound. Place remaining dressing on top of packed wound.
- Secure in place with direct pressure or pressure bandage.

# Using a Tourniquet

When using a commercial tourniquet, always follow the manufacturer's directions.

Loop the compressing band around the injured limb. If unable to loop it over the limb, unfasten the band, wrap it around the limb, and refasten it. Place the band a few inches above the wound site. Make sure it is not directly over a joint. Hand tighten the band firmly around the limb. Twist the handle to compress the band until bleeding stops. Lock the handle, using the mechanism provided.

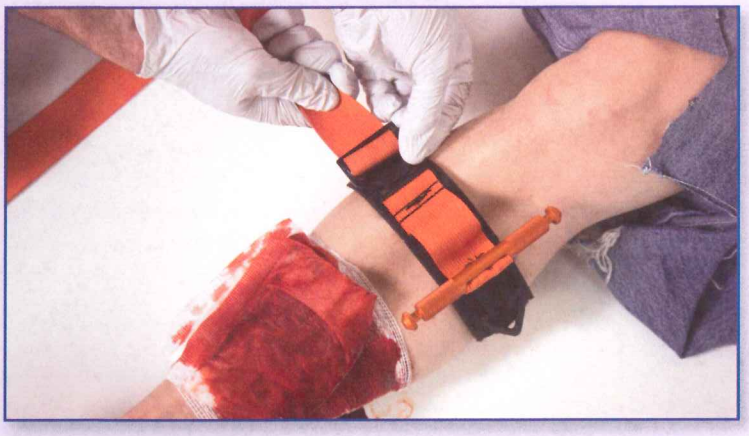
Document the time of application and provide it to EMS personnel. Unless directed by qualified medical personnel, never remove or loosen a tourniquet once it is applied.

To improvise a tourniquet using a triangular bandage, start by folding the bandage lengthwise so that it is approximately 2 inches wide. Place the center of the bandage a few inches above the wound site and not directly over a joint.

Wrap the bandage firmly around the limb, bringing both ends back to the top. Make sure the bandage remains flat. Tie half a knot over the top of the bandage. Place a rigid stick-like object on top of the half-knot and tie a full knot over it. Twist the stick to compress the band until bleeding stops. Secure the stick so it does not loosen or unwind.

Document the time of application and provide it to EMS personnel. As with a commercial tourniquet, do not loosen or remove an improvised tourniquet unless directed by qualified medical personnel.

# Using a Commercial Tourniquet



### *Place Tourniquet*

- Loop band around limb. If necessary, unfasten band, wrap it around limb, and refasten it.
- Place band a few inches above wound site and not over a joint.
- Hand-tighten band snugly around limb.

### *Twist Handle*

- Twist handle to compress band around limb.
- Twist until bleeding stops.

### *Secure the Handle*

- Lock handle in place using mechanism provided to prevent it from loosening or unwinding.


### *Document Time*

- Document time of application and inform EMS personnel when they arrive.
- Do not remove or loosen tourniquet unless directed to by quaified medical personnel.

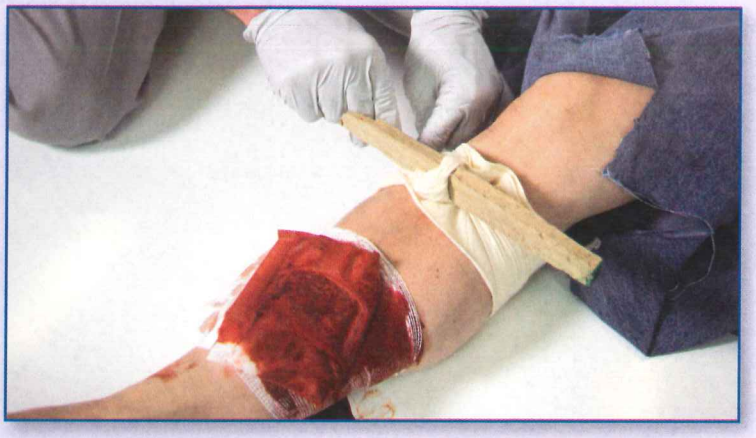
# Using an Improvised Tourniquet

### Place Tourniquet

- Fold bandage lengthwise until about 2 inches wide.
- Place center of bandage a few inches above wound site and not over a joint.
- Wrap snugly around limb, bringing both ends back to top. Tie half-knot to keep in place.

### Twist Stick

- Place a rigid stick-like object on top of half knot. Tie full knot over stick.
- Twist stick to compress bandage around limb until bleeding stops.



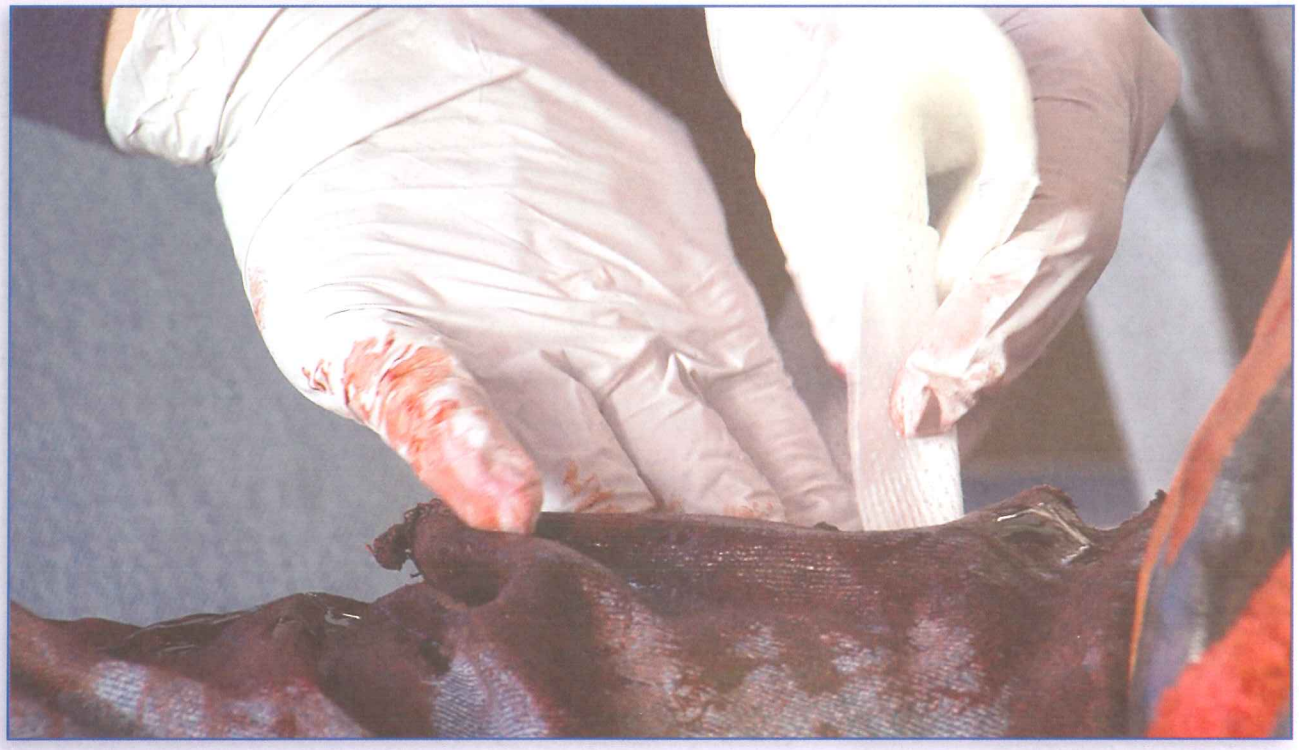
### Secure Stick

- Wrap bandage tails around stick to prevent it from loosening or unwinding.


### Document Time

- Document time of application and inform EMS personnel when they arrive.
- Do not remove or loosen tourniquet unless directed to by qualified medical personnel.

# Using a Hemostatic Dressing

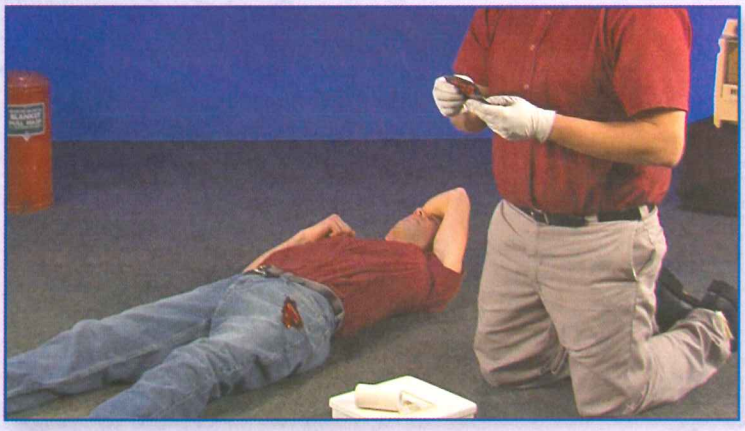


If injury is located where a tourniquet cannot be applied and direct pressure is unable to control bleeding, consider use of a hemostatic dressing.

When using a hemostatic dressing, always follow the manufacturer's directions:

- Remove the dressing from the packaging. The dressing is folded in a Z pattern to help with proper use.
- Pull end of dressing out from one side and pack into wound, directly over the source of bleeding.
- When the wound is packed, apply direct pressure using the rest of the dressing. Continue to apply pressure until bleeding stops.
- Consider using direct pressure or a pressure bandage over the wound to maintain bleeding control.

# Using a Hemostatic Dressing



### Assess Injury

- If injury is located where a tourniquet cannot be applied and direct pressure is unable to control bleeding, consider use of a hemostatic dressing.

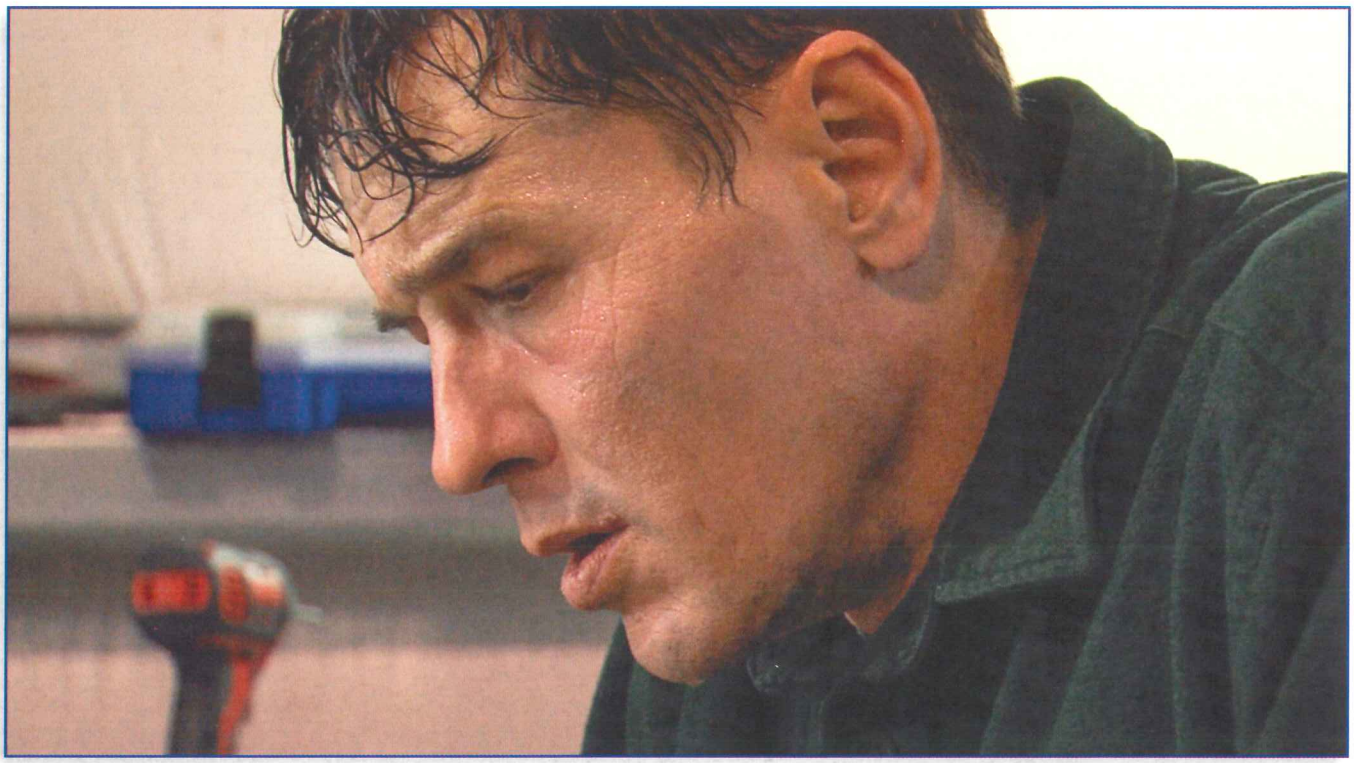
### Pack Dressing into Wound

- Remove the dressing from packaging; dressing is folded in a Z pattern to help with proper use.
- Pull end of dressing out from one side and pack into wound, directly over source of bleeding.

### Apply Direct Pressure

- When wound is tightly packed apply direct pressure over wound site using remaining part of dressing. Continue to apply pressure until bleeding stops.
- If bleeding is controlled, consider using a pressure bandage to hold dressing in place.

# Shock



Shock develops when poor blood flow creates a shortage of oxygen to body tissues. Any serious illness or injury has the potential to cause shock. If not treated early, it can get worse and become life threatening.

Early signs can be difficult to detect. A person may simply begin to appear uneasy, restless, or worried. Other, more serious signs can emerge gradually. The person may become confused. The skin may become pale, cool, and sweaty.

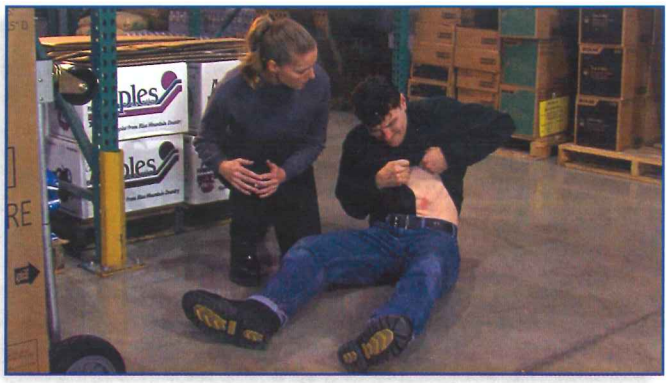
A person in shock must get to a hospital as quickly as possible. Early recognition, treatment, and activation of EMS are essential for survival.

To limit the effects of shock, help the body maintain adequate oxygen by ensuring an open and clear airway, confirming normal breathing, and controlling any external bleeding. If there is no difficulty in breathing, lay the person flat on the ground.

Maintain a normal body temperature. Insulate on top and underneath to prevent heat loss. Be careful not to overheat. Give nothing to eat or drink, even if the person asks for it. Keep the person as comfortable and calm as possible. Reassess regularly until another provider or EMS take over.

## *Internal Bleeding*

A significant blow can create injury and bleeding inside the body. This is especially true for blood vessels and organs in the chest and abdomen. Because you cannot clearly see the injury, internal bleeding can be difficult to detect. Suspect it if the chest or abdomen was hit hard. Signs of shock may be the earliest indication that internal bleeding is occurring.



### Knowledge Check

At the elementary school where you teach, one of your students tells you that another child fell off the play structure at recess. Concerned, you approach the child who fell and ask her what happened. She tells you she hit her belly on one of the bars when she fell and that it hurt a lot at first, but that it feels better now. You are concerned whether she injured herself internally. What signs do you look for?

# Amputation

Amputation is the complete detachment of a body part. If an amputation has occurred, quickly assess for and control any severe bleeding. Have the person sit or lie down, even if it is on the ground. Activate EMS.

Amputated body parts can often be surgically reattached. Once the person is stable, locate the severed part. Wrap it in a sterile or clean cloth. Place the part in a tightly sealed plastic bag or waterproof container. If available, cool the bag or container with ice or a chemical cold pack.

Do not soak the severed part in water, and do not put it directly on ice. Give it to EMS providers for transport with the person to the hospital.

Calm, comfort, and reassure the person. Reassess regularly until another provider or EMS take over.

### Knowledge Check

True or false? Quickly assessing for and controlling any bleeding is the highest priority if an amputation has occurred.

# Impaled Objects

An impaled object is an object that penetrates a body part and remains embedded. As a general rule, do not remove an impaled object. If it has damaged any large blood vessels, it can act like a plug, helping to prevent serious blood loss.

Movement of the object, or the body part it is in, could also create additional injury, especially if the object is embedded in muscle, bone, or organs below the skin.

If you suspect impalement has occurred, carefully tear or cut away clothing to confirm the object has penetrated the skin. Look for any serious bleeding.

Keep the affected body part immobilized to prevent movement. Activate EMS for any significant impaled object or if you are in doubt about its severity. If the injury is bleeding, use clean pads to apply direct pressure straight down around the base of the object to control it. Do not apply pressure to the object itself.

To prevent movement of the object, place bulkier padding around it for stabilization. Hold the padding in place with your gloved hand or a bandage.

Being impaled on a larger, more immovable object requires additional care. If needed, support the person's weight to relieve pressure on the impalement. Use padding to provide stability and comfort. Reassure the person to keep him or her calm. Make him or her as comfortable as possible. Reassess the person and the injury regularly until EMS personnel can take over care.

## *Impaled Object in the Eye*

The impalement of an unprotected eye is most likely to be caused by a small object being propelled at a high rate of speed.

Activate EMS. Prompt professional medical care is required anytime an object penetrates the surface of the eye. The immediate focus of care is to stabilize the object and prevent additional injury. Do not allow the person to rub the eye. Never try to remove an embedded object.

Stabilize a large object with clean pads. Place a protective cover over the object, such as a paper cup or cone. Cover the uninjured eye with a pad and bandage over both eyes. With smaller objects, loosely cover both eyes with pads and bandage. Eyes move together. Covering both eyes prevents movement of the affected eye.

Covering both eyes can be distressing. Stay with the person. Calm, comfort, and reassure to help reduce anxiety. Regularly assess the person until EMS personnel take over.

### Knowledge Check

Another carpenter with whom you work has accidently driven a framing nail into his hand with a nail gun. The nail is embedded deeply and extends out the other side of his hand. As a first aid trained provider, you begin to provide care. You elect to leave the impaled nail in place. What are the two main reasons you make that decision?

# Open Chest Injury

A penetrating injury through the chest wall can disrupt the chest's ability to draw air into the lungs. Expansion of the chest during breathing creates suction in the chest, which pulls outside air containing oxygen through the airway and into the lungs. An open wound on the chest wall will also allow air to be drawn into the chest. This will get progressively worse over time and significantly impair breathing. The person's condition could deteriorate quickly.

Activate EMS immediately. Remove clothing to expose the injury site to assess the wound. Check to see if there is an exit injury on the other side of the chest. If so, treat the more serious one first. Do not seal the open wound with an airtight dressing. If you do, pressure within the chest could increase and quickly become life threatening. Be careful that your bleeding control measures do not unintentionally seal the wound.

If possible, allow the person to assume a position he or she is most comfortable breathing in. Regularly assess the person and the injury until EMS providers assume care. Be prepared to perform CPR if breathing stops.

### Knowledge Check

True or false? It is recommended that first aid providers seal an open chest wound with an airtight dressing.

# Open Abdominal Injury

Injury to the abdomen may result in a condition known as evisceration, in which abdominal organs protrude through an open wound. It is important to understand that these are functioning organs and the primary treatment is to protect them from further injury.

Activate EMS. Allow the person to assume a position of comfort. Cover any protruding organs with a thick, moist dressing. Do not push the organs back inside the body. Do not apply direct pressure on the wound or exposed internal parts, as this could cause further injury.

Regularly assess the person and the injury until EMS personnel arrive and take over care.

### Knowledge Check

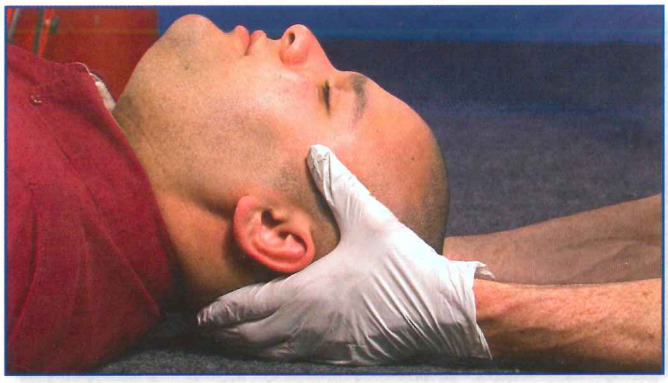
Your fellow cook at a restaurant is doing prep work when she slips while trimming a large piece of meat. She accidentally draws a sharp knife blade across the abdomen, cutting through the abdominal wall. As a trained first aid provider, you cut away her shirt to expose and inspect the wound. It is not bleeding very much but you see abdominal organs protruding through the open wound. Knowing these are functioning organs, how are you going to protect them from further injury?

# Head, Neck, or Back Injury


The head, neck, and back are all vulnerable when the body experiences a sudden force.

## *Spinal Injury*

When the body suffers a significant force, such as from a high fall, shooting, or motor vehicle crash, serious injury can result, most notably to the spine. Injury to the spinal cord can result in temporary or permanent paralysis. Paralysis of chest muscles could result in the loss of breathing. Serious shock may also occur.



After an initial injury, the movement of damaged spinal bones can result in additional injury to the spinal cord or surrounding tissue.

Suspect a spinal injury when the following occur:

- Obvious injuries to head, neck, or back
- Numbness, tingling, burning, or a loss of sensation in the arms, hands, legs, or feet

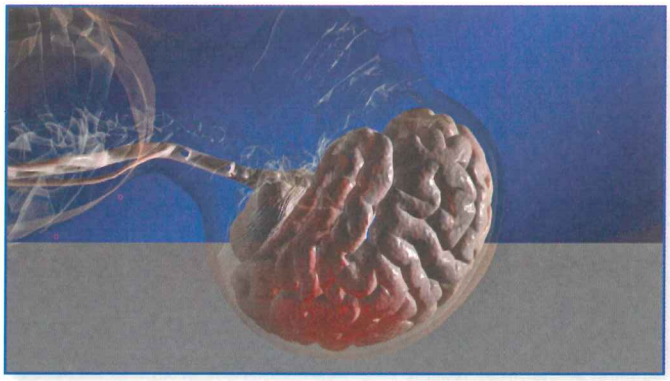
The lack of symptoms or obvious injury does not mean that the spine is not injured. If a significant mechanism of injury occurred, it is best to assume a spinal injury exists. Manually stabilize the head in place with your hands to provide spinal motion restriction.

Establishing an airway for an unresponsive person is a higher priority than protecting a suspected injury to the spine. Tilt the head and lift the chin when necessary to maintain an open airway or give rescue breaths.

When a head, neck, or back injury is suspected, it is best to leave the person in the position found. However, if the airway is threatened, quickly roll the person as needed to clear and protect it. Keep the head, shoulders, and torso from twisting as best you can.

If you need to leave an unresponsive person with a suspected spinal injury alone to get help, place the person in a recovery position to protect the airway before you go.

## Brain Injury



Injury to the brain can occur from a significant blow to the head or by rapid movements of the head that force the brain to bounce around within the skull. Significant swelling or bleeding inside the skull can result in increased pressure that damages delicate brain tissue.

Suspect serious brain injury when a blow to the head clearly results in a diminished level of responsiveness. Surgical intervention may be the only treatment. Activate EMS without delay and stabilize the head with your hands. Do not attempt to stop the flow of blood or fluid from the ears or nose.

If the person has a seizure, protect the head as much as possible and prevent him or her from bumping into nearby objects. Do not restrain the person tightly and do not place anything in his or her mouth. Seizures will generally last for just a few minutes. When the seizure stops, assess the person's breathing and ability to respond. Provide CPR if necessary. Reassess regularly until EMS personnel take over.

## Concussion

A concussion is a brain injury that generally results in less immediate or obvious signs. Most concussions are temporary and resolve naturally, but it is possible for one to progress into a life-threatening condition.

Suspect a concussion after a significant blow to the head or body when the affected person is unable to remember what happened just before or after the incident, or recall simple facts about it. The person may move clumsily, answer questions slowly, or show a change in mood or personality. Additional signs include the following:

- Looking stunned or dazed
- Headache
- Nausea
- Dizziness
- Difficulty in balance
- Visual problems

A first aid provider may be called upon to give advice on whether someone who may have a concussion is okay to return to normal activities. Unfortunately, there is no current concussion evaluation process for use by those trained in first aid.

If you suspect a concussion may have occurred, the affected person should be evaluated by a healthcare provider or EMS personnel as soon as possible.

Because of the potential progressive nature of concussion, it is best to not allow the person to perform actions that could pose a risk for additional injury until he or she can be adequately assessed by a healthcare professional.

### Knowledge Check

You are driving along your delivery route when you witness one car hitting another car at a high rate of speed. Trained as a first aid provider, you stop to help. The scene is secured and the driver of the car you have gone to help has no immediate life threats that you can assess. However, she is not wearing a seat belt and it appears she was thrown forward into the windshield, hitting it with her head. There is a small cut on her forehead, but she does not complain of pain in her neck, or numbness and tingling in her arms or legs. You elect to manually stabilize her head with your hands. Why?

# Manual Spinal Motion Restriction

### *Initial Considerations*

- Make sure it is safe to provide care.
- Immediately encourage person to not move.
- Have a bystander activate EMS.

### *Stabilize Head*

- Get into a comfortable position behind person.
- Cup your hands on both sides of head, to manually stabilize it.
- Minimize any motion.
- Comfort, calm, and reassure person.

### *Protect Airway*

- If fluids are collecting in mouth and airway, roll person onto side to drain.
- If you are alone and need to leave to get help, roll person into recovery position before you go.

# Swollen, Painful, or Deformed Limb

Bones, muscles, and joints give the body shape, allow movement, and protect vital internal organs. Long bones form the upper and lower parts of each limb. Muscles, ligaments, and tendons attach to the bones, allowing for movement where the bones come together at joints. These bones are the most exposed to external forces and injury.

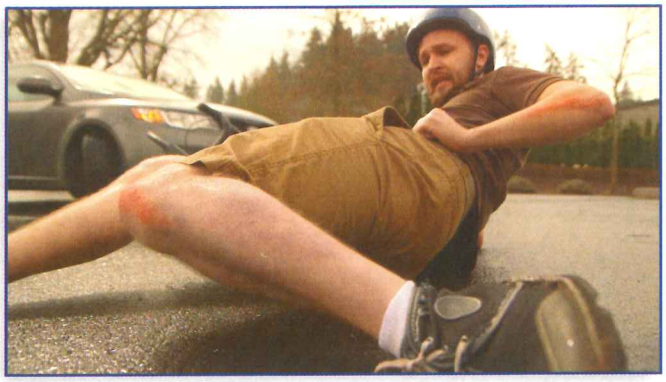
There are four different types of injuries affecting bones, muscles, and joints:

- Strains are stretching or tearing injuries to muscles or tendons.
- Sprains are tearing injuries to ligaments that hold joints together.
- Dislocations are the separation of bone ends at a joint.
- Fractures are breaks in bones.

Common signs of these types of injuries include swelling, pain, and discoloration. Distinguishing the exact type of injury is often difficult. It is best to treat everything as a possible fracture.

The limb may appear deformed and the person may guard it by holding it against his or her body. Unstable bones or joints can damage surrounding tissue. Encourage the person to not move or use the injured limb. If the injury seems serious, or you are not sure, activate EMS.

It is best to not straighten an injured limb that is unnaturally angled. Leave the limb in the position found. If a limb becomes blue or extremely pale, circulation may be compromised by the injury. Activate EMS if this occurs.



Splinting an injured limb can reduce pain and prevent further injury, especially when moving an injured person. In general, it is best to rely on EMS personnel to splint, as they have more extensive training, experience, and equipment.

Comfort, calm, and reassure the person. Reassess the person and injury regularly until EMS personnel take over.

### Local Cooling

For many injuries, local cooling can help decrease bleeding, swelling, and pain. A plastic bag filled with a mixture of ice and water works best. Place a thin cloth between the bag and skin to prevent cold-related problems. Limit application to 20 minutes or less.

### Knowledge Check

One of your coworkers was hit in the leg with a wide load on a forklift. As a responding first aid provider, you carefully cut her pant leg open to expose the injury site and find the lower leg is lying at an unnatural angle and the tissue color of the leg and foot below the injury is a grayish blue. What do you do?

# Manual Stabilization of a Limb

### *Expose Injury*

- Encourage person not to move injured limb.
- Expose injury site to look for an open wound.

### *Cover Open Wounds*

- Cover an open wound with a clean absorbent pad.
- Gently control bleeding with firm, continuous, direct pressure around bone or injury site.
- Never push an exposed bone back under skin.

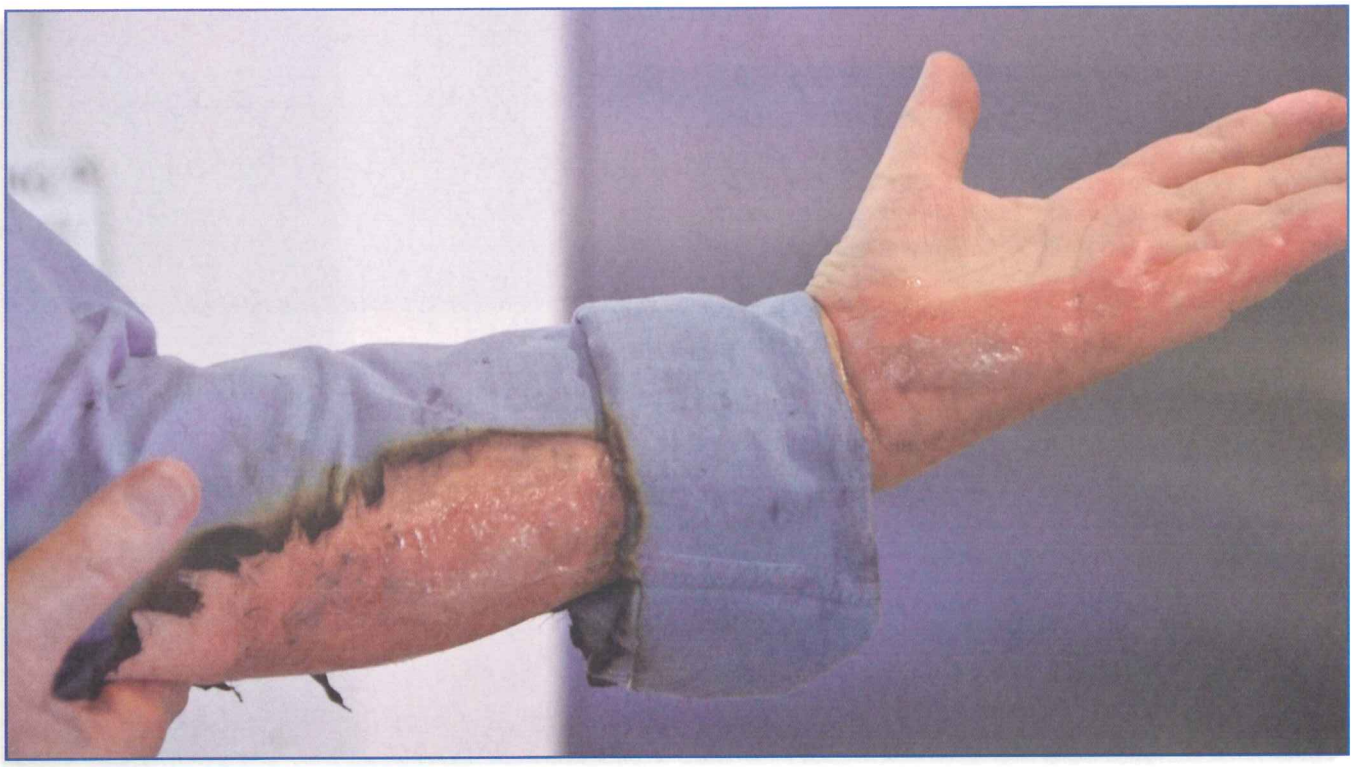
### *Stabilize Limb*

- Leave injured limb in position it was found.
- Use padding in gaps and holes underneath limb to provide a stable and comfortable spot for it to rest.
- If needed, use your hands to manually stabilize limb.

### *Additional Considerations*

- If injury seems serious, or you are not sure, activate EMS.
- Comfort, calm, and reassure person.
- Local cooling can help decrease bleeding, swelling, and pain.

# Burns



A burn is an injury to skin, and possibly underlying tissues, caused by exposure to extreme heat, chemicals, or electrical contact.

## Thermal Burns

Common causes of thermal burns include direct contact with hot liquids, flames, or hot objects. Burns can also be caused by radiant heat from a hot environment or extended exposure to the sun. Most burns are minor in nature and may only require basic care. However, more serious burns require additional care.

The severity of a burn is related to its depth and size. Deeper burns resulting in blistering or broken skin are more serious. Larger burns, even those with a shallow depth, are also more serious. Burn location contributes to severity. Burns involving the face, neck, hands, genitals, and feet can result in complications related to movement and other basic functions. Difficulty breathing as a result of inhaling hot air indicates a serious injury within the airway. All serious burns, or ones you are unsure about, should be evaluated by a healthcare provider.

When a burn occurs, make sure the situation is safe for you to help. If clothes or other materials are burning or on fire, act immediately to put the fire out.

Direct a person to stop, drop, and roll. Smother the burning material with a coat, rug, or blanket, or douse the material with water.

Activate EMS if you think the burn is severe or you are unsure. Carefully expose burned areas by removing clothing. If needed, cut or tear clothing away. If it is stuck to the burn, cut around it. Cool a burn with cool or cold water as quickly as possible. Cool the burn for at least 10 minutes. Use a clean, cool or cold dressing as an alternative when water is not available. Never use ice or a frozen compress to cool a burn. There are also gel-soaked burn dressings, presoaked with a specially formulated gel, to promote cooling of the burn.

Early cooling can reduce pain and minimize the risk and depth of burn injury. When cooling large burns, watch for signs of overcooling, such as shivering. Children have a larger surface area in relation to weight than adults and are more likely to have complications from overcooling.

Remove any jewelry near the burned area. After cooling, separate fingers or toes with sterile dressings or pads. To improve healing, leave any blisters intact. Loosely cover the burn area with a dry, clean pad or clean sheet to help keep it clean and protected. Avoid natural burn remedies such as honey or potato peels. Never apply butter, ointment, lotion, or antiseptic to a serious burn. Give the person nothing to eat or drink. Keep the person calm and comfortable while awaiting EMS.

## Electrical Burns

Medical emergencies involving electricity can occur when there is direct contact with an energized object, such as an electrical wire or outlet, or when someone is struck by lightning.

Be safe! Turn off any electrical current before touching the person. If you cannot stop the flow of electricity, do not enter the area around the person or attempt to care for him or her.

An electric shock can cause an abnormal heart rhythm in which the heart stops moving blood. When it is safe, perform CPR and use an AED if one becomes available.

When a body part comes into contact with an exposed electrical source, electricity can travel from the point of contact to a second point of contact that is grounded. Common points of contact include the hands and the feet.

If the person affected is responsive and no longer in contact with the electrical source, look for burns at any suspected points of contact. Cool the burn as you would with a thermal burn.

A person who has received an electrical shock should seek professional medical care because serious internal injuries can occur.

**Caution!**

Consider any fallen or broken wire extremely dangerous. Do not touch (or allow your clothing to touch) a wire, person, or vehicle that is possibly energized. Do not approach within 8 feet of it. Notify the local utility and have trained personnel sent to scene. NEVER attempt to handle wires yourself unless you are properly trained and equipped.

## Chemical Burns

Some chemicals can damage skin tissue on contact. The priority is to quickly remove the chemical to minimize any damage. Immediately flood the affected area with large amounts of water. Take care to prevent additional exposure to the injured person or yourself.

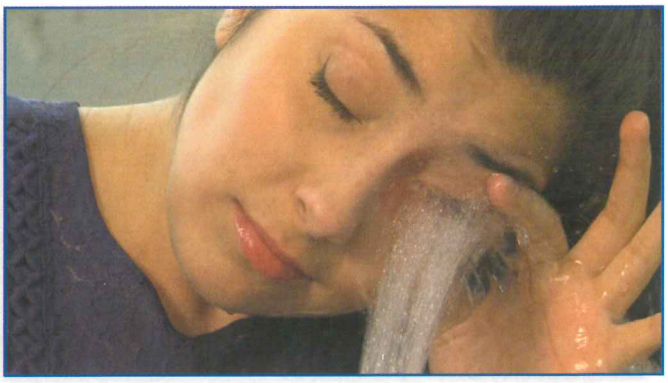
When involved, brush off any dry powder with a gloved hand or cloth prior to flushing. Do this carefully to avoid additional exposure.


Carefully remove any contaminated clothing while continuing to flush the area. Flush for at least 15 minutes. Some chemicals take longer than others to be flushed away. If still painful, resume flushing. If no longer painful, cover any visible burns loosely with a dry, clean dressing and seek further medical attention.

## Chemicals in the Eye

Corrosive chemicals splashed into an eye can quickly damage eye tissue. Affected eyes will become painful and appear red and watery. Immediately flood the eye with

large amounts of water. Carefully hold the eye open and flush continuously for at least 15 minutes, or until EMS personnel take over.



Flush outward from the nose side of the affected eye to prevent contamination of an unaffected eye. If the person is wearing contact lenses and they are not removed by the flushing, have the person try to remove them as flushing continues. If running water is not available, normal saline or another commercial eye irrigating solution can be used.

Chemical burns to the eye require professional medical care. Activate EMS as quickly as possible.

Without interrupting care, contact the Poison Help line at 1-800-222-1222 for treatment advice when a chemical burn occurs. If not available, talk to the EMS dispatcher or a medical provider.

### Knowledge Check

A nearby coworker using a torch to free up a stuck bolt accidentally ignites his shirt sleeve on fire. As a trained first aid provider, you quickly put out the flames by throwing a nearby coat over his arm. When you remove the coat, you can see that his arm has been burned badly. What is your next step to remove heat from the burned area and prevent additional damage?

# Minor Injuries

Minor injuries, which can also be sudden and surprising, may need first aid attention.

## Nosebleed

Nosebleeds can occur when small blood vessels inside the nostrils are ruptured. Most nosebleeds are not serious and can be easily handled.

To care for someone with a nosebleed, have the person sit up straight with his or her head tilted forward, chin down. Pinch the soft portion of the nose with your thumb and index finger and hold it for about ten minutes. Do not tilt the head back or have the person lie down. These actions will cause the person to swallow blood and may cause him or her to vomit. Have the person spit out any blood that collects in his or her mouth.

Monitor the person. If the nose continues to bleed, or you see signs of developing shock, seek further medical help.

## Injured Tooth

A blow to the mouth can break, dislocate, or even knock out teeth. When a tooth has been knocked out, treat it without delay. Immediate reimplantation is believed by the dental community to result in the greatest chance of tooth survival.

Control any bleeding. Have the person gently bite down on a clean absorbent pad over the bleeding socket. Handle the tooth only by the chewing surface, called the crown. Do not touch the root, the part of the tooth that extends into the gum. Never scrub the tooth or remove any attached tissue fragments.

Keeping the tooth moist can help extend the time for successful reimplantation. At a minimum, have the person spit into a cup and place the tooth in the saliva. Avoid storage in water.

There are alternative solutions that are more effective for temporary storage of a displaced tooth than saliva:

- Hank's Balanced Salt Solution
- Egg white
- Coconut water
- Whole milk

Get the person to a dentist as quickly as possible, within an hour. The faster you act, the better the chance of saving the tooth.

### Splinter

Splinters are small, sharp pieces of foreign material that become embedded in the skin. They need to be removed to keep a wound from becoming inflamed or infected.

Most splinters can be easily treated. If there is a protruding end, use tweezers to grab the splinter and pull it out in the direction it entered. Following use, tweezers should be washed thoroughly with soap and water.

If a splinter is deeply embedded or you have only been able to remove a piece of it, seek professional medical care.

### Irritated Eyes

Small foreign objects on the surface of an eye will cause irritation and discomfort.

Encourage the person not to rub the affected eye. Have the person blink several times to see if the eyelid or tearing can remove the object naturally. If not, flush the eye with tap water or saline eyewash solution. Flush outward from the nose side of the eye.

If pain continues or the person feels like something is still in the eye, cover the eye lightly with a gauze pad and seek professional medical care. If the person has been exposed to flying metal fragments (hammering, grinding, etc.), do not attempt removal. Seek professional medical care immediately.

### Knowledge Check

When a tooth has been knocked out, what is the most critical factor in being able to successfully reimplant the tooth?

# Sudden Illness

Medical conditions and illnesses can suddenly trigger an unexpected medical emergency. In general, suspect a serious illness when, without warning, a person suddenly appears weak, ill, or in severe pain.

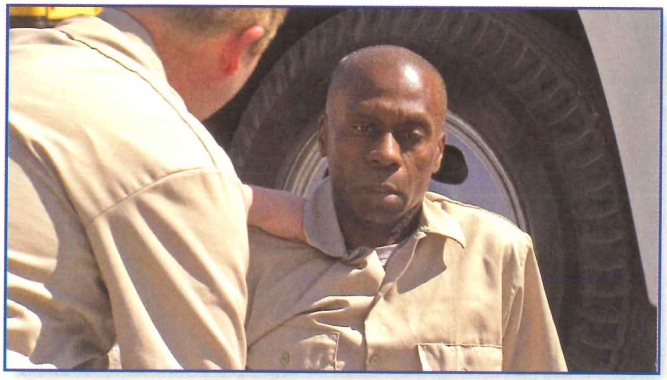
In many cases, the human body displays warning signs to alert us to serious illness. The most common warning signs of serious illness include the following:

- Altered mental status
- Breathing difficulty or shortness of breath
- Pain, severe pressure, or discomfort in the chest

# Altered Mental Status

Caused by a number of medical conditions, as well as the use of alcohol, medications, or drugs, an altered mental status is a significant or unusual change in a person's personality, behavior, or consciousness. It is an indication of a change in brain function.

Regardless of the cause, an altered mental status is a warning sign of a serious problem and is considered a medical emergency.



- Activate EMS.
- Position the person for comfort.
- Calm and reassure the person as best you can.
- If responsiveness becomes severely diminished, consider placing in a recovery position to protect the airway.
- Reassess regularly until another provider or EMS personnel take over. The condition could deteriorate quickly and require additional care.

## *Fainting*

Fainting is a momentary loss of consciousness caused by an unexpected drop in blood pressure and blood flow to the brain. Anxiety, fear, pain, stress, standing in place too long, or rapid movements in position, such as standing up quickly from a seated or lying position, can all result in someone feeling faint or fainting. A medication or underlying medical condition might also contribute to the cause.

If someone complains of suddenly feeling warm, lightheaded, or that his or her vision is narrowing, follow these guidelines:

- Quickly lay the person flat on his or her back on the ground.
- You can elevate the feet about 6 to 12 inches, which allows blood from the legs to move back into the body.
- Do not elevate the feet if it causes pain or you suspect a person may be injured.

This is a temporary condition that should pass quickly and allow the person to get back to normal activities.