

**Basic Emergency**

**&**

**First Aid**

**Concepts**

*A Basic Handbook*



## Emergency and First Aid Considerations

### NOTE:

*Below is a very basic handbook of very fundamental information concerning the assessment and management of situations that people may encounter during the course of their activities. Health issues are usually very stressful issues. Our wellbeing and “personhood” are threatened. A common reaction is to panic. Some basic knowledge can help avert panic.*

*This little handbook is not intended to provide definitive or comprehensive information concerning health issues. It is a basic guide intended to provide some assistance and fundamental knowledge until the patient can be seen and evaluated by a medical professional.*

*The material in the book was taken directly from Rod Brouhard’s web site <http://firstaid.about.com/> Mr. Brouhard is a trained paramedic and writes such that most lay people can understand the problems and the process involved with basic health issues.*

*There have been some minor modifications made to facilitate placing this into a “manual form”. Mr. Brouhard’s site has some excellent information and is well organized. You would do well to familiarize yourself with some of the information on his web site.*

*After the emergency occurs it is usually beyond the time to start learning and preparing how to handle it.*

*It is my hope that in today’s difficult, troubled and uncertain world that this information will be of some assistance to you and we hope that you will not have to use it at all.*

*Prevention, using caution and care and thinking “Safety First” is the critical factor in maintaining wellbeing.*

**Ronald Beals, MD**

# Some Basic Emergency and First Aid Considerations

## Universal Precautions

Professional rescuers practice universal precautions when providing medical care to victims. Universal precautions are steps used to reduce the potential for victims to infect rescuers. Practicing universal precautions requires personal protective equipment such as gloves or eye protection.

To better protect yourself, you should make sure your first aid kit is adequately stocked with personal protective equipment necessary to practice universal precautions.

## Staying Safe

Safety is an *ongoing concern* that must never leave your thoughts.

There is a primal instinct in many people to dash to the rescue of those in need. Regardless of the dire circumstances of whatever terrible accident or injury you may witness, it's urgent that you keep your wits about you and stay safe.

Safety is an awareness of your surroundings and a healthy fear of unstable situations. By its very nature, an emergency is an unstable situation. If everything were truly under control, nothing bad would've happened in the first place.

If, for example, you see a person struck by a car in a crosswalk, do not rush headlong into the street to see if they're injured. You will no doubt find yourself lying next to them after being struck by the next car barreling down the road.

## Fundamental First Aid: The ABC's



### Determine if the Victim is Awake

Briskly rub the victim's sternum with your knuckles to wake him.

Probably the biggest indicator of a serious medical emergency is an inability to wake a victim. If the person you are trying to help does not respond to you as you attempt to wake him or her, then you should call 911 immediately. If you are out of the house or office and using your cell phone, make sure you know how to call 911 on a cell phone.

If a person is responding to you but is confused, you should still call 911.

Remember: **When in doubt, call 'em out!**

## A is for Airway and B is for Breathing

After caring for your own safety, checking for responsiveness and calling for help, it is important to check **ABC's**. ABC's stand for **A**irway, **B**reathing, **C**irculation.



To see if a patient is breathing:

- look** for chest movement,
- listen** for air movement, and
- feel** for air on your cheek.

### Airway

Checking the victim's airway depends on whether the victim is conscious or unconscious.

If a victim is conscious, ask him or her to speak. The ability to speak directly correlates with an airway. If a person's airway is blocked, he or she can't speak.

Unconscious victims, on the other hand, require a closer inspection. Put your ear close to the victim's mouth and listen for breathing. Feel for air on your cheek and look at the chest to see if it or the abdomen is rising with each breath.

## Breathing

If you do not see, hear or feel *normal* breathing: start CPR immediately! If the victim *is* breathing normally, place him or her in the recovery position. Possible causes of unconsciousness or confusion:

- Diabetes
- Seizures
- Alcohol or drug intoxication
- Poisoning
- Overdose
- Dehydration
- Illness or infection

## C is for Circulation

**Circulation** is the last of the ABC's of first aid. After you have determined if the victim is responding and is breathing, you must determine if the victim has adequate circulation.



Look at the victim's color and feel his or her skin temperature to see if he or she has signs of circulation. If you do not think the victim has circulation and is not responding to you, start CPR.

***Begin chest compressions.*** Place the heel of your hand in the middle of the victim's chest. Put your other hand on top of the first with your fingers interlaced. Compress the chest about 1-1/2 to 2 inches (4-5 cm). Allow the chest to completely recoil before the next compression. Compress the chest at a rate equal to 100/minute.

If the victim is bleeding, follow the steps to control bleeding and wait for the ambulance

There are other techniques involved in CPR for those who are health care providers. If you had training in CPR by the 2005 standards you probably learned some of those techniques which included rescue breathing. The current American Heart Association Standards do not use those techniques except for health care providers. It is usually best to keep things very simple in emergency situations. The greater the complexity the more room for error.

### While Waiting for the Ambulance

As the ambulance is responding to your emergency, there are some things you can do to help emergency crews find you. Make sure to try to do as many of these things as possible to prepare for the ambulance's arrival:

- Lock up the dogs or other pets
- Turn on the porch light
- Gather the victim's personal medical information
- Send someone to meet emergency crews and guide them to the victim
- Move cars & furniture out of the way to allow access with a gurney
- Don't forget to keep an eye on the victim

## How To Treat for Shock



Uncontrolled bleeding may lead to a condition known as shock. Shock is essentially a decrease in blood flow to the brain and other important organs.

Untreated, shock from bleeding will almost always cause death.

The most important step in treating shock is to control bleeding. However, if the victim is already showing signs of shock, it's important to take the necessary steps to stabilize the victim until help arrives.

### Here's How:

1. As with all emergency treatment, make sure you remain safe. Follow universal precautions and wear personal protective equipment if you have it. Follow universal precautions and wear personal protective equipment if you have it. You cannot be helpful to a victim if you allow yourself to be injured in the process.
2. Call for an ambulance. Remember that 911 works differently on a wireless phone than it does from the home or office.
3. Make sure the victim is breathing. If not, begin rescue breathing.
4. Before any other treatments for shock are done, bleeding must be stopped.
5. If you do not suspect a neck injury, lay the victim on his or her back (supine) and elevate the legs. If you suspect a neck injury, do not move the victim. Car and other vehicle accidents often lead to neck injuries. Neck injuries are also common in falls, especially falls from a height taller than the victim.
6. Keep the victim warm.
7. Continue to check on the victim. If the victim stops breathing, begin rescue breathing. If the victim vomits, roll the victim to one side and sweep the vomit from his or her mouth with your fingers.

# Everyday First Aid A-D

What should you do if you're hurt or sick? In an emergency, call 911. Otherwise, look here for first aid tips and procedures for all manner of emergency and non-emergency injuries or conditions. There are plenty of common bumps and bruises that can be handled at home without medical attention. Other times it can be difficult to decide when to see a doctor. This list provides information for everyday illnesses and injuries.

## Causes of Abdominal Pain

Abdominal pain is one of the most difficult symptoms to identify a cause. The causes of abdominal pain listed below range from relatively minor conditions to life-threatening emergencies.

### When to Call 911 for Abdominal Pain

It's important to [call 911](#) when certain signs and symptoms accompany abdominal pain, regardless of the cause. If a victim of abdominal pain is also experiencing any of the following, call 911:

- sudden, severe onset of abdominal pain
- vomiting blood
- bloody diarrhea
- neck, chest, or shoulder pain
- rigid (hard) and tender abdomen
- not able to have a bowel movement, especially with vomiting
- pain between shoulder blades
- dizziness
- weakness
- sweating
- confusion

### Abdominal Pain Causes

Here are links to potential causes of abdominal pain; this list is by no means exhaustive.

[abdominal aortic aneurysm](#)

[appendicitis](#)

[Crohn's disease](#)

[diverticulitis](#)

[ectopic pregnancy](#)

[food poisoning](#)

[gallstones](#)

[GERD \(acid reflux\)](#)

[heart attack](#)

[irritable bowel syndrome](#)

[kidney stones](#)

[kidney trauma](#)

[twisted bowel \(sigmoid volvulus\)](#)

[ulcer \(gastrointestinal bleeding\)](#)

## How To Treat an Amputation

Amputations come in all shapes and sizes. Whether it's a leg amputation, a finger amputation, or a penis amputation, the treatment is exactly the same. React quickly and there's a good chance the amputated part can be reattached.

### Here's How:

1. **Stay Safe.** If you are not the victim, practice [universal precautions](#) and wear [personal protective equipment](#) if available.
2. **Call 911** immediately. If calling from a cell phone, be sure to tell the operator your location as clearly as possible.
3. Make sure the victim [has an airway and is breathing](#) - if not, begin [CPR](#). [Control bleeding](#) on the stump (the part of the amputated limb still attached to the victim). Use pressure directly on the wound and elevate the limb above the heart if possible. **Do not** use a [tourniquet](#) unless medical care will be delayed for several hours.
4. Collect the amputated limb and put it in a bag. Place the amputation on top of ice. **Do not** wash the amputation or put it in water. **Do not** put the amputation *in* ice, just on top.
5. If an ambulance is not available, get the victim to medical care as soon as possible.
6. Watch for signs of [shock](#).

### Tips:

1. Do not let the victim eat or drink anything. Reattaching an amputation requires surgery. Doctors do not want surgery patients to have anything in their stomachs during the procedure.

## How To Treat a Bee Sting

1. **Safety first!** Get away from the bee. Bees release a scent when in danger to attract other bees. If you're still around when reinforcements get there, they'll sting you.
2. Follow [universal precautions](#) and wear [personal protective equipment](#) if you have it.
3. **Remove any stingers immediately!** No need to scrape off bee stingers, just remove them. It's OK to pull stingers out with your fingers. The longer bee stingers are allowed to remain in the body, the more severe the reaction will be.

4. If the victim is allergic to bees, check to see if the victim is carrying an epinephrine auto-injector (EpiPen®). If so, help the victim use the device as directed. If the victim is supposed to carry one of these devices and does not have it, call 911 immediately! **Do not wait for symptoms to appear.**

Watch any victim closely for signs of anaphylaxis.

- itching
- redness
- hives (raised welts)
- shortness of breath

If there is any concern that the victim may be developing anaphylaxis, call 911 immediately. Antihistamines, such as diphenhydramine (Benadryl®), can slow an anaphylactic reaction, but will not stop it.

5. Non-allergic victims will almost always develop local reactions to bee stings. Redness, swelling, and pain are all common at the site of the bee sting. The pain will usually go away pretty quickly, but swelling may last for more than a day. Use an ice pack to reduce swelling at the site.

It's common to develop some itching at the bee sting site. Antihistamines or calamine lotion should help.

6. Take the victim to the emergency department if the victim was stung more than 10 times, or if there are bee stings inside the nose, mouth, or throat. Swelling from these stings can cause shortness of breath, even in non-allergic victims.
7. Use ibuprofen or acetaminophen for minor pain relief. For tenderness at the site, try a bee-sting swab (compare prices) to dull the pain.

#### **Tips:**

1. Conventional wisdom says to scrape bee stingers away from the skin because pinching the venom sack could push extra venom into the victim. In fact, *how fast* you get the stinger out is much more important than *how*.
2. Honey bees leave a stinger behind when they sting a victim. Wasps, yellow jackets, and hornets do not leave a stinger. These relatives of the honey bee can also cause an anaphylactic reaction.

## **How To Treat a Black Eye**

Black eyes are caused by bruising of the skin and fat around the eye bones (orbits). Most of the time, black eyes are minor injuries that, like any bruise, will fade with time and disappear.

Black eyes can also be a sign of a more significant injury - especially if both eyes are black following an injury to the head.

1. Safety First! Make sure the environment is safe for both rescuer and victim before providing any first aid. Always practice universal precautions and use personal protective equipment whenever you may come in contact with blood or body fluids. The worst thing a rescuer can do is become another victim. Use common sense and stay away from potential hazards.
2. Call 911 immediately if the victim has any of the following:
  - bleeding from the eyeball (**DO NOT** apply pressure)
  - loss of consciousness
  - two black eyes (especially if the injury was to a part of the head other than the face)
  - confusion
  - loss of vision or blurred vision
  - vertigo (dizziness)
3. During the first 24-48 hours, place an icepack lightly on the black eye for about 20 minutes of each waking hour. Do not leave ice on the eye for more than 20 minutes at a time.
4. Watch the eye for swelling or infection. If the victim's vision is obstructed from swelling, or there is drainage or bleeding from the eye, call a doctor.

#### **Tips:**

1. Never put raw meat on a black eye. There is a first aid myth that putting steak on a black eye will help it heal faster. It will not. In fact, putting raw meat on a black eye is more likely to cause an infection (see E coli).
2. Never put pressure on the eyeball. Eyes are delicate and pressure can lead to serious permanent injury.
3. Ice works to decrease swelling, but there's not really anything that can be done for the discoloration. It will eventually fade.

## **How to Control Bleeding**

### **Direct Pressure**

Regardless how severe, all bleeding can be controlled.

If left uncontrolled, bleeding may lead to shock or even death.



Most bleeding can be stopped before the ambulance arrives at the scene.

While you're performing the steps for controlling bleeding, you should also be calling for an ambulance to respond. Bleeding control is only part of the equation.

The first step in controlling a bleeding wound is to plug the hole.

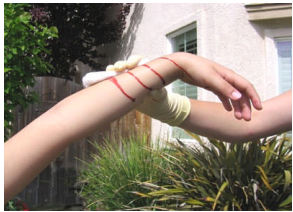
Blood needs to clot in order to start the healing process and stop the bleeding. Just like ice won't form on the rapids of a river, blood will not coagulate when it's flowing.

The best way to stop it is to...stop it. Put pressure directly on the wound. If you have some type of gauze, use it. Gauze pads hold the blood on the wound and help the components of the blood to stick together, promoting clotting. If you don't have gauze, terrycloth towels work almost as well.

If the gauze or towel soaks through with blood, add another layer.

Never take off the gauze. Peeling blood soaked gauze off a wound removes vital clotting agents and encourages bleeding to resume.

### **Elevate Above the Heart**



Gravity makes blood flow down easier than it flows up. If you hold one hand above your head and the other at your side, the lower hand will be red while the higher one is pale.

Step two to control bleeding uses this principle. Elevate the wound above the heart. By elevating the wound, you slow the flow of blood. As the blood slows, it becomes easier to stop it with direct pressure. Remember, it must be *above the heart* and you must *keep direct pressure on it*.

### **Use Pressure Points**



Pressure points should be between the wound and the heart.

Pressure points are areas of the body where blood vessels run close to the surface. By pressing on these blood vessels, blood flow further away will be slowed, allowing direct pressure to stop bleeding.

When using pressure points, make sure you are pressing on a point closer to the heart than the wound. Pressing on a blood vessel further from the heart than the wound will have no effect on the bleeding.

Common pressure points:

- Arm between shoulder and elbow - brachial artery
- Groin area along bikini line - femoral artery
- Behind the knee - popliteal artery

Remember to keep the wound elevated above the heart and keep pressure directly on the wound.

### **When Should You Apply a Tourniquet?**



#### ***Tourniquets should almost never be used.***

When should you apply a tourniquet? The simple answer: almost never. Tourniquets severely restrict or occlude blood flow to the arm or leg to which they are applied. Using a tourniquet to stop bleeding has the potential to damage the entire arm or leg. Patients have been known to lose limbs from the use of tourniquets.

Often, if a tourniquet doesn't cause a loss of function on the extremity which has it, then it probably wasn't applied correctly.

**Applying a tourniquet is a desperate move** - only for the most dire emergencies where the choice between life and limb must be made.

Using a tourniquet requires wrapping a cravat (non stretchy material like terry cloth or linen) around an extremity and tightening it with the use of a windlass stuck through the bandage (see photo).

The tourniquet should be tightened until the wound stops bleeding. If there is any bleeding at the wound after placing a tourniquet, then the tourniquet must be tightened.

When a tourniquet is applied, it is important to note the time of application and write that time down somewhere handy. The best bet is to write the time on the patient's forehead with a water-proof marker.

Once bleeding is controlled, take steps to treat the victim for shock.

## How To Treat a Blister

Blisters created by friction, like the kind you get on your feet or hands when hiking or climbing, can be painful and become infected. Whether or not a blister needs any treatment is still debatable. If the blister is small, unbroken and not very painful, it is probably best to leave it alone. If the blister is large or painful -- especially if the activity isn't finished (such as you are in the middle of a hike) -- follow these steps to drain and dress it.

### Here's How:

1. **Clean the blister**

Gently clean the blister with soap and water, then wipe the blister and surrounding area with isopropyl (rubbing) alcohol.

2. **Drain the blister**

Heat a needle over a flame until the tip is glowing red. Let the needle cool without touching anything else. Poke a hole in the base of the blister to allow the fluid inside to drain. Press lightly on the blister to help drain it.

3. **Dress the blister**

Dab a little antibiotic ointment on the drained blister and cover it with a bandage.

### Tips:

1. Don't get burned holding the needle over the flame. Use a pair of pliers, hot pad or cloth to hold it. You don't want to create a burn blister while trying to fix a friction blister.
2. If you must continue the activity that caused the blister, whether you choose to drain it or not, cut a piece of moleskin like a donut with a hole in the middle. Put the moleskin around the blister. This helps keep pressure off the blister, which should minimize any further injury. If you've drained it, then cover the whole thing with a bandage.

## How To Treat Broken Bones

There are several types of injury that affect extremities (arms and legs): broken bones (fractures), dislocations, sprains and strains. Persistent pain and swelling following an injury warrants a trip to the doctor. All extremity injuries need to be treated as broken bones until an X-ray can be obtained.

Specific broken bones need specific treatment.

### Here's How:

1. **Stay Safe!** The victim was injured somehow. Don't get hurt the same way. Follow universal precautions and wear personal protective equipment if you have it.
2. If the foot or hand at the end of the injured extremity is cold or blue, **call 911 immediately!**
3. Do *NOT* straighten the extremity if it is deformed - keep it in the position found.
4. Stabilize the extremity. Use padding to keep it immobile.
5. Put ice on the injury. Never put the ice directly on the skin - put it in a bag first. After holding ice on the injury for about 20 minutes, take it off for 20 minutes.
6. Anti-inflammatory drugs like ibuprofen or naproxen will help with pain.
7. Elevate the extremity to reduce swelling.
8. If 911 was not called, seek medical assistance for additional pain relief and further evaluation of the injury. The use of an ambulance is probably not necessary, but ambulances in many areas are capable of providing additional pain relief.

### Tips:

1. A little water in the ice bag will help it conform to the shape of the injury.
2. Compression wraps may also help reduce swelling, although the evidence is not compelling. Wrap the extremity about 4-6 inches above and below the injury. The wrap should be snug, but loose enough to fit one finger under the elastic bandage

## How To Recognize and Treat a Broken Wrist

Broken wrists are very painful injuries and rarely life-threatening emergencies. Learn to recognize a broken wrist to decide how to respond to it.

Signs and symptoms of a broken wrist:

- pain (almost always present)
- swelling
- bruising
- deformity (wrist appears misshapen)
- numbness or tingling
- broken skin with bone visible
- limited mobility of the wrist

### Here's How:

1. **Safety First!** Make sure the victim is in a safe location. It is more important to worry about rescuer and victim ongoing safety than to worry about one broken wrist.
2. **Check ABC's.** Make sure the victim has an **A**irway, is **B**reathing, and has **C**irculation.
3. **Control bleeding.**
4. Look for other injuries. If a victim shows signs of injury to the head, neck, or back, **DO NOT** move the victim.
5. Cover any broken skin with sterile dressings.

If needed, the wound can be rinsed -- try to use sterile water or saline solution.

Open wounds may require stitches.

6. If an ambulance is responding, have the victim remain still and wait for the ambulance.

Proceed to step 10 (ice on the break).

7. If an ambulance is unavailable, it may be necessary to splint the broken wrist. Before splinting, check circulation, sensation, and motion.
  1. Check **circulation** by comparing the color and temperature of the injured wrist against the uninjured wrist.
  2. Check **sensation** by asking the victim which finger you are touching.
  3. Check **motion** by having the victim wiggle his or her fingers.
8. To splint a broken wrist, follow the steps for splinting a broken arm. Be sure to immobilize the hand. Any movement of the hand will result in pressure on the wrist. Do not wrap the wrist too tight.
9. After splinting, recheck circulation, sensation, and motion.
10. Put ice on the break to reduce swelling. Put a sheet or towel between the ice and the skin to prevent frostbite. Leave ice on for 15 minutes, then remove ice for 15 minutes.

#### Tips:

1. Remember, **DO NOT** move a victim with suspected head, neck, or back injuries unless it is to keep rescuers or victim safe.
2. Always practice universal precautions and use personal protective equipment whenever you may come in contact with blood or body fluids.
3. Call 911 for a leg broken above the knee, a broken hip, a broken pelvis, a neck or back injury, or a head injury. It is still acceptable to summon an ambulance for a broken wrist, but try to call on the ambulance agency's non-emergency line if known.

## How To Recognize and Treat a Broken Arm



A broken arm may be deformed

Broken arms are very painful injuries and rarely life-threatening emergencies. Learn to recognize a broken arm to decide how to respond to it.

Signs and symptoms of a broken arm:

- pain (almost always present)
- swelling
- bruising
- deformity (arm appears out-of-place)
- numbness or tingling
- broken skin with bone visible
- limited mobility of the arm

#### Here's How:

1. **Safety First!** Make sure the victim is in a safe location. It is more important to worry about rescuer and victim ongoing safety than to worry about one broken arm. Follow universal precautions and wear personal protective equipment if you have it.
2. **Check ABC's.** Make sure the victim has an **A**irway, is **B**reathing, and has **C**irculation. Broken arms can be very distracting injuries. Most of the time, however, they look worse than they are.
3. **Control bleeding.**
4. Look for other injuries. If a victim shows signs of injury to the head, neck, or back, **DO NOT** move the victim.
5. Cover any broken skin with sterile dressings. If needed, the wound can be rinsed -- try to use sterile water or saline solution.
6. If an ambulance is responding, have the victim remain still and wait for the ambulance. If an ambulance is unavailable, it may be necessary to splint the broken arm. Be sure to immobilize the joints (elbow, wrist, shoulder) above and below the break. Do not wrap the arm too tight.

7. Put ice on the break to reduce swelling. Put a sheet or towel between the ice and the skin to prevent frostbite. Leave ice on for 15 minutes, then remove ice for 15 minutes.

**Tips:**

1. Remember, **DO NOT** move a victim with suspected head, neck, or back injuries unless it is to keep rescuers or victim safe.
2. **DO NOT** straighten a broken arm or change its position unless the victim's hand (on the arm with the break) is cold, blue, numb, or paralyzed. Only attempt to return a deformed arm to the anatomical position.
3. Call 911 for a leg broken above the knee, a broken hip, a broken pelvis, a neck or back injury, or a head injury. It is still acceptable to summon an ambulance for a broken arm, but call on the ambulance agency's non-emergency line.
4. If splinting the broken arm, make a sling to support the arm's weight and wrap a swath around the victim's torso to immobilize the broken arm.

## How To Recognize and Treat a Broken Leg

Broken legs can range from simply painful injuries to life-threatening emergencies. You must recognize a broken leg to decide how to respond to it. Call 911 for a leg broken above the knee.

Signs and symptoms of a broken leg:

- pain (almost always present)
- swelling
- bruising
- deformity (leg appears out-of-place)
- numbness or tingling
- broken skin with bone visible
- limited mobility of the leg

**Here's How:**

1. Safety First! Make sure the victim is in a safe location. It is more important to worry about rescuer and victim ongoing safety than to worry about one broken leg. Follow universal precautions and wear personal protective equipment if you have it.
2. Check ABC's. Make sure the victim has an **A**irway, is **B**reathing, and has **C**irculation. Broken legs can be very distracting injuries. Most of the time, however, they look worse than they are.
3. Control bleeding.
4. Look for other injuries. If a victim shows signs of injury to the head, neck, or back, **DO NOT** move the victim.
5. Cover any broken skin with sterile dressings. If needed, the wound can be rinsed -- try to use sterile water or saline solution.
6. If an ambulance is responding, have the victim remain still and wait for the ambulance. If an ambulance is unavailable, the broken leg may need to be splinted. Be sure to immobilize the joints (knee, ankle, hip) above and below the break. Do not wrap the leg too tight.
7. Put ice on the break to reduce swelling. Put a sheet or towel between the ice and the skin to prevent frostbite. Leave ice on for 15 minutes, then remove ice for 15 minutes.
8. Elevate the leg above the level of the heart, if possible.
9. Lay the victim on his or her back to reduce the chance of shock. Cover the victim with a blanket.

**Tips:**

1. Remember, **DO NOT** move a victim with suspected head, neck, or back injuries unless it is to keep rescuers or victim safe.
2. **DO NOT** move a victim of a broken leg unless necessary for the safety of rescuers or victim.
3. **DO NOT** straighten a broken leg or change its position unless the victim's foot (on the leg with the break) is cold, blue, numb, or paralyzed. Only attempt to return a deformed leg to the anatomical position.
4. Call 911 for a leg broken above the knee, a broken hip, a broken pelvis, a neck or back injury, or a head injury. It is still acceptable to summon an ambulance for a leg broken below the knee, but call on the ambulance agency's non-emergency line.
5. If splinting the broken leg, try using a broom handle, long wooden spoon, tube from a vacuum cleaner, or a jack handle from the car.

## How To Recognize and Treat a Broken Foot

Broken feet are very painful injuries and rarely life-threatening emergencies. Learn to recognize a broken foot to decide how to respond to it.

Signs and symptoms of a broken foot:

- pain (almost always present)
- swelling
- bruising
- deformity (foot appears misshapen)

- numbness or tingling
- broken skin with bone visible
- limited mobility of the foot
- victim is unable to bear weight on the foot

**Here's How:**

1. Safety First! Make sure the victim is in a safe location. It is more important to worry about rescuer and victim ongoing safety than to worry about one broken foot.
2. Check ABC's. Make sure the victim has an **A**irway, is **B**reathing, and has **C**irculation.
3. Control bleeding.
4. Look for other injuries. If a victim shows signs of injury to the head, neck, or back, **DO NOT** move the victim.
5. Cover any broken skin with sterile dressings.

If needed, the wound can be rinsed -- try to use sterile water or saline solution.

Open wounds may require stitches.

6. If an ambulance is responding, have the victim remain still and wait for the ambulance.

Proceed to step 10 (ice on the break).

7. If an ambulance is unavailable, it may be necessary to splint the broken foot. Before splinting, check circulation, sensation, and motion.
  1. Check **circulation** by comparing the color and temperature of the injured foot against the uninjured foot.
  2. Check **sensation** by asking the victim which toe you are touching.
  3. Check **motion** by having the victim wiggle his or her toes.
8. To splint a broken foot, immobilize the foot with padding, such as a rolled up towel or a pillow. Be sure to immobilize the ankle as well. Any movement of the ankle will result in pressure on the foot. Do not wrap the foot too tight.
9. After splinting, recheck circulation, sensation, and motion.
10. Put ice on the break to reduce swelling. Put a sheet or towel between the ice and the skin to prevent frostbite. Leave ice on for 15 minutes, then remove ice for 15 minutes.

**Tips:**

1. Remember, **DO NOT** move a victim with suspected head, neck, or back injuries unless it is to keep rescuers or victim safe.
2. Always practice universal precautions and use personal protective equipment whenever you may come in contact with blood or body fluids.
3. Call 911 for a leg broken above the knee, a broken hip, a broken pelvis, a neck or back injury, or a head injury. It is still acceptable to summon an ambulance for a broken foot, but try to call on the ambulance agency's non-emergency line if known.

**How To Treat Common Bug Bites**



Insects, spiders, and scorpions are capable of causing very painful reactions. Bites and stings can be dangerous, but are rarely fatal.

Bug bites are dangerous because of the possibility of anaphylaxis.

Spider bites and scorpion stings can be more worrisome. The reality, however, is that most bites are from unidentified bugs.

There are specific treatments for bee stings and removing ticks.

**Here's How:**

1. **Stay Safe!** Follow universal precautions and wear personal protective equipment if you have it. If a stinger is present, follow the directions for treating bee stings.
2. Apply an ice pack to the site of the sting. Alternate on and off to prevent tissue damage - usually 20 minutes on and 20 minutes off.
3. If the victim exhibits any of the following, consider the possibility of anaphylaxis:
  - itching
  - swelling (other than the site of the sting)
  - shortness of breath
  - heart palpitations
  - chest pain
  - weakness
  - dizziness
  - hives or redness
4. If the victim has any involuntary muscle movements, **call 911 immediately**.
5. Try to identify the bug. If the bug is dead, scoop it up and take it with you to the emergency department. Be careful, even dead bugs have venom.
6. For pain relief, try sting swabs (compare prices). Acetaminophen and ibuprofen are also good for pain.

7. Bark scorpion stings can cause numbness and tingling in the tissue around the bite. If the site is tingling or burning, see a doctor.

**Tips:**

1. Spiders like damp, dark areas the best. Be aware around wood piles, attics, and cellars.
2. The two common North American poisonous spiders are the black widow and the brown recluse.
3. Scorpions are undeniably ugly but rarely fatal pests. Arizona, New Mexico, some of Nevada and Utah, and the California side of the Colorado River are known for the bark scorpion, a particularly nasty critter.
4. Scorpions come out at night, so take care to check bedding before snuggling in. Scorpions are also notorious stowaways; inspect baggage before and after heading home.
5. There is an antitoxin available for bark scorpions, but it is only available in Arizona and it is not FDA-approved.

## How To Treat a Burn



Burns destroy skin, which controls the amount of heat our bodies retain or release, holds in fluids, and protects us from infection. While simple burns on fingers and hands are usually not dangerous, burns injuring even relatively small areas of skin can develop serious complications. If you think a burn of any type is significant, do not hesitate to call 911 immediately. Here are the first aid steps for treating a burn.

*Blisters indicate second-degree burns and potential complications*

**Here's How:**

1. **STAY SAFE!**  
Do not let the rescuer get burned trying to save the victim. Follow universal precautions and wear personal protective equipment if you have it.
2. Treating a burn begins with stopping the burning process. Cool the burned area with cool running water for several minutes.  
If an ambulance is coming, continue running water over the burned area until the ambulance arrives.
3. Look for blistering, sloughing, or charred (blackened) skin.  
Blistering or sloughing (skin coming off) means the top layer of skin is completely damaged and complications are likely. Charring indicates even deeper damage to all three layers of skin (see illustration).  
If the damaged area is bigger than one entire arm or the whole abdomen, call 911 or take the victim to the emergency department immediately.
4. Victims with burns to the following areas need emergency medical assistance (call 911):
  - face
  - hands
  - feet
  - genitalia
5. Mild burns with reddened skin and no blisters may be treated with a topical burn ointment or spray to reduce pain. Cool water (not cold or warm) may also help with pain.  
**DO NOT APPLY BUTTER OR OIL TO ANY BURN!**
6. Over the counter pain relievers like ibuprofen or acetaminophen can be used for the pain of a mild burn (typically redness only). If stronger pain relief is needed, contact a physician or go to the emergency department.

**Tips:**

1. Burns cause swelling. Burns of the face and neck can sometimes swell enough to cause difficulty breathing (see illustration). If that happens, call 911 immediately.
2. Burns that completely circle the hands or feet may cause such severe swelling that blood flow is restricted. If swollen or tight hands and feet become numb and tingly, blue, cold, or "fall asleep," then call 911 immediately.
3. While the burn is healing, wear loose natural clothing like silks or light cottons. Harsher fabrics will irritate the skin even more.
4. Burns destroy skin and the loss of skin can lead to infection, dehydration and hypothermia (loss of body heat). Make sure that burn victims get emergency medical help if experiencing any of the following:
  - dizziness or confusion
  - weakness
  - fever or chills
  - shivering
  - cold sweats

## Electrical injury

**Definition:** An electrical injury can occur to the skin or internal organs when a person is directly exposed to an electrical current.

### **Considerations**

The human body is a good conductor of electricity. Direct contact with electrical current can be fatal. While some electrical burns look minor, there still may be serious internal damage, especially to the heart, muscles, or brain. About 1,000 people die annually of electric shock in the United States.

The outcome of an electric shock to an individual depends on the intensity of the voltage to which the person was exposed, the route of the current through the body, the victim's state of health, and the speed and adequacy of the treatment.

Electric current can cause injury in three main ways:

- Cardiac arrest due to the electrical effect on the heart.
- Muscle, nerve, and tissue destruction from a current passing through the body.
- Thermal burns from contact with the electrical source.

### **Causes**

- Accidental contact with exposed parts of electrical appliances or wiring
- Young children biting or chewing on electrical cords, or poking metal objects into the electrical outlet
- Lightning
- Flashing of electric arcs from high-voltage power lines
- Machinery or occupational-related exposures

### **Symptoms**

Symptoms may include:

- Skin burns
- Numbness, tingling
- Weakness
- Muscle contraction
- Muscular pain
- Bone fractures
- Headache
- Hearing impairment
- Seizures
- Heart arrhythmias
- Cardiac arrest
- Respiratory failure
- Unconsciousness

### **First Aid**

1. If safely possible, shut off the electrical current. Unplug the cord, remove the fuse from the fuse box, or turn off the circuit breakers if possible. Often, simply turning off the appliance itself will not stop the flow of electricity.
2. Call for medical help.
3. If the current can't be turned off, use a non-conducting object, such as a broom, chair, rug, or rubber doormat to push the victim away from the source of the current. Don't use a wet or metal object. If possible, stand on something dry and non-conducting, such as a mat or folded newspapers. Do not attempt to rescue a victim near active high-voltage lines.
4. Once the victim is free from the source of electricity, check the victim's airway, breathing, and pulse. If either has stopped or seems dangerously slow or shallow, initiate first aid (CPR).
5. If the victim has a burn, remove any clothing that comes off easily, and rinse the burned area in cool running water until the pain subsides. Give first aid for burns.
6. If the victim is faint, pale, or shows other signs of shock, lay the victim down, with the head slightly lower than the trunk of the body and the legs elevated, and cover the person with a warm blanket or a coat.
7. Stay with the victim until medical help arrives.
8. Electrical injury is frequently associated with explosions or falls that can cause additional traumatic injuries, including both obvious external injuries and concealed internal injuries. Avoid moving the victim's head or neck if a spinal injury is suspected. Administer appropriate first aid as needed for other wounds or fractures.

### **DO NOT**

- DO NOT touch the victim with your bare hands while the person is still in contact with the source of electricity.
- DO NOT remove dead skin or break blisters if the victim has acquired burns.
- DO NOT apply ice, butter, ointments, medications, fluffy cotton dressings, or adhesive bandages to a burn.
- DO NOT touch the skin of someone who is being electrocuted.
- DO NOT get within 20 feet of someone who is being electrocuted by high-voltage electrical current until the power is turned off.
- DO NOT move a victim of electrical injury unless there is immediate danger.

### **When to Contact a Medical Professional**

Call for emergency medical help if the victim is unconscious, confused, has difficulty breathing, has skin or mouth burns, or was in contact with a high-voltage source.

### Prevention

- Use child safety plugs in all outlets.
- Keep electrical cords out of children's reach.
- Teach your children about the dangers of electricity.
- Avoid electrical hazards at home and at work. Always follow manufacturer's safety instructions when using electrical appliances.
- Parents of small children should put safety guards on all electrical outlets, and keep children away from electrical devices.
- Avoid using electrical appliances while showering or wet.

Never touch electrical appliances while touching faucets or cold water pipes.

## Carbon Monoxide Poisoning

### Recognizing Carbon Monoxide Poisoning Symptoms

The bloodstream binds to carbon monoxide (CO) about 200 times stronger than it binds to oxygen. That means a victim of carbon monoxide poisoning has less oxygen getting to important organs like the heart and brain.

The only treatment for carbon monoxide poisoning is to replace the carbon monoxide in the victim's blood with oxygen. At a minimum, the victim will have to breathe high concentrations of oxygen for a long time to reverse the poisoning. In worst case scenarios, victims must be treated in barometric chambers, which provide 100% oxygen in high-pressure environments.

The best defense against carbon monoxide poisoning is to have a carbon monoxide detector in your home.

### Sources of Carbon Monoxide

Carbon monoxide can leak from any of the following items:

- Gas stoves
- Gas water heaters
- Gas clothes dryers
- Fireplaces or firepits
- Wood stoves
- Gas or charcoal barbecues
- Gas or oil space heaters
- Smudge pots
- Gas or diesel generators
- Gas or diesel cars and trucks
- Motorboats
- Motorcycles
- Gas-powered lawn equipment

### Signs and Symptoms of Carbon Monoxide Poisoning

The symptoms of carbon monoxide poisoning are very similar to those of other conditions affecting the central nervous system. It's important to consider carbon monoxide poisoning whenever someone around the sources listed above experiences any of the following signs or symptoms:

- Headache
- Confusion
- Shortness of breath
- Weakness
- Fatigue
- Dizziness
- Unstable gait (stumbling around)
- Nausea & vomiting
- Unconsciousness

### Telltale Coloring of Carbon Monoxide Poisoning

Unlike other conditions that decrease oxygen in the blood, victims of carbon monoxide poisoning are almost never pale or blue (cyanotic). Although it doesn't happen every time, skin coloring in victims of severe carbon monoxide poisoning will often be *bright pink* or *flushed red*.

### Response to Carbon Monoxide Poisoning

If carbon monoxide poisoning is suspected, follow these steps:

1. **Remove the victim from the area immediately.** Breathing fresh air will stop the poisoning from getting worse.
2. **Call 911.** Treating carbon monoxide poisoning requires professional assistance and oxygen delivery equipment. If 911 is not available, take the victim to emergency medical providers.
3. Follow the basics of first aid until help arrives.
4. Find the source of the carbon monoxide and fix it.

## Cardiac Problems - Symptoms of a Heart Attack

### Common Signs and Symptoms of a Heart Attack

Heart attack symptoms typically follow a classic pattern. The list below includes several common signs and symptoms of heart attacks. The victim does *not* need to have every item on the list in order to be having a heart attack, but if two or more of the items are present then it is important to call 911 immediately.

- Chest pain
- Pressure, heaviness or tightness in the chest
- Pain or pressure in the neck or jaw
- Pain or pressure in one or both arms (especially the left)
- Shortness of breath
- Sweating
- Nausea
- Pain or throbbing between the shoulder blades

### If You Suspect You're Having a Heart Attack

If you suspect a heart attack, **do not** make an appointment to see the doctor. A private physician will probably not have the tools necessary to treat a heart attack. Instead, **call 911 immediately!**

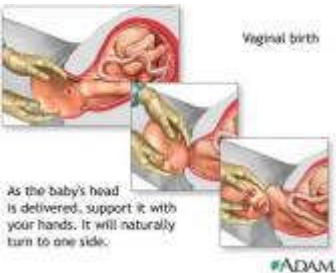
While waiting for the ambulance:

- *Sit down and rest.* The more exercise or stress you put on the heart, the more damage the heart attack will do. Sit and rest until the ambulance arrives.
- *Have someone gather your medications.* If there is someone with you, have them gather your medications or an updated list. It's a good idea to have personal medical information available at all times for the ambulance crew.
- *Take your nitroglycerin.* If you have a prescription for nitroglycerin, this is why you have it. Take it as directed by your physician. Usually, you put a tablet under your tongue and let it dissolve. **Do not** take another person's nitroglycerin. Nitroglycerin can make some people's blood pressure drop dangerously low.

**WARNING:** Taking nitroglycerin within 36 hours of taking Viagra®, Cialis®, or Levitra® (drugs used to treat erectile dysfunction) may cause a sudden drop in blood pressure. Do not take nitroglycerine within 36 hours of taking erectile dysfunction drugs unless directed by a physician.

There are many medical conditions in which calling the doctor is not always the best option. Often, it's better to skip the doctor and call 911 instead. Here are some other medical complaints that tell you when to call 911.

## Childbirth - How To Deliver a Baby



If you have a family member who is expecting a baby, it's important to be prepared in case the baby decides to come before anyone is ready. Delivering a baby is not hard, but it can be overwhelming.

It's important to remember that chance favors the prepared, and delivering your baby in a hospital is the safest way to go.

### Here's How:

1. **Go to the hospital.** As the uterus contracts to push the baby out of the birth canal, mom should feel pain and pressure. When mom feels labor progressing, especially if her water breaks, it's time to go to the hospital or call an ambulance. No matter how well this guide prepares you, it's better to deliver with the help of a professional. If you're cutting it close, call 911. If not, then you may be able to take the car. Either way, get going toward the Labor & Delivery ward as soon as possible.
2. **Get comfortable.** If you're not able to go to the hospital right away, then mom needs space. Get her some pillows and a spot on the floor. Put some clean sheets down so baby doesn't touch the dirty floor. Mom will need at least one pillow under her hips. She can lay on her side until delivery. Prop up mom's back and support her during contractions.  
Baby is going to be very slippery. Putting mom on the floor makes sure that baby doesn't fall very far if you don't keep a good grip on him (or her)!
3. **Wash your hands.** Baby will be born with very little immune system and is susceptible to infections. Follow universal precautions and wear personal protective equipment if you have it. Remember once you've washed your hands not to touch anything but mom, baby and the bedding.
4. **Check for crowning.** As the cervix dilates, the baby's head moves down the birth canal and becomes visible. If you can see baby's head, then birth is imminent.  
You should be able to see the head clearly once it's visible. If it is obscured by a membrane stretched across it,

then pinch the membrane and twist. The membrane is the amniotic sac, which should already have broken. If not, it will break easy when pinched and release the amniotic fluid. After that, things will move quickly!

5. **Guide the baby.** Put your hand in front of the baby's head and let it come out nice and slow. Don't try to hold the baby back, but don't let it explode from the vagina either.

The baby will slide out slowly in waves as mom's uterus contracts. As the baby comes out, it will turn to the side naturally. There is no need to try to force the baby or help it.

Putting some gentle pressure on the base of the vagina near the perineum will help baby's head pass.

6. **STOP!** Baby's head is out and mom needs to stop pushing (easy for me to say). Clean baby's nose and mouth with a bulb syringe. If you don't have a bulb syringe, use a clean towel to wipe away fluid and membrane from baby's airway.

If you see the umbilical cord wrapped around the baby's neck, try to slip the cord over the baby's head. This is important, but there is a possibility you will not be able to release the cord. If the cord won't go, deliver the baby anyway.

7. **Guide the shoulders.** Do **NOT** pull on the baby, but guide its shoulders out, starting with the top shoulder. If there is difficulty, you can put pressure on mom's abdomen just above the pubic bone to encourage the top shoulder to deliver.

Once the shoulders are out, baby is going to slip right through. Hold on tight; the baby is slippery and will probably wiggle.

8. **Wrap baby up.** Other than clearing the airway, the most important thing you can do for the baby is keeping it warm. Make sure to cover from head to toe, but leave the face open so the baby can breathe.

9. **Deliver the placenta.** After the baby is delivered, the placenta will come. Don't try to force it or pull on the umbilical cord. The placenta will naturally deliver in about ten or fifteen minutes.

10. **Get to the hospital.** Now that the fun part is over, it really is time to get to the hospital. There are still some important steps to make sure that baby and mom are fine. Those steps need to be performed at the hospital. You still have the placenta attached to the newborn by the umbilical cord. That will be fine for a few more minutes. There is very little to hurry about.

## Confusion

A sudden onset of confusion means that something is potentially wrong with the brain. Almost all conditions that affect the brain are life-threatening. *In the case of sudden confusion, always call 911 immediately.*

### Causes of Confusion

There are several medical causes of confusion. One of the easiest ways to remember these causes is to use the mnemonic *AEIOU TIPS*:

- **A** - alcohol
- **E** - epilepsy or exposure (heat stroke, hypothermia)
- **I** - insulin (diabetic emergency)
- **O** - overdose or oxygen deficiency
- **U** - uremia (toxins due to kidney failure)
- **T** - trauma (shock or head injury)
- **I** - infection
- **P** - psychosis or poisoning
- **S** - stroke

*AEIOU TIPS* can be used to identify any condition that affects the brain.

- coma
- seizures
- dizziness (vertigo)
- blindness
- paralysis
- severe headache

### Treatment for Confusion

There is no specific treatment for confusion. Treatment depends on finding a solution for the underlying cause of the confusion.

## How To Treat a Laceration

A laceration is an irregular cut in the skin from a sharp object. Treatment for a laceration depends on how deep it is.

### Here's How:

1. **Stay Safe.** If you are not the victim, practice universal precautions and wear personal protective equipment if available.
2. Control bleeding before anything else. Putting pressure directly on the laceration while holding it above the level of the heart for 15 minutes should be enough to stop bleeding. If not, try using pressure points. Tourniquets should be avoided unless medical care will be delayed for several hours.
3. If bleeding will not stop, call 911.

4. Once bleeding has stopped, wash the laceration with warm water and mild soap (see illustration). If bleeding starts again, repeat step two.
5. Determine if the laceration needs stitches. If victim needs stitches, proceed to the emergency department.
6. For smaller lacerations that do not require stitches, use antiseptic ointment (compare prices) and close with butterfly closures (compare prices).
7. Cover the laceration with sterile gauze (compare prices) and tape in place or wrap with roller gauze (compare prices).
8. Watch for infection and change the dressing (bandages) daily. Clean the laceration each time you change the dressing. If the laceration begins to swell or drain pus - or if redness begins to radiate or streak away from the laceration - contact a doctor.
9. Use acetaminophen or ibuprofen for pain relief.

**Tips:**

1. If the laceration is contaminated, the victim should consult a doctor as soon as possible for a tetanus vaccination or booster shot. Wounds of the feet, those that cannot be cleaned right away, and wounds made by animals all have a high risk of contamination.
2. Lacerations caused by animal bites may also cause rabies. Always consult a doctor for wounds caused by animal bites.

**Dizziness**

A sudden onset of vertigo (dizziness) means that something is potentially wrong with the brain or blood pressure. Almost all conditions that affect the brain are potentially life-threatening. *In the case of sudden vertigo, call your physician immediately.*

**Causes of Vertigo**

Many times, vertigo is made worse by movement or changes in position. Two common causes of vertigo are labyrinthitis (inner ear infection) or a condition called Meniere's disease. Both of these conditions are caused by fluid fluctuations in the inner ear. The ear sends a message to the brain that the victim is moving, while the eyes send a different message. Since the two messages conflict, the victim feels dizzy.

Another very common cause of vertigo that worsens with a change in position is dehydration. Dehydration often follows vomiting or diarrhea. Vertigo often causes nausea and vomiting, so it may be hard to distinguish inner ear problems from dehydration. Victims of vertigo that gets worse with changes in position should be seen by a physician. Untreated, inner ear problems can lead to a loss of hearing and dehydration can lead to shock.

Any condition that affects the brain can cause vertigo. One of the easiest ways to remember other causes of vertigo is to use the mnemonic **AEIOU TIPS**:

- **A** - alcohol
- **E** - epilepsy or exposure (heat stroke, hypothermia)
- **I** - insulin (diabetic emergency)
- **O** - overdose or oxygen deficiency (shortness of breath)
- **U** - uremia (toxins due to kidney failure)
- **T** - trauma (shock or head injury)
- **I** - infection
- **P** - psychosis or poisoning
- **S** - stroke

**Treatment for Vertigo**

Meclizine (Antivert®) is a prescription medication used to treat vertigo. In most cases, treatment depends on finding a solution for the underlying cause of the vertigo. If the vertigo causes nausea, doctors may prescribe an anti-emetic medication like promethazine (Phenergan®). Be sure to call 911 or a physician for vertigo that comes on suddenly.

**Eye First Aid**

When treating eye injuries, always make sure to take care of both eyes.

***Eye Abrasion***

Eye abrasions often come from foreign objects in the eye. Make sure before seeking medical treatment that both eyes have been flushed with water.

**Here's How:**

1. Stay Safe. If you are not the victim, practice universal precautions and wear personal protective equipment if available.
2. Once both eyes have been flushed with water, cover the affected eye with a bulky dressing. Take care not to put pressure on the eye with the dressing. If the victim still feels like there is a foreign object in the eye after flushing with water, cover both eyes with a bulky dressing to keep the eye from moving and receiving more damage.
3. Take the victim to medical treatment.

**Tips:**

1. Pressure is bad. Make sure you do not put any pressure on the eyes, injured or not.

***Impaled Object in the Eye***

An impaled object in the eye can lead to vision loss and disfigurement. Proper first aid can save the eye.

**Here's How:**

1. **Stay Safe.** If you are not the victim, practice universal precautions and wear personal protective equipment if available.
2. Call 911. Rapid medical treatment is a must.
3. **Do not put any pressure on the impaled object or the eyeball.**
4. Cover both eyes with a bulky dressing, taking care not to put any pressure on either eye. Remember not to put any pressure on the impaled object. Covering both eyes keeps the injured eye from moving and causing more damage.
5. This injury will require surgery, make sure the victim does not eat or drink anything.

**Tips:**

1. If available, a paper or styrofoam cup with a hole in the bottom can slide over the impaled object and cover the injured eye without putting any pressure on the eye or the object.

**What You Need:**

- Bulky dressings

***How To Flush Eyes***

Flushing the eyes with water is the preferred treatment to remove foreign objects or chemical contamination from the eyes.

**Here's How:**

1. **Stay Safe.** If you are not the victim, practice universal precautions and wear personal protective equipment if available.
2. If an eyewash station is available, use it. If not, a garden hose held vertically so the water is flowing straight up is ideal. If a garden hose is not available, eyes can be flushed under the facet in the kitchen or bathroom sink.
3. Keep the eyes open at all times. Flushing the eyes with them closed does not do anything.
4. Always flush both eyes to avoid washing the object or contamination to the unaffected eye. If using a sink facet, have the victim hold his or her head so that the affected eye is lower than the unaffected eye.
5. Flush both eyes for at least 20 minutes.
6. If there is still irritation or vision loss after flushing the eyes, take the victim to medical treatment.

**What You Need:**

- Lots of water

**Causes of Fainting****There Are Lots of Reasons Why We Pass Out**

Fainting (syncope) is a sudden loss of consciousness from a lack of blood flow to the brain. Victims usually wake up quickly after collapsing. Management is simple, usually requiring little more than letting the victim recover while lying flat. More important than immediate management is treating the cause of the fainting. Often, the only way to identify the cause is to look at the victim's chronic medical problems, if any, and recent activities or illnesses.

Most fainting is triggered by the vagus nerve. It connects the digestive system to the brain, and it's job is to manage blood flow to the gut. When food enters the system, the vagus nerve directs blood to the stomach and intestines, pulling it from other body tissues, including the brain. Unfortunately, the vagus nerve can get a little too excited and pull too much blood from the brain. Some things make it work harder, such as bearing down to have a bowel movement, or vomiting.

Conditions that drop blood pressure amplify the effects of the vagus nerve.

Folks who are prone to this commonly begin fainting at around 13 years old and continue for the rest of their lives.

Fainting usually follows a pattern. The victim will feel flush (warm or hot are also common feelings) followed by sudden weakness and loss of consciousness. They'll go limp and often break out in a sweat. Victims who are standing when they faint, or "pass out," will collapse to the ground. In some folks with a hyper vagus nerve, stimulating it causes the heart to slow drastically. However, once the victim actually passes out, the vagus nerve stops doing its thing, and the victim's heart begins to speed up in order to fix the low blood pressure.

**Dehydration**

Too little water in the bloodstream lowers blood pressure, and stimulating the vagus nerve when the system is already a quart low leads to dizziness and fainting. There are many causes of dehydration: vomiting or diarrhea, heat exhaustion, burns and more. Vomiting and diarrhea, specifically, also stimulate the vagus nerve -- talk about a double whammy.

## Psychological Triggers

Do you pass out when you see blood? Anxiety, panic disorder and stress can stimulate the vagus nerve in some people and lead to a loss of consciousness. When I taught EMT courses, students would sometimes collapse while watching a procedure in the emergency department. Other than a couple of damaged noggins from table corners, they were always fine.

## Shock

Not all losses of consciousness are related to the vagus nerve. Shock is a condition characterized by low blood pressure that often leads to a loss of consciousness. As a society, we are very aware of the long-term consequences of high blood pressure, but very low blood pressure is much more immediately dangerous.

Shock is a life-threatening emergency that usually comes from bleeding, but can also come from severe allergy (anaphylaxis) or severe infection. Victims of shock will most likely become confused, then lose consciousness as their condition gets worse. It can all happen very quickly, and although it's not fainting per se, we can't really tell unless the victim wakes up. Taking a wait and see attitude may be dangerous.

## Drugs or Alcohol

Plenty of people lose consciousness due to alcohol use, and we don't call it fainting (although passing out still seems appropriate). Besides its obvious sedation effect, alcohol makes you urinate, which will eventually lead to dehydration. It also dilates blood vessels, which decreases blood pressure. The combination of those effects drains the brain and turns out the lights.

Like shock, losing consciousness due to alcohol is not technically considered fainting, but it may or may not be cause for concern. It is possible to die from alcohol poisoning, and passing out is a sign of serious intoxication. Other drugs -- legal as well as illegal -- can knock you out for a variety of reasons, and some are serious causes of dehydration or drops in blood pressure.

- Nitrates quickly lower blood pressure
- Diuretics make you urinate and can lead to dehydration
- Stimulants dry you out and raise your temperature
- Opiates lower blood pressure and slow breathing
- Heart drugs often lower blood pressure
- Any drug meant to control high blood pressure acts in some way to lower blood pressure -- too much medication equals too low blood pressure

## Heart

Your heart is the pump that forces blood through your veins and arteries. It takes a certain amount of pressure in the bloodstream to keep it flowing. A correctly functioning heart is essential to maintaining adequate blood pressure. If the heart beats too fast or too slow, it can't keep the blood pressure up as high as it needs to be. Blood drains from the brain and leads to fainting. During a heart attack, the heart muscle can become too weak to maintain blood pressure.

To decide if the heart may be the culprit, take a pulse. If it's too fast (more than 150 beats per minute) or too slow (less than 50 beats per minute), suspect that the heart caused the fainting spell. Also, if the victim is complaining of chest pain or other symptom of a heart attack, assume the heart is too weak to keep blood in the head

## Influenza (Flu)

### Flu Facts From the CDC

The flu is a contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness, and at times can lead to death. The best way to prevent the flu is by getting a flu vaccination each fall.

Every year in the United States, on average:

- 5% to 20% of the population gets the flu;
- more than 200,000 people are hospitalized from flu complications, and;
- about 36,000 people die from flu.

Some people, such as older people, young children, and people with certain health conditions, are at high risk for serious flu complications.

### Symptoms of Flu

Symptoms of flu include:

- fever (usually high)
- headache
- extreme tiredness
- dry cough
- sore throat
- runny or stuffy nose
- muscle aches
- Stomach symptoms, such as nausea, vomiting, and diarrhea, also can occur but are more common in children than adults

## **Complications of Flu**

Complications of flu can include bacterial pneumonia, ear infections, sinus infections, dehydration, and worsening of chronic medical conditions, such as congestive heart failure, asthma, or diabetes.

## **How Flu Spreads**

Flu viruses spread from person to person through coughing or sneezing of people with influenza. Sometimes people may become infected by touching something with flu viruses on it and then touching their mouth or nose. Most healthy adults may be able to infect others beginning 1 day before symptoms develop and up to 5 days after becoming sick. That means that you may be able to pass on the flu to someone else before you know you are sick, and while you are sick.

## **Preventing the Flu: Get Vaccinated**

The single best way to prevent the flu is to get a flu vaccination each fall. There are two types of vaccines:

- The "flu shot" – an inactivated vaccine (containing killed virus) that is given with a needle. The flu shot is approved for use in people 6 months of age and older, including healthy people and people with chronic medical conditions.
- The nasal-spray flu vaccine – a vaccine made with live, weakened flu viruses that do not cause the flu (sometimes called LAIV for "Live Attenuated Influenza Vaccine"). LAIV is approved for use in healthy people 5 years to 49 years of age who are not pregnant.

About two weeks after vaccination, antibodies develop that protect against influenza virus infection. Flu vaccines will not protect against flu-like illnesses caused by non-influenza viruses.

## **When to Get Vaccinated**

October or November is the best time to get vaccinated, but getting vaccinated in December or even later can still be beneficial since most influenza activity occurs in January or later in most years. Though it varies, flu season can last as late as May.

## **Who Should Get Vaccinated?**

In general, anyone who wants to reduce their chances of getting the flu can get vaccinated. However, certain people should get vaccinated each year either because they are at high risk of having serious flu-related complications or because they live with or care for high risk persons. During flu seasons when vaccine supplies are limited or delayed, ACIP makes recommendations regarding priority groups for vaccination.

People who should get vaccinated each year are:

1. People at high risk for complications from the flu, including:

- Children aged 6 months of age,
- Pregnant women,
- People 50 years of age and older,
- People of any age with certain chronic medical conditions, and
- People who live in nursing homes and other long term care facilities.

2. People who live with or care for those at high risk for complications from flu, including:

- Household contacts of persons at high risk for complications from the flu (see above)
- Household contacts and out of home caregivers of children less than 6 months of age (these children are too young to be vaccinated)
- Health care workers.

3. Anyone who wants to decrease their risk of influenza.

## **Use of the Nasal Spray Flu Vaccine**

Vaccination with the nasal-spray flu vaccine is an option for healthy persons aged 5-49 years who are not pregnant, even healthy persons who live with or care for those in a high risk group. The one exception is healthy persons who care for persons with severely weakened immune systems who require a protected environment; these healthy persons should get the inactivated vaccine.

## **Who Should Not Be Vaccinated**

Some people should not be vaccinated without first consulting a physician. They include:

- People who have a severe allergy to chicken eggs.
- People who have had a severe reaction to an influenza vaccination in the past.
- People who developed Guillain-Barré syndrome (GBS) within 6 weeks of getting an influenza vaccine previously.
- Children less than 6 months of age (influenza vaccine is not approved for use in this age group).
- People who have a moderate or severe illness with a fever should wait to get vaccinated until their symptoms lessen.

If you have questions about whether you should get a flu vaccine, consult your health-care provider.

*Reprinted from the CDC [Key Facts About](#)*

## Food Poisoning

Abdominal pain and nausea caused by foodborne bacteria is commonly misnamed *food poisoning*. Food poisoning can cause severe pain, nausea, and diarrhea in victims. The effects of food poisoning can lead to serious dehydration. The National Digestive Diseases Information Clearinghouse (NDDIC) provides information on bacteria and foodborne illness. The following are some facts about foodborne illness from the NDDIC.

### Causes of Food Poisoning (Foodborne Illness)

Many different bacteria can lead to foodborne illness. Cooked food left at room temperature for more than two hours may grow bacteria. In most cases, bacteria do not color food or create an odor.

Most raw food is contaminated with bacteria when it's purchased. The following are the most common types of bacteria; included are links to explanations of each.

- [Salmonella](#)
- [Shigella](#)
- [Escherichia coli \(E coli\) O157:H7](#)

### Symptoms of Food Poisoning (Foodborne Illness)

The most common symptoms of foodborne illness are:

- abdominal pain and cramps
- nausea
- vomiting
- diarrhea
- fever
- dehydration

Victims need to call 911 if they have any of the following symptoms, with or without gastrointestinal symptoms:

1. Chest pain
2. Signs of shock
  - weak or rapid pulse
  - shallow breathing
  - cold, clammy, pale skin
  - shaking or chills
3. Signs of severe dehydration
  - dry mouth
  - sticky saliva
  - decreased urine output
  - dizziness
  - fatigue
  - sunken eyes
  - low blood pressure
  - increased heart rate and breathing
4. Confusion or difficulty reasoning

## How To Treat Frostbite



Frostbite looks much like burns and causes similar damage to tissues

Frostbite occurs when the body's tissues freeze deeply in the cold. Ice crystals that form in the tissues cause damage to the cells. It's important not to try to rewarm or treat frostbite until relatively certain that the tissues will not refreeze. Once frostbite is identified, make sure to prevent further damage.

Frostbitten tissue looks white or very pale. It usually has a waxy and hard appearance.

Victims often cannot feel frostbitten tissue. Many times, victims will not recognize frostbite.

### Here's How:

1. **Stay Safe!** It's more important to make sure no one else is injured by the cold. Only help if you can do so safely. Follow universal precautions and wear personal protective equipment if you have it.
2. Remove the victim from the cold. **DO NOT** attempt to thaw frostbitten tissues if there is a possibility they could freeze again.
3. Fill a shallow container with enough water to cover the frostbitten body part. Make sure the water is tepid (room temperature). The water does not have to be cool, but it cannot be too warm. The warmer the water, the worse the pain.
4. Continue to refresh the water in the container as it cools. Keep the water at the same temperature as consistently as possible. It may take several hours to completely thaw severe frostbite.
5. As soon as feasible, get the victim to medical assistance - even after thawing frostbite.

### Tips:

1. *DO NOT* allow thawed tissue to freeze again. The more often tissue freezes and thaws, the deeper the damage. If the victim will soon be exposed to freezing temperatures again, wait to treat frostbite.
2. *NEVER* rub or massage frostbitten tissue. Rubbing frostbitten tissue will result in more severe damage.
3. *DO NOT* use any heating devices, stoves, or fires to treat frostbite. Victims cannot feel the frostbitten tissue and can be burned easily.
4. In a pinch, body heat can be used to thaw frostbite. For example, placing frostbitten fingers under the arm.

**What You Need:**

- Sink, tub, or other container deep enough to cover the frostbitten part

**Wash Your Hands**

The best way to stop the spread of infections is to keep your hands clean. Wash your hands before and after every first aid procedure.

**Here's How:**

1. Wet hands, preferably with warm water.
2. Use soap - any soap will do. Lather your hands front and back, and between all fingers.
3. Continue lathering all around your hands and between the fingers for at least 20 seconds. Humming the theme song from *Jeopardy!* takes about 15 seconds.
4. Rinse your hands thoroughly.
5. Dry your hands using a clean, dry paper or cloth. Use the towel to turn off the faucet.

**Tips:**

1. Waterless hand cleaners (compare prices) can be used if water is unavailable. Apply hand cleaners liberally; make sure to cover both hands completely

**Head Injury**

**Recognition, First Aid for Skull Fracture & Closed Head Injury**

Injuries to the head can cause damage to the skull, scalp, or brain. The brain rests inside the skull protected by a cushion of soft tissue called the meninges.

**Skull Fracture**

Head injuries typically come from blunt or penetrating trauma the head. The skull does not have to be fractured, but can be. If the skull is soft when touched, or missing, the victim has an open or depressed skull fracture. If skull fracture is suspected, call 911 immediately.

Other signs of a skull fracture include blood or clear fluid draining from the ears or nose, and bruising around both eyes or behind the ears.

**Closed Head Injury**

A closed head injury is an injury to the brain inside an intact skull. Injury to the brain causes swelling, which quickly increases the pressure within the skull (intracranial pressure). The increased pressure causes more damage to the brain, which causes more swelling, and so on. Common names for closed head injuries include:

- concussion
- edidural hematoma
- subdural hematoma
- intracerebral hemorrhage
- increased intracranial pressure

Some types of closed head injury stop the cycle automatically (concussion), while others will continue to get worse until the victim dies (epidural hematoma). The only way to tell the difference is through a CT scan, which looks at the brain and the skull using x-rays.

**Signs and Symptoms of a Closed Head Injury**

A victim struck with a blunt object should be watched for signs and symptoms of a closed head injury. If a victim of blunt head trauma has any of the following, call 911 immediately:

- loss of consciousness at the time of the injury (getting knocked out)
- short-term memory loss (victim keeps repeating questions)
- unable to wake the victim from sleeping
- confusion
- vomiting
- dizziness
- very high blood pressure
- very slow pulse

**Head Injury First Aid**

In all cases of injury to the head and neck, it's vital not to move the victim's neck. Support his or her head in the position you found it. Bones of the spine (vertebra) can be injured from movement of the head during trauma. Broken or displaced

spinal bones can cut or put pressure on the nerves of the spinal cord, causing temporary or permanent paralysis and loss of feeling.

Vomiting can lead to problems with the victim's airway. If the victim begins vomiting and is unconscious, place the victim in the recovery position to let the emesis (vomit) drain from the victim's mouth.

It is a myth that closed head injury victims should not be allowed to sleep. If a victim of trauma to the head does not have any of the signs or symptoms of closed head injury or skull fracture, there is no reason to keep him or her awake. Once asleep, wake the victim about 30 minutes after falling asleep to make sure he or she can be aroused. If you are unable to wake a victim of blunt head trauma 30 minutes after falling asleep, call 911 immediately.

## Heart Attack – See Cardiac

### Heat Exhaustion

Heat exhaustion is caused by an increase in core body temperature often coupled with fluid loss (dehydration).

It's important to recognize heat exhaustion early and seek treatment as quickly as possible. It does not need to be hot outside for heat exhaustion to occur. Many victims develop heat exhaustion just from exertion.

Heat exhaustion can lead to heat stroke if not treated in time.

Signs and symptoms of heat exhaustion:

- weakness
- dizziness
- warm, moist, pale skin
- nausea and vomiting

#### Here's How:

1. **Stay safe!** If the environment is hot enough for the victim to get overheated, then it's hot enough for the rescuers. Follow universal precautions and wear personal protective equipment if you have it.
2. Make sure the patient has an airway and is breathing. Follow the ABC's of first aid.
3. Move the victim to a cooler environment immediately. Shade is better than sun, air conditioning is better than outside, etc. The cooler the better.
4. Remove the victim's clothing to encourage heat loss.
5. If the victim is conscious and able to follow commands, he or she can drink fluids to rehydrate.
6. If the victim is unable to follow commands or is vomiting, call 911 immediately!

#### Tips:

1. For victims of heat illness that have stopped sweating and/or are unconscious, treat for heat stroke.

### Hypoglycemia Symptoms

Hypoglycemia (low blood sugar) is the most common emergency condition affecting victims of diabetes. If left untreated, hypoglycemia can lead to seizures, coma, or even death. Hypoglycemia treatment usually includes eating some type of simple carbohydrate (sugar) to quickly increase blood sugar levels.

#### Hypoglycemia Symptoms

The symptoms of hypoglycemia tend to follow a common pattern that victims of diabetes learn to recognize. Early onset hypoglycemia symptoms include:

- hunger
- muscle tremors (The Shakes)
- nausea

As hypoglycemia progresses and blood sugar levels drop further, the symptoms get more severe. If victims exhibit any of these symptoms, call 911 immediately. These include:

- dizziness
- confusion
- weakness
- loss of muscle control
- seizures
- coma

#### Hypoglycemia Causes

Hypoglycemia is very common in people being treated for diabetes with medications. Taking medication and not eating, or taking too much medication, may lead to hypoglycemia. However, hypoglycemia will sometimes occur in people with no history of diabetes. Either way, the symptoms are the same.

## How To Recognize and Treat Hypothermia

Hypothermia ranges from mild chills and shivering to coma and death. Hypothermia is defined as a core body temperature of less than 95 degrees Fahrenheit. Hypothermia signs and symptoms include:

- shivering
- exhaustion
- confusion
- slurred speech
- memory loss
- fatigue
- loss of motor control (fumbling hands)

Some cold exposures are worse than others. Wet victims lose body heat much faster than dry victims. Windy conditions cause victims to lose heat very quickly as well.

### Here's How:

1. **Stay Safe!** If it is cold enough to cause hypothermia for the victim, it's cold enough to cause hypothermia in the rescuers. Follow universal precautions and wear personal protective equipment if you have it.
2. Make sure the victim has an airway and is breathing. Follow the ABC's of first aid.

**CAUTION:** *Victims may get worse as they get warmer.* As the cold blood in the extremities begins to flow back toward the heart, the victim's body temperature may go lower. Be prepared for a change in the victim's condition.

3. *Stop the exposure.* Move the victim to warm, dry shelter.
4. Call 911 for victims that show signs of severe hypothermia:
  - confusion
  - coma
  - fumbling hands
  - slurred speech
5. Remove wet clothing - leave dry clothing on victim.
6. Wrap the victim with blankets. Warming blankets (like electric blankets) work the best.
7. Chemical heat packs can be used on the victim's groin, neck, and armpits.
8. Victims that are able to follow commands and sit upright may drink warm, non-alcoholic beverages.

### Tips:

1. As hypothermia progresses, shivering stops in order for the body to conserve energy. A victim of hypothermia that has stopped shivering may be getting worse rather than better.
2. Unconscious hypothermia victims may have additional medical problems. There are several causes of coma.
3. Victims of cold exposure may also be suffering from frostbite.
4. Alcohol may feel like it warms the body, but that's because it flushes the skin with warm blood. Once the blood is at the surface of the skin, it is easily cooled. Alcohol speeds hypothermia. It can also cause dehydration.
5. As severely hypothermic victims begin to recover, cold blood from the extremities is pulled back to the core of the body. This can lead to a decrease in core body temperature and worsens the hypothermia. Watch hypothermia victims closely. They may suffer sudden cardiac arrest and require CPR. If that happens, follow the ABC's of first aid.

## Impaled Object

Impaled objects are items that have punctured the body's soft-tissue and are still embedded. Depending on the location of the impalement and the size of the object, emergency medical response may be necessary. The course of treatment depends on several factors, but here are the basics steps to treat an impaled object.

### Here's How:

1. *Stay Safe.* It's important to remain safe while helping a victim with an impaled object. Sharp objects, such as knives or nails, are not only capable of causing an injury to rescuers, but are also contaminated with the victim's blood. Follow universal precautions and wear personal protective equipment if you have it.
2. Call 911. Because of their complicated nature, even seemingly minor impaled objects require emergency medical response.
3. **DO NOT REMOVE IMPALED OBJECT!** Impaled objects create a puncture wound and then tamponade (put pressure on) that same wound, controlling bleeding. However, as with every rule, there are exceptions. Impaled objects may be removed if:
  - the victim needs CPR and the object is in the way
  - the object is in the way of the victim's airway

If an impaled object must be removed, follow the steps to control bleeding.

4. If an ambulance is not available or the victim must be moved, it will be necessary to secure the object. Start by shortening the object if possible. The more of an object that sticks out of the body, the more leverage it has to do damage to surrounding tissues.
5. After the object is as short as possible, secure it to prevent movement. The more movement of the impaled object, the more soft-tissue damage it does and the more bleeding it will cause

### How To Treat (Insect) Common Bug Bites



It's hard to distinguish the type of bug by its bite.

Insects, spiders, and scorpions are capable of causing very painful reactions. Bites and stings can be dangerous, but are rarely fatal.

Bug bites are dangerous because of the possibility of anaphylaxis.

Spider bites and scorpion stings can be more worrisome. The reality, however, is that most bites are from unidentified bugs.

There are specific treatments for bee stings and removing ticks.

#### Here's How:

1. **Stay Safe!** Follow universal precautions and wear personal protective equipment if you have it. If a stinger is present, follow the directions for treating bee stings.
2. Apply an ice pack to the site of the sting. Alternate on and off to prevent tissue damage - usually 20 minutes on and 20 minutes off.
3. If the victim exhibits any of the following, consider the possibility of anaphylaxis:
  - itching
  - swelling (other than the site of the sting)
  - shortness of breath
  - heart palpitations
  - chest pain
  - weakness
  - dizziness
  - hives or redness
4. If the victim has any involuntary muscle movements, **call 911 immediately**.
5. Try to identify the bug. If the bug is dead, scoop it up and take it with you to the emergency department. Be careful, even dead bugs have venom.
6. For pain relief, try sting swabs (compare prices). Acetaminophen and ibuprofen are also good for pain.
7. Bark scorpion stings can cause numbness and tingling in the tissue around the bite. If the site is tingling or burning, see a doctor.

#### Tips:

1. Spiders like damp, dark areas the best. Be aware around wood piles, attics, and cellars.
2. The two common North American poisonous spiders are the black widow and the brown recluse.
3. Scorpions are undeniably ugly but rarely fatal pests. Arizona, New Mexico, some of Nevada and Utah, and the California side of the Colorado River are known for the bark scorpion, a particularly nasty critter.
4. Scorpions come out at night, so take care to check bedding before snuggling in. Scorpions are also notorious stowaways; inspect baggage before and after heading home.
5. There is an antitoxin available for bark scorpions, but it is only available in Arizona and it is not FDA-approved.

### Laceration

A laceration is an irregular cut in the skin from a sharp object. Treatment for a laceration depends on how deep it is.

#### Here's How:

1. **Stay Safe.** If you are not the victim, practice universal precautions and wear personal protective equipment if available.
2. Control bleeding before anything else. Putting pressure directly on the laceration while holding it above the level of the heart for 15 minutes should be enough to stop bleeding. If not, try using pressure points. Tourniquets should be avoided unless medical care will be delayed for several hours.
3. If bleeding will not stop, call 911.
4. Once bleeding has stopped, wash the laceration with warm water and mild soap (see illustration). If bleeding starts again, repeat step two.
5. Determine if the laceration needs stitches. If victim needs stitches, proceed to the emergency department.
6. For smaller lacerations that do not require stitches, use antiseptic ointment (compare prices) and close with butterfly closures (compare prices).

7. Cover the laceration with sterile gauze (compare prices) and tape in place or wrap with roller gauze (compare prices).
8. Watch for infection and change the dressing (bandages) daily. Clean the laceration each time you change the dressing. If the laceration begins to swell or drain pus - or if redness begins to radiate or streak away from the laceration - contact a doctor.
9. Use acetaminophen or ibuprofen for pain relief.

**Tips:**

1. If the laceration is contaminated, the victim should consult a doctor as soon as possible for a tetanus vaccination or booster shot. Wounds of the feet, those that cannot be cleaned right away, and wounds made by animals all have a high risk of contamination.
2. Lacerations caused by animal bites may also cause rabies. Always consult a doctor for wounds caused by animal bites.

**Nausea**

Nausea, with or without vomiting, is a miserable feeling. Often, treating nausea means fixing the cause of the nausea. However, there are some things you can try regardless of cause. Most of the time, nausea is not life-threatening. However, prolonged nausea that causes repeated vomiting may lead to dehydration or even shock.

**Causes of Nausea**

There are several common causes of nausea and vomiting. Most causes of nausea either involve the gastrointestinal tract or are triggered by feelings of dizziness (vertigo). It's important to identify what is causing nausea in order to relieve it.

Some common causes of nausea:

- pregnancy
- infections
- food poisoning (foodborne illness)
- anxiety or stress
- alcohol intoxication
- fatigue
- brain injury
- vertigo
- motion sickness
- carbon monoxide poisoning
- reactions to medication

Infections that cause nausea usually affect the gastrointestinal system, but infections that lead to shortness of breath can cause nausea by depriving the brain of oxygen. Whenever the brain is affected by an illness or injury, there is always the possibility of it causing nausea. Vertigo, anxiety, stress, and fatigue all cause nausea by affecting the brain.

**Other Symptoms**

Nausea and vomiting are often associated with other signs and symptoms. Prolonged cases of vomiting can lead to symptoms of dehydration. Some other symptoms associated with nausea can be from the physiological reaction of the body to vomiting. Vomiting stimulates the vagus nerve, which leads to a decrease in pulse rate and blood pressure. That sudden drop in blood pressure sometimes causes a reciprocal adrenaline rush.

Adrenaline does several things to the body - such as increasing blood pressure and pulse - which includes pulling blood from the skin and triggering sweat. For that reason, victims of nausea and vomiting will often look pale with cool, clammy skin.

**Neck Injury - Suspected Cervical Spine Injury**

The spine bones of the neck, the cervical vertebrae, may be fractured or displaced if the neck is twisted, compressed, or hyper-extended. A fracture (break) or displacement of the cervical spine (C-spine) can cut or press on the spinal cord.

Always suspect a C-spine injury if there is neck pain after significant injury.

- vehicle or bicycle accidents
- sports injuries
- falls
- assaults

When in doubt, consider the cervical spine injured until evaluated by medical personnel.

**Here's How:**

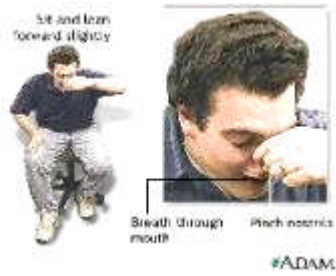
1. Safety First! Make sure the environment is safe for both rescuer and victim before providing any first aid. Always practice universal precautions and use personal protective equipment whenever you may come in contact with blood or body fluids.
2. Make sure the victim is breathing. Breathing is more important than immobilizing the cervical spine. **A-B-C:** *Airway* first, then *Breathing*, then *Circulation* and *Cervical* spine.
3. All suspected cervical spine injuries must be assessed by x-ray. Call 911 to summon an ambulance. Make sure you know the differences between mobile phones and regular phones before calling 911 on a cell phone.

4. If the victim is unconscious, protect the airway by placing the victim in the recovery position. Place padding under the head to help keep the neck straight.
5. If the victim is awake, place both hands on either side of the victim's head to steady it. Hold the victim's head gently but firmly to keep it from moving. Any movement of the cervical spine may make a C-spine injury worse. Only release the head to help with the victim's airway, breathing or circulation, or if the scene becomes unsafe.
6. Continue to immobilize the victim's head until medical help arrives and remind the victim not to move.

**Tips:**

1. Statistically, C-spine injuries are very rare. Don't commit yourself to immobilizing the cervical spine if the victim needs other first aid.
2. If more than one rescuer is available, use the two person technique to roll the victim into the recovery position.

**Nosebleed**



Lean forward and pinch the nostrils to stop a nosebleed

Nosebleeds (epistaxis) are uncomfortable and scary-looking, but usually not dangerous. Kids get nosebleeds more often than adults, typically either from irritating the nasal membrane (picking their noses) or from trauma (like a soccer ball in the face). When adults get nosebleeds, it could be an indicator of a more severe medical problem. Be sure to tell your doctor if you have gotten nosebleeds, especially without physical trauma.

**Here's How:**

1. **Stay Safe!** Follow universal precautions and wear personal protective equipment if you have it. The victim's nosebleed may be from trauma. Make sure you are not going to be hurt while helping the victim.
2. *Lean forward, not back.* Don't try to protect a favorite shirt by leaning back. The blood needs to go somewhere and will most likely go down the throat. If the victim leans back, blood could get in the windpipe causing a blocked airway, or go into the stomach. Blood may irritate the stomach lining and cause the victim to vomit.
3. *Pinch the victim's nose just below the bony bridge.* Your fingers should be on the soft tissue as well as the bone. If there is still blood flowing, adjust your grip. There should not be visible bleeding while you are holding the nose. Blood vessels that supply the nasal membrane can be pinched against the bony bridge (the hard part) to slow blood flow and create a clot. Hold the nose for at least 5 minutes. *Do not let go to check bleeding until the 5 minutes is up.*
4. After 5 minutes, release the pressure to see if the bleeding has stopped. If not, repeat Step 3 for 10 minutes this time. Remember: don't let go to check bleeding until the 10 minutes is up. Repeat for another 10 minutes if necessary.
5. If a nosebleed doesn't stop after the second or third try, it's time to see a doctor. If at any time, the victim feels lightheaded, dizzy, or weak, call 911. If left uncontrolled, nosebleeds can lead to shock.

**Tips:**

1. Placing ice or a chemical cold pack over the bridge of the nose can constrict the blood vessels and help stop bleeding. Use this in addition to pressure.
2. After the bleeding is controlled, do not let the victim blow his or her nose. Blowing the nose will release the clots and encourage bleeding to start again.
3. Most nosebleeds are the result of dry nasal membranes or trauma. However, some nosebleeds occur spontaneously and may indicate more serious medical problems. Contact a physician if the victim is suffering from frequent or hard-to-control nosebleeds.
4. Nosebleeds after trauma to the head may indicate a brain injury - especially if the bleeding occurs without obvious facial injury. If a victim of significant trauma - such as a vehicle accident or fall - is bleeding from the nose, call 911 immediately.

**Pain**

The symptom of pain tells the victim that something is wrong with the body. Sometimes, the cause of pain is never diagnosed. It is important to be as specific as possible about pain to help physicians diagnose the cause. *If you believe this pain to be life-threatening, call 911 immediately.*

**Sudden Onset Pain**

Pinpoint the location of sudden pain. Click on the location of the pain below.

- Head or neck
  - intense, sudden headache with changes in vision or hearing, confusion, weakness, or loss of balance.
  - headache with or without other symptoms
  - neck pain
- Chest
  - Dull or heavy chest pain that does not seem to change with movement or breathing.
  - Sharp chest pain along with shortness of breath.
- abdomen
- pelvis
- back
- arms
- legs

Slow or Gradual Onset Pain In most cases of slow onset pain, it is advisable to call your physician and make an appointment. If the pain has become *unbearable*, either call 911 or proceed directly to a hospital emergency department.

## Household Poisons

### Common Poisons at Home

There are common household substances that are poisonous to humans. Take caution when using these items. Some chemicals become toxic when mixed together, others are poisonous when used as directed.

#### *Mixing Bleach and Ammonia - Chlorine Gas Exposure*

In case your mom didn't tell you, mixing bleach and ammonia can kill you. The nitty-gritty details of the chemical reaction aren't important, but the end result is a release of chlorine gas. Chlorine gas is so dangerous, it was used as a chemical warfare agent in World War I.

If you discover someone exposed to chlorine gas, follow these steps to stay safe and get the help needed.

#### **Here's How:**

1. **STAY SAFE!** Regardless of anything else that happens, if you smell a strong odor of chlorine (bleach) then you need to move out of the area to fresh air. It only takes a few moments for chlorine gas to overwhelm you. Obviously, if you become unconscious, you will not be able to summon help for yourself or anyone else.
2. **Call 911.** Get help on the way. The faster an ambulance arrives the less damage will be done to the patient. During any call to 911, do not hang up until instructed to do so.
3. If the 911 call center doesn't patch you through to poison control, call **1-800-222-1222** after you are finished with 911.
4. Most likely, the person you find will be unconscious. If you are able, move the victim to a well-ventilated area away from the chlorine smell. The best bet is to move outside.
5. If you are unable to move the victim or the smell is too strong, ventilate the room as much as possible.
6. Monitor the victim and follow the basic steps for first aid. Follow universal precautions and wear personal protective equipment if you have it. Most importantly, make sure you're in a *well ventilated area*. The victim can be covered in chemicals giving off the chlorine gas.
7. When help arrives, tell them what happened and **step back**. Staying out of the way of rescuers is as much help to the victim as everything you do before the ambulance arrives.

In case your mom didn't tell you, it's a very bad idea to mix bleach and ammonia. The gas that results from these two chemicals is such a strong poison, it was used in the past as a chemical warfare agent.

### **Carbon Monoxide Poisoning**

Carbon monoxide is a colorless, odorless gas that displaces oxygen in the bloodstream. Carbon monoxide can leak from any gas motor; lawn mowers, cars, boats, etc. It can also occur from gas burning appliances that are not calibrated correctly.

#### **Recognizing Carbon Monoxide Poisoning Symptoms**

The bloodstream binds to carbon monoxide (CO) about 200 times stronger than it binds to oxygen. That means a victim of carbon monoxide poisoning has less oxygen getting to important organs like the heart and brain.

The only treatment for carbon monoxide poisoning is to replace the carbon monoxide in the victim's blood with oxygen. At a minimum, the victim will have to breathe high concentrations of oxygen for a long time to reverse the poisoning. In worst case scenarios, victims must be treated in barometric chambers, which provide 100% oxygen in high-pressure environments.

The best defense against carbon monoxide poisoning is to have a carbon monoxide detector in your home.

## Sources of Carbon Monoxide

Carbon monoxide can leak from any of the following items:

- Gas stoves
- Gas water heaters
- Gas clothes dryers
- Fireplaces or firepits
- Wood stoves
- Gas or charcoal barbecues
- Gas or oil space heaters
- Smudge pots
- Gas or diesel generators
- Gas or diesel cars and trucks
- Motorboats
- Motorcycles
- Gas-powered lawn equipment

## Signs and Symptoms of Carbon Monoxide Poisoning

The symptoms of carbon monoxide poisoning are very similar to those of other conditions affecting the central nervous system. It's important to consider carbon monoxide poisoning whenever someone around the sources listed above experiences any of the following signs or symptoms:

- Headache
- Confusion
- Shortness of breath
- Weakness
- Fatigue
- Dizziness
- Unstable gait (stumbling around)
- Nausea & vomiting
- Unconsciousness

## Telltale Coloring of Carbon Monoxide Poisoning

Unlike other conditions that decrease oxygen in the blood, victims of carbon monoxide poisoning are almost never pale or blue (cyanotic). Although it doesn't happen every time, skin coloring in victims of severe carbon monoxide poisoning will often be *bright pink* or *flushed red*.

## Response to Carbon Monoxide Poisoning

If carbon monoxide poisoning is suspected, follow these steps:

1. **Remove the victim from the area immediately.** Breathing fresh air will stop the poisoning from getting worse.
2. **Call 911.** Treating carbon monoxide poisoning requires professional assistance and oxygen delivery equipment. If 911 is not available, take the victim to emergency medical providers.
3. Follow the [basics of first aid](#) until help arrives.
4. Find the source of the carbon monoxide and fix it.

## Pesticide Poisoning First Aid

Organophosphates are some of the most deadly poisons in the home. Most pesticides, including lice shampoos, either have organophosphates in them or have similar characteristics. Pesticide poisoning creates a reaction that quickly leads to death if untreated. Organophosphates are currently used as nerve gas by some militaries. Use these chemicals with great care and always follow the manufacturers' recommendations.

## First Aid and Symptoms of Pesticide Poisoning

Pesticides are chemicals used to control unwanted bugs and animals. Pesticides are commonly found around the house and used in gardening, cleaning, and controlling bugs in the home. Pesticide poisonings occur when humans are exposed to pesticides and absorb the chemicals through the skin, the lungs, or by swallowing.

## Pesticide Poisoning Symptoms

Symptoms of pesticide poisonings depend heavily on the pesticide to which the victim was exposed. Symptoms often appear within minutes of pesticide exposure, but may take much longer. The most common symptoms include:

- Headache
- Tears in the eyes
- Runny nose
- Increased saliva
- Vomiting
- Diarrhea
- Sweating
- General weakness
- Muscle twitching
- Seizures
- Shallow breathing
- Not breathing
- Dizziness
- Constricted pupils
- Abdominal pain or cramps
- Fatigue

[Rat poison](#) is a pesticide with its own distinct pattern of symptoms.

## Pesticide Poisoning First Aid

Adults tend to get exposures through the use of pesticides while kids are more likely to ingest pesticides. Regardless of the cause of the poisoning, always contact the Poison Control Center immediately. The national number is 1-800-222-1222. If

the victim is showing symptoms from pesticide poisoning, call 911 instead of Poison Control. The 911 dispatcher may connect you to Poison Control while you are on the phone with 911.

The most important consideration of any chemical exposure, whether pesticides or not, is to limit the exposure to just the victim. As each rescuer comes in contact with the victim or area of exposure, the potential for additional victims grows. Stay safe at all times.

It's extremely important to recognize pesticide exposure to the eyes as soon as possible and decontaminate both eyes immediately.

Activated charcoal and syrup of ipecac are available over the counter for immediate treatment of poison ingestion. **Never use activated charcoal or syrup of ipecac unless directed to do so by Poison Control!**

## Puncture Wound

Puncture wounds can be deep or shallow and large or small. Treatment depends on the severity of the puncture wound and the size of the object creating it. Bleeding control and infection are the priorities.

### Here's How:

1. **Stay Safe.** If you are not the victim, practice universal precautions and wear personal protective equipment if available.
2. Control bleeding before anything else. Putting pressure directly on the puncture wound while holding it above the level of the heart for 15 minutes should be enough to stop bleeding. If not, try using pressure points. Tourniquets should be avoided unless medical care will be delayed for several hours.
3. Deep puncture wounds (or those of unknown depth) to the abdomen, back, pelvis, thigh, chest, or if bleeding will not stop, call 911. Also call 911 for puncture wounds of any depth to the neck.

*Holes in the chest can lead to collapsed lungs. Deep puncture wounds to the chest should be immediately sealed by hand or with a dressing that does not allow air to flow. Victims may complain of shortness of breath. If the victim gets worse after sealing the chest puncture wound, unseal it.*

4. Once bleeding has been controlled, wash the puncture wound with warm water and mild soap (see illustration). If bleeding starts again, repeat step two.
5. Wide puncture wounds may need stitches. If the victim needs stitches, proceed to the emergency department.
6. For smaller puncture wounds that do not require stitches, use antiseptic ointment (compare prices) and cover with adhesive bandages.
7. Watch for infection and change the dressing (bandages) daily. Clean the puncture wound each time you change the dressing. If the puncture wound begins to swell or drain pus - or if redness begins to radiate or streak away from the puncture wound - contact a doctor.
8. Use acetaminophen or ibuprofen for pain relief.

### Tips:

1. If the puncture wound is contaminated, the victim should consult a doctor as soon as possible for a tetanus vaccination or booster shot. Wounds of the feet, those that cannot be cleaned right away, and wounds made by animals all have a high risk of contamination.
2. Puncture wounds caused by animal bites may also cause rabies. Always consult a doctor for wounds caused by animal bites

## Seizure

In most cases, seizures are not life-threatening and are relatively easy to manage. Most adolescent or adult seizure victims suffer from epilepsy. In some cases, seizures can be caused by other medical conditions. Be concerned if the seizure immediately follows an injury to the head, if the victim is pregnant, or if the victim has diabetes.

Seizures in children are often caused by high fever. Management for a febrile seizure may be different.

### Here's How:

1. *Stay Safe!* As always, safety is the most important step. Follow universal precautions and wear personal protective equipment if available.
2. Remain calm. Anxiety is contagious, but so is serenity. As long as you are calm, other bystanders will follow suit.
3. Note the time. It's important to time the seizure from the beginning of convulsions to the end of convulsions. A seizure lasting more than five minutes will be treated differently than a shorter one. Seizures look very scary and unless a clock or watch is used, it can be easy to overestimate the duration of the seizure.
4. Clear hard or sharp objects away from the vicinity of the victim. Seizures can be violent enough to injure a victim.
5. Loosen tight clothing around the neck, especially ties or collars. These items may restrict breathing or block the airway.

6. Pad under the head with a pillow or rolled-up jacket.
7. If possible, roll the victim to his or her left side. This way, sputum or vomit will drain out of the mouth away from the airway. **DO NOT PUT ANYTHING IN THE VICTIM'S MOUTH!** Seizure victims do not swallow their tongues.
8. If the seizure activity (convulsions) last more than five (5) minutes, call 911.
9. After the seizure, the victim will slowly regain consciousness, if he or she does not begin to wake up within a few minutes, call 911.
10. If the victim stops breathing after the seizure, call 911 and begin CPR.

**Tips:**

1. According to the Epilepsy Foundation, Call 911 for seizures if:
  - the seizure happened in water
  - there is no way to determine the cause of the seizure (ID bracelet, etc.)
  - the victim is pregnant
  - the victim has diabetes
  - the victim is injured
  - the seizure lasts more than five (5) minutes
  - another seizure happens before the victim regains consciousness
2. Also according to the Epilepsy Foundation, 911 does not need to be called if the victim is known to have epilepsy, the seizure ended in less than five minutes, the victim wakes up, and there are no signs of injury, physical distress, or pregnancy.

**Shortness of Breath**

Being short of breath (otherwise known as *dyspnea* or difficulty breathing) is one of the scariest conditions. Responding to most victims complaining of shortness of breath requires calling 911 and supporting them until the ambulance can arrive.

To help recognize victims of shortness of breath, the common signs and symptoms include:

- breathing fast
- breathing through pursed lips
- feeling "winded" or unable to speak
- sitting with hands on knees
- using neck and chest muscles to breathe

To help understand what a victim of shortness of breath looks like, picture someone recovering after running a sprint. The difference between a runner and a victim is that the victim can't stop and rest.

**Causes of Shortness of Breath**

Many conditions and diseases cause shortness of breath. These are the most common:

- anaphylaxis
- asthma
- carbon monoxide poisoning
- chronic obstructive pulmonary disease
- pulmonary embolism
- collapsed lung (pneumothorax)
- congestive heart failure
- hyperventilation syndrome
- pneumonia

**Treating Victims with Shortness of Breath**

Treating shortness of breath depends on how severe it is. If the victim feels a little out of breath, but can still walk and talk, then calling a doctor or taking the victim to the hospital is probably OK. If the victim has any of the following signs, call 911 immediately:

- blue in the face, chest, or hands
- unable to speak more than two words between breaths
- confusion
- dizziness
- weakness
- wheezing

*In addition to calling 911:*

- The victim should rest in the position that is most comfortable -- usually sitting upright.
- If the victim has a fast-acting inhaler -- encourage him or her to use it.
- Positioning a fan on the victim can help ease the feeling of shortness of breath.
- Follow basic first aid until the ambulance arrives.

## Snake Bites



Look for two small puncture wounds at the site of the snake bite.

### Here's How:

1. **Safety first!** Get away from the snake. That's probably why it bit in the first place. Follow universal precautions and wear personal protective equipment if you have it.
2. **Call 911 immediately!** Waiting until the pain may lead to permanent tissue damage. Remember that calling 911 on a cell phone is different than a regular phone.
3. **Do not elevate.** Keep the bite below the level of the heart.
4. Wash the area with warm water and soap.
5. Remove constricting clothing and jewelry from the extremity. The area may swell and constricting items will cause tissue death.
6. If the snake is an elapid species (coral snakes and cobras), wrap the extremity with an elastic pressure bandage. Start from the point closest to the heart and wrap towards the fingers or toes. Continue to keep the bite lower than the heart.
7. Follow the basics of first aid while waiting for responders to arrive. Be especially concerned about the potential for shock.

### Tips:

1. **NO CUTTING & SUCKING!** Those snake bite kits from the drug store don't work. Cutting into the wound will just create infections.
2. An ounce of prevention is worth a ton of first aid:
  - Wear long pants and boots taller than the ankle.
  - Avoid tall brush and deep, dark crevices.
  - Make plenty of noise and vibration while walking.
  - Do not approach snakes, avoid them.
  - Do not expect rattlesnakes to make any noises.
3. If the snake is dead, bringing it to the hospital is appropriate. Be careful, dead snakes can reflexively bite for up to an hour.
4. In today's digital world, pictures are easy to get. A quick picture of the snake - even with a cell phone - will help medical crews identify the animal. Rattlesnakes are pit vipers, identified by dents in the side of their heads that look like ears. Coral snakes are small with bands of red bordered by pale yellow or white. Cobras have hoods that spread behind their heads.
5. It's not that important to identify the snake; medical crews in areas prone to snake bites can often identify the animal just from the wound. Pit vipers have two fangs and the bite often has two small holes (see illustration). Coral snakes have small mouths full of teeth with rows of small puncture wounds

## Spider Bites



This Australian white-tail bite has a classic bullseye.

Spiders get a pretty bad rap in the world of first aid. Plenty of red, raised welts have been identified, either correctly or incorrectly, as spider bites. Despite the belief by many victims that spiders are responsible for their pain, spider bites are often harmless. Indeed, most spider bites go unnoticed and untreated.

### Poisonous Spiders

Almost all spiders are poisonous. That's how they hunt. Most spiders are too small, or their poison too weak, to be dangerous to humans.

In the United States, black widow spiders are often considered the most poisonous. Other countries have a widow spider called the red-back spider. It's probably a good idea to consider any shiny, black spider with a red mark to be in the widow family. Another type of widow spider, the brown widow, generally has a weaker toxin and can be found worldwide. Brown recluse spiders have garnered plenty of attention in the last ten years or so. Despite the large wounds often associated with brown recluse, they are much less likely to cause significant injury than black widows. Brown recluse are also misdiagnosed quite a bit, with abscesses attributed to them that they didn't cause.

Brown Recluse spiders are only found in the Southeast United States. There are several other species of recluse spider, but none are as dangerous as the brown recluse. Brown recluse spiders have a violin-shaped mark on the back of their midsections.

### Spider Bite Symptoms

Determining whether a victim has been bitten by a spider may be impossible. Studies of brown recluse spiders have shown that victims seek treatment more than three days after their bites, making it nearly impossible to identify the culprit. Black widow bites are often identified only by symptoms of its venom, without any visible local bite.

For an idea how spider bites may look, check out the [spider bite picture gallery](#).

Local reactions to bites from all manner of toxic bugs look the same:

- redness
- swelling
- itching
- pain

Victims should be concerned when a local reaction continues to get worse for more than 24 hours. Look for redness spreading away from the bite, drainage from the bite, increase in pain, numbness/tingling, or a discoloration around the bite that looks like a halo or bullseye.

Victims should also call a doctor if they are not up to date on their tetanus vaccinations.

Anaphylaxis is always the biggest concern with any type of bug bite. If the victim exhibits any signs of allergic reaction or anaphylaxis shortly after a bug bite, [call 911](#).

- hives
- shortness of breath
- wheezing
- weakness

Victims should seek medical treatment if symptoms appear in parts of the body away from the location of the bite. Black widow spiders have a toxin that affects muscle contraction and nerve function. Severe brown recluse spider bites can also cause some symptoms over the entire body (systemic reaction). Look for:

- sweating
- chills
- headache
- body aches
- stomach cramps
- leg cramps
- rapid pulse
- exhaustion

In cases where the victim is feeling extremely tired or weak, [call 911](#).

### First Aid for Spider Bites

Perform [first aid for common bug bites](#) if a wound is found. There is no specific first aid for spider bites. Systemic reactions to black widow or brown recluse bites have to be treated by medical staff, often in the emergency department.

Victims should call a doctor or go to the emergency department if symptoms persist more than 24 hours or get worse.

There are many home remedies offered for the treatment of insect and spider bites. Most of these have not been shown to provide any real benefit. Meat tenderizer (papain) has even been implicated in allergies and asthma reactions to its protein. Suction syringes designed to extract toxins *do not work* and are a complete waste of money.

### Splinter

Splinters can become infected if left under the skin too long. Look for signs of infection before trying to remove a splinter.

- redness
- swelling
- pus draining from the wound
- severe pain even without movement

If the splinter has become infected, see a doctor for removal. The chances of a splinter becoming infected depends on what the splinter is: organic material - like animal spines or plant thorns - are more likely to cause infection or toxic reactions.

### Here's How:

1. **Stay Safe.** If you are not the victim, practice [universal precautions](#) and wear [personal protective equipment](#) if available.
2. [Wash your hands](#) thoroughly before attempting to remove the splinter.

3. Before trying more invasive methods, squeeze the splinter from both sides and the bottom of the splinter to try and work it back the way it came.
4. Clean a needle and a pair of tweezers with povidone-iodine solution (compare prices on [prep pads](#), [swabs](#), or [liquid](#)). Do not use isopropyl alcohol unless that's all you have available. Povidone-iodine is much more effective at killing bacteria than isopropyl alcohol.
5. Wash the wound and surrounding area with soap and warm water. A little povidone-iodine solution on the wound is also not a bad idea.
6. Use the needle to open up the skin above the splinter enough to grab the splinter with the tweezers and remove it. If the needle doesn't work, a pair of nail clippers can be used on the skin - remember to clean the nail clippers with povidone-iodine solution.
7. Grasp the end of the splinter with the tweezers and back it out of the skin.
8. Wash the wound with warm water and soap. Again, povidone-iodine solution is an excellent skin cleanser in this situation.

### Tips:

1. Usually, the pain of a splinter is more irritable than anything. However, if the area is very tender, try a bee-sting swab ([compare prices](#)) to dull the pain.
2. Splinters under a fingernail (subungal splinters) may present a bigger problem. If the tip of the splinter cannot be reached with tweezers, either go see a doctor or not. A doctor will be able to snip away the nail and pull the splinter out. The other option is to keep the area clean and wait until natural nail growth pushes the splinter out. Watch the area closely for signs of infection.
3. Make sure the victim is up to date on tetanus vaccination. If not - have the doctor remove the splinter when going in to get the vaccination.
4. Finally, splinters will work out of the skin naturally and may not need to be removed. There's no need to hurry - wait until the proper cleanliness can be achieved to remove splinters.

## Sprain

The symptoms of a sprain are almost exactly the same as that of a broken bone. When in doubt, sprains should be treated the same as broken bones. The most common symptoms are:

- pain
- swelling
- bruising
- inability to move
- inability to bear weight on the joint

It is not necessary to have all of the symptoms of a sprain in order for the joint to be injured.

### Here's How:

1. **Stay Safe.** If you are not the victim, practice [universal precautions](#) and wear [personal protective equipment](#) if available.
2. Do not call 911 for a sprain. NIAMS suggests visiting a doctor for a sprained joint if:
  - it has severe pain
  - victim unable to put *any* weight on it
  - it looks different than uninjured joint (swelling doesn't count)
  - victim can't move it
  - victim can't walk more than four steps on it
  - there is numbness in any part of it
  - redness or red streaks spread out from the injury.
  - it has been sprained several times before
  - there is pain, swelling, or redness over a bony part of your foot
3. Use the **RICE** method to treat the sprain.
  - **Rest** the sprained joint by not placing weight on it. Use a cane or crutch on the uninjured side to lean away from the injury.
  - **Ice** the sprain with an [ice pack](#).
  - **Compress** the sprain with a compression bandage. Ask a healthcare provider to show you how to properly apply a compression bandage.
  - **Elevate** the sprain above the level of the heart as often as possible during the first 48 hours.

## Strep Throat

### Streptococcal Pharyngitis

Most sore throats are harmless inflammations of the pharynx (the back of the throat). The majority are caused by viral infections and are left untreated to run their courses. Strep throat, however, is a bacterial infection caused by the

streptococcal bacterium. Strep throat is relatively minor, but can lead to more severe infections. It's important to see a physician for an easy test to determine if a sore throat is indeed strep.

### **Symptoms of Strep Throat**

The signs and symptoms of strep throat are similar to many other conditions. If strep throat is suspected, be sure to call a physician. Signs and symptoms of strep throat are:

- sore throat
- fever
- difficulty swallowing
- nausea & vomiting
- loss of appetite
- red throat
- headache
- tenderness or swollen lymph nodes in neck
- rash
- foul odor on the breath

Remember that not all signs and symptoms must be present for a physician to diagnose strep throat.

### **Antibiotics for Strep Throat**

Because the overuse of antibiotics is usually recognized as one of the causes of drug-resistant strains of bacteria, physicians are more likely to let minor bacterial infections go without antibiotic treatments today. Strep throat is an exception to that rule. Strep throat needs to be treated with antibiotics to stop the infection before it is spread or before it leads to a more severe condition.

If antibiotics are taken, be sure to complete the entire prescription. Stopping antibiotic treatment before the infection is completely cured could lead to a more severe infection that is harder to treat.

### **Spreading Strep Throat**

Strep throat is spread through contact with mucus from the nose and throat of infected victims. Most victims are only contagious while they have symptoms. Strep throat spreads easily among children in school or daycare settings. Treatment with antibiotics for 24 hours significantly reduces the ability to spread the disease. It's still important to finish any antibiotic prescription.

### **Complications of Strep Throat**

Strep throat can lead to several, more severe, infections. Some related streptococcal infections include impetigo and necrotizing fasciitis. These conditions are rare.

### **Treatment of Strep Throat**

Treating strep throat means taking antibiotics. Be sure to contact a physician if strep throat is suspected. The throat pain can be alleviated with NSAIDs like ibuprofen or naproxyn sodium. Acetaminophen and NSAIDs can both be used to treat fever. Gargling with salt water several times daily may also help with the pain and swelling

## **Stroke Symptoms**

Stroke is the third leading cause of death in the United States. It's important to recognize stroke symptoms as they are happening in order to get help to the victim before the damage is permanent. The National Institute of Neurological Disorders and Stroke (NINDS) identify the following signs and symptoms of stroke. If a victim suffers any of the following signs or symptoms of stroke, call 911 immediately!

- Sudden numbness or weakness of face, arm, or leg, especially on one side of the body.
- Sudden confusion or trouble speaking or understanding speech.
- Sudden trouble seeing in one or both eyes.
- Sudden trouble walking, dizziness, or loss of balance or coordination
- Sudden severe headache with no known cause.

### **Causes of Stroke Symptoms**

Stroke occurs when a section of the brain is suddenly starved of oxygen. Strokes can happen in two very different ways.

- *Ischemic stroke* is a blockage of a blood vessel in the brain that results in death to the brain tissue. Usually, the blockage comes from a blood clot.
- *Hemorrhagic stroke* occurs when a blood vessel in the brain bursts and causes bleeding in or around the brain.

### **Treatment of Stroke**

Stroke is a true emergency, a good reason to call 911. Treatment for both types of stroke require early recognition and access to emergency medical care. Using medication to dissolve clots in ischemic stroke should happen within three hours of onset. When suspecting stroke symptoms, be sure to take quick action.

- Call 911 immediately. Be a good 911 caller and listen carefully to the call taker.
- Follow the ABC's of First Aid. Pay close attention to the victim's airway; stroke victims have difficulty controlling their own airways.
- Raise the victim's head. Raising the head helps decrease the pressure on the brain inside the skull

## Sunburn



Blisters indicate second-degree burns and potential complications.

Sunburn treatment starts with prevention. Correctly using sunscreen will help prevent burns. Make sure you know [sunscreen myths versus facts](#) when out in the sun.

Sunburns are caused by UV radiation rather than heat (ie, we get sunburns on cold, snowy days).

Sunburns destroy skin, which controls the amount of heat our bodies retain or release, holds in fluids, and protects us from infection.

Remember always, if you think a burn of any type is significant, do not hesitate to call 911

immediately.

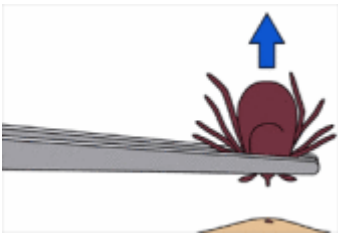
### Here's How:

1. Get out of the sun. Staying in the sun after the burn is present will make it worse.
2. Look for blisters. Blistering means the skin is completely damaged and complications are likely. If the area with blisters is bigger than one entire arm or the whole abdomen, seek medical attention by calling 911 or visiting the emergency department.
3. Take a cool shower or bath to soothe the pain.
4. Apply aloe or another cooling agent. Whatever you use - **DO NOT APPLY BUTTER OR OIL TO ANY BURN!**
5. Over the counter pain relievers like ibuprofen or acetaminophen can be used for the pain of a sunburn. If stronger pain relief is needed, contact a physician or go to the emergency department.

### Tips:

1. Burns cause swelling. Burns of the face and neck can sometimes swell enough to cause difficulty breathing. If that happens, call 911 immediately.
2. Burns that completely circle the hands or feet may cause such severe swelling that blood flow is restricted. If swollen or tight hands and feet become numb and tingly, blue, cold, or "fall asleep," then call 911 immediately.
3. While the burn is healing, wear loose natural clothing like silks or light cottons. Harsher fabrics will irritate the skin even more.
4. Too much sun can also cause heat illness. Learn [how to recognize and treat heat exhaustion and heat stroke](#).

## Remove a Tick



*Grasp the tick with tweezers and gently lift straight up.*

*© Centers for Disease Control*

Ticks don't just bite, they burrow in head-first. Ticks can cause [Lyme disease](#) and need to be removed as soon as they are discovered. If you do not see a tick, treat the bite like any other [bug bite](#).

### Here's How:

1. **Stay Safe!** Follow [universal precautions](#) and wear [personal protective equipment](#) if you have it.
2. Grasp the tick with the tweezers very close to the skin.
3. Pull with gentle, constant pressure. Pulling too hard will tear the tick and leave some behind.
4. Examine the tick to make sure all of it has been removed. Look for the tick's mouth parts to be intact.
5. If any of the tick is missing, *seek medical attention immediately*.
6. Save the tick in an airtight container (do not touch it).
7. Watch the victim for several days. If signs of [Lyme disease](#) are seen, seek medical help immediately.

### Tips:

1. DO NOT twist or pull the tick
2. DO NOT try to burn the tick
3. DO NOT touch the tick with bare skin
4. Check frequently for ticks in areas of the body that get moist.
  - under arms
  - groin
  - buttocks
  - waist
  - belly button
  - neck

- backs of knees

### What You Need:

- Small-tipped tweezers
- Gloves or tissue

## Water Intoxication and Hyponatremia Symptoms and First Aid

Hyponatremia is commonly known as water intoxication. Water and sodium lost to perspiration is replaced only with water, leaving the body low in sodium. While it has always been a concern during military training, today's growing occurrences of hyponatremia are often the result of athletes drinking water during endurance sports.

### Heat Exhaustion or Hyponatremia?

Participants in marathons and other endurance events across the nation have become confused and collapsed during competitions due to hyponatremia. However, many *more* participants in these very events have become confused and collapsed from dehydration, heat exhaustion, or heat stroke.

The need to remain hydrated during periods of exertion, particularly in hot climates, makes it difficult to recognize hyponatremia symptoms. Severe dehydration and heat exhaustion look very similar to hyponatremia and, like hyponatremia, are more common in hot weather during exercise.

### Hyponatremia Symptoms

Hyponatremia symptoms include:

- weakness
- dizziness
- nausea
- muscle cramps
- slurred speech
- confusion
- loss of consciousness
- seizures in severe cases

There is very little that can be done outside of a hospital for hyponatremia, so differentiating between dehydration and hyponatremia is the most important part of hyponatremia first aid. The symptoms are similar enough that a good assessment must include interviewing the victim and witnesses.

### Hyponatremia First Aid

Victims with slurred speech, confusion, severe weakness, or loss of consciousness need medical attention immediately. Call 911 for these victims, regardless of the cause.

Heat exhaustion and dehydration can look very much like hyponatremia and are much more common. Heat stroke has a distinct set of symptoms and is a serious emergency.

Determine if the victim has been staying hydrated. If witnesses can confirm the victim has been drinking at least a pint of fluid per hour during exercise, consider the possibility of hyponatremia. In cases of rapid massive water intake -- such as college fraternity initiation -- consider the possibility of hyponatremia.

Victims of hyponatremia need salt. In minor cases -- usually just when nausea is present -- before cramps, dizziness or confusion occur, victims may feel better with salty food intake. Be very careful not to treat dehydration as hyponatremia and suggest salty foods when the victim really needs fluid. Assume any victim complaining of thirst is dehydrated.

Avoid NSAIDs like ibuprofen, aspirin, or naprosyn when concerned about hyponatremia. These pain relievers may make symptoms worse

## Weakness

### Causes of Generalized Weakness

Generalized weakness is one of the most common medical complaints of seniors in the US. It is characterized by muscle weakness throughout the body. Focal weakness, weakness in one part of the body, is usually related to the brain (stroke) or to the muscles that are affected (muscle fatigue). However, there are so many medical conditions can result in generalized weakness, so it is one of the hardest medical complaints to diagnose.

### Causes of Generalized Weakness

Generalized weakness is most often related to fatigue or low blood pressure. It can be also be related to endocrine problems. Here is a list of potential causes of generalized weakness:

- shock
- dehydration
- stroke
- hypoglycemia (diabetic emergency)
- heat exhaustion
- hypothermia
- shortness of breath
- anaphylaxis (allergic reaction)
- poisons
- kidney disease
- sleep disorder

### Treatment for Generalized Weakness

There is no specific treatment for generalized weakness. It is important to treat the underlying cause in order to fix the weakness

## How To Dress a Wound

Minor cuts and scratches can be treated at home or on the road. Larger lacerations may also need to be dressed until medical help can be obtained. Cleanliness is key. Follow these steps to dress wounds.

**Time Required:** a few minutes

### Here's How:

1. **Stay Safe.** If you are not the victim, practice universal precautions and wear personal protective equipment if available.
2. A little bleeding is OK; it helps flush dirt and other contaminants out of the wound. To stop bleeding, follow the steps to control bleeding. Call 911 if:
  - there is bright red or squirting blood
  - it's a deep (more than an inch) puncture wound on the head, neck, chest, abdomen, pelvis, or back
  - it's a deep puncture wound on an arm above the elbow or a leg above the knee
3. Clean the wound with running water (see illustration). Wash the skin around the injury with soap. Don't worry if soap gets into the wound, though it is likely to sting and irritate the raw tissue. Rinse the wound thoroughly to rid it of any dirt and soap. Tweezers can be used to remove particles. Use of hydrogen peroxide is neither necessary nor encouraged (see tips below).
4. Only cover the wound if it is likely to come in contact with clothing or dirt. Cuts less than 2 centimeters long can be held closed with butterfly bandages. If the edges of a laceration are not easily pulled together, then the wound may need stitches. Adhesive bandages are the easiest way to cover most minor lacerations and abrasions.
5. Deep lacerations are those that extend into the tissues below the skin. If you can see layers of tissue along the sides of the laceration, it's pretty deep. Puncture wounds are harder to evaluate, and should be based on how long the offending object is. Seek medical attention for a deep wound if:
  - it has been more than five years since the victim had a tetanus shot
  - it's a laceration with jagged edges or won't close
  - the wound is tender or numb
  - the wound is inflamed (swelling and redness)
  - the wound is draining pus (yellowish, thick liquid)

### Tips:

1. Hydrogen peroxide is not necessary to adequately clean a wound. The bubbling action of hydrogen peroxide creates oxygen gas -- more than blood can handle. Surgeons using hydrogen peroxide to clean deep surgical wounds have accidentally triggered gas bubbles in the bloodstream (known as a gas embolism), a potentially deadly condition. Very little evidence exists to show the effectiveness of hydrogen peroxide on minor lacerations, and plenty of evidence is published on the merits of plain old water -- so just use water.
2. Antibiotic ointment is not necessary for a wound to heal nicely. Ointment will help raw injuries -- such as abrasions -- be less painful.