

# EMERGENCY FIRST AID

## RECOGNITION AND TREATMENT OF MEDICAL EMERGENCIES



Breathing  
Emergencies



Heart Attack



Choking



Eye Injuries



Emergency  
Childbirth

### Don't Panic

Staying calm is the most important step toward effective treatment. Excitement and alarm are natural emotions but you must keep these in check to provide first aid as efficiently as possible. Compose yourself and others and take charge of the situation. Keep crowds away from patient(s). **The first thing you should always do before administering first aid is to call for medical assistance if available.**

### Evaluate the Situation

Determine if it is safe to proceed before lending assistance. Remove or stabilize hazards and move patients only if absolutely necessary. If you suspect a spinal injury, do not move patient unless situation is life-threatening. If there are multiple victims, plan who to help first, second, etc. The first priority is to help those who are not breathing or who are bleeding profusely.

### Administer First Aid

Administer first aid to victims by following the A,B,C,Ds. If the patient is conscious ask them if they are OK. **If they require treatment you must first ask for their permission before administering first aid.**

- A = Airway.** Ensure airway is not blocked. Remove obstruction(s) from mouth with finger sweep. Treat for choking if necessary.
- B = Breathing.** Ensure patient is breathing. Watch for chest to rise, listen for breathing. If patient is not breathing, administer artificial respiration.
- C = Circulation.** Ensure patient has a pulse by checking for pulse on neck. If no pulse exists, administer external heart massage (CPR).
- D = Deadly Bleeding.** Check for excessive bleeding. Stop excessive bleeding by applying pressure to open wounds.

This guide is intended to provide graduates of first aid courses with simplified reference on how to recognize and treat medical emergencies when no medical help is readily available and lives are at stake. The information in this guide is intended for reference only and is not intended to substitute for professional medical advice and training. **Note that if you administer first aid to someone improperly you can be subject to legal action.** Prevent potential problems by taking a certified first aid course. The publisher assumes no responsibility for proceedings or prosecutions brought or instituted by any individual(s) or organization(s) as a result of applying the techniques described herein.

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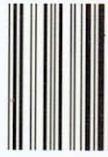
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## RESCUE HAZARDS

If rescue hazards exist, you may choose to either remove the hazard or move the patient away from the hazard. It is always preferable to treat the victim without moving them. When stabilizing hazards, your first priority is to avoid injuring yourself. The safety of the first aid giver always takes priority over the treatment of the victim.

### Physical Hazards

Inspect the area for loose or falling debris, fuel or gas leaks, electrical cables, dangerous structures or wreckage.

### Vehicle Accidents

Stop traffic in the immediate area to prevent further injuries and request assistance of bystanders to control traffic or help in treatment. Turn off the ignition in all damaged vehicles to prevent fires/explosions.

### Drowning

Do not enter the water to save someone unless you are an excellent swimmer. If the water is 65°F (18°C) or cooler, hypothermia can disable you within 15-20 minutes. During a rescue attempt, maintain distance from the victim in case they panic and lunge at you. Extend a towel or shirt for them to hang onto while you tow them to safety.

### Electrical Hazards

- Do not contact a person who has been electrocuted unless you are certain they are not in contact with a live current. Turn off current if possible and move any nearby wires away from the casualty with a dry stick.
- If overhead power lines have fallen stay back at least 30 ft. (9 m) from the point they contact the ground. If you begin to feel a tingling sensation in your legs you are too close. Break the current by raising one leg and hop away from the downed line.
- Never leave your vehicle if it comes in contact with a power line; the tires will insulate you from shock until help arrives. Do not attempt to jump clear!

### Leaking Gas

If you suspect a victim of being overcome by noxious fumes, never rush into an enclosed space to rescue them. One breath could overcome you. Stay upwind from the gas leak. If you do not have access to a self-contained breathing apparatus, try to turn off the gas at its source and ventilate the area before entering. Remove the person to fresh air and administer artificial respiration if necessary.

### Fires

Beware of collapsing buildings and falling debris. Remove victim to fresh air and administer artificial respiration if necessary.

**Note:** The human body is essentially a machine that runs on blood, air and energy. In first aid emergencies, your primary objective is to ensure that air and blood keep flowing. If breathing has stopped, restore it by performing artificial respiration. If blood flow has stopped (no pulse), restore it using external heart massage (CPR). Check for blood/air leaks, control leakage and seek medical assistance ASAP.

## PRIMARY ASSESSMENT OF VICTIM

The purpose of the primary assessment is to evaluate if the injuries are life-threatening.

### Unconscious Casualty

1. Check to see if victim is breathing. If not, administer artificial respiration. If chest does not rise after first few breaths, check throat for obstruction. If none exists, treat for choking.
2. Check for pulse. If none exists administer external heart massage (CPR).
3. Check for traumatic injuries.
4. Check for excessive bleeding and staunch the flow of blood by applying pressure to wounds or nearby arteries (see excessive bleeding).
5. An unattended victim lying on their back may suffocate. If you do not suspect victim of suffering from potential spinal injury, move them into the recovery position.

### Conscious Casualty

1. Ask victim "Are you OK?"
  - a) If they hold their throat or respond in squeaking noises or are not breathing, treat for choking.
  - b) If they cannot respond, or respond weakly, check for other injuries.
2. Check all over body for excessive bleeding.
3. Check for fractures.

## MOVING PATIENTS

### Moving Patient into Recovery Position

1. Carefully roll person onto their side.
2. Bend arm and leg outward to stop patient from lying flat.
3. Extend head and tilt jaw forward to prevent airway from becoming blocked.



### Moving Patient Without Spinal Injury

1. Support all or some of victim's weight and move to safety.



Two-handed Seat



Human Crutch



Firefighter's Carry

### Moving Patient With Spinal Injury

#### Symptoms of Spinal Injury

Neck or back pain, inability to move limbs or extremities, numbness of limbs or extremities.

#### Treatment

1. Tell patient to lie still. Carefully immobilize head, neck and back of victim to prevent ANY movement. If possible keep head, neck and spine in line with patient's torso.
2. Using four or more people, move victim only if possible to do so without moving or twisting head, neck or back. If you must move them, move them on a rigid flat surface to inhibit movement. Transport to safety. **Note that up to 25% of patients paralyzed in accidents become paralyzed as a result of being moved improperly.**

## RESTORE BREATHING & PULSE

Signs of troubled breathing include noisy, gasping or irregular breathing, bluish lips and ears. Note that a lack of breathing or pulse are common signs of cardiac arrest.

### Unconscious Patient - Restore Breathing

#### Adults

1. Lie victim on back.
2. If no spinal injury exists, tilt head back. Look into mouth. If you see objects or fluids, use finger sweep to remove any obstruction. If you suspect spinal injury, do not tilt head back.
3. Pinch nostrils shut.
4. Take deep breath, place mouth over victim's mouth and blow (give 2 slow breaths). Watch for chest to rise. If it does not, tilt head farther back and try again. If windpipe is blocked, treat for obstruction (see following panel on choking).
5. Check for pulse. If no pulse see below.
5. Repeat blowing 12-20 times per minute until breathing is restored.

**Note: If you are unable to seal your lips around the victim's mouth, seal the mouth with your hand and blow through their nose.**

#### Children

Same process but breathe normally as you exhale, do not blow. Watch for chest to rise, do not overinflate. For babies, place mouth over mouth and nose and use small, frequent puffs.

### Unconscious Patient - Restore Pulse

After administering artificial respiration for 2 breaths, check for pulse at the side of the neck beside the windpipe. If there is a pulse, continue blowing. If there is no pulse, begin external heart massage.

#### Adults

1. Place heel of hand on lower half of breastbone and, with arms straight, rock forward and press down about 2 in. (5 cm). The objective is to compress the heart muscle and to squeeze oxygenated blood out into the body. **Pressing too hard can crack the breastbone and ribs - BE CAREFUL!** Repeat rhythmically about 100 times a minute.
2. Check for pulse.
3. Alternate 15 compressions with two lung inflations. If two persons are available, have one give compressions while the other gives inflations.
4. Reassess patient after one minute. If no pulse continue until medical assistance arrives or you are unable to continue.

#### Small Children

For children under 8 use one hand only. For infants use two fingers. Process is the same but apply much less pressure to the chest. Apply approximately 100 compressions per minute.



External Heart Massage



## CHOKING

### Conscious Patient - Choking

1. Clear obstruction from airway (food, tongue, false teeth, vomit, etc.) by sweeping the inside of the mouth with a finger.
2. If victim appears to be choking and cannot speak or breathe, use abdominal thrusts to clear the obstruction (commonly called the Heimlich Manoeuvre).
3. Be prepared to administer artificial respiration.

#### Adults

1. Stand behind victim.
2. Make a fist and place it above the navel but under ribs.
3. Grab fist with other hand and pull up sharply and rapidly 4 times.
4. Repeat until effective.

If alone, lean against blunt object (chair back, tree stump) and drop down on it to replicate upward thrust of fist.



Heimlich Manoeuvre

#### Older Children

Administer Heimlich Manoeuvre using two knuckles instead of whole fist under patient's ribs.

#### Small Children & Babies

1. Support face down on forearm or on knee.
2. Using the heel of the hand, give 5 sharp blows between the shoulder blades.
3. Turn babies over and use 2 fingertips to press 5 times firmly on the center of the chest.



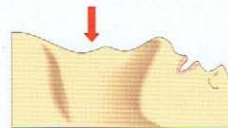
### Unconscious Patient - Choking

1. Lay patient flat on ground.
2. Place hand on lower half of breastbone, give 5 chest thrusts.
3. Look into the mouth and remove any objects.
4. Repeat until obstruction cleared.

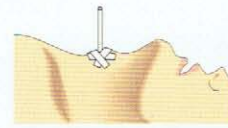
#### If All Else Fails

If the above methods fail to dislodge the blockage, the last option in a life-threatening situation is to cut into a victim's throat below the obstruction and insert a tube (straw, ballpoint pen case, etc.) into the airway in order to deliver air to the patient's lungs

1. Lay victim on back and tilt head back.
2. Use fingers to feel for a hollow valley below the Adam's apple.
3. Make a small incision with a sharp knife. The blade will move more easily when you cut into the windpipe. Turn blade sideways to create a gap.
4. Insert tube into hole and secure with tape.
5. Administer artificial respiration through tube if necessary.



Make incision into airway in hollow valley just below Adam's apple.



Insert tube into hole and secure with tape.

## EXCESSIVE BLEEDING

Excessive blood loss can kill a patient within a matter of minutes. Once you've ensured the patient is breathing and has a pulse, the next objective is to control bleeding. Arterial bleeding, which causes blood to be released in strong spurts in time with the heartbeat, can be rapidly fatal. The more typical venous bleeding causes blood to ooze from the wound area. Both kinds of bleeding can be effectively controlled by applying direct pressure to the wound site and elevating the injured area above the level of the heart.

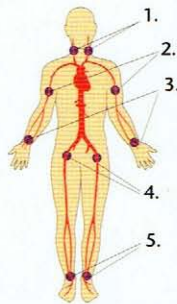
**Note:** Open wounds that have contacted dirt or unsanitary substances should first be cleaned. If possible, scrape debris and dead skin out of wound and rinse with water before applying pressure.

**Note:** Do not remove impaled objects. Create a 'donut' of cloth around object and apply pressure around margins of the wound.

1. Apply direct pressure over the bleeding point for 10 minutes. If available, use a clean pad next to the wound and **ELEVATE** the wound as long as this doesn't aggravate the injury.
2. Slowly release pressure. If wound is still bleeding, maintain pressure for an additional 10-15 minutes.
3. If direct pressure does not stop bleeding after 20 minutes, try applying pressure to an arterial pressure point (places where arteries run close to the surface of bones). Feel for the presence of the pulsating artery with your fingers and press it into the bone to cut off blood flow. If blood flow does not decrease significantly after applying pressure, keep moving your fingers until it does.
4. If blood soaks through the pads, add another over it and maintain pressure. Replace dressings if they smell badly.
5. If wound is gaping, hold it closed with tape, bandaids or sew it shut with a needle and thread.



Apply direct pressure to wound and pressure to nearby artery if necessary.



Location of Arterial Pressure Points

1. Side of neck
2. Inside upper arm
3. Base of each thumb
4. Groin/upper thigh.
5. Top of each foot

## Tourniquet

Use a tourniquet only as a last resort. Applying a tourniquet is dangerous because if the blood supply is completely cut off to a limb, gangrene may develop which can result in the loss of a limb. The only safe places to apply a tourniquet are immediately above the elbow or knee or above the end of a severed limb.

1. Wrap a strip of cloth at least 2 in. (5 cm) wide around the elbow or knee. Increase tension with each wrap until bleeding stops.
2. Relax tourniquet frequently to monitor blood flow. Never leave tourniquet on for extended periods of more than 5 minutes.

## Internal Bleeding

Results from a violent blow to the body or a stabbing or gunshot wound. Victim will have a weak but rapid pulse and may spit up blood or pass blood in urine or stool. Lie patient flat with legs elevated (if you can do so without aggravating injuries), keep warm and immediately seek medical help. If chest wound emits a sucking sound, cover with palm of hand to prevent air from entering the wound.

## TREAT SHOCK

Shock refers to a slowing down of the body's vital functions that can cause death. Shock often follows severe injury or trauma and can usually be attributed to a drop in blood pressure owing to blood loss.

### Symptoms

1. General weakness.
2. Weak, rapid pulse.
3. Chalky pallor.
4. Cold, sweaty skin.
5. Nausea and/or vomiting



Treatment for Shock

### Treatment

1. Lay patient on their back and elevate their legs (do not elevate legs if it causes them pain or inhibits breathing). Loosen any tight clothing and remove jewellery.
2. Assess and manage any injuries. Cover patient to maintain body heat but do not overheat. Be sure to insulate patient from the ground as well as the air. Do not give liquids.
3. Reassure the patient and keep them calm, comfortable and encouraged. Do not leave them alone unless necessary.
4. Monitor the patient. Be prepared to restore breathing and pulse if necessary.

## IMMOBILIZE BROKEN BONES

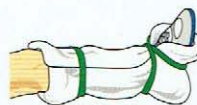
There are two kinds of broken bones, open and closed fractures. A closed fracture does not break the skin. An open fracture is when the broken bone breaks through the skin. This is the most severe kind of fracture since the risk of blood loss or infection is great.

### Symptoms of Broken Bones

1. Severe pain which is aggravated by moving the limb.
2. Tenderness of area around break.
3. Inability to use the limb.
4. Deformity, often a shortening of limb.
5. Swelling and discoloration.

### Treatment

1. Remove jewelry or constricting clothing and footwear.
2. Treat open fractures as embedded objects (see excessive bleeding).
3. Immobilize the injured area using pads, splints or tape.
4. Support immobilized arm injuries in a sling to limit movement if necessary.



Ankle Brace



Leg Brace



Shoulder Brace & Sling



Forearm Brace & Sling



Rib Brace

## HEAT EXPOSURE

### Symptoms

1. Loss of consciousness (severe).
2. Shallow rapid breathing, weak rapid pulse.
3. Chalky pallor, excessive sweating.
4. Headache or dizziness, cramps, spasms.
5. Nausea and vomiting.

### Treatment

1. Place patient at rest in a cool area. Loosen clothing. If possible, cool patient by sponging down with cool water.
2. Monitor breathing and be prepared to administer artificial respiration. If patient is breathing but unconscious, move to the recovery position (see 'Moving Patients').
3. Administer fluids if patient is awake and able to swallow (salted if possible).
4. If condition does not improve, seek medical help.

## COLD EXPOSURE

### Symptoms

1. Shivering, slurred speech, drowsiness.
2. Loss of consciousness.
3. Weak pulse, shallow breathing.
4. Low body temperature.

### Treatment

1. Prevent further heat loss – Move to sheltered area, remove any wet clothing, cover victim's head.
2. Rewarm victim's body with blankets, camp fire or the heat of another's body. DO NOT place in hot water.
3. Monitor breathing and be prepared to administer artificial respiration. If patient is breathing but unconscious, move to the recovery position.
4. Give warm drinks and small amounts of sugary food if patient is conscious and able to swallow.
5. If conditions do not improve, seek medical help. If moving the victim, transport them gently; rough handling can cause cardiac arrest.

## Frostbite

### Symptoms

Flesh becomes white, waxy, numb and hard.

### Treatment

1. Remove jewelry and restrictive clothing.
2. Rewarm affected area by placing it next to warm body parts. Do not rub affected area or expose it to open fire.
3. If part is completely frozen, do not rewarm. Immobilize and get medical assistance ASAP.

## EYE INJURIES

### Particles in the Eye

Remove loose particles by moistening the corner of a clean cloth. Do not attempt to remove particles stuck to pupil. Seek medical help.

### Chemicals in the Eye

Flush under running tap or shower for 20 minutes. After flushing, cover eye with pad and seek medical help.



## BURNS

Burns cause intense pain and fluid loss and are susceptible to infection. Severe burns may be fatal. If victim's clothing is on fire, smother the flames by rolling the person on the ground or wrapping them in a blanket. After extinguishing the fire, remove charred clothing and all jewelry.

### Treatment

1. Immerse or drench burned area in cold water for a minimum of 10 minutes or until area is cool to the touch.
3. Cover burned areas with a clean dry cloth. **Do not put ointments or other substances on to burned area.**
4. Monitor breathing, look for other injuries and be prepared to treat for shock.
5. Seek medical help ASAP.

## POISONING

Usually occurs when poisons are injected. The treatment varies depending upon the type and volume of poison swallowed. Seek medical help immediately

1. If victim is conscious, wipe out or rinse mouth of any remaining poison.
2. Do not induce vomiting or drink fluids to dilute the poison. Determine what poison has been injected.
3. Monitor breathing and be prepared to treat for shock.

## ANIMAL BITES

### Mammal Bites

Chief danger of mammal bites is infection, e.g., contracting rabies or tetanus. Capture animal if possible for medical evaluation.

### Treatment

1. Flush bite area with clean water.
2. Bandage bite area with clean pad and control bleeding.
3. Seek medical help ASAP. **ALWAYS** report animal bites to a doctor.

### Snakebite

#### Treatment

1. Have victim relax and reassure them. Lower bite area below heart.
2. Clean wound thoroughly. Cover with a clean pad.
3. **DO NOT SUCK OUT POISON OR CUT BITE AREA TO INCREASE BLEEDING.**
4. Monitor breathing and be prepared to treat for shock.
5. Seek medical help ASAP. Limit muscular activity of victim during transport. Be prepared to describe snake so that proper anti-venom can be administered.

### Insect Bites

#### Treatment

1. If stinger is embedded in skin, remove it by stroking it out with a needle. Do not squeeze end of stinger as it may inject more venom.
2. Be prepared to treat for shock. Get medical help ASAP.

### Diabetes

Diabetic individuals may faint if they lack sugar or insulin. Check to see if unconscious victim is wearing a bracelet with the word 'DIABETES' stamped on it.

#### Treatment

1. Give conscious victims something sweet to eat or drink if the patient is awake and can swallow.
2. Monitor breathing and heartbeat and seek medical help ASAP.
3. Place unconscious patients in the recovery position. Place a small amount of sugar or a sweet substance under the patient's tongue but do not block their airway.

### Epilepsy

Epileptic individuals may spontaneously faint or go into convulsions and froth at the mouth.

#### Treatment

1. If victim is convulsing, clear away obstructions and do not hinder movement.
2. When convulsions have finished, assess breathing and heartbeat. Place patient in recovery position. Clear saliva away from mouth. Do not place bite stick or any object between patient's teeth.
3. Have someone seek medical help. Do not leave victim unattended.

## EMERGENCY CHILDBIRTH

### Symptoms

**First Stage Labor** – Uterus contracts at 10-20 minute intervals. Condition may last several hours.

**Second Stage Labor** – Discharge of blood-stained mucus from uterus. Contractions increase in frequency up until time of birth.

### What To Do

#### First Stage Labor

1. Prepare comfortable, clean surface for mother.
2. Wash your hands, sterilize a knife or scissors and have clean water and towels or sheets available if possible for cleaning the mother and baby.

#### Second Stage Labor

1. Tell mother NOT to hold breath or bear down during contractions. Encourage her to breathe in short breaths (pant).
2. As baby's head emerges, check to ensure umbilical cord is not around neck. If it is, slide it over its head or shoulder.
3. Support baby by its head and back as the body emerges. Be sure to have a good grip as baby is VERY SLIPPERY.
4. After baby emerges, leave it by mother's legs. Tilt it upside down to let fluid drain from its nose and mouth and wipe off mucus.
5. When baby cries, wrap it in clean towels to keep it warm and place on the mother's chest.
6. Using string, tie off umbilical cord about 6 in. (15 cm) and 8 in. (20 cm) from baby's navel. Cut between the two ties.



### Amputated Parts

If a body part is cut off or torn away in an accident, wrap part in a clean moist cloth (do not try to clean), place in a sealed plastic bag, place on ice and take to the hospital ASAP. Parts in good condition can often be reattached.

### Asphyxiation

Stoves and candles burned in small or airtight spaces (tents, cabins, garages) will consume the available oxygen over time and cause victims to suffocate. Always ensure that such spaces have adequate ventilation and a continuous source of fresh air.

### Automobile Accidents

- In the U.S., seatbelts are estimated to have saved over 112,000 lives between 1975 and 1998.

### Drowning

- If you are caught in a rip-tide, swim to shore at a 45° angle to the shore. Swimming directly to shore will cause you to be dragged out to sea.
- If you are thrown overboard, make a life vest. Take your pants off, knot the leg ends, swirl the pants over your head to fill them with air. Roll the waist shut, submerge it underwater and rest head between the inflated legs.

### Electrocution

- Never grab for an electrical appliance (hair dryer, shop vac, drill) when standing in a puddle of water.
- If a person has been hit by lightning assess breathing and heartbeat. If necessary, administer artificial respiration and external heart massage. Victims of lightning strikes do not remain charged after being hit.

### Fire

Prevention and preparedness are key.

- Install smoke alarms in every room in middle of ceiling.
- Purchase fire extinguishers and practise using them.
- Plan escape route. Rooms over 20 ft. (6 m) above the ground should have working windows and an emergency ladder.

### Head Injuries

- Up to 900 cyclists are killed annually, the majority of which sustain serious head injuries. Wearing a helmet can reduce the risk of serious head injury by 85%.

### Heart Attacks

During a heart attack, the victim feels a squeezing chest pain that often radiates down one or both arms.

- Call the ambulance immediately. Most deaths from heart attacks occur in the first 1-2 hours after the onset of pain.
- Put the patient at rest and reassure them.
- Administer a couple of aspirin at the onset of pain. Baby aspirin is most easily absorbed by the body.

### Poisoning

Each year, nearly 900,000 cases of poisoning are reported to emergency departments. Over half of the cases reported are children and the poisons usually involved are household cleaners, medications and personal care products. Stop dangerous poisons in locked cabinets to limit risk.