

First Aid Refresher

(CPR/AED NOT included)

Before giving care and checking an injured or ill person please be advised that:

- Medical emergencies happen every day in ANY setting.
- Emergency actions include: CHECK—CALL—CARE

EMS (emergency medical system)

Your role includes 4 basic steps:

1. Recognize that an emergency exists
2. Decide to act
3. Activate EMS (911)
4. Give care UNTIL help takes over

Preventing disease transmission

- Use standard precautions (when possible)
 1. Hand hygiene
 2. Personal protective equipment (gloves, gown, mask)
 3. Safe handling of potentially contaminated equipment or surfaces
 4. Respiratory hygiene and cough etiquette

Shock

A condition in which the circulatory system fails to deliver enough oxygen-rich blood to the body's tissues and vital organs.

Signs of shock:

- Restlessness/irritability
- Alter LOC (level of consciousness)
- Nausea/vomiting
- Pale, ashen, gray, cool and moist skin
- Rapid breathing and pulse
- Excessive thirst

What to do till help arrives

- Have person lie down or get into more comfortable position

- Control external bleeding
- Help maintain normal body temp
- Do not give anything to eat or drink
- Reassure person
- Continue to monitor breathing and changes in condition

Checking an unconscious person

1. Airway

- An open airway allows air into the lungs, if the airway is blocked, the person cannot breathe!
- To open the airway push down on his forehead while pulling up on the bony part of the chin (head tilt/chin lift). This moves the tongue away from the back of the throat, allowing air into the lungs.

2. Breathing

- Normal is regular, quiet and effortless.
- After opening airway check person for breathing, if after 10 seconds you do not feel person is breathing start CPR.
- If unconscious person has irregular, gasping or shallow breaths or is not breathing, start CPR.

Breathing Emergencies

2 types:

1. Respiratory distress – a condition in which breathing becomes difficult
2. Respiratory arrest - when breathing has stopped

****note infants and children have faster breathing rates than adults****

Time is critical in breathing emergencies

0 minutes: breathing stops

4-6 minutes: brain damage possible

6-10 minutes: brain damage likely

Over 10 minutes: irreversible brain damage is certain

Causes of Respiratory distress/arrest

- Choking (partial or complete)
- Illness

- Chronic conditions (ex: asthma)
- Electric shock
- Irregular heartbeat
- Heart attack
- Injury to the head or brain, chest, lungs or abdomen
- Allergic reactions
- Drug overdose
- Poisoning
- Emotional distress
- Drowning

Asthma

- Inflammation of the air passages that result in narrowing (temporarily) of the airways that carry oxygen to the lungs
- Wheezing (hoarse whistling sound while exhaling) usually occurs due to the trapped air in the lungs

Triggers

- Cold
- Exercise
- Allergens/irritants

Allergic Reactions

- Response of the immune system to a foreign substance (antigens)
- Can cause serious breathing problems (Anaphylaxis)
- Usually will see rash first

Causes

- Bee/insect venom
- Antibiotics
- Pollen
- Animal dander
- Sulfa Drugs
- Food (Nuts/peanuts/shellfish/strawberries/dairyproducts)

What to look for

- Hives

- Itching
- Rash
- Weakness
- Nausea
- Stomach cramps
- Vomiting
- Dizziness
- Trouble breathing
 - Severe reactions can cause life threatening conditions called anaphylactic shock
 - Occurs within minutes
 - Can lead to a blocked airway
 - Can lead to shock and low blood pressure

Anaphylactic Shock – severe allergic reaction causing air passages to swell and restrict breathing.

- **This is a medical emergency!**

When to call 911

- Person has trouble breathing
- Person complains of tightening in throat
- Person has history of severe reactions
- Person is unconscious

What to do until help arrives

- Monitor person's breathing
- Give care for life threatening emergencies
- Check person for substance involved, route of exposure, effects of exposure
- Assist the person with using an epinephrine auto-injector



- Assist the person with taking an antihistamine
- Document changes in condition over time

Choking

- Occurs when a person's airway is partially or completely blocked
 - A person whose airway is completely blocked cannot cough, speak, cry or breathe at all!

Causes in adults

- Swallowing large pieces of food
- Drinking alcohol before or during meals
- Wearing dentures
- Eating while talking or laughing
- Walking, playing or running with food in the mouth
- Small objects (safety pins, toys, coins, marbles)
- Food (hard smooth food like veggies, peanuts, round firm foods like hotdogs, grapes, popcorn)
- Balloons
- Baby powder
- Objects from the trash (eggshells, pop-tops)
- Button type batteries

Signs/Symptoms

- Coughing
- Clutching the throat
- Inability to cough, speak or cry
- High pitched noises while inhaling
- Panic
- Bluish skin color
- LOC

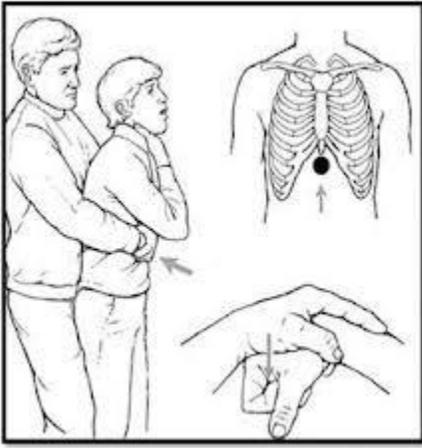
When to call 911

- If the person continues to cough without coughing up object, call 911. A partially blocked object can quickly become completely blocked.

What to do until Help arrives

Conscious adult/child

- If coughing forcefully, let them cough!
- If completely blocked, 5 back blows followed by 5 abdominal thrusts will be needed
 - Stand or kneel behind the person and wrap your arms around the waist
 - Locate the naval, make a fist, placing the thumb against the middle, well below the breastbone
 - Grab your fist with the other hand and give quick upward thrusts



Special Situations

- Large or pregnant person – give chest thrust instead by placing your fist against the center of the person’s breastbone.



- Alone and choking – bend over and press your abdomen against a firm object (ex: back of chair)
- Persons in wheelchairs – give abdominal thrusts



Conscious Choking Adult who becomes unconscious

- Lower slowly to the ground, open mouth and look for object (if you can see try and grab, if not try 2 rescue breaths, if chest does not rise, begin CPR)

Unconscious Choking Adult

- This is when the adult is not breathing and the chest does not rise with rescue breaths
 - Retilt the head and try another rescue breath, if chest still does not rise, assume airway is blocked.
 - Locate the correct hand position (same one used for CPR technique)
 - Give chest compressions 30 times, at a rate of 100 per minute
 - Look for the foreign object, if object not seen or you unable to remove, give 2 rescue breaths and repeat cycles of chest compressions. Continue to do so until one of the below occurs
 - Object is removed and chest clearly rises with rescue breaths
 - Person starts to breathe on own
 - EMS personnel take over
 - You are too exhausted to continue
 - The scene becomes unsafe

Sudden Illness

What to look for

- Changes in LOC (dizzy, confusion, unconsciousness)
- Breathing problems
- Signs and symptoms of heart attack (chest pain, pressure that lasts and moves to shoulder, arm, neck, jaw, stomach or back)
- Signs and symptoms of a stroke (sudden weakness on one side, facial drooping, slurred speech, sudden/severe headache)
- Loss of vision or blurred
- Signs and symptoms of shock (rapid breathing, cool, pale or gray skin)
- Sweating
- Abdominal pain or pressure
- Seizures
 - Look around the scene and look for clues that might tell you what is wrong with the person, asking yourself if anything could have caused this.

When to call 911

- Same as the above
- Severe external bleeding
- Vomiting or passing blood
- Critical burns
- Poisoning
- Head, neck or spinal injuries
- Broken bones

What to do until help arrives

- Do no further harm
- Check area for safety, then check the person
- First care for life threatening conditions, then call for help
- Help person to get comfortable
- Keep person from getting chilled or overheated
- Reassurance for the person
- Watch for life threatening changes ex: no breathing
- Ask person if conscious of allergies or other medical conditions
- Do NOT provide food or water unless person able to speak, swallow and shows no signs of stroke
- Position on side if person vomits
- If person having severe allergic reaction (anaphylaxis) as if prescribed medication is with

Fainting

- Occurs when there is an insufficient supply of blood to the brain for a short period of time
- Usually not harmful

What to look for

- Person about to faint usually become pale and begins to sweat.
- Person may feel weak or dizzy

When to call 911

- It is always appropriate to seek medical care for those who faint

What to do until help arrives

- Lower person to the ground or flat surface
- Position on back
- Loosen tight clothing
- Check for pulse and if none initiate CPR

Seizures

- Occurs when normal functions of the brain are disrupted by injury, disease, fever, infections, metabolic disturbances
- Causes temporary and involuntary changes in body movement, function, sensation, awareness or behavior.

2 types

Epilepsy – chronic seizure condition usually controlled with medication.

Febrile – often occur due to infections of the ear, throat or digestive system. Usually occurs with high rectal temps.

What to look for

- Blank stare
- Period in which the person is unable to respond
- Uncontrolled muscular contractions (convulsions), lasting several minutes
- An aura occurs (unusual sensation/feeling, visual hallucination, strange changes to senses)
- Sudden rise in body temp
- Change in LOC
- Loss of bladder/bowel control
- Confusion
- Drowsiness
- Crying out
- Rigid body
- Upward rolling of eyes

When to call 911

- Seizures lasting more than 5 minutes
- Multiple seizures
- Injury or fails to regain consciousness after seizure
- Cause is unknown
- Pregnancy
- Diabetes
- Seizure took place in water
- Elderly and questionable stroke
- Primary seizure

What to do until help arrives

- Do not try and stop seizure
- Prevent injury and protect airway
- Do not hold or restrain person
- Do not put anything in the persons mouth
- Ensure safe environment
- After seizure is over, care for person as you would for an unconscious person
 - Note after the seizure person may be drowsy or disorientated, possible unresponsive for short period.

Stroke

- Also called a brain attack
- Caused when blood flow to the brain is cut off or when there is bleeding into the brain
- Can cause permanent brain damage, occasionally stopped or reversible

Risk Factors

- High blood pressure
- Diabetes
- Smoking
- Heart disease
- Age
- Gender
- Family history
- Diet

Sign and Symptoms of stroke

- Weakness or numbness of face, arm or leg
- Facial droop or unsymmetrical facial features
- Trouble with speech
- Disturbed vision
- Sudden severe headache
- Dizziness, LOC, confusion or agitation
- Loss of balance with ringing in the ears



Think FAST for stroke

1. Face
2. Arm
3. Speech
4. Time

When to call 911

Today with new medications or medical treatments, damage caused by a stroke can be limited or reduced

- Call 911 immediately and note time of onset!

What to do until help arrives

- Observe for life threatening conditions (ex: always check for open airways)
- Always stay with the person and monitor for changes in condition
- Offer comfort and reassurance as a stroke can make the person fearful and anxious.

Diabetic Emergencies

- Diabetes is the inability of the body to change sugar (glucose) from food into energy.
- Regulated by insulin (a hormone produced in the pancreas)
- 2 types: I and II

Type I Diabetes

- Formerly called juvenile diabetes
- Usually begins in childhood
- Occurs when the body produces no or little insulin
- Insulin must be injected into the bodies daily (insulin dependent)

Signs and Symptoms

- Frequent urination
- Increased hunger and thirst
- Unexpected weight loss
- Irritability
- Weakness and fatigue

Type II diabetes

- Most common
- Usually occurs in adults but occasionally found in children
- The body makes insulin but not enough to meet the bodies needs
- Progressive disease

Signs and Symptoms (usually very little experienced)

- Any signs of Type I
- Frequent infections (bladder, skin and gums)
- Blurred vision
- Numbness in legs, feet and hands
- Cut or bruises slow to heal
- Itching

Diabetic emergency

- An imbalance between sugar and insulin in the body
 - Hyperglycemia – too much sugar in the blood
 - Hypoglycemia – too little sugar in the blood

What to look for

- Changes in LOC
- Changes in mood
- Rapid breathing and pulse
- Feeling/looking ill
- Dizziness and headache
- Confusion

When to call 911/What to do until help arrives

- If the person is unconscious DO NOT give anything by mouth. After calling 911, care for the person the same as you would for any unconscious person, always checking airway.
- If the person is conscious, give some form of sugar.
- If the problem is too much sugar, giving more WILL harm them. Some may carry injectable form of medication to lower.

Poisoning

- Any substance that causes injury, illness or death if it enters the body
 - Swallowed (food, drugs, alcohol, cleaning products/pesticides and plants)
 - Breathed (gases like carbon monoxide, carbon dioxide, chlorine fumes or drugs)
 - Absorbed (poison ivy, poison oak, fertilizers and pesticides)
 - Injected into the body (bites, insect stings, spiders, ticks, marine life, snakes, or other drugs injected with a hypodermic needle)

What to look for

- Look first get information from the person or bystanders
- Check the scene for unusual odors, flames, smoke, open/spilled containers, open medicine or damaged/overturnd plant

Signs and Symptoms

- Nausea/vomiting
- Diarrhea
- Chest/abdominal pain
- Trouble breathing
- Sweating
- Changes in consciousness
- Seizures
- Headache/dizziness
- Weakness
- Irregular pupil size
- Burning or tearing eyes
- Abnormal skin color

- Burns around the lips, tongue or on the skin

Who to call

- For life threatening conditions (unconscious or not breathing) call 911 immediately
- For conscious and alert persons with suspected poisoning call the National Poison Control Center 1-800-222-1222

What to do until help arrives

- Remove person from the source of poison
- Check persons LOC and breathing
- Care for life threatening conditions
- Look for containers or sources of poison to keep with you
- DO NOT give the person anything to eat or drink unless medical professionals tell you to do so
- If the person vomits, save some of the vomit to help analyze the poison

Heat/Cold related illnesses

Heat related illnesses – include heat cramps, heat exhaustion and heat stroke

Heat cramps – painful muscle spasm, occurring in the legs and abdomen

- To care for, provide cool place to rest and give electrolyte/carbohydrate fluids. Gently stretch the muscle and massage.

Heat Exhaustion – severe condition

- Look for cool, moist, pale, ashen or flushed skin, headache, nausea, dizziness, weakness and exhaustion
- Move person to cool area and provide circulating air
- Provide small amounts of cool fluid
- Monitor for changes in condition
- If conditions worsen call 911

Heat Stroke – less common but more severe

- Look for extremely high body temps, red skin, rapid/weak pulse, shallow breathing, confusion, vomiting, and seizures
- Call 911 immediately as heat stroke is life threatening!
- Rapidly cool the body by immersing in cold water or douse/spray down the body
 - Cover the body in bags of ice
 - Monitor temp and breathing

Cold-related emergencies - include frostbite and hypothermia

Frostbite –freezing of body parts exposed to cold

- Can result in loss of limbs or digits (fingers or toes)
- Signals include lack of feeling in affected area, waxy colored skin, blisters or even black showing signs of deep tissue damage
- Call 911 for serious frostbite injuries
- To care for frostbite, handle area gently
 - Remove wet clothing and jewelry
 - Do not rub or attempt to rewarm area
 - If minor frostbit try to warm affected area with skin to skin contact

Hypothermia – condition in which the entire body cools because of its inability to keep warm

- Life threatening condition
- Homeless, ill and young are at most risk
- Look for shivering, numbness, glassy stare, loss of consciousness
- Shivering that warms without rewarming is a sign the condition is worsening!
- Call 911 immediately
- Until help arrives gently move person to heat source and slowly warm the person by providing dry clothes, wrapping in blankets and plastic sheets to hold in body heat
- Monitor breathing as CPR may need to be initiated

Lyme disease



- Spread by ticks
- Attaches to a warm blooded animals
- May affect skin by causing circular rings



Removing a tick

1. Use fine tipped tweezers and grasp the tick as close to the skins surface as possible.
2. Pull upward with even pressure. **Do Not twist or jerk** the tick to prevent the mouth parts from sticking.

3. If the mouth parts of the tick stick, remove with the tweezers or leave alone to heal.
4. After removing the tick, clean the bite area and your hands with rubbing alcohol, iodine or soap and water.

Follow-up

- If a rash or fever develops after the removal of the tick, see your doctor and tell them about the recent tick bite, when the bite occurred and where you acquired the tick bite.

Mosquito-borne illness

West Nile virus – passed onto humans and other animals by mosquitoes that bite them after feeding on infected birds

Prevention

- Use insect repellent containing DEET
- Consider staying indoors at dusk and dawn
- Get rid of mosquito breeding sites (ex: dumping bird baths or buckets of water)

Signs and symptoms of infected people

- High fever
- Headache
- Neck stiffness
- Confusion
- Coma
- Tremors
- Convulsions
- Muscle weakness
- Vision loss
- Numbness
- Paralysis

When to seek care

- No specific care for WNV
- If signs and symptoms develop seek medical attention

Soft Tissue Injuries

Wounds – injuries to the layers of skin, fat and muscle beneath skins out layer (soft tissue)

1. Closed wounds – skins surface is not broken, any bleeding and tissue damage occurs below the surface

- a. Simple is a bruise
- b. Can be serious due to injured blood vessels and muscle tissue resulting in internal damage to organs



What to look for

- Tender, swollen, bruised or hard areas on the body
- Rapid, weak pulse
- Cool, moist, pale or bluish color to skin
- Vomiting/coughing blood
- Excessive thirst
- Altered mental state

When to call 911

- Person complains of severe pain or cannot move body part
- You feel the force of the injury was enough to cause serious damage
- Injured extremity is blue or pale
- Person's abdominal is tender or distended
- Person is vomiting/coughing blood
- Person shows signs of shock

What to do until help arrives

- Most closed wounds do not require special medical attention
 - Apply ice packs for 20 minutes on and 20 off
 - Elevate injured body part
2. Open wounds – with this wound, the skin is broken and blood may come through the tear in the skin
 - a. Abrasion – usually caused by something rubbing against the skin
 - i. Do not bleed much
 - ii. Painful because of scraping the outer nerve endings



- b. Laceration – a cut in the skin occurs
 - i. Can cut layers of fat, muscle, nerve endings and blood vessels
 - ii. Bleeding can be done to heavy



- c. Avulsions – serious soft tissue injury (occurs when tissue is completely or partially torn away)
 - i. Usually causes serious bleeding
 - ii. Occasionally a violent force may completely tear away a body part (amputation)



- d. Punctures – occurs when a pointed object (ex: nail) pierces the skin

Laceration



Puncture wound



ADAM.

When to call 911

- Call immediately for any MAJOR open or closed wound

What to do until help arrives

- Give general care depending on the wound
- For any wounds (after bleeding is controlled) wash the area with soap and water to prevent infection

Burns

- Special kind of soft tissue injury
- Can damage the skin, layers of fat, muscle and or bone

3 classifications

Superficial or 1st degree

- Involves only the top layers of skin
- Skin becomes red, dry and painful
- Usually heals within a week without scarring



Partial thickness or 2nd degree burns

- Involves the top layers of skin
- Skin is red and painful with or without open blisters
- Usually heals in 3-4 weeks with a scar



Full-thickness or 3rd degree burns

- May destroy ALL layers of skin, some or all fat, muscle, bones and nerve layers
- Skin may be brown or black (charred) with skin underneath white
- Extremely painful
- Healing requires possible medical assistance and scarring likely to occur



When to call 911

- If the person is having trouble breathing or suspected burns to airway
- Burns cover more than one body part of large surface area
- Burns to head, neck, hands, feet or genitals
- Any full-thickness burns
- Burns caused by chemicals, explosions or electricity

What to do until help arrives

Heat burns

- Check scene for safety
- Remove person from the source of the burn
- Check for life threatening conditions
- ASAP cool the burn with large amounts of water
- Cover the burn loosely with a sterile dressing
- Minimize shock (prevent overheating or chilling)
- Comfort and reassure person
- Do not apply ice or ice water
- Do not touch burn with anything except clean coverings (ex: gauze)
- Do not remove pieces of clothing that stick to burn

- Do not try and clean the burn
- Do not break blisters
- Do not use ointments on severe burns

*** keep in mind that someone with a severe burn is less able to regulate body temperature ***

Types of burns

Chemical burns

- Remember the chemical will continue to burn as long as it is on the skin
- Flush or brush the chemical off the affected area (careful not to get on yourself)
- If possible have person remove contaminated clothing to prevent further contamination
- Be aware that chemicals can be inhaled and potentially damage the airway or lungs

Electrical burns

- Never go near the person until you are sure they are safe from the power source
- Turn off the power source if possible and care for life threatening conditions
- Call 911 immediately
- Be aware that electrocution can cause cardiac and respiratory emergencies
- Look for entry and exit wounds

Special Situations

Crash injuries

- Call 911 immediately for any life threatening injuries

Severed body parts

- Call 911 then look for severed body part
- Wrap body part in sterile or clean material and place in plastic bag and place in cold area (do not freeze) and send with victim

Embedded objects

- If an object (knife, glass or metal)
- If embedded into a wound, do not remove
- Place dressings around it to secure it until EMS or medical professionals can care for it

Nose injuries

- Most often results in bleeding
- Pinch the nostrils for 10 minutes, if this does not control the bleeding, apply ice pack to bridge of nose or put pressure on the upper lip (place a cloth between the ice and the skin)

Mouth injuries

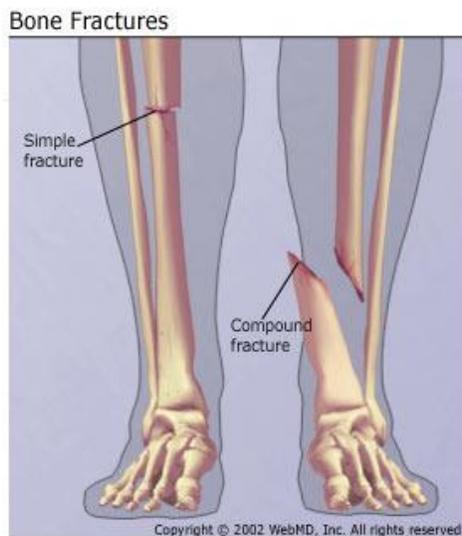
- Ensure the person can breathe
- If no head, neck or spinal injury suspected, lean person forward to drain blood from the mouth
- If person's tooth is knocked out, control the bleeding and save the tooth

Injuries to Muscles, Bones and Joints

Fractures – a complete break, chip or crack in a bone

Open Fracture (compound) – occurs when the end of a bone tears through the skin, more dangerous because they carry a risk of infection and bleeding

Closed Fracture (simple) – skin is not broken, more common



Dislocation – movement of a bone at a joint away from its normal position

Sprain – occurs when there is tearing of ligaments at the joint



Strain – is a stretching and tearing of a muscle or tendon, usually involves the muscles in the neck, back
back of lower leg

thigh or

What to look for

- Pain
- Significant bruising and swelling
- Significant deformity
- Person is unable to use affected part normally
- Bone fragments sticking out of a wound
- Person felt snap or pop at the time of injury
- Injured area cold, numb or tingly

When to call 911

- Obvious deformity
- Moderate or severe swelling and discoloration present
- Bones sound or feel like they are rubbing together
- Snap or pop felt or heard at time of injury
- Open wound fracture
- Injured person cannot use affected area normally
- Injured area cold or numb
- Injury involves the head, neck or spine
- Injured person has trouble breathing
- It is not possible to safely or comfortably move the person to transport to the hospital

What to do until help arrives (RICE)

Rest – do not move or straighten injured area

Immobilize- stabilize injured part only if the person must be moved or transported to receive medical care

Cold – apply ice wrapped in cloth to affected area for 20 minutes (do not apply heat)

Elevate – elevate injured part only if it does not cause more pain

Head, Neck and Spinal Injuries

- These injuries may be life threatening or cause permanent life altering damage
- These injuries can cause paralysis, speech or memory problems
- An injury to the brain can cause bleeding inside the skull, leading to more damage
- Injuries to the spine can fracture vertebrae and tear ligaments which can cause paralysis

What to look for

- If the person was involved in a motor vehicle accident
- Injury occurred as a result of a fall from greater than a standing height
- Person is wearing a safety helmet that is broken
- Person complains of neck or back pain
- Tingling or weakness in the extremities
- Person is not fully alert
- Person appears intoxicated

When to call 911

- Call 911 immediately if you suspect the person has a head, neck or spinal injury

What to do until help arrives

- Minimize movement as long as the person is breathing normally
- If the person is wearing a helmet, do not remove it

Sources

www.americanredcross.org

www.cdc.gov

www.mda.state.mn.us

www.medlineplus.com

www.about.com

www.webmd.com

www.nih.gov

www.nps.org.au