NewLife CPR
Trusted Certification Partner

CPR Training Course

ADULT, CHILD, INFANT CPR

STANDARD FIRST AID

AED (AUTOMATED EXTERNAL DEFIBRILLATOR)

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CPR Basics

Assess the Victim
Assess the approximate age and size of the victim. Suggested guidelines for administering CPR are as follows:

- **Adult CPR:** should be administered to victims who have reached the onset of puberty and older.
- **Child CPR:** should be administered to victims who have not reached the onset of puberty and are not considered infants (approximately 1 year to the onset of puberty).
- **Infant CPR:** should be administered to victims who are younger than toddler aged (approximately birth to 1 year).

Compressions - Airway - Breathing
C-A-B (Compressions-Airway-Breathing) Order

- Begin **C**ompressions
- Open **A**irway with head tilt–chin lift method, check breathing, **AT THE SAME TIME**
- Give 2 rescue **B**reaths

Head Tilt-Chin Lift Method
Use one hand on the forehead to tilt the victim's head back. **AT THE SAME TIME** place the other hand under the victim's chin, lift the chin to open the airway and displace the tongue. Look into the victim's mouth for an obstruction. If you see an obstruction, remove it immediately.

Rescue Breaths
Keep airway open with head tilt-chin lift method. Administer one rescue breath (1 second). Observe chest for rise and fall. If breath does not go in, re-tilt head and administer second rescue breath (1 second). Observe chest for rise and fall **AT THE SAME TIME** as administering rescue breaths.
Use one of the following methods to administer rescue breaths:

- Mouth-to-barrier
- Mouth-to-nose
- Mouth-to-stoma (An artificial opening in the neck, such as a breathing tube)

Chest compressions, which keep oxygen flowing to the brain, is the single most important factor in life saving procedures.

Chest Compressions
Chest compressions should be swift, hard and consistent, at a rate of 100-120 per minute.
Use

- Adult: Two hands (heel of dominant hand)
- Child: One hand (heel of dominant hand)
- Infant: Two fingers

Depth

- Adult: At least 2 inches, but no more than 2.4 inches
- Child: At least 1/3 depth of the child's body (or 2")
- Infant: At least 1/3 depth of the infant's body (or 1 ½")

Position

- Adult and child: On the breastbone (sternum)
- Infant: On the breastbone, just below nipple line

Rate

- 100-120 compressions per minute

CPR Cycle
Perform **30 compressions** then administer **2 rescue breaths**

- At a rate of 100-120 compressions per minute
- Check for signs of breathing (rise/fall of chest)

Continue CPR cycles until:

- AED becomes available
- Victim shows signs of life

- A second rescuer takes over
- EMS takes over
- You are too tired to continue

Identify Airway Obstruction
Partial air exchange

- **Mild**: victim is able to produce forceful cough
- **Severe**: victim is able to produce weak, ineffective cough
- **Complete blockage**: victim is unable to breathe, cough or speak

Common causes for airway obstruction

- Tongue, foreign object, vomit, allergic reaction, spasm, swelling

Caring for Airway Obstruction
Responsive adult or child: **Heimlich Maneuver**

- Abdominal thrusts just above navel
- Continue until object is removed or victim is unresponsive
- Chest thrusts should be used for larger or pregnant victims

Responsive infant

- Support infant's head and lay face-down over your forearm
- Support forearm with thigh
- Give five back blows
- Roll infant face up
- Check for breathing
- Continue until object is removed or victim is unresponsive

Unresponsive adult or child (if breath does **NOT** go in)

- Re-tilt head
- Reattempt breath
- Begin CPR
- Check airway
- Remove object

Unresponsive infant (if breath does **NOT** go in)

- Re-tilt head
- Reattempt breath
- Begin CPR
- Check airway
- Remove object

Adult CPR

Assess the Scene

- Determine
  - If it is safe to help
  - Number of victims
  - if you will need additional assistance from EMS
  - What personal protective devices are readily available to you

Assess the Victim

- Check the victim for responsiveness
- Tap on victim's shoulder and shout ***"Are you okay?"***
- Look at the victim's chest and face
- Determine if the victim is breathing normally
  - Agonal breathing is **NOT** normal breathing and needs care

Activate EMS

- Call 911 or direct a bystander to call 911 and return
- Caller should give dispatcher victim's location, details of emergency situation including how many victims are injured and what treatment is occurring
- Request AED machine, if available

Check Pulse

- Check for pulse (about 10 seconds) in the carotid artery in the neck
- If unable to locate a pulse, do not waste valuable time searching, immediately **begin CPR**

CPR Cycle

Begin cycles of **30 compressions** (at a rate of 100-120 per minute) and then administer **2 rescue breaths**

Compression depth:

- Adult: At least 2 inches, but no more than 2.4 inches

Position:

- On the breastbone (sternum)

C-A-B Order

Rescuers should assume cardiac arrest has occurred when encountering adults who have collapsed or are found unconscious. Immediately call or have a bystander call 911 and begin CPR.

Use the **C-A-B** (**C**ompressions-**A**irway-**B**reathing) **Order**

- Begin 30 **C**ompressions
- Open **A**irway with head tilt–chin lift and check breathing, **AT THE SAME TIME**
- Give 2 rescue **B**reaths

Compressions

For an unconscious adult immediately begin 30 chest compressions, at a rate of 100-120 compressions per minute. Administer to the breastbone (sternum).

Compressions should be **swift**, **hard** and **consistent** with a depth of at least **2, but no more than 2.4 inches** of the chest. Avoid leaning on the victim's chest between compressions to allow for full chest recoil.

Airway

Open the victim's airway, using the head tilt-chin lift method and **AT THE SAME TIME** check for breathing (5-10 seconds). Look into the victim's mouth for an obstruction. If you see an obstruction, remove it immediately.

If the victim **is** breathing:

- Place the victim in the recovery position

If the victim is **not** breathing:

- Administer - Rescue breaths

Breathing

Administer **2 rescue breaths** (1 second each).

If the first breath does not make the chest rise:

- Re-tilt the head and try the breath again

After administering 2 rescue breaths

- Resume compressions

Continue CPR Cycle until:

- AED becomes available
- Victim shows signs of life
- A second rescuer takes over
- EMS arrives and takes over
- You are too tired to continue

Child CPR

Assess the Scene

- Determine
  - If it is safe to help
  - Number of victims
  - if you will need additional assistance from EMS
  - What personal protective devices are readily available to you

Assess the Victim

- Check the victim for responsiveness
- Tap on victim's shoulder and shout ***"Are you okay?"***
- Look at the victim's chest and face
- Determine if the victim is breathing normally
  - Agonal breathing is **NOT** normal breathing and needs care

Activate EMS

- Call 911 or direct a bystander to call 911 and return
- Caller should give dispatcher victim's location, details of emergency situation including how many victims are injured and what treatment is occurring
- Request AED machine, if available

Check Pulse

- Check for pulse (about 10 seconds) in the carotid artery in the neck
- If unable to locate a pulse, do not waste valuable time searching, immediately **begin CPR**

CPR Cycle

Begin cycles of **30 compressions** (at a rate of 100-120 per minute) and then administer **2 rescue breaths**

Compression depth:

- Child: At least 1/3 of the child's body (approximately 2")

Position:

- On the breastbone (sternum)

C-A-B Order

Immediately have a bystander call 911 and begin CPR. If you are alone, complete five cycles (about 2 minutes) of CPR before calling for help.

Use the **C-A-B** (**C**ompressions-**A**irway-**B**reathing) **Order**

- Begin 30 **C**ompressions
- Open **A**irway with head tilt–chin lift and check breathing, **AT THE SAME TIME**
- Give 2 rescue **B**reaths

Compressions

For an unconscious child, immediately begin 30 chest compressions, at a rate of 100-120 compressions per minute. Administer to the breastbone (sternum) using one hand for children under the onset of puberty.

Compressions should be **swift**, **hard** and **consistent** with a depth of at least 1/3 of the child's body (or 2"). Avoid leaning on the victim's chest between compressions to allow for full chest recoil.

Airway

Open the victim's airway, using the head tilt-chin lift method and **AT THE SAME TIME** check for breathing (5-10 seconds). Look into the victim's mouth for an obstruction. If you see an obstruction, remove it immediately.

If the victim **is** breathing:

- Place the victim in the recovery position

If the victim is **not** breathing:

- Administer - Rescue breaths

Breathing

Administer **2 rescue breaths** (1 second each).

If the first breath does not make the chest rise:

- Re-tilt the head and try the breath again

After administering 2 rescue breaths

- Resume compressions

Continue CPR Cycle until:

- AED becomes available
- Victim shows signs of life
- A second rescuer takes over
- EMS arrives and takes over
- You are too tired to continue

Infant CPR

Assess the Scene

- Determine
  - If it is safe to help
  - Number of victims
  - if you will need additional assistance from EMS
  - What personal protective devices are readily available to you

Assess the Victim

- Check the victim for responsiveness
- Tap on victim's shoulder and shout ***"Are you okay?"***
- Look at the victim's chest and face
- Determine if the victim is breathing normally
  - Agonal breathing is **NOT** normal breathing and needs care

Activate EMS

- Call 911 or direct a bystander to call 911
- Caller should give dispatcher victim's location, details of emergency situation including how many victims are injured and what treatment is occurring
- Request AED machine, if available

Check Pulse

- Check for pulse (about 10 seconds) in the carotid artery in the neck
- If unable to locate a pulse, do not waste valuable time searching, immediately **begin CPR**

CPR Cycle

Begin cycles of **30 compressions** (at a rate of 100-120 per minute) and then administer **2 rescue breaths**

Compression depth:

- Infant: At least 1/3 of the infant's body (approximately 1½")

Position:

- On the breastbone, just below the nipple line

C-A-B Order

Immediately have a bystander call 911 and begin CPR. If you are alone, complete five cycles (about 2 minutes) of CPR before calling for help.

Use the **C-A-B** (**C**ompressions-**A**irway-**B**reathing) **Order**

- Begin 30 **C**ompressions
- Open **A**irway with head tilt–chin lift and check breathing, **AT THE SAME TIME**
- Give 2 rescue **B**reaths

Compressions

For an unconscious infant, immediately begin 30 chest compressions, at a rate of 100-120 compressions per minute. Administer to the breastbone, just below the nipple line, using two fingers.

Compressions should be **swift**, **hard** and **consistent** with a depth of at least 1/3 of the infant's body (or 1 ½"). Avoid leaning on the victim's chest between compressions to allow for full chest recoil.

Airway

Open the victim's airway, using the head tilt-chin lift method and **AT THE SAME TIME** check for breathing (5-10 seconds). Look into the victim's mouth for an obstruction. If you see an obstruction, remove it immediately.

If the victim **is** breathing:

- Place the victim in the recovery position

If the victim is **not** breathing:

- Administer - Rescue breaths

Breathing
Administer **2 rescue breaths** (1 second each).
If the first breath does not make the chest rise:

- Re-tilt the head and try the breath again

After administering 2 rescue breaths

- Resume compressions

Continue CPR Cycle until:

- AED becomes available
- Victim shows signs of life
- A second rescuer takes over
- EMS arrives and takes over
- You are too tired to continue

Hands Only CPR

Mouth to Mouth
Mouth-to-mouth rescue breathing has not posed a serious safety hazard for victims and rescuers; however some rescuers may fear the risk of infectious diseases and are reluctant to give mouth-to-mouth rescue breaths to strangers.

To avoid the chance that the victim will not receive any care, compression-only or “Hands Only” CPR method can be considered in these situations:

- Rescuer is unwilling or unable to perform mouth-to-mouth rescue breathing.
- An untrained bystander is following dispatcher-assisted CPR instructions.
- Personal protective devices are unavailable.

Hands Only CPR Cycle
HANDS ONLY: Bystanders who witness a sudden cardiac arrest and try CPR can skip the mouth-to-mouth breathing. The American Heart Association says doing chest compressions alone, or “Hands Only” CPR, until help arrives can be just as good as performing full mouth to mouth CPR.

WHO'S IT FOR? Any adult who collapses, stops breathing and is unresponsive. Children, infants and drowning victims still need mouth-to-mouth breaths.

WHAT TO DO: First, call or have a bystander call 911. Then press hard and fast, about - times per minute, on the middle of the victim's chest. Continue care until EMS arrives, an AED becomes available or you are too tired to continue.

*****Conventional CPR is recommended for children and infants, however due to the asphyxial nature of most pediatric cardiac arrests, rescue breaths may not be possible. In these instances, the hands only method is preferred to no CPR.**

Airway Obstruction

People can accidentally choke on many types of objects. Small foods, such as hard candy, peanuts, and grapes can be considered major offenders due to their shape and size. Nonfood items such as balloons, marbles, toys and coins can often become choking hazards for children and infants.

Identifying Airway Obstructions
When an object becomes lodged in the airway it can be considered a mild to severe airway obstruction, depending on the victim's inability to breathe. Good air exchange and the ability to make forceful coughing efforts, is usually present in a mild airway obstruction. If a victim experiences a mild airway obstruction, the victim should be encouraged to continue coughing until the obstruction has been removed.

Signs of a severe airway obstruction include all or one the following:

- Breathing becoming more difficult
- Weak and ineffective cough
- Inability to speak or breathe
- Skin, beds of fingernails, and area in and around mouth may appear bluish gray (indicating cyanosis)

***Victims with a severe airway obstruction will have poor air exchange and may need immediate care. Victims with a complete airway obstruction will have little to no air exchange and will need **immediate care.**

Choking Victims
The universal distress signal for choking is grasping the throat. Choking victims may try to speak and grasp their neck in an attempt to alert others. It is important to recognize the signs of choking, as not all victims know or use the universal distress signal. Caring for an airway obstruction for an adult and child are the same while caring for an infant with a severe airway obstruction is different.

Airway Obstruction - Responsive Adult or Child
Check victim for choking. Elicit response to question, "Are you choking?" Observe signs of obstruction (speaking and breathing). Begin **Heimlich Maneuver**:

- Move behind the victim
- Reach around the victim's waist with both arms just above the navel
- Place a fist with the thumb side against the victim's abdomen
- Grasp the fist with other hand
- Press into the abdomen with quick inward and upward thrusts
- Continue administering thrusts until the object is removed or the victim becomes unresponsive
- If unable to move behind the patient, have patient lay on the ground and administer abdominal thrusts using both hands in the same location as if they were standing
- If victim becomes unresponsive, stops breathing and loses consciousness, immediately call or have a bystander call 911 and begin CPR Cycles
- Continue CPR cycles until a second rescuer or EMS takes over, you are too tired to continue, or victim begins breathing
- If victim begins breathing, place in recovery position until EMS arrives

***Pregnant women**, in the late stages of pregnancy should **NOT** be given the Heimlich Maneuver from behind. Instead rescuer should administer abdominal thrusts to victim while she is lying on the ground.

Airway Obstruction - Responsive Infant
Check victim for choking. Observe signs of obstruction (speaking and breathing).

- Support the infant's head, neck, and back with hand and forearm
- Use thigh to support your arm
- Give strong five back blows
- Turn the infant over, supporting the head and neck, using your leg or nearby object.
- Check mouth and throat for obstruction.
- Give five chest compressions, using two fingers and check airway again
- Repeat these steps until the object is removed

- If the victim becomes unresponsive, stops breathing and loses consciousness, immediately call or have a bystander call 911 and begin CPR cycle

CPR Cycle - Unresponsive Choking Victim

Administer **2 rescue breaths**

- If first breath does not make chest rise, re-tilt head and give second breath
- After second breath - begin compressions
- Each time you open the airway to give a breath look for an object in the mouth or throat and if seen, remove it.
- Continue CPR cycles of **30 compressions, at a rate of 100-120 per minute** and then administer **2 rescue breaths**

Compression depth:

- **Adult:** At least 2 inches of the chest, but no more than 2.4”
- **Child:** At least 1/3 depth of the child’s body (or 2”)
- **Infant:** At least 1/3 depth of the infant’s body (or 1 ½”)

Position:

- **Adult/Child:** On the breastbone (sternum),
- **Infant:** On the breastbone, just below the nipple line

Continue CPR until:

- AED becomes available
- Victim shows signs of life
- A second rescuer takes over
- EMS arrives and takes over
- You are too tired to continue

Tongue and Airway Obstruction

Airway obstruction in an unresponsive victim lying on his or her back is usually the result of the tongue relaxing in the back of the mouth, restricting air movement. Opening the airway with the head tilt-chin lift method may be all that is needed to correct this problem.

First Aid Basics

First aid is the immediate care given to someone in an emergency situation, due to an illness or injury before EMS (Emergency Medical Services) arrives and takes over. Most of the time first aid is provided by a bystander (or by the victim) with minimal or no medical equipment. First aid is usually provided for minor illnesses and injuries. However, first aid may also be provided to someone who has a more serious illness or injury, such as a heart attack or severe bleeding.

Important Terms
Fear of being sued has caused reluctance for bystanders to become rescuers in emergency situations. However, initial rescuers are rarely sued and in most emergencies you are not legally required to provide first aid.

Good Samaritan Law – provides protection against lawsuits for persons who are acting in good faith, while providing reasonable first aid. These laws are not a substitute for competent first aid or for staying within the scope of rescuer training. Laws vary from state to state, and it is important to become aware of your state's guidelines.
Although laws vary, Good Samaritan protection generally applies when the rescuer is:

- Acting in an emergency situation
- Acting in good faith, indicating that he or she has good intentions
- Acting without compensation
- Not guilty of malicious misconduct or gross negligence toward the victim (intentionally NOT following established medical guidelines)

Duty to Act – requires an individual to provide first aid when they have a legal duty. If a rescuer does not have a legal duty to provide care he or she is not required to provide first aid.
Duty to act may imply in the following situations:

- When it is a requirement of employment. If you are designated as responsible for providing first aid to meet Occupational Safety and Health Administration (OSHA) requirements and you are called to emergency, you are required to provide first aid. (some examples of occupations that may require a duty to act include, but are not limited to: park rangers, athletic trainers, law enforcement officers, life guards, teachers)
- When a pre-existing responsibility to a person exists. If you have a pre-existing relationship and are responsible for a person, for example a parent, you must give first aid if they need it (some examples of pre-existing relationships are parent/child, driver/passenger).

Consent

- Permission from a responsive (alert) person allowing you to provide care.

Implied Consent

- When a victim is unconscious, it is understood that if the person were responsive (alert), he or she would request and allow you to provide care.

Abandonment

- When a rescuer initiates care and fails to continue to provide care until EMS or a second rescuer takes over.

Negligence

- When you have a duty to respond to an emergency situation and you fail to provide care or give in appropriate care which causes injury or harm.

Universal Precautions

- Wearing gloves, gowns, masks, and other protective devices every time you provide care in situations where you may come into contact with bodily fluids.

Clinical Death

- When a victim's breathing and heartbeat stops. There is a high likelihood that victims who are clinically dead for less than 6 minutes can be revived with little to no cellular damage.

Biological Death

- When a victim's breathing and heartbeat stops. Persons who are clinically dead for 10 minutes or more may have irreversible damage to brain cells and tissues. Reviving a victim is not likely, however it is not impossible.

Rescuer Concerns
Safety

- Rescuers should never enter unsafe situations. If your safety or that of the victim's is at risk, do not attempt to provide care. Instead call EMS and wait for EMS support to arrive.

Infectious Disease

- Using personal protective devices, such as gloves, masks, gowns, etc.… can reduce your exposure to infectious diseases.

Lawsuits

- States have Good Samaritan laws in place to provide protection for rescuers who are acting in good faith, in situations where the rescuer does not have a legal duty to provide care.

Hurting a Victim

- Victims who are clinically dead are helped when provided care and not often made worse with rescue efforts.

Inability to Save Victim

- Rescuers should focus on providing care to the best of their ability. Basic life support efforts can improve a victim's chance of survival. Rescuers who have provided care in traumatic situations may feel overwhelming emotions. If a rescuer continues to experience depressed like symptoms it is important to seek support from an outside resource.

Personal Protective Equipment (PPE)

Personal protective equipment should be used when available, prior to providing care. This equipment is designed to minimize exposure to infectious diseases and bodily fluids.

Gloves

- Always use medical exam gloves when providing care
- Check for rips, tears or damage before providing care
- Remove any jewelry that may damage or cause tears
- If you have a latex allergy use alternative vinyl or nitrile gloves
- Remove gloves using skin to skin and glove to glove method
    - Using gloved hand, pinch the wrist of the other gloved hand
    - Pull the glove off while turning inside out, place in palm of gloved hand
    - Using bare hand place fingers inside wrist of gloved hand and remove inside out, collecting the gloves inside each other
    - Dispose of gloves in an appropriate container

Rescue mask/Face shield

- Always use when providing rescue ventilations
- Mask or shield should have a one-way valve to prevent exposure to bodily fluids
- Dispose of mask/shield in an appropriate container

Chain of Survival

The Chain of Survival is a common way of describing the order in which rescuers should provide care for a victim of cardiac arrest. Early action can improve the chance of a victim's survival.

Link One: Early Access

- Rescuer recognizes early warning signs and immediately calls EMS to activate EMS (emergency medical services) to provide early access to care.

Link Two: Early CPR

- Rescuer immediately begins CPR cycle to continue minimal supply of blood to the victim's heart and brain until defibrillator and EMS personnel take over.

Link Three: Early Defibrillation

- Rescuer utilizes AED (automated external defibrillator) to administer a shock to the victim which may restore the heartbeat in some instances.

Link Four: Early Advanced Care

- EMS arrives and provides advanced cardiac life support care to victim of sudden cardiac arrest. In addition, EMS may provide IV fluids, medications, and use advanced airway devices.

Action at an Emergency

In an emergency situation, the bystander is a vital link between the victim and Emergency Medical Services (EMS). When entering the scene of an emergency situation, it is important to recognize the severity of the emergency before deciding how to respond.

Assess the Scene

Always remember to check the scene for safety hazards BEFORE providing care, it is important to ensure if you and the victim(s) are in a safe location, free of imminent danger or hazards.

- Determine
    - if it is safe to help
    - number of victims
    - if you will need additional assistance from EMS
    - what personal protective devices are readily available to you
- Safety
    - If the area is unsafe for the victim or rescuer, move the victim to a safe location, if can be done safely

  - Do not put you or the victim's safety at risk
  - If you cannot safely provide care, do not become another victim, call EMS and wait for EMS to arrive

Activate EMS

- For serious situations, it is best to error on the side of caution and call EMS
- Provide vital information to EMS dispatcher
  - You name and number
  - Location of emergency
  - Information about the type of emergency
  - Number of victims
  - Victim(s) condition
  - What care is being provided at the scene

Assess the Victim

- Check the victim for responsiveness
- Tap on the shoulder and shout, ***"Are you okay?"***
- Ask the victim if you he or she would like you to provide care
- If the victim is facedown and unresponsive, turn the victim over
- Check the victim for breathing
  - If victim is **not** breathing – **begin CPR**
  - If victim is breathing – check the victim and provide care
- Check the victim for obvious signs of injury, such as bleeding, broken bones, burns, or bites
- Look for medical information jewelry to determine if the victim has a serious medical condition
- Place the victim in recovery position (on side)
  - If the victim has difficulty breathing because of vomiting, or other secretions
  - you have to leave an unresponsive victim to get help
- If the victim shows signs of shock, have the victim lie flat on back
- If the victim does not show signs of trauma or injury, raise the feet about 6-12 inches.
  - Do not raise the feet if it causes the victim any pain

Provide Care

- Decide to provide care
- Determine what type of care is needed
- Begin care immediately – early care is critical for a victim's survival

Victim Assessment
When providing care to a victim it is important to identify and correct any condition that may not be immediately life threatening, but may have the potential to become life threatening should they not be corrected.

SAMPLE
Gather information about victim using the **SAMPLE** history method. Ask victim about the following information

- **S**igns and symptoms
- **A**llergies
- **M**edications
- **P**ast medical history
- **L**ast meal eaten
- **E**vents leading to the injury or illness

Medical information tags may identify allergies, medication, or medical condition

DOTS
Use the **DOTS** method to check the victim head to toe for the following conditions

- **D**eformity
- **O**pen wounds
- **T**enderness
- **S**welling

Head to Toe exam

- Head – look for blood, check eyes, check mouth for loose teeth or blood, check the nose and ears for fluid or blood, look for bruising of the eyes or behind the ears
- Neck – look for bleeding, distention of the jugular vein, open wounds, or tracheal deviation
- Chest –look for blood, broken ribs, open wounds, accessory muscle breathing
- Abdomen –look for bleeding, abdominal wounds, tenderness, bruising
- Legs –look for bleeding, bruising, open wounds, broken bones, deformities
- Pelvis –look for bleeding and instability
- Arms –look for bleeding, bruising, open wounds, broken bones, deformities

While you are waiting for EMS to arrive

- Recheck the victim's condition using **ABC assessment:**
  - **A**irway – use head tilt-chin lift method
  - **B**reathing – look, listen and feel for breathing
  - **C**irculation – check for severe bleeding
- Treat for shock
  - Help victim lie on back
  - Keep covered and warm
  - Do not give anything to eat or drink
- Remain with victim and record any changes in the victim's condition
- Report your findings and care to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Medical Emergencies

Breathing Problems

Victims with breathing problems may have a mild or severe blockage of their air passages, may be having a heart attack, stroke or may have experienced a serious injury leading to breathing problems. Other breathing problems may be caused by medical conditions.

Signs of breathing problems

- Breathing becoming more difficult
  - Very fast or very slow
- Weak and ineffective cough
- Breathing is noisy
  - Makes a sound or whistle as air enters or leaves lungs
- Inability to speak or breathe
- Skin, beds of fingernails, and area in and around mouth may appear bluish gray (indicating cyanosis)

Asthma

- Most victims with asthma usually know about their condition and carry an inhaler.
- Sometimes they may have so much trouble breathing, they may need help with their inhaler
- Assess the scene for safety
- Ask if you can help – retrieve inhaler
  - Shake the medicine canister
  - Remove the cap
  - Attach a spacer, if available and you know how
  - Tilt the victim's head back slightly and instruct to breath out slowly
  - Put the inhaler or spacer in the victim's mouth
  - Push down on the medicine canister
  - Instruct the victim to breath in slowly and deeply as you push down
  - Instruct the victim to hold his breath for 10 seconds and then breathe out slowly
- If no inhaler is available or victim does not get better after using the inhaler
  - Call or direct bystander to call EMS
  - Stay with the victim until EMS arrives and takes over
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Choking

When an object becomes lodged in the airway it can be considered a **mild to severe** airway obstruction, depending on the victim's inability to breathe. Good air exchange and the ability to make forceful coughing efforts, is usually present in a mild airway obstruction. If a victim experiences a mild airway obstruction, the victim should be encouraged to continue coughing until the obstruction has been removed.

Victims with a severe airway obstruction will have poor air exchange and may need immediate care. Victims with a **complete** airway obstruction will have **little to no air exchange** and will **need immediate care**.

The universal sign for choking is grasping the throat. Not all victims know or use the sign. It is important to recognize the signs of choking and to take immediate action when a severe airway obstruction occurs.

Signs of a severe airway obstruction include all or one the following:

- Breathing becoming more difficult
- Weak and ineffective cough
- Inability to speak or breathe
- Skin, beds of fingernails, and area in and around mouth may appear bluish gray (indicating cyanosis)

Caring for Choking Victim

Check victim for choking. Elicit response to question, ***"Are you choking?"*** Observe signs of obstruction (speaking and breathing).

Responsive Adult or Child - begin Heimlich Maneuver

- Assess the scene for safety
- Ask if you can help
- Call or direct bystander to call EMS
- Move behind the victim
- Reach around the victim's waist with both arms just above the navel

- Place a fist with the thumb side against the victim's abdomen
- Grasp the fist with other hand
- Press into the abdomen with quick inward and upward thrusts
- Continue administering thrusts until the object is removed or the victim becomes unresponsive
- If unable to move behind the victim, have victim lay on the ground and administer abdominal thrusts using both hands in the same location as if they were standing
- **If victim becomes unresponsive**, stops breathing and loses consciousness, **immediately** call or have a bystander call EMS - **begin CPR**
    - Continue CPR cycle until a second rescuer or EMS takes over, you are too tired to continue, or victim begins breathing
    - If victim begins breathing, place in recovery position until EMS arrives
      Pregnant women should NOT be given the Heimlich Maneuver from behind, but rather given abdominal thrusts to victim while she is lying on the ground.
      Non-responsive Adult or Child – begin CPR
- Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
- If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Infant choking - observe signs of obstruction (speaking and breathing)

- Assess the scene for safety
- Call or direct bystander to call EMS
- Support the infant's head, neck, and back with hand and forearm
- Use thigh to support your arm
- Give five strong back blows
- Turn the infant over, supporting the head and neck, using your leg or nearby object
- Check mouth and throat for obstruction
- Give five chest compressions, using two fingers and check airway again
- Repeat these steps until the object is removed
- If victim begins breathing, place in recovery position until EMS arrives
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Allergic Reactions

People have allergic reactions to many things, including foods, insect stings and bites. Although many allergic reactions are mild, some can become severe within minutes. People who have severe allergies may carry an epinephrine pen. Some states and organizations permit first aid rescuers to help people use their epinephrine pens. First aid rescuers can help administer an epinephrine injection, if permitted to do so by their state regulations and/or company.

*****Anaphylaxis is the most severe form of allergic reaction. It has a rapid onset and may cause death.**

Signs and Symptoms of Allergic Reaction

- Difficulty breathing
    - very fast or very slow
    - noisy and/or wheezing
- Inability to speak or breathe
- Swelling and itching skin
- Facial and/or tongue swelling
- Low blood pressure
- Vomiting
- Skin, beds of fingernails, and area in and around mouth may appear bluish gray (indicating cyanosis)
  Caring for Victim of Allergic Reaction
    - Asses the scene for safety
    - Call or direct a bystander to call EMS
    - Ask the victim if you can help
    - Determine if victim has epinephrine pen
      With Epinephrine Pen
    - Can help someone with a severe allergic reaction breathe more easily
    - Contains a small amount of medicine which can be injected through clothing

- Takes several minutes to take effect
- Given on the side of the thigh
  - Retrieve epinephrine pen
  - Hold the pen in your fist without touching either end (needle comes out of one end)
  - Push the end with the needle hard against the side of the victim's thigh (about halfway between the hip and knee)
  - Give the injection through clothes or on bare skin
  - Hold the pen in place for approximately 10 seconds
  - Remove the needle by pulling the pen straight out
  - Dispose of the pen properly
  - Note the time of the injection
  - Stay with victim until EMS arrives
- If victim does not respond to first dose, and EMS does not arrive within 5-10 minutes a repeat dose may be administered
- Remain with victim and record any changes in victim
- Report findings to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Without Epinephrine Pen

- Remain with victim until EMS arrives and takes over
- Record any changes in victim
- Report findings to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
- Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
- If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Heart Attack

A heart attack is the death or damage to the heart muscle and may lead to a victim's death. A heart attack usually develops within the first 4 hours of after the onset of symptoms. A heart attack increases the chance of cardiac arrest in victims and unlike with a cardiac arrest, the heart usually does not stop beating. Early recognition of signs and symptoms can improve a victim's chance of survival.

Signs and Symptoms of a Heart Attack

- Pain, fullness, and/or squeezing sensation of the chest
- Jaw pain, toothache, headache
- Shortness of breath
- Nausea, vomiting and/or general upper abdominal discomfort
- Heartburn and/or indigestion
- Arm pain (commonly in the left arm, but may be both)
- Overall fatigue
- Sweating
- Some victims (about ¼ of all heart attacks) are silent, without chest pain or symptoms

*****Women, the elderly and people with diabetes are more likely to have atypical signs of a heart attack – ache in the chest, heartburn or indigestion, or an overall uncomfortable feeling in the back, jaw, neck or shoulder.**

Caring for a Heart Attack Victim

If victim is NOT breathing:

- Assess the scene for safety
- Call or direct a bystander to call EMS
- Retrieve AED, if available
- Check breathing
- Begin CPR
  - Continue CPR cycle until EMS or second rescuer takes over, AED becomes available or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

If victim is breathing:

- Assess the scene for safety
- Call or direct bystander to call EMS

- Ask if you can help
- Encourage victim to remain calm and in a comfortable position (recovery position if possible)
- Offer 1 adult dose or 2 low dose aspirin, if certain the victim is experiencing a heart attack and has no known allergy
- Stay with victim until EMS arrives and takes over
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all - **begin CPR**
    - Continue CPR cycle until EMS or second rescuer takes over, AED becomes available or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100- 120 minute

Fainting
Fainting occurs when there is not enough blood going to the victim's brain. It usually only lasts for a short period of time. The victim will stop responding for less than a minute and then seems alert again. Moments before fainting, a victim may feel dizzy.

Signs and Symptoms of Fainting

- Victim suddenly feels dizzy
- Victim stumbles and falls down
- Victim stops responding (less than a minute) and then becomes alert again

Caring for a Fainting Victim

- Assess the scene for safety
- Help the victim lie flat on the ground
- Call or direct bystander to call EMS
- Instruct the victim to remain lying flat on the ground until he/she can sit up and feel normal
- If the victim fell – check for injuries caused by the fall
- Remain with victim until he/she feels normal and alert
    - Can stand and walk without assistance
    - Is aware of what happened and who he/she is
- Record any changes in victim
- Report findings to EMS when they arrive
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120/per minute

Diabetes and Low Blood Sugar
Diabetes is a disease that affects a victim's blood sugar levels. When a victim has too much or too little blood sugar, problems can occur. Some diabetics take regular doses of insulin.

Signs and Symptoms of Low Blood Sugar (Hypoglycemia)

- A change in behavior
    - Confused, irrational or irritable
- Sleepiness or lack of response
- Hunger, thirst or overall weakness
- Victim appears sweaty and/or pale
- Seizure – see seizure section

Common causes of low blood sugar

- Not eating
- Vomiting
- Not eating enough food for level of activity
- Injecting too much insulin

Caring for a Diabetic Victim

- Assess the scene for safety
- Call or direct a bystander to call EMS
- Ask the victim if you can help
- If the victim can sit up and swallow
    - Give glucose tablet if available OR
    - Give a food or drink that contains sugar (chocolate does not contain enough sugar)

  - Fruit juice
  - Milk
  - Sugar
  - Honey
  - A regular soft drink
  - Diet foods and drinks do not have sugar
- If the victim cannot sit up and swallow
  - Do NOT give food or drink
  - Have victim sit quietly or lie down until EMS arrives
- **If victim becomes unresponsive**, stops breathing and loses consciousness, **immediately** call or have a bystander call EMS - **begin CPR**
  - Continue CPR cycle until a second rescuer or EMS takes over, you are too tired to continue, or victim begins breathing
  -
  - If victim begins breathing, place in recovery position until EMS arrives

Stroke

A stroke occurs when the blood supply to the victim's brain is interrupted or severely reduced by a blood clot, which deprives the brain tissue of oxygen and vital nutrients. A stroke is sometimes called a "brain attack". Early recognition of signs and symptoms can improve a victim's chance of survival.

Signs and Symptoms of Stroke

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

FAST Stroke Assessment:

- **F - F**acial droop
- **A - A**rm weakness
- **S - S**peech difficulty
- **T - T**ime to call EMS

Caring for a Stroke Victim

Recognize the signs and symptoms of a stroke

- Assess the scene for safety
- Call or direct a bystander to call EMS
- Do NOT give the victim anything to eat or drink
- Encourage the victim to remain calm and quiet
- Monitor victim and be prepared to begin CPR
- Most strokes are preventable
  - More than half of strokes are caused by uncontrolled hypertension or high blood pressure making it the most important risk factor to control
- Medical treatments may be used to control high blood pressure and/or manage atrial fibrillation among high-risk victims
- Carotid endarterectomy (removal of blockages in artery)
  - Angioplasty/stents (opening of blocked blood vessel)
- Remain with victim until EMS arrives
- Record any changes in victim
- Report findings to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Seizure
A seizure is caused by abnormal electrical activity in a victim's brain. Most seizures stop within a few minutes. Victims who have the medical condition, epilepsy can have seizures. Some seizures can also occur when the heart suddenly stops beating.

Signs and Symptoms of Seizure

- Loss of muscle control
- Falling to the ground
- Victim's arms, legs or other parts of the body may jerk
- Victim stops responding

Causes of Seizure

- Medical condition
- Head injury
- Low blood sugar
- Heat-related injury
- Poisoning

Caring for a Seizure Victim

- Assess the scene for safety
- Call or direct a bystander to call EMS
- Ask the victim if you can help
- Protect the victim from injury
- Move furniture or other unsafe objects out of the way
- Place a small pad or towel under the victim's head, if possible
- Do NOT place objects in the victim's mouth
- Encourage the victim to remain calm
- Remain with the victim until EMS arrives and takes over
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all - **begin CPR**
    - Continue CPR cycle until EMS or second rescuer takes over, AED becomes available or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100- 120 minute

Shock
Shock victims are experiencing circulatory failure due to heart failure, fluid loss or an allergic reaction. Shock may cause a victim to stop responding and lead to permanent damage if left untreated.

Signs and Symptoms of Shock

- Victim's skin feels cold and clammy
- Victim appears pal or grayish
- Victim is nauseous, vomiting or thirsty
- Victim has rapid breathing and pulse
- Altered mental state – acts restless, agitated or confused

Caring for Shock Victim

- Check the scene for safety
- Call or direct bystander to call EMS
- Help the victim lie on his/her back
- Cover the victim to keep him/her warm
- Check the victim using **ABC method**:
    - **A**irway – use head tilt-chin lift method
    - **B**reathing – look, listen and feel for breathing
    - **C**irculation – check for severe bleeding
- Record any changes in the victim's condition
- Report your findings and care to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all - **begin CPR**
    - Continue CPR cycle until EMS or second rescuer takes over, AED becomes available or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100- 120 minute

Injury Emergencies

External Bleeding
Many times bleeding can look worse than it is. When large blood vessels are cut or torn, a victim may lose a lot of blood within minutes. Most bleeding can be slowed or stopped with pressure. If possible, have victim apply direct pressure to the wound while you put on any available personal protective equipment (PPE) – gloves, mask, etc…

Types of bleeding
- Minor
  - Capillary (oozing)
- Severe
  - Venous (flowing)
  - Arterial (spurting)

Types of open wounds
- Abrasion
- Laceration
- Incision
- Puncture
- Avulsion
- Amputation

Treating External Bleeding Wounds
- Check the scene for safety
- Call or direct a bystander to call EMS
- Treat wound according to severity

Minor wounds
- Apply gloves
- Inspect wound and look for point where bleeding is coming from
- Apply direct pressure
- Clean wound, apply antibiotic ointment and cover with clean bandage.
- Seek medical care, if necessary

Severe wounds
- Apply gloves
- Inspect wound and look for point where bleeding is coming from
- Cover with a clean cloth or gauze
- Apply direct pressure
- Use a pressure bandage by wrapping a roller gauze or elastic bandage around the wound to control bleeding
- Do **NOT** remove blood-soaked dressings
- Leave all dressings on and add more, if/when needed

Amputation
- Apply gloves
- Apply direct pressure
- Immobilize partial amputation with bulky dressing
- Find amputated part, if possible and wrap in clean and/or sterile dressing, place in plastic bag and set in container of ice and water (do not soak/or freeze)

  Tourniquet
  If an arm or leg has severe bleeding that cannot be stopped with direct pressure, use a tourniquet. If you do not have a pre-made tourniquet make one using a piece of cloth and a windless - straight, hard object like a stick to tighten the tourniquet.
- Fold a cloth or bandage so that it is long and at least 1” wide
- Place the tourniquet 2 inches above the injury, if possible

- Tie the ends of the bandage around a stick
- Turn the stick to tighten the tourniquet
- Tighten it until bleeding stops
- Note the time you placed the tourniquet
- Leave the tourniquet on until EMS arrives and takes over
- Tourniquet's that are applied correctly will cause pain as the bleeding stops.

Ongoing Care until EMS arrives

- Check the victim using ABC method:
  - **A**irway – use head tilt-chin lift method
  - **B**reathing – look, listen and feel for breathing
  - **C**irculation – check for severe bleeding
- Care for shock, if necessary
  - Victim lies on back
  - Cover and keep warm
  - Do not give anything to eat or drink
- Record any changes in victim
- Report findings to EMS when they arrive
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Internal Bleeding

Signs of internal bleeding

- Skin is not broken and blood is not seen
- Bruising
- Painful, tender, rigid and/or bruised chest and abdomen
- Vomiting or coughing blood
- Black or bright red stool
- Shortness of breath
- Injury to the abdomen or chest
- Signs of shock – see shock section
- Knife or gunshot wound

Care for internal bleeding

- Assess the scene for safety
- Call or direct a bystander to call EMS
- Have the person lie down and remain still
- Provide care for shock, if necessary
- If vomiting occurs, roll victim on his or her side
- Check the victim using ABC method:
  - **A**irway – use head tilt-chin lift method
  - **B**reathing – look, listen and feel for breathing
  - **C**irculation – check for severe bleeding
- Care for shock, if necessary
  - Victim lies on back
  - Cover and keep warm
  - Do not give anything to eat or drink
- Record any changes in victim
- Report findings to EMS when they arrive
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Wound Care

When caring for wounds it is important to assess the scene for safety and wear (PPE) personal protective equipment, if available. Activate EMS if you are unsure or unable to treat a victim. Administer shock care, if needed. If victim becomes

unresponsive – begin CPR. Perform CPR cycle until another bystander or EMS arrives and takes over, or you are too tired to continue.

Caring for Nose Bleeds

- Assess the scene for safety
- Apply PPE
- Pinch victim's nose
- Tilt the victim's head forward
- Keep constant pressure on both sides of the nostrils until the bleeding stops
- If bleeding continues, press harder
- Apply a cold pack to the bridge of the nose
- Call or direct a bystander to call EMS if
    - The bleeding doesn't stop in approximately 15 minutes
    - Bleeding is heavy (gushing)
    - The victim has trouble breathing
    - Do **NOT** have victim tilt head back

Caring for Bleeding from the Mouth

Bleeding from the mouth can lead to breathing problems if blood or broken teeth block the airway or you cannot reach the bleeding area.

- Assess the scene for safety
- Apply PPE
- If you can reach the bleeding area
    - Apply pressure with clean, sterile dressings
- Check the mouth for any missing teeth, or parts of teeth
    - Clean the wound with saline or clean water
    - If the victim has a loose tooth
        - Have the victim bite down on a piece of gauze to keep the tooth in place
        - Call a dentist
        - If the tooth is chipped, clean the area and call a dentist
    - If tooth is missing
        - Apply pressure with gauze to stop bleeding at the empty tooth socket
        - Place tooth in a cup of Hank's balanced salt solution, propolis, egg white, coconut water, Ricetral or milk
        - Take victim to dentist or emergency room
    - If tooth becomes discolored – victim should see a dentist
- Call or direct bystander to call EMS if
    - You cannot stop the bleeding
    - The victim has trouble breathing
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Caring for an Eye Injury

- Assess the scene for safety
- Apply PPE
- Call or direct a bystander to call EMS
- Instruct victim to keep eyes closed
- Use clean water to rinse the eye(s)
- If the eye(s) have been punctured or penetrated by an object leave the object in place until EMS arrives and takes over

Caring for Embedded (Impaled) Objects

- Assess the scene for safety
- Apply PPE
- Call or direct bystander to call EMS, if necessary
- Expose the injured area
- Stabilize the object
- Do NOT remove the object
- Control bleeding around the object

- Seek medical attention or wait for EMS to arrive
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Caring for an Open Chest Wound

- Assess the scene for safety
- Apply PPE
- Call or direct bystander to call EMS, if necessary
- Leave the wound open or apply a dressing and pressure, if required to stop bleeding
    - Take care that dressing does not become occlusive (sealing the wound)

Determining if a wound needs medical attention

- Arterial bleeding
- Uncontrolled bleeding
- Deep wounds
- Large or deeply embedded objects
- Foreign matter in wound
- Human or animal bite that breaks the skin
- Slit eyelid or lip
- May cause large scar
- Need tetanus shot
- Uncertain of how to provide care

Dressings and Bandages

It is important to treat wounds with the appropriate bandages and dressing. Some bandages may be improvised at the emergency scene, if other options are not available. Be sure to apply your PPE **BEFORE** providing care where you may come into contact with bodily fluids.

When using bandages and dressings check for signs that the bandage may be too tight by observing any of the following:

- Bluish or pale skin color
- Coldness of extremity below or above the bandage
- Inability to move fingers and/or toes
- Bluish tinge in fingernails and/or toenails

*****If bandage is too tight, correct and continue to provide care. If bleeding is not controlled, continue to apply direct pressure and do NOT remove dressings**

Dressings

Functions

- Control bleeding
- Prevent infection
- Absorb blood
- Protect the wound

Types

- Gauze pads
- Adhesive strips
- Trauma dressings
- Improvised dressings

Bandages

Functions

- Hold dressing in place
- Apply pressure
- Control bleeding

- Prevent or reduce swelling
- Support and stabilize extremity or joint
- Hold splint in place

Types

- Gauze roller
- Self-adhering bandages
- Conforming bandages
- Adhesive tape

Head, Neck and Spine Injuries

Signs and Symptoms of a Head Injury

- Victim does not respond or only moans or moves
- Acts sleepy or confused
- Vomits
- Complains of a headache
- Difficulty seeing
- Difficulty walking or moving around any part of the body
- Seizure

Signs and Symptoms of a Neck and Spine Injury

- Victim fell from a height
- Is 65 or older
- Was in a car or bicycle crash
- Tingling or weakness in the victim's extremities
- Pain or tenderness in the neck or back
- Victim appears to be intoxicate or not fully alert
- Victim has other painful injuries of the head and neck

Caring for a Head, Neck or Spine Injury Victim

- Assess the scene for safety
- Call or direct bystander to call EMS
- Apply PPE, if available
- Minimize movement
    - Encourage victim to remain as still as possible
    - Do not apply a cervical collar or move the victim
    - Stabilize the head and neck with your hands, if possible
- Advise victim to remain calm and still
- Evaluation by a healthcare provider should occur as soon as possible

Ongoing Care until EMS arrives

- Check the victim using **ABC assessment**:
    - **A**irway – use head tilt-chin lift method
    - **B**reathing – look, listen and feel for breathing
    - **C**irculation – check for severe bleeding
- Care for shock, if necessary
    - Victim lies on back
    - Cover and keep warm
    - Do not give anything to eat or drink
- Record any changes in victim
- Report findings to EMS when they arrive
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Broken Bones and Sprains

Broken bones and sprains occur when a victim's body moves in directions it's not supposed to go. Without an x-ray it is not possible to determine if a bone is broken. Rescuers will perform the same action, regardless of the condition of the bone.

Signs and Symptoms of a Broken Bone or Sprain

- Swelling at the joint
- Swelling under the skin
- Bruising at injury site
- Large open wound
- An abnormally bent limb or other part of the body

Caring for a Victim with a Broken Bone or Sprain

- Asses the scene for safety
- Call or direct bystander to call EMS
- Advise the victim to remain still and avoid using or moving the injured body part
- Apply a cold pack to the injured area
- Do **NOT** try to straighten a bent or deformed body part
- Do **NOT** try to move a broken bone that has come through the skin
- Make a splint if you are unable to access EMS support immediately (example hiking in the woods)
    - Use something to support the arm or leg from moving (magazine, stick, rolled up towels)
    - Place the splint so that it goes beyond the injured area and supports the joints above and below the injury
    - Tie the splint to the injured body part for support
    - Use tape, gauze or cloth to secure it
    - Check to make sure the splint is not too tight
        - You should be able to put a few fingers between the splint and the injured body part
- If the injured part is bleeding, apply direct pressure to stop the bleeding and apply dressing to the wound **BEFORE** applying the splint
- If there are no materials to make a splint, have the victim self-splint by using his/her arm to hold the injured arm in place
- Do **NOT** try to straighten body parts when applying a splint

Ongoing Care until EMS arrives

- Check the victim using ABC method:
    - **A**irway – use head tilt-chin lift method
    - **B**reathing – look, listen and feel for breathing
    - **C**irculation – check for severe bleeding
- Care for shock, if necessary
    - Victim lies on back
    - Cover and keep warm
    - Do not give anything to eat or drink
- Record any changes in victim
- Report findings to EMS when they arrive
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Burns and Electrical Injuries

Victims who come into contact with heat, electricity or certain chemicals can experience burns and injuries. Heat burns can be caused by fire, hot surfaces, hot liquids or steam. It is important to use cool water on burns, as ice can damage burned areas. Hypothermia (low body temperature) can occur when a burn victim gets too cold.

Types of Burns

- Thermal (Heat related) burns
- Chemical burns
- Electrical burns

Caring for Thermal Burns

- Assess the scene for safety

- Call or direct bystander to call EMS if
- There is a fire
    - If the victim is on fire
        - Direct the victim to stop, drop and roll
            - Cover the person with a wet blanket to put the fire out
            - Remove the blanket after the fire is out
            - The victim has a large second degree or third degree burn
    - You are unsure of what to do
    - Apply PPE
- Determine the type and severity of burn
    - Depth (Degree)
        - First degree (superficial)
        - Second degree (partial thickness)
        - Third degree (full thickness)
    - Extent
        - Rule of palm - use the size of palm to measure size of burn (palm area=1% of the body)
- Stop the burning process
- Open airway and check breathing
- Seek medical attention if
    - Victim is younger than 5 and older than 55
    - Victim has difficulty breathing
    - Victim has other injuries or electrical injuries
    - Face, feet, hands and/or genitals are burned
    - Child abuse is suspected
    - Second degree burn is larger than 20% BSA
    - Burn is third degree

First Degree Burns (superficial)

- Signs and Symptoms
    - Redness
    - Mild swelling
    - Tenderness
    - Pain
- Caring for First Degree Burns
    - Cool burn with cold water – no ice
    - Apply moisturizer, such as aloe vera gel
    - Adult: administer ibuprofen for pain relief
    - Child: administer acetaminophen for pain relief

Second Degree Burns (partial thickness)

- Signs and Symptoms
    - Redness
    - Blisters
    - Swelling
    - Weeping fluids
    - Intense pain
- Caring for Second Degree Burns
    - Cool burn with cold water – no ice
    - Apply antibiotic ointment
    - Cover burn with dry, nonstick, sterile dressing
    - Adult: administer ibuprofen for pain relief
    - Child: administer acetaminophen for pain relief
    - For larger Second Degree Burns – **see caring for third degree burns**

Third Degree Burns (full thickness)

- Signs and Symptoms
    - Redness
    - Dead nerve endings
    - Leathery, waxy appearing skin

    - Pearly gray or charred skin
- Caring for Third Degree Burns
    - Seek medical attention **immediately**
    - If the person is on fire, put the fire out
    - Remove jewelry and clothing that is not stuck to the skin
    - Cover the person with a blanket
    - Open airway and check for breathing
    - Monitor breathing
    - Care for shock – **see shock section**
    - Remain with the victim until EMS arrives
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Chemical Burns

- Signs and Symptoms
    - Occur when a victim comes into contact with a caustic or corrosive substance
        - Acids, alkalis and/or organic compounds
    - Continue to burn as long as they in contact with the skin
- Caring for Chemical Burns
    - Flush skin
    - Remove contaminated clothing
    - Cover burn
    - Seek medical care
    - Monitor breathing
    - Care for shock – **see shock section**
    - Remain with the victim until EMS arrives
- If victim becomes **unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Electrical Burns

- Signs and Symptoms
    - Victim may have burns on the inside and outside of the body
    - Victim may stop breathing or have an irregular heart rhythm
- Caring for Electrical Burns
    - Assess the scene for safety – do not touch a victim if still in contact with electrical source
    - Call or direct a bystander to call EMS
    - Ask if you can help
    - Turn off the main power source, if possible
    - Cover burns
    - Check for spinal injuries
    - Assess the victim, once safe
- Check the victim using **ABC assessment**:
    - **A**irway – use head tilt-chin lift method
    - **B**reathing – look, listen and feel for breathing
    - **C**irculation – check for severe bleeding
- Care for shock, if necessary
    - Victim lies on back
    - Cover and keep warm
    - Do not give anything to eat or drink
- Record any changes in the victim's condition
- Report your findings and care to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Environmental Emergencies

Insect/Animal Bites and Stings

Many bites are minor, although some may break the skin and bleed. Bites that do not break the skin are usually not serious. Some bites can become more serious if they become infected. It is best to avoid any animal that is exhibiting unusual behavior. Cats, dogs, skunks, raccoon, foxes, bats and other wild animals can be infected with rabies.

Caring for a Bite

- Assess the scene for safety
- Apply PPE
- Call or direct a bystander to call EMS
- Ask if you can help
- Move away from the animal, if possible
- Advise the victim to remain still and calm
    - Victim should avoid moving the part of the body that was bitten
- Remove any clothing that covers the area
- Flush the wound with running water
- Clean it with soap and water
- Stop any bleeding by applying pressure and dressings
- If a bite breaks the skin, see a healthcare provider
- Place an ice pack over any area that has bruising or swelling
- For serious bites, remain with victim until EMS arrives

Snakes

- It is important to identify the type of snake, if possible
- Assume it is poisonous, if you do not know
- Watch for signs of poisoning
    - Pain in the area, that continues to get worse
    - Swelling in the area
    - Nausea
    - Vomiting
    - Sweating

Bats

- If a victim is in a room with a bat
    - Assume bite may have occurred
    - Do **NOT** kill the bat (rabies testing is impossible without live specimen)
    - **Immediately** seek medical attention from a healthcare provider

Insect, Bee and Spider Bites and Stings

- Assess the scene for safety
- Apply PPE
- Call or direct a bystander to call EMS
- Ask if you can help
- Advise the victim to remain still and calm
    - Victim should avoid moving the part of the body that was bitten
- Remove any clothing that is covering the injury
- Gently wash the area of the injury with water (and soap, if possible)
- Place an ice pack over any area the injury site
- For serious bites, remain with victim until EMS arrives
- Watch the victim for signs of allergic reaction (up to 30 minutes) – **see allergic reaction section**
    - If the victim has a known severe allergy to the insect bite or sting retrieve the victim's epinephrine pen – **see allergic reaction section**

Bees

- Look for the stinger
- Scrape away the stinger and venom sack using something with a flat and dull edge – like a credit card

Ticks

- Use tweezers or a tick-removing device
- Grab by the mouth or head, as close to the skin as possible
- Lift the tick straight out without twisting or squeezing its body
- Wash the bite with running water (and soap, if available)
- See healthcare provider if you are in an area where tick-borne diseases occur.
- Place the tick in a plastic bag and give it to the healthcare provider

Signs and Symptoms of Poisoning

- Severe pain at the site of injury
- Muscle cramps
- Headache
- Vomiting
- Fever
- Breathing problems
- Seizures
- Lack of response

Ongoing Care until EMS arrives

- Check the victim using **ABC assessment**:
  - **A**irway – use head tilt-chin lift method
  - **B**reathing – look, listen and feel for breathing
  - **C**irculation – check for severe bleeding
- Care for shock, if necessary
  - Victim lies on back
  - Cover and keep warm
  - Do not give anything to eat or drink
- Record any changes in the victim's condition
- Report your findings and care to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Weather Related Emergencies

Heat Related Emergencies

Most heat-related emergencies occur when victims engage in vigorous exercise. Mild heat-related signs are a warning that the victim's condition may worsen without action. Symptoms of heat-related emergencies may increase if left untreated.

Heat Cramps

- Signs and Symptoms
  - Painful muscle cramps, usually in the calves, arms, stomach muscles and back
  - Sweating
  - Headache
- Caring for Heat Cramps
  - Assess the scene for safety
  - Apply PPE
  - Advise the victim to lie down, rest and cool off
  - Stretch cramped muscle
  - Provide drink that contains electrolytes, such as juice or a sports drink
    - Give the victim water if the others are not available
  - A cool ice pack may be applied to the sore muscle for up to 20 minutes, if the victim can tolerate it.
  - Call or direct a bystander to call EMS if victim's condition does not improve
  - Monitor breathing
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Heat Exhaustion

- Signs and Symptoms
  - Heavy sweating
  - Severe thirst
  - Headache
  - Feeling faint
  - Muscle cramps
  - Nausea and/or vomiting
  - Fatigue
- Caring for Heat Exhaustion
  - Stop activity and rest in a cool place
  - Remove excess or tight clothing
  - Provide drink that contains electrolytes, such as juice or a sports drink
  - Give water if other drinks are unavailable
  - Advise victim to lie down, raise legs 6 to 12 inches
  - Apply cool damp cloths to the neck, armpit and groin area, if possible
  - Spray with a cool water spray, if possible
  - Call or direct a bystander to call EMS if victim's condition does not improve
  - Monitor breathing
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Heatstroke

- Signs and Symptoms
  - Appears very similar to heat exhaustion, but can be very life threatening
  - Extremely hot, dry skin
  - Dizziness and confusion
  - Seizures
  - Unresponsiveness
  - Fainting
- Caring for Heatstroke
  - Assess the scene for safety

  - Call or direct bystander to call EMS
  - Ask if you can help
  - Apply PPE
  - Begin cooling the victim immediately
  - Place in cool water up to neck, if possible
  - Cool with a cool water spray, if possible
  - Stop cooling the victim once behavior is normal again – continued cooling can lead to hypothermia
- If the victim is able to drink
  - Provide drink that contains electrolytes, such as juice or a sports drink
  - Give water if other drinks are unavailable
- If victim is unable to drink
  - Remain with victim until EMS arrives and takes over
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Cold Related Emergencies
Cold-related injuries usually occur when a victim is exposed to cold weather conditions without proper protection, however hypothermia can also be a symptom of a treatment for severe burns or heat related injuries.

Frostbite
- Signs and Symptoms
  - Skin becomes white, waxy or grayish-yellow
  - Damaged skin is hard and does not move when pushed
  - Damaged skin is cold and numb
- Caring for Frostbite
  - Assess the scene
  - Call or direct a bystander to call EMS
  - Ask if you can help
  - Apply PPE
  - Move the victim to a warm place
  - Remove tight clothing and jewelry from the frostbitten area
  - Remove wet clothing
  - Pat the body dry
  - Put dry clothes on the victim, if possible
  - Cover with a blanket
  - Do not try to thaw the frozen part if you think there may be a chance of refreezing
  - Try not to touch the frostbitten area
  - Do **NOT** rub the damaged area
  - Remain with victim until EMS arrives
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Hypothermia (Low Body Temperature)
- Signs and Symptoms
  - Hypothermia is a serious condition that can lead to death. A victim can develop hypothermia in above freezing temperatures.
  - Skin is cool to the touch
  - Shivering stops
  - Victim is confused and/or drowsy
  - Change in personality or behavior
    - Unconcerned with condition
  - Muscles become stiff and rigid
  - Skin becomes ice cold and blue
  - Advanced stages of hypothermia
  - Victim becomes unresponsive

    - Breathing slows
    - Victim may appear dead
- Caring for Hypothermia
    - Assess the scene for safety
    - Call or direct a bystander to call EMS
    - Ask if you can help
    - Apply PPE
    - Move the victim out of the cold
    - Remove wet clothing
    - Pat the body dry
    - Put dry clothes on, if possible
    - Cover with a blanket and any other coverings you may have
    - Cover the head, but not the face
    - Place victim near a heat source and place containers of warm – not hot – water in contact with the skin
    - Remain with victim and record any changes
    - Report changes to EMS when they arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Poison Emergencies

Many types of products can be poisonous to people. When victims come into contact with poisonous products either by swallowing, breathing or contact with skin and eyes, serious sickness and even death can occur. If you are unsure of a victim's exposure, call 911 immediately, before calling poison control

Caring for Poison Emergencies
The number for the **American Association of Poison Control** Centers (Poison Control) is

- **1-800-222-1222**
- Follow all workplace guidelines about poisonous items in your workplace

Caring for Poison Exposure Emergencies

- Assess the scene – ensure it is safe BEFORE you approach
- Call or direct bystander to call EMS
- Provide name of poison, if possible
- Apply PPE
- If the scene appears unsafe
    - Do **NOT** approach
    - Warn others to move away
- Look for signs that warn you poisons are nearby
- Check for spills or leaking containers
- Avoid the area with poison if you see more than 1 victim
- If you approach the scene
    - Apply PPE
    - Remove the poison off the victim as quickly and safely as you can
    - Use water to rinse the poisons off
    - Help the victim remove contaminated clothing and jewelry
    - Help the victim to a safety shower, or eyewash station if responsive and able to move
    - Brush off any dry power or solid substances from skin, using gloved hand
    - Rinse contaminated areas with water for at least 20 minutes or until EMS arrives and takes over
    - If victim has poisoning in the eye
        - Help wash face under flowing water with the poisoned eye on the bottom, or
        - Use eyewash station

Ingested Poisons
Known and Unknown Ingested Poisons

- Signs and Symptoms
    - Abdominal pain

  - Nausea and/or vomiting
  - Diarrhea
  - Burns, stains, odor near or in mouth
  - Drowsiness and/or unresponsiveness
  - Poison containers nearby
- Caring for Poison Victim
- Assess scene for safety
- Call or direct bystander to call EMS
- Apply PPE
- Determine
  - the age and size of the victim
  - what and how much poison was ingested
  - when it was taken
- Give activated charcoal, if advised
- Save containers, plants and vomit, if unknown
- If victim is responsive
  - Place victim in recovery position
  - Call poison control
  - Remain with victim until EMS arrives
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Alcohol Intoxication

- Signs and Symptoms
  - Victim appears unsteady or staggers
  - Confused
  - Slurred speech
  - Nausea and/or vomiting
  - Sweaty
  - Flushed face
  - Strong odor of alcohol
  - Fainting
- Caring for Alcohol Intoxication
  - Assess the scene for safety
  - Call poison control: 800-222-1222
    - Call or direct bystander to call EMS if victim is violent or becomes unresponsive
  - Apply PPE
  - Place responsive breathing victim in recovery position and monitor breathing
  - Remain with victim until he/she becomes alert or EMS arrives and takes over
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
  - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
  - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Drug Overdose

- Signs and Symptoms
  - Victim appears drowsy, anxious, agitated or hyperactive
  - Change in pupil size
  - Confused and/or delirious
  - Hallucinations
- Caring for Drug Overdose
  - Assess the scene for safety
  - Call poison control: 800-222-1222
    - Call or direct bystander to call EMS if victim is violent or becomes unresponsive
  - Apply PPE
  - Place responsive, breathing victim in recovery position
  - Monitor breathing

    - Remain with victim until he/she becomes alert or EMS arrives and takes over
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

*****Naloxone, if available, may be administered if suspected, life-threatening opioid overdose has occurred.**

Carbon Monoxide Poisoning

- Signs and Symptoms
    - Headache
    - Ringing in the ears
    - Chest pain/tightness in chest
    - Muscle weakness
    - Nausea and/or vomiting
    - Dizziness and changes in vision
    - Unresponsiveness
    - Breathing and heart stop
    - Symptoms may come and go
    - Symptoms can worsen and improve depending on the time and place
    - Nearby people have similar symptoms
    - Can be confused with flu – due to flu like symptoms
    - Pets become ill
- Caring for Carbon Monoxide Poisoning
    - Assess the scene for safety – do **NOT** enter if more than 1 victim is present
    - Call or direct a bystander to call EMS
    - Apply PPE
    - Remove the victim from environment immediately
    - Monitor breathing
    - Place responsive, breathing victim in recovery position and wait for EMS to arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Plant Poisoning

- Signs and Symptoms
- Plants such as poison ivy, poison oak, poison sumac and others cause victims to react to their poisonous effects with one or all of the following symptoms
    - Rash
    - Itching
    - Redness
    - Blisters
    - Swelling
- Caring for Plant Poisoning
    - Assess the scene for safety
    - Apply PPE
    - Clean skin with soap and cold water as soon as possible
    - Give victim lukewarm bath with colloidal oatmeal
    - Apply calamine lotion and baking soda paste
    - Apply corticosteroid ointment to relieve symptoms
    - Administer oral corticosteroid to relieve symptoms
    - Contact poison control: 800-222-1222
    - Seek medical attention if symptoms do not improve or worsen
    - Call or direct bystander to call EMS if victim shows signs of allergic reaction – see allergic reaction section
    - Place responsive, breathing victim in recovery position, monitor breathing and wait for EMS to arrive
- **If victim becomes unresponsive** or has agonal breathing (irregular, shallow or gasping) or is not breathing at all – **begin CPR**
    - Continue CPR cycle until EMS arrives, a second rescuer takes over or you are too tired to continue
    - If you do not know CPR begin "Hands Only" compressions at a rate of 100-120 per minute

Rescuing and Moving Victims

It is important to know when and how to rescue and move victims in an emergency situation. However, as a bystander becoming a rescuer in an emergency situation it is imperative that you DO NOT put your own safety at risk, in an attempt to help others, unless it is your duty to act. Instead activate EMS and remain on the scene, record important information to report when someone who is better trained arrives.

Types of Rescue

Water Rescue

- Reach-Throw-Go
  - **Reach** for the victim
  - **Throw** anything that floats
  - **Go** by swimming (must be trained)
- Enter the water as a last resort

Ice Rescue

- Extend a pole or throw a line, with floatable object to victim
- Pull victim to shore

Electrical Emergency Rescue

- Turn off power at circuit breaker, fuse box or outside switch, if possible
- Unplug power cord, if possible
- Stay clear of high-voltage power lines
- Wait for trained personnel with proper equipment if scene is unsafe

Hazardous Materials Incidents

- Look for signs on hazardous materials
- Look for signs on vehicle
- Look for spilled liquids or solids
- Avoid strong, unusual odors
- Stay away and upwind
- Wait for trained personnel to arrive

Motor Vehicle Crashes

- Park in a safe area and call or direct bystander to call EMS
- Turn on emergency hazard lights
- Assess the scene for safety
- Apply PPE
- Turn off ignitions of involved vehicles, if possible
- Activate flares and/or reflectors, if available
- If you suspect spinal injuries in victim, stabilize head and neck - **see head, neck and spine injury section**
- Check and care for life threatening injuries first
- Remain with victim(s) until EMS arrives and takes over

Fires

- Call EMS or direct a bystander to call EMS
- Assess the scene for safety
- Quickly remove people from the site
- Use a fire extinguisher for small fires
- Check and care for life threatening injuries first
- Remain with victim(s) until EMS arrives and takes over

Confined Space

- Any area not intended for human occupancy may have dangerous atmosphere (low oxygen levels)
- Rescue requires special training and equipment
- Call or direct bystander to call EMS
- Only enter the space if you are trained and have protective equipment
- Check motionless victims first
- Remove victim(s) and provide care

Moving Victims

Only move victims if:

- There is immediate danger to the victim
- It is necessary to provide care
- It does not put you, the rescuer in danger
- You can protect victim's head, neck and back

Recovery Position

- Keeps victim's airway open
- Allows any fluid to drain from the mouth
- Can prevent aspiration
- How to place victim in position
    - Extend out victim's closest arm above his/her head
    - Place victims leg farthest from you over the other leg
    - Support victim's head and neck
    - Place victim's other arm across his/her chest
    - Roll victim toward you
    - Use victim's knee of the top leg to prop the body
    - Place victims hand under the chin

Emergency Rescue Moves

When moving the victim, drag with the victim's body position at the longest axis

Clothing Drag

- Apply PPE
- Stand behind victim's head, looking toward victim's feet
- Grasp victim's shirt, near shoulders
- Lift up and walk backwards while dragging the victim to safety

Blanket Drag

- Apply PPE
- Stand behind victim's head, looking toward victim's feet
- Place the victim on a blanket, sheet or large fabric
- Grasp blanket above victim's head
- Lift up and walk backwards or crawl while dragging the victim to safety

Extremity Drag

- Use victim's legs or forearms
- Stand holding firmly to arms or legs and pull victim to safety

AED Basics

About the Heart

How the Heart Works

- The heart is a muscle made up of four chambers divided by a wall called a septum
  - Right side - pumps blood to the lungs to pick up oxygen
  - Left side – receives oxygen rich blood from lungs and delivers it to the body
- About the size of the fist
- Located just under the breastbone on the left side of the chest
- Maintains a normal electric activity in healthy persons

Interruption of Normal Electrical Activity

- Ventricular Fibrillation (V-Fib)
  - Chaotic electrical activity that causes loss of circulation
  - The most common abnormal heart rhythm in cases of sudden cardiac arrest in adults
- Ventricular Tachycardia (V-Tach)
  - Very rapid electrical activity
  - Heart may be unable to pump blood effectively

Cardiovascular Disease

Cardiovascular disease causes damage to the heart and surrounding blood vessels, which often leads to heart attack or stroke. The key to preventing cardiovascular disease is to focus on maintaining a healthy weight and diet, while engaging in regular physical activity, lowering daily stress and not smoking.

It is important to understand that risk factors for cardiovascular disease include those that can be controlled and those that are uncontrollable.

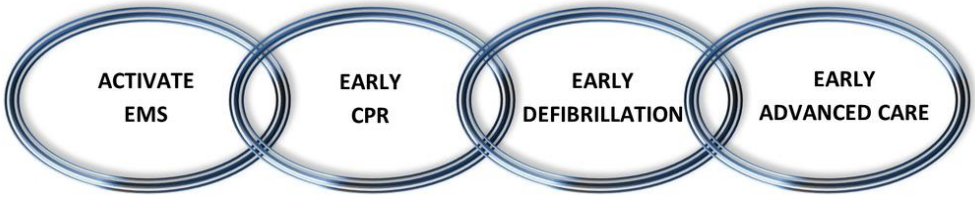
Controllable Risk Factors

- Lack of regular exercise
- High cholesterol levels
- Cigarette smoking
- High blood pressure
- High fat diet
- High stress level
- Uncontrolled diabetes

Uncontrollable Risk Factors

- Heredity
- Race
- Sex
- Age

Chain of Survival



The Chain of Survival is a common way of describing the order in which rescuers should provide care for a victim of cardiac arrest. Early action can improve the chance of a victim's survival.

- **Link One: Early Access**
  Rescuer recognizes early warning signs and immediately calls 911 to activate EMS (emergency medical services) to provide early access to care.

- **Link Two: Early CPR**
  Rescuer immediately begins CPR cycle to continue minimal supply of blood to the victim's heart and brain until defibrillator and EMS personnel take over.

- **Link Three: Early Defibrillation**
  Rescuer utilizes AED (automated external defibrillator) to administer a shock to the victim which may restore the heartbeat in some instances.

- **Link Four: Early Advanced Care**
  EMS arrives and provides advanced cardiac life support care to victim of sudden cardiac arrest. In addition, EMS may provide IV fluids, medications, and use advanced airway devices.

Cardiac Arrest
Cardiac arrest is a serious cardiac event which occurs when something triggers and electrical malfunction that causes a victim to experience an irregular heartbeat (arrhythmia). Although cardiac arrest is often confused with heart attack, it is different and occurs suddenly often without warning. Cardiac arrest is reversible for most victims, if treated within minutes. Early recognition of signs and symptoms can improve a victim's chance of survival.

Signs and Symptoms of Cardiac Arrest
- Sudden loss of responsiveness (victim does not respond to tapping on shoulder)
- Does not respond when asked, "Are you okay?"
- Victim may experience one or all of the following symptoms:
  - Nausea
  - Sweating
  - Shortness of breath
  - Denial
  - Feeling of overall weakness
  - Chest discomfort-pressure, tightness that may or may not radiate to jaw and arms.
  - 1/3 of **female victims** do NOT experience chest pain and are more likely to experience shortness of breath, extreme fatigue or flu-like symptoms.

Treating Cardiac Arrest
If victim is NOT breathing:
- Call or direct a bystander to call EMS
- Retrieve AED
- Check breathing
- Perform CPR (if the victim is **NOT** breathing or only gasping)
  - Victims in cardiac arrest often have **agonal breathing (also known as agonal gasps)**
  - **Agonal breaths** do not provide adequate oxygen to the body and can be described as gurgling, moaning, snorting, agonal or labored breathing
  - Healthcare providers must be able to distinguish between **agonal breathing** and adequate breathing
- Continue CPR cycle until EMS or second rescuer takes over, AED becomes available or you are too tired to continue.

If victim is breathing:
- Call or direct bystander to call EMS
- Encourage victim to remain calm and in a comfortable position (recovery position if possible)
- Offer 1 adult dose of aspirin
- Stay with victim until EMS takes over

Heart Attack
A heart attack occurs when the flow of blood to the heart is blocked, most often by some type of fatty build up. A heart attack is the death or damage to the heart muscle and may lead to a victim's death. A heart attack usually develops within the first 4 hours of after the onset of symptoms. A heart attack increases the chance of cardiac arrest in victims and **unlike** with a cardiac arrest, the heart usually does **not** stop beating. Early recognition of signs and symptoms can improve a victim's chance of survival.

Signs and Symptoms of Heart Attack

- Pain, fullness, and/or squeezing sensation of the chest
- Jaw pain, toothache, headache
- Shortness of breath
- Nausea, vomiting and/or general upper abdominal discomfort
- Heartburn and/or indigestion
- Arm pain (commonly in the left arm, but may be both)
- Overall fatigue
- Sweating
- Some victims (about ¼ of all heart attacks) are silent, without chest pain or symptoms

**Women, the elderly and people with diabetes are more likely to have atypical signs of a heart attack – ache in the chest, heartburn or indigestion, or an overall uncomfortable feeling in the back, jaw, neck or shoulder.

Treating Heart Attack

If victim is NOT breathing:

- Call or direct a bystander to call EMS
- Retrieve AED
- Check breathing
- Perform CPR
- Continue CPR Cycle until EMS or second rescuer takes over, AED becomes available, or you are too tired to continue

If victim IS breathing:

- Call or direct bystander to call EMS
- Encourage victim to remain calm and in a comfortable position (recovery position if possible)
- Offer 1 adult dose of aspirin
- Stay with victim until EMS arrives and takes over

AED Guidelines

About AED - Automated External Defibrillator

An Automated External Defibrillator (AED) is an electronic device that is used to deliver an electric shock to reset a victim's heart when it has stopped beating normally. It is critical that an AED is used as soon as possible, as the likelihood of a successful defibrillation diminishes significantly over time. Defibrillation survival rates increase to greater than 50% when early defibrillation occurs. For each minute defibrillation is delayed, the victim's change of survival decreases by about 10%.

*****AED's are designed for use on adult victims, however most can be adapted to use with pediatric pads for victims who are children or infants**

About AED

- Analyzes the victim's heart rhythm
- Determines and advises when shock is needed
- Delivers electrical shock to victim in cardiac arrest
- Reestablishes a heart rhythm which will generate a pulse

AED Design

- On/Off Button
- Cable and pads (electrodes)
- Defibrillation capable
- Voice prompts to guide defibrillation
- Battery operated for mobile use

AED Use Overview

- Place the unit between you and victim – by victim's shoulder
- Turn the unit on
- Apply AED pads to bare chest and the cable to AED unit
- Stand clear
    - Wait for unit to analyze the heart rhythm
- Deliver shock, if needed
- Perform CPR

AED Maintenance

- Perform routine maintenance checks, as recommended by manufacturer
- The AED automatically performs periodic self-checks, but should be checked regularly to ensure proper operation
- Check expiration dates and regularly replace pads and batteries

AED - Automatic External Defibrillator

CPR must be started and continue until defibrillator (AED) becomes available.

When AED becomes available

- Remove victim from any standing water or metal surfaces
- Dry chest if noticeably wet
- Remove hair from chest enough for pads to make good skin contact
- If victim has a transdermal medication patch, remove the patch and wipe the area clean prior to attaching pads
- Use appropriate AED pads

Adult and Child AED Use

- Place the AED by the victim's shoulder
- **Turn on** the AED and follow voice prompts

Adult: use adult AED pads

    - AED pads should not touch
    - Place AED one pad directly below the clavicle on the right sternal boarder

  - Place the other AED pad lateral to the left nipple with the top of the pad a few inches below the axilla
  - If victim has a permanent pacemaker, or implanted defibrillator, place the AED pad at least 1 inch to the side of the implanted device

Child: use pediatric (child) AED pads

  - AED pads should not touch
  - Place AED one pad directly below the clavicle on the right sternal boarder
  - Place the other AED pad lateral to the left nipple with the top of the pad a few inches below the axilla

Infant: use pediatric (child) AED pads

  - AED pads should not touch
  - A manual defibrillator is preferred for infants less than 1 year of age.
  - If a manual defibrillator is not available, an AED with a pediatric dose attenuator is suggested, if neither are available, an AED without a dose attenuator may be used.
  - Smaller infant, the pediatric AED pads should be placed in the anterior-posterior position

- **Wait** for AED to analyze the rhythm
- If a shock is indicated
  - Do **NOT** touch the victim
  - **Ensure no one else is touching the victim**
  - Press the shock button
- After shock is delivered
  - Keep pads on the victim
  - Complete 2 minutes of CPR cycle
  - Reassess the victim's condition
  - Follow AED voice prompts
- Continue following AED voice prompts, administering CPR cycle and AED shock until
  - The victim shows signs of life
  - A second rescuer or EMS takes over
  - You are too tired to continue
- If **NO** shock is indicated
  - Continue CPR cycle if the victim is unresponsive
  - Continue CPR until a second rescuer or EMS takes over or you are too tired to continue