



Developed with W. Deenene Brewer, MPH, healthcare science instructor at Empower College and Career Center, GA

CPR and first aid training and certification

(Lesson 1 of 2. Download "Vol. 2: Triple threat triage," to extend learning.)

Volume 1 | Gr. 9–12

**Time required: Grades 9 and 10, allow 2–3 weeks (daily schedule)
Grades 11 and 12, allow 1–2 weeks, depending on class size**



Standards

Aligned to Cardiopulmonary Resuscitation (CPR) American Heart Association (AHA) Guidelines

STEL–2Z. Use management processes in planning, organizing, and controlling work.

Objectives

Students will...

- Understand and execute adult, child, and infant CPR
- Understand and execute first aid skills
- Explain what condition is managed using CPR
- Describe how to assess a victim for sudden cardiac arrest
- Demonstrate how to perform CPR
- Demonstrate how to use an AED
- Explain basic first aid terminology
- Describe how to manage basic first aid scenarios

Resources

- CPR vocabulary and anatomy handout (**p. 3**)
- Optional quizzes that can be used in online games for review and vocabulary (**pp. 5–9**)
- CPR slides (**pp. 10–46**)

Materials

- CPR Prompt TPAK 700 7-Pack-Blue (**LF06700**)
- Adult Face Shield/Lung Replacement Bags (**LF06208**)
- Baby Buddy Lung Replacement Bags (**LF06209**)
- LIFEPAK CR Plus AED Trainer Device (**SB46489**)
- Practi-Valve CPR Training Valve (**SB46504**)
- Clorox Wipes (**WA34853**)

Instructions

1. Introduce students to the objectives of your lesson using the slide on **p. 11**.

2. (Use slides on pp. 12 and 13.) Begin by asking your students what they already know about CPR from their own lives, television, movies, or the news. Are any of your students already CPR certified? How do movies tend to portray CPR scenes? Connect what students already know about CPR and first aid to what you are going to talk about in your lesson.

Then talk about when to use CPR. Use the slide on **p. 14** to teach students the difference between a heart attack and cardiac arrest.

3. Next review the CPR vocabulary below either together on the board or by creating an online flashcard game. Then, give each student the “CPR vocabulary and anatomy” handout (**p. 3**) to complete as a class (see handout and definitions below).



CPR Vocabulary

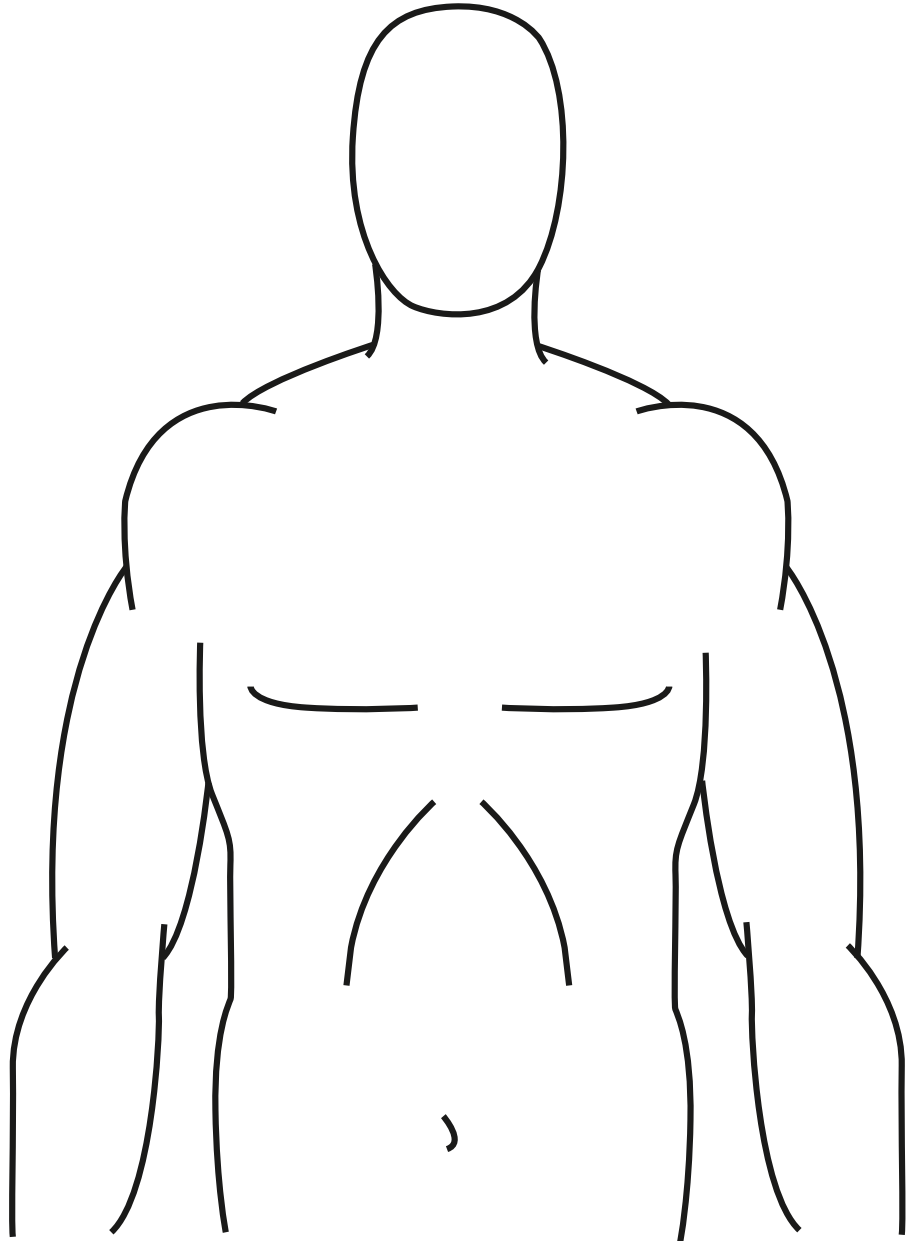
- **arrhythmia:** abnormal heartbeat pattern
- **brachial artery:** a pulse point in the arm used to assess infant victims during CPR primary assessment
- **carotid artery:** a pulse point in the neck used to assess adult victims during CPR assessment
- **defibrillation:** electrical shock used to reset the heart rhythm
- **heart:** the muscular organ that pumps blood through the circulatory system
- **lungs:** respiratory organs that allow you to take in oxygen (inhale) and expel carbon dioxide (exhale) during ventilation (breathing)
- **pacemaker:** a medical device implanted in the body to support normal heart rhythm
- **pulse:** a person's heartbeat, measured in beats per minute (bpm) at arteries
- **sinus rhythm:** a normal heart rhythm
- **sternum:** the breastbone located in the center of the chest, used to compress the heart during CPR compressions
- **trachea:** windpipe; the respiratory organ that delivers oxygen into the lungs

CPR vocabulary and anatomy

Name: _____ Date: _____ Period: _____

Define each term below, and then label the anatomical landmarks you need to know to deliver CPR.

1. Arrhythmia
2. Brachial artery
3. Carotid artery
4. Defibrillation
5. Heart
6. Lungs
7. Pacemaker
8. Pulse
9. Sinus rhythm
10. Sternum
11. Trachea



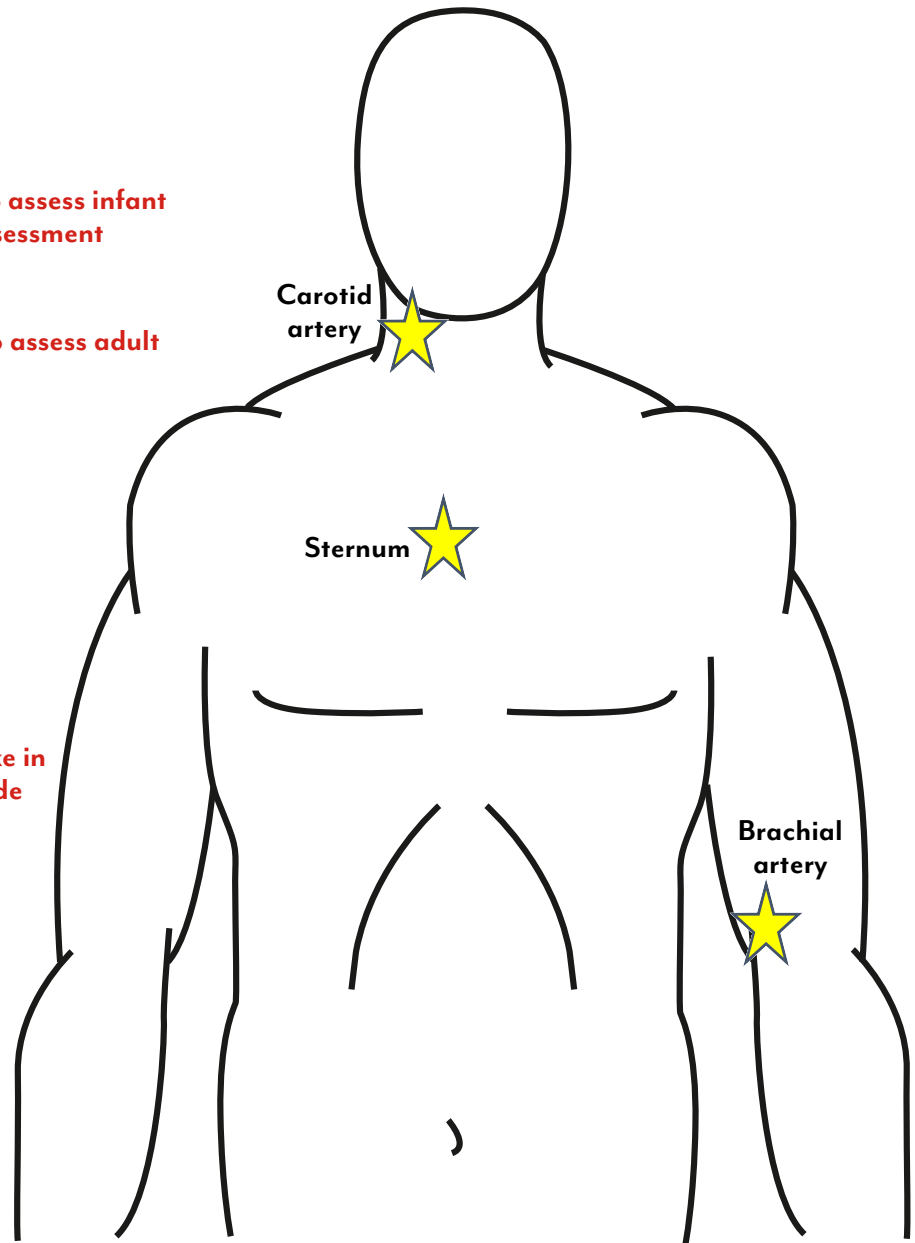
Name: _____

Date: _____

Period: _____

Define each term below, and then label the anatomical landmarks you need to know to deliver CPR.

1. Arrhythmia **abnormal heartbeat pattern**
2. Brachial artery **a pulse point in the arm used to assess infant victims during CPR primary assessment**
3. Carotid artery **a pulse point in the neck used to assess adult victims during CPR assessment**
4. Defibrillation **electrical shock used to reset the heart rhythm**
5. Heart **the muscular organ that pumps blood through the circulatory system**
6. Lungs **respiratory organs that allow you to take in oxygen (inhale) and expel carbon dioxide (exhale) during ventilation (breathing)**
7. Pacemaker **a medical device implanted in the body to support normal heart rhythm**
8. Pulse **a person's heartbeat, measured in beats per minute (bpm) at arteries**
9. Sinus rhythm **a normal heart rhythm**
10. Sternum **the breastbone located in the center of the chest, used to compress the heart during CPR compressions**
11. Trachea **windpipe; the respiratory organ that delivers oxygen into the lungs**



3. (Use slides on pp. 16 and 17.) Once they've learned some basic vocabulary, students can use the American Heart Association website, cpr.heart.org/en/resources/what-is-cpr, to answer the following questions:

- What does CPR stand for?
- What is the function of CPR?
- What are the two big pieces of high-quality CPR?
- What is an AED?
- What is hands-only CPR?
- What is the difference between a heart attack and cardiac arrest?
- Why are there gender-related differences in cardiac care?

4. After students have finished their research, compare answers. Then, review what they have learned by creating an online game using the following questions (answers are in bold).

Where is the brachial artery found?

- In the neck
- **In the arm**
- In the foot
- In the center of the chest

Where is the carotid artery found?

- In the arm
- In the foot
- In the center of the chest
- **In the neck**

What does the prefix part "cardi-" mean?

- **Heart**
- Lung
- Breath
- Back to life

What is arrhythmia?

- A heart attack
- **Abnormal heartbeat**
- A stroke
- A device to reset the heart

What does defibrillation do?

- Stops the heart
- **Resets the heart rhythm**
- Performs compressions
- Delivers breaths

What is the major function of the heart?

- **Pump blood to deliver oxygen and nutrients**
- Exchange oxygen and carbon dioxide
- Filter the blood of wastes
- Secrete hormones to maintain homeostasis

What do lungs do?

- Deliver nerve signals to control movement
- Pump blood throughout the body
- **Exchange oxygen and carbon dioxide**
- Store energy for later use

What term describes a normal heartbeat pattern?

- Arrhythmia
- Sudden cardiac arrest
- Heart attack
- **Sinus rhythm**

What implantable device can be used to help prevent abnormal heart rhythms?

- **Pacemaker**
- AED
- Compressions
- CPR mask

What protects people from being sued if they try to help another person in an emergency?

- HIPAA
- **Good Samaritan Laws**
- Patient Bill of Rights
- PHI

Who should be in charge of first aid care or CPR?

- **The person with the most related training**
- The person with the highest education level
- The person who arrived first
- The person who called 911

What is PPE?

- Protective pulmonary endoscopy
- **Personal protective equipment**
- Private personal insurance
- Proclaimed protected information

What is an AED?

- A device that keeps heart rhythm normal
- **A device that resets heart rhythm**
- A device that slows heart rate
- Devices that stops the heart

What does CPR stand for?

- **Cardiopulmonary resuscitation**
- Carotid pulse rhythm
- Control personal rate
- Corrective personal respiration

What are the two big pieces of CPR?

- Calling 911 and waiting for help
- **Compressions and breaths**
- Holding the victim still and checking heart rate
- Listening and looking

What does CPR do?

- **Keeps blood and oxygen moving to the brain**
- Slows heart rate to calm the patient
- Restarts the heart after it stops
- Electrocutes the patient to wake them up

Teacher tip: Emphasize the importance of using credible resources like the AHA website. Promote communication skills by having students write their answers in their own words (no plagiarism!). Teach relevant technology skills to help them become stronger online researchers (i.e., Do they know how to use CTRL+F to search a web page? Do they know how to hyperlink text if they're taking digital notes?).

5. Give each student four sheets of paper to create a CPR flipbook to take notes during the live CPR training or the American Heart Association CPR video training. You can see a simple way to create your flipbooks [here](#).

Certified CPR Instructors should conduct CPR training in accordance with their local training center's expectations. The slides on **pp. 19–33** are included to support review and discussion.

During your training video, pause for note-taking on CPR skills and parameters.

6. Go through each of the CPR steps for adults and infants using the slides on **pp. 19-32**, and then practice CPR procedures using manikins and AED simulators.

Teacher tip: Provide immediate feedback on students' demonstration of CPR skills (either verbally or via feedback-capable simulation manikins).

7. Then, create an online quiz game for review using the following questions (answers in bold).

What is the first step in Primary Assessment?

- o Assess breathing
- o Control bleeding
- o Activate EMS
- o **Scene safety**

Why do we use barriers/gloves?

- o EMS requires us to do so
- o To protect us from lawsuits
- o **To protect us from diseases of the blood**
- o The CPR instructor told us to do so

True or false? The rescuer can use “compression-only” CPR when the patient is unconscious and not breathing.

- o **True**
- o False

You would place the patient in the recovery position _____.

- o **to allow yourself to go for help and call 911**
- o so the patient can sleep
- o before you give your medical statement
- o to perform an illness assessment

If you are alone and choking, what should you do?

- o Call 911
- o Drink some water
- o Jump up and down
- o **Fall on a chair/couch/counter**

If you're not able to reach around the abdomen of someone who is choking, what should you do?

- o Perform a jaw thrust
- o Perform abdominal thrusts
- o **Perform chest thrusts**
- o Perform back blows

When performing adult CPR, how deep should you compress the chest?

- o .5–1 inch
- o 1–1.3 inches
- o **2–2.5 inches**
- o 4–5 inches

What are the two major symptoms of a heart attack?

- o Headache and blurred vision
- o Paralysis and stomach pain
- o **Chest pain and shortness of breath**
- o Hearing impairment and lower extremity pain

During chest compressions, at what rate should you compress the chest?

- o 75 compressions per minute
- o 25 compressions per minute
- o No more than 50 compressions per minute
- o **100–120 compressions per minute**

What condition is CPR appropriate for?

- o Heart attack or myocardial infarction
- o **Sudden cardiac arrest**
- o An airway obstruction
- o Broken bones or fractures

Which of the following scenarios would not warrant a switch to 15:2 compressions:breaths?

- o **2 rescuer CPR for an adult**
- o 2 rescuer CPR for an infant
- o 2 rescuer CPR for a child
- o 2 rescuer CPR for a baby less than 1 year

Which does NOT describe how the hands should be placed in CPR?

- o Over the lower half of the sternum
- o With one hand over the other, fingers interlaced
- o With the heel of the hand on the breastbone
- o **With hands beside each other**

What is the correct depth of compression for child or infant CPR?

- o 1 inch deep
- o 2 inches
- o **1/3 chest depth**
- o 5 cm

What should you NOT do if the scene is unsafe?

- o **Stay with the victim**
- o Move them if possible
- o Call 911
- o Send another person to help

Immediately after verifying the scene is safe, what should you do?

- o **Activate the emergency response system**
- o Put the victim in the recovery position
- o Give rescue breaths
- o Give abdominal thrusts

Where should AED pads be placed on an adult victim?

- o **Upper right chest, lower left chest**
- o Upper left chest, lower right chest
- o Front of chest and back
- o Middle of the chest and lower right chest

Why would AED pads be used on the chest and back of a child or infant victim?

- o To make them more comfortable
- o **To prevent pads from touching**
- o To help a rescuer maintain hand placement
- o To surround the heart best

What hand grip should be used to place a bag valve mask on a victim's face?

- o **C-E grip**
- o One fist over the other
- o Open-handed, nothing specific
- o Only hold the bag

If the chest does not rise when you deliver breaths, you should:

- o Breathe harder to deliver more air
- o Squeeze the BVM until it's empty
- o Wait for EMS to bring oxygen
- o **Reset the airway and try again**

A head tilt/chin lift maneuver should be used to open the airway unless:

- o **You suspect a spine injury**
- o You are using a BVM
- o You are giving direct mouth to mouth
- o You are using supplemental oxygen

You come across a child victim that has collapsed and needs CPR. What should you do?

- o **5 cycles of CPR**
- o Find an AED
- o Leave to call 911
- o Rescue breaths only

In the latest updates from AHA, it is no longer advised to use this technique when giving breaths:

- o Use a bag valve mask
- o Deliver 2 breaths per CPR cycle
- o **Apply cricoid pressure**
- o Look for chest rise

When rescuing a choking infant, how should you hold the infant?

- o **Facedown at a downward angle**
- o Around their waist
- o Sitting upright
- o Like you would rock them to sleep

Which of these is the universal sign for choking?

- o Turning blue from lack of oxygen
- o **Holding the throat with two hands**
- o Passing out while coughing
- o Gasping for air while sputtering

Which of these would be considered a safe scene?

- o A traffic accident with a downed power line
- o **On the floor at a movie theater**
- o Poolside in a puddle of water
- o A car accident in the middle of the interstate

Why is defibrillation important?

- o Prevent rearrests of the heart
- o It's a 100% effective cure for cardiac arrest
- o It is not necessary for cardiac arrest
- o **It may reset the heart to a normal rhythm**

If you have to do CPR on a choking person, what should you add to normal CPR?

- o Nothing, perform compressions and breaths as normal
- o **Look for the choking hazard when you go to give breaths**
- o Do not give breaths, only give compressions
- o Use a jaw thrust instead of a head tilt/chin lift

Why is chest recoil important?

- o Makes CPR easier to do
- o **Makes it possible for the heart to refill with blood**
- o Makes it less likely that a rib is broken
- o Makes it impossible to give incorrect compressions

How often should two rescuers switch roles during CPR?

- o Every 5 minutes
- o **Every 2 minutes**
- o When the AED pads are being put on
- o Do not change positions after beginning CPR

Which link in the chain of survival stops an abnormal heart rhythm?

- o Activate emergency response system
- o High-quality rescue breaths
- o **Rapid defibrillation**
- o Follow up care in a cardiac unit

Which of these statements is true?

- o You should not remove medication patches before putting on AED pads.
- o It is okay to use an AED and put AED pads on while a victim is in water.
- o **AED pads may not stick well to a person with a hairy chest; this can prevent the AED from shocking them.**
- o CPR rescuers should never use an AED on someone with an artificial pacemaker.

8. Discuss AHA's stated guidelines for helping choking victims. Use the slides on **pp. 34–36** and the quiz information above to learn about terms, signs and symptoms, and treatments.

9: Administer the American Heart Association Basic Life Support (AHA BLS) written exam and CPR skills check-off. Provide remediation as needed per AHA CPR instructor guidelines. Students who score 84 or higher will proceed with adult and infant skills check-offs. Students who score 83 or lower should complete remediation and retest.

Teacher tip:

Revisit first aid concepts and promote critical thinking through choice board activities (**use the slide on p. 39**) during rotations for CPR skills check-offs. Students should analyze different relevant resources and synthesize various products to communicate their findings.

10. While students are completing the skills check-offs, other students can work on the following first aid materials. Each student should create a 10-page booklet (5 pages, front and back) using copy paper and add a cover using construction paper.

11. (Use the slides on pp. 40–45.) Students should research the following conditions on reputable websites, such as those run by the Centers for Disease Control and Prevention, National Institute of Health, Mayo Clinic, or Cleveland Clinic.

- Allergic reaction
- Asthma
- Bleeding
- CVA or stroke
- Dental avulsion
- Drowning
- Hyperthermia
- Hypoglycemia
- Opioid overdose
- Seizures



12. Students should list each of these conditions on its own page in their booklets. Each page should contain the following information:

1. Title
2. Definition
3. What causes this condition?
4. How do I recognize this condition (signs and symptoms)?
5. What is appropriate first aid treatment?
6. What is in my first aid kit that might help with this condition (if anything)?

13. Create an online quiz to test student knowledge with the following questions (answers in bold).

What is an allergic reaction?

- o Hemorrhage
- o Choking
- o **Inflammatory response**
- o Loss of blood to the brain

Which of these are common allergens?

- o **Nuts**
- o **Dairy**
- o **Pollen**
- o **Shellfish**
- o Cotton

What is a sign/symptom of allergic reaction?

- o **Skin reactions, like rashes**
- o Stroke
- o Bleeding
- o Hypoglycemia

What type of allergic reaction requires the use of an Epi-Pen?

- o Skin irritation
- o Watery eyes
- o Runny nose
- o **Anaphylaxis**

How do you use an Epi-Pen?

- o **Remove the cap, inject in thigh, hold, call 911**
- o Apply pressure, call 911, use Epi-Pen
- o Open, swallow, call 911
- o Give food, use Epi-Pen, call 911

What is an appropriate treatment for mild allergic reactions?

- o **Antihistamine**
- o Antibiotic
- o Antipyretic
- o Antiviral

What in a first aid kit can be used to treat an allergic reaction?

- o **Answers: medication or ointment**

What is asthma?

- o **A condition that causes airways to constrict**
- o A condition that causes low blood sugar
- o A condition that causes an allergic reaction
- o A condition that causes seizures

Which are the causes of asthma attacks?

- o **Airborne particles**
- o **Physical activity**
- o **Stress**
- o **Cold**
- o Seizures

Which are common s/sx of asthma?

- o **Cough**
- o Nose bleeds
- o **Difficulty breathing**
- o Bleeding
- o Headaches

What should you do if someone is having an asthma attack?

- o Give them CPR
- o Tell them to breathe
- o Offer them water
- o **Help them find/use their inhaler**

What term is used to describe serious bleeding?

- o **Hemorrhage**
- o Hypertension
- o Hemoglobin
- o Hypoglycemia

Which of these can cause serious bleeding?

- o **Motor vehicle accident**
- o **Internal organ damage**
- o Hyperthermia
- o **Puncture wound**
- o **Bone injury (fracture)**

How would a person appear if they were losing blood?

- o **Pale, weak, or in shock**
- o Red-faced
- o Sweaty
- o Overheated

What should you do for a person who is bleeding profusely?

- o **Lie them down**
- o **Apply pressure to the wound**
- o Check their temperature
- o **Elevate their legs**
- o Give them food

What might you find in a first aid kit to help control bleeding?

- o **Tourniquet**
- o Antibiotic ointment
- o Antihistamines
- o **Gauze**
- o Ice pack

What is the medical term for stroke?

- o **Cerebrovascular accident**
- o Cardiopulmonary resuscitation
- o Cardiovascular assistance
- o Myocardial infarction

What causes a stroke?

- o Lack of blood flow to the heart muscle
- o Lack of blood flow to the kidneys
- o **Lack of blood flow to the brain**
- o Lack of blood flow to the lungs

FAST is a memory trick for recognizing stroke. What does the T stand for?

- o Teeth
- o Tongue
- o Test
- o **Time**

What body part is damaged in a dental avulsion?

- o **Tooth**
- o Nose
- o Braces
- o Airway

What might cause dental avulsion?

- o **Face trauma**
- o Wearing a mouthguard
- o Neck injury
- o Swimming

What is the appropriate treatment for an avulsed tooth?

- o **Place the tooth in cows milk to transport**
- o Drink water
- o Hold the tooth in place to reset
- o **Apply pressure to bleeding gums**
- o Keep tooth dry

What in a first aid kit can help treat a dental avulsion?

- o Antibiotic ointment
- o **Sterile gauze**
- o Band-aid
- o Tweezers

Which of these medical emergencies is caused by not being able to get oxygen into the lungs?

- o Stroke
- o Hypoglycemia
- o Hyperthermia
- o **Drowning**

Which of these increases the risk of drowning?

- o **Inability to swim**
- o **Aspirating water (water in lungs)**
- o Hemorrhage
- o Lack of barriers around water
- o **Lack of blood to the brain**

What happens to a person's physical appearance when they cannot get oxygen into their lungs?

- o **Cyanosis (blueish)**
- o Jaundice (yellowish)
- o Albinism (absence of color)
- o Erythema (reddish)

What treatment is appropriate for a drowning victim?

- o **CPR**
- o Protect their head
- o Apply pressure
- o Elevate their feet

What is hyperthermia?

- o **High body temperature**
- o Low body temperature
- o Low blood sugar
- o High blood sugar

What causes hyperthermia?

- o **Dehydration**
- o Genetic condition
- o **Reduced sweating**
- o **Hot environment**
- o Playing sports

What are common s/sx of hyperthermia?

- o **Red skin**
- o **Possible LOC**
- o Cyanosis
- o **Lack of sweating**
- o Hunger

What is an appropriate treatment for hyperthermia?

- o **Remove from heat, rapidly cool, call 911**
- o Warm slowly to trick the body into sweating
- o Give water, cool slowly, rest 3 days
- o Give sugary food to the patient to start metabolism

What in a first aid kit can help treat hyperthermia?

- o **Chemical ice pack**
- o Glucose tablet
- o Band-aids
- o Gauze

What term describes low blood sugar?

- o Hypotension
- o **Hypoglycemia**
- o Bradycardia
- o Sublingual

Which of these can cause hypoglycemia?

- o **Diabetes**
- o High blood pressure
- o Excess heat exposure
- o **Physical activity**
- o Dehydration

Which is NOT a common s/sx of hypoglycemia?

- o Fatigue
- o Shakiness
- o Weakness
- o **Bleeding**

What is an appropriate treatment for hypoglycemia?

- o **Snack or meal**
- o Rapidly cool, call 911
- o Elevate the legs
- o Give CPR

What are opioids?

- o **Pain medication drug**
- o Drugs for reducing blood pressure
- o Blood sugar regulating medicine
- o Medicines that help control seizures

Which are common s/sx of opioid overdose?

- o **Difficulty breathing**
- o **Possible LOC**
- o Drooping facial features
- o **Poor circulation, cyanosis**
- o High body temperature

What is the appropriate treatment for opioid overdose?

- o Elevate legs, rapidly cool
- o Monitor temperature, call 911
- o Give water and snack
- o **Call 911, give CPR (if needed), use naloxone**

What is a seizure?

- o **Electrical disturbance in the brain**
- o Blood sugar lower than normal
- o Excessively high body temperature
- o Profuse bleeding

Which of these can cause a seizure?

- o **Epilepsy**
- o **Head trauma**
- o Heat exposure
- o **Drug use**
- o **COVID-19**

Which of these are possible s/sx of seizure

- o **Confusion**
- o **Uncontrolled body movements**
- o Extreme thirst
- o **Staring spell**
- o **Possible LOC**

What is appropriate first aid treatment for a person having a seizure?

- o **Place something soft under their head, clear dangerous objects from the area**
- o Elevate the legs, monitor body temperature
- o Give medication and water
- o Perform CPR and call 911

You should NOT do this for a person having a seizure:

- o **Hold them down**
- o Remove dangerous objects from their area
- o **Put things in their mouth**
- o Place something under their head to cushion it

What is first aid?

- o Treatment for injuries involving blood
- o **Treatment given until medical professionals arrive**
- o Care for car accident victims
- o Help provided by strangers