Public Health – Seattle and King County
Emergency Medical Services Division

CPR in the Schools

**Hands-Only CPR and AED
(modified version for Remote Learning)**

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This version of the King County EMS <u>CPR in the Schools</u> curriculum is modified to accommodate remote cognitive learning.

Although CPR skills are demonstrated, there is no opportunity to practice and assess hands-on CPR and AED skills.

Students are advised to discuss options for hands-on skills practice with their teacher.
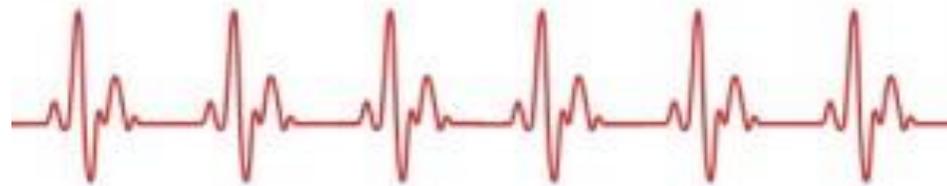
For additional information on CPR, visit:

www.kingcounty.gov/schoolcpr

Why Know CPR?

1. Heart disease and cardiac arrests are an increasing problem in our country. Heart disease is the **#1** killer of Americans. Every year in the US, about **350,000** cardiac arrests happen outside of the hospital .

2. **Four** out of **five** cardiac arrests happen at home. You are most likely to do CPR on someone at home.

3. You can save a life! Your response could mean that someone survives. If you perform CPR within the first few minutes of a cardiac arrest—you **double** or **triple** that person's chances of survival!

Cardiac Arrest vs. Heart Attack

Cardiac arrest is when a person's heart suddenly and unexpectedly *(often without any prior symptoms)* stops beating.

A person in **cardiac arrest** is *unconscious* and *not breathing normally.*
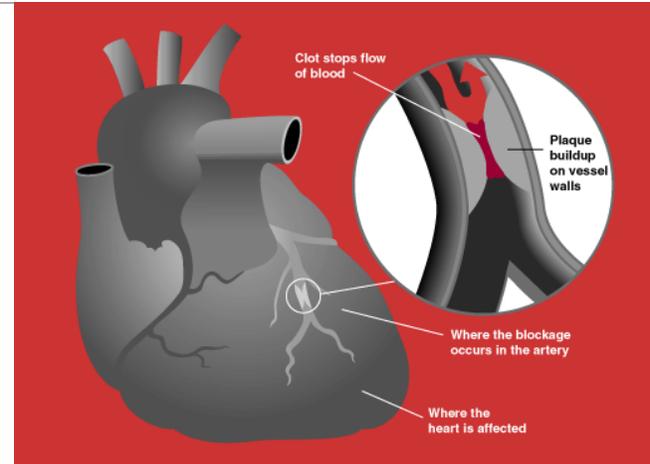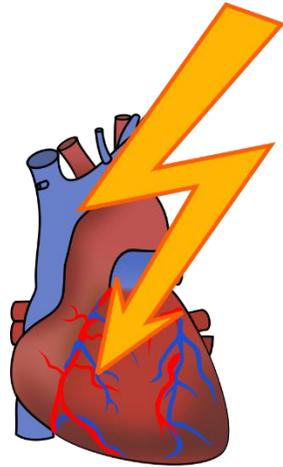
» A **heart attack** is a blockage of blood flow to a portion of the heart that may damage an area of the heart muscle.

» A person having a **heart attack** is *conscious* and often *experiences certain symptoms.*

» A **heart attack** may trigger cardiac arrest.

Heart Attack Signs & Symptoms

- Pressure or tightness in chest

- Pain in the chest, back, jaw and other areas of the upper body that lasts more than a few minutes or that goes away and comes back

- Shortness of breath, difficulty breathing

- Sweating

- Nausea, upset stomach
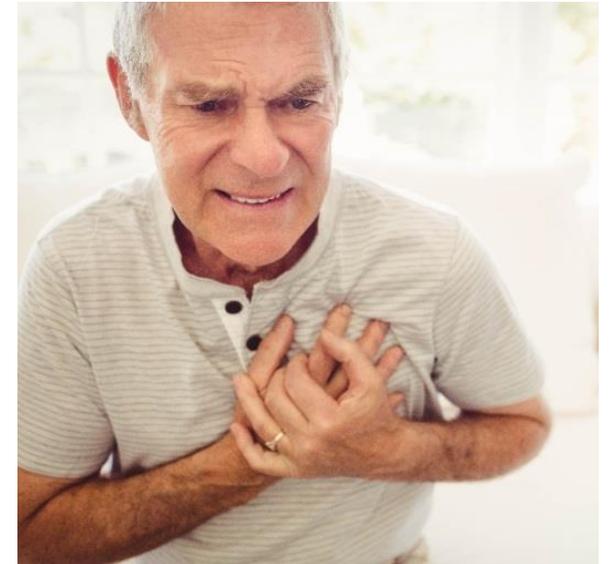
If you see these symptoms, call 911 immediately

CPR and Defibrillation

Someone in cardiac arrest needs immediate CPR and an AED, if available

An AED helps 'shock' the heart into a normal beating rhythm

Even if you don't have an AED, you still need to do CPR

CPR is preserving the brain and vital organs until EMS Providers arrive to do defibrillation

Purpose of CPR

» CPR alone is unlikely to restart the heart; but CPR will give a person a "Window of Opportunity" to be brought back to life without brain damage

» The brain can go about **4 minutes** without oxygen before permanent damage may occur

» Average response time for EMTs in King County is **4.9 minutes**

» Average response time for King County paramedics is **7.5 minutes**

» Across the nation, the average response time for first responders once 911 is called, is **8-12 minutes**

CPR provides the Window of Opportunity until First Responders can arrive

Scene Safety

» Don't become a victim!

» Make sure you are safe! Your life is the most important

» If the scene is not safe, call 911 and wait for emergency services to arrive

» Consider if you have the proper protection to assist (gloves, breathing barrier device)

Good Samaritan Law

A "Good Samaritan" in legal terms refers to someone who renders aid in an emergency to an injured person on a voluntary basis. Usually, if a volunteer comes to the aid of an injured or ill person who is a stranger, the person giving the aid owes the stranger a duty of being reasonably careful.

Generally, where an unconscious victim cannot respond, a Good Samaritan can help them on the grounds of implied consent. However, if the victim is conscious and can respond, a person needs to ask their permission to help them first.

When to Call 911

Call 911 for any **life-threatening** emergency. Emergency situations where lives may be in danger: medical emergencies, car accidents, fires, anything with weapons involved.

Do **not** call 911 in for situations that are not life-threatening. For example: bleeding that isn't severe, a shoulder or ankle injury, needing directions or getting a medication refill.

Life-Threatening Emergencies

Cardiac arrest and heart attacks are life-threatening medical emergencies.

You will **need** to respond if a person is:

» Unresponsive, unconscious

» Not breathing, or has difficulty breathing

» Experiencing severe chest pains

Tips When Calling 911

Don't hang up!

- Answer questions in a calm manner

- Know the address or landmarks of where you are located

- Describe the situation with what **is** happening, not what you **think** is happening

- Put phone on speaker so you can assist patient (if you are alone)

- Direct someone to call 911 if you are assisting the patient

Performing Hands-Only CPR

» Hands-only CPR is recommended for adult patients since the most important part of CPR is doing high quality chest compressions

» CPR also has roughly the same survival rate with or without breaths.

CPR provides a **Window of Opportunity** for someone in cardiac arrest.

» How long can the brain go without oxygen before brain damage occurs?

» What is the average response time for King County EMTs?

» Why shouldn't you be afraid to make a mistake when performing CPR?

Adult CPR Demonstration
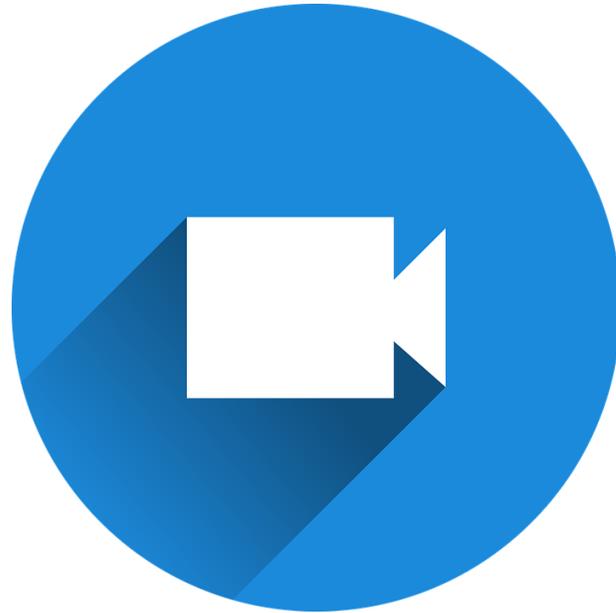
View Adult CPR Video at:

https://www.youtube.com/watch?v=yl93ddvXX7Y&feature=emb_logo

Adult CPR Steps

Step 1: Check if the scene is safe

Step 2: Tap and shout, "Are you okay?"
      Yell for help if no response

Step 3: If someone is there: tell them to call 911 and get an AED
      If you are alone, call 911, leave on speaker, and get an AED if it is nearby

Step 4: Compressions: Begin compressions within 10 seconds
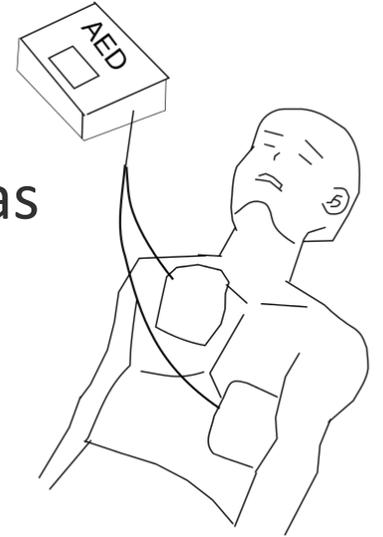   Complete at a rate of 100-120 compressions per minute.

Step 5: If an AED is available, turn it on and follow directions (will learn in next lesson)

Step 6: Continue with the compressions until EMS arrives. If another responder is available, take turns giving compressions, every 2 minutes (5 cycles), spending no more than 10 seconds switching roles

Increasing a Patient's Survival Rate

» Starting compressions within 10 seconds of collapse

» Early defibrillation- getting an AED or EMS there as soon as possible

» Performing high quality compressions

» No more than 10 seconds of interruption between compressions

The bystander's quick reactions make a difference!

High Quality Compressions

- Rate of at least 100 per minute, but not faster than 120 compressions per minute

- Depth of *at least* 2 inches for adults and children

- Allow the chest to completely recoil between compressions

- Don't interrupt compressions for more than 10 seconds

Position Hands Over Sternum

What is an AED?

- An automated external defibrillator (AED) analyzes a heart's rhythm

- An AED will only shock a person if he/she actually needs a shock

- Delivers a shock to the heart if necessary

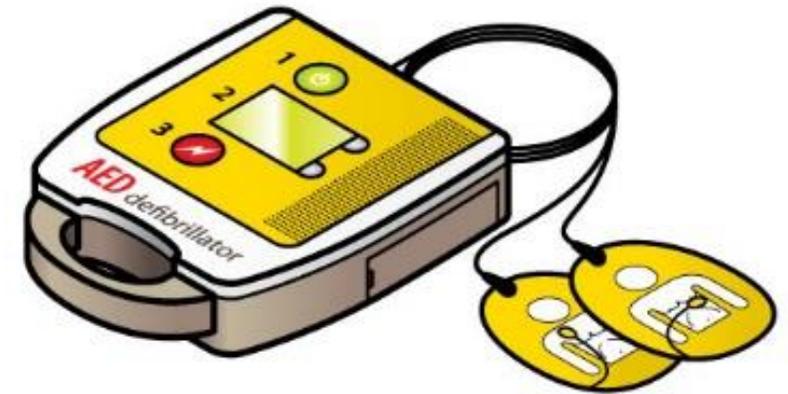- The shock may cause the heart to start beating again

An AED is Safe & Easy to Use

An AED is safe because it will **NOT** deliver a shock unless a person needs a shock, so you can't "accidentally" shock someone

An AED is easy to use because it has voice prompts that tell you what to do once you turn it on

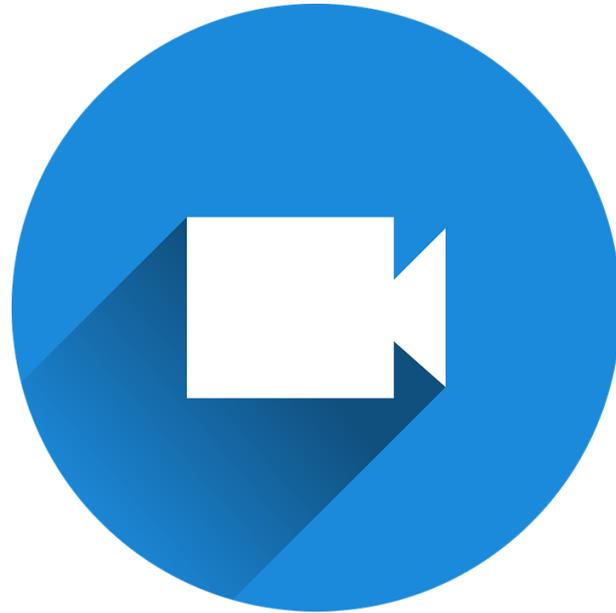The AED pads have pictures on the pads so you know where to place them

Parts of an AED

1. May be stored in a case
2. Power Button
3. Pads Envelope
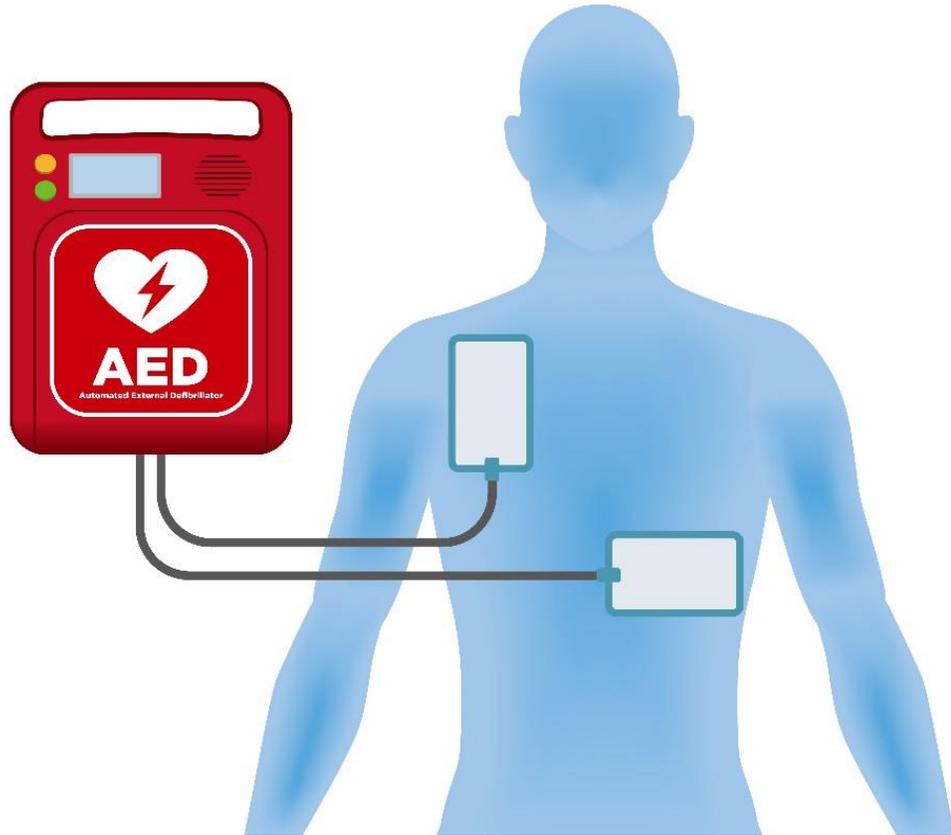4. Connection Cord (Connect pads to device)
5. Shock button

Using an AED

View Using and AED video at:

https://www.youtube.com/watch?v=uaSgoiF38Fc&feature=emb_logo

AED Pad Placement for Adults

Preparing to Use an AED

Water

◦ Don't use an AED if a person is lying in water; move the patient to a dry area
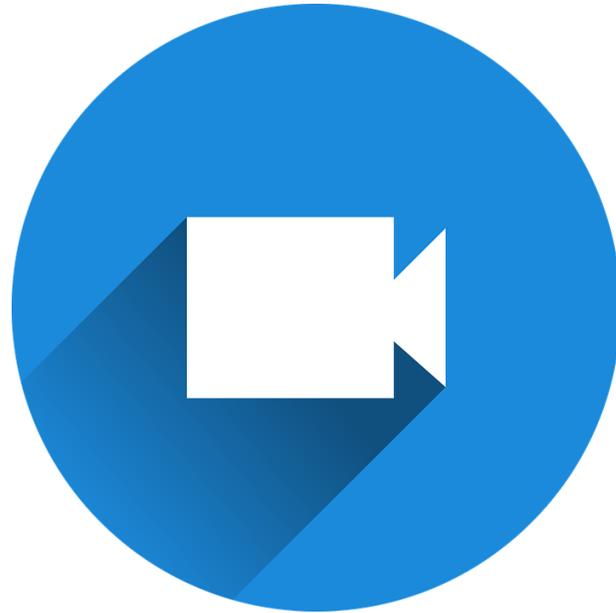
Expose the person's chest

◦ No clothing can be under the AED patches

◦ Dry off a person's chest if it is wet

◦ For large amounts of chest hair you may have to shave it off (this is very rare)

Jewelry

◦ Remove any jewelry from the chest

Two Person AED

View Two Person AED video at:

https://www.youtube.com/watch?v=x982IVaJKrA&feature=emb_logo

Adult Choking

» The universal sign for choking:

> Two hands around neck

» If a choking person is coughing, let them continue to cough and verbally encourage coughing

» If they get up to leave the room, follow them (choking can quickly become a life threatening situation)

» If they stop coughing, take action quickly

> Ask if you can help (tell them you are trained in first aid), if they cannot speak or cough you will need to intervene
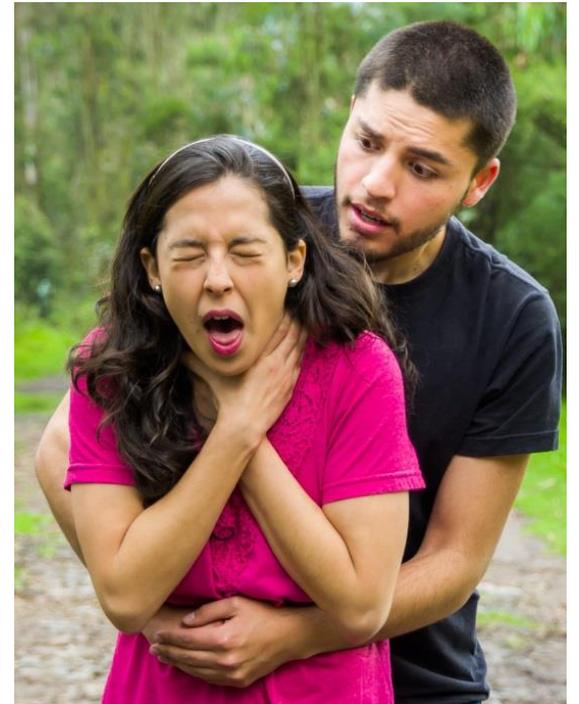
Abdominal Thrusts

» Check for permission to do abdominal thrusts

» Stand behind the person and reach around to place a fist above their belly button, but below the breastbone

» Press in and up as hard as you can until the object is expelled

» If the person loses consciousness, lower him or her to the ground and begin CPR starting with compressions. Make sure to activate EMS

Responding to a Choking Adult
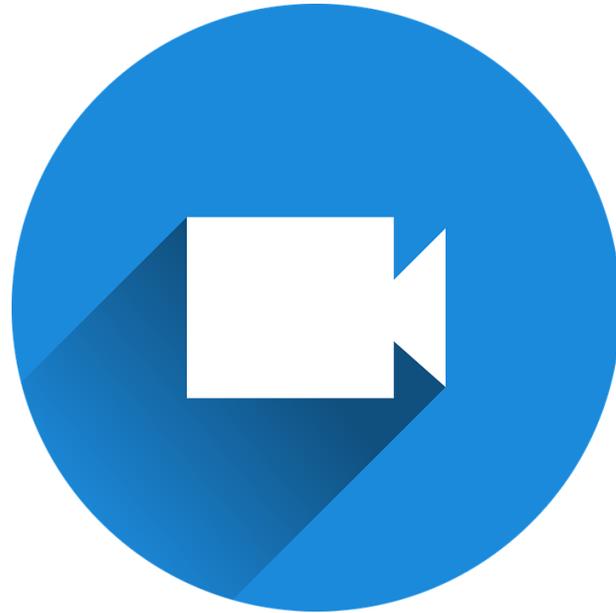
View Choking Adult video at:

https://www.youtube.com/watch?v=bNphpPcEQCM&feature=emb_logo

Choking: Special Considerations

If you are by yourself, use a chair

If you are unable to reach around someone's waist, or if a woman is pregnant, give thrusts at the chest instead of the abdomen

For additional information on CPR visit:

www.kingcounty.gov/schoolcpr

Credits

King County Emergency Medical Services
- *Laura Miccile, CPR/PAD Program Manager, KC EMS Division*
- *Bosaiya, KC Emergency Medical Services, Videographer*

Gonzaga University
- *Nichole Calkins, Ed.D., Assistant Professor of Physical Education Pedagogy:* designed/created curriculum components: lessons, PPTs, handouts

Highline School District
- *Claudia House, Middle School Health teacher:* reviewed lessons

Renton School District
- *Tom Walker, Hazen High School HOSA and CTE instructor* Video performances
- *Students*: Video performances

Shoreline Fire Department
- *Gabriel DeBay*; Shoreline Fire Department; Firefighter Paramedic, MICP, BLS Instructor

Eastside Fire & Rescue
- *Michele Overholt*, Eastside Fire & Rescue, FF/EMT, BLS Instructor

The Voice Guy
- *Jim Cissell*, Video Voiceover