

How to Teach CPR/AED

1. Heart Attack vs. Cardiac Arrest

- **Heart Attack** is a plumbing problem. The heart's plumbing system (arteries/veins) are blocked/clogged/narrowed and oxygen rich blood cannot get to certain parts of the heart. The heart is still pumping but something must be done to relieve the block.
- Typical signs and symptoms of heart attack include; chest pain, shortness of breath, crushing type chest pain, pain that radiates up the jaw/down the arm.
- Women can have different less specific symptoms which include fatigue, anxiety, insomnia.
- Patient needs to get to a hospital to have 12 lead ECG and blood work done. Procedures can be done to immediately restore blood flow.
- Can give aspirin (2 low dose or 1 adult dose aspirin). Patient should not take if they have an allergy to aspirin or prior history of stroke.

- **Cardiac Arrest** is an electric problem. Something has interfered with the heart's electrical system and the heart is no longer pumping. Therefore the patient is not awake, moving, kicking, breathing, they are blue and lifeless...they need CPR.
- Causes of Cardiac arrest include a massive Heart attack, electrolyte deficiencies, trauma, pre-existing and undiagnosed cardiac problems etc.

2. Activate Chain of Survival

- **Call 911:**
 - You can cancel 911 but can't get them to respond to any quicker if you wait to call.
 - Discuss the 911 system in your area.
 - Call Security: they know your facility better than anyone and can guide 1st responders to you faster. They often have AEDs and CPR training. They can hold elevators and assist 1st responders.
 - Discuss your company/school/facility's emergency procedures.
 - Hawaii stats (<10% OHCA survival rate, <30% chance of victim getting CPR, approx 7-15min response time for 1st responders to get to patient)

3. Compressions (Adult/Child/Infant)

- **Hand placement:**

- Center of the chest on the sternal plate between the nipple line.
- **Compression technique:**
 - Align your shoulders, elbows and wrist and lock your arms. You can interlock your fingers or lay them on top of each other...it doesn't really matter.
 - Ideally patient should be on a hard, flat surface but do the best you can do with what you have.
- **Rate** (100-120 bpm):
 - Staying Alive, Uptown Funk (Bruno Mars), Baby Shark, Get Down on It (Kool and the Gang) etc...
 - AEDs have metronomes to help keep the beat.
- **Depth:**
 - 2-2.4inches or $\frac{1}{2}$ the depth of the chest for Adult/child and $\frac{1}{2}$ - $\frac{1}{3}$ the depth of the chest for an infant: "Squish them in half"
- **Recoil:**
 - Must allow the chest to come to full recoil after every push. This allows air to passively enter the lungs and allows the heart to fill with blood.
- **Minimize Interruptions:** DON'T STOP PUMPING in the community setting it is far better to do continuous compression/hands only cpr. The only time to stop compression is 1. If the patient wakes up, 2. If the AED tells you to stop while it is analyzing, 3. If the 1st responders ask you to stop so they can take over.
- **Child/Infant compressions:**
 - Use same rate, depth is $\frac{1}{2}$ the depth of the child's chest and recoil everytime. Use 2 hands, 1 hand, 2 fingers or 2 thumbs. Whatever technique allows you to keep the rate, "squish the patient in $\frac{1}{2}$ and recoil every time without stopping.

4. Breathing?

- Discuss 30:2 vs continuous compression CPR

- Discuss difficulties of mouth to mask, mouth to mouth: opening airway, vomit, saliva, facial hair, too much air (too much ventilation decreases circulation) etc.
- Discuss that it takes about 15 really good compressions to get perfusion to the brain and a pause in compressions for as little as 3 seconds stops all perfusion to the brain. If one does 30:2 CPR the patient likely only gets compressions about 60 - 70% of the time.
- Hawaii is a Hands only state/1st responders do High Performance CPR (Why we can teach other than 30:2).

5. AED

- **Where are AED's in our community?**
 - Airport, Fire City/State/Federal, Ocean Safety, Police, EMS, HECO/HELCO work trucks, malls, hotels, some schools, business
- **Can you hurt someone with an AED?**
 - **NO!!** AEDs will **NOT** shock someone who does not need a shock.
- **How to use?**
 - Turn on, put on pads (discuss pad placement)
- **Can it be used on someone hairy? Wet(in the water)? Pregnant? Medication patches or Medical devices?**
 - YES! If the person is very hairy-use razor.
 - YES! If they are pregnant, if you don't save the mom-you don't save the baby.
 - YES!
- **When can I take it off/ turn it off?**
- **Discuss different devices**
- **Pediatric key, button or pads (can I use adult pads on a child/infant)**
- **Metronome**
- **What if patient wakes up?**

6. Scenarios/Practice Compressions

- 2-3 people per manikin
- Need manikins with feedback (shows rate and depth)
- Practice compressions and switching compressors without interrupting
- CERTIFICATION COURSE-EVERYONE MUST COMPRESS.

7. Choking (Adult/Child/Infant)

- Call 911
- Abdominal Thrust/Heimlich Maneuver

- If coughing-let them cough. DO NOT PAT THEM ON THE BACK. Can wiggle the object further down wind pipe.
- **Accommodations**
 - If patient is too big to wrap your arms around or pregnant (wrap under armpits and pull in at the chest)
- **Infant**
 - Back slaps/chest thrusts:
 - Consider the size of child and just doing back slaps if unable to flip child over.
 - DO NOT BLIND FINGER SWEEP
- **What to do when choking is relieved?**
- **What to do when choking is not relieved and patient goes unconscious?**
 - Call 911
 - Start chest compressions
- **Alone and choking**

8. **SUMMARY: HOW TO SAVE A LIFE?**

- **CALL:** 911 right away
- **PUSH:** hard and fast in the center of the chest and dont stop
- **RESPOND:** with an AED if one is available