

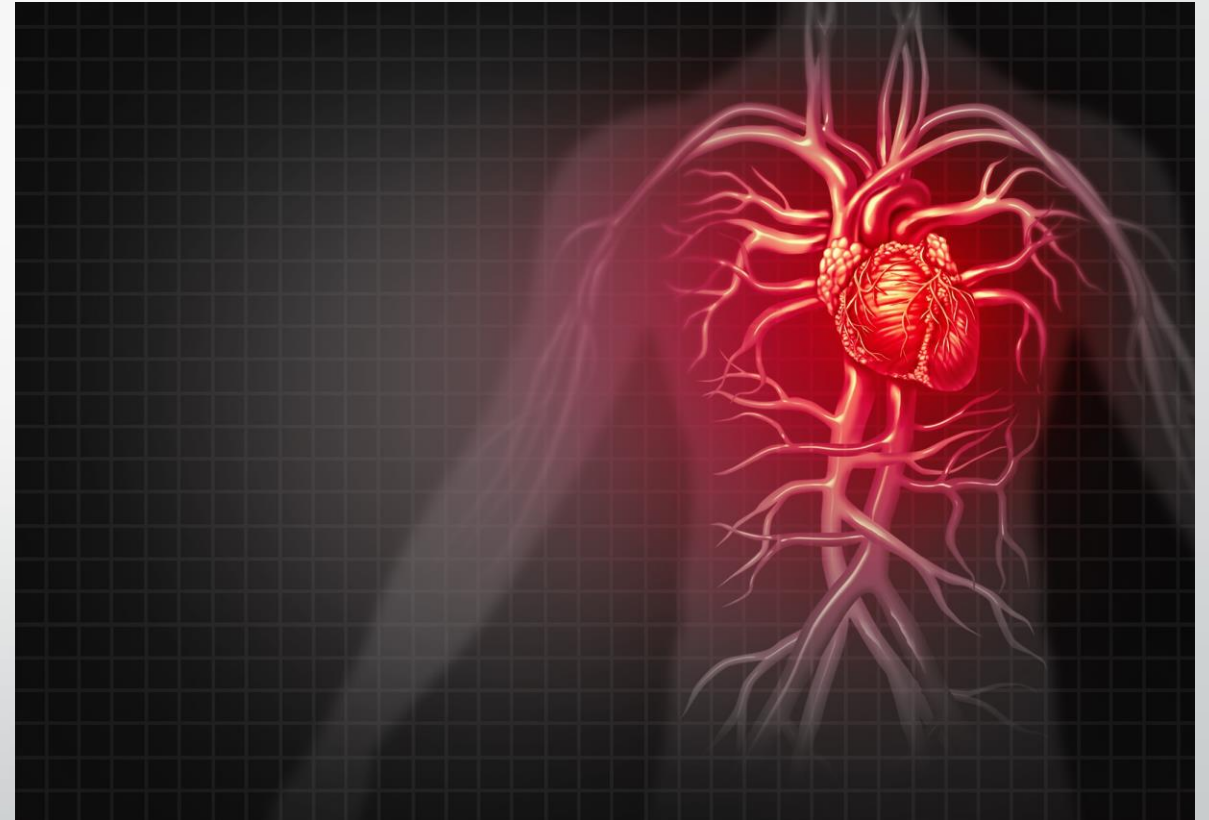


CPR and Basic Life Support

Lesson 1 – Why Learn Basic Life Support?

Heart Attack vs. Cardiac Arrest

- **Heart attacks** occur when the blood flow to the heart is blocked, causing part of the heart tissue to die.
- It can also be referred to as a **myocardial infarction**.
- Symptoms include:
 - Crushing chest pain
 - Pain in the upper body
 - Shortness of breath
 - Dizziness, nausea, and even vomiting



Heart Attack vs. Cardiac Arrest



- While a heart attack is serious and can lead to cardiac arrest, the two are not the same.
- **Cardiac arrest** means a “heart stoppage”.
- It occurs when the heart stops effectively pumping blood through the body.
- A cardiac arrest often occurs suddenly and without warning.

Causes of Cardiac Arrest

- There are many causes that can trigger a cardiac arrest, such as:
 - Choking
 - Drug overdose
 - Severe trauma
 - Electrocutation
 - Respiratory shock
 - A heart condition or disease



What's Happening to the Heart



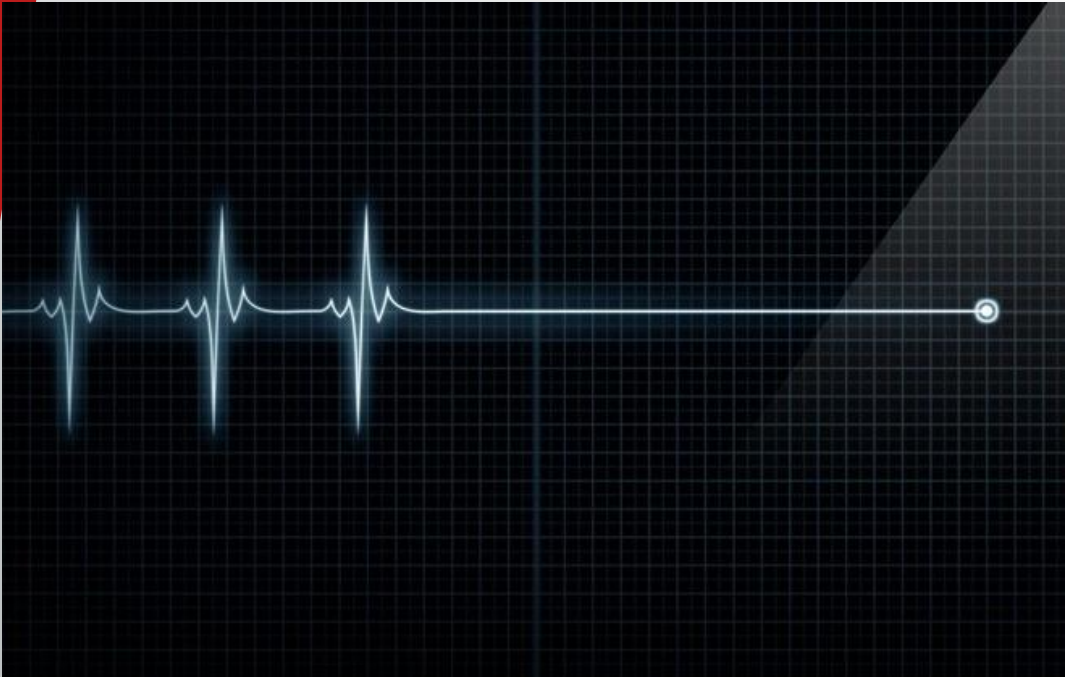
- The heart has an electrical system that controls how it beats. Problems with this system can cause arrhythmias.
- **Arrhythmias** are changes in the heartbeat's normal rhythm.
- Most arrhythmias are harmless. However some can lead to a cardiac arrest.
- Common arrhythmias related to cardiac arrest are:
 - Ventricular fibrillation (VF)
 - Pulseless Ventricular Tachycardia (pVT)
- **Pulseless electrical activity (PEA)** is a condition where the heart's electrical signal does not produce a beat. This is not an arrhythmia however it also leads to cardiac arrest.

Clinical vs. Biological Death

- In the medical field, there are 2 types of death: clinical and biological.
- **Clinical death** is when breathing and blood circulation stop, however most organs remain functional. Clinical death can be reversed. Cardiac arrest victims are clinically dead.
- **Biological death** is when vital organs die and can no longer function or be revived. This happens shortly after clinical death.



Damage Caused to the Heart



- During cardiac arrest, the heart can no longer pump blood. This has very serious consequences to vital organs.
- Within 20 seconds, the victim loses consciousness due to lack of oxygen.
- After a minute, brain cells start to die.
- After four minutes, lasting brain damage is likely.
- After six minutes, biological death becomes imminent.
- After 10 minutes, a coma and lasting brain damage is almost inevitable.
- Shortly after that, survival is nearly impossible.

What Can Be Done?

- While a victim is clinically dead, there is still a chance they can be revived. A victim's chances of survival can be increased if they receive Basic Life Support.
- **Basic Life Support** (BLS) generally refers to a level of emergency care.
- BLS is given to victims of cardiac arrest, respiratory distress, or an obstructed airway.

