

The Importance of CPR

CPR (cardio-pulmonary resuscitation) is a technique used to keep victims of sudden cardiac arrest and other emergencies, alive and to prevent brain damage until more advanced medical professionals arrive. The goal of CPR is to keep oxygen flowing in and out of the lungs and to keep oxygenated blood flowing through the body. This will delay tissue death.

Sudden Cardiac Arrest:

Sudden cardiac arrest is not the same thing as a heart attack. This can often be a confusing concept.

- Sudden cardiac arrest occurs when the heart abruptly stops pumping due to an interruption of normal heart impulses.
- A heart attack is the final stage of heart disease which is the slowing and then stopping of blood flow to the heart muscle.

Survival:

Circulating blood that contains oxygen is required to keep tissues in the body alive and functioning. The brain may sustain damage after blood flow has been stopped for about 4 minutes. There is irreversible damage to the brain after blood flow has stopped for 7 minutes. To be successful, CPR should be started within 6 minutes of a person having a sudden cardiac arrest. Low body temperatures (hypothermia), seen in near-drownings and exposure to the cold, prolong the time that the brain can survive.

The incidence of sudden cardiac arrest is 50 to 100 per 100,000 people.

Survival of sudden cardiac arrest is quite low, overall between 1% to 6%. If someone starts CPR immediately, the survival rate is 6% but if no bystander starts CPR and it is only started when the ambulance arrives, the survival rate drops to only 2%.

Recognition:

Early recognition of cardiac arrest is a key step in initiating early treatment. After witnessing a person collapse, or coming upon an unresponsive person:

- Assess the area quickly to make sure it is safe to approach the person
- Confirm unresponsiveness by tapping the person on the shoulder and shouting something such as "are you OK?"
- If no response, call for help, and initiate chest compressions.
- Do not delay chest compressions if a pulse cannot be felt within 10 seconds.

Chest compressions:

All rescuers, whether trained or not, should provide chest compressions to victims of cardiac arrest. Chest compressions are now the first line response rather than opening the airway and delivering rescue breathing. High-quality chest compressions are essential:

- Follow the mantra: “push hard and push fast on the center of the chest”
- Compress the chest at least 2 inches with each down-stroke
- Compress at a rate of 100 compressions per minute
- Minimize the frequency and duration of interruptions while performing chest compressions

Chest compressions with ventilations can be provided by those trained in the technique and will be done by professional rescuers.

Complications:

Performing proper CPR can lead to complications. Common complications include fractures to the ribs or sternum, bleeding into the chest, bruising of the heart, and damage to the lungs. These complications are generally manageable and should not stop anyone from performing CPR. If CPR is performed on someone who didn't need it, though it can be uncomfortable for that person, only about 2% suffer any type of injury as a result.

Training:

Chest compression-only CPR is very attractive because it is easier to teach than conventional CPR and is still beneficial to the victim. Courses teaching this can be taken on-line. However, instructor-led courses will often also include training on delivery of airway and breathing maneuvers which may be very important for the victim in some cases. Instructor-led courses also usually provide feedback devices such as the use of a life-like “doll” which can improve acquiring and retaining the proper skills.

Skills for performing CPR deteriorate in as little as 3 to 6 months, therefore refresher training is strongly recommended. Though an optimal interval for refresher training has not been established, it is recommended that training intervals of 12 to 24 months are not adequate. Refresher courses may be needed as often as every 6 months to keep skills sharp.