CPR
Cardiopulmonary Resuscitation

History

1740 The Paris Academy of Sciences officially recommended mouth-to-mouth resuscitation for drowning victims

1767 The Society for the Recovery of Drowned Persons became the first organized effort to deal with sudden and unexpected death

1891 Dr. Friedrich Maass performed the first equivocally documented chest compression in humans

1903 Dr. George Crile reported the first successful use of external chest compressions in human resuscitation

1904 The first American case of closed-chest cardiac massage was performed by Dr. George Crile

1954 James Elam was the first to prove that expired air was sufficient to maintain adequate oxygenation

1956 Peter Safar and James Elam invented mouth-to-mouth resuscitation

1957 The United States military adopted the mouth-to-mouth resuscitation method to revive unresponsive victims

1960 Cardiopulmonary resuscitation (CPR) was developed. The American Heart Association started a program to acquaint physicians with close-chest cardiac resuscitation and became the forerunner of CPR training for the general public

1963 Cardiologist Leonard Scherlis started the American Heart Association's CPR Committee, and the same year, the American Heart Association formally endorsed CPR

1966 The National Research Council of the National Academy of Sciences convened an ad hoc conference on cardiopulmonary resuscitation. The conference was the direct result of requests from the American National Red Cross and other agencies to establish standardized training and performance standards for CPR

1972 Leonard Cobb held the world's first mass citizen training in CPR in Seattle, Washington called Medic 2. He helped train over 100,000 people the first two years of the programs

There are 500,000 deaths in US related to new and recurring coronary (heart) attacks. That means that every day 1,400 people die from a heart attack. Out of these 500,000 80% die outside the hospital setting and do not received any medical treatment after suffering heart attack. If these patients received CPR, this would save 200,000 per year or 550 lives per day.

2015 guidelines (largely unchanged from 2010 guidelines) "strongly recommend" that **untrained / lay responders** perform "compression-only" CPR, sometimes known as CCR. However, medical professionals and trained lay people are still urged to give the victim two "rescue breaths" in between each series of 30 chest compressions. All the changes apply only to adult victims who experience cardiac arrest; artificial respiration is still recommended for children and for adults in a few cases, including near-drowning and drug overdose.

The science behind the changes is simple. In an adult who has been breathing normally, for several minutes even after cardiac arrest there is enough oxygen in the bloodstream to maintain the heart and brain, as long as compressions circulate that oxygen.

The new guidelines also call for faster and more forceful compressions than in the past. The new standard is to compress the chest at least two inches on each push, at a rate of 100 to 120 compressions per minute. The perfect pace is that of the Bee Gees "Staying Alive".

1. Chest compressions should be performed at a rate of 100 to 120 per minute

2. Increase the depth of chest compressions to 2 inches (but not greater than 2.4 inches) for adults/children and 1.5 inches for infants

3. Continue with chest compressions for as long as possible or until help arrives

4. There has been a change in the recommended sequence for the lone rescuer to initiate chest compressions before giving rescue breaths (C-A-B rather than A-B-C).

Cardiopulmonary resuscitation, commonly called CPR, combines rescue breathing (one person breathing into another person) and chest compression in to one lifesaving procedure. It is performed when a person has stopped breathing or a person's heart has stopped beating. When performed quickly enough, CPR can save lives in such emergencies as loss of consciousness, heart attacks or heart "arrests," electric shock, drowning, excessive bleeding, drug overdose, and other conditions in which there is no breathing or no pulse.

The purpose of CPR is to bring oxygen to the victim's lungs and to keep blood circulating so oxygen gets to every part of the body. When a person is deprived of oxygen, permanent brain damage can begin in as little as four minutes and death can follow only minutes later. So the main objective is to intervene as soon as possible.

Likelihood of brain damage or death and typical timing after the heart stopping.

Mins after exhibiting symptoms	***Chances of Brain Damage***
0-4	***Minimal***
4-6	***Possible***
6-10	***Likely***
Greater than 10	***Brain Death***

There are three general symptoms that warrant immediate administration of CPR:

Victim is Unconscious

Victim is not Breathing

Victim has No Pulse

If one or more of those symptoms is present, perform CPR as soon as possible.

Make sure you are not in any danger

Make sure the victim is not in danger

Avoid moving the victim unless there is an immediate danger or you are preparing for CPR

Assess the surroundings for anyone who can help

Make sure you are aware of your location (for example: floor in the building, etc), to help emergency responders locate you

Determine if the victim is conscious or unconscious by positioning yourself next to the victim, tapping him/her on the shoulder and shouting "Are you OK? Are you OK?" several times

If no response, immediately ask someone to call 911 and then have the person report back to you. If no one is available, call 911 yourself prior to beginning CPR

To perform CPR, remember the basic steps of CPR administration called CAB

C for compressions, **A** for airway, and **B** for breathing

C - Compressions

External chest compressions provide artificial circulation.

When you apply rhythmic pressure on the lower half of the victim's breastbone, you force the heart to pump blood.

To do external chest compression properly, follow the steps below and watch the video:

1. Kneel beside the victim's chest. With the middle and index fingers of your hand find the notch where the bottom rims of the two halves of the rib cages meet in the middle of the chest.

2. Put the heel of one hand on the sternum (breastbone) next to the fingers that found the notch. Put your other hand on top of the hand that's in position. Be sure to keep your fingers up off the chest wall. It may be easier to do this if you interlock your fingers.

3. Bring your shoulders directly over the victim's sternum and press down, keeping your arms straight. Depress the sternum at least 2 inches. Then completely relax the pressure on the sternum. Do not remove your hands from the victim's sternum, but do let the chest rise to its normal position between compressions.

4. Relaxation and compression should take equal amounts of time. If you must give both rescue breathing and external chest compressions, the proper rate is 30 chest compressions to 2 breaths. You must compress at a rate of 100 times per minute. Keep interruptions to less than 10 seconds. Continue administration until emergency personnel arrives.

Important:
As of October of 2010, the guidelines for performing effective CPR have changed. If the person is not confident in his/her abilities of performing CPR, for adult, first, you should call 911 if help is not available and perform external chest compressions without mouth-to-mouth breathing. Continue performing compressions until emergency services arrive with Automated External Defibrillator (AED). Based on the recent studies, external compressions can be as effective as combinations of compressions and mouth-to-mouth. If you are trained and/or comfortable performing mouth-to-mouth breathing then administer after the first set of compressions.

A - Clear Airway

Place the victim on his/her back on a firm surface.

Kneel next to the victim's neck and shoulders.

To open the airway, place your palm on the forehead to carefully tilt the head back and lift the chin forward with your other hand.

Then you must check for signs of life for no longer than 10 second. Place your ear over the mouth of the victim, and while counting from 10 to 0 listen if the victim is breathing.

If there are no signs of life, proceed to B.

Important: Gasping for air is not considered normal breathing, so you should proceed with CPR immediately. If the victim is breathing, roll the person onto his or her side, and wait for emergency personnel to arrive

B - Breathing

Breathing - refers to rescue breathing, where one person is breathing into other or also commonly referred to as mouth to mouth technique.

1. Using the thumb and forefinger of your hand that is on the victim's forehead, pinch the person's nose shut.

2. Keep the heel of your hand in place so the person's head remains tilted. Keep your other hand under the person's chin, lifting it up.

3. As you keep an airtight seal with your mouth, give first breath and watch the victim's chest rise. If rises, give second breath. If not, start from the beginning. Goal is for the victim to receive two full mouth to mouth breaths, 1 second each.

Important: Make sure to monitor that chest is actually moving, that means you are applying the technique correctly. Also, make sure not to press on the soft part of the neck or under the chin, as this could prevent proper air circulation.

Red Cross CPR Video
Click Here

To Test

Access Code: GN3J

Please write down code. You will be asked for it

Once you have successfully passed the test (70% correct), please email Kim Jackson at kim_hotschool@yahoo.com. We will email you your CE certificate within 7 business days.