

Cardiopulmonary Resuscitation



Cardiopulmonary resuscitation [CPR]

Definition: is a lifesaving technique useful in many emergencies, including heart attack or near drowning, in which someone's breathing or heartbeat has stopped.



The aims of CPR

- CPR is used in order to oxygenate the blood.**
- Maintain a cardiac output to keep vital organs alive until the cause of cardiac arrest corrected.**

**It's far better to do something
than to do nothing .**

**Remember, the difference
between your doing
something and doing nothing
could be someone's life.**



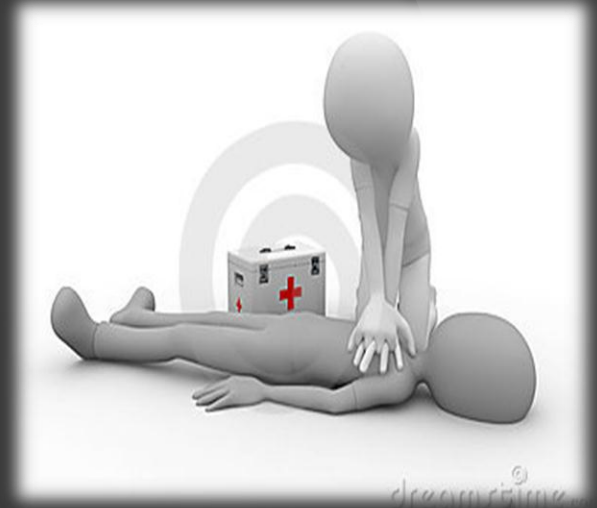
Indications of CPR

- Cardiac arrest(causes).
- Respiratory arrest(causes).



CPR consists of the use of :

- ❑ Chest compressions.
- ❑ Artificial ventilation.
- ❑ Drugs and defibrillator.



The American Heart Association **2010 update the CPR guidelines.**

- The order of interventions was changed for all age groups from airway, breathing, chest compressions (ABC) to chest compressions, airway, breathing (CAB).



- An exception to this recommendation is for those who are believed to be in a respiratory arrest (drowning, etc.).

CPR is as easy as
C-A-B



Compressions

Push hard and fast
on the center of
the victim's chest



Airway

Tilt the victim's head
back and lift the chin
to open the airway



Breathing

Give mouth-to-mouth
rescue breaths

American Heart
Association



Learn and Live

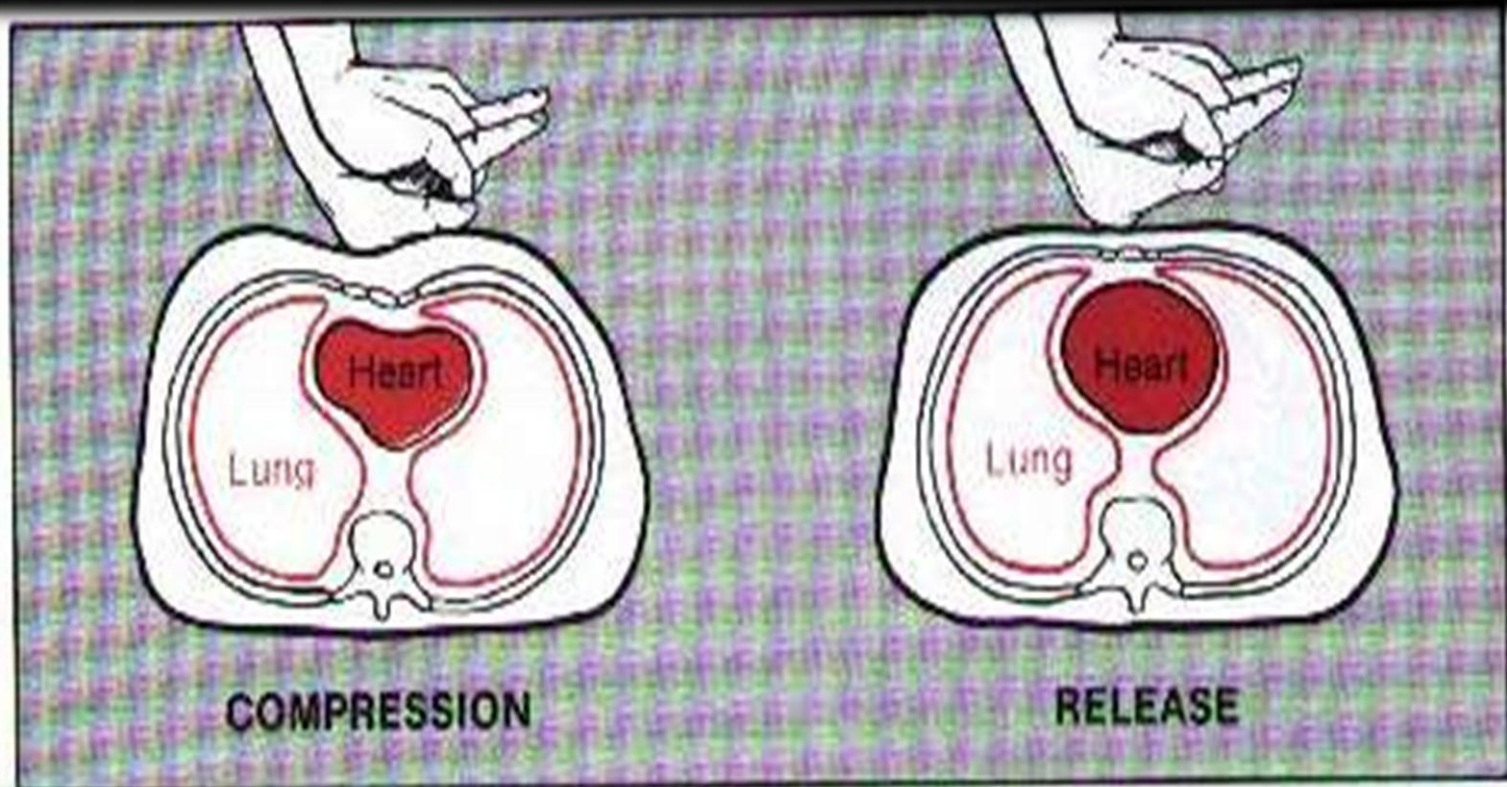
Before starting CPR, check:

- ☐ **Is the person conscious or unconscious?**
- ☐ **If the person doesn't respond call 911 or the local emergency number and begin CPR.**



COMORESSION

- **Aim :** To restore blood circulation to vital organs during compression and filling of the heart by blood during release.

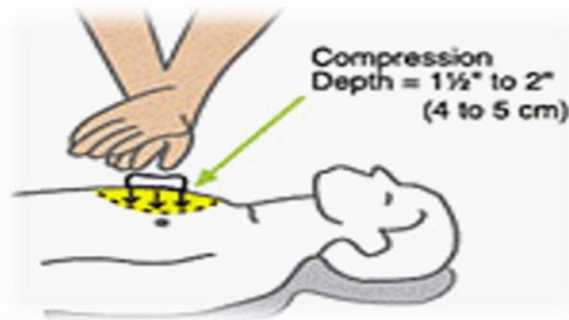


THE PROCEDURE OF EXTERNAL CARDIAC COMPRESSION

- **Put the person on his or her back on a firm surface.**
- **Kneel next to the person's neck and shoulders.**
- **Place the heel of one hand over the center of the person's chest, between the nipples. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands.**

- **Use your upper body weight (not just your arms) as you push straight down on (compress) the chest at least 2 inches (approximately 4- 5 centimeters).**
- **Push hard at a rate of about 80- 100 compressions a minute.**

❖ **Cardiac compression may cause local blunt trauma as: lung contusion, bruising or fracture of the sternum or ribs**





A



B

Airway: Clear the airway

Open the person's airway using the head-tilt, chin-lift maneuver. Put your palm on the person's forehead and gently tilt the head back. Then with the other hand, gently lift the chin forward to open the airway.





- ✓ **Check for normal breathing, taking no more than five or 10 seconds. *Look, listen, and feel.***
- ✓ **If the person isn't breathing normally and you are trained in CPR, begin mouth-to-mouth breathing..**



Breathing

1. Mouth-to-mouth breathing.

2. Mouth-to-nose breathing if the mouth is seriously injured or can't be opened.



- **The airway open (using the head-tilt, chin-lift maneuver).**
- **Pinch the nostrils.**
- **Shut for mouth-to-mouth breathing and cover the person's mouth with yours, making a seal.**
- **Give breath at about 12 time per minute**
- **As rate 30 compression : 2 breathing(1 or 2 rescuers).**



- ◎ **Normally inspired air contain 21% of oxygen & the remaining constitute nitrogen, CO₂ & other gases.**
- ◎ **The normal expired air still has an adequate amount of oxygen (16 – 17%) to sustain life. The carbon dioxide in expired air is desirable because it help to stimulate the respiratory center of the subject.**

***Note: In drowning 10% die due to asphyxia (laryngospasm) and 90% die due to entering of fluid in the lungs.**

***Fresh water is hypotonic, rapidly absorbed, dilute plasma and causing hemolysis.**

***While Ocean water is hypertonic, draw fluid from vascular system into lungs and decrease plasma volume.**

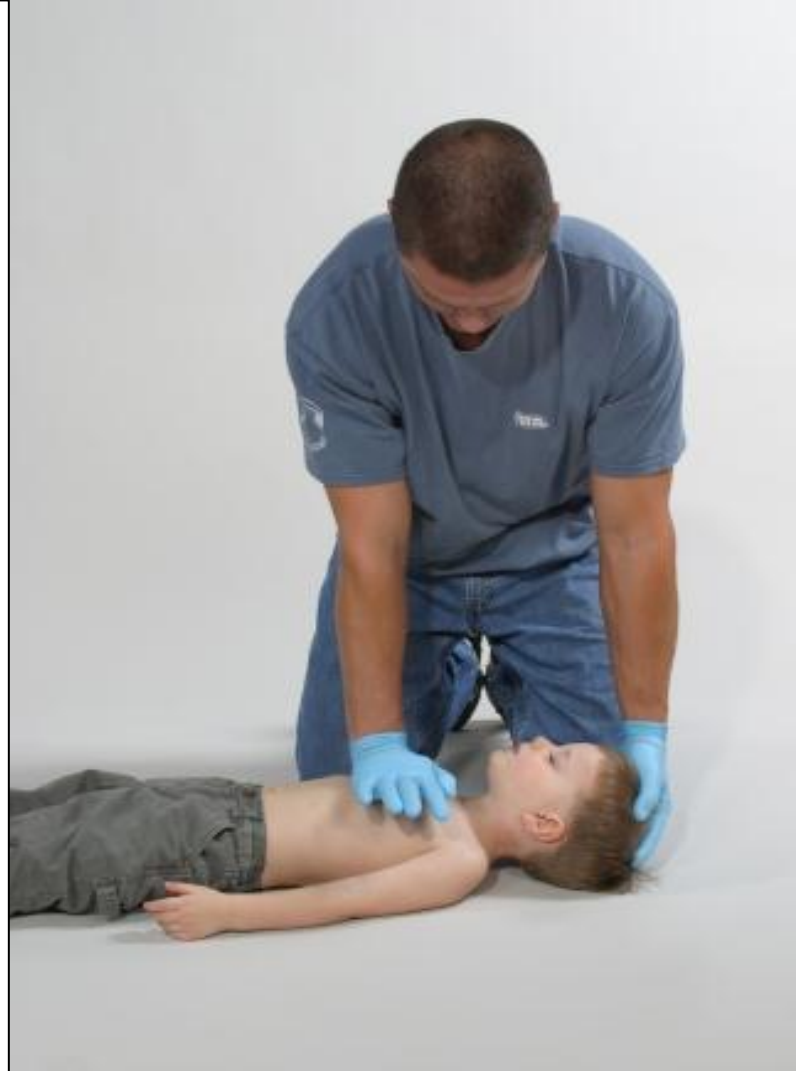


CPR In a children

- ❖ **The procedure for giving CPR to a child age 1 – 8 years is essentially the same as that for an adult. The differences are as follows:**
- ❖ **Use only one hand to perform chest compressions.**
- ❖ **Breathe more gently.**
- **Use the same compression-breath rate as is used for adults: 30 compressions :2 breaths if alone(2 rescuers use 15:2)**

CPR - Children

- Compression use heel of one hand(2 inches about 5 cm).
- Keep airway open with other hand
- 30 compressions:2 ventilations if alone
- (2 rescuers use 15:2).



CPR in Infants

- An infant is defined as a child younger than one year of age.

❑ Chest compression by 2 fingers on lower half of sternum (1.5 inches about 4 cm).

❑ 30 compressions : 2 ventilations if alone

❑ (2 rescuers use 15:2)



Under what special circumstances can a non-physician discontinue CPR?

- **The victim responds.**
- **The rescuer collapses.**
- **A doctor pronounces the victim dead.**
- **Someone with equal or more training
takes over.**



AED



Ambu Bag



A close-up photograph of a bouquet of flowers. The bouquet features several large, light pink roses with soft, layered petals. Interspersed among the roses are several white daisies with bright yellow centers. The flowers are set against a background of dark green foliage and small, dark purple filler flowers. The overall lighting is soft, highlighting the textures of the petals.

THANK YOU