Basic life support

Assiut University Children Hospital

Cardiopulmonary resuscitation (CPR)

- It is an emergency procedures which is performed on person suffering cardiac or respiratory arrest.

-It is a combination of rescue breathing (mouth-to-mouth resuscitation) and chest compressions.

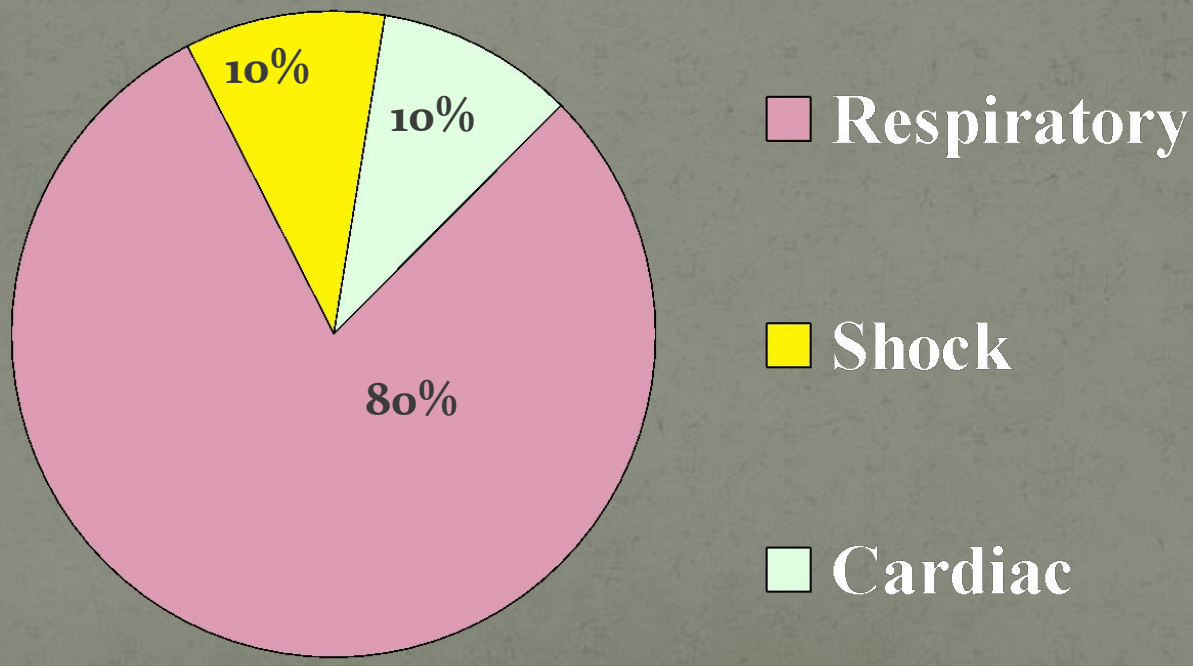
CPR can restore circulation of oxygen-rich blood to the brain.

Causes of cardiac arrest (6 H & 4 T):

1) Hypoxia.
2) Hypotension.
3) Hypothermia.
4) Hypoglycemia.
5) Acidosis (H^+).
6) Hypokalemia (electrolyte disturbance).

1) Cardiac Tamponade.
2) Tension pneumothorax.
3) Thromboembolism (pulmonary, coronary).
4) Toxicity **(eg. digoxin, local anesthetics, TCA, insecticides).**

Pediatric Cardiorespiratory Arrests

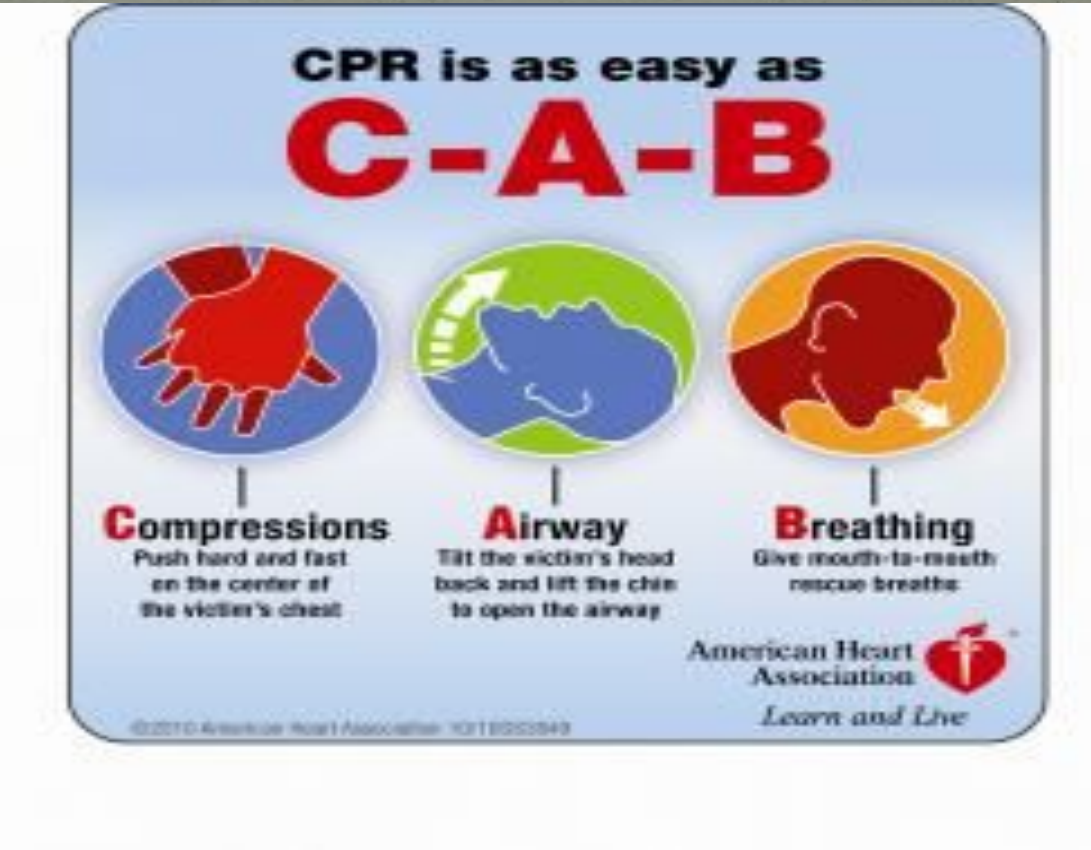


The commonest cause of cardiopulmonary arrest in pediatric is **respiratory**

Basic Life Support

Change in CPR Sequence: C-A-B Rather Than A-B-C

The ***2010*** *AHA Guidelines for* ***CPR***
recommend CAB sequence.
(chest compressions- airway- breathing)
and continued in 2015 Guidlines



Pediatric chain of survival 2010

S

- Safety
- Shake the victim gently and shout "Are you okay?"
- Shout for help

Circulation

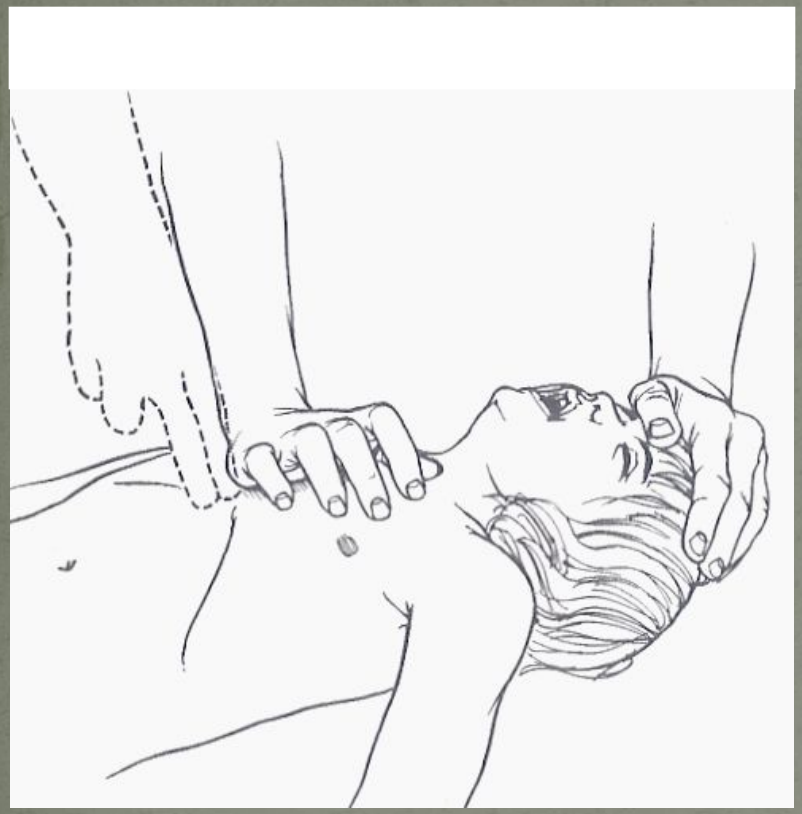
Objective: Maintain adequate blood flow to vital organs

Circulation

- In infants → 1 finger breadth below intermammary line
- 2 fingers or thumbs encircling
- At least 100/minute
- 1/3 to 1/2 of chest

Brachial or femoral pulse is used to check for pulse

Circulation



- In older children → the lower third of the sternum
- Maintain continuous head tilt with hand on forehead
- One hand
- 100/minute
- 1/3 to 1/2 of chest (4-5 cm)

Carotid pulse is used to check for pulse

Circulation-Chest Compressions

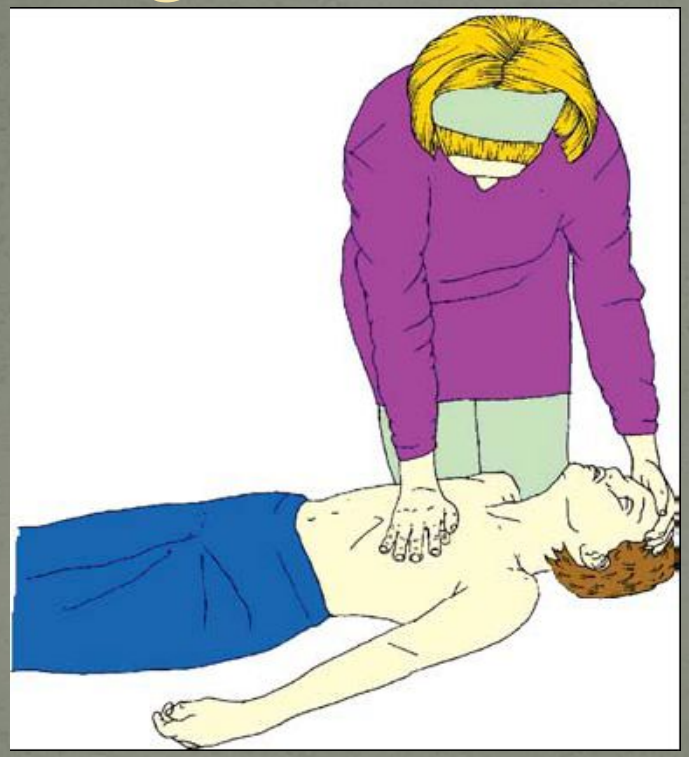
Indications for chest compression:

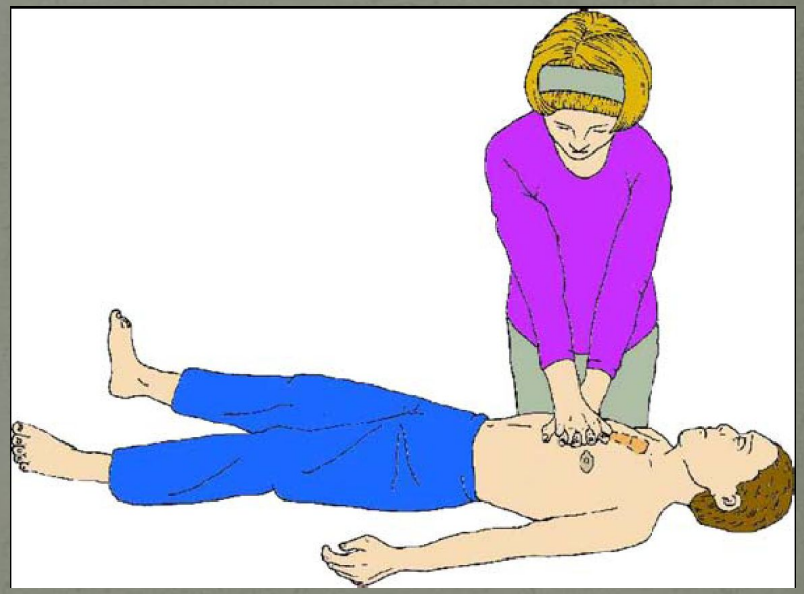
- **Absent pulse**
- **Heart rate < 60 BPM (or < 80 in infants) with signs of poor perfusion**

Best Sign of Effective Circulation

Pulse with Each Compression

Chest compressions : breaths
30:2 for one rescuer , 15:2 for 2 rescuers in all ages





Airway Management

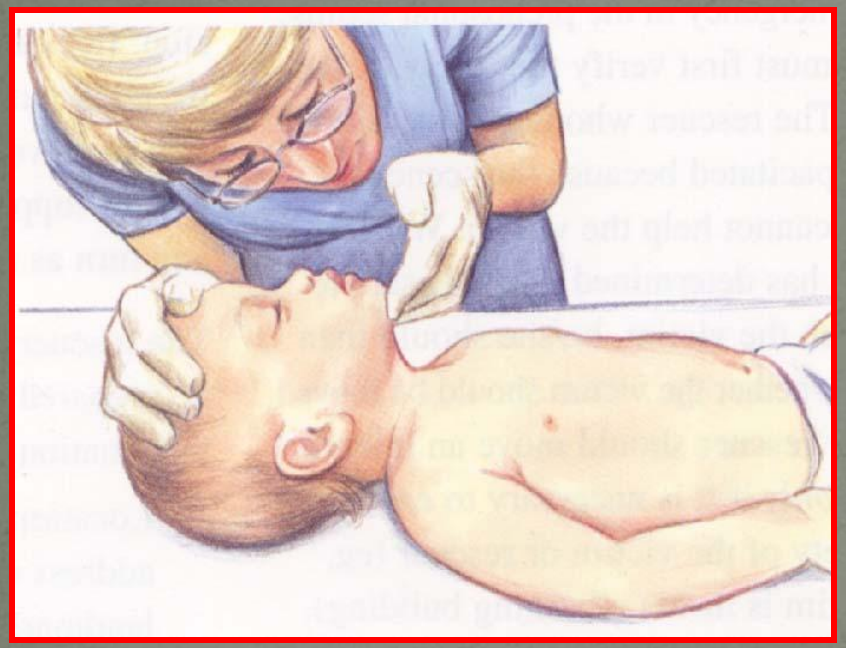
OBJECTIVE: Maintain Patent Airway

Open Airway

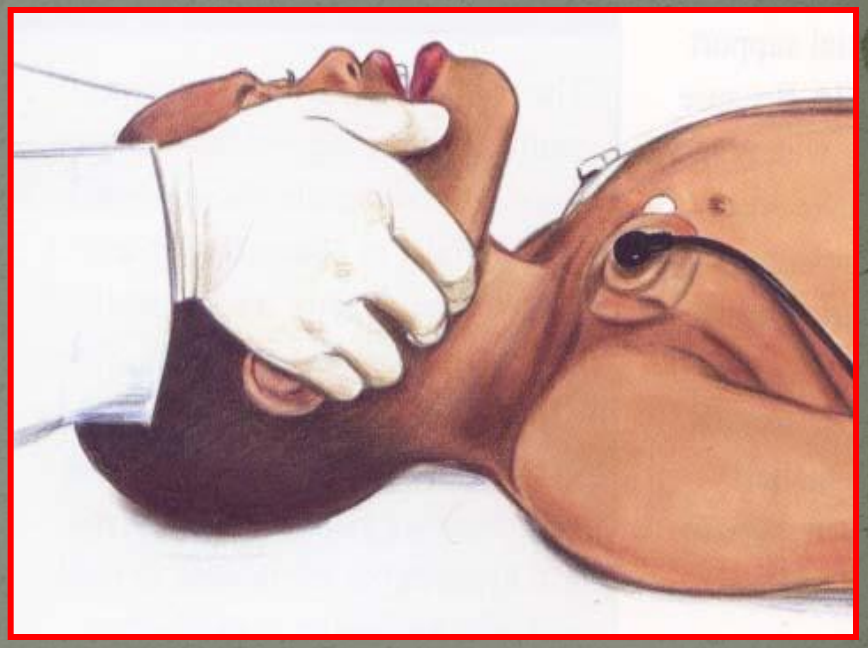
- Head-tilt/chin-lift method
- Jaw thrust method with possible neck injury

Airway Management

Head Tilt-Chin Lift



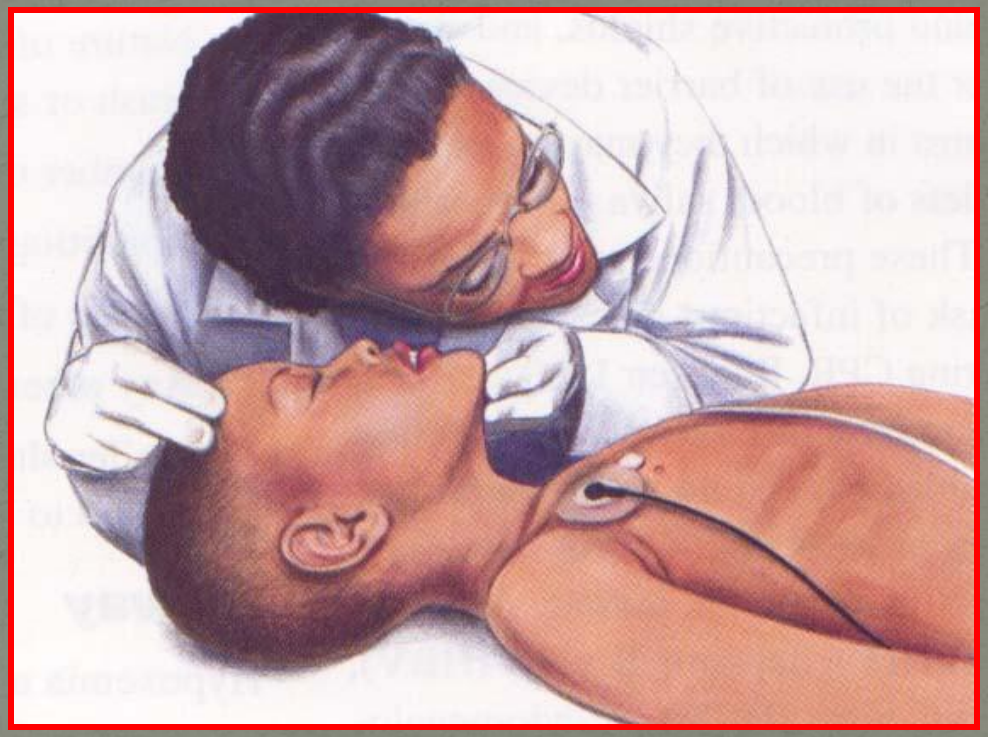
Jaw Thrust



Avoid extreme hyperextension

Breathing

Look-Listen-Feel



Breathing

Objective: Maintain Gas Exchange

Rescue Breathing

- Mouth to mouth/nose-mouth

- Bag and Mask

?fast Breathing-How much and how

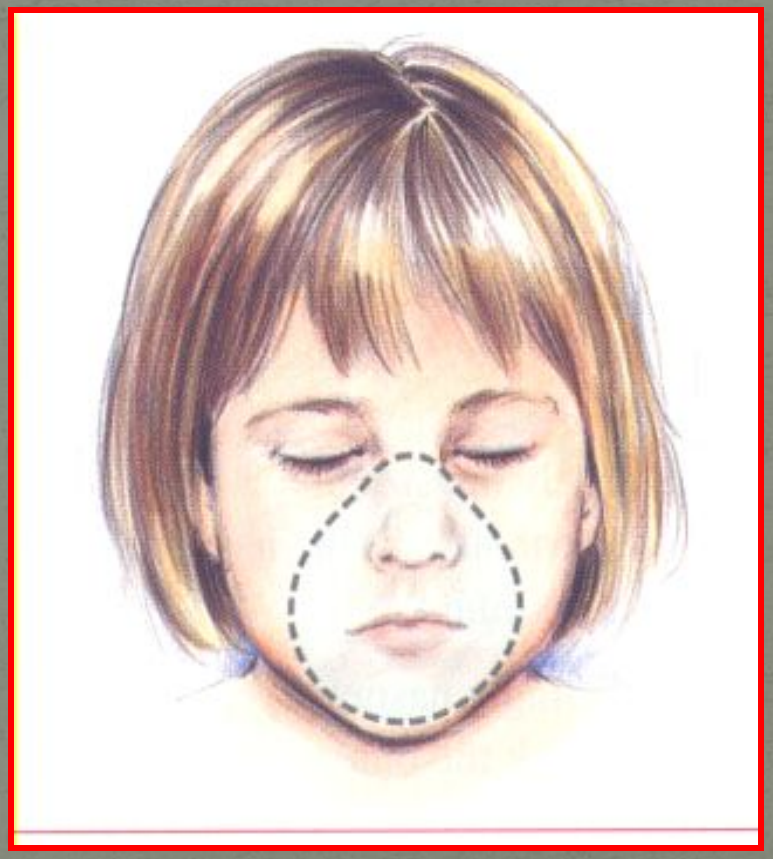
Adequate ventilation = adequate volume x adequate rate

Volume: enough to cause chest rise over 1-1.5 sec

Rate: first 2 rescue breathing , then 12-20/min synchronized with cardiac compressions at a ratio of 2-15 if 2 rescuers and 2:30 if one rescuer

Breathing

Bag-Mask Ventilation



Proper area for mask application

Breathing

Bag-Mask Ventilation

Best Sign of Effective Ventilation

Chest Rise

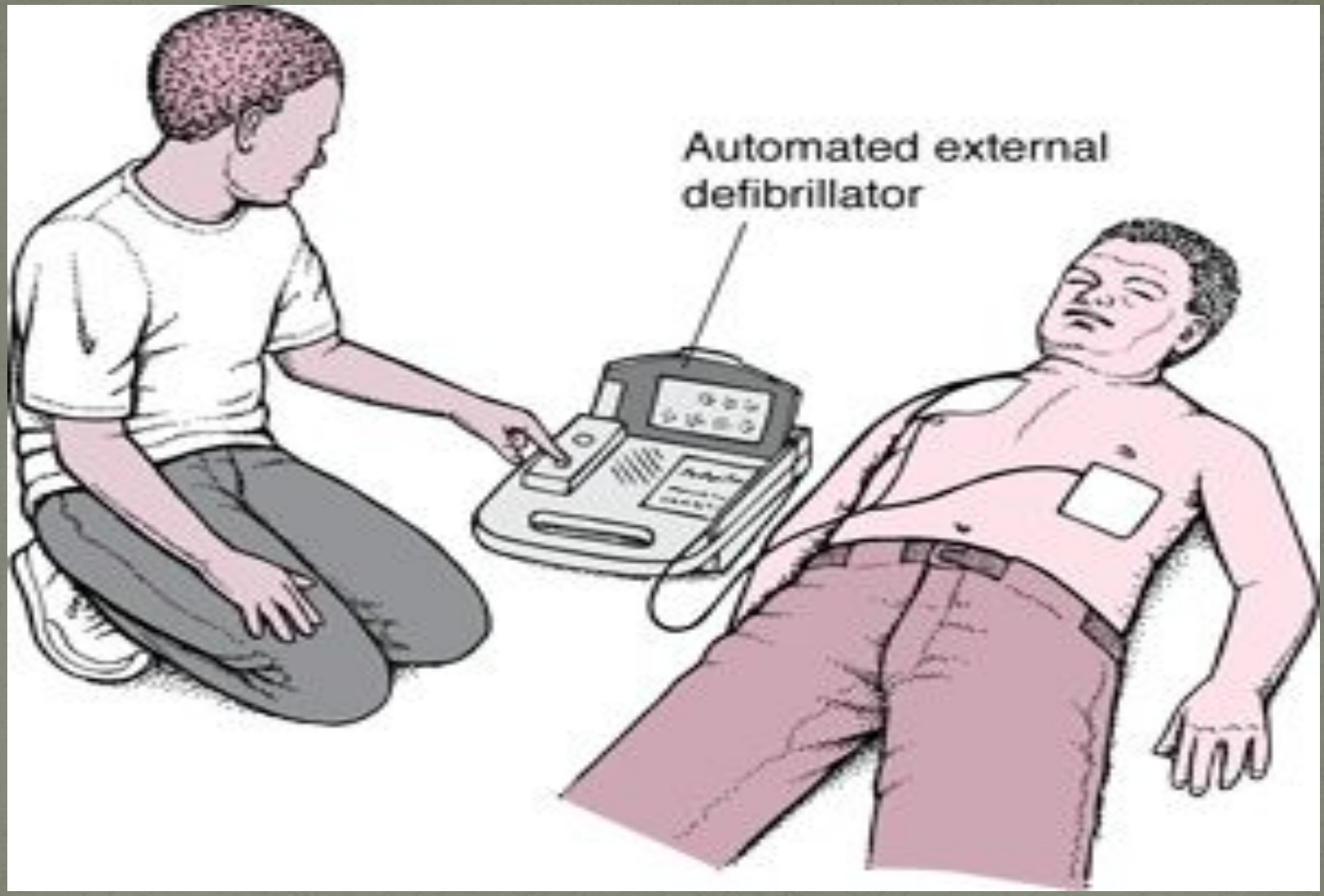
Automated External Defibrillators

Automated external defibrillator (AED)

- AEDs are sophisticated, reliable, safe, computerized devices that deliver electric shocks to victims of cardiac arrest when the ECG rhythm is one that is likely to respond to a shock. Simplicity of operation is a key feature: controls are kept to a minimum, voice and visual prompts guide rescuers. Modern AEDs are suitable for use by both lay rescuers and healthcare professionals

- Incorporate a simple ECG display.

- Analyze ECG tracing & attempts to detect VT or VF.


Automated external
defibrillator

Thank You