

## CPR (Cardiopulmonary Resuscitation) Notes

### AYUSH NEXT EXAM NOTES

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CPR is a life-saving technique used in emergencies when someone's heartbeat or breathing has stopped.

#### 1. Overview of CPR

- CPR is essential in cases of cardiac arrest (when the heart stops beating) or respiratory arrest (when breathing stops).
  - The aim of CPR is to restore circulation and prevent brain damage until the heart can be restarted, typically through defibrillation.
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#### 2. Steps of CPR (For Adults)

CPR involves a series of steps that include chest compressions, airway management, and rescue breaths.

##### 1. Assess the Situation:

- Ensure the environment is safe for you and the victim.
- Check for responsiveness by tapping or shouting.
- If the person is unresponsive and not breathing, call for emergency medical help immediately (dial 911 or local emergency number).

##### 2. Chest Compressions:

- **Positioning:** Place your hands on the center of the chest, on the lower half of the breastbone (sternum).
- **Compression Depth:** Press down at least 2 inches (5 cm) deep for adults.
- **Compression Rate:** Perform compressions at a rate of 100-120 per minute (about 30 compressions in 18 seconds).
- **Allow Full Recoil:** After each compression, allow the chest to fully recoil to ensure optimal blood flow.

**3. Rescue Breaths (If Trained):**

- **Head-Tilt, Chin-Lift:** Open the airway by tilting the head backward and lifting the chin.
- **Seal the Nose:** Pinch the victim's nostrils shut, cover the mouth with yours, and give two breaths.
- **Breath Volume:** Each breath should last about 1 second and make the chest rise.

**Note:** If you are not trained or not comfortable giving rescue breaths, perform hands-only CPR (chest compressions alone).

**4. Continue CPR:**

- **Continue cycles of 30 chest compressions and 2 rescue breaths until emergency help arrives or the person starts breathing on their own.**

**3. Compression-to-Ventilation Ratios:**

Age Group	Compression-to-Ventilation Ratio	Chest Compressions Depth	Compression Rate
Adults	30:2 (for 1 or 2 rescuers)	At least 2 inches (5 cm)	100-120 per minute
Children (1 to 8 years)	30:2 (for 1 rescuer)	At least 1/3 the depth of the chest	100-120 per minute
Infants (<1 year)	30:2 (for 1 rescuer)	At least 1.5 inches (4 cm)	100-120 per minute

**4. When to Use CPR**

**CPR should be performed if the individual:**

- **Is unresponsive and not breathing or only gasping.**
- **Has no pulse (check for a pulse at the carotid artery in the neck).**
- **Has sustained a cardiac arrest (heart stopped), drowning, or overdose.**

## 5. CPR for Special Situations

- **Drowning:** Give 2 initial rescue breaths before starting chest compressions.
  - **Pregnant Women:** Perform CPR as you would on any adult, but consider placing the woman on her left side to reduce pressure on the abdomen.
  - **Children and Infants:** Use gentler compressions with the heel of one hand for children and two fingers for infants. Rescue breaths are essential in these cases.
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## 6. Use of an AED (Automated External Defibrillator)

An AED is a device used to deliver an electric shock to the heart to restore a normal rhythm. It's important to use an AED if one is available.

1. **Turn On the AED:** Follow the voice prompts.
  2. **Apply Electrodes:** Place the pads on the chest (one on the upper right side and one on the lower left).
  3. **Shock if Advised:** The AED will analyze the heart rhythm and advise a shock if necessary.
  4. **Resume CPR:** After delivering a shock, continue CPR with chest compressions and rescue breaths until emergency personnel arrive.
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## 7. Precautions to Keep in Mind

- **Hand Position:** Always ensure the hands are placed correctly on the chest, as improper positioning can cause injury.
- **Avoid Interruptions:** Limit interruptions in chest compressions to ensure blood flow to vital organs.
- **Barrier Devices:** If available, use a barrier device (like a pocket mask) during rescue breaths to reduce the risk of disease transmission.

## 8. Key Points for Effective CPR

- **Speed:** Maintain a compression rate of 100-120 per minute (like the beat of the song “Stayin’ Alive”).
  - **Depth:** Compressions should be at least 2 inches deep for adults, with full recoil after each compression.
  - **Minimize Pauses:** Minimize interruptions in compressions to ensure continuous blood flow.
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## 9. When to Stop CPR

- **CPR can be stopped when:**
    - Emergency responders arrive and take over.
    - The person starts breathing or shows signs of life.
    - You are physically unable to continue (e.g., exhaustion).
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## 10. CPR Myths and Facts

Myth	Fact
CPR can restart the heart immediately.	CPR keeps blood circulating, but defibrillation is usually needed to restart the heart.
CPR is only for adults.	CPR is for people of all ages, including infants and children.
Rescue breaths aren't necessary.	Rescue breaths are important for oxygenating the blood, especially in children and infants.

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## CPR Summary Chart

Step	Action	Details
1. Assess the Situation	Check for responsiveness, breathing, and pulse.	Ensure safety, call emergency services.
2. Chest Compressions	Perform 30 compressions at 100-120/min.	Use two hands (for adults), compress to 2 inches.
3. Rescue Breaths (If Trained)	Give 2 rescue breaths (1 second per breath).	Ensure the chest rises with each breath.
4. Use of AED	Apply pads and follow AED prompts.	Administer shock if advised, then resume CPR.
5. Continue CPR	Continue CPR until help arrives.	Perform CPR in cycles of 30 compressions and 2 breaths.

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