# C-A-B of CPR for Adults, Children, and Infants*

<table>
<thead>
<tr>
<th>Component</th>
<th>Recommendations</th>
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</thead>
<tbody>
<tr>
<td><strong>Recognition</strong></td>
<td>Check for Responsiveness</td>
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<tr>
<td></td>
<td><strong>Activate 911 and get the AED or send second rescuer (if available) to do this</strong></td>
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<td></td>
<td>Check a pulse for no more than 10 seconds While looking for normal breathing  No breathing or no normal breathing (i.e., only gasping) No breathing or only gasping</td>
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<tr>
<td><strong>CPR sequence</strong></td>
<td><strong>START C-A-B Chest compressions, Airway, Breathing</strong></td>
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<tr>
<td><strong>Compression rate</strong></td>
<td>At least 100/120 min on the lower half of the breastbone</td>
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<tr>
<td><strong>Compression depth</strong></td>
<td>At least 2 inches (5 cm) no more than 2.4 inches</td>
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<td></td>
<td>At least 1/3 AP diameter About 2 inches (5 cm)</td>
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<tr>
<td></td>
<td>At least 1/3 AP diameter About 1½ or 1.5 inches (4 cm)</td>
</tr>
<tr>
<td><strong>Chest wall recoil</strong></td>
<td>Allow complete recoil between compressions Rotate compressors every 2 minutes to reduce fatigue during CPR</td>
</tr>
<tr>
<td><strong>Compression interruptions</strong></td>
<td>Minimize interruptions in chest compressions Attempt to limit interruptions to &lt;10 seconds</td>
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<tr>
<td><strong>Airway</strong></td>
<td>Head tilt–chin lift (suspected trauma: jaw thrust). Avoid excessive ventilation.</td>
</tr>
<tr>
<td><strong>Compression-ventilation ratio</strong></td>
<td>30:2 Single rescuer or 2-rescuers 30:2 Single rescuer 15:2 Two rescuers</td>
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<tr>
<td><strong>Ventilations with advanced airway</strong></td>
<td>1 breath every 6 seconds Asynchronous with chest compressions (at least 100/120 min) About 1 second per breath with visible chest rise</td>
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<tr>
<td><strong>Defibrillation</strong></td>
<td>Attach and use AED as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.</td>
</tr>
</tbody>
</table>

**Abbreviations:**  AED, Automated External Defibrillator;  AP, Anterior-Posterior;  CPR, CardioPulmonary Resuscitation.  
* Excluding the newly born, in whom the etiology of an arrest is nearly always asphyxial.

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## BLS for Healthcare Providers Critical Concepts

High-quality CPR improves a victim’s chances of survival. The critical characteristics of high-quality CPR include:

- **Start compressions within 10 seconds** of recognition of cardiac arrest. It is important to compress to the appropriate depth to create blood flow. Compressions are important because they pump blood to the rest of the body.

- **Push hard, push fast:** Compress at a rate of at least 100/120 min with a depth of at least 2 inches (5 cm) no more than 2.4 for adults, approximately 2 inches (5 cm) for children, and approximately 1 ½ or 1.5 inches (4 cm) for infants.

- **Allow complete chest recoil** after each compression. Complete chest recoil contributes to effective CPR by allowing the heart to refill with blood between compressions.

- **Minimize interruptions** in compressions (try to limit interruptions to < 10 seconds).

- **Give effective breaths** that make the chest rise.

- **Avoid excessive ventilation.**

## Automated External Defibrillator-AED

- As soon as an AED becomes available, the first step the rescuer should perform is to turn on the AED.
- After the AED delivers a shock, the rescuer should immediately restart CPR, beginning with chest compressions.
- Using an AED for an infant or a child less than 8 years of age, adult pads/dose may be used if pediatric pads/dose attenuator is not available.
- Child age range is 1 year to 8 years of age when using an AED; Child age range is 1 year to puberty for CPR.

### Foreign Body Airway Obstruction - Choking
- The best way to relieve severe choking in responsive adult or child – Perform abdominal thrusts. If the adult becomes unresponsive activate the emergency response system and start CPR beginning with compressions.
- The best action to relieve severe choking in a responsive infant – Begin cycles of 5 back slaps, followed by 5 chest thrusts.
- When a victim of foreign-body airway obstruction becomes unresponsive (adult, child, or infant) and the rescuer sends someone to activate emergency response system, and then immediately start CPR beginning with compressions.

### Child or Infant With A Heart Rate
- When a child/infant has a pulse of more than 60/minute but is not breathing, the rescuer should give breaths without chest compressions.
- When an unresponsive child/infant has a pulse of less than 60/minute and is not breathing with signs of poor perfusion despite oxygenation and ventilation with a bag-mask, the rescuer should perform both compressions and breaths.

### C-A-B is Chest Compressions–Airway–Breaths, Not A-B-C

#### CHEST COMPRESSIONS
- The rescuer should initially ensure that the scene is safe when the rescuer first sees a potential victim.
- A victim who is unresponsive with no normal breathing and no pulse requires CPR.
- It is appropriate to move an adult victim who needs CPR when the victim is in a dangerous environment.
- To identify cardiac arrest in an unresponsive victim with no breathing (or no normal breathing), a healthcare provider should check a pulse for no more than 10 seconds.
- Adult and child pulse is located on the side of the neck, near the trachea
- Infant pulse is located on the inside of the upper arm, between the elbow and the shoulder.
- It is important to compress to the appropriate depth during CPR to create blood flow during compressions.
- The depth of chest compressions for an adult victim should be at least 2 inches (5cm) no more than 2.4 inches.
- The depth of chest compressions for an infant is at least one third the depth of the chest, approximately 1½ or 1.5 inches (4cm).
- Recommended rate for performing chest compressions for victims of all ages is at least 100/120 compressions per minute.
- Hands are placed on the lower half of the breastbone to perform chest compressions on an adult.
- In 2-rescuer CPR, one rescuer provides chest compressions; the second rescuer maintains an open airway and gives breaths.
- Preferred technique for providing chest compressions during 2-rescuer CPR for the infant is the 2 thumb-encircling hands technique.

#### AIRWAY
- The best way to open the airway of an unresponsive victim with no suspected neck injury is the head tilt-chin lift.
- After the airway is opened, the proper technique for delivering mouth-to-mouth ventilation is the rescuer opens the airway, seals his or her mouth over the victim’s mouth, pinches the victim’s nose closed, and gives 2 breaths while watching for the chest to rise.

#### BREATHS
- Bag-mask device/technique is not recommended for a single rescuer to provide breaths during CPR.
- The rescue breath for an adult, child, or infant is effective when the chest rises visibly.
- During bag-mask ventilation, giving a breath just until you see the chest rise is recommended to minimize the risk of air entering the victim’s stomach (gastric inflation).
- The compression-ventilation ratio for 1-rescuer adult CPR and 2-rescuer adult CPR is 30:2.
- The compression-ventilation ratio for 2-rescuer child CPR is 15:2.
- The compression-ventilation ratio for 2-rescuer infant CPR is 15:2.
- Compression and ventilation rates for 2-rescuer CPR in the presence of an advanced airway is to compress at a rate of at least 100/120 per minute, 1 breath every 6 to 8 seconds.
- When administering breaths by using a bag-mask device for a child who is not breathing but does have a pulse, the rescuer should give breaths at the rate of 1 breath every 3 to 5 seconds.

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