

# BLS Study Guide 2020

Component	Adults and Adolescents	Children (age 1 year to puberty)	Infants (age less than 1 year, excluding newborns)
Verifying scene safety	Make sure the environment is safe for rescuers and victim		
Recognizing of cardiac arrest	Check for responsiveness No breathing or only gasping (ie, no normal breathing) No definite pulse felt within 10 seconds (Breathing and pulse check can be performed simultaneously in less than 10 seconds)		
Activating emergency response system	If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR  Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available	Witnessed collapse Follow steps for adults and adolescents on the left  Unwitnessed collapse Give 2 minutes of CPR  Leave the victim to activate the emergency response system and get the AED  Return to the child or infant and resume CPR; use the AED as soon as it is available	
Compression-ventilation ratio without advanced airway	1 or 2 rescuers 30:2	1 rescuer 30:2 2 or more rescuers 15:2	
Compression-ventilation ratio with advanced airway	Continuous compressions at a rate of 100-120/minute Give 1 breath every 6 seconds (10 breaths/minute)	Continuous compressions at a rate of 100-120/minute Give 1 breath every 2-3 seconds (20-30 breaths/minute)	
Compression rate	100-120/minute		
Compression depth	At least 2 inches (5 cm) *	At least one third AP diameter of chest Approximately 2 inches (5 cm)	At least one third AP diameter of chest Approximately 1 1/2 inches (4 cm)
Hand placement	2 hands on the lower half of the breastbone (sternum)	2 hands or 1 hand (optimal for very small child) on the lower half of the breastbone (sternum)	<i>1 rescuer</i> 2 fingers or 2 thumbs in the center of the chest, just below the nipple line  <i>2 or more rescuers</i> 2 thumb-encircling hands in the center of the chest just below the nipple line. If the rescuer is unable to achieve the recommended depth, it may be reasonable to use the heel of one hand
Chest recoil	Allow full recoil of chest after each compression; do not lean on the chest after each compression		
Minimizing interruptions	Limit interruption in chest compressions to less than 10 seconds with a CCF goal of 80%		

\* Compression depth should be no more than 2.4 inches (6 cm)

Abbreviations: AED, Automated External Defibrillator; AP, Anterior-Posterior; CCF, chest compression fraction; CPR, cardiopulmonary resuscitation

## High Quality CPR

- In team-based resuscitation attempt, two rescuers should alternate giving high-quality chest compressions
- Two rescuers begin CPR, alternating the compressor every 2 minutes to avoid fatigue supports high-quality CPR
- You witness a sudden collapse. The person is unresponsive, you hear gasping sounds, and there is no pulse-begin CPR; the gasps are not normal breathing
- A victim who is unresponsive with no normal breathing and no pulse requires high-quality CPR
- High quality CPR is compressing to a depth of at least 2 inches (5 cm)
- Performing high quality CPR is the most likely action to positively impact a victim's survival
- Quickly move bulky clothes out of the way. If a person's clothes are difficult to remove, you can still provide compressions over clothing.
- You and another rescuer begin CPR. After a few cycles, you notice the chest compressions rate is slowing. You should say "You need to compress at a rate of 100-120 per minute"
- You notice the person giving chest compressions is not allowing for complete chest recoil. Your next action is to tell the compressor you notice decreased chest recoil

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Additional material created to enhance and supplement the learning experience and is not AHA approved  
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## High Quality CPR

### COMPRESSIONS:

#### RATIO

- Ratio for compressions to breaths for 1-rescuer **ADULT, CHILD** and **INFANT** CPR is 30 compressions to 2 breaths

#### DEPTH

- Depth of compression for an **INFANT** is at least one third the depth of the chest, approximately 1 1/2 inches (4 cm)
- Depth of compression for a **CHILD** is at least one third the depth of the chest, approximately 2 inches (5 cm)
- Depth of compression for an **ADULT** is a depth of at least 2 inches (5 cm)

#### RATE

- Chest compressions for **ADULT, CHILD** and **INFANT** CPR is to compress at a rate of 100 to 120 per minute

#### RECOIL

- Allowing complete chest recoil is important when performing high quality CPR so the heart will adequately refill between compressions

### BREATHS:

- Rescuers ensure that they are providing effective breaths when using a bag-mask device by observing chest rise with each breath

### TWO RESCUERS:

- To support a team-based resuscitation attempt, 2 rescuers alternate giving high quality chest compressions
- Two rescuers begin high-quality CPR by alternating the compressor role every 2 minutes

## Team Dynamics

### TEAM DYNAMICS: 1.) Clear Roles and Responsibilities 2.) Knowing your Limitations 3.) Constructive Intervention

Match statement with appropriate element of team dynamics:

1. "The team functions smoothly when all team members know their positions, functions, and tasks during a resuscitation attempt"—Clear roles and responsibilities
2. "Members of the team know their boundaries and ask for help before the resuscitation attempt worsens"—Knowing your limitations
3. If the person giving chest compressions is not allowing for complete chest recoil, tell the compressor you notice decreased chest recoil—Constructive intervention

## Automated External Defibrillator-AED 3 P's—Power Pads Plug-in

- Defibrillation is important because it can restore a regular cardiac rhythm
- Early defibrillation is important to survival because it eliminates the abnormal heart rhythm
- When the AED arrives, the first step is to turn on the AED
- When an AED becomes available, remove all clothes that cover the chest. AED pads must NOT be placed over any clothing.
- After the AED pads are attached to the person's bare chest and the AED detects ventricular fibrillation, the next step is to follow the AED prompts
- Special circumstance to consider when using an AED on a hairy chest, the pads may not stick and may fail to deliver a shock
- If you need to use an AED on someone who has been submerged in water, pull the person out of water, and wipe the chest before attaching the AED pads

## Foreign Body Airway Obstruction - Choking

- The first course of action for a victim with a foreign-body airway obstruction who becomes unresponsive, start CPR, beginning with chest compressions
- When performing CPR on an unresponsive choking person each time you open the airway, look for the obstructing object
- An **INFANT** is responsive and choking with a severe airway obstruction, give sets of 5 back slaps and 5 chest thrusts
- When an **INFANT** becomes unresponsive, perform CPR, and look in the mouth for the obstructing object before you give each breath

## Chest Compression Fraction (CCF)

- Chest Compression Fraction is the amount of time during a cardiac arrest event that high-quality chest compressions are performed. Improving CCF to achieve the 81% threshold has been shown to increase survival by 200% to 300%
- CCF = actual chest compression time / total code time

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