

# The ABC & 1-2-3 (D) of CPR

| MANUEVER  | ADULT  | CHILD   | INFANT   |
|---|--|---|--|
| HCP - Healthcare Provider   | Adolescent and older   | 1 year to adolescent<br>(about 12-14 years old)   | Less than 1 year of age  |
| Establish that the victim does not respond<br>Activate the emergency response system.                           | Activate the emergency response system as soon as the victim is found unresponsive<br>If asphyxial arrest likely, call after 5 cycles (2 minutes) of CPR   | Activate the emergency response system after giving 5 cycles of CPR<br>For sudden, witnessed collapse, activate after verifying that victim unresponsive  |  |
| <b>AIRWAY</b><br>Open the Airway<br>Use head tilt-chin lift.  | Head tilt-chin lift (Suspected head and neck trauma, use jaw-thrust)   |   |  |
| <b>BREATHING</b><br>Check breathing<br>If the victim is not breathing, give 2 breaths that make the chest rise. | Open the airway, look, listen, and feel.<br>Take at least 5 seconds and no more than 10 seconds.   |   |  |
| First 2 breaths   | Give 2 breaths<br>(1 second each)  |   |  |
| Rescue breathing without chest compressions   | 1 breath every 5 to 6 seconds<br>(approximately)   | 1 breath every 3 to 5 seconds<br>(approximately)  |  |
| Rescue breaths for CPR with advanced airway   | 1 breath every 6 to 8 seconds  |   |  |
| <b>CIRCULATION</b><br>Check Pulse<br>At least 5 seconds and no more than 10 seconds.                            | Carotid pulse<br>If no pulse, start CPR  | Carotid pulse<br>If no pulse or pulse is less than 60 bpm with signs of poor perfusion, start CPR   | Brachial pulse<br>If no pulse or pulse is less than 60 bpm with signs of poor perfusion, start CPR |
| Start CPR   |  |   |  |
| ♥ Compression rate  | 100 per minute   |   |  |
| ♥ Compression location  | Center of breastbone, between nipples  |   | Just below the nipple line on breastbone   |
| ♥ Compression method<br>Push hard and fast, allow complete recoil   | 2 Hands: Heel of 1 hand with second hand on top  | 2 Hands: Heel of 1 hand with second hand on top OR<br>1 Hand: Heel of 1 hand only   | 1-rescuer: 2 fingers<br>2-rescuers: 2 thumbs-encircling hands                                      |
| ♥ Compression depth   | 1 ½ to 2 inches  | 1/3 to 1/2 the depth of the chest   |  |
| ♥ Compression-ventilation ratio   | 30:2 for 1-or 2-rescuer CPR  | 30:2 for 1-rescuer CPR<br>15:2 for 2-rescuer CPR  |  |
| <b>DEFIBRILLATION</b>   | ADULT: over 8 years  | CHILD: 1-8 years  | INFANT: Under 1 year of age  |
| Automated External Defibrillator - AED  | All: Use adult pads ONLY.<br>Do <u>not</u> use child pads.<br><br>HCP: For out-of-hospital response provide 5 cycles/ 2 minutes of CPR before shock if response time greater than 4 to 5 minutes<br><br>Use AED as soon as available for witnessed sudden collapse | All: Use child pads for child 1 to 8 years if available. If child pads not available, use adult AED pads<br><br>HCP: For out-of-hospital response provide 5 cycles/ 2 minutes of CPR before shock<br><br>Use AED as soon as available for witnessed sudden collapse | No recommendation for infants less than 1 year of age  |

## RESCUE TECHNIQUES - ABC and D

**Unresponsiveness:** After determining that the scene is safe, check to see if victim is responsive. If the adult victim is unresponsive, send someone to activate the emergency response system (EMS) - phone 911 and get the AED.

“Phone FIRST” versus “Phone FAST” if rescuer is ALONE

1. If alone the rescuer phones 911 immediately after discovering an unresponsive adult victim and then returns to begin CPR. The goal of the “phone first” approach is fast arrival of EMS professionals able to attach and use a defibrillator.  
EXCEPTION: if asphyxial arrest is likely, call after 5 cycles of CPR (2 minutes).
2. If alone the rescuer calls out for “help” immediately for infants and children and begins the ABCs of CPR and then phones 911 after 2 minutes of rescue support. The goal of “phone fast” approach is to deliver oxygen immediately because the most common cause of cardiac arrest in infants and children is a severe airway breathing problem, respiratory arrest, or shock.  
EXCEPTION: for sudden, witnessed collapse of child or infant, activate EMS immediately after verifying that victim is unresponsive.

Therefore, if you are alone and find an infant who is not responsive, you begin the steps of CPR and activate the emergency response system after you give 5 cycles of CPR (about 2 minutes).

**Airway:** Open the Airway.

- ♥ The *head tilt-chin lift* is the best way to open unresponsive victim’s airway when you do NOT suspect cervical spine injury.
- ♥ The *jaw-thrust* with cervical spine immobilization is used for opening airway without tilting the head or moving the neck if a neck injury is suspected—after two unsuccessful attempts, use *head tilt-chin lift*.

**Breathing:** Check for Breathing.

- ♥ Look, Listen, and Feel for breathing. Check for breathing by looking to see chest rise and fall when the victim breathes, listening and feeling for airflow through victim’s nose and mouth.
- ♥ Next, pinch the victim’s nose closed and give 1 breath (blow for 1 second), watching for the chest to rise. If the chest does not rise, make a second attempt to open the airway with a head tilt-chin lift. Then give 1 breath (blow for 1 second) and watch for the chest to rise.
- ♥ Some victims may continue to demonstrate agonal or gasping breaths for several minutes after a cardiac arrest, but these breaths are too slow or too shallow and will not maintain oxygenation. Perform rescue breathing.

**Circulation:** Check for a Pulse.

**Push Hard. Push Fast. Allow for Full Chest Recoil. Minimize Interruptions. Avoid Hyperventilation.**

- ♥ The best location for performing a pulse check for an adult is the carotid artery of the neck.
- ♥ You should start cycles of chest compressions and breaths when the victim is unresponsive, is not breathing adequately, and does not have a pulse.
- ♥ Proper compression technique requires the right rate and depth of compressions, as well as full chest recoil. Take your weight off your hands and allow the chest to come back to its normal position. Full chest recoil maximizes the return of blood to the heart after each compression.
- ♥ The rate of performing chest compressions for a victim of any age (adult, child and infant) is at a rate of 100 compressions per minute.
- ♥ Compressions on the adult, two hands are placed in the center of the chest between the nipples on the lower half of the sternum.

- ♥ Correct technique to perform chest compressions on a child use the heel of one (or two) hand(s) in the center of the chest between the nipples.
- ♥ The best way to describe how you and a second rescuer can give CPR to an infant together using the 2-thumb encircling hands technique, is that you switch to cycles of 15 compressions and 2 breaths with one rescuer giving chest compressions and the other giving breaths.
- ♥ Minimizing interruptions in chest compressions will increase the victim's chance of survival.

**Defibrillation:** Attach the Automated External Defibrillator (AED).

- ♥ The probability of successful defibrillation diminishes rapidly over time. Immediate CPR and defibrillation within no more than 3 to 5 minutes gives an adult in sudden cardiac arrest the best chance of survival.
- ♥ The AED is used on an adult victim and may be used on a child victim over the age of 1 yr.
- ♥ Only use adult AED pads when performing defibrillation on an adult.
- ♥ Child victim: Rescuer should use pediatric pads when available for children ages 1 to 8 yr. If not available use adult pads making sure that they do not touch each other.
- ♥ Adult or Child victim: Place one pad on the victim's upper right chest just below the collar bone and right of the sternum and the other pad on the left side and below the nipple, being careful that the pads do not touch.
- ♥ Steps for defibrillation are: **1.**Power on the AED & attach pads, **2.**clear the victim and allow the AED to analyze the rhythm, **3.**clear the victim and deliver shock, if advised.
- ♥ Make sure to clear the victim before shocking so that you and others helping do not get shocked.
- ♥ If no shock is advised, leave the AED pads on the victim and continue CPR, beginning with compressions.
- ♥ CPR alone may not save the life of a sudden cardiac arrest victim. Early defibrillation is needed.

**FOREIGN BODY AIRWAY OBSTRUCTION - CHOKING**

- ♥ The best way to relieve severe choking in a responsive adult or child - Perform abdominal thrusts.
- ♥ The best action to relieve severe choking in a responsive infant – Begin cycles of 5 back slaps, followed by 5 chest thrusts.
- ♥ When a choking victim becomes unresponsive (adult, child, or infant) – Begin CPR. When you open the airway, look for and remove the object (if seen) before giving rescue breaths.

## **MAJOR CHANGES IN BLS FOR HEALTHCARE PROVIDERS (Currents Winter 2005, p. 11)**

### **Major changes in BLS for HCP include the following:**

- ♥ Healthcare provider “child” CPR guidelines now apply to victims 1 year to the onset of puberty.
- ♥ Lone healthcare providers should tailor their sequence of actions for the most likely cause of arrest in victims of all ages.
- ♥ “Phone first” and get the AED and return to start CPR and use the AED for all adults and any children with out-of hospital *sudden collapse*.
- ♥ “CPR first” (provide about 5 cycles or 2 minutes of CPR before activating the emergency response number) for unresponsive infants and children (except infants and children with sudden, witnessed collapse) and for all victims of likely *hypoxic* (asphyxial) arrest (eg, drowning, injury, drug overdose).
- ♥ Opening the airway remains a priority for an unresponsive trauma victim with suspected cervical spine injury; if a jaw thrust without head extension does not open the airway, healthcare providers should use the head tilt–chin lift maneuver.
- ♥ Basic healthcare providers check for “adequate” breathing in adults and presence or absence of breathing in infants and children before giving rescue breaths. Advanced providers will look for “adequate” breathing in victims of all ages and be prepared to support oxygenation and ventilation.
- ♥ Healthcare providers may need to try “a couple of times” to reopen the airway and deliver effective breaths (i.e., breaths that produce visible chest rise) for infant and child victims.
- ♥ Excessive ventilation (too many breaths per minute or breaths that are too large or too forceful) may be harmful and should not be performed.
- ♥ Chest compressions are recommended if the infant or child heart rate is less than 60 per minute with signs of poor perfusion despite adequate oxygenation and ventilation. This recommendation was part of the 2000 guidelines but was not emphasized in courses. It will now be emphasized in the courses.
- ♥ Rescuers must provide compressions of adequate rate and depth and allow adequate chest recoil with minimal interruptions in chest compressions.
- ♥ Use 1 or 2 hands to give chest compressions for a child; press on the sternum at the nipple line. For the infant, press on the sternum just below the nipple line.
- ♥ During 2-rescuer infant CPR, the 2 thumb–encircling hands technique should include a thoracic squeeze.
- ♥ Healthcare providers should use a 30:2 compression-to-ventilation ratio for 1-rescuer CPR for victims of all ages and for 2-rescuer CPR for adults. Healthcare providers should use a 15:2 compression to-ventilation ratio for 2-rescuer CPR for infants and children.
- ♥ During 2-rescuer CPR with an advanced airway in place, rescuers no longer provide cycles of compressions with pauses for ventilation. The compressor provides continuous compressions and the rescuer providing rescue breaths gives 8 to 10 breaths per minute (1 breath about every 6 to 8 seconds).
- ♥ When 2 or more healthcare providers are present during CPR, rescuers should rotate the compressor role every 2 minutes.
- ♥ Actions for foreign body airway obstruction relief were simplified.

### **What did NOT change:**

- ♥ Checking for response
- ♥ Pulse check
- ♥ Rescue breathing without chest compressions
- ♥ Location of hands or fingers for adult chest compressions
- ♥ Compression rate
- ♥ Compression depth for adults, infants, or children (note that for infants and children the depth of compression is listed as one third to one half the depth of the chest and is no longer listed in inches)
- ♥ Ages for use of infant BLS recommendations