

## Testing

### Testing for Course Completion

#### Course Completion Requirements

To receive a course completion card, students must complete all cognitive components of the course, either through the instructor-led course or HeartCode BLS. Students in the instructor-led course must also pass a cognitive exam with a passing score of at least 84%. In addition, students must pass all psychomotor skills assessments, including independent skills test showing proficiency as outlined on the Adult CPR and AED and Infant CPR Skills Testing Checklists. Skills tests will be completed with a feedback device to ensure requirements are met.

#### When to Give Tests

You will test students as outlined in the lesson plans.

Skills testing is performed during the hands-on skills session of HeartCode BLS or in the instructor-led course. It can be administered during the course or at the end, at the discretion of the instructor. Please refer to the lesson plans for when to administer skills testing.

The cognitive exam is administered at the conclusion of the BLS Course. HeartCode BLS has cognitive assessment incorporated throughout the online portion, so an exam does not need to be given to HeartCode students.

#### Skills Testing

As part of the emphasis on better teaching and learning, the AHA developed CPR skills tests to ensure that there is a uniform and objective approach for testing CPR skills.

The skills testing checklists help instructors evaluate each student's CPR skills. The AHA-approved HeartCode-compatible manikin is designed to align with the skills testing checklists. As a result of the course design and skills tests, the AHA expects that students in CPR classes will learn more effectively and instructors will work with students to achieve higher levels of CPR skills competency.

CPR competency is critical to victim survival. It is important that you use the skills testing checklists to evaluate each student's performance and to ensure consistent testing and learning across all AHA BLS courses. In addition, students must use a CPR feedback device during skills tests, allowing you to accurately monitor their compression rate, depth, and recoil as well as ventilation rate and volume. Your adherence to these testing procedures will enhance the CPR competency of your students.

You must keep a copy of completed skills testing checklists for students who are unsuccessful. For records retention, refer to the *Program Administration Manual*.

## Using a Stopwatch

To achieve accuracy during the skills practice and testing, a stopwatch is used to measure the rate of compressions. Follow these rules when using a stopwatch:

- Start your stopwatch when the student first compresses the breastbone.
- Stop your stopwatch at the end of the 30th compression.
- Mark the step correct if the number of seconds is between 15 and 18 seconds.

## Using the Skills Testing Checklists and Critical Skills Descriptors

Use the skills testing checklists to document the student's performance during the skills testing portion of the course. The skills testing checklist should be filled out while the student is performing the skills. Use the skills testing critical skills descriptors to determine if a student has demonstrated each step of the skill correctly.

If the student successfully completes a step, place a check (✓) in the box to the left of the step on the skills testing checklist.

If the student is unsuccessful, leave the box next to the step blank on the skills testing checklist. Circle the step under the critical skills descriptor that the student did not complete successfully.

If a student demonstrates each step of the skills test successfully, mark the student as passing that skills test on the skills testing checklist. If a student does not receive checks in all boxes, refer the student to the remediation lesson at the end of the course for further testing in that skill. Also, discuss with the student the areas that you circled on the critical skills descriptors and how to correctly perform each skill that was circled.

You should be very familiar with all the critical skills descriptors to be able to test BLS skills correctly.

## Understanding the Adult CPR and AED Skills Testing Checklist

### *Assessment and Activation*

The steps in this box do not have to be completed in a specific order; the student only needs to complete all of the steps before beginning compressions. In addition, the student must take no less than 5 seconds and no more than 10 seconds to check breathing and check a pulse (ideally these checks should be done at the same time).

Once the student shouts for help, the instructor should say, "Here's the barrier device. I am going to get the AED."

### *Adult Compressions*

During this section, evaluate the student's ability to perform high-quality chest compressions. Feedback devices are required to objectively evaluate chest compressions, and high-fidelity manikins are recommended as the optimal feedback device. Compressions should be initiated within 10 seconds after recognizing cardiac arrest.

### *Hand Placement*

Evaluate the student to ensure that hand placement is on the lower half of the breastbone (sternum) and that the heel of the hand is used. When the student uses 2 hands, the second hand is placed on top of or grasping the wrist of the first hand.

### *Rate*

Compression rate should be evaluated by using a feedback device and a stopwatch. To achieve a rate of 100 to 120 compressions per minute, students should deliver 30 compressions in 15 to 18 seconds.

### **Depth and Recoil**

Evaluating depth and recoil in the absence of a feedback device or a manikin is unreliable. To increase the validity and reliability of the test, you must use commercial feedback devices or manikins that have the capability to objectively evaluate depth and recoil. High-fidelity manikins, with lights or an electronic display that indicates correct depth and recoil, are highly recommended. Manikins with a depth indicator that makes a clicking sound when compressions are deep enough are acceptable.

Tip: To help students achieve adequate compression depth and to minimize fatigue, instruct them to perform chest compressions with their elbows locked and their shoulders over the victim.

### **Adult Breaths**

Breaths should be given only with a barrier device, such as a pocket mask or face shield. The device used should be similar to what the students will be using in their workplace. If the type of device is unknown, instructors should provide students with the device they used in training. In some circumstances, a workplace may have only a bag-mask device available. In these instances, students may complete their skills test with a bag-mask device. Instructors should emphasize that in the clinical setting, a rescuer will not be able to deliver 2 breaths within 10 seconds when using a bag-mask device during 1-rescuer CPR.

### **Each Breath Given Over 1 Second**

Students should open the victim's airway by using the head tilt–chin lift. Each student should deliver 2 breaths. Each breath should be given over 1 second while the student observes for chest rise.

### **Visible Chest Rise**

Students should deliver just enough air for visible chest rise.

Tip: If students are having difficulty providing breaths, ensure that they have a proper seal and that the airway is open. You might need to help students with their hand placement on the pocket mask or bag-mask device so that they can get a proper seal.

### **Minimizing Interruptions**

The pause from the end of the last compression in a cycle to the beginning of the first compression of the next cycle should be no more than 10 seconds. This can be challenging to achieve with a bag-mask device.

### **Adult Cycle 2**

Students should deliver another set of 30 compressions and 2 breaths. Evaluate students with the same criteria as in Cycle 1.

### **Adult AED**

The second rescuer (either another student or the instructor) may participate in the delivery of CPR or bring the AED.

The instructor or a second student can arrive with an AED and hand it to the first student. The second student or the instructor can take over compressions. If a second student is not available, the instructor can hand the student the AED and instruct the student to use the AED. The instructor can tell the student that another rescuer is providing chest compressions. It is important that students understand that the attachment of AED pads should not interrupt chest compressions.

The student should turn the AED on as required for his or her specific device; this may require the student to push the power button on the AED, or the AED may turn on automatically when the case is opened. Students should attach the AED pads to the manikin by following the pictures on the pads. Students should follow the prompts of the AED they

are using. Instructors should be aware that some of the AED steps outlined on the skills testing checklist might not be completely applicable to all devices. Some AEDs require the patient to be cleared during the analysis and charging cycle, and some AEDs allow compressions to be continued while the device is charging. Instructors should encourage their students to contact the manufacturer of their particular device to understand the device's capabilities. Once the AED is ready to deliver a shock, the student should clear the patient both verbally and visually. Once everyone is clear, the student should press the shock button and then resume compressions immediately.

*Note:* An AED is not used in infant testing.

### ***Resumes Compressions***

The student being evaluated should begin compressions immediately after the shock is delivered or tell the instructor to begin compressions immediately after the shock is delivered. Evaluate the student's ability to begin compressions immediately after the shock delivery. Evaluate the student with the same criteria for compressions as in Cycle 1; if the student resumes compressions or directs the instructor to begin compressions immediately, stop the test.

### ***Test Results***

If the student successfully performs all of the skills, circle "Pass" on the student's skills testing checklist. If the student does not successfully perform all of the skills, circle "NR" for needs remediation. The instructor should retest (reevaluate) the student on the skills that were not performed correctly by using a new skills testing checklist. If remediation is needed, both the skills testing checklist that indicated the need for remediation and the new skills testing checklist indicating that the student passed should be stored with the course records. Provide your initials, your instructor ID, and the date in the box at the end of the checklist.

## Basic Life Support Adult CPR and AED Skills Testing Checklist



Student Name \_\_\_\_\_ Date of Test \_\_\_\_\_

Hospital Scenario: "You are working in a hospital or clinic, and you see a person who has suddenly collapsed in the hallway. You check that the scene is safe and then approach the patient. Demonstrate what you would do next."

Prehospital Scenario: "You arrive on the scene for a suspected cardiac arrest. No bystander CPR has been provided. You approach the scene and ensure that it is safe. Demonstrate what you would do next."

### Assessment and Activation

- Checks responsiveness       Shouts for help/Activates emergency response system/Sends for AED  
 Checks breathing       Checks pulse

Once student shouts for help, instructor says, "Here's the barrier device. I am going to get the AED."

### Cycle 1 of CPR (30:2) \*CPR feedback devices are required for accuracy

#### Adult Compressions

- Performs high-quality compressions\*:  
 • Hand placement on lower half of sternum  
 • 30 compressions in no less than 15 and no more than 18 seconds  
 • Compresses at least 2 inches (5 cm)  
 • Complete recoil after each compression

#### Adult Breaths

- Gives 2 breaths with a barrier device:  
 • Each breath given over 1 second  
 • Visible chest rise with each breath  
 • Resumes compressions in less than 10 seconds

### Cycle 2 of CPR (repeats steps in Cycle 1) Only check box if step is successfully performed

- Compressions       Breaths       Resumes compressions in less than 10 seconds

Rescuer 2 says, "Here is the AED. I'll take over compressions, and you use the AED."

### AED (follows prompts of AED)

- Powers on AED       Correctly attaches pads       Clears for analysis  
 Clears to safely deliver a shock       Safely delivers a shock

### Resumes Compressions

- Ensures compressions are resumed immediately after shock delivery  
 • Student directs instructor to resume compressions or  
 • Second student resumes compressions

## STOP TEST

### Instructor Notes

- Place a check in the box next to each step the student completes successfully.
- If the student does not complete all steps successfully (as indicated by at least 1 blank check box), the student must receive remediation. Make a note here of which skills require remediation (refer to instructor manual for information about remediation).

**Test Results** Circle **PASS** or **NR** to indicate pass or needs remediation:

**PASS**

**NR**

Instructor Initials \_\_\_\_\_ Instructor Number \_\_\_\_\_ Date \_\_\_\_\_

## Basic Life Support

**Adult CPR and AED****Skills Testing Critical Skills Descriptors**

- 1. Assesses victim and activates emergency response system (this *must* precede starting compressions) within 30 seconds. After determining that the scene is safe:**
  - Checks for responsiveness by tapping and shouting
  - Shouts for help/directs someone to call for help *and* get AED/defibrillator
  - Checks for no breathing or no normal breathing (only gasping)
    - Scans from the head to the chest for a minimum of 5 seconds and no more than 10 seconds
  - Checks carotid pulse
    - Can be done simultaneously with check for breathing
    - Checks for a minimum of 5 seconds and no more than 10 seconds
- 2. Performs high-quality chest compressions (initiates compressions immediately after recognition of cardiac arrest)**
  - Correct hand placement
    - Lower half of sternum
    - 2-handed (second hand on top of the first or grasping the wrist of the first hand)
  - Compression rate of 100 to 120/min
    - Delivers 30 compressions in 15 to 18 seconds
  - Compression depth and recoil—at least 2 inches (5 cm) and avoid compressing more than 2.4 inches (6 cm)
    - Use of a commercial feedback device or high-fidelity manikin is required
    - Complete chest recoil after each compression
  - Minimizes interruptions in compressions
    - Delivers 2 breaths so less than 10 seconds elapses between last compression of one cycle and first compression of next cycle
    - Compressions resumed immediately after shock/no shock indicated
- 3. Provides 2 breaths by using a barrier device**
  - Opens airway adequately
    - Uses a head tilt–chin lift maneuver or jaw thrust
  - Delivers each breath over 1 second
  - Delivers breaths that produce visible chest rise
  - Avoids excessive ventilation
  - Resumes chest compressions in less than 10 seconds
- 4. Performs same steps for compressions and breaths for Cycle 2**
- 5. AED use**
  - Powers on AED
    - Turns AED on by pushing button or lifting lid as soon as it arrives
  - Correctly attaches pads
    - Places proper-sized (adult) pads for victim's age in correct location
  - Clears for analysis
    - Clears rescuers from victim for AED to analyze rhythm (pushes analyze button if required by device)
    - Communicates clearly to all other rescuers to stop touching victim
  - Clears to safely deliver shock
    - Communicates clearly to all other rescuers to stop touching victim
  - Safely delivers a shock
    - Resumes chest compressions immediately after shock delivery
    - Does not turn off AED during CPR
- 6. Resumes compressions**
  - Ensures that high-quality chest compressions are resumed immediately after shock delivery
    - Performs same steps for compressions

## Understanding the Infant CPR Skills Testing Checklist

### **Assessment and Activation**

The steps in this box do not have to be completed in a specific order; the student only needs to complete all of the steps before beginning compressions. In addition, the student must take no less than 5 seconds and no more than 10 seconds to check breathing and check a pulse (ideally these checks should be done at the same time).

Once the student shouts for help, the instructor should say, "Here's the barrier device."

### **Infant Compressions**

During this section, evaluate the student's ability to perform high-quality chest compressions. Feedback devices are required to objectively evaluate chest compressions, and high-fidelity manikins are recommended as the optimal feedback device. Compressions should be initiated within 10 seconds after recognizing cardiac arrest.

#### **Finger Placement, Cycles 1 and 2 (1-Rescuer CPR)**

Evaluate the student to ensure that finger or thumb placement is in the center of the chest and 2 fingers or 2 thumbs are placed just below the nipple line.

#### **Finger Placement, Cycle 3 (2-Rescuer CPR)**

Evaluate the student's 2 thumb-encircling hands technique for infant compressions during 2-rescuer CPR. Ensure that the student's 2 thumbs are placed on the lower half of the breastbone, just below the nipple line.

#### **Rate, Cycles 1 and 2 (1-Rescuer CPR)**

Compression rate should be evaluated by using a feedback device and a stopwatch. To achieve a rate of 100 to 120 compressions per minute, students should deliver 30 compressions in 15 to 18 seconds.

#### **Rate, Cycle 3 (2-Rescuer CPR)**

Compression rate should be evaluated by using a feedback device and a stopwatch. To achieve a rate of 100 to 120 compressions per minute, students should deliver 15 compressions in 7 to 9 seconds.

### **Depth and Recoil**

Evaluating depth and recoil in the absence of a feedback device or a manikin is unreliable. To increase the validity and reliability of your testing experience, you must use commercial feedback devices that have the capability to objectively evaluate depth and recoil. High-fidelity manikins, with lights or an electronic display that indicates correct depth and recoil, are highly recommended. Manikins with a depth indicator that makes a clicking sound when compressions are deep enough are acceptable. If the student cannot achieve the recommended depth, you can tell the student that it may be reasonable to use the heel of 1 hand.

### **Infant Breaths**

Breaths should be given only with a barrier device, such as a pocket mask or face shield. The device used should be similar to what the students would be using in their workplace. If the type of device is unknown, instructors should provide students with the device they used in training. In some circumstances, a workplace may have only a bag-mask device available. In these instances, students may complete their skills test with a bag-mask device. Instructors should emphasize that in the clinical setting, a rescuer will not be able to deliver 2 breaths within 10 seconds when using a bag-mask device during 1-rescuer CPR.

#### **Breaths, Cycle 4 (2-Rescuer CPR)**

Breaths should be given with a bag-mask device.

### **Each Breath Given Over 1 Second**

Students should open the victim's airway by using the head tilt–chin lift. Each student should deliver 2 breaths. Each breath should be given over 1 second while the student observes for chest rise.

### **Visible Chest Rise**

Students should deliver just enough air for visible chest rise.

Tip: If students are having difficulty providing breaths, ensure they have a proper seal and that the airway is open. You might need to help students with their hand placement on the pocket mask or bag-mask device so that they can get a proper seal.

### **Minimizing Interruptions**

The pause from the end of the last compression in a cycle to the beginning of the first compression of the next cycle should be no more than 10 seconds. This can be challenging to achieve with a bag-mask device.

### ***Infant Cycle 2***

Students should deliver another 30 compressions and 2 breaths. Evaluate students with the same criteria as in Cycle 1.

### ***Infant Cycle 3***

The student being evaluated continues compressions while the second rescuer (either another student or the instructor) gets in position to provide breaths with a bag-mask device. The student being evaluated should provide compressions with the 2 thumb–encircling hands technique, with the 2 thumbs placed on the lower half of the breastbone, just below the nipple line. The test will end once the student has paused after 15 compressions so that the second rescuer can deliver 2 breaths.

Note: The students will switch roles at the end of this cycle, before Cycle 4.

### ***Infant Cycle 4***

The second student can continue compressions while the student being evaluated gets in position to provide breaths with a bag-mask device. After a cycle of 15 compressions, the student being evaluated should provide 2 breaths by using a bag-mask device. Each breath should be delivered over 1 second. Each breath should result in visible chest rise. There should be no more than a 10-second pause in compressions for the breaths to be delivered.

### ***Test Results***

If the student successfully performs all of the skills, circle "Pass" on the student's skills testing checklist. If the student does not successfully perform all of the skills, circle "NR" for needs remediation. The instructor should retest (reevaluate) the student on the skills that were not performed correctly by using a new skills testing checklist. If remediation is needed, both the skills testing checklist that indicated the need for remediation and the new skills testing checklist indicating that the student passed should be stored with the course records. Provide your initials, your instructor ID, and the date in the box at the end of the checklist.



## Basic Life Support Infant CPR Skills Testing Checklist (1 of 2)



Student Name \_\_\_\_\_ Date of Test \_\_\_\_\_

Hospital Scenario: "You are working in a hospital or clinic when a woman runs through the door, carrying an infant. She shouts, 'Help me! My baby's not breathing.' You have gloves and a pocket mask. You send your coworker to activate the emergency response system and to get the emergency equipment."

Prehospital Scenario: "You arrive on the scene for an infant who is not breathing. No bystander CPR has been provided. You approach the scene and ensure that it is safe. Demonstrate what you would do next."

### Assessment and Activation

- Checks responsiveness       Shouts for help/Activates emergency response system  
 Checks breathing               Checks pulse

Once student shouts for help, instructor says, "Here's the barrier device."

### Cycle 1 of CPR (30:2) \*CPR feedback devices are required for accuracy

#### Infant Compressions

- Performs high-quality compressions\*:
  - Placement of 2 fingers or 2 thumbs in the center of the chest, just below the nipple line
  - 30 compressions in no less than 15 and no more than 18 seconds
  - Compresses at least one third the depth of the chest, approximately 1½ inches (4 cm)
  - Complete recoil after each compression

#### Infant Breaths

- Gives 2 breaths with a barrier device:
  - Each breath given over 1 second
  - Visible chest rise with each breath
  - Resumes compressions in less than 10 seconds

### Cycle 2 of CPR (repeats steps in Cycle 1) Only check box if step is successfully performed

- Compressions       Breaths       Resumes compressions in less than 10 seconds

Rescuer 2 arrives with bag-mask device and begins ventilation while Rescuer 1 continues compressions with 2 thumb-encircling hands technique.

### Cycle 3 of CPR

#### Rescuer 1: Infant Compressions

- Performs high-quality compressions\*:
  - 15 compressions with 2 thumb-encircling hands technique
  - 15 compressions in no less than 7 and no more than 9 seconds
  - Compresses at least one third the depth of the chest, approximately 1½ inches (4 cm)
  - Complete recoil after each compression

#### Rescuer 2: Infant Breaths

*This rescuer is not evaluated.*

(continued)

Basic Life Support  
**Infant CPR**  
**Skills Testing Checklist (2 of 2)**



Student Name \_\_\_\_\_ Date of Test \_\_\_\_\_

(continued)

**Cycle 4 of CPR**  
**Rescuer 2: Infant Compressions**  
*This rescuer is not evaluated.*  
**Rescuer 1: Infant Breaths**

Gives 2 breaths with a bag-mask device:

- Each breath given over 1 second
- Visible chest rise with each breath
- Resumes compressions in less than 10 seconds

**STOP TEST**

<p><b>Instructor Notes</b></p> <ul style="list-style-type: none"> <li>• Place a check in the box next to each step the student completes successfully.</li> <li>• If the student does not complete all steps successfully (as indicated by at least 1 blank check box), the student must receive remediation. Make a note here of which skills require remediation (refer to instructor manual for information about remediation).</li> </ul>		
<p><b>Test Results</b>    Circle <b>PASS</b> or <b>NR</b> to indicate pass or needs remediation:</p>	<b>PASS</b>	<b>NR</b>
<p>Instructor Initials _____ Instructor Number _____ Date _____</p>		

## Basic Life Support

**Infant CPR****Skills Testing Critical Skills Descriptors**

- 1. Assesses victim and activates emergency response system (this *must* precede starting compressions) within 30 seconds. After determining that the scene is safe:**
  - Checks for responsiveness by tapping and shouting
  - Shouts for help/directs someone to call for help *and* get emergency equipment
  - Checks for no breathing or no normal breathing (only gasping)
    - Scans from the head to the chest for a minimum of 5 seconds and no more than 10 seconds
  - Checks brachial pulse
    - Can be done simultaneously with check for breathing
    - Checks for a minimum of 5 seconds and no more than 10 seconds
- 2. Performs high-quality chest compressions during 1-rescuer CPR (initiates compressions within 10 seconds after identifying cardiac arrest)**
  - Correct placement of hands/fingers in center of chest
    - 1 rescuer: 2 fingers or 2 thumbs 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*
  - Compression rate of 100 to 120/min
    - Delivers 30 compressions in 15 to 18 seconds
  - Adequate depth for age
    - Infant: at least one third the depth of the chest (approximately 1½ inches [4 cm])
    - Use of a commercial feedback device or high-fidelity manikin is required
  - Complete chest recoil after each compression
  - Appropriate ratio for age and number of rescuers
    - 1 rescuer: 30 compressions to 2 breaths
  - Minimizes interruptions in compressions
    - Delivers 2 breaths so less than 10 seconds elapses between last compression of one cycle and first compression of next cycle
- 3. Provides effective breaths with bag-mask device during 2-rescuer CPR**
  - Opens airway adequately
  - Delivers each breath over 1 second
  - Delivers breaths that produce visible chest rise
  - Avoids excessive ventilation
  - Resumes chest compressions in less than 10 seconds
- 4. Switches compression technique at appropriate interval as prompted by the instructor (for purposes of this evaluation). Switch should take no more than 5 seconds.**
- 5. Performs high-quality chest compressions during 2-rescuer CPR**
  - Correct placement of hands/fingers in center of chest
    - 2 rescuers: 2 thumb–encircling hands just below the nipple line
  - Compression rate of 100 to 120/min
    - Delivers 15 compressions in 7 to 9 seconds
  - Adequate depth for age
    - Infant: at least one third the depth of the chest (approximately 1½ inches [4 cm])
  - Complete chest recoil after each compression
  - Appropriate ratio for age and number of rescuers
    - 2 rescuers: 15 compressions to 2 breaths
  - Minimizes interruptions in compressions
  - Delivers 2 breaths so less than 10 seconds elapses between last compression of one cycle and first compression of next cycle

## Retesting Students

If time permits during skills testing, you may retest a student 1 additional time if the student did not pass. If a student does not pass a skills test after the second attempt, work with the student during the remediation lesson at the end of the course and retest at that time. All additional retesting is done at the end of the course during the remediation lesson. In every retesting case, test the student in the entire skill. In some cases, you may defer retesting to a later time after the course. For example, if remediation is not successful, you might develop a plan of improvement and schedule retesting once the student completes the plan. If a student needs substantial additional remediation, you may recommend that the student repeat a BLS course.