CPR Safety 411

CPR | First Aid | AED | BLS Training

Basic Life Support (BLS)

Student Guide

For healthcare providers and professional rescuers. Covers high-quality CPR for adults, children, and infants, AED use, rescue breathing, team CPR, choking relief, and opioid emergencies.

Based on the 2025 International Liaison Committee on Resuscitation (ILCOR) Consensus on Science with Treatment Recommendations (CoSTR) and the 2025 American Heart Association (AHA) Guidelines for CPR and Emergency Cardiovascular Care.

Name _____

Class date _____

Instructor _____

Location _____

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Use with the AHA BLS Provider Manual and hands-on instruction; this is not an official AHA publication.

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1. Welcome to Your BLS Course

This guide walks you through everything covered in class, in plain language. Read it before class if you can, and keep it handy afterward as a quick refresher. Your instructor will teach the hands-on skills and answer your questions. The guide helps it all stick.

What you will be able to do

- Recognize cardiac arrest and other life-threatening emergencies, and call for help quickly.
- Give high-quality CPR to adults, children, and infants.
- Use an AED (automated external defibrillator) safely and confidently.
- Give effective breaths with a barrier device or bag-mask device.
- Work as part of a two-rescuer team with clear roles and communication.
- Relieve choking in adults, children, and infants.
- Recognize a suspected opioid overdose and know where naloxone fits alongside CPR.

How to get the most from class

- Wear comfortable clothing. You will be kneeling and working at floor level.
- Practice on the manikins as if it were a real emergency. Say your steps out loud.
- Use feedback from the manikins or devices to adjust your rate, depth, and recoil.
- Ask questions. If something is unclear, others are probably wondering too.
- Your instructor will explain skills testing and any written exam at the start of class.

A note on this guide

Use current AHA course materials for course skills and testing. Workplace procedures may specify how to call for help or obtain equipment, but should not delay evidence-based CPR, ventilation, or defibrillation. Ask your instructor about any conflict.

2. What Is New in the 2025 Guidelines

ILCOR reviews resuscitation research on an ongoing basis and publishes its findings as the CoSTR. Resuscitation councils such as the American Heart Association use that evidence to write their own guidelines. In October 2025, the AHA released its updated Guidelines for CPR and ECC. The core of BLS has not changed: recognize quickly, start compressions, use an AED early, and minimize pauses. These are the updates you are most likely to notice in class.

Topic	What the 2025 guidance says	What it means for you
Chain of Survival	One unified Chain of Survival with six links now applies to adults and children, in and out of the hospital.	You learn one chain instead of several. See Section 3.

Topic	What the 2025 guidance says	What it means for you
Infant chest compressions	The two-finger technique is no longer used. Use the two-thumb encircling hands technique, or the heel of one hand.	Practice both methods on the infant manikin. See Section 8.
Choking: adults and children over 1 year	Alternate 5 back blows with 5 abdominal thrusts until the object comes out or the person becomes unresponsive.	Back blows now come first in the sequence. See Section 10.
Choking: infants	Alternate 5 back blows and 5 chest thrusts. Use the heel of one hand for thrusts.	The sequence stays 5 + 5; the chest-thrust hand technique changed. See Section 10.
Opioid emergencies	Naloxone is part of the BLS response when available. Do not delay CPR while naloxone is being considered.	See Section 11.
Positioning	Use a firm surface. Adjust your own position, such as using a step stool, so you can compress effectively.	Get the person onto a firm surface when you can do so without delay.
CPR for people with obesity	Use the same CPR technique as for any other person.	No special modifications are needed.
Head-up CPR	Not recommended outside of research settings.	Keep the person lying flat on a firm surface.
Mechanical CPR devices	Not recommended for routine use in adult cardiac arrest.	Manual high-quality CPR remains the standard.
Feedback devices	ILCOR strongly recommends CPR feedback devices during training.	You may see feedback lights, sounds, or apps in class.

Several recommendations in the 2025 guidance, including the 5 back blows plus 5 abdominal thrusts sequence, rest on limited evidence and expert consensus. Your instructor will teach the sequence your course materials require.

3. The Chain of Survival

Each link in the chain supports the next. A weak link lowers the chance of survival, and a strong chain improves it. The 2025 guidelines use one six-link chain for adults, children, and infants.

1. Recognition and emergency activation

Recognize unresponsiveness, absent or abnormal breathing, and no definite pulse; call for help and activate the emergency response system.

2. High-quality CPR

Provide effective compressions and breaths, with full recoil and minimal pauses.

3. Defibrillation

Apply and use an AED as soon as it is ready. Resume compressions immediately afterward.

4. Advanced resuscitation

EMS and healthcare teams provide additional resuscitation interventions.

5. Post-cardiac arrest care

After circulation returns, teams stabilize the person and treat the cause of arrest.

6. Recovery and survivorship

Ongoing care, rehabilitation, and emotional support help survivors and families.

Prevention and preparedness come before the chain. BLS providers directly support links 1, 2, and 3.

4. Before You Begin: Key Definitions and Scene Safety

Age groups used in BLS

Group	Definition
Infant	Less than 1 year old (excluding newborns in the first moments after birth)
Child	1 year to puberty: breast development in females or underarm hair in males.
Adult	Puberty and older

If you are unsure whether a person is a child or an adult, do not delay. Use the technique that fits their body size and keep going.

Cardiac arrest vs. respiratory arrest

- **Cardiac arrest:** The heart stops pumping effectively. The person is unresponsive and is not breathing or is only gasping. Give CPR and use an AED.
- **Respiratory arrest:** The person is not breathing normally but still has a pulse. Give rescue breathing. This is more common in children, drowning, and opioid overdose.

- **Gasping (agonal breathing):** Irregular, noisy gasps are not normal breathing. Treat the person as if they are not breathing.

Scene safety

- Make sure the scene is safe for you, the person, and bystanders before you approach.
- Use gloves and a barrier device when available.
- Look for hazards such as traffic, water, electrical sources, fire, or violence.
- If the scene is not safe and you cannot make it safe, call for help rather than putting yourself at risk.

Activating emergency response

In most settings this means calling 911 (or your facility's emergency number) and getting an AED. If you are alone with a mobile phone, put it on speaker so you can talk to the dispatcher while you work. Dispatchers can coach you through CPR and AED use.

5. Adult BLS: Step by Step

This is the sequence for a single rescuer who finds an adult who may be in cardiac arrest. Later sections cover children, infants, and teams.

1	**Check the scene.** Make sure it is safe. Put on gloves if available.
2	**Check for response.** Tap the person's shoulders and shout, "Are you okay?"
3	**Call for help.** Shout for nearby help. Activate emergency response and get an AED, or send someone to get them. If alone, use your mobile phone on speaker.
4	**Check breathing and pulse at the same time.** Look at the chest for no more than 10 seconds. For the pulse, feel the carotid artery in the neck. If there is no normal breathing and no definite pulse, start CPR.
5	**Start compressions.** Place the person on a firm, flat surface. Give 30 compressions, then 2 breaths. Continue in cycles of 30:2.
6	**Use the AED as soon as it arrives.** Turn it on and follow the prompts. See Section 7.
7	Continue CPR. If signs of life return, briefly reassess breathing and pulse. Pause for AED analysis or shock and resume promptly. Stop when help takes over, the scene becomes unsafe, or you cannot continue.

If there is a pulse but no normal breathing

- Give rescue breaths: 1 breath every 6 seconds (about 10 breaths per minute) for an adult.
- Recheck the pulse about every 2 minutes. If the pulse is lost, start CPR.
- If you suspect an opioid overdose, give naloxone if available. See Section 11.

Who needs CPR?

What you find	What to do
No pulse and not breathing normally (this includes gasping)	Start high-quality CPR and use an AED. Gasping is a sign of cardiac arrest, not normal breathing.
Pulse present, but not breathing normally	Give rescue breaths. For a child or infant with pulse <60/min and poor perfusion despite oxygenation and ventilation, start CPR.
Pulse present and breathing normally	Keep watching and recheck. CPR is not needed.
Choking but able to speak or cough forcefully	Encourage coughing and stay close. CPR is not needed. See Section 10.

Check breathing and the pulse at the same time so you do not delay CPR. If you see someone suddenly collapse and they are unresponsive, gasping, and have no pulse, activate emergency response and begin CPR. High-quality CPR is the action most likely to improve survival from sudden cardiac arrest.

Remember

Healthcare providers: if unresponsive, not breathing normally, and no definite pulse within 10 seconds, start CPR. A definite pulse with inadequate breathing calls for rescue breathing.

6. High-Quality CPR

The quality of CPR matters as much as starting it. Blood flow to the brain and heart depends on strong, steady, uninterrupted compressions.

	Adult	Child (1 year to puberty)	Infant (under 1 year)
Hand position	Heel of one hand on the lower half of the breastbone (not the upper third), other hand on top	Heel of one or two hands on the lower half of the breastbone	Two thumbs encircling the chest, or heel of one hand, on the lower half of the breastbone
Compression rate	100 to 120 per minute	100 to 120 per minute	100 to 120 per minute
Compression depth	At least 2 in (5 cm); avoid deeper than 2.4 in (6 cm)	At least one third of the chest depth (front to back), about 2 inches (5 cm)	At least one third of the chest depth (front to back), about 1.5 inches (4 cm)
Ratio, 1 rescuer	30:2	30:2	30:2
Ratio, 2 rescuers	30:2	15:2	15:2
Chest recoil	Allow full recoil. Do not lean on the chest.	Same	Same
Pulse check site	Carotid (neck)	Carotid (neck) or femoral (groin)	Brachial (inside upper arm)

	Adult	Child (1 year to puberty)	Infant (under 1 year)
Rescue breaths only	1 every 6 seconds	1 every 2 to 3 seconds	1 every 2 to 3 seconds
With an advanced airway	Continuous compressions, 1 breath every 6 seconds	Continuous compressions, 1 breath every 2 to 3 seconds	Same as child

The five components of high-quality CPR

- **Rate:** 100 to 120 compressions per minute. Think of a steady, firm beat.
- Depth: Adults at least 2 in (5 cm); avoid exceeding 2.4 in (6 cm).
- **Recoil:** Let the chest come all the way back up between compressions. The heart refills with blood during recoil. Incomplete recoil reduces filling and lowers the blood flow your compressions create.
- **Minimal interruptions:** Keep pauses as short as possible, ideally under 10 seconds. Aim to spend as much of each minute as you can giving compressions.
- **Effective breaths:** About 1 second each, with visible chest rise. Avoid giving too many breaths or breathing too hard.

Switching compressors

Switch compressors about every 2 minutes, or sooner if tired or quality drops. About 5 cycles of 30:2 approximates 2 minutes; 5 cycles of pediatric 15:2 does not. Coordinate with AED analysis when possible and keep the swap under 5 seconds.

Positioning

- Place the person on a firm, flat surface. If they are on a bed or sofa, move them to the floor when you can do so quickly.
- Kneel beside the chest. Keep your shoulders over your hands and your arms straight.
- Use a step stool if you are standing at a raised bed and cannot compress effectively from the floor.
- Use the same technique for people of all body sizes.

Using feedback devices

Many manikins and devices show your rate, depth, and recoil in real time. In training, watch these numbers and adjust. In real life, a feedback device can help you stay on target, but never delay CPR to find or set one up.

7. Using an AED

An AED analyzes the heart rhythm and delivers a shock if one is needed. AEDs are designed for everyday use and give voice prompts. Early defibrillation is one of the biggest factors in survival from certain heart rhythms.

Why early defibrillation matters

Some cardiac arrests are caused by an abnormal heart rhythm. The AED identifies rhythms as shockable or nonshockable. A shock stops the abnormal rhythm and resets the heart's electrical system, so a normal rhythm may return. It does not guarantee success, and it does not replace CPR. The sooner it is delivered, the better the chance of survival.

AED steps

1	**Open the AED and turn it on if needed, then follow the prompts.** Prompts may be voice or screen messages. Keep compressions going until the pads are ready.
2	**Expose the chest.** Remove or cut clothing. Dry the chest if it is wet. Remove any medication patches and wipe the area.
3	**Attach the pads.** Peel and place them as shown on the pads. For adults, one pad goes on the upper right chest below the collarbone and the other on the left side below the armpit.
4	**Let the AED analyze.** Make sure no one is touching the person while the AED checks the rhythm.
5	**Deliver a shock if advised.** Before you press the shock button, clear the person: make sure no one is touching them, say loudly, "Everybody clear!", and look to confirm. Then press the shock button.
6	**Resume CPR right away,** starting with compressions, for about 2 minutes. Follow the AED prompts for the next rhythm check.

Special situations with AEDs

Situation	What to do
Child under 8	Use child pads or a child dose-attenuator key if the AED has one. If not available, use adult pads rather than waiting.
Pads might touch (small child or infant)	Place one pad on the front of the chest and one on the back, between the shoulder blades.
Infant under 1 year	Use an AED immediately, with pediatric attenuation if available. A trained clinician may use a manual defibrillator. If pediatric attenuation is unavailable, use the available AED rather than delay.
Wet person or wet surface	Do not use an AED in water. Pull the person out of the water. If the chest is wet, quickly wipe it dry, then attach the pads.
Medication patch on chest	Remove the patch with gloved hands and wipe the area before placing the pad. Do not place a pad over a patch.
Implanted device (pacemaker or ICD)	Look for a lump under the skin. Place the pad at least 1 inch (2.5 cm) away from it. A pacemaker or ICD is not a reason to skip the AED.
Hairy chest	Pads can stick to hair instead of skin, and the AED may show a "check electrodes" message. Trim or shave the area with the razor from the kit. If there is no razor but you have a second set of pads, use the first set to pull off the hair, then apply the second set. Do not delay.

Safety first

Never touch the person while the AED is analyzing or delivering a shock. Do not use alcohol to wipe the chest.

8. Children and Infants

The steps are similar to adults, but cardiac arrest in children is more often caused by breathing problems. For that reason, breaths are especially important.

Single rescuer: child or infant

1. Check safety and response. Shout for help. Use a mobile phone on speaker to activate emergency response without leaving the child or infant.

2. Check breathing and pulse together for up to 10 seconds (child: carotid or femoral; infant: brachial). If no definite pulse, begin CPR.

3. If you must leave to call or get an AED: after a witnessed sudden collapse, activate response and get the AED first. Otherwise give about 2 minutes of CPR before leaving.

4. One rescuer gives 30 compressions and 2 breaths. Use the AED as soon as it is ready. If another rescuer arrives, send them for the AED.

5. A definite pulse with inadequate breathing calls for 1 breath every 2 to 3 seconds. Start CPR if the pulse is below 60/min with poor perfusion despite oxygenation and ventilation.

When a second rescuer arrives

- If you started CPR alone and have already activated emergency response, send the second rescuer to **get the AED**.
- When the AED arrives, attach the pads and follow the prompts. After a shock, resume CPR right away.
- With two rescuers, use **15 compressions to 2 breaths** for children and infants. A single rescuer uses 30:2.
- For a child, compress at least one third of the chest depth (front to back), about 2 inches (5 cm).

Infant compression technique

The two-finger technique is no longer used. Use one of the following:

Two-thumb encircling hands: Support the back with your hands and press straight down on the lower half of the breastbone with both thumbs.
Heel of one hand: Press on the lower half of the breastbone. Use this when you cannot encircle the chest effectively.
With either technique, reach at least one third of chest depth (about 1.5 in / 4 cm).

- Keep the infant on a firm, flat surface. Allow full chest recoil.

Rescue breathing in children and infants

- Give 1 breath every 2 to 3 seconds (about 20 to 30 breaths per minute) if there is a pulse but breathing is absent or inadequate.
- For infants, cover the mouth and nose with your mouth, or use a pediatric mask. Give gentle puffs of air, just enough to see the chest rise.
- If the pulse stays below 60 per minute with poor perfusion despite good oxygenation and ventilation, begin compressions. Your instructor will review this.

Drowning and breathing-related arrest

After drowning, provide CPR with breaths. Healthcare professionals and trained responders may begin with breaths. Start resuscitation promptly; use the AED when ready.

9. Rescue Breaths and Team CPR

Giving breaths

- **Open the airway:** Use head tilt and chin lift. If you suspect a neck or spine injury, use a jaw thrust. If that does not open the airway, use head tilt and chin lift.
- **Seal the mask:** Use a pocket mask or other barrier device when possible.
- **Breathe in:** Give each breath over about 1 second, just enough to make the chest visibly rise.
- **Do not over-breathe:** Too much air or force can fill the stomach and make CPR harder.

Bag-mask device

- Best performed by two rescuers: one holds the mask and keeps the airway open, the other squeezes the bag.
- Use the E-C clamp: thumb and index finger form a C over the mask, and the other three fingers lift the jaw in an E shape.
- Squeeze the bag over about 1 second and watch for visible chest rise with every breath. That is how you know the breath is effective.
- Do not squeeze quickly or forcefully, and reseal the mask if air leaks around it. Supplemental oxygen can be added but is not required for the breath to be effective.
- If you are a single rescuer, use a pocket mask, or follow your instructor's guidance.

Two-rescuer CPR

1	Rescuer 1 starts compressions. Rescuer 2 gets the AED and bag-mask or barrier device and activates emergency response.
2	Rescuer 1 gives 30 compressions. Rescuer 2 gives 2 breaths (adult). For children and infants, use 15:2.
3	When the AED arrives, rescuer 2 turns it on and attaches the pads while rescuer 1 continues compressions.
4	Switch compressor and airway roles about every 2 minutes, sooner if tired. Keep the change brief; about 5 cycles applies to 30:2 CPR.

Team dynamics

Good CPR is a team effort. Clear roles and communication make a measurable difference. These are the elements of effective team dynamics.

Element	What it looks like
Clear roles and responsibilities	Everyone knows their position, function, and tasks. Define roles as early as possible and assign tasks to each member's skill level.
Knowing your limitations	Team members know their boundaries and ask for help early, before the situation gets worse. The team leader knows them too.

Element	What it looks like
Constructive intervention	Anyone can speak up, tactfully, to stop a mistake. Example: if compressions are slowing, remind your partner of the 100 to 120 per minute rate.
Knowledge sharing	Team members share information and ideas openly.
Summarizing and reevaluation	The team reviews what has happened so far and what is changing, and adjusts.
Mutual respect	Team members treat each other with respect, even under stress.
Closed-loop communication	When given an instruction, repeat it back. When a task is done, say so.
Clear messages	Speak calmly and directly, without ambiguity.

After the event, hold a short debrief: what went well and what to improve.

10. Choking (Foreign-Body Airway Obstruction)

Mild vs. severe blockage

	Signs	What to do
Mild	Can cough forcefully, speak, or breathe.	Encourage coughing. Stay with the person and watch closely.
Severe	Cannot speak, cough, or breathe. May clutch the throat. Weak, silent, or high-pitched sounds. Skin may turn blue. An infant may be unable to cry or make any sound but is still responsive.	Act immediately. Send someone to activate emergency response. Begin the steps below.

Adult or child over 1 year who is conscious

1	Stand behind the person and lean them slightly forward.
2	Give **5 back blows**: Use the heel of your hand to strike firmly between the shoulder blades.
3	Give **5 abdominal thrusts**: Make a fist above the navel, place your other hand over it, and pull sharply inward and upward.
4	Alternate 5 back blows and 5 abdominal thrusts until the object comes out or the person becomes unresponsive.

For pregnant people or those with a larger body size where you cannot reach around the abdomen, give chest thrusts instead of abdominal thrusts.

Infant who is conscious

1	Hold the infant face-down along your forearm, supporting the head and jaw, with the head lower than the body.
2	Give **5 back blows** with the heel of your hand between the shoulder blades.
3	Turn the infant face-up, supporting the head, and give **5 chest thrusts** using the heel of one hand on the lower half of the breastbone.
4	Repeat 5 back blows and 5 chest thrusts until the object comes out or the infant becomes unresponsive. Do not use abdominal thrusts on infants.

If the person or infant becomes unresponsive

- Activate emergency response if not already done, and get an AED.
- Do not perform back blows or abdominal thrusts on an unresponsive person. **Start CPR, beginning with chest compressions.**
- For an infant, do not stop to check a pulse. Start CPR right away.
- Each time you open the airway to give breaths, **look in the mouth**. If you see an object and can easily remove it, remove it.
- Do not do blind finger sweeps.
- Give breaths as normal. Do not skip breaths because someone is choking. Continue CPR and use the AED as soon as it arrives.

After choking relief

Anyone who needed abdominal thrusts, chest thrusts, or CPR for choking should be checked by a healthcare professional, even if they seem fine.

11. Opioid Emergencies and Naloxone

Opioid overdose can slow or stop breathing. Naloxone can reverse the effects of opioids, and the 2025 guidance treats it as part of the BLS response when it is available.

Signs of a possible opioid overdose

- Unresponsive or very difficult to wake
- Slow, shallow, or absent breathing, or gasping
- Very small (pinpoint) pupils
- Blue or gray lips or fingertips
- Evidence of drug use nearby, or a history that suggests opioid use

What to do

1	Check the scene for safety. Check for response.
2	Call for help and activate emergency response. Get an AED and naloxone.
3	Check breathing and pulse for no more than 10 seconds.
4	**No pulse:** Start CPR and use the AED. Give naloxone when it is available, but do not delay CPR to do so.
5	**Pulse present, but not breathing normally:** Give rescue breaths (1 breath every 6 seconds for an adult) and give naloxone. Keep checking the pulse about every 2 minutes.
6	Stay with the person until emergency responders arrive. The effects of naloxone can wear off, and the person may need further care.

Naloxone basics

Naloxone is given in the nose (nasal spray) or by injection. Follow the instructions on the device. A second dose may be needed. Your instructor will show a trainer device if available. Always follow your workplace policy and local protocols.

12. Special Situations

Situation	Key points
Pregnancy	Give standard CPR and use the AED. Activate emergency response early. In a healthcare setting, follow the team's lead for additional steps.
People with obesity	Use the same CPR technique and AED steps as for any other person.
Soft surface or bed	Move the person to a firm, flat surface when you can do so quickly. If you cannot, compress on the surface they are on rather than delaying.
During transport	Keep compressions going with minimal interruptions. Plan stops carefully.
Suspected neck or spine injury	Use a jaw thrust to open the airway. Minimize movement of the head and neck. If breaths cannot be given with a jaw thrust, use head tilt and chin lift.
Hypothermia	Handle gently. Begin CPR and use the AED. Remove wet clothing and protect from further heat loss.
Drowning	Remove from water safely. Give CPR with breaths; trained responders may start with breaths. Use AED when ready.
Lay rescuers (untrained)	For adult sudden collapse, give compression-only CPR if unable or unwilling to give breaths. Breaths matter especially in pediatric and drowning arrests.

Stopping CPR

Signs of life return: briefly reassess breathing and pulse; resume CPR if arrest persists.

- Emergency personnel or a more highly trained provider takes over.

AED analysis or shock: pause briefly, then resume CPR immediately as prompted.

- The scene becomes unsafe.
- You are physically unable to continue.

Putting the reasoning together

Recognize the emergency

Gasping does not count as normal breathing. No definite pulse plus absent or abnormal breathing means CPR, not breaths alone. A definite pulse calls for rescue breathing when breathing is inadequate.

Protect blood flow

Adult depth is at least 2 inches; child depth is at least one third of the chest, about 2 inches. Full recoil allows the heart to refill. Do not lean. Unnecessary pulse checks interrupt blood flow.

Match the ratio to the rescuers

Without an advanced airway: one rescuer uses 30:2 for every age. Two rescuers use 30:2 for adults and 15:2 for children and infants. Switch compressors about every 2 minutes, sooner if tired; do not count 5 pediatric cycles as 2 minutes.

Use the AED in the right order

Turn it on and follow prompts. Apply pads. Clear for analysis. If a shock is advised, say clear and visually confirm nobody is touching before delivery. Resume CPR after shock or no-shock advice. An AED may end a shockable rhythm; it does not guarantee survival.

Change the response when choking changes

A responsive infant with severe choking needs 5 back blows and 5 heel-of-hand chest thrusts. Once unresponsive, start CPR with compressions, without a pulse check. Look for a visible object each time you open the airway to give breaths; never sweep blindly.

Work as a team

Clear roles mean everyone knows their job. Knowing limitations means asking for help early. Constructive intervention means respectfully correcting a rate or recoil problem. With emergency response already activated, send the arriving rescuer for the AED.

Check the result of each breath

Give each breath over about 1 second and watch the chest rise. Oxygen attachment alone does not prove effective ventilation. If the chest does not rise, improve airway position and mask seal; avoid forceful or excessive breaths.

13. Quick Reference Card

Use this page as a refresher. Check it against your course materials and instructor guidance.

Skill	Adult	Child	Infant
Pulse site	Carotid	Carotid or femoral	Brachial
Rate	100-120/min	100-120/min	100-120/min
Depth	At least 2 in; avoid >2.4 in (6 cm)	At least 1/3 chest; about 2 in (5 cm)	At least 1/3 chest; about 1.5 in (4 cm)
Ratio: 1 / 2 rescuers	30:2 / 30:2	30:2 / 15:2	30:2 / 15:2
Rescue breaths	1 every 6 sec	1 every 2-3 sec	1 every 2-3 sec
Responsive choking	5 back blows + 5 abdominal thrusts	5 back blows + 5 abdominal thrusts	5 back blows + 5 chest thrusts (heel)
AED	Adult pads	Pediatric mode under 8 if available	Pediatric mode if available; do not delay
Pause time	Less than 10 sec	Less than 10 sec	Less than 10 sec

Adult one-rescuer checklist

[ ] Scene safe

[ ] Check responsiveness

[ ] Shout for help and activate emergency response; get AED

[ ] Check breathing and carotid pulse (10 seconds or less)

[ ] Give 30 compressions at 100-120/min; depth at least 2 in, avoiding >2.4 in; full recoil

[ ] Give 2 breaths, about 1 second each, with visible chest rise

[ ] Use the AED as soon as it arrives

[ ] Resume CPR immediately after the shock or no-shock message

[ ] Switch compressors about every 2 minutes

Pediatric exception: start CPR for pulse <60/min with poor perfusion despite oxygenation and ventilation. Ratios above apply without an advanced airway.

14. Topic Finder

Use this table to find where each major BLS topic is covered in this guide.

Topic	Where to look
Chain of Survival, including Recognition and Emergency Activation	Section 3
Checking breathing and pulse, gasping, who needs CPR	Sections 4 and 5
Compression rate, depth, hand position, recoil and why it matters	Section 6
Compression-to-breath ratios (adult, child, infant, 1 and 2 rescuers)	Sections 6 and 8, Quick Reference (Section 13)
Switching compressors and fatigue	Sections 6 and 9
AED steps, clearing before a shock, why early defibrillation matters	Section 7
AED special situations: water, chest hair, medication patch, pacemaker, children	Section 7
Child and infant CPR, second rescuer and the AED	Section 8
Bag-mask ventilation and effective breaths	Section 9
Team dynamics: roles, limitations, constructive intervention, and more	Section 9
Choking: conscious adult, child, infant; unresponsive person or infant	Section 10
Opioid emergencies and naloxone	Section 11
Special situations and when to stop CPR	Section 12

15. Practice Questions

These questions are for self-review. They do not replace any exam given in class. Answers and section references follow the questions.

1. You are alone with an infant in cardiac arrest and you begin CPR. Which ratio do you use?

A. 15 compressions to 2 breaths
B. 5 compressions to 1 breath
C. 30 compressions to 2 breaths
D. 20 compressions to 2 breaths

2. Two rescuers are giving CPR to a child. Which ratio do they use?

A. 30 compressions to 2 breaths
B. 15 compressions to 2 breaths
C. 10 compressions to 1 breath
D. 5 compressions to 1 breath

3. Why should you let the chest fully recoil between compressions?

A. It prevents rib injuries
B. It increases your rate
C. It reduces rescuer tiredness
D. The heart refills with blood between compressions

4. Where do you place your hands for adult chest compressions?

A. Lower half of the breastbone
B. Upper third of the breastbone
C. Over the stomach
D. On the side of the ribs

5. An adult collapses, is unresponsive, has no pulse, and is making occasional gasping sounds. What do you conclude and do?

A. Breathing is normal; keep watching
B. Gasping is not normal breathing; start CPR
C. Breathing is normal; get the AED only
D. Not normal breathing; give rescue breaths only

6. Which adult needs chest compressions?

B. Someone coughing forcefully
C. Someone with no pulse who is not breathing normally
D. Someone with a pulse who is not breathing normally

7. An AED has just arrived while you are doing CPR. What is the first thing you do with it?

A. Turn it on if needed and follow the prompts
B. Attach the pads before powering it on
C. Press the shock button
D. Shout "clear" and wait

8. The AED says a shock is advised. What do you do next?

A. Check for a carotid pulse
B. Resume compressions
C. Press the shock button right away
D. Make sure no one is touching the person, say "Everybody clear!", then press the shock button

9. Why is early defibrillation important?

A. It guarantees survival
B. It replaces the need for CPR
C. A shock can stop an abnormal rhythm so a normal rhythm may return
D. It measures blood pressure

10. A person is pulled from a pool and needs an AED. Their chest is wet. What do you do?

A. Skip the AED
B. Wait for the chest to air dry
C. Use the AED while they are still in the water
D. Quickly wipe the chest, then attach the pads

11. The AED shows a "check electrodes" message on a person with a very hairy chest. What can you do?

A. Press harder and wait
B. Trim or shave the area, or use the first pads to pull the hair and apply a second set
C. Stop using the AED
D. Place both pads on the back

12. An adult who was choking becomes unresponsive. What do you do first?

A. Give abdominal thrusts
B. Give back blows
C. Do a blind finger sweep
D. Start CPR, beginning with compressions

13. A responsive infant has severe choking. What is the sequence?

A. Abdominal thrusts only
B. 5 back blows alternating with 5 chest thrusts
C. Finger sweeps
D. Wait and watch

14. Your partner's compressions are getting slow. What is the best response?

A. Take over without saying anything
B. Tactfully remind them to keep the rate at 100 to 120 per minute
C. Wait for them to notice
D. Tell them they are doing it wrong

15. Which team element means asking for help early, before a situation gets worse?

A. Clear roles and responsibilities
B. Knowing your limitations
C. Mutual respect
D. Knowledge sharing

16. About how often should rescuers switch compressor and airway roles?

A. Every 30 seconds
B. Only when the AED arrives
C. About every 2 minutes, or sooner if tired
D.

17. How do you know a bag-mask breath is effective?

A. You see the chest rise with each breath
B. You squeezed quickly and forcefully
C. Oxygen is attached
D. Air is escaping around the mask

18. Which action belongs to the Recognition and Emergency Activation link?

A. Applying the AED pads
B. Identifying the signs of cardiac arrest and calling 911
C. Giving compressions and breaths
D. Post-arrest care in the hospital

19. You started CPR alone on a child and have already activated emergency response. A second rescuer arrives. What do you ask them to do?

A. Call 911 again
B. Give only breaths
C. Take over compressions at once
D. Go get the AED

Answers

1. C. 30:2 for a single rescuer of any age (Section 6).

2. B. 15:2 with two rescuers for a child (Sections 6 and 8).

3. D. Recoil lets the heart refill with blood (Section 6).

4. A. Lower half of the breastbone (Section 6).

5. B. Gasping is not normal breathing; start CPR (Sections 4 and 5).

6. C. No pulse and not breathing normally (Section 5).

7. A. Open and power on the AED if needed, then follow the prompts (Section 7).

8. D. Clear the person, then press the shock button (Section 7).

9. C. A shock can stop an abnormal rhythm and allow a normal one to return (Section 7).

10. D. Wipe the chest quickly, then attach pads. Never use an AED in water (Section 7).

11. B. Trim or shave, or use the first pads to remove hair and apply a second set (Section 7).

12. D. Start CPR with compressions; look in the mouth when you open the airway (Section 10).

13. B. 5 back blows alternating with 5 chest thrusts (Section 10).

14. B. Constructive intervention: speak up tactfully (Section 9).

15. B. Knowing your limitations (Section 9).

16. C. About every 2 minutes, or sooner if tired (Sections 6 and 9).

17. A. Visible chest rise with each breath (Section 9).

18. B. Recognizing cardiac arrest and calling 911 (Section 3).

19. D. Send the second rescuer to get the AED (Section 8).

16. Glossary and References

Term	Meaning
AED	Automated external defibrillator. A device that analyzes the heart rhythm and can deliver a shock.
Agonal breathing	Irregular gasping that is not effective breathing. Treat as no breathing.
Bag-mask device	A mask attached to a squeezable bag used to give breaths.
CoSTR	Consensus on Science with Treatment Recommendations. ILCOR's published review of resuscitation evidence.
Compression fraction	The share of time during CPR that compressions are being given.
Defibrillation	A controlled electric shock that can help restore an effective heart rhythm.
ILCOR	International Liaison Committee on Resuscitation. Reviews evidence used by resuscitation councils worldwide.
Naloxone	A medication that can reverse the effects of opioids.
Recoil	The chest returning to its normal position after each compression.

Sources and review date

AHA 2025 Adult Basic Life Support (Part 7)

AHA / AAP 2025 Pediatric Basic Life Support (Part 6)

AHA Chain of Survival and BLS algorithms

ILCOR 2025 BLS CoSTR: Bray et al. Resuscitation 215 Suppl 2:110808

ILCOR 2025 Education, Implementation, and Teams CoSTR

ILCOR continuous topic recommendations (check final/draft status)

Reviewed October 6, 2026 against the supplied October 22, 2025 AHA BLS exams and annotated rationales, published 2025 AHA guidance, and ILCOR source recommendations. The ILCOR 2026 annual CoSTR preprint was labeled DRAFT at review and was not adopted as final guidance.
ILCOR evaluates evidence; AHA translates that evidence into course algorithms. This guide uses AHA sequences for AHA course training.

Student resources: students.cpr411.com
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Notes