



# PEDIATRIC FIRST AID | CPR AED

student book  
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# TABLE OF CONTENTS

Using This Student Book .....	3	Infant CPR AED .....	39
Introduction .....	5	Infant – Cardiac Arrest .....	41
Universal Concepts .....	8	Infant – Assessment & Chest Compressions .....	43
Procedure for Pediatric First Aid   CPR AED .....	9	Infant – Rescue Breathing & Using a CPR Mask.....	45
Legal Concepts.....	13	Infant – Automated External Defibrillation & Using an AED	47
Pediatric First Aid Provider: Roles, Responsibilities, & Priorities.....	15	Infant – One CPR Provider CPR AED.....	48
Assessment .....	16	Infant – Additional CPR AED Considerations .....	50
<b>Child CPR AED .....</b>	<b>23</b>	Infant – Suspected Opioid-Associated Emergency (OEA) .	51
Child – Cardiac Arrest & Pediatric Chain of Survival .....	25	Infant – Relief of Choking.....	52
Child – Assessment & Chest Compressions .....	27	<b>Adult CPR AED.....</b>	<b>53</b>
Child – Rescue Breathing & Using a CPR Mask .....	29	Adult – Sudden Cardiac Arrest (SCA).....	55
Child – Automated External Defibrillation & Using an AED .....	30	Adult – Chain of Survival.....	56
Child – One-Provider CPR AED .....	32	Adult – Assessment & Chest Compressions .....	57
Child – Additional CPR AED Considerations.....	34	Adult – Rescue Breathing & Using a CPR Mask .....	59
Child – Suspected Opioid-Associated Emergency (OEA)...	35	Adult – Automated External Defibrillation & Using an AED	61
Child – Relief of Choking.....	36	Adult – One-Provider CPR AED .....	63
		Adult – Additional CPR AED Considerations.....	65
		Adult – Suspected Opioid-Associated Emergency (OEA) ..	67
		Adult – Relief of Choking .....	69

<b>Pediatric First Aid</b> .....	<b>71</b>	Severe Allergic Reaction .....	102
Drowning .....	72	Seizure .....	104
Severe, Life-Threatening External Bleeding .....	74	Diabetes & Hypoglycemia .....	105
Shock.....	78	Presyncope & Syncope.....	106
Minor Wounds.....	79	Heat Emergencies.....	108
Tooth Injuries .....	80	Cold Emergencies.....	110
Bleeding from the Nose .....	81	Bites & Stings .....	112
Impaled Objects.....	82	<b>Appendix</b> .....	<b>117</b>
Eye Injuries.....	83	Procedure for Pediatric First Aid   CPR AED.....	118
Amputation .....	84	Procedure for Pediatric CPR AED .....	119
Internal Bleeding .....	85	Procedure for Adult CPR AED .....	120
Open Chest Wound.....	86	First Aid Kits and Supplies .....	121
Open Abdominal Injury .....	87		
Head, Neck, or Spinal Injury .....	88		
Concussion .....	89		
Shaken Baby Syndrome .....	90		
Bone, Joint, & Muscle Injuries.....	91		
Burns .....	93		
Altered Mental Status .....	96		
Poisoning .....	97		
Difficulty Breathing .....	100		
Asthma .....	101		



# ASSESSMENT

## PERFORM AN ASSESSMENT

Assess  
Scene Safety

Take  
Standard Precautions\*

Assess  
Responsiveness

Activate  
EMS and/or EAP<sup>†</sup>

Send Someone to  
Get a First Aid Kit & AED  
(unless readily available to you)

ASSESS BREATHING FOR NO MORE THAN 10 SECONDS

Assessment of the scene and the person is a critical skill that applies in any emergency. The steps of assessment are crucial in all but the most minor circumstances. The first steps of assessment are always the same. The steps of assessment list the actions in sequence, but in a real emergency, they may need to be carried out in a different order or performed simultaneously when multiple providers are available.

1. Assess scene safety.
2. Take standard precautions.
3. Assess responsiveness.
4. Activate EMS and/or your emergency action plan (EAP).
5. After activating, and unless they are readily available to you, send someone to get the first aid kit and an AED.
6. Assess breathing for no more than 10 seconds.





## Assess Scene Safety

Emergency scenes can be dangerous. Your personal safety is the highest priority, even before the safety of an ill or injured child. Always pause for a moment before approaching. Look for obvious hazards and consider the possibility of hidden dangers. If the scene is unsafe, do not approach it. Activate EMS or your emergency action plan, or EAP.

## Emergency Moves

It is best not to move an ill or injured child at all, especially when you suspect a spinal or pelvic injury.

You should only move an ill or injured child when there is an immediate danger and you are able to take action without placing yourself at unreasonable risk.

It may be easiest to simply carry a small child away from immediate danger. If it is necessary to move a larger child you cannot carry, the most effective move to use is a drag. When using a drag, pull in the direction of the long axis of the body to help keep the spine in line. Never pull on the child's head or pull the child's body sideways. Use your legs, not your back, and keep the child's weight as close to your body as possible. Avoid twisting. Consider if you can safely move the child, based on your physical ability, to avoid hurting yourself.

Common drags include the extremity drag, performed by grasping and pulling on the ankles or forearms; the clothing drag, performed by pulling on a child's shirt in the neck and shoulder area; and the blanket drag, performed by rolling a child onto a blanket and dragging the blanket.



**Confined spaces are especially dangerous.**<sup>22</sup> Although they are not necessarily designed for people, a confined space is often large enough for workers and children to enter. A confined space also has limited or restricted means for entry or exit and is not designed for continuous occupancy. Confined spaces include, but are not limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, equipment housings, ductwork, pipelines, etc. Many workers are injured and killed each year while working in confined spaces. An estimated 60% of the fatalities have been among “would-be rescuers.” Specialized training and equipment are necessary to rescue anyone, including a child, from a confined space including atmospheric monitors, fall protection, extraction equipment, and self-contained breathing apparatus (SCBA). Never enter tanks or other confined spaces to perform a rescue without proper training and equipment. Children are naturally curious about confined spaces. Adults must provide barriers to entry and teach them about the dangers of these areas.

<sup>22</sup> Safety and Health Topics, Confined Spaces. Occupational Safety & Health Administration. Available: <https://www.osha.gov/confined-spaces/hazards-solutions> [Retrieved 12/1/21]



# CHILD – ASSESSMENT & CHEST COMPRESSIONS

Assessment of the scene and the child is a critical skill that applies in any emergency. The steps of assessment are crucial in determining the provider's next actions. As a single pediatric CPR provider, follow the pediatric CPR AED procedure.

## Assess Scene Safety

- ▶ First, assess scene safety. Upon arrival and before anything else, pause to make sure the scene is safe for you and the child.

## Take Standard Precautions

- ▶ Don PPE, like gloves and eye protection.

## Assess Responsiveness

- ▶ If the scene is safe, assess responsiveness. Tap the child and ask loudly, "Are you okay?"

## Activate EMS and/or EAP

- ▶ If the child is unresponsive, call 911 to activate EMS using a mobile device and/or activate your EAP.

## Send Someone to Get the First Aid Kit & AED

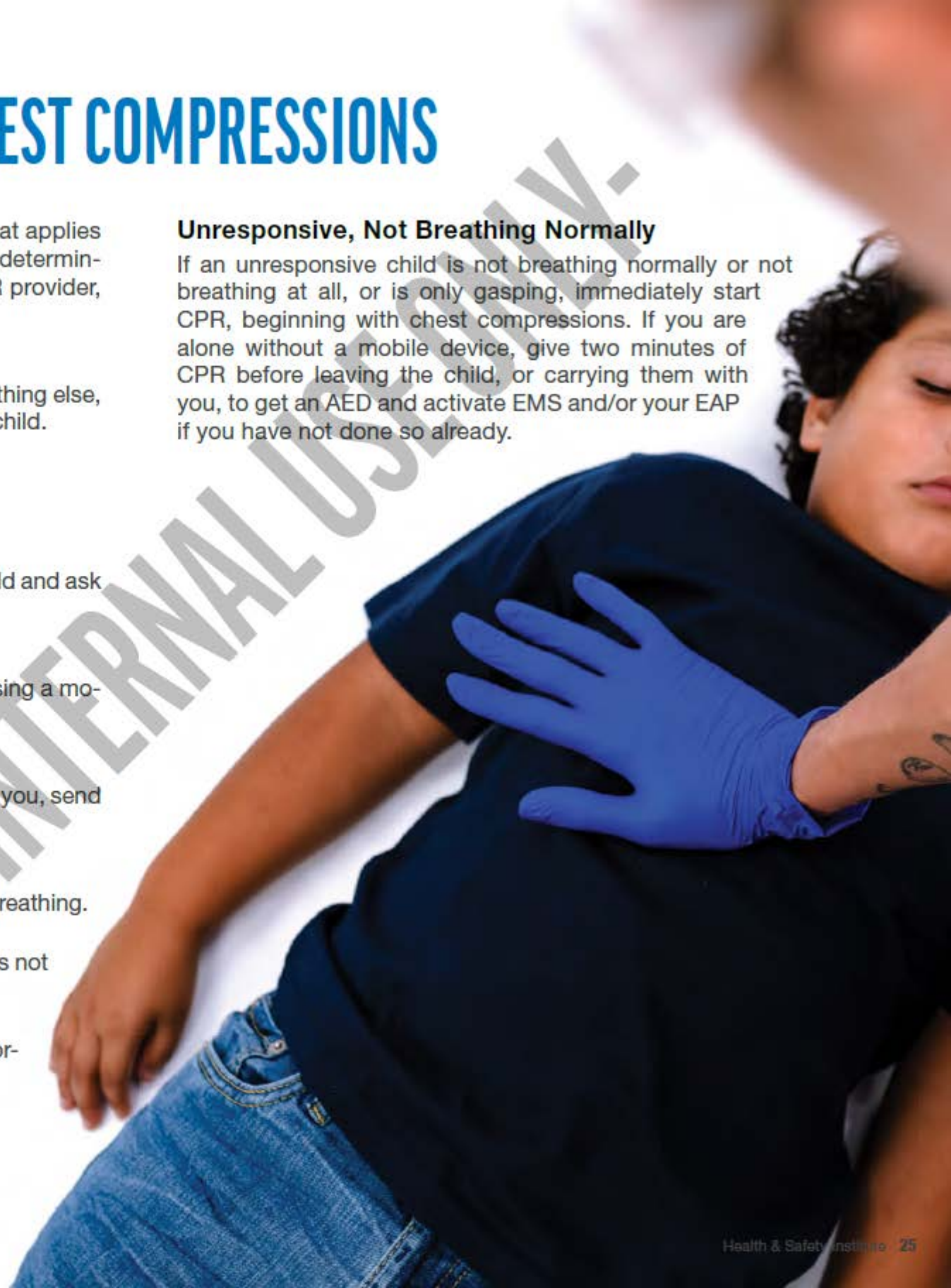
- ▶ After activating, and unless they are readily available to you, send someone to get the first aid kit and an AED.

## Assess Breathing

- ▶ Look at the child's chest and face for signs of normal breathing.
- ▶ Look for the chest to rise and fall.
- ▶ Weak, irregular gasping, snorting, snoring, or gurgling is not normal breathing.
- ▶ Take no longer than 10 seconds to assess breathing.
- ▶ Then, take action based the presence or absence of normal breathing.

## Unresponsive, Not Breathing Normally

If an unresponsive child is not breathing normally or not breathing at all, or is only gasping, immediately start CPR, beginning with chest compressions. If you are alone without a mobile device, give two minutes of CPR before leaving the child, or carrying them with you, to get an AED and activate EMS and/or your EAP if you have not done so already.





# INFANT – RESCUE BREATHING & USING A CPR MASK

Rescue breathing is artificial ventilation of the lungs. It provides oxygenation of the blood and removal of carbon dioxide. CPR providers can give rescue breathing using their own exhaled breath and a CPR mask. Room air contains about 21% oxygen. Exhaled air contains between 16% and 17% oxygen. This exhaled oxygen is enough to support life.

## Importance of Infant Rescue Breaths

Rescue breaths are extremely important for infants because cardiac arrest typically results from asphyxia. Conventional CPR with rescue breathing should be performed by all trained pediatric CPR providers who are willing and able.

## Take Standard Precautions

Take standard precautions when providing infant rescue breaths. Use an infant-sized CPR mask. Some CPR masks allow you to attach a HEPA filter to provide further protection during CPR. The HEPA filter fits between the valve and mask, in the path of the exhaled air. HEPA filters can trap airborne virus particles.

## Open the Airway

To give rescue breaths, there must be an open airway. The airway is the only path for getting air into the lungs. The tongue is connected to the lower jaw. Lifting the jaw forward pulls the tongue away from the back of the throat, relieving the obstruction and opening the airway.



## Head Tilt–Chin Lift

To open the airway with the head tilt–chin lift maneuver, position yourself at the infant’s side.

Place one hand on their forehead. Place the fingertips of your other hand under the bony part of the lower jaw, near the chin. Apply firm, backward pressure on the forehead while lifting the chin upward. Avoid pressing into the soft tissue of the chin with your fingers, as this can also obstruct the airway. Leave the mouth slightly open. **Keep an infant’s head in a neutral “sniffing” position. Tilting the head beyond a neutral position may block the airway.**



# ADULT - ONE-PROVIDER CPR AED

If an unresponsive person is not breathing normally or only gasping, one CPR provider can provide high-quality adult CPR by putting together all the skills of assessment, compressions, airway, breathing, and AED use.



## Perform an Assessment

- ▶ First, assess scene safety, taking standard precautions. If the scene is safe, assess the person's responsiveness. Tap the victim and ask loudly, "Are you okay?"
- ▶ If the person is unresponsive, activate EMS and/or your EAP.
- ▶ After activating, and unless they are readily available to you, send someone to get the first aid kit and an AED.
- ▶ Assess the person's breathing for no more than 10 seconds. If the person is not breathing normally or only gasping, start high-quality CPR.



## Perform High-Quality Chest Compressions

- ▶ Position the person on a firm, flat surface. Perform 30 high-quality chest compressions. Position two hands on the lower half of the breastbone. Use upper body weight to compress. Compress at least 2 inches (5 centimeters). Compress at a rate of 100–120 times per minute. Allow the chest to fully recoil at the top of each compression.



## Give Rescue Breaths

- ▶ Use a CPR mask to give rescue breaths. Open the airway and give 2 rescue breaths. Ensure each breath is 1 second in length and creates visible rise of the chest.

## Continue CPR

- ▶ Immediately resume high-quality chest compressions. Repeat CPR cycles of 30 compressions and 2 breaths for two minutes.



# INJURY EMERGENCIES

## DROWNING

Drowning is the leading cause of unintentional death among children ages 1 to 4 years old.<sup>42</sup> Close, constant, and attentive supervision of young children in or around any water is essential to prevent drowning.<sup>43</sup> The immediate cause of death in drowning is a lack of oxygen. As a result, the first and most important treatment is giving rescue breaths to a drowning victim.



42 U.S. Consumer Product Safety Commission. Available: <https://www.poolsafely.gov/blog/news/new-cpsc-report-finds-steady-rise-in-fatal-child-drownings> [Retrieved 7/15/21]

43 Prevention of Drowning. Denny SA, et al. Pediatrics May 2019, 143 (5) e20190850; DOI: <https://doi.org/10.1542/peds.2019-0850> [Retrieved 7/15/21]



# DIFFICULTY BREATHING

In children, difficulty breathing is almost always a medical emergency. There are many different causes, including viral or bacterial respiratory tract infections, chronic health conditions such as asthma and allergies and sudden onset emergencies, such as choking. An increase in the breathing rate may be the first sign that a responsive child is having a serious breathing problem that requires urgent care.

Other signs include looking frightened and an obvious increase in the effort it takes for the child to breathe; their skin may be sucking in around and between ribs or above the breastbone. There may be exaggerated belly movement with coughing, wheezing, whistling, or grunting sounds. There may be changes in the skin appearance and condition, such as sweaty, cool skin, and grayish, whitish or blue-tinged lips, tongue, and nail beds. The child may be drowsy and difficult to keep awake.

## ***Follow the Pediatric First Aid, CPR AED Procedure***

Allow the child to find the most comfortable position in which to breathe, typically sitting up. Help them loosen any restrictive clothing.

Regularly reassess scene safety, responsiveness, and breathing. The situation can quickly become life-threatening if the child becomes exhausted from struggling to breathe. Be prepared to provide CPR if the child becomes unresponsive and stops breathing or is only occasionally gasping or making snorting, snoring, or gurgling sounds.





## Health & Safety Institute

1450 Westec Drive  
Eugene, OR 97402 USA  
800-447-3177

[hsi.com/brands](http://hsi.com/brands)

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