

## CARDIOPULMONARY RESUSCITATION (CPR) FOR INFANTS

Cardiopulmonary Resuscitation (car-dee-oh-PULL-mon-air-ee ree-SUS-i-TA-shun) is a combination of mouth-to-mouth breathing which sends oxygen to the lungs, and chest compressions (pumping) which moves blood from the heart to the body. If the baby's heart is beating but he is not breathing, only mouth-to-mouth breathing is needed.

### HOW THE LUNGS WORK

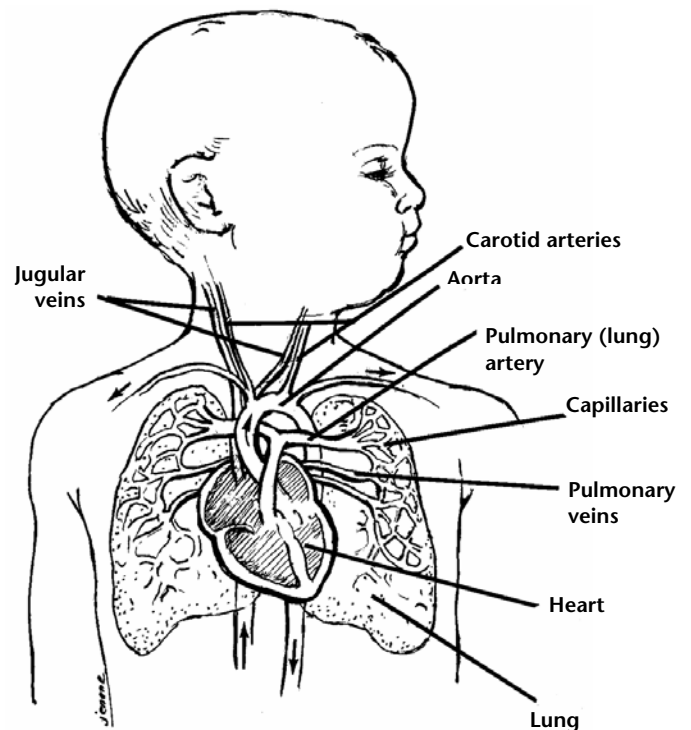
Air is breathed in (inhaled) through the nose and mouth. The air goes through the windpipe and into the large airways of the lungs. It then goes into the small airways and into the air sacs.

Air is made up of oxygen, nitrogen, and carbon dioxide. Oxygen, which we need to live, goes from the lungs into the blood. Carbon dioxide goes from the blood into the lungs and then into the air when we breathe out (exhale).

### HOW THE HEART WORKS

The heart is under the breastbone (sternum) and slightly left of the center of the chest (Pictures 1 and 2). Its purpose is to pump blood to the lungs and to the body.

The heart has 4 chambers (2 atria and 2 ventricles). The right side of the heart receives blood from the body and pumps it to the lungs. Oxygen is picked up in the lungs and the blood returns to the left side of the heart. The blood is then pumped throughout the body. This process is repeated about 100 times a minute.



Picture 1 The heart and lungs inside the body.

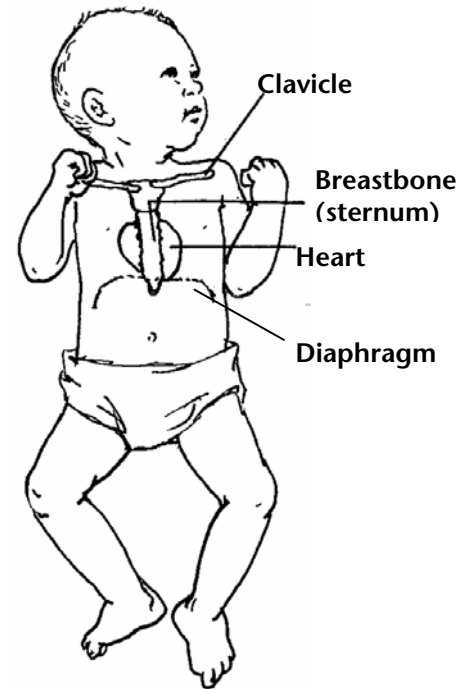
### WHAT HAPPENS IF A BABY STOPS BREATHING OR THE HEART STOPS BEATING

If a baby stops breathing, he or she is not getting the oxygen needed to maintain life. If breathing stops, the heart will also soon stop. **YOU MUST ACT IMMEDIATELY** by: 1) Breathing your air into the baby's lungs (ventilating); and 2) Pumping the baby's heart with your hand (compressing). There could be damage to the baby's brain and body if he does not get the needed oxygen within a few minutes.

## HOW TO DO CARDIOPULMONARY RESUSCITATION (CPR)

If you think the baby is not breathing:

1. Check to see if the baby will respond to you. Tap the baby gently. Gently shake his shoulders to see if he will move.
2. If the baby does not respond, **call out** for someone to help you. If you are alone in the house, **do not leave the baby** to make a phone call at this time.
3. Turn the baby flat on his back on a hard surface.
4. Open the baby's airway for mouth-to-mouth breathing using the chin lift/head tilt method. Tip the head back with one hand on the forehead. Use the tips of the fingers of your other hand to lift the chin upward (Picture 3). Be careful not to close the baby's mouth completely. Tilt the head just until the nose is aimed at the ceiling. Do not tilt the head too far back because this may close the baby's airway.



**Picture 2** The heart lies under the breastbone.

If at any time while doing mouth-to-mouth breathing you notice secretions in the baby's mouth, turn the baby's head to the side, wrap your index and middle finger together in a clean cloth, and quickly clean out the mouth.

5. Put your ear over the baby's mouth and look toward the chest. **LOOK, LISTEN,** and **FEEL** for breathing (Picture 4).
6. If you do not feel or hear air coming from the baby's mouth and do not see the chest rising and falling, give 2 **slow** breaths. To do this, place your mouth over **both** the baby's mouth and nose to form an airtight seal. Slowly breathe in only enough air to make the baby's chest rise (Picture 5). Since the baby's lungs are small, only small puffs of air are needed to fill the lungs.
7. If the baby is still not breathing on his own, continue the steps of CPR.



**Picture 3** Open the baby's airway by lifting the chin and tilting the head.



**Picture 4** **LOOK, LISTEN,** and **FEEL** breathing.

8. Next, check for signs of circulation (breathing, coughing or movement).

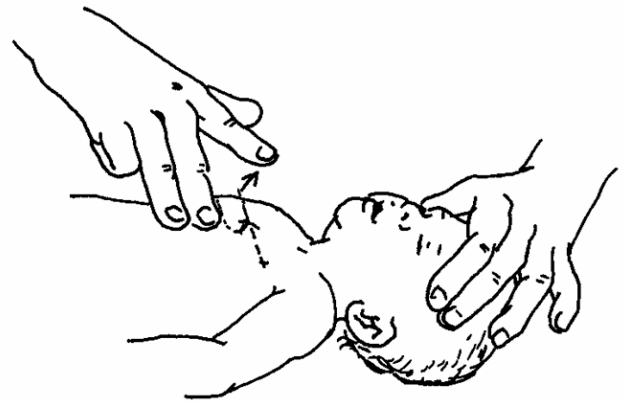
9a. **If you find signs of circulation but your baby is not breathing**, give him 1 breath every 3 seconds (20 breaths in 1 minute). Have someone call the emergency squad. If you are alone, after breathing for your baby for at least 1 minute, go quickly to the phone **with the baby** and call the emergency squad. When you resume resuscitation, give 2 breaths and check again for signs of circulation. **Continue breathing for the baby until help arrives or until the infant starts breathing on his own.**



Picture 5 Give small, slow puffs of air.

9b. **If you do not find signs of circulation, have someone call the emergency squad.**

If you do not find signs of circulation, a combination of mouth-to-mouth breathing and chest compressions is needed. First, locate the proper hand position. To do this, draw an imaginary line between the nipples to find the middle of the breastbone. Place the index finger of one hand just below the imaginary line on the breastbone (Picture 7). Place the middle and ring fingers on the breastbone and lift the index finger from the breastbone. (Compressions are done the width of one finger **below** the imaginary line.) Push down on the breastbone  $\frac{1}{2}$  to 1 inch into the chest toward the backbone. Use your other hand to keep the head in position.



Picture 6 Locate the proper hand position.

Using your middle and ring fingers, compress the baby's heart 5 times, then give a breath. Compressions are done at the rate of at least 100 per minute. To keep the right rate, count "1 and 2 and 3 and 4 and 5 and" (breath), "1 and 2 and 3 and 4 and 5 and" (breath), etc. After 20 sets (slightly more than a minute), stop and recheck for signs of circulation. Look to see if the baby is breathing on his own. If there are no signs of circulation or breathing, **continue CPR until help arrives.**

If you are alone, continue CPR for 20 sets (slightly more than a minute), then take your baby with you and call the emergency squad.

**IMPORTANT: You must practice CPR on a mannequin (doll) with a nurse to be sure you are doing it correctly. This should be done before you leave the hospital.**

**NOTE:** If you wish to become certified in CPR, contact the American Heart Association or the Red Cross in your community.

**QUICK REFERENCE FOR CPR**  
(Tape to a wall in a suitable place.)

(Breaths per minute \_\_\_\_\_ Compressions per minute \_\_\_\_\_)



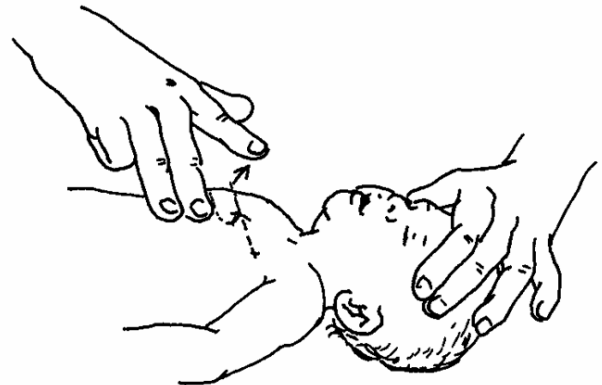
**Step 1** Open the baby's airway.



**Step 2** Look, listen, and feel for breathing.



**Step 3** Place your mouth over the baby's nose and mouth and start the breathing. Check for signs of circulation. If there are signs of circulation but no breathing, continue mouth-to-mouth breathing. (Give 1 slow breath every 3 seconds.)



**Step 4** If there are no signs of circulation, locate proper hand position and start pushing down on the breastbone (5 compressions, then 1 slow breath).

**EMERGENCY PHONE NUMBERS**

Fill in the phone numbers, copy them, and tape them by your telephone:

Emergency Squad: \_\_\_\_\_

Doctor: \_\_\_\_\_

Other: \_\_\_\_\_

Other: \_\_\_\_\_