

# Cardiopulmonary Resuscitation

When the heart stops beating (cardiac arrest), only a few minutes remain before that person dies, unless **circulation** (blood flow) returns or is restored. Providing **cardiopulmonary resuscitation (CPR)** is a way to keep some circulation going until expert help arrives. Compressing—pushing down on the patient's chest and then allowing the chest to recoil—helps push some blood through the heart, into the lungs, and into the major arteries of the body (including to the brain). These chest compressions, possibly combined with artificial **respiration** (breathing) that is usually performed in a “mouth-to-mouth” manner, are termed **basic CPR**. Automated external defibrillators (AEDs) have become part of out-of-hospital resuscitation efforts. Using an AED can be lifesaving in certain types of cardiac arrest. AEDs are increasingly available in schools, athletic venues, airports, and other public places. The October 6, 2010, issue of *JAMA* contains an article about performing CPR using chest compressions only, without mouth-to-mouth breathing, during out-of-hospital cardiac arrest.



## PERFORMING CPR

**CALL FOR HELP. ACTIVATE THE EMERGENCY RESPONSE SYSTEM BY DIALING 9-1-1 IN THE UNITED STATES AND CANADA. HAVE SOMEONE BRING THE AED IF ONE IS AVAILABLE.**

After confirming that the patient does not respond and is unconscious, check if the patient is breathing. If not, open the airway by gently lifting the chin upward. If the patient is not breathing, immediately start CPR by administering 2 breaths and beginning chest compressions. If you are not comfortable performing mouth-to-mouth rescue breaths, still perform chest compressions. Place the heel of one hand on the middle of the breastbone, and put your other hand on top. Press hard, straight down, compressing the chest about 1½ to 2 inches, at about 100 times per minute. If you have immediate access to an AED, apply the AED pads to the patient's chest, following the drawing in the AED box. Turn the AED power switch on. Allow the AED to analyze the patient's heart rhythm. Listen to what the AED says and follow the AED instructions. If the AED administers a shock but the patient does not immediately regain consciousness, resume chest compressions for 2 minutes and then recheck the AED, using the instructions in the AED box. Feel for a pulse at this time. If there is no pulse, resume chest compressions and continue until trained help arrives.

Providing chest compression-only CPR may increase the willingness of laypeople to do CPR, potentially improving chances of survival from an out-of-hospital cardiac arrest. Knowing how to perform basic CPR (chest compressions and use of an AED) could save the life of a loved one, a colleague, or a neighbor. You can find out about CPR training at the American Heart Association and American Red Cross Web sites shown above.

## FOR MORE INFORMATION

- American Heart Association  
[www.americanheart.org](http://www.americanheart.org)
- American Red Cross  
[www.redcross.org](http://www.redcross.org)
- American College of Emergency Physicians Foundation  
[www.emergencycareforyou.org](http://www.emergencycareforyou.org)

## INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page link on JAMA's Web site at [www.jama.com](http://www.jama.com). Many are available in English and Spanish. A Patient Page on automated external defibrillators was published in the August 9, 2006, issue.

Sources: American Heart Association; American Red Cross; National Heart, Lung, and Blood Institute; American College of Emergency Physicians

Janet M. Torpy, MD, Writer

Cassio Lynn, MA, Illustrator

Richard M. Glass, MD, Editor

The JAMA Patient Page is a public service of JAMA. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, JAMA suggests that you consult your physician. This page may be photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, call 312/464-0776.

