

Cardiac Arrest

The heart pumps blood to all of the body's organs. If the heart stops functioning (**cardiac arrest**), blood flow ceases, organs begin to shut down, and within a few minutes the person will die. If cardiac arrest can be detected and treated immediately, serious organ damage, brain damage, or death may be prevented. Cardiac arrest can occur in adults and children. It may happen suddenly in a person who was thought to be healthy. Community-based programs emphasizing activation of emergency medical services (calling 911 in most areas of North America), cardiopulmonary resuscitation (CPR), and rapid **defibrillation** (correcting an abnormal heart rhythm with an electrical shock from a defibrillator) have raised public awareness about cardiac arrest and its treatment. However, cardiac arrest remains a major cause of death in all parts of the world. The January 4, 2006, issue of *JAMA* includes an article about the outcome of cardiac arrest in children and in adults.

CAUSES OF CARDIAC ARREST

- **Myocardial infarction** (heart attack)
- Some kinds of **arrhythmias** (abnormal heart rhythms)
- Severe blood loss from traumatic injury or internal bleeding
- Electrical shock injury
- Lack of oxygen supply from events like choking, drowning, or a severe asthma attack
- **Cardiogenic shock** (heart failure because of inadequate heart pumping function)
- **Stroke** (sudden loss of blood supply in the brain)
- Heart valve or heart muscle disease
- Certain genetic disorders that affect the heart

DIAGNOSIS

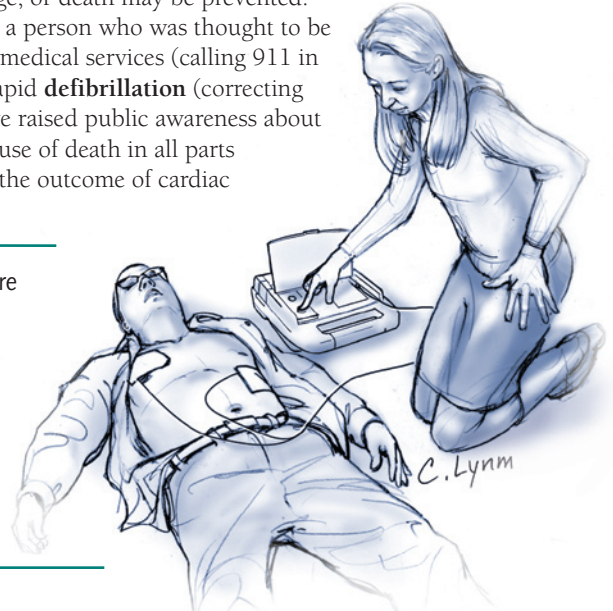
When cardiac arrest occurs, the individual becomes unresponsive and unconscious. There is no pulse, no blood pressure, and no breathing. If an electrocardiogram is done, there is either no electrical activity from the heart or a heart rhythm (such as **ventricular fibrillation**) that does not produce effective heart function.

TREATMENT

- **CALL 911 OR YOUR LOCAL EMERGENCY MEDICAL SERVICE NUMBER**
- Rapid defibrillation using an **automated external defibrillator (AED)**, found in many large public places and in commercial airplanes
- CPR and rapid transfer to the appropriate medical facility
- Treatment of specific problems like heart attack, stroke, or trauma by specialized medical teams

PREVENTION

- See your doctor regularly and follow treatment plans for chronic medical conditions like high blood pressure, heart disease, and diabetes.
- Do not smoke.
- Maintain a healthy weight.
- Exercise regularly.
- Eat a balanced diet low in saturated fat and high in nutrient-rich fruits and vegetables. Some evidence suggests that eating seafood regularly can reduce the risk of sudden cardiac death.
- Talk with your doctor about an implanted defibrillator if you have severe heart disease.



FOR MORE INFORMATION

- National Heart, Lung, and Blood Institute
www.nhlbi.nih.gov
- American Heart Association
www.americanheart.org
- Centers for Disease Control and Prevention
www.cdc.gov

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page Index on JAMA's Web site at www.jama.com. Many are available in English and Spanish. A Patient Page on cardiopulmonary resuscitation was published in the January 19, 2005, issue; and one on electrocardiograms was published in the April 23/30, 2003, issue.

Sources: National Heart, Lung, and Blood Institute; Centers for Disease Control and Prevention; American Heart Association

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 718/946-7424.

