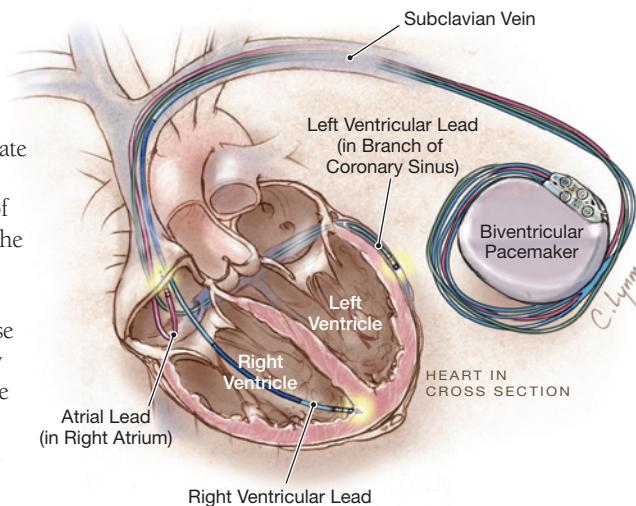


# Heart Failure

**H**eat failure develops when the heart cannot pump adequate amounts of blood for the body's needs. The heart tries to compensate and work harder by **dilating** (enlargement of the heart chambers), by becoming **hypertrophic** (thickening of the heart walls), or by beating faster. In many countries, heart failure is a leading cause of death. For individuals older than 65 years, heart failure is the most common cause of hospitalization. Because the burden of heart failure is large and affects health care delivery worldwide, new treatments and methods to diagnose heart failure are being developed. The June 13, 2007, issue of *JAMA* includes an article about the role of a new type of treatment for heart failure using biventricular pacemakers.



## SIGNS AND SYMPTOMS

- Shortness of breath, particularly with physical activity or when lying down
- Fatigue or weakness
- Inability to perform simple exercise, including grocery shopping or climbing a few stairs
- Palpitations (usually a symptom of irregular heartbeat, or **dysrhythmia**)
- Ankle or foot swelling (**pedal edema**)
- Abdominal swelling (**ascites**) from excess fluid
- Swollen jugular veins in the neck

## DIAGNOSIS AND TESTING

A detailed medical history and physical examination often reveal whether a person has heart failure. Testing may include a chest x-ray to look for **cardiomegaly** (an enlarged heart), **pulmonary edema** (fluid in the lungs), or **pleural effusion** (collection of fluid around the lungs). Other tests commonly include an **electrocardiogram** (a tracing of the heart rhythm) and an **echocardiogram** (an ultrasound examination that shows the heart structures and the blood flow through the heart).

## TREATMENT

- Treating heart failure depends on the causative factors. Surgery may be recommended for heart valve disease or congenital heart disease.
- Medications used to treat heart failure often include diuretics to remove excess fluid, antiarrhythmic medicines to correct abnormal heart rhythm, and **beta-blockers** or **ACE inhibitors** (blood pressure medications that help the failing heart).
- In patients with advanced heart failure, medications called **inotropes** may be used to help the heart muscle beat more strongly. Most of these drugs are given by intravenous infusion, which requires an indwelling intravenous catheter.
- Pacemakers and implantable defibrillators may be useful to regulate the heart's rhythm and restore functional heart contractions. Biventricular pacemakers that stimulate both sides of the heart may improve heart function and survival in some patients.
- For persons who have severe heart failure causing critical illness, mechanical devices may be required. These devices include intra-aortic balloon pumps; left, right, or biventricular assist devices; or the rare use of a mechanical heart pump. Heart transplantation may be considered when severe heart failure does not respond to conventional treatment, but it is not an option for all patients.

## FOR MORE INFORMATION

- National Heart, Lung, and Blood Institute  
[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)
- American Heart Association  
[www.americanheart.org](http://www.americanheart.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 cardiomyopathy was published in the December 15, 2004, issue; and one on cardiac arrest was published in the January 4, 2006, issue.

Sources: National Heart, Lung, and Blood Institute; 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 203/259-8724.

