Heart Failure

Heart failure develops when the heart as a pump malfunctions. Systolic heart failure is the inability of the heart to squeeze enough blood from the ventricles (heart chambers) to supply the body's needs. Diastolic heart failure results from the inability of the heart muscle to relax in between heartbeats, causing a backup of blood in the heart's chambers and in the blood vessels. Both systolic and diastolic heart failure can cause edema (fluid) to build up in the lungs and the rest of the body. The heart tries to make up for this malfunction by dilating (enlarging the heart chambers) or becoming hypertrophic (thickening of the heart walls). For individuals older than 65 years, heart failure is the most common cause of hospitalization. The May 13, 2009, issue of JAMA contains an article about heart failure.

**Signs and Symptoms**
- Fatigue or weakness
- Shortness of breath during physical activity
- Difficulty breathing when lying in a flat position
- Waking at night feeling short of breath
- Swollen neck (jugular) veins
- Abdominal swelling (ascites) from excess fluid
- Lower leg or foot swelling (pedal edema)
- Palpitations (sensation of fast or irregular heartbeat)

**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 (tracing of the heart rhythm) and an echocardiogram (ultrasound examination showing the heart structures and function of heart valves).

**Treatment**
Treating heart failure depends on the reasons why heart failure developed. It is important to work with your doctor to find the best treatment plan, including an exercise program.
- A low-sodium diet is prescribed to decrease fluid retention.
- Medications used to treat heart failure often include beta-blockers that allow the heart to work better, ACE inhibitors that lower blood pressure, making the heart pump against less pressure, and diuretics to remove excess fluid.
- Pacemakers and implantable defibrillators may be useful to help the heart contract in a coordinated way and monitor for irregular, life-threatening heart rhythm.
- Surgery may be recommended for heart valve disease or congenital heart disease.
- For persons who have severe advanced heart failure, medications called inotropes may be used to help the heart beat more strongly. Use of these drugs often requires an indwelling intravenous catheter. Mechanical devices may be required, such as intra-aortic balloon pumps; left, right, or biventricular assist devices; or the rare use of a mechanical heart pump.
- Heart transplantation may be the final option considered when severe heart failure does not respond to the usual treatments.

Janet M. Torpy, MD, Writer
Cassio Lynm, 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.