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# Ejection fraction: What does it measure?

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With Mayo Clinic cardiologist **Martha Grogan, M.D.**  
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## Question

Ejection fraction: What does it measure?  
**What does the term "ejection fraction" mean? What does it measure?**

## Answer

from **Martha Grogan, M.D.**

Ejection fraction is a measurement of the capacity at which your heart is pumping.

During each heartbeat cycle, the heart contracts and relaxes. When your heart contracts, it ejects blood from the two pumping chambers (ventricles). When your heart relaxes, the ventricles refill with blood. No matter how forceful the contraction, it doesn't empty all of the blood out of a ventricle. The term "ejection fraction" refers to the percentage of blood that's pumped out of a filled ventricle with each heartbeat.

Because the left ventricle is the heart's main pumping chamber, ejection fraction is usually measured only in the left ventricle (LV). A normal LV ejection fraction is 55 to 70 percent. The ejection fraction may decrease if your heart has been damaged by a heart attack or other problems with the heart valves or muscle.

Ejection fraction can be measured with various imaging techniques, including:

- **Ultrasound.** During an ultrasound, sound waves are used to produce images of specific parts of the body. When an ultrasound is used to study the heart, it's called an echocardiogram.
- **Cardiac catheterization.** During cardiac catheterization, a thin, plastic tube (catheter) is inserted into a vein in the arm or leg and then moved to the heart — most likely the left ventricle.
- **Magnetic resonance imaging (MRI).** During an MRI scan, a magnetic field and radio waves are used to create cross-sectional images of specific parts of the body. When an MRI is used to study the heart, it's known as a cardiovascular MRI.
- **Computerized tomography (CT).** During a CT scan, a special X-ray technique is used to create cross-sectional images of specific parts of the body. When a CT scan is used to study the heart, it's known as a cardiac CT.
- **Nuclear medicine scan.** During a nuclear scan, trace amounts of radioactive material — such as thallium — are injected into the bloodstream. Special cameras then detect the radioactive material as it flows through the heart and lungs.



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