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## What does the term "ejection fraction" mean? What does it measure?

Answers from [Martha Grogan, M.D.](#)

Ejection fraction is a measurement of the percentage of blood leaving your heart each time it contracts.

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.

The left ventricle is the heart's main pumping chamber, so ejection fraction is usually measured only in the left ventricle (LV). An LV ejection fraction of 55 percent or higher is considered normal. An LV ejection fraction of 50 percent or lower is considered reduced. Experts vary in their opinion about an ejection fraction between 50 and 55 percent, and some would consider this a "borderline" range.

Keep in mind that ejection fraction is just one measure of heart function. Even with a normal ejection fraction, overall heart function may not be normal. Talk with your doctor if you have concerns about your heart.

The ejection fraction may decrease if:

- You have weakness of your heart muscle, such as dilated cardiomyopathy
- A heart attack has damaged your heart
- You have problems with your heart's valves
- You have had long-standing, uncontrolled high blood pressure

Ejection fraction can be measured with imaging techniques, including:

- **Echocardiogram.** During an echocardiogram, sound waves are used to produce images of your heart and the blood pumping through your heart.
- **Cardiac catheterization.** During cardiac catheterization, a

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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. Using images taken during the catheterization, your doctor can see how your blood pumps through your heart.

- **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 in your blood as it flows through the heart and lungs.

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