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Your Heart Ultrasound

An ultrasound of your heart's size, pumping and valves. What to expect, and what your report means.

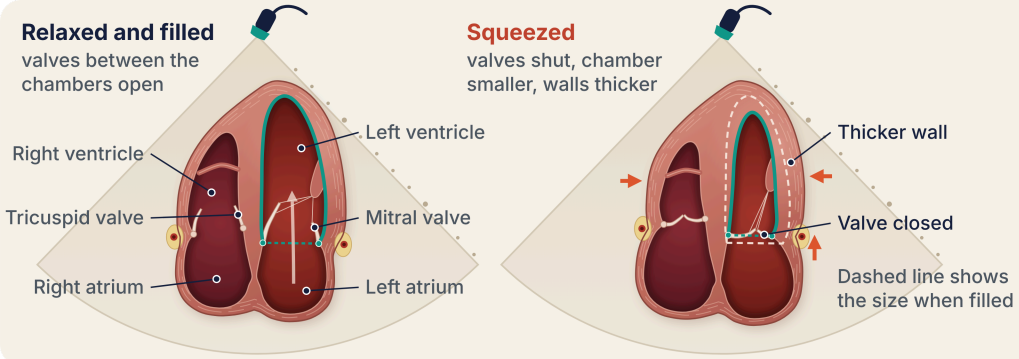
30–45 min
for a typical study, with no radiation and no needles

No fasting
needed for a standard echo done through the chest

52–72%
is a normal ejection fraction in men (54 to 74% in women)

WHAT IT IS

Sound waves that show a beating heart



Ejection fraction

The share of blood the left ventricle pumps out each beat. Normal is about 52 to 72% in men and 54 to 74% in women.

— Inner wall of the left ventricle, traced to measure it

Shown as on the echo screen, with the tip of the heart at the top

A small probe called a transducer sends high-frequency sound waves into your chest. They bounce off the heart and the blood inside it, and a computer turns the echoes into moving pictures. The study shows four things. **Structure** is the size and thickness of the chambers and the look of the valves. **Function** is how well the pumping chambers squeeze and relax. **Flow** shows whether a valve is narrowed or leaking. **Pressures** inside the heart and lungs are estimated from how fast the blood moves.

WHAT TO EXPECT

On the exam table

1 Get ready
There's no need to fast. You'll change into a gown, and the sonographer places three EKG stickers on your chest.

2 Lie on your left side
Warm gel goes on, and the probe moves below the breastbone, between the ribs and at the base of the neck. You may be asked to hold your breath. Firm pressure can be mildly uncomfortable.

3 Time and results
Expect 30 to 45 minutes, sometimes longer. A cardiologist reviews the images later and writes the formal report.

What comes next

Most abnormal findings are mild or manageable with medication and lifestyle change. The rare ones that need urgent care, like severe valve disease, a severely reduced ejection fraction or a large fluid collection around the heart, are communicated to you promptly.

READING YOUR REPORT

The numbers that tell the story

EJECTION FRACTION (LVEF)

About 52–74%	41–51%	30–40%	Under 30%
Normal	Mildly abnormal	Moderately abnormal	Severely abnormal

Normal is about 52 to 72% in men and 54 to 74% in women. Heart failure uses its own cutoffs. Heart failure with a reduced ejection fraction means 40% or lower, mildly reduced means 41 to 49%, and preserved means 50% or higher. If a low ejection fraction recovers to above 40%, keep taking your heart failure medicines. Readings can differ by several points from one reader to the next.

OTHER NUMBERS ON YOUR REPORT

Wall thickness	Normal is under 1.1 cm in men and slightly less in women. Thicker walls, called left ventricular hypertrophy, most often come from uncontrolled high blood pressure. They raise the risk of heart failure, rhythm problems and sudden death.
Valves	Each valve is graded from trace to severe for narrowing (stenosis) and leaking (regurgitation). Mild leaking is extremely common and often means nothing, while moderate or severe findings need attention.
Aortic stenosis	Severe needs blood speeding through the valve at 4 m/s or more, or an average pressure drop (mean gradient) of 40 mmHg or more, usually with a valve area of 1.0 cm^2 or less, since area alone isn't enough.
Diastolic function	How well the heart relaxes and fills. Grade I is mild. Grades II and III mean rising pressure inside the heart and are the echo sign of heart failure with a preserved ejection fraction.
Lung pressure	Pulmonary artery pressure, estimated from the leak across the tricuspid valve. Normal is under 35 mmHg, and a higher value calls for a search for the cause.
Left atrial size	A volume index above 34 mL/m^2 means the upper left chamber is enlarged, which raises the risk of AFib and stroke.

WHEN A STANDARD ECHO ISN'T ENOUGH

TEE	A probe passed down the esophagus, right behind the heart, for sharper views of the valves, or to check for a clot before a cardioversion. It needs sedation, six to eight hours with nothing by mouth and an adult to drive you home.
Stress echo	Imaging with treadmill exercise or a drug, usually dobutamine, to look for poor blood flow to the heart muscle and judge valve disease.
Contrast echo	Bubbled saline to find a small opening between the upper chambers (a patent foramen ovale), or a contrast agent that sharpens the picture for a more accurate ejection fraction.
Cardiac MRI	Better for telling inflammation from infiltrating diseases like amyloid, and for showing scar after a heart attack. Echo is faster, cheaper and portable.

WHAT A NORMAL ECHO CAN MISS

Echo generally doesn't show the coronary arteries. A normal study doesn't rule out coronary disease, early cardiomyopathy with a normal ejection fraction, or small clots inside the heart. Ask for a copy of your report and have your clinician walk you through it.

READ THE FULL ARTICLE

damianrasch.com/
echocardiogram-guide

For education only, and not a substitute for advice from your own physician. Sources include the American Society of Echocardiography guidelines on transthoracic exams (2019), chamber quantification (2015) and diastolic function (2016), the 2020 ACC/AHA valve guideline and the 2022 AHA/ACC/HFSA heart failure guideline.

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