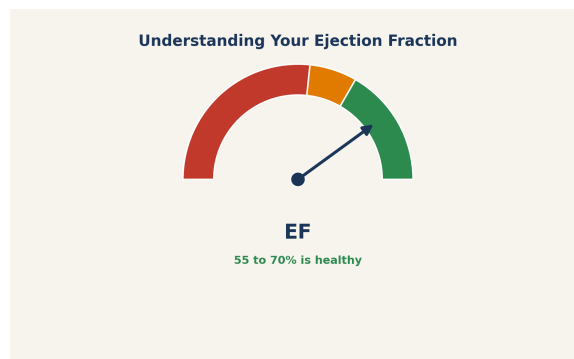


Understanding Your Ejection Fraction (EF)

The One Number Patients Ask About Most After an Echo

Your EF is one important number - not your whole story.



Online: <https://go.riasalimd.com/ejection-fraction-guide>

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Names & Terms You Will Hear

Term	Meaning
Ejection fraction (EF)	The percent of blood the left ventricle pushes out with each beat.
LVEF (left ventricular ejection fraction)	The full medical name - the EF of the main pumping chamber.
Preserved EF	A normal EF, 50% or higher - the squeeze looks normal.
Reduced EF	A low EF, 40% or lower - the squeeze is clearly weak.
Mildly reduced EF	An EF of 41 to 49% - the squeeze is a little weak.
HFpEF	Heart failure with a preserved (normal) EF - a stiff heart.
HFrEF	Heart failure with a reduced (low) EF - a weak heart.
Improved EF / recovered EF	A low EF that has risen back up with treatment.



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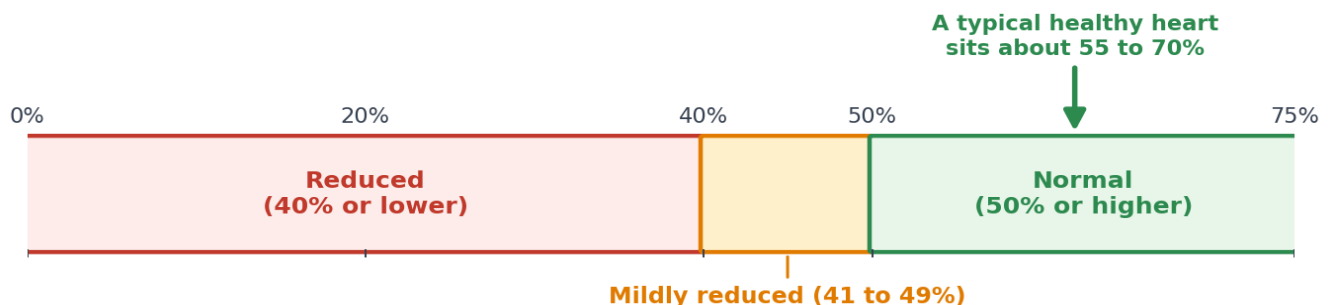


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What Is Your Ejection Fraction (EF)?

- Ejection fraction (EF) is the percent of blood your heart's main pumping chamber (the left ventricle) squeezes out with each beat.
- Your heart never empties all the way - it always keeps some blood inside. So a NORMAL EF is about 55 to 70%, not 100%.
- An EF of 60% does not mean your heart is broken or only 60% working. It means it pushes out about 60 out of every 100 drops each beat - which is healthy.
- The ranges, in plain words: normal (also called preserved) is 50% or higher; mildly reduced is 41 to 49%; reduced is 40% or lower.
- EF is usually measured on an echocardiogram (echo), a painless ultrasound of the heart.
- EF is an estimate. It can vary a few points from test to test and between readers - so the trend over time matters more than one single reading.
- A normal EF does not always mean the heart is fine, and a low EF can often improve with treatment. The cause and your symptoms matter as much as the number.

Your EF on a Number Line



The heart never empties fully - so even a normal EF is not 100%.

Your EF on a number line. Reduced is 40% or lower; mildly reduced is 41 to 49%; normal is 50% or higher. A healthy heart usually sits about 55 to 70% - the heart never empties fully, so even a normal EF is not 100%.



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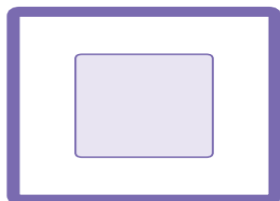


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Two Ways the Heart Can Struggle

Normal EF, stiff heart

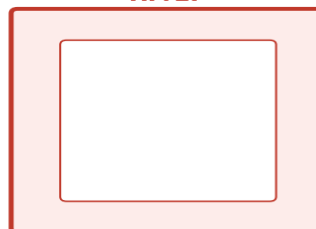
HFpEF



Squeezes fine,
but walls are thick
and will not relax

Low EF, weak heart

HFrEF



Stretched and weak,
so it squeezes out
less each beat

Heart failure can happen with a normal EF or a low EF.

Heart failure can happen two ways. A normal-EF heart can be stiff and unable to fill (HFpEF). A low-EF heart is weak and squeezes out less each beat (HFrEF). The EF number alone does not tell the whole story.

EF Ranges - What They Can Mean and What We Do

EF range	What it can mean	What we usually do
50% or higher	Normal squeeze (preserved EF). Reassuring - but heart failure is still possible if the heart is stiff (HFpEF).	Treat any cause; if you have symptoms, check for a stiff heart and treat it.
41 to 49%	Mildly reduced. The squeeze is a little weak.	Treat the cause; protective medicines often help; recheck the EF soon.
40% or lower	Reduced (low EF, HFrEF). The squeeze is clearly weak.	Start the proven medicines, even with no symptoms; recheck the EF; consider a defibrillator if it stays 35% or lower.



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What the EF Number Means (and Why Normal Is About 55 to 70%)

- Picture the left ventricle filling with blood, then squeezing to push some of it out. EF is the share it pushes out each beat, written as a percent.
- The heart never empties all the way - it always keeps a reserve inside. That is why a normal EF is about 55 to 70%, not 100%.
- So an EF of 60% is healthy and strong. It does not mean your heart is '60% broken' - that is a common worry, and it is not true.
- The ranges: normal (preserved) is 50% or higher; mildly reduced is 41 to 49%; reduced is 40% or lower.
- EF measures only the squeeze - not how well the heart relaxes and fills. That is why the number alone is not the whole picture.

A normal EF does not always mean a healthy heart. The heart has two jobs: squeeze and relax-to-fill. EF only measures the squeeze. A heart can squeeze fine (normal EF) and still be too stiff to fill - that is heart failure with a preserved EF (HFpEF). So your symptoms and the cause matter as much as the number. [See our HFpEF guide.](#)



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Why It Matters

- EF is the number that guides many of your treatment decisions - which medicines you need and how closely we follow you.
- If your EF is low (40% or lower), proven medicines can protect the heart and often lift the EF back up - even if you feel fine.
- EF helps decide whether a defibrillator (ICD) is recommended - often when the EF stays at 35% or lower despite good treatment.
- A normal EF is reassuring, but it does not rule out heart failure: a stiff heart can pump fine and still cause symptoms (HFpEF).
- Knowing your EF lets you ask the right questions and take part in your own care.
- Your EF is one important number - not a verdict and not your destiny. Many low numbers get better.



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A Normal EF Can Still Be Heart Failure (HFpEF) - and a Low EF Can Improve (HFrEF)

- **Normal EF, stiff heart (HFpEF):** the heart squeezes fine, so the EF looks normal - but the walls are thick and stiff and cannot relax to fill. Fluid backs up and causes the same symptoms as other heart failure. [See our HFpEF guide.](#)
- **Low EF, weak heart (HFrEF):** the squeeze is weak, so the EF is low. This is very treatable, and the EF often improves with medicines. [See our Heart Failure \(low EF\) guide.](#)
- This is the key point: a normal EF does not rule out heart failure, and a low EF is not the end of the road.
- Either way, your symptoms and the cause guide treatment as much as the EF number does.
- A low EF that goes on to recover with treatment is called an 'improved' or 'recovered' EF - the medicines should be continued even after the number gets better.

A low EF can improve. A reduced EF is not a life sentence. With the right medicines - and sometimes a device - many patients see the EF rise by 10 to 20 points within 6 to 12 months, sometimes back to normal. Doctors call this an 'improved' or 'recovered' EF. Keep taking your medicines to hold the gain. [See our Heart Failure \(low EF\) guide.](#)



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EF Ranges At a Glance - Know Your Zone

Normal (50% or higher)	Mildly reduced (41 to 49%)	Reduced (40% or lower)
• Squeeze is normal • Healthy heart about 55 to 70% • Still possible to have HFpEF • Treat any cause and symptoms	• Squeeze a little weak • Often no symptoms yet • Treat the cause early • Protective medicines often help	• Squeeze clearly weak (HFrEF) • Start the proven medicines • EF can often improve • Device if it stays 35% or lower



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Risk Factors

Some patients are more likely to develop this condition. Knowing your risk helps your care team take extra precautions.

Risk Factor	Why It Increases Risk
Prior heart attack or coronary artery disease	Scar tissue from a blocked artery cannot squeeze, so the EF falls. The most common cause of a low EF.
Long-standing high blood pressure	Years of high pressure first thicken the heart (raising HFpEF risk), then can weaken it and lower the EF.
Valve disease	A leaky or tight valve overworks the pump until the EF drops.
Cardiomyopathy	A disease of the heart muscle itself - viral, genetic, or unknown - that lowers the EF.
Cancer treatments	Some chemotherapy drugs can lower the EF. We often check the EF before, during, and after treatment.
Uncontrolled fast heart rhythm	A fast rhythm such as atrial fibrillation, left unchecked for months, can lower the EF - and it is often reversible.
Heavy alcohol use	Years of heavy drinking can weaken heart muscle and lower the EF.
Diabetes, obesity, and aging	These stiffen the heart over time and raise the risk of heart failure with a normal EF (HFpEF).



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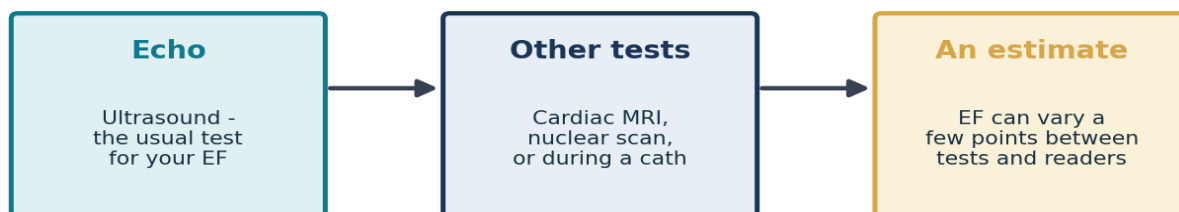


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Treatment Options

- **The EF guides the plan - but we treat you, not just the number.** Your symptoms and the cause matter just as much.
- **If the EF is low (40% or lower):** we start the proven heart-failure medicines that protect and strengthen the pump, even if you feel well. These can lift the EF back up.
- **If the EF is normal but you have symptoms (HFpEF):** we treat the stiffness and fluid with medicines such as SGLT2 inhibitors and water pills, and we manage blood pressure and weight.
- **Treat the cause.** Open a blocked artery, fix a bad valve, control blood pressure, or slow a fast rhythm.
- **Re-check the EF.** We usually repeat the echo in about 3 to 6 months to see how much the EF has improved.
- **Defibrillator (ICD).** If the EF stays at 35% or lower after a few months of medicines, an ICD can prevent sudden death.
- **Keep taking your medicines.** If your EF improves, that means the medicines are working - stopping them can let the EF fall again.
- **Ask what your number is** and what it means for you. Bring it to every appointment.

How Your EF Is Measured



Because EF is an estimate, the trend over time matters more than one single number.

EF is usually measured on an echo. A cardiac MRI, a nuclear scan, or a heart catheterization can also measure it. Because EF is an estimate, the trend over time matters more than one single number.



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How EF Is Measured and How It Guides Your Treatment

- **Echocardiogram (echo):** a painless ultrasound and the usual way your EF is measured. [See our Echocardiogram guide.](#)
- **Other tests:** a cardiac MRI gives a very precise EF; a nuclear scan or a measurement during a heart catheterization can also report it.
- **It is an estimate:** EF can vary a few points from test to test and between readers. One number is a snapshot - the trend over time tells the real story.
- **Guiding medicines:** a low EF (40% or lower) calls for the proven protective medicines; a normal EF with symptoms is treated as a stiff heart (HFpEF).
- **Guiding devices:** if the EF stays at 35% or lower despite good treatment, a defibrillator (ICD) may be advised to prevent sudden death. [See our ICD and CRT guide.](#)
- **The bigger picture:** the EF is part of how we look at the whole pumping chamber. [See our Left Ventricular Dysfunction guide.](#)



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Risks, Benefits, and Alternatives

Every choice has trade-offs. Use this table to start the shared decision conversation.

Option	Risks	Benefits	Alternatives
Medicines for a low EF	Low blood pressure, kidney or potassium changes. Most people tolerate them with simple lab checks.	Can lift the EF back up - sometimes to normal - and lower the chance of heart failure and death.	Treating only the cause; closer monitoring if the EF is borderline.
Repeat the echo to track the EF	An extra test visit. EF can vary a little between readings.	Shows the trend - whether the EF is improving, steady, or falling - which guides the next step.	A cardiac MRI for a very precise EF; less frequent checks.
Defibrillator (ICD) when EF stays 35% or lower	Small implant risk; a wrong shock happens in a few percent of patients.	Prevents sudden cardiac death when a low EF does not recover.	More time on medicines first; a wearable defibrillator vest while the EF may still recover.



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Common Misconceptions

Myth	Reality
My EF is 60%, so my heart is only 60% working.	No. The heart never empties fully, so 55 to 70% is normal and healthy. An EF of 60% means a strong, normal squeeze.
A normal EF means my heart is fine.	Not always. A stiff heart can squeeze fine and still cause heart failure (HFpEF). Your symptoms and the cause matter too.
A low EF means I will not get better.	Many low EFs improve - sometimes back to normal - with the right medicines, especially when caught early.
My EF improved, so I can stop my medicines.	The EF improved BECAUSE the medicines are working. Stopping them can let the EF fall again. Keep taking them unless we say otherwise.
One EF number tells the whole story.	EF is an estimate that can vary a few points. The trend over time, plus your symptoms and the cause, tells the real story.
If I have no symptoms, my EF must be normal.	A low EF can be silent. It is often found on an echo done for another reason - which is a chance to treat it early.



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Possible Complications

Knowing what can go wrong helps you spot problems early. Most complications are uncommon, especially with treatment.

Where / What	What Can Happen
Heart failure with a low EF (HFrEF)	When a low EF causes symptoms - breathlessness, swelling, fatigue. Very treatable with the proven medicines.
Heart failure with a normal EF (HFpEF)	A stiff heart that pumps fine but cannot relax and fill, causing the same symptoms with a normal EF number.
Dangerous heart rhythms	A very low EF raises the risk of fast, life-threatening rhythms - the reason a defibrillator is sometimes advised.
Fluid build-up	When the heart struggles, the body holds salt and water, causing leg swelling and shortness of breath.
Blood clots	Blood moving slowly through a weak chamber can form a clot. A blood thinner is sometimes added.
Strain on the kidneys	The heart and kidneys share the same plumbing, so a struggling heart can stress the kidneys over time.



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Points to Know

If you remember nothing else, remember these key points.

- Ejection fraction (EF) is the percent of blood your pump pushes out each beat. Know your number.
- The heart never empties fully - so a NORMAL EF is about 55 to 70%, not 100%.
- The ranges: normal (preserved) is 50% or higher; mildly reduced is 41 to 49%; reduced is 40% or lower.
- A normal EF does not always mean a healthy heart - heart failure can happen with a normal EF (HFpEF).
- A low EF (HFrEF) is treatable and can often improve with medicines and, when needed, devices.
- EF is an estimate that can vary a little - the trend over time matters more than one single reading.
- EF helps decide medicines and whether a defibrillator is advised (often when the EF stays at 35% or lower).
- Ask what your EF is and what it means for you - it is one important number, not your destiny.

Your EF is a starting point, not a verdict. It is one important number that helps guide your care - not your whole story and not your destiny. Ask what your EF is, ask what it means for you, and remember that many low numbers get better with treatment.



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When to Call Us - and When to Call 911

If you are not sure, call. We would rather hear from you twice than miss a real problem.

- New or worse shortness of breath, especially when lying flat.
- Waking at night short of breath, or needing more pillows to breathe.
- New or worse swelling in the legs, ankles, or belly.
- Fast weight gain - more than 3 lb in 2 days or 5 lb in a week.
- Dizziness, lightheadedness, or near-fainting.
- A racing, pounding, or very irregular heartbeat.
- Chest pain or pressure - call 911.
- Fainting, or signs of stroke (face droop, arm weakness, slurred speech) - call 911.
- Any plan to stop a heart medicine - call us first.

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Trusted Resources

The links below are the trusted resources Dr. Ali used to write this guide and that he recommends you visit for more information. Each is a clickable link in the digital version and a Short.io tracked URL on the printed version.

- [AHA - Ejection Fraction and Heart Failure](#) - Plain-language explanation of EF and what the ranges mean.
- [Cleveland Clinic - Ejection Fraction](#) - How EF is measured and how to read your number.
- [Mayo Clinic - Ejection Fraction FAQ](#) - Patient FAQ on normal, borderline, and reduced EF values.
- [NHLBI - Heart Failure](#) - Official NIH page linking a normal EF and a low EF to heart failure.
- [HFSA Patient Hub](#) - Heart Failure Society of America patient materials.



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Sources Used to Build This Guide

Every recommendation in this guide is grounded in one or more of the studies, guidelines, or trusted resources below. Short links are tracked so Dr. Ali can see which references patients are reading; nothing personally identifying is captured.

- [2022 AHA/ACC/HFSA Heart Failure Guideline — EF Classification \(Circulation 2022\)](#) [Guideline]
Defines the EF-based heart failure categories (reduced 40% or lower, mildly reduced 41 to 49%, preserved 50% or higher) and the improved-EF category, plus the ICD threshold.
- [Universal Definition and Classification of Heart Failure \(2021\)](#) [Guideline]
Source of the four EF categories and the formal definition of heart failure with improved ejection fraction (HFimpEF).
- [ASE/EACVI — Recommendations for Cardiac Chamber Quantification \(EF measurement\)](#) [Guideline]
American Society of Echocardiography normal-range values for LV ejection fraction and the biplane method used to measure EF.
- [ACC/AHA/HRS Guideline for Device Therapy of Cardiac Rhythm Abnormalities \(ICD indications\)](#) [Guideline]
Primary-prevention ICD is considered when EF stays at 35% or lower despite guideline medical therapy.
- [SCD-HeFT — Defibrillator benefit at EF 35% or lower \(NEJM 2005\)](#) [Clinical Evidence]
Trial behind the EF 35%-or-lower defibrillator threshold cited in the guide.
- [Heart Failure With Recovered / Improved Ejection Fraction — review](#) [Clinical Evidence]
Evidence that a reduced EF can improve with treatment and that medicines should be continued after recovery.
- [AHA — Ejection Fraction Heart Failure Measurement](#) [Patient Page]
AHA patient-facing explanation of what EF means, normal versus reduced ranges, and what a low number indicates.
- [Cleveland Clinic — Ejection Fraction](#) [Patient Page]
Plain-language overview of EF percentages, how it is tested, and what each range means for heart function.
- [Mayo Clinic — Ejection Fraction: What Does It Measure?](#) [Patient Page]
Patient FAQ on EF normal ranges, borderline and reduced values, and the tests used to measure it.
- [NHLBI — Heart Failure](#) [Patient Page]
Official NIH overview that links a low EF and a normal EF to the two types of heart failure.



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Reviewer note: Reviewed against AHA, Cleveland Clinic, and Mayo Clinic pages on ejection fraction. Ours adds an EF number-line gauge, a normal-EF (HFpEF) versus low-EF (HFrEF) heart comparison, a color-coded EF range table, and a clear message that a normal EF does not always mean a healthy heart and a low EF can improve.

Disclaimer

This guide is for educational purposes only and does not replace medical advice from your physician. Recommendations may not apply to every patient. Always follow the specific instructions of Dr. Ali and your care team. In an emergency call 911 or go to the nearest emergency department.



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