

Heart failure

Section 1 of 6: The basics

Understand heart failure, reduced and preserved EF, symptoms, treatment, and daily care.

What should I do now?

Call 911

Call 911 for severe trouble breathing at rest, chest pressure, fainting, or new confusion with severe illness. Do not drive yourself.

Contact your care team

Contact your care team promptly for increasing swelling, rapid weight change, worsening breathlessness, or needing more pillows to breathe comfortably.

Keep your care plan

Keep your treatment and follow-up plan. Bring questions, readings, and your medication list.

SECTION 1

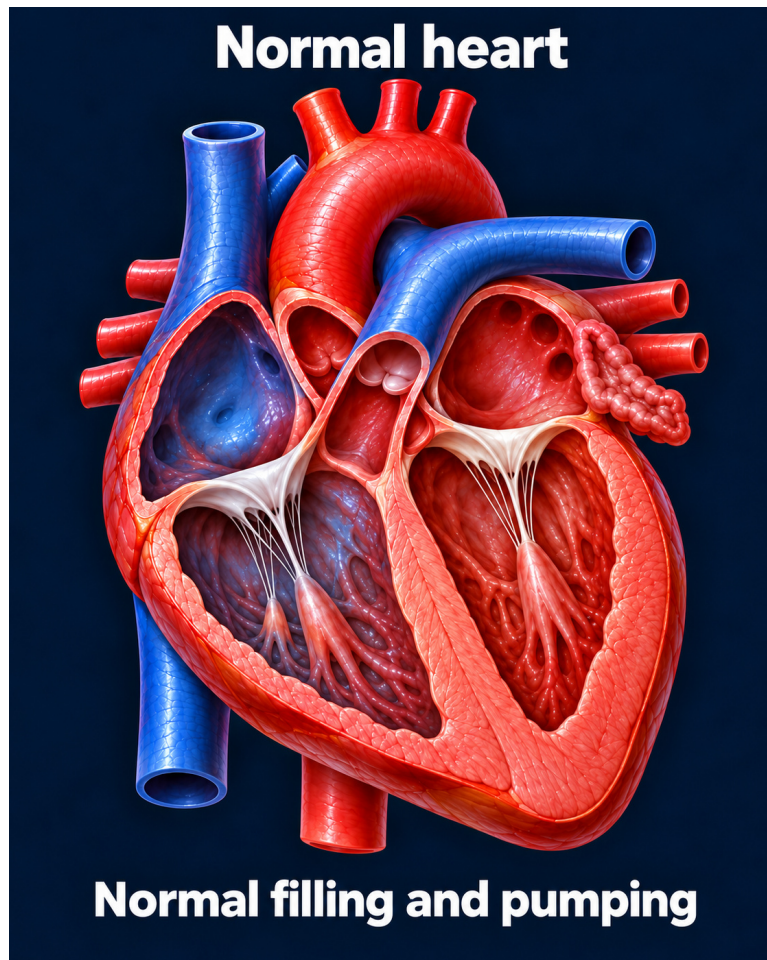
What is heart failure?

Heart failure means your heart has difficulty meeting your body's needs. Your heart is still beating, but it may have trouble pumping blood forward or relaxing and filling between beats. Heart failure can develop gradually or begin suddenly, and it can affect the left side, right side, or both sides of the heart.

How does a normal heart work?

Your heart is a muscular pump with four chambers. The right side sends blood to the lungs to pick up oxygen. The left side sends oxygen-rich blood to the rest of your body.

With each heartbeat, the heart relaxes to fill with blood, then squeezes to pump blood forward. Both steps are important.



A normal heart fills between beats and pumps blood forward with each squeeze.

What is ejection fraction?

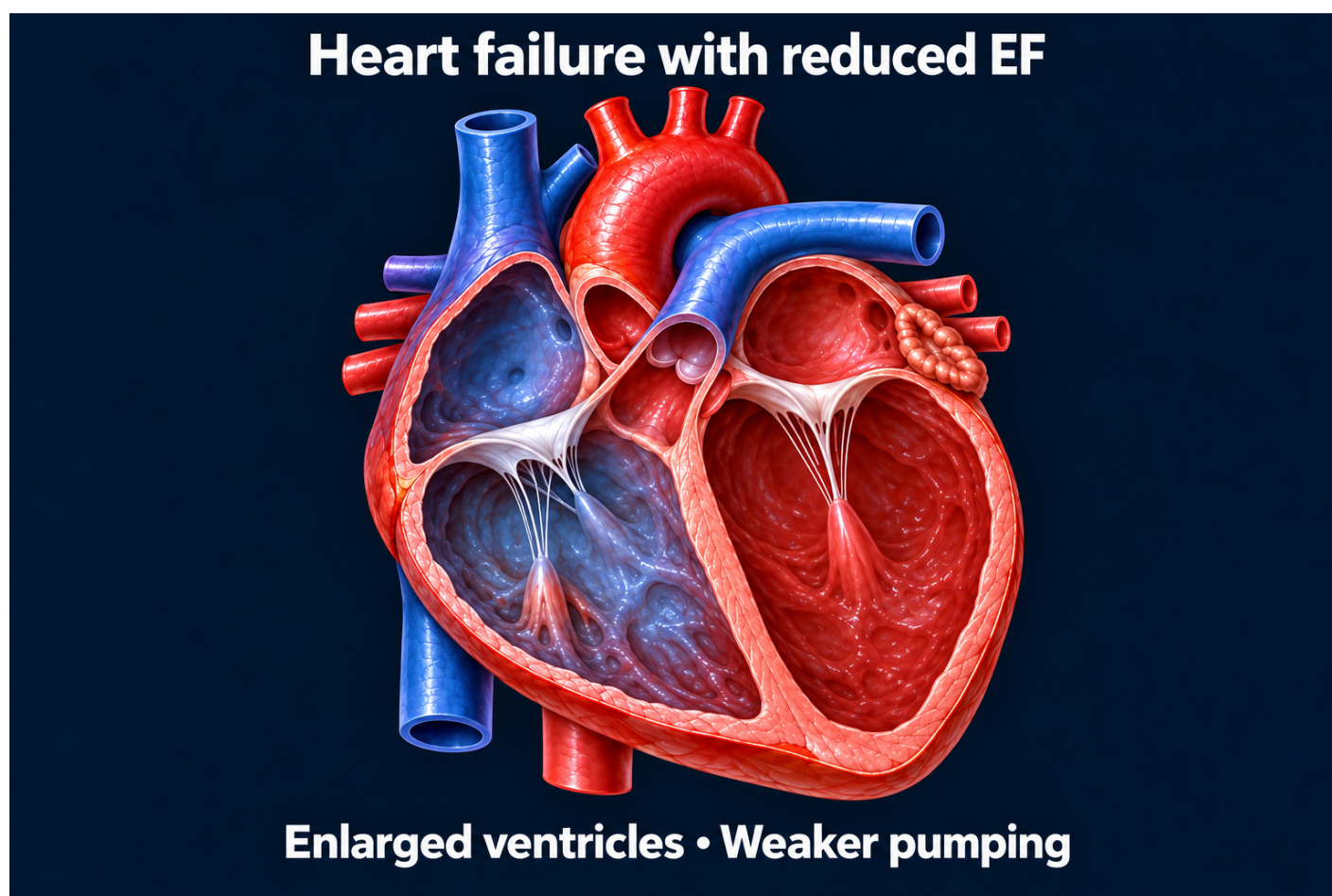
Ejection fraction, or EF, is the percentage of blood pumped out of the left ventricle with each heartbeat. The left ventricle is the heart's main pumping chamber.

For example, an EF of 60% means that the chamber pumps out 60% of the blood it contains with each beat. A normal EF is generally 55%-70%. Your heart does not need to empty completely to work normally.

Two main types of heart failure

1. A weakened pump: heart failure with reduced EF

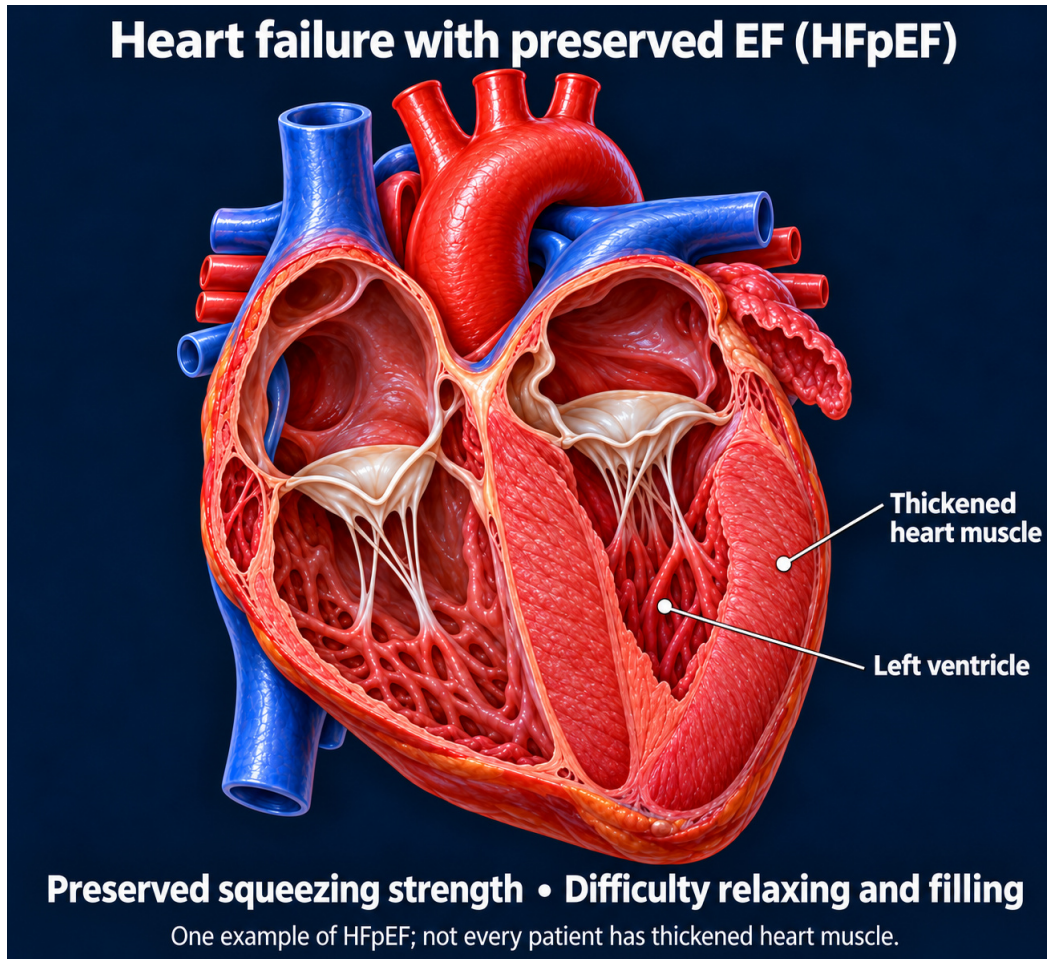
The heart muscle does not squeeze strongly enough. The left ventricle may become enlarged, and less blood moves forward with each heartbeat. This is called heart failure with reduced ejection fraction (HFrEF), typically with an EF of 40% or lower.



This example shows enlarged ventricles and weaker pumping. Not every patient with reduced EF has enlargement of both ventricles.

2. Difficulty filling: heart failure with preserved EF

The heart muscle is stiff and does not relax normally. Pressure rises as the heart fills, even though its squeezing strength may be preserved. This is called heart failure with preserved ejection fraction (HFpEF), with an EF of 50% or higher.



This example shows thickened muscle and a smaller filling space. The heart can have a preserved EF while filling pressures are too high. Not every patient with HFpEF has thickened heart muscle.

Some patients fall between these categories, with a mildly reduced EF of 41%-49%. A normal EF alone does not rule out heart failure.

Why does fluid build up?

When pressure backs up behind the heart, fluid can collect in the lungs, causing shortness of breath. Fluid can also accumulate in the legs and abdomen. The kidneys may retain extra salt and water, adding to the buildup.

When heart failure includes fluid buildup, you may hear it called congestive heart failure, or CHF.

What causes heart failure?

Common causes include:

- Coronary artery disease or a previous heart attack.
- Long-standing high blood pressure.
- Heart valve problems.
- Heart muscle disease, including inherited conditions.
- Certain persistent fast or abnormal heart rhythms.

Identifying the cause helps your doctor choose the right treatment.

Can heart failure improve?

Heart failure is serious, but treatment can help many patients feel better and live more active lives. Medications, lifestyle changes, and selected devices or procedures can improve symptoms and heart function. Even when heart function improves, ongoing care remains important.

Heart failure

Section 2 of 6: Symptoms

Understand heart failure, reduced and preserved EF, symptoms, treatment, and daily care.

SECTION 2

What symptoms might I feel?

Heart failure symptoms can develop gradually or worsen suddenly. Some patients notice problems only during activity, while others have symptoms at rest. Patients with reduced EF and preserved EF can experience similar symptoms.

Common symptoms

- Shortness of breath: Activities such as walking, climbing stairs, or getting dressed may become harder.
- Difficulty breathing when lying flat: You may need extra pillows or feel more comfortable sleeping upright.
- Waking up breathless: You may awaken feeling that you need to sit up to breathe.
- Fatigue and reduced stamina: Everyday tasks may leave you unusually tired.
- Swelling: Your feet, ankles, legs, or abdomen may become swollen.
- Rapid weight gain: Extra fluid can increase your weight over a few days.
- Coughing or wheezing: Fluid in the lungs may cause a persistent cough.
- Poor appetite or feeling full quickly: Abdominal congestion can make eating uncomfortable.

Pay attention to changes

A change from your usual condition can be an early warning that heart failure is worsening. Contact your care team promptly for increasing swelling, worsening breathlessness, needing more pillows, or rapid weight gain.

A common reporting threshold is 2-3 pounds in one day or 5 pounds in one week, but follow the specific weight threshold your doctor gives you.

When is it an emergency?

Call 911 for severe or sudden difficulty breathing, chest pain or pressure, fainting, or blue or gray lips. Do not drive yourself.

Symptoms such as breathlessness and swelling can also have other causes. Your doctor uses an examination and testing to determine what is responsible.

Heart failure

Section 3 of 6: Diagnosis

Understand heart failure, reduced and preserved EF, symptoms, treatment, and daily care.

SECTION 3

How is heart failure diagnosed?

Heart failure is diagnosed by combining your symptoms, medical history, examination, and test results. Testing helps determine the type of heart failure, its severity, and what caused it.

1. Your history and examination

Your doctor will ask about breathing, swelling, weight changes, activity level, and previous heart problems. They will review your medications, check your blood pressure and pulse, listen to your heart and lungs, and look for signs of fluid buildup.

2. An echocardiogram: an ultrasound of your heart

An echocardiogram, often called an echo, uses sound waves to create moving pictures of your heart. During a standard echo, a technician places an ultrasound probe on your chest.

The test helps your doctor assess:

- Your ejection fraction, or pumping strength.
- The size of your heart's chambers.
- The thickness of the heart muscle.
- Whether your heart valves work properly.
- How your heart relaxes and fills.



An echocardiogram looks at your heart's structure and function. The probe rests on your chest and uses sound waves to create moving pictures of your heart.

A normal EF does not rule out heart failure. Patients with HFpEF may squeeze normally but have difficulty relaxing and abnormally high filling pressures.

3. Blood tests

Blood tests called BNP or NT-proBNP help assess strain on the heart. Your doctor interprets these results alongside your symptoms and imaging.

Other blood tests check kidney function, electrolytes such as potassium, and other problems that may affect your treatment. One blood test alone does not provide the whole picture.

4. An EKG and chest X-ray

An EKG records the heart's electrical activity. It can identify abnormal rhythms or clues to previous heart damage.

A chest X-ray may show fluid congestion in the lungs or an enlarged heart. These tests provide useful clues, but do not replace the full evaluation.

5. Additional testing when needed

Depending on your results, your doctor may recommend a stress test, coronary artery testing, cardiac MRI, or cardiac catheterization to better understand the cause or measure pressures.

Not every patient needs every test. The goal is to understand your heart and choose the treatment that best fits your condition.

Heart failure

Section 4 of 6: Treatment options

Understand heart failure, reduced and preserved EF, symptoms, treatment, and daily care.

SECTION 4

How is heart failure treated?

Treatment aims to help you feel better, reduce hospital visits, and improve long-term health. Your plan depends on your type of heart failure, its cause, your kidney function, blood pressure, and other medical conditions. Several treatments often work together.

1. Removing extra fluid

Diuretics, often called water pills, help your kidneys remove extra salt and water through urine. Examples include furosemide (Lasix), torsemide, and bumetanide.

Reducing fluid buildup can improve breathing and swelling. Your doctor adjusts the dose based on your symptoms, weight, kidney function, and blood tests.

Removing fluid helps you feel better, but it is only one part of heart failure treatment. Other medications help protect the heart over time.

2. Treating a weakened heart: reduced EF

For many patients with reduced EF, treatment includes four main groups of medications, sometimes called the four pillars:

ARNI - or an ACE inhibitor or ARB

Sacubitril/valsartan (Entresto) helps reduce strain on the heart. An ACE inhibitor or ARB may be used when an ARNI is unsuitable. These are alternatives within this treatment group.

Evidence-based beta-blockers

Carvedilol, metoprolol succinate, and bisoprolol reduce the effects of stress hormones on the heart and can help heart function improve over time.

Mineralocorticoid receptor antagonists (MRAs)

Spironolactone or eplerenone blocks a hormone that contributes to fluid retention and harmful changes in the heart.

SGLT2 inhibitors

Dapagliflozin (Farxiga) or empagliflozin (Jardiance) helps reduce heart failure hospitalizations and provides heart protection. These medications can benefit patients with or without diabetes.

These medications work together to reduce hospitalization and the risk of death. Your doctor chooses appropriate doses and adjusts them as tolerated. Blood pressure, kidney function, and potassium levels help guide treatment.

3. Treating a stiff heart: preserved EF

HFpEF has effective treatments, even when the EF is normal. Treatment may include:

- Diuretics to relieve fluid buildup.
- SGLT2 inhibitors to reduce worsening heart failure and hospitalizations.
- Other medications for selected patients, including finerenone or medicines that help control blood pressure.

- Treating contributing conditions, including high blood pressure, atrial fibrillation, diabetes, kidney disease, and sleep apnea.
- Addressing obesity when present, through nutrition, activity, and appropriate weight-management treatments.

Your doctor selects treatments that fit your particular condition. The medication plan for HFpEF may differ from the four-pillar plan used for reduced EF.

4. Treating the underlying cause

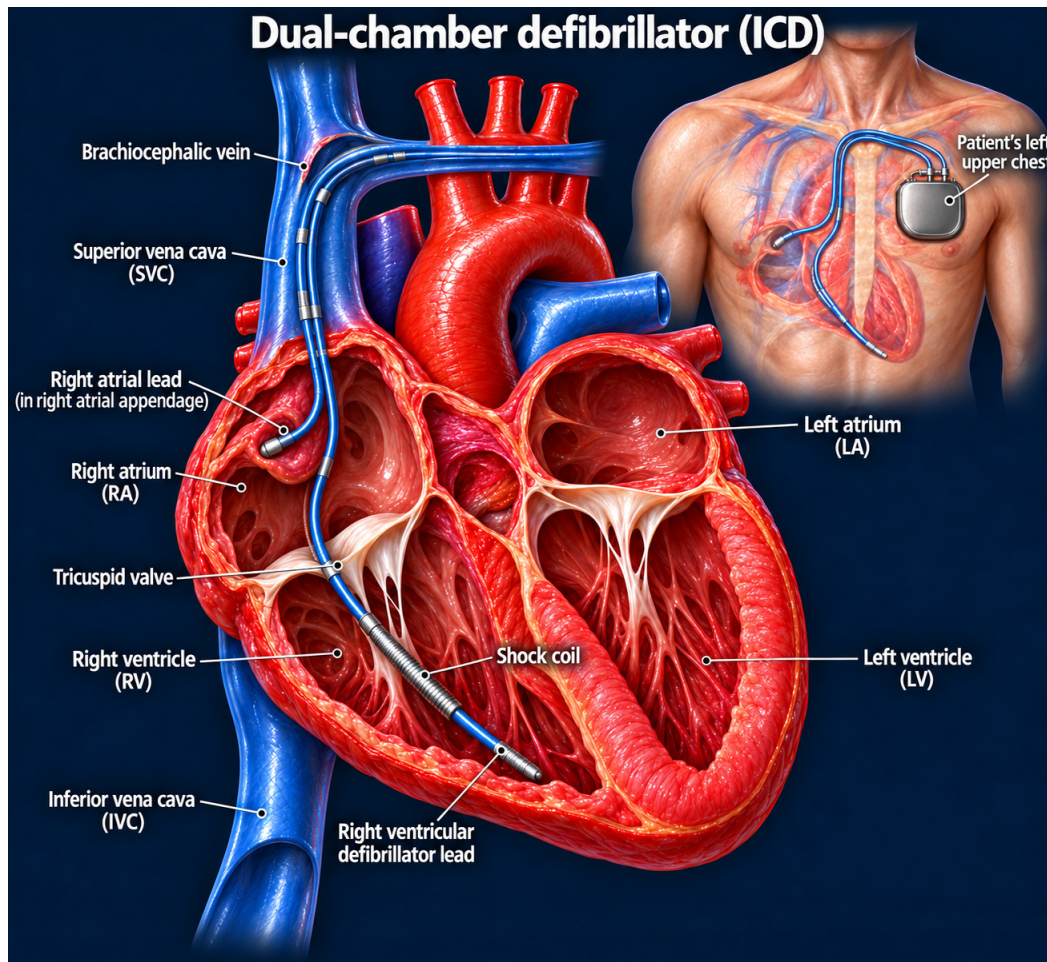
Treatment also addresses the problem that caused or worsened your heart failure. This may involve treating coronary artery disease, repairing a significant valve problem, controlling an abnormal heart rhythm, or treating a specific heart muscle disease.

Healthy habits - including an individualized salt and fluid plan, appropriate activity, and avoiding smoking - support your medical treatment.

5. Devices for selected patients

An implantable defibrillator (ICD)

Some patients with reduced heart function have an increased risk of dangerous ventricular rhythms. An ICD can detect and treat VT or VF to help prevent sudden cardiac death. An ICD provides rhythm protection; it does not directly strengthen the heart's pumping.

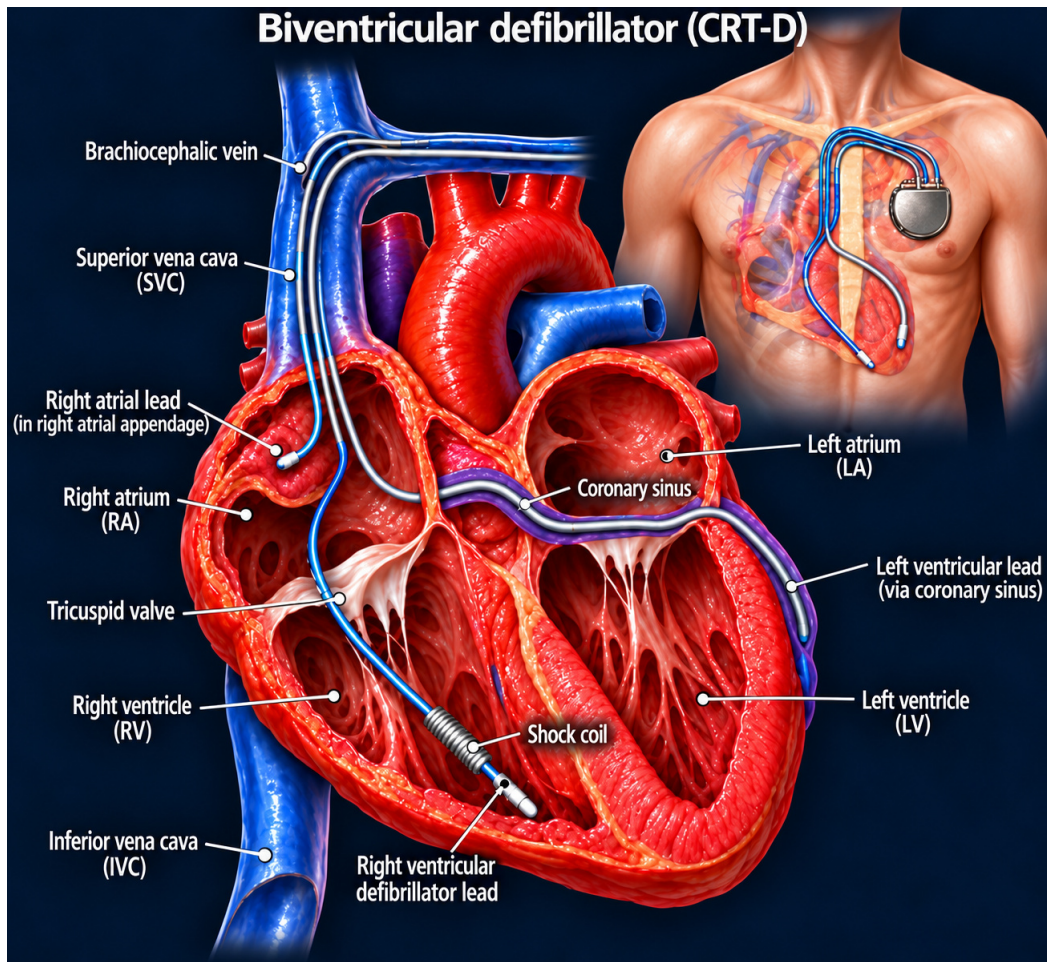


A dual-chamber ICD: This example has one lead in the right atrium and one defibrillator lead in the right ventricle. The ICD can treat dangerous ventricular rhythms.

Cardiac resynchronization therapy (CRT)

In some patients, delayed electrical signals cause the ventricles to squeeze out of coordination. CRT uses pacing to help them work together, which can improve symptoms and heart function.

CRT may be provided by a CRT-P pacemaker or a CRT-D, which also includes defibrillator protection. Your physician determines whether you would benefit and which device fits your needs.



A CRT-D: This example includes a coronary sinus lead to pace the left ventricle, helping coordinate ventricular contraction. It also provides defibrillator protection.

A wearable defibrillator vest

Selected patients may receive temporary protection with a wearable defibrillator while their heart function is reassessed or a long-term treatment decision is made. It protects against certain dangerous rhythms when worn as directed; it does not treat the underlying heart failure.



Wearable defibrillator vest

Temporary protection
for selected patients
at risk of VT or VF

A wearable defibrillator vest (LifeVest): Temporary rhythm protection for selected patients. Protection depends on wearing the device as directed. Illustration of a wearable system; appearance varies by model.

6. When more advanced treatment is needed

Patients with persistent severe symptoms despite treatment may benefit from an advanced heart failure specialist. Options can include additional therapies, a mechanical heart pump called an LVAD, or evaluation for a heart transplant.

These treatments are reserved for selected patients. Your care team helps you understand the options and choose care that fits your health and goals.

Treatment continues even when you feel better

Feeling better or having an improved EF does not mean you should stop your medications. Continuing treatment helps maintain improvement. Your cardiologist will guide medication changes and follow-up testing.

Heart failure

Section 5 of 6: Living with your condition

Understand heart failure, reduced and preserved EF, symptoms, treatment, and daily care.

SECTION 5

Living well with heart failure

Heart failure usually requires ongoing care, even when you feel better. Taking your medications, monitoring symptoms, and staying connected with your care team can help you remain active and reduce hospital visits.

Check your weight each morning

Weigh yourself after using the bathroom and before breakfast. Use the same scale and similar clothing, and record the result.

A sudden increase may mean you are retaining fluid. A common reason to call your care team is gaining 2-3 pounds in one day or 5 pounds in one week. Follow the specific threshold your doctor gives you.

Watch for changes in symptoms

Contact your care team promptly if you notice:

- Increasing shortness of breath.
- More swelling in your legs or abdomen.
- Needing extra pillows to breathe comfortably.
- Waking up breathless.
- Increasing fatigue or difficulty with usual activities.

Do not wait until your next appointment to report worsening symptoms.

Take medications consistently

Take each medication as prescribed. An improved EF does not mean you should stop treatment.

Report side effects, dizziness, difficulty paying for medications, or trouble following the schedule. Your team can help adjust your plan. Change your water-pill dose only according to instructions from your care team.

Follow your salt and fluid plan

Excess salt can worsen fluid retention. Choose lower-sodium foods and check labels, especially on packaged foods.

Your doctor will tell you whether you need a daily fluid limit. The right amount of fluid differs between patients.

Stay active safely

Once your condition is stable, regular activity can support stamina and quality of life. Ask about an exercise plan and whether you qualify for cardiac rehabilitation.

Balance activity with rest, and discuss the activities you enjoy with your doctor.

Keep follow-up appointments

Your care team may adjust medications and arrange blood tests or repeat heart imaging. Continue scheduled device checks if you have an ICD or CRT device.

Heart failure can also affect your emotional well-being. Tell your team if you feel anxious, overwhelmed, or depressed - support is part of your care.

Heart failure

Section 6 of 6: Your next steps

Understand heart failure, reduced and preserved EF, symptoms, treatment, and daily care.

SECTION 6

Preparing for your next visit

Your follow-up visits help your care team track progress and adjust treatment. Bring your questions and explain how you are feeling during everyday activities.

What should I bring?

- An updated medication list, including doses, supplements, and over-the-counter medicines.
- Your weight log and any blood pressure or pulse readings.
- Notes about breathing, swelling, fatigue, or medication side effects.
- Reports from recent hospital visits or testing outside your usual clinic.
- Your device identification card, if you have a pacemaker or defibrillator.

A family member or trusted friend can help you remember the discussion and follow your care plan.

Questions about my heart

- What caused my heart failure?
- Do I have reduced or preserved EF?
- What is my latest EF, and has it changed?
- Is there an underlying problem we can treat?

Questions about treatment

- What does each medication do?
- Can my medications be adjusted to provide more benefit?
- Which blood tests do I need, and when?
- Could I benefit from an ICD, CRT, or an advanced heart failure consultation?
- What should I do if I develop side effects or cannot afford a medication?

Questions about daily life

- What weight change should prompt a call?
- How much sodium and fluid should I have?
- What exercise, work, or recreational activities are appropriate?
- Would cardiac rehabilitation help me?
- Who should I contact if symptoms worsen?

Asking questions helps you understand your condition and participate in treatment decisions.

Leave with a clear plan

Before you leave, make sure you know:

- Your medication schedule and any changes.
- When to have blood tests or repeat imaging.
- When your next appointment is.
- Which symptoms or weight changes to report.
- How to reach your care team during and after office hours.

Heart failure care is an ongoing partnership. A clear plan helps you recognize changes early and know what to do next.

Sources & further reading

AHA: Understanding heart failure

AHA: Ejection fraction

AHA: Signs and symptoms

AHA: Diagnosing heart failure

ACC: Treatment of reduced EF

ACC: Treatment of preserved EF

AHA: Cardiac resynchronization therapy

ZOLL: Wearable defibrillator questions

NIH: Living with heart failure

AHA: Questions for your visit

Updated October 2026. Educational information; your own care plan may differ. Medical illustrations are simplified examples for teaching.