



# Patient education: Heart failure (Beyond the Basics)

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## INTRODUCTION

Heart failure is a condition that occurs when the heart cannot pump blood as well as it should; this leads to inadequate blood flow to vital organs such as the kidneys and congestion (buildup of fluid) in other vital organs such as the lungs. The term "heart failure" is misleading because the heart does not completely fail or stop beating. In some cases, heart failure can be mild and cause minor symptoms that are only evident with physical activity. Other times it can be severe (causing symptoms at rest) or even life-threatening. The most common symptoms of heart failure are shortness of breath, fatigue, leg swelling, and other signs of fluid retention.

Although heart failure is a serious condition, safe and effective treatments are available. Treatment can relieve symptoms and help you live longer.

This article discusses the most common causes, symptoms, and treatment of heart failure. More detailed information about heart failure is available by subscription. (See '[Professional level information](#)' below.)

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## NORMAL HEART FUNCTION AND HEART FAILURE

To understand what happens when a person has heart failure, it helps to understand normal heart function:

- **Normal function of the heart** – The heart has four chambers. The two upper chambers are the right atrium and left atrium (plural "atria"); the two lower chambers

are the right and left ventricles ( [figure 1](#)). Blood comes in from the body through the right atrium and into the right ventricle; from there it flows to the lungs, where it picks up oxygen. Then the blood comes back through the left atrium and into the left ventricle, which relaxes to receive the blood and then pumps the oxygenated blood out to the entire body. During times of increased physical activity (such as climbing the stairs), the body's muscles require more oxygen, which requires the heart to relax and pump more efficiently.

- **Heart failure** – When a person with heart failure does physical activity, their heart cannot adjust to the body's increased need for oxygen. The end result is poor delivery of oxygen to the body and high pressures in the heart, which is called "heart failure."

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## TYPES OF HEART FAILURE

There are two main types of heart failure. They are defined based on whether the "ejection fraction" (which indicates how well the left ventricle is able to pump) is reduced or preserved:

- In "heart failure with **reduced** ejection fraction" (HFrEF, also called "systolic heart failure"), the heart is too **weak**. When the heart pumps, it doesn't squeeze normally.
- In "heart failure with **preserved** ejection fraction" (HFpEF, also called "diastolic heart failure"), the heart is too **stiff**. When the heart pumps, it doesn't relax and refill with blood normally.

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## HEART FAILURE CAUSES

Heart failure is caused by a disease or condition that damages the heart. Fortunately, treating these conditions during the early stages can often prevent or slow the development of heart failure. The most common causes of heart failure include:

**High blood pressure** — In people with high blood pressure (also called hypertension), the heart must work harder to pump blood. Over time, this increased workload can reduce the heart's ability to relax and fill with blood. (See "[Patient education: High blood pressure in adults \(Beyond the Basics\)](#)".)

**Coronary heart disease** — In people with coronary heart disease, the arteries that supply blood to the heart become clogged with fatty deposits (plaques), reducing the flow of blood. As a result, portions of the heart muscle are deprived of oxygen (especially during exercise, when the body requires more oxygen), and the heart cannot function as well. Coronary heart disease can also lead to a heart attack (also called a myocardial infarction) if an artery

becomes completely blocked; this causes permanent damage to the heart muscle. Coronary heart disease can lead to heart failure when it impairs the function of the heart.

**Cardiomyopathy** — This is when the heart muscle does not pump or relax normally, but the cause is not high blood pressure or coronary heart disease. Cardiomyopathy can be related to different medical conditions, including certain autoimmune disorders, a genetic mutation, buildup of abnormal proteins in the body, or an infection; however, often the cause is unknown.

**Heart valve disease** — A number of conditions can damage the heart valves (which normally keep blood flowing through the heart at the right pressure and in the right direction):

- The valve can become narrowed ("stenosed"), which interferes with blood flow through the valve and increases pressure in the heart.
- In other cases, the valve can become leaky, causing blood to flow backward ("regurgitation"). (See "[Patient education: Mitral regurgitation \(Beyond the Basics\)](#)".)

Sometimes, both of these things happen, and a valve becomes both narrowed and leaky.

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## HEART FAILURE SYMPTOMS

As the amount of blood pumped by the heart (the "cardiac output") decreases, a variety of symptoms can develop, including:

- Shortness of breath, which might require you to cut back on your normal activities and/or sleep with several pillows to elevate your head.
  - Feeling tired or fatigued quickly.
  - Weakness, particularly of the legs, when exercising.
  - Lightheadedness or dizziness.
  - A rapid heart rate, even while resting.
  - Swelling in the lower legs and feet (edema) or in the abdomen (ascites). (See "[Patient education: Edema \(swelling\) \(Beyond the Basics\)](#)".)
  - Unintentional weight loss (in severe heart failure).
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## HEART FAILURE DIAGNOSIS

Heart failure is diagnosed based upon your medical history, a physical exam, and a series of tests. These tests can tell your doctor how well your heart is working and can help determine the cause of your heart failure. Tests may include:

- **Electrocardiogram (ECG)** – An ECG measures the electrical activity that causes the heart to beat. An ECG may detect conditions that can cause heart failure, such as an abnormal heart rhythm or a heart attack.
- **A blood test known as B-type natriuretic peptide (BNP) or N-terminal pro-BNP (NT-proBNP)** – BNP is a hormone produced by the heart. When a person has heart failure, the BNP or NT-proBNP level is higher than normal.
- **Chest X-ray** – A chest X-ray shows the size and shape of the heart and the large blood vessels in the chest. It also can show if there is fluid in the lungs, which can happen in people with heart failure.
- **Echocardiogram** – An echocardiogram uses ultrasound (high-frequency sound waves) to assess the size and function of the heart's chambers and the structure and function of the heart valves. This includes measuring how well the left ventricle pumps (the "ejection fraction"). A follow-up echocardiogram can be done to see if your heart function changes over time.
- **Exercise testing** – An exercise test (also called a "stress test") determines how well your heart performs during exercise. It is one way to look for signs of a shortage of blood supply to your heart caused by blockages in the coronary arteries. A doctor or nurse will see how your heart responds to exercise by looking at the ECG, blood pressure, and heart rate as you walk or run on a treadmill. In addition, imaging tests may be done to measure the effect of exercise on the heart.
- **Cardiac catheterization** – Cardiac catheterization helps to measure how well the heart is functioning and provides pictures of the coronary arteries to look for blockages. During the test, the doctor inserts a thin tube (catheter) through a large blood vessel in your groin (or arm) then advances it into the heart. A dye is injected into the catheter to view the arteries and the structure of the heart by X-ray. The pumping function of the heart can also be assessed during catheterization.
- **Other imaging tests** – Computed tomography (CT), magnetic resonance imaging (MRI), and nuclear scanning are all imaging tests. Doctors can use these to look at the heart muscle and coronary arteries in specific situations. For example, an MRI or nuclear scan can detect inflammation of the heart. A CT scan is sometimes used to examine the coronary arteries to look for disease.

## HEART FAILURE COMPLICATIONS

Heart failure can cause symptoms and make you feel ill. It can also lead to dangerous, even life-threatening complications. Left untreated, heart failure is generally a progressive condition. The goal of treatments for heart failure is to relieve symptoms; reduce the chances that you will develop complications; and slow, stop, or reverse the progression of the underlying process.

Some common complications of heart failure include:

- Irregular heart rhythms (called arrhythmias) – These problems can make your symptoms worse; some can also cause blood clots if the abnormal heartbeat causes blood to pool in the left atrium. Clots can be dangerous because if they travel to the brain, they can lead to a stroke. Some irregular heart rhythms are life threatening.
- Kidney disease – This may be caused or worsened by heart failure, which may reduce the flow of blood to or from the kidneys. Kidney disease may also make heart failure worse.
- Liver disease – This can be caused by blood flow backing up from the heart to the liver.

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## HEART FAILURE TREATMENT

In most people, heart failure is a chronic (long term) condition. While there are treatments that can help with symptoms and slow the progress of heart failure, in most cases it is a chronic condition that requires life-long treatment. Treatment usually includes a combination of changes in your diet and lifestyle, medicines, and sometimes a device to protect your heart from abnormal rhythms.

**Diet and lifestyle** — Changes in diet and lifestyle are often recommended to treat heart failure. The most common recommendations include:

- Weighing yourself daily – Weighing yourself daily helps to detect fluid accumulation, which can be caused by worsening heart function. The best way to weigh yourself is to stand on the same scale at the same time every day (eg, in the morning after you urinate but before eating breakfast). Be sure to wear the same amount of clothing each time you weigh yourself. If your weight increases by 2 pounds (about 1 kilogram) in one day, call your doctor or nurse. Also, if your weight increases by four pounds (2 kg) in one week, call your doctor or nurse. Your doctor may give you different criteria for calling based on your specific situation.

- Decreasing your salt and water intake – Salt in the diet can cause your body to retain excess fluid in the circulation, lungs, and elsewhere. Therefore, limiting the amount of salt (sodium) in the foods you eat can help to keep heart failure under control. Ask your doctor how much salt you should eat. Low-sodium diets are discussed in more detail separately. (See "[Patient education: Low-sodium diet \(Beyond the Basics\)](#)".)

The amount of fluid you drink is also important. For people with **severe** heart failure, doctors often recommend drinking less than 2 liters (66 ounces) of fluid per day. This includes water as well as all other fluids. Your doctor might give you more specific guidance on fluid intake depending on your situation.

- Maintaining a healthy weight – If you are overweight, your heart has to work harder to supply blood and oxygen to your body. Maintaining a healthy weight reduces the strain on your heart and can help you feel better, too. On the other hand, losing a lot of weight quickly without trying can be a sign of severe heart failure. Your doctor or nurse can give you advice on how to lose weight safely. (See "[Patient education: Losing weight \(Beyond the Basics\)](#)".)
- Avoiding smoking – Cigarette smoking increases your risk of having a heart attack and can worsen heart failure. If you smoke, talk to your doctor or nurse to get help with quitting. (See "[Patient education: Quitting smoking \(Beyond the Basics\)](#)".)
- Limiting the amount of alcohol you drink – Talk to your doctor about how much alcohol is too much. (See "[Patient education: Alcohol use — when is drinking a problem? \(Beyond the Basics\)](#)".)
- Regular exercise – If your symptoms allow, exercising most days of the week can help to improve your cardiovascular fitness and strengthen your muscles. As a result, this can improve symptoms like shortness of breath and fatigue, which are common in people with heart failure. Becoming more active can also help you to feel better. Before starting a new exercise routine, talk to your doctor or nurse. They might recommend a "cardiac rehab" program, which is a personalized approach to exercising safely to improve your heart function and overall health. (See "[Patient education: Heart attack recovery \(Beyond the Basics\)](#)", section on 'Cardiac rehabilitation after heart attack'.)

**Medication** — Medicines are often used to treat heart failure symptoms; some medicines have even been proven to prolong life. It is very important to take your medicines on time every single day. If you cannot afford or have trouble taking your medicines, talk to your health care provider.

There are some differences in the medicines used to treat heart failure with reduced ejection fraction and heart failure with preserved ejection fraction.

**Medicines for heart failure with reduced ejection fraction** — Most people with this type of heart failure take three or more medicines. They include:

- **Diuretic** – People with heart failure often develop swelling (also called edema) in the legs and fluid in the lungs. A diuretic (also called a "water pill") helps your body get rid of the excess fluid. The dose of diuretic requires careful monitoring and adjustment by your clinician, taking into consideration changes in your diet, underlying condition, or other medications. (See "[Patient education: Edema \(swelling\) \(Beyond the Basics\)](#)".)
- **ACE inhibitor, ARNI, or ARB** – Angiotensin-converting enzyme (ACE) inhibitor, angiotensin receptor-neprilysin inhibitor (ARNI), and angiotensin II receptor blocker (ARB) medicines all widen blood vessels and lowers blood pressure, making it easier for your heart to pump. They also directly improve heart function. You should generally take only one of these types of medication. An ARNI contains an ARB plus another drug. All of these medicines also protect the heart from hormone effects that can happen when a person has heart failure. ACE inhibitors can sometimes cause a dry cough, in which case an ARNI or ARB may be preferred. These medications can help prolong life. If you have a history of angioedema (sudden swelling of the face, mouth, tongue, or other parts of the body), it's important to tell your provider this, since people with angioedema should not take an ACE inhibitor or ARNI.

Some examples of ACE inhibitors include [enalapril](#), [captopril](#), and [lisinopril](#) (brand name: Zestril). The ARNI [sacubitril-valsartan](#) (brand name: Entresto) has two medicines in a single pill. One is the ARB called [valsartan](#); the other is called sacubitril, and can help your body to retain less fluid and relax blood vessels. Some examples of single-agent ARB include [candesartan](#) (brand name: Atacand) and valsartan (brand name: Diovan).

- **Beta blocker** – A beta blocker can slow your heart rate and lower your blood pressure. These medicines also protect the heart from the adverse effects of certain hormones that are increased when a person has heart failure. It can take time to start working, and some people feel worse right after they start taking it. If your doctor prescribes a beta blocker, give it a little time to start working. This medication can help prolong life. To minimize side effects, your doctor will start you on a low dose and then increase it as needed every few weeks.

Some examples of beta blockers include [carvedilol](#) (brand name: Coreg), [metoprolol](#) (brand name: Toprol XL), and [bisoprolol](#).

[Ivabradine](#) (brand name: Corlanor) is another type of drug used to slow the heart rate. Your doctor might prescribe ivabradine if your heart rate is still a little fast with a beta blocker, or if you cannot take a beta blocker.

In addition to the medications above, many people also need to take other medications to control their symptoms. These might include:

- **Mineralocorticoid receptor antagonist** – A mineralocorticoid receptor antagonist is a type of diuretic; it helps the body get rid of extra salt and fluid. However, it also helps the body hold onto potassium. That's important because other diuretics sometimes make the body lose too much potassium, which the body needs to work normally. Mineralocorticoid receptor antagonists might also protect the heart from hormone effects that can happen when a person has heart failure.

When taking this type of medicine, it is very important to have regular blood tests to check your potassium levels and see how your kidneys are working. Your doctor or nurse should follow the results of these tests closely.

Some examples of mineralocorticoid receptor antagonists include [spironolactone](#) (brand name: Aldactone) and [eplerenone](#) (brand name: Inspra).

- **An SGLT2 inhibitor** – These medications have historically been used in the treatment of diabetes; they can also be used to treat heart failure in people with or without diabetes. Your doctor will determine whether you are a candidate for a sodium-glucose co-transporter 2 (SGLT2) inhibitor.
- **Nitrate with hydralazine** – A nitrate and hydralazine work together to relax and expand blood vessels. This makes it easier for the heart to pump blood throughout the body. This combination of medicines is sometimes used in people who cannot take an ACE inhibitor, ARB, or ARNI. Unfortunately, the medicines often cause side effects (such as headaches and nausea), so doctors usually try other options before suggesting them.

These two medicines come in a single pill, but it is possible to get the two ingredients separately for much less money. The two ingredients come in pills of "[isosorbide dinitrate](#)" and "[hydralazine](#)."

- **Digoxin** – Digoxin helps the heart pump with more force. This can help reduce some of the symptoms of heart failure.

**Medicines for heart failure with preserved ejection fraction** — Medicines commonly prescribed to treat this type of heart failure include:

- **Diuretic** – People with heart failure often develop swelling (edema) in the legs and fluid in the lungs. A diuretic (also called a "water pill") helps the body get rid of the excess fluid. (See "[Patient education: Edema \(swelling\) \(Beyond the Basics\)](#)".)
- **An SGLT2 inhibitor** – These medications are used to treat heart failure in people with or without diabetes. In people with heart failure, taking this medication can help



prevent episodes of worse heart failure. Your doctor will determine whether you are a candidate for an SGLT2 inhibitor.

- **Mineralocorticoid receptor antagonist** – A mineralocorticoid receptor antagonist is a type of diuretic; it helps the body get rid of extra salt and fluid. However, it also helps the body hold onto potassium. That's important because other diuretics sometimes make the body lose too much potassium, which the body needs to work normally. Mineralocorticoid receptor antagonists might also protect the heart from hormone effects that can happen when a person has heart failure.

When taking this type of medicine, it is very important to have regular blood tests to check your potassium levels and see how your kidneys are working. Your doctor or nurse should follow the results of these tests closely.

Some examples of mineralocorticoid receptor antagonists include [spironolactone](#) (brand name: Aldactone) and [eplerenone](#) (brand name: Inspra).

- **ARNI** – An ARNI widens blood vessels, lowers blood pressure, and protects the heart from hormone effects that can happen when a person has heart failure. If you have a history of angioedema (sudden swelling of the face, mouth, tongue, or other parts of the body), it's important to tell your provider this, since people with angioedema should not take an ARNI.

The ARNI [sacubitril-valsartan](#) (brand name: Entresto) has two medicines in a single pill. One is the ARB called [valsartan](#) (brand name: Diovan); the other is called sacubitril. Together, these medications can help your body to retain less fluid and relax blood vessels.

- **Medicine to control high blood pressure** – If you have high blood pressure, your doctor might prescribe medicines to control it.

**Heart rhythm treatment** — In some people with heart failure, an abnormal heart rhythm (arrhythmia) develops. Some abnormal heart rhythms are treated with medications.

If you have a condition that causes an abnormal heart rhythm, your doctor might recommend a device that shocks the heart and returns it to a normal rhythm. The device is called an implantable cardioverter-defibrillator (ICD). It is implanted under the skin in your upper chest. (See "[Patient education: Implantable cardioverter-defibrillators \(Beyond the Basics\)](#)".)

Another potential problem in people with heart failure is abnormal electrical conduction in the heart. This can cause the walls of the left ventricle to contract out of sync, making the heart work less efficiently. A special type of pacemaker, called "cardiac resynchronization

therapy" (CRT) or biventricular pacing, can treat this problem. (See "[Patient education: Pacemakers \(Beyond the Basics\)](#)", section on 'Types of pacemakers'.)

**Surgery or stenting** — Surgery is sometimes recommended for people with heart failure who also have coronary heart disease or severe disease of the heart valves. This might include heart valve surgery or coronary artery bypass graft (CABG) surgery or both. CABG is a procedure to bypass narrowed or blocked coronary arteries and restore blood flow to the heart muscle. (See "[Patient education: Coronary artery bypass graft surgery \(Beyond the Basics\)](#)".)

In some cases, coronary heart disease can be treated with a coronary stent procedure to help restore blood flow. A stent is a thin tube that can be inserted surgically to keep blood flowing through a narrowed or blocked artery. (See "[Patient education: Stenting for the heart \(Beyond the Basics\)](#)".)

**Treatment for advanced heart failure** — Heart transplantation can be helpful for some people with severe heart failure that has not responded to other treatments. However, careful screening is required to ensure that heart transplantation is appropriate. In addition, the supply of hearts available for transplant is limited, so most people must wait for months or even years before a new heart is available. People who have a heart transplant are followed closely before and after surgery, since there are numerous risks. (See "[Patient education: Heart transplantation \(Beyond the Basics\)](#)".)

Your doctor might recommend something called a left ventricular assist device (LVAD) instead of transplantation **or** while you wait for transplantation. This device is a pump that is surgically implanted inside the chest and designed to improve blood flow to the body when the heart pump is weakened. Complications of LVADs include bleeding, blood clots, and infection.

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## HOW TO CARE FOR YOURSELF

Being diagnosed with heart failure can be frightening and stressful. There are some things you can do to manage your condition:

- Be sure to take your medicines as instructed. Do not skip doses when you feel better. If you are having trouble paying for your medicines, talk to your doctor or nurse.
- Tell your doctor if your medicines cause side effects or other problems. Your doctor might be able to switch you to another medicine or lower your dose to avoid bothersome side effects.

- Pay attention to how you feel, and look for signs that your heart failure is getting worse ( [figure 2A-B](#)). Let your doctor know if there are any changes.

**When to seek help** — Call for emergency help (in the United States and Canada, **dial 9-1-1**) if you have any of the following:

- Severe shortness of breath.
- Chest discomfort or pain that lasts more than 15 minutes and does not get better with rest – If your provider has prescribed [nitroglycerin](#) for chest pain, take it as directed and seek help if your pain does not resolve.
- Fainting or passing out.

Call your doctor or nurse if you develop any of the following, which can be signs of worsening heart failure:

- Increasing or new shortness of breath
- New or worsened cough, especially if you are coughing up frothy or bloody material
- An increase in leg or ankle swelling
- Weight gain of 2 to 3 pounds (1 kilogram) in one day or five pounds (2 kg) in one week
- A fast or irregular heartbeat

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## WHERE TO GET MORE INFORMATION

Your health care provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our website ( [www.uptodate.com/contents/table-of-contents/patient-information](http://www.uptodate.com/contents/table-of-contents/patient-information)). Related topics for patients, as well as selected articles written for health care professionals, are also available. Some of the most relevant are listed below.

**Patient level information** — UpToDate offers two types of patient education materials.

**The Basics** — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient education: Heart failure \(The Basics\)](#)

[Patient education: Swelling \(The Basics\)](#)

[Patient education: Medicines for heart failure with reduced ejection fraction \(The Basics\)](#)

[Patient education: Shortness of breath \(The Basics\)](#)

Patient education: ECG and stress test (The Basics)  
Patient education: Nuclear heart testing (The Basics)  
Patient education: Echocardiogram (The Basics)  
Patient education: What can go wrong after a heart attack? (The Basics)  
Patient education: Heart failure and atrial fibrillation (The Basics)  
Patient education: Cardiac catheterization (The Basics)  
Patient education: Cardiac resynchronization therapy (The Basics)  
Patient education: High blood pressure emergencies (The Basics)  
Patient education: Pleural effusion (The Basics)  
Patient education: Sudden cardiac arrest (The Basics)  
Patient education: Myocarditis (The Basics)  
Patient education: Aortic dissection (The Basics)  
Patient education: Tetralogy of Fallot (The Basics)  
Patient education: Tricuspid regurgitation (The Basics)  
Patient education: When your lungs fill with fluid (The Basics)  
Patient education: Mitral stenosis in adults (The Basics)  
Patient education: Heart failure with preserved ejection fraction (The Basics)  
Patient education: Heart failure with reduced ejection fraction (The Basics)  
Patient education: Stress cardiomyopathy (The Basics)  
Patient education: Pulmonary artery catheterization (The Basics)  
Patient education: Cardiac rehabilitation (The Basics)  
Patient education: Choosing surgical treatment for heart failure (The Basics)

**Beyond the Basics** — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

Patient education: High blood pressure in adults (Beyond the Basics)  
Patient education: Mitral regurgitation (Beyond the Basics)  
Patient education: Edema (swelling) (Beyond the Basics)  
Patient education: Low-sodium diet (Beyond the Basics)  
Patient education: Losing weight (Beyond the Basics)  
Patient education: Quitting smoking (Beyond the Basics)  
Patient education: Alcohol use — when is drinking a problem? (Beyond the Basics)  
Patient education: Heart attack recovery (Beyond the Basics)  
Patient education: Warfarin (Beyond the Basics)  
Patient education: Implantable cardioverter-defibrillators (Beyond the Basics)  
Patient education: Pacemakers (Beyond the Basics)  
Patient education: Coronary artery bypass graft surgery (Beyond the Basics)  
Patient education: Stenting for the heart (Beyond the Basics)  
Patient education: Heart transplantation (Beyond the Basics)

**Professional level information** — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Overview of the management of heart failure with reduced ejection fraction in adults](#)

[Primary pharmacologic therapy for heart failure with reduced ejection fraction](#)

[Secondary pharmacologic therapy for heart failure with reduced ejection fraction](#)

[Epidemiology of heart failure](#)

[Heart failure: Clinical manifestations and diagnosis in adults](#)

[Determining the etiology and severity of heart failure or cardiomyopathy](#)

[Prognosis of heart failure](#)

[Heart failure with preserved ejection fraction: Clinical manifestations and diagnosis](#)

[Treatment and prognosis of heart failure with preserved ejection fraction](#)

The following organizations also provide reliable health information.

- National Library of Medicine  
( [medlineplus/healthtopics.html](https://medlineplus.gov/healthtopics.html))
- National Heart, Lung, and Blood Institute  
( [www.nhlbi.nih.gov](https://www.nhlbi.nih.gov))
- American Heart Association  
( [www.heart.org](https://www.heart.org))
- European Society of Cardiology  
( [www.escardio.org](https://www.escardio.org))

[1-6]

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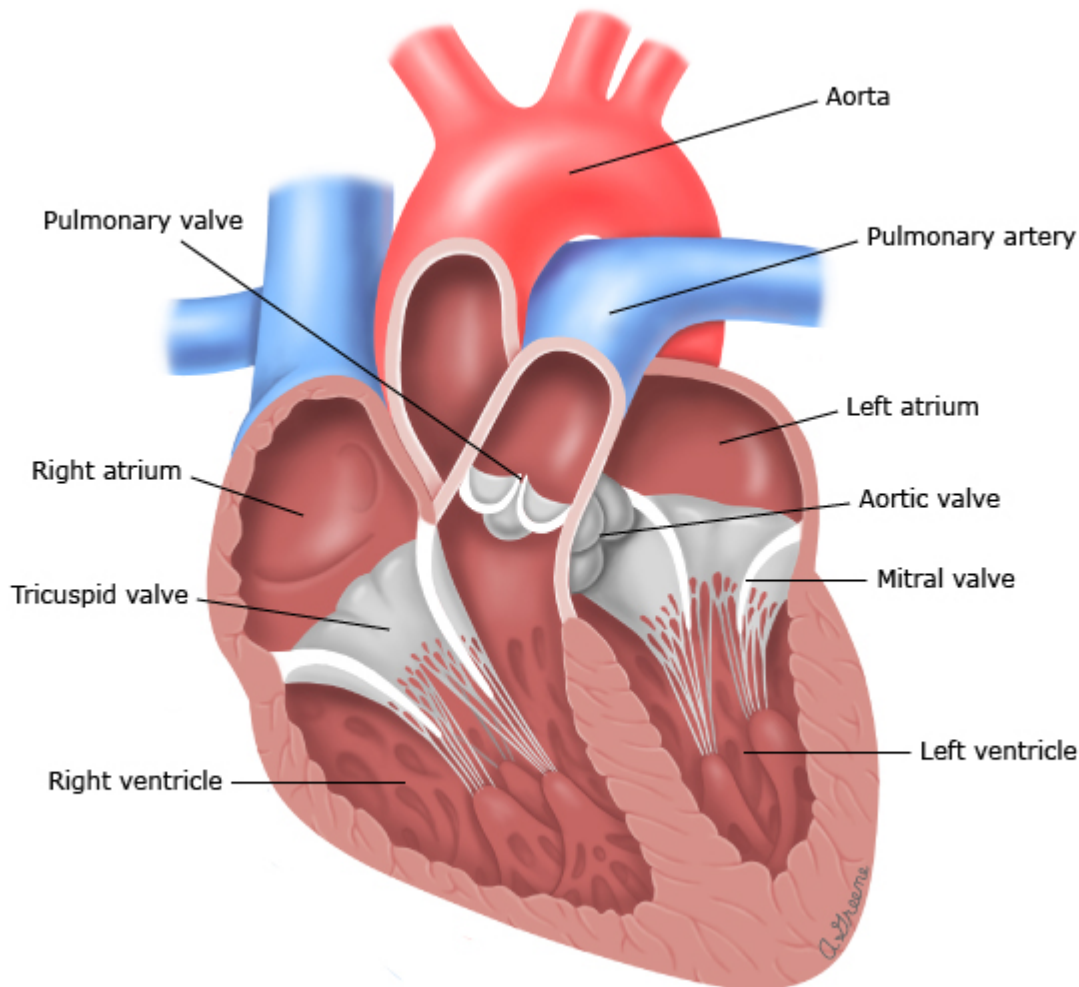
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advice or a substitute for the medical advice, diagnosis, or treatment of a health care provider based on the health care provider's examination and assessment of a patient's specific and unique circumstances. Patients must speak with a health care provider for complete information about their health, medical questions, and treatment options, including any risks or benefits regarding use of medications. This information does not endorse any treatments or medications as safe, effective, or approved for treating a specific patient. UpToDate, Inc. and its affiliates disclaim any warranty or liability relating to this information or the use thereof. The use of this information is governed by the Terms of Use, available at <https://www.wolterskluwer.com/en/know/clinical-effectiveness-terms>.  
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Topic 3446 Version 32.0

## GRAPHICS

### Chambers and valves of the heart



The heart has 4 main sections, or "chambers." The top 2 chambers are called the right atrium and left atrium. The bottom 2 chambers are called the right and left ventricles. Each of these chambers has a valve that keeps blood flowing in 1 direction. The valves in this picture appear in gray.

When the heart is working normally, blood comes in from the body through the right atrium and into the right ventricle. From there, it goes to the lungs, where it picks up oxygen. Then, the blood comes back through the left atrium, into the left ventricle, and back out to the body through a blood vessel called the aorta. The aorta appears in red. If a valve doesn't work properly, it will either let blood flow backward in the wrong direction or not let enough blood flow forward.

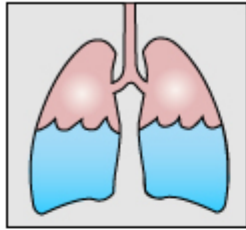
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Graphic 58389 Version 14.0



## Heart failure action plan - Page 1

Every morning, when you get up, check how you are doing. Look for:



### Changes in breathing

Ask yourself:

- Can I breathe as well as I usually can?
- Am I getting out of breath doing things that I can normally do without a problem?
- Am I coughing more than usual?
- Did I use more pillows than usual to sleep last night?

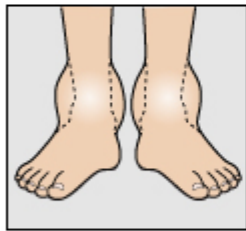


### Changes in weight

Weigh yourself every morning after urinating but before eating.

Write down your weight on a calendar. Then, ask yourself:

- Has my weight gone up or gone down compared with yesterday?  
If so, by how many pounds?
- Has my weight gone up or gone down compared with a week ago?  
If so, by how many pounds?



### New or worse swelling

Ask yourself:

- Are my ankles more swollen than usual?
- Do my socks or shoes feel tighter?
- Do my clothes feel tighter at the waist?
- Do my rings fit more snugly?



### Changes in your ability to do everyday things

Ask yourself:


- Can I do all of the things that I normally do, such as get dressed on my own, make meals, or go for walks?
- Do I feel dizzy or more tired than usual?
- Do I have any new symptoms, like pressure or pain in my chest?
- Does my heartbeat feel strange or irregular?
- Do I feel like I might pass out?

See the next page to find out what you should do if any of these changes occur.

Graphic 72459 Version 4.0



## Heart failure action plan – Page 2

Symptoms to watch for	Actions to take
<p><b>If you:</b></p> <ul style="list-style-type: none"> <li>▪ Have no trouble breathing or chest pain</li> <li>▪ Can do your normal activities</li> <li>▪ Have no new ankle swelling</li> <li>▪ Are sleeping normally</li> <li>▪ Have no changes in your weight (<i>weight: _____</i>)</li> <li>▪ Have a normal appetite</li> <li>▪ Feel good emotionally</li> </ul>	<p><b>Your symptoms are under control.</b></p> <p>You should:</p> <ul style="list-style-type: none"> <li>▪ Keep taking your medicines every day as instructed</li> <li>▪ Keep weighing yourself every day and writing down your weight</li> <li>▪ Go to all of your medical appointments</li> </ul>
<p><b>If you:</b></p> <ul style="list-style-type: none"> <li>▪ Have more trouble breathing with activity</li> <li>▪ Are coughing</li> <li>▪ Have new ankle swelling or discomfort or swelling in the belly</li> <li>▪ Have gained 2 to 3 pounds in 1 week</li> <li>▪ Have trouble sleeping</li> <li>▪ Have less of an appetite than usual</li> <li>▪ Have mild sadness or depression</li> </ul>	<p><b>You might need a change in your medicine.</b></p> <p>You should:</p> <ul style="list-style-type: none"> <li>▪ Call your doctor, and ask them what to do</li> </ul> <p><i>Doctor's name:</i> _____</p> <p><i>Phone number:</i> _____</p>
<p><b>If you:</b></p> <ul style="list-style-type: none"> <li>▪ Have trouble breathing, even at rest</li> <li>▪ Are coughing a lot</li> <li>▪ Have worsening ankle swelling or discomfort or swelling in the belly</li> <li>▪ Have gained more than 2 to 3 pounds overnight, or 5 pounds in 1 week</li> <li>▪ Cannot lie flat</li> <li>▪ Have nausea or no appetite</li> <li>▪ Have sadness or depression and are having trouble coping</li> <li>▪ Feel very confused, dizzy, or lightheaded</li> <li>▪ Have chest pain or other signs of a heart attack</li> </ul>	<p><b>You need medical attention right away!</b></p> <p>You should:</p> <ul style="list-style-type: none"> <li>▪ Call your doctor, and ask them what to do</li> </ul> <p><i>Doctor's name:</i> _____</p> <p><i>Phone number:</i> _____</p> <p style="text-align: center;"><b>If you can't reach your doctor right away, call for an ambulance (in the US and Canada, call 9-1-1).</b></p> <div style="text-align: center;">  </div>

Adapted from: *Heart Failure Signs and Symptoms: Self-Check Plan for HF Management*. American Heart Association 2022. Available at: <https://www.heart.org/en/health-topics/heart-failure/warning-signs-of-heart-failure> (Accessed on July 11, 2024).

Graphic 75501 Version 7.0

