



Patient education: Heart failure with reduced ejection fraction (The Basics)

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What is heart failure with reduced ejection fraction?

This is a type of heart failure. Heart failure is a condition in which the heart does not pump or fill with blood well. As a result, the heart cannot move blood throughout the body as well as usual. This can lead to symptoms.

There are 2 main types of heart failure:

- **Heart failure with reduced ejection fraction** – This is when the heart is too weak. When the heart pumps, it doesn't squeeze normally. This is also known as "systolic heart failure."
- **Heart failure with preserved ejection fraction** – This is when the heart is too stiff. When the heart pumps, it doesn't relax and fill with blood normally. This is also known as "diastolic heart failure."

The "ejection fraction" ("EF") is the amount of blood that the heart pumps out with each heartbeat. People with "heart failure with reduced ejection fraction" have an EF that is **lower** than normal. People with the other type of heart failure, "heart failure with preserved ejection fraction," have a **normal** (or almost normal) EF.

What are the symptoms of heart failure with reduced EF?

Symptoms can include:

- Trouble breathing – At first, people might have trouble breathing only with activity. Over time, they can also have trouble breathing when resting or lying down.
- Swelling in the feet, ankles, legs, or belly
- Feeling tired

Is there a test for heart failure?

Yes. If your doctor or nurse thinks that you might have any type of heart failure, they will ask about your symptoms, do an exam, and order some of these tests:

- Chest X-ray – This can show if there is fluid in your lungs. It also shows the general shape of your heart and large blood vessels in your chest.
- Electrocardiogram ("ECG") – This test measures the electrical activity in your heart.
- "Brain natriuretic peptide" ("BNP") or "N-terminal pro-BNP" ("NT-proBNP") – These are blood tests that help show if you have heart failure.
- Echocardiogram (also called an "echo") – This uses sound waves to create pictures of your heart as it beats.
- Stress test – The doctor records your ECG while you exercise on a treadmill or bike, or get medicine to make your heart pump faster.
- Cardiac catheterization (also called "cardiac cath") – The doctor puts a thin tube into a blood vessel in your leg or arm. Then, they move the tube up to your heart. When the tube is in your heart or blood vessels, they take blood pressure measurements. The doctor might also put a dye that shows up on an X-ray into the tube. This can show if any arteries in your heart are narrowed or blocked. This part is called "coronary angiography."

How is heart failure with reduced EF treated?

Treatment usually includes:

- Taking medicines – Medicines can help reduce symptoms and help you live longer. They might also lower the chance that you will need to go to the hospital. Many people need to take 3 or more medicines every day. It's important to take your medicines every day, even if you feel well. The right medicines for you will depend on your symptoms and other medical conditions, and can include:
 - An angiotensin-converting enzyme inhibitor ("ACE inhibitor"), angiotensin II receptor blocker ("ARB"), or angiotensin receptor-neprilysin inhibitor ("ARNI") – These widen blood vessels and lower blood pressure, making it easier for your heart to pump. They might also protect your heart from hormone effects that can happen with heart failure. If you can't take an ACE inhibitor, your doctor might prescribe an ARB

or other medicine. The ARNI [sacubitril-valsartan](#) is another heart failure medicine that can be used instead of an ACE inhibitor.

- A beta blocker – This can slow your heart rate down and sometimes lowers blood pressure. It can reduce the amount of work your heart has to do. When you start taking a beta blocker, you might feel a little worse. But after your body gets used to the medicine, you might start to feel better.

[Ivabradine](#) (brand name: Corlanor) is another medicine that slows your heart down. Your doctor might prescribe this if your heart rate is still a little fast with a beta blocker, or if you cannot take a beta blocker.

- A diuretic (water pill) – This helps your body get rid of extra salt and fluid. It can reduce the fluid in your lungs or swelling in your legs or belly.
- A mineralocorticoid receptor antagonist – This helps your body get rid of extra salt and fluid. It also protects your heart from harmful hormone effects that happen in heart failure.
- An SGLT2 inhibitor – This is used to treat people with diabetes. It can also be used to treat heart failure with reduced EF even if you do not have diabetes.
- Nitrate with [hydralazine](#) – These work together to relax and expand blood vessels. This makes it easier for your heart to pump blood throughout your body. These 2 medicines come in 1 pill, but it is possible to get the 2 ingredients separately for much less money. The 2 ingredients come in pills of "[isosorbide dinitrate](#)" and "hydralazine."
- [Digoxin](#) – This helps your heart pump with more force. It can help reduce some of the symptoms of heart failure.
- Treating your coronary heart disease (if you have it) – In coronary heart disease, the arteries that bring blood to the heart get clogged. Treatment can include medicines, a procedure to unblock a clogged artery, or surgery.

Other treatments for heart failure with reduced EF sometimes includes:

- A device to help your heart pump with more force or beat at the right rhythm
- Procedures to improve the function of your heart valves
- Exercise training to help prevent the condition from getting worse
- "Cardiac rehabilitation" – This involves working with doctors, nurses, and other health professionals to help improve your heart's health after a hospitalization.

In severe cases of heart failure, your doctor might suggest that you get:

- A pump attached to your heart to increase blood flow to your body and reduce the work your heart needs to do
- Heart transplant surgery – This is surgery to replace your diseased heart with a healthy heart. It is done only when all other treatments do not work.

What can I do on my own to protect my heart?

To help feel better and reduce the chances that you will need to go to the hospital, you should:

- Follow the action plan your doctor gives you. This is a list of instructions that tells you what to do if your symptoms change. To use an action plan, watch your symptoms closely and weigh yourself every day. If you do not feel well or if you lose or gain weight suddenly, look at your action plan to see what to do ([figure 1](#) and [figure 2](#)).
- Lose weight, if you have excess body weight.
- Quit smoking, if you smoke. Your doctor or nurse can help.
- Limit alcohol. Talk to your doctor about how much alcohol is too much.

More on this topic

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

[Patient education: Heart failure in adults – Discharge instructions \(The Basics\)](#)

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

[Patient education: Heart failure with preserved ejection fraction \(The Basics\)](#)

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

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

[Patient education: ECG and stress test \(The Basics\)](#)

[Patient education: B-type natriuretic peptide test \(The Basics\)](#)

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[Patient education: Cardiac catheterization \(The Basics\)](#)

[Patient education: Coronary artery disease \(The Basics\)](#)

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

[Patient education: Cardiac resynchronization therapy \(The Basics\)](#)

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

[Patient education: Choosing surgical treatment for heart failure \(The Basics\)](#)

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

[Patient education: Shortness of breath \(dyspnea\) \(Beyond the Basics\)](#)

[Patient education: Edema \(swelling\) \(Beyond the Basics\)](#)

[Patient education: Heart attack \(Beyond the Basics\)](#)

[Patient education: Heart transplantation \(Beyond the Basics\)](#)

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GRAPHICS

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?

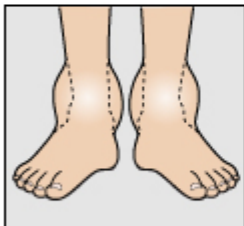


Changes in weight

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.

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Heart failure action plan – Page 2

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

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