

Heart Disease and Congestive Heart Failure

Heart failure affects nearly 5 million Americans. Roughly 550,000 people are diagnosed with heart failure each year. It is the leading cause of hospitalization in people older than 65.

What Is Heart Failure?

Heart failure does not mean the heart has stopped working. Rather, it means that the heart's pumping power is weaker than normal. With heart failure, blood moves through the heart and body at a slower rate, and pressure in the heart increases. As a result, the heart cannot pump enough oxygen and nutrients to meet the body's needs. The chambers of the heart respond by stretching to hold more blood to pump through the body or by becoming stiff and thickened. This helps to keep the blood moving for a short while but, in time, the heart muscle walls weaken and are unable to pump as strongly. As a result, the kidneys often respond by causing the body to retain fluid (water) and sodium. If fluid builds up in the arms, legs, ankles, feet, lungs, or other organs, the body becomes congested, and congestive heart failure is the term used to describe the condition.

What Causes Heart Failure?

Heart failure is caused by many conditions that damage the heart muscle, including:

Coronary artery disease. Coronary artery disease (CAD), a disease of the arteries that supply blood and oxygen to the heart, causes decreased blood flow to the heart muscle. If the arteries become blocked or severely narrowed, the heart becomes starved for oxygen and nutrients.

Heart attack. A heart attack occurs when a coronary artery becomes suddenly blocked, stopping the flow of blood to the heart muscle and damaging it. All or part of the heart muscle becomes cut off from its supply of oxygen. A heart attack damages the heart muscle, resulting in a scarred area that does not function properly.

Cardiomyopathy. Damage to the heart muscle from causes other than artery or blood flow problems, such as from infections or alcohol or drug abuse.

Conditions that overwork the heart. Conditions including high blood pressure, valve disease, thyroid disease, kidney disease, diabetes, or heart defects present at birth can all cause heart failure. In addition, heart failure can occur when several diseases or conditions are present at once.

What Are the Symptoms of Heart Failure?

You may not have any symptoms of heart failure, or the symptoms may be mild to severe. Symptoms can be constant or can come and go. The symptoms can include:

Congested lungs. Fluid backup in the lungs can cause shortness of breath with exercise or difficulty breathing at rest or when lying flat in bed. Lung congestion can also cause a dry, hacking cough or wheezing.

Fluid and water retention. Less blood to your kidneys causes fluid and water retention, resulting in swollen ankles, legs, abdomen (called edema), and weight gain. Symptoms may cause an increased need to urinate during the night. Bloating in your stomach may cause a loss of appetite or nausea.

Dizziness, fatigue, and weakness. Less blood to your major organs and muscles makes you feel tired and weak. Less blood to the brain can cause dizziness or confusion.

Rapid or Irregular heartbeats. The heart beats faster to pump enough blood to the body. This can cause a fast or irregular heartbeat.

If you have heart failure, you may have one or all of these symptoms or you may have none of them. In addition, your symptoms may not be related to how weak your heart is; you may have many symptoms but your heart function may be only mildly weakened. Or you *may* have a more severely damaged heart but have no symptoms.

What Are the Types of Heart Failure?

Systolic dysfunction (or systolic heart failure) occurs when the heart muscle doesn't contract with enough force, so there is less oxygen-rich blood that is pumped throughout the body.

Diastolic dysfunction (or diastolic heart failure) occurs when the heart contracts normally, but the ventricles *do* not relax properly or are stiff, and less blood enters the heart during normal filling.

A calculation done during an echocardiogram called the ejection fraction (EF) is used to measure how well your heart pumps with each beat to help determine if systolic or diastolic dysfunction is present. Your doctor can discuss which condition you have.

How Is Heart Failure Diagnosed?

Your doctor will ask you many questions about your symptoms and medical history. You will be asked about any conditions you have that may cause heart failure (such as coronary artery disease, angina, diabetes, heart valve disease, and high blood pressure). You will be asked if you smoke, take drugs, drink alcohol (and how much you drink), and about what drugs you take.

You will also get a complete physical exam. Your doctor will listen to your heart and look for signs of heart failure as well as other illnesses that may have caused your heart muscle to weaken or stiffen.

Your doctor may also order other tests to determine the cause and severity of your heart failure. These include:

Blood tests. Blood tests are used to evaluate kidney and thyroid function as well as to check cholesterol levels and the presence of anemia. Anemia is a blood condition that occurs when there is not enough hemoglobin (the substance in red blood cells that enables the blood to transport oxygen through the body) in a person's blood.

B-type Natriuretic Peptide (BNP) blood test. BNP is a substance secreted from the heart in response to changes in blood pressure that occur when heart failure develops or worsens. BNP blood levels increase when heart failure symptoms worsen, and decrease when the heart failure condition is stable. The BNP level in a person with heart failure - even someone whose condition is stable - is higher than in a person with normal heart function. BNP levels do not necessarily correlate with the severity of heart failure.

Chest X-ray. A chest X-ray shows the size of your heart and whether there is fluid build-up around the heart and lungs.

Echo cardiogram. This test shows the heart's movement.

Ejection fraction (EF). A test called the ejection fraction (EF) is used to measure how well your heart pumps with each beat to determine if systolic dysfunction or heart failure with preserved left ventricular function are present. Your doctor can discuss which condition is present in your heart.

Electrocardiogram (EKG or ECG). An EKG records the electrical impulses traveling through the heart.

Cardiac catheterization.

Stress Test.

Other tests may be ordered, depending on your condition.

Is There a Treatment for Heart Failure?

Today there are more treatment options available for heart failure than ever before. Tight control over your medications and lifestyle coupled with careful monitoring are the first steps. As the condition progresses, doctors specializing in the treatment of heart failure can offer more advanced treatment options.

The goals of treating heart failure are primarily to decrease the likelihood of disease progression (thereby decreasing the risk of death and the need for hospitalization), to lessen symptoms, and to improve quality of life.

Together, you and your doctor can determine the best course of treatment for you.

Stages of Heart Failure

In 2001, the American Heart Association (AHA) and American College of Cardiology (ACC) developed the "Stages of Heart Failure." These stages, which were updated in 2005, will help you understand that heart failure is often a progressive condition and can worsen over time. They will also help you understand why a new medication was added to your treatment plan and may help you understand why lifestyle changes and other treatments are needed.

The stages classified by the AHA and ACC are different than the New York Heart Association (NYHA) clinical classifications of heart failure that rank patients as class I-IV, according to the degree of symptoms or functional limits. Ask your doctor what stage of heart failure you are in.

Check the table below to see if your therapy matches what the AHA and ACC recommend. Note that you cannot go backward in stage, only forward.

The table below outlines a basic plan of care that may or may not apply to you, based on the cause of your heart failure and your special needs. Ask your doctor to explain therapies that are listed if you do not understand why you are or are not receiving them.

Stage	Definition of Stage	Usual Treatments
Stage A	<p>People at high risk of developing heart failure (pre-heart failure), including people with:</p> <ul style="list-style-type: none"> High blood pressure Diabetes Coronary artery disease Metabolic syndrome History of cardiotoxic drug therapy History of alcohol abuse History of rheumatic fever Family history of cardiomyopathy 	<p>Exercise regularly.</p> <p>Quit smoking</p> <p>Treat high blood pressure</p> <p>Treat lipid disorders</p> <p>Discontinue alcohol or illegal drug use</p> <p>An angiotensin converting enzyme inhibitor (ACE inhibitor) or an angiotensin II receptor blocker (ARB) is prescribed if you've had a coronary artery disease or if you have diabetes, high blood pressure, or other vascular or cardiac conditions</p> <p>Beta blockers may be prescribed if you have high blood pressure or if you've had a previous heart attack</p>
Stage B	<p>People diagnosed with systolic left ventricular dysfunction but who have never had symptoms of heart failure (pre-heart failure), including people with:</p> <ul style="list-style-type: none"> Prior heart attack Valve disease Cardiomyopathy <p>The diagnosis is usually made when an ejection fraction of less than 40% is found during an echocardiogram test.</p>	<p>Treatment methods above for Stage A apply</p> <p>All patients should take an angiotensin converting enzyme inhibitor (ACE inhibitors) or angiotensin II receptor blocker (ARB)</p> <p>Beta-blockers should be prescribed for patients after a heart attack</p> <p>Surgery options for coronary artery repair and valve repair or replacement (as appropriate) should be discussed</p> <p>If appropriate, surgery options should be discussed for patients who have had a heart attack.</p>
Stage C	<p>Patients with known systolic heart failure and current or prior symptoms. Most common symptoms include:</p> <ul style="list-style-type: none"> Shortness of breath Fatigue Reduced ability to exercise 	<p>Treatment methods above for Stage A apply</p> <p>All patients should take an angiotensin converting enzyme inhibitor (ACE inhibitors) and beta-blockers</p> <p>African-American patients may be prescribed a hydralazine/nitrate combination if symptoms persist</p> <p>Diuretics (water pills) and digoxin may be prescribed if symptoms persist</p> <p>An aldosterone inhibitor may be prescribed when symptoms remain severe with other therapies</p> <p>Restrict dietary sodium (salt)</p> <p>Monitor weight</p> <p>Restrict fluids (as appropriate)</p> <p>Drugs that worsen the condition should be discontinued</p> <p>As appropriate, cardiac resynchronization therapy (biventricular pacemaker) may be recommended</p> <p>An implantable cardiac defibrillator (ICD) may be recommended</p>
Stage D	<p>Patients with systolic heart failure and presence of advanced symptoms after receiving optimum medical care.</p>	<p>Treatment methods for Stages A, B & C apply</p> <p>Patient should be evaluated to determine if the following treatments are available options: heart transplant, ventricular assist devices, surgery options, research therapies, continuous infusion of intravenous inotropic drugs and end-of-life (palliative or hospice) care</p>

How Can I Prevent Heart Failure From Worsening?

Keep your blood pressure low. In heart failure, the release of hormones causes the blood vessels to constrict or tighten. The heart must work hard to pump blood through the constricted vessels. It is important to keep your blood pressure as low as possible, so that your heart can pump effectively without extra stress.

Monitor your own symptoms. Check for changes in your fluid status by weighing yourself daily and checking for swelling. Call your doctor if you have unexplained weight gain (3 pounds in one day or 5 pounds in one week) or if you have increased swelling.

Maintain fluid balance. Your doctor may ask you to keep a record of the amount of fluids you drink or eat and how often you go to the bathroom. Remember, the more fluid you carry in your blood vessels, the harder your heart must work to pump excess fluid through your body. Limiting your fluid intake to less than 2 liters per day will help decrease the workload of your heart and prevent symptoms from recurring.

Limit how much salt (sodium) you eat. Sodium is found naturally in many foods we eat. It is also added for flavoring or to make food last longer. If you follow a low-sodium diet, you should have less fluid retention, less swelling, and breathe easier.

Monitor your weight and lose weight if needed. Learn what your "dry" or "ideal" weight is. Dry weight is your weight without extra water (fluid). Your goal is to keep your weight within **4** pounds of your dry weight. Weigh yourself at the same time each day, preferably in the morning, in similar clothing, after urinating but before eating, and on the same scale. Record your weight in a diary or calendar. If you gain two pounds in one day or five pounds in one week, call your doctor. Your doctor may want to adjust your medications.

Monitor your symptoms. Call your doctor if new symptoms occur or if your symptoms worsen. Do *not* wait for your symptoms to become so severe that you need to seek emergency treatment.

Take your medications as prescribed. Medications are used to improve your heart's ability to pump blood, decrease stress on your heart, decrease the progression of heart failure, and prevent fluid retention. Many heart failure drugs are used to decrease the release of harmful hormones. These drugs will cause your blood vessels to dilate or relax (thereby lowering your blood pressure).

Schedule regular doctor appointments. During follow-up visits, your doctors will make sure you are staying healthy and that your heart failure is not getting worse. Your doctor will ask to review your weight record and list of medications. If you have questions, write them down and bring them to your appointment. Call your doctor if you have urgent questions. Notify all your doctors about your heart failure, medications, and any restrictions. Also, check with your heart doctor about any new medications prescribed by another doctor. Keep good records and bring them with you to each doctor visit.

How Can I Prevent Further Heart Damage?

In an effort to prevent further heart damage:

- Stop smoking or chewing tobacco.
- Reach and maintain your healthy weight.
- Control high blood pressure, cholesterol levels, and diabetes.
- Exercise regularly.
- Do not drink alcohol.
- Have surgery or other procedures to treat your heart failure as recommended.

What Medications Should I Avoid if I Have Heart Failure?

There are several different types of medications that are best avoided in those with heart failure including:

- Nonsteroidal anti-inflammatory medications such as Motrin or Aleve. For relief of aches, pains. Or fever take Tylenol instead.
- Most antiarrhythmic agents
- Most calcium channel blockers (if you have systolic heart failure)
- Some nutritional supplements, such as salt substitutes, and growth hormone therapies Antacids that contain sodium (salt)
- Decongestants such as Sudafed

If you are taking any of these drugs, discuss them with your doctor.

It is important to know the names of your medications, what they are used for, and how often and at what times you take them. Keep a list of your medications and bring them with you to each of your doctor visits. Never stop taking your medications without discussing it with your doctor. Even if you have no symptoms, your medications decrease the work of your heart so that it can pump more effectively.

How Can I Improve My Quality of Life With Heart Failure?

There are several things you can do to improve your quality of life if you have heart failure. Among them:

Eat a healthy diet. Limit your consumption of sodium (salt) to less than 2,000 milligrams (2 grams) each day. Eat foods high in fiber. Limit foods high in fat, cholesterol, and sugar. Reduce total daily intake of calories to lose weight if necessary.

Exercise regularly. A regular cardiovascular exercise program, prescribed by your doctor, will help improve symptoms and strength and make you feel better. It may also decrease heart failure progression.

Don't overdo it. Plan your activities and include rest periods during the day. Certain activities, such as pushing or pulling heavy objects and shoveling may worsen heart failure and its symptoms.

Prevent respiratory infections. Ask your doctor about flu and pneumonia vaccines.

Take your medications as prescribed. Do not stop taking them without first contacting your doctor.

Get emotional or psychological support if needed. Heart failure can be difficult for your whole family. If you have questions, ask your doctor or nurse. If you need emotional support, social workers, psychologists, clergy, and heart failure support groups are a phone call away. Ask your doctor or nurse to point you in the right direction.

Can Surgery Be Used to Treat Heart Failure?

In heart failure, surgery is aimed at stopping further damage to the heart and improving the heart's function. Procedures used include:

Coronary artery bypass grafting surgery. The most common surgery for heart failure is bypass surgery. Your doctor will determine if your heart failure is caused by coronary artery disease and if you have blockages that can be bypassed. Although surgery is more risky for people with heart failure, new strategies before, during, and after surgery have reduced the risks and improved outcomes.

Heart valve surgery. Diseased heart valves can be treated both surgically (traditional heart valve surgery) and non-surgically (balloon valvuloplasty).

Implantable left ventricular assist device (LVAD). The LVAD is known as the "bridge to transplantation" for patients who haven't responded to other treatments and are hospitalized with severe systolic heart failure. This device helps your heart pump blood throughout your body. It allows you to be mobile, sometimes returning home to await a heart transplant. It may also be used as destination therapy for long-term support in patients who are not eligible for transplant.

Heart transplant. A heart transplant is considered when heart failure is so severe that it does not respond to all other therapies, but the person's health is otherwise good.

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