

### **Introduction**

Congestive heart failure is a common condition that affects millions of people. Although it is more common in older people, heart failure can happen at any age.

It is possible to control this disease of the heart. If not successfully controlled, heart failure can cause serious disability and death.

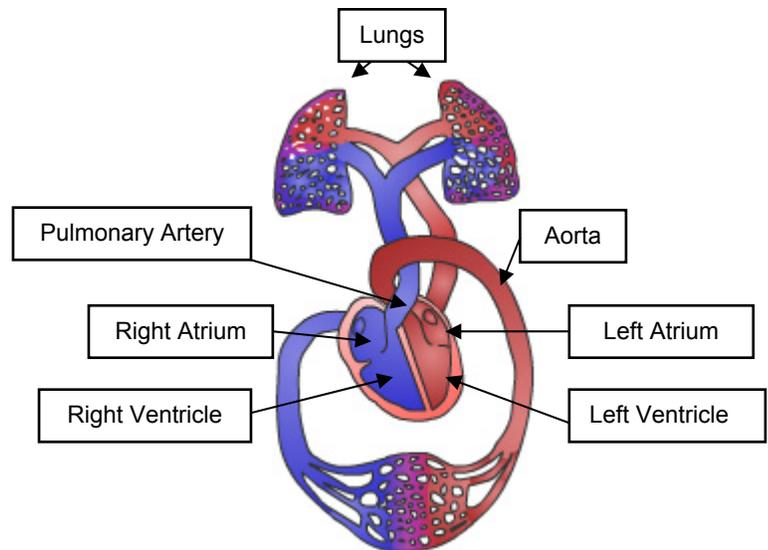
This reference summary explains what congestive heart failure is and how to control it.

### **The Heart**

The heart is responsible for pumping blood to all the organs in the body. It is a highly specialized muscle that is expected to work continuously, without rest, for a lifetime!

The heart has a right and a left side. Each side has 2 chambers: the atrium and the ventricle. Special valves divide the chambers and prevent blood from flowing backward.

Blood loaded with oxygen comes from the lungs and enters the left atrium. It stays there until the mitral valve opens up and the atrium contracts. This forces the blood into the left ventricle. The blood is then pumped to the rest of the body through the aortic valve into the biggest blood vessel of the body, the aorta.



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After the blood comes back from circulating through the body, it goes into the right atrium. From there, it is pumped into the right ventricle through the tricuspid valve and then to the lung through the pulmonic valve. In the lung, the blood picks up oxygen and returns to the left atrium, where the whole cycle starts again.

The heart needs a continuous supply of oxygen and sugar to be able to function. Oxygen-rich blood is delivered to the heart through the coronary arteries. These arteries branch off from the aorta.

## Heart Failure

Heart failure is a condition where the heart is not able to pump blood to the rest of the body at a normal rate. A healthy heart pumps 50% of the blood in the ventricle in one beat; a failing heart pumps only 40% or less of the blood in the ventricle in one beat.

When the heart cannot pump all the blood it receives, excess fluid could back up into the lungs and other parts of the body. The lack of blood being supplied to the body in addition to the buildup of fluids causes symptoms of heart failure. When fluids collect in the lungs, it is called congestion. That is why this disease is called congestive heart failure.

There are several levels of congestive heart failure:

- Mild
- Average
- Severe
- Very severe

Each level may limit a person's activities more and more. With very severe heart failure, a person may be short of breath or feel fatigued even at rest.

## Symptoms

One of the first signs of heart failure is weight gain. It can be either sudden or slow and progressive. The weight gain is due to an accumulation of fluid in the abdomen, feet, ankles, and legs. People with heart failure may feel excessively tired and short of breath when doing things that are normally easy, such as climbing stairs. As heart failure gets worse, a person becomes completely disabled, unable to walk or even to move around the house.



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Fluids may accumulate in the upper body, such as in the lungs and abdomen. People with heart failure will feel short of breath as fluids build up in the lungs. If this happens during the night, the person may wake up with a choking feeling. People suffering from heart failure usually have difficulty lying flat in bed. They may need to sleep with their head raised up on several pillows.

As fluid accumulates in the lungs, congestive heart failure patients typically develop a persistent cough that may include mucus or blood. If not controlled, congestive heart failure can be very debilitating, causing the patient to feel tired after very simple activities, such as walking or eating. If symptoms get worse, they need attention!



Call your doctor if you experience:

- Sudden weight gain (2 pounds in 1 day or 5 pounds in 5 days)
- Worsening shortness of breath
- Increased swelling of your feet, legs, or abdomen
- Needing more pillows or sleeping in a recliner
- Waking from sleep to catch your breath
- New or worsening dizziness
- A cough that does not go away
- New or increasing irregularities in your heart rate
- Any problem with heart failure medications

If symptoms get worse, they need attention! Ask someone to drive you to the Emergency Room or call 911 if you experience:

- Severe shortness of breath
- Coughing up pink, frothy sputum
- Chest discomfort, pain, or pressure not relieved by rest and/or nitroglycerine

## Causes

Heart failure can happen at any age, but it is more common in older people. As we age, our heart becomes a little weaker and the blood vessels get narrower.

Heart valve diseases can also cause heart failure. The blood may leak back through a defective valve, causing the heart to work harder and blood and fluids to collect in the lungs. Hypertension, or high blood pressure, increases the workload of the heart over time. This can lead to heart failure, as well.

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Coronary artery disease can cause heart failure. Coronary artery disease develops when fatty materials deposit in the coronary arteries. This causes the blood vessels of the heart to become narrow and clogged.

The first sign of coronary artery disease may be chest pain called angina. If an artery becomes completely blocked and the blood supply to an area of the heart stops, a heart attack occurs. Heart attacks may cause heart failure. Because part of the heart muscle is damaged in a heart attack, the heart pumps less effectively, which in turn may lead to congestive heart failure.



In some cases, the heart gets infected or inflamed; this causes it to weaken, a condition called cardiomyopathy. This may also result in congestive heart failure.

Other causes of heart failure include:

- Diabetes
- Cancer treatment, radiation and some chemotherapy drugs
- Thyroid diseases, too much or too little thyroid hormones
- Alcohol abuse
- Cocaine and other illegal drug use
- HIV/AIDS



Heart failure can happen to anyone, but it is more common in:

- People 65 years of age or older
- African Americans
- Males

Young people can have heart failure because of congenital heart malformation. These are abnormalities of the heart and major blood vessels that patients are born with. Surgery is often required to fix these abnormalities.

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## Diagnosis

To diagnose heart failure, the doctor must take a health history. He or she will ask questions such as:

- What do you feel and when did these signs start?
- What other health problems do you have and how are they being treated?
- Have any family members had heart problems? What type of problems?

Other questions your doctor will ask include:

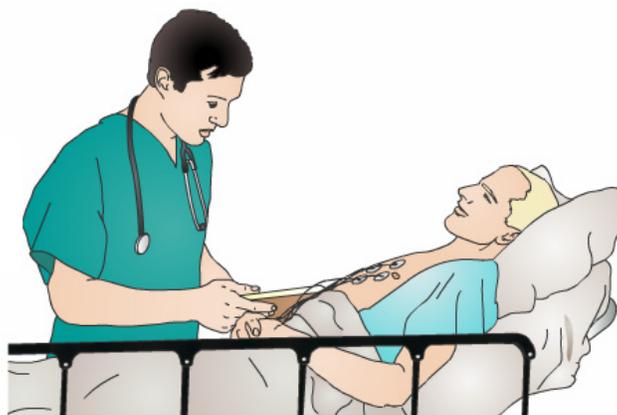
What is your daily life like (eating, working, sleeping)?

What are your health habits (exercise, diet, smoking, alcohol, illegal drugs)? It is important to be very honest when answering these kinds of questions.

The doctor will do a physical exam and may request a chest x-ray. In addition, a heart tracing, called an EKG, and a heart-imaging test, called an echocardiogram, may be necessary.

Your doctor may also do a BNP blood test. This new test checks the level of a hormone called BNP, which rises during heart failure.

Additional tests may be indicated, according to the doctor's recommendations, which may include stress tests and Holter monitoring. More invasive tests may include cardiac catheterization or angiography.



## Treatment Options

### *Medicines*

Your doctor will base your medicine treatment on the type of heart failure you have, how severe it is, and your response to certain medicines. The following are the main medicines for treating heart failure:

- Diuretics (water or fluid pills) help reduce fluid buildup in your lungs and swelling in your feet and ankles.
- ACE inhibitors lower blood pressure and reduce strain on your heart. They also may reduce the risk of future heart attacks.
- Aldosterone antagonists trigger the body to get rid of salt and water through urine, which lowers the volume of blood that the heart must pump.

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- Angiotensin receptor blockers relax your blood vessels and lower blood pressure, so the heart doesn't have to work as hard.
- Beta blockers slow your heart rate and lower your blood pressure to decrease the workload on your heart.
- Isosorbide dinitrate/hydralazine hydrochloride helps relax your blood vessels, so your heart doesn't work as hard to pump blood. The Food and Drug Administration approved this medicine for use in African Americans after studies showed it worked well for this group.
- Digoxin makes the heart beat stronger and pump more blood.



A patient should tell their doctor about any medication they are currently taking, including non-prescription medications, vitamins, or dietary supplements. This way, he or she can ensure that the best combination of medication is prescribed to treat the heart failure.

The doctor or health care provider will explain the possible side effects of the prescribed medication. The doctor should be notified if any side effects are noticed. When picking up a new medication, the patient should ask for a consultation with the pharmacist.

Prescribed medications can have some serious side effects. They differ from medication to medication.



Make sure to ask your physician or healthcare providers about specific side effects to the medications you are taking. Also make sure to report any of these side effects to your health care providers if you experience any of them.

Many people with severe heart failure must be treated in the hospital from time to time. In the hospital, you may receive new or special medicines, but you will keep taking your other medicines too. Some people with very severe heart failure are given intravenous (IV) medicines, which are injected into veins in their arms.

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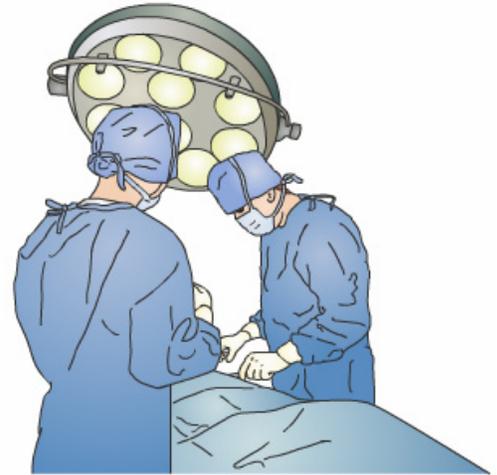
Your doctor will also order extra oxygen if you take medicine but still have trouble breathing. The extra oxygen can be given in the hospital and at home.

### *Medical Procedures and Surgery*

As heart failure worsens, lifestyle changes and medicines may no longer control heart failure symptoms. You may need a medical procedure or surgery.

If you have heart damage and severe heart failure symptoms, you may need:

- Cardiac resynchronization therapy. In heart failure, the right and left sides of the heart may no longer contract at the same time. This disrupts the heart's pumping. To correct this problem, doctors may implant a type of pacemaker near your heart. This device helps both sides of the heart contract at the same time, which may decrease heart failure symptoms.
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- An implantable cardioverter defibrillator (ICD). Some people with heart failure have very rapid, irregular heartbeats. Without treatment, the problem can cause sudden cardiac arrest. Doctors implant ICDs to solve this problem. ICDs are similar to pacemakers. The device checks your heart rate and corrects heart rhythms that are too fast.



Children or adults with persistent congenital heart problems often have heart surgery to correct the abnormalities and prevent or improve heart failure.

People who have heart failure symptoms at rest despite other treatments may need:

- A mechanical heart pump, such as a left ventricular assist device. This device helps pump blood from the heart to the rest of the body. People may use pumps until they have surgery or as a long-term treatment.
- Heart transplant. When all other treatments fail to control symptoms, some people who have heart failure receive healthy hearts from deceased donors.

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Lifestyle changes may help to reduce the amount of work the heart must do. You can do several things to manage your heart failure:

- Get regular physical activity, as advised by your doctor
- Balance activity with rest
- Eat healthy, low-sodium foods
- Weigh yourself daily and keep records of your weight
- Avoid smoking and too much alcohol
- Take your medications as prescribed

A team of professionals can help you learn to manage your heart failure.

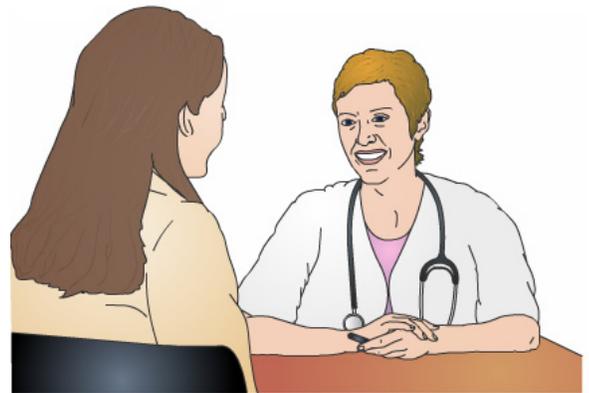
In addition to your personal physician, your team may include:

- Specialized nurse care managers
- Pharmacists
- Clinical health educators
- Dietitians
- Social workers
- Specialists in behavioral medicine

If hospitalized, your nurse will review your discharge instructions before you leave the hospital. It is important for you to understand your doctor's recommendations about:

- Your medications
- Weighing yourself daily
- Diet and fluid restrictions
- The activity level that is right for you
- Your follow-up appointments
- What to do if your symptoms get worse

Following your discharge instructions will help you to manage your heart failure more effectively. If hospitalized, share your discharge instructions with your primary care or family doctor. Make sure to give his or her name and address to the doctors you saw in the hospital and ask them to send a discharge summary to your primary care or family doctor.



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The discharge summary will let your primary care or family doctor know what happened during your hospital stay, your new diagnoses, your new medications, your new allergies and your treatment plan.

Tips for remembering to take medications:

- Learn the name, dose, and reason for each medication.
- Make a simple chart for your medications.
- Update your chart as the medications change, especially if you have been in the hospital.
- Set a regular routine for taking medications, such as meal time or bed time.
- Do not skip doses; if you do miss a dose, do not take two doses at once.
- Set an alarm or your watch to remind you.
- Use a pill box to help you organize your daily medications.

## **Lifestyle Changes**

The following 10 healthy life habits help control heart failure. If you don't have heart failure, these habits will help you to prevent congestive heart failure.

### **1. Do not eat salt.**

Salt causes fluid to build up in the body. By reducing the amount of salt that you eat, you can reduce swelling and fluid buildup in the lungs. Frozen foods, canned foods and processed meats contain a lot of salt.

Heart failure patients should limit their salt to less than 1,500 milligrams per day. They should not add salt to food, either while cooking or at the table.

### **2. Be physically active.**

Try to be as active as possible, but stay within what your health condition allows. Talk to your doctor about the type of activities you can do. Heart failure usually affects the ideal level of activity for most patients.

### **3. Lose weight if you are overweight.**

Check with your healthcare provider about the resources available help you lose weight, including, dietitians, classes, and health education materials.

### **4. Eat a healthy, balanced diet that is rich in fiber and low in fat and salt.**

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**5. Check your blood pressure regularly.**

If it is high, keep it under control by avoiding foods that are high in salt and taking prescribed medication.

**6. Do not smoke.**

Check with your healthcare providers about available resources to help you quit smoking. These may include health educators, classes, and medications.

**7. Check your cholesterol and blood sugar levels.** If either is high, keep it under control.

**8. Do not use illegal drugs and avoid alcohol entirely.**

**9. Get enough sleep at night and rest frequently.**

**10. Manage stress in your life.** Ask your healthcare providers about resources that are available to manage stress. These may include behavioral medicine specialists and stress reduction classes and quality of life.



**Summary**

Heart failure is a serious disease that affects millions of people. If not controlled, it can progress, leading to disability and sometimes death.

Thanks to advances in medicine, healthcare providers can help patients control heart failure. For most patients, treatment consists of medications and adopting healthier life habits.



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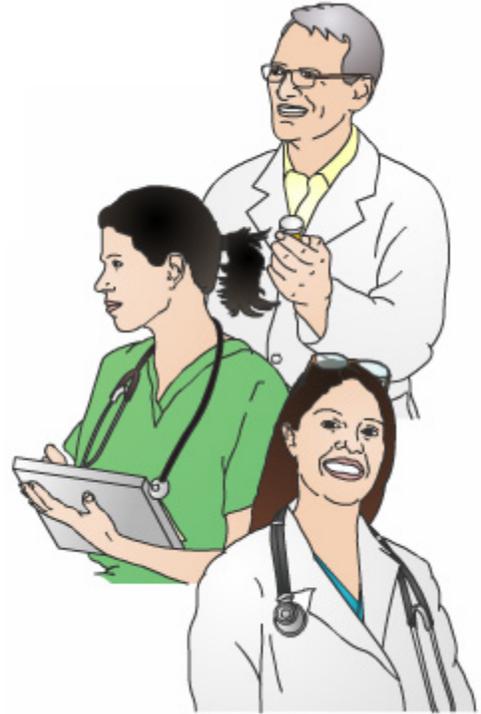
For a lot of patients, taking daily medication is important in controlling heart failure. Medication should be taken as prescribed and any side effects should be reported immediately to the doctor.

Your healthcare providers are available to help you select lifestyle changes that fit your needs.

In addition to your personal physician, the healthcare team involved in managing your heart failure may include:

- Specialized nurse care managers
- Pharmacists
- Clinical health educators
- Dietitians
- Social workers
- Specialists in behavioral medicine

You can also seek the support of family and friends to help you adjust to the changes.



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