



Understanding and Treating Heart Failure

Currently, around five million Americans are affected by heart failure, with 550,000 new cases diagnosed every year. Heart failure is a condition in which the heart muscle cannot pump enough blood to meet the needs of your body. Heart failure usually does not occur suddenly, but gradually worsens over time.

Heart failure can be caused by coronary artery disease, a heart attack, high blood pressure, lung disease, valve disease, rheumatic fever, structural heart defects at birth, infection of the heart muscle or heart valve(s), alcohol or drug abuse, diabetes, or abnormal heart rhythms. For most people, heart failure is not curable, but through medications, diet, and exercise plans, you can help control the symptoms and the progression of the disease.

There are three kinds of heart failure. When the heart muscle becomes weak and unable to pump blood throughout the body, it is called systolic dysfunction. When the heart cannot relax properly to fill with blood, it is called diastolic dysfunction. In some cases, both types of dysfunction are present.



Symptoms of Heart Failure

The symptoms of heart failure include:

- ♥ loss of energy, feeling tired
- ♥ shortness of breath, especially with activity
- ♥ awakening at night with shortness of breath, or coughing when lying flat
- ♥ frequent coughing or wheezing
- ♥ rapid weight gain
- ♥ swelling of the ankles, legs, and abdomen
- ♥ loss of appetite
- ♥ feeling bloated
- ♥ decreased urination during the day, increased urination at night
- ♥ rapid or irregular heart beat

Treatments for Heart Failure

Being active in your own care is very important to controlling your symptoms of heart failure. Your care team will provide you with activities you can do to help you feel your best. Here are some ways you can take control of your disease:

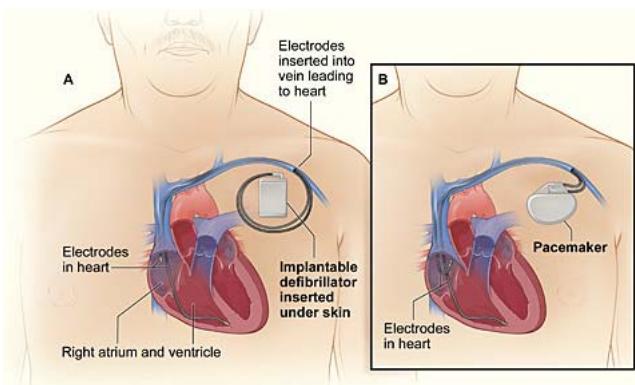
- ♥ Take more rest periods. Resting with your head on two or three pillows may help you breathe easier.
- ♥ Monitor your weight every day. Weigh yourself each morning after going to the bathroom. Keep a chart near the scale to record your weights. If you gain three pounds in two days, or gain five pounds in five days, you should call your care team as this may mean that your body is holding on to salt and water. One of the main symptoms of heart failure is having too much fluid in the body. If you have too much fluid, you may have trouble breathing or have swollen ankles. Medication may be used to help get rid of this extra fluid. However, if you lose too much body fluid, you can become dehydrated. Your body cannot work very well when it has either too much or too little fluid.
- ♥ Take your medications. Daily medications are critical in treating your heart failure. The medications that are prescribed are used to improve the function of your heart as well as to reduce salt and water build-up in your body. In the beginning, there is an adjustment period that may require changes to your heart medication. However, it is important that you take your medications as prescribed. Commonly prescribed medications include:
 - Angiotension Converting Enzyme Inhibitors (ACE-I, also called Ace Inhibitors) – work by helping to keep your blood vessels relaxed and open. They help keep oxygen-rich blood flowing into your heart. These medicines may be used to treat high blood pressure and prevent your heart muscle from weakening.
 - Angiotension Receptor Blockers (ARBs) – lower blood pressure and prevent your heart muscle from weakening.
 - Beta Blockers – lower blood pressure and prevent chest pain and irregular heart beats.
 - Diuretics – help the heart work better by decreasing the extra fluid in your body. Getting rid of the extra fluid helps your heart to not work so hard. You will urinate more frequently. These medicines may need to be adjusted by your doctor.
 - Aldosterone Inhibitors – prevent scar tissue from forming in your heart. They also help to eliminate extra salt and water.
 - Vasodilators – decrease the pressure in your arteries, especially in the vessels around your heart.
 - Digoxin – keeps your heart rate slow if it has an irregular rhythm and may improve activity tolerance as well.
- ♥ Limit/restrict salt and fluid intake. Salt (sodium) puts a strain on your heart, so how much you take into your body daily must be limited. The average American eats approximately 6000 mg of salt daily. However, people with heart failure need to eat 2000 mg/day or less. Tips to maintaining a 2000 mg sodium diet include:
 - Take the salt shaker off of the table; do not add salt when cooking; avoid salt substitutes.
 - “Fresher is better.” Eat fresh fruits and vegetables. Eat fresh fish, poultry, and meat instead of canned or processed meats.
 - Eliminate foods that you know are high in salt like potato chips, pickles, hot dogs, bacon, ham, sausage, canned soups, fast foods.
 - Read food labels. If the food has 140 mg or less of sodium per serving, it is acceptable to use in your daily food plan if you stick to the serving size on the label.
 - Keep a food diary of what you eat.
 - Ask your doctor for a referral to a dietitian to help you with meal planning.
- ♥ Stay active with exercise. The best exercises for heart failure patients are walking, bicycling, and swimming. The benefits include increased blood circulation, improved heart function and blood pressure, weight control, decreased cholesterol and blood sugar levels, and improved fitness. Please check with your physician before beginning any exercise program.

- ♥ If you smoke, STOP. Smoking decreases the amount of oxygen circulating in your blood and releases harmful chemicals that make your heart work harder and make your blood vessels narrow. Smoking increases your risk of a heart attack and/or stroke, increases your symptoms of shortness of breath, decreases the pumping action of your heart, increases your heart rate and need for more oxygen, and causes medications to be less effective.
- ♥ Monitor your symptoms of heart failure. Keep track of your symptoms and note if they are getting worse. Call your doctor as soon as possible if symptoms get worse. Possible causes include eating foods high in salt, forgetting to take prescribed medications as instructed, over exertion, drinking too much fluid or drinking alcohol, increased stress, infection, and using various over-the-counter medications.

Your condition can improve with medical management and education. It is important to follow your treatment plan. Due to your heart condition, there may be times when you need certain treatments to make you feel better. Your doctor may prescribe oxygen to help you breathe easier, or tests and treatments in the hospital (blood tests, x-rays, or breathing treatments).

Advanced Treatments

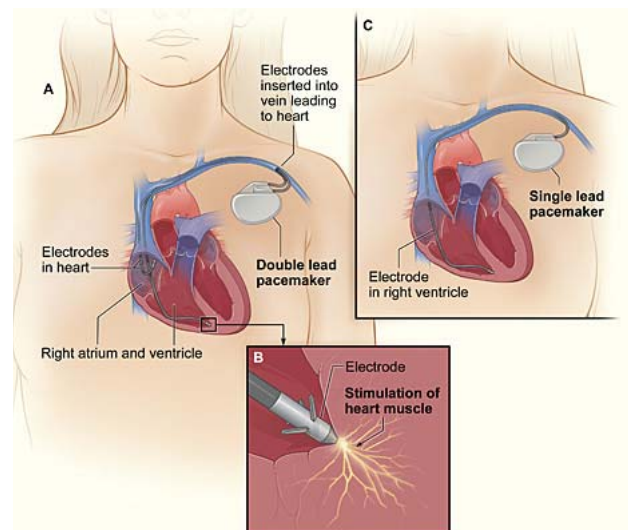
There are also a number of more advanced treatments that may be necessary if your heart failure is severe.



“Cross-Section of the Chest With a Pacemaker” image courtesy of National Institutes of Health (NIH) of the National Heart, Lung and Blood Institute (NHLBI), How Does a Pacemaker Work?, http://www.nhlbi.nih.gov/health/dci/Diseases/pace/pace_howdoes.html

Implantable Cardioverter Defibrillator (ICD): An implantable cardioverter defibrillator (ICD) is an electronic, battery-powered device that is surgically placed beneath your skin. Wires are inserted through the veins, positioned

in your heart, and then connected to the ICD. This allows information to travel between your heart and the ICD, and helps the ICD monitor your heart rhythm problem. If the ICD senses or detects that your heart is beating too fast, electrical pulses or shocks are delivered to your heart from the ICD to help your heart beat regularly again. If your heart beats too slowly, an electrical impulse stimulates your heartbeat. A specific type of ICD, known as CRT-D, may also be necessary to help coordinate the pumping action of the heart muscles. This treatment is called cardiac resynchronization therapy (CRT).



“Comparison of an Implantable Cardioverter Defibrillator and a Pacemaker” image courtesy of National Institutes of Health (NIH) of the National Heart, Lung and Blood Institute (NHLBI), What is an implantable cardiac defibrillator?, http://www.nhlbi.nih.gov/health/dci/Diseases/icd/icd_what.html

Biventricular Pacing/Cardiac Resynchronization

Therapy (CRT): A biventricular pacemaker may be included as part of the implantable cardioverter defibrillator or as a separate device. It is a small device similar to a regular pacemaker. It is implanted under the skin of your upper chest, and helps correct and restore your heart’s rhythm. Heart failure occurs when there is heart muscle damage. When the heart muscle is weakened, the pumping action of the heart to get oxygen-rich blood to the heart is also weakened. This device is programmed to allow the right and left ventricles to beat at the same time, which can improve the heart’s ability to pump blood to the body. Biventricular pacing is used in combination with other medical therapies that your doctor prescribes and does not replace medications. This therapy can reduce your heart failure symptoms and increase your ability to exercise and be more active.

Ultrafiltration: This therapy involves removing blood from your body and passing it through a special filter. The filter removes the excess fluid from your blood. The filtered blood is returned to you. This procedure may be done as a one day treatment or as part of your hospital stay.

Heart Transplantation/Left Ventricular Assist Device: Patients with advanced heart failure who have not responded to standard treatment may be referred for heart transplantation. Patients may also be considered for advanced therapy with a ventricular assist device (VAD). This is a mechanical pump device that helps a weak heart pump blood through the body. This may be an option for patients with end stage heart failure. A VAD may be used as a “bridge-to-transplant,” which means it is used temporarily until heart transplantation can be performed, or it may be considered as an alternative to heart transplant.

Supportive (Palliative) Care: Your condition may worsen even with the most advanced therapies. As part of your treatment, your doctor may ask you to think about palliative care. This care focuses on finding treatments to improve how you feel and focus on your quality of life. This focus involves how you physically feel, and also how you are feeling in mind and spirit. Understanding that there is no cure for heart failure is very difficult to accept. Palliative care offers help and support for you and your family.

Research and Clinical Trials: Medical research is important for the ongoing discovery of new treatments and therapies for all types of conditions, including heart failure. There are currently active clinical studies evaluating new treatments for heart failure. Baystate Medical Center participates in many clinical studies. As part of your care, you may be asked to participate. If you are interested, ask your doctor about the types of active research for heart failure management.

Questions I have about heart failure:

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