## FOLLOW UP

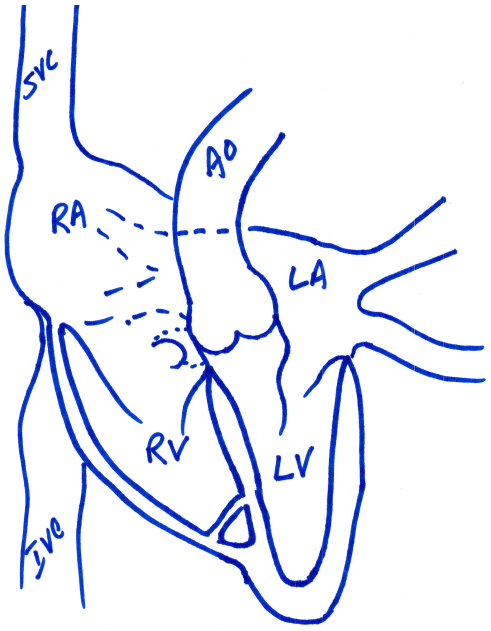
Lastly, no matter how good the medications and your compliance with recommendations, changes in these medications or recommendations may occur. This it is necessary to have intermittent follow up with someone with knowledge of the treatment of heart failure. When first recognizing the problem or after leaving the hospital to correct a problem, this follow up should be every 1-2 weeks until everyone is sure that no changes are ongoing. After that time, every three months until medications and recommendations are firmly established. This doesn't mean meeting with your cardiologist or a doctor every time. A clinical practice nurse versed in the treatment of heart failure or your primary care physician, if he or she is more convenient, will work just fine.

Additional resources:

www.circ.ahajournals.org/content/129/3/e293.full

www.hfsa.org/patient/education-modules/

James M. Wilson, MD
6560 Fannin Suite 1836
Houston, TX 77030
(832)336-1530
www.HoustonMDs.org



# HEART FAILURE

## 2016




JAMES M. WILSON MD
6560 Fannin # 1836
(832)336-1530
HOUSTONMDS.ORG

## INTRODUCTION

Heart failure is the inability of the heart to perform its normal function under normal or expected conditions. For example, if you were to ask an average guy to run a marathon and he tired, he's normal. If you ask your heart to work with excessive blood pressure or very low blood counts, the same is true. Meanwhile, if a marathoner gets tired after five miles, we should find out why.

Heart Failure will affect almost 1 in 10 Americans

## CAUSES

Heart failure isn't really a final diagnosis any more than "headache" or stomach ache. The medical field uses a shorthand descriptive terminology to group the different causes of heart failure. This is used because the behavior of the problem and its treatment tend to follow these classifications that use the appearance of the heart with its apparent strength (referred to as ejection fraction or EF).

- **Dilated** When the main pumping chambers of the heart become enlarged, it is usually due to muscular weakness of the heart (low EF). This is termed dilated cardiomyopathy (or muscular weakness with a big heart).

Diuretics may be used on a scheduled basis. However, it may be more useful for you to use a weight-based treatment that will allow some flexibility. Weight based recommendations are available to you upon request.

In some instances, **pacemakers** may reduce the heart's pumping function. When this is suspected, a modification of the pacemaker to make communication with the heart more effective is needed. This is known as **Biventricular (BiV) pacing**. In addition, when the heart is weakened and the degree to which recovery can be expected is unknown, we will often use a computerized protector to watch every heartbeat. This is known as a defibrillator. Some can be worn for temporary protection. However, it is common to use the more permanent version that many people refer to as a *special pacemaker*. The term used by medical professionals is implantable cardioverter/defibrillator **(ICD)**.

**Exercise** Although it may seem odd, regular exercise is an important addition to medical and dietary treatments. In the past, many people, including physicians, thought that rest was the best medicine. Nothing is farther from the truth. Any daily activity is our goal. You must of course work within limitations placed by other problems such as arthritis. As a general rule, daily walking (or biking/swimming) beginning with 5-10 minutes once or twice daily is a good way to start. You may wish to begin exercise in a monitored program. Ask for a program near your home.



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- *ACE-I* (lisinopril, ramipril) this group of medicines is very important to help the heart work more efficiently and work with the kidneys. About 1/6 people develop cough or lip swelling with this family of medicines. If this occurs, their cousins, the ARB's (losartan, valsartan, Irbesartan,…sartan) may have similar effects.

A weight-based diuretic treatment schedule may allow more day to day flexibility

- *Diuretics*, commonly referred to as "fluid" pills work to actually remove salt from your body. Water just comes with it.

Commonly used diuretics include:

➔ HCTZ/Chlorthalidone: mild diuretics used for blood pressure control.

➔ Furosemide/bumetanide/torsemide: potent diuretics that reduce swelling and difficulty breathing. Do not combine with other diuretics unless explicitly recommended. Side effects include cramps, depletion of potassium and magnesium and cross-reaction with sulfa allergy.

➔ Spironolactone/eplerenone are diuretics used to keep potassium in the body. They are almost always needed when the more potent medications are used daily.





- **Normal**. In some individuals, the heart will not function normally but looks perfectly fine on all imaging testing. It is now commonly referred to as "Heart Failure with Preserved EF" or HFpEF.

- **Hypertrophic**. Sometimes thickening of muscle is necessary to do a job. However, when thickening becomes the problem and not the answer, it may cause symptoms. This problem comes in two major forms.

Undertreated blood pressure problems, obesity and lifelong inactivity are major causes of heart failure symptoms

➔ *Hypertensive*. If blood pressure is poorly controlled, one of the outcomes is excess thickening and stiffness of the heart muscle. Poorly controlled blood pressure and years of physical inactivity are probably the most common sources of symptoms felt to be heart failure.

➔ *Congenital*. About 1/500 people are born with abnormalities in specific parts of the heart muscle cell that make it inefficient. As a result, the heart muscle may thicken, work poorly or develop electrical/rhythm disturbances.

## DIAGNOSIS

- *Symptoms/Exam* The most important part of finding out if your symptoms are heart failure and the possible cause is the interview and examination. A trained clinician and a stethoscope are the two most important tools in evaluation.
- *Blood Tests* Beyond simple screening work that is done with your PCP, several blood tests are used to look for illnesses that my not be readily apparent from the examination and imaging studies.
- *EKG/ECG*. The EKG/ECG is an invaluable tool to guide investigation into the cause of heart failure and guide treatment.
- *Echocardiogram* One of the most common tests used to evaluate someone for suspected heart failure is the echocardiogram. Using sound waves much like SONAR, the heart may be examined and its function measured. This is painless and takes about 45 minutes
- *MRI* is a more involved method of seeing the heart and its function. It is more accurate and informative than echocardiography and often allows us to avoid other types of testing like angiography or heart catheterization.
- *Stress/Angiography* If coronary artery disease is suspected an angiogram is often requested. In this test, the artery of the hand or leg is entered and a tube (catheter) is inserted to take pictures of the arteries of the heart





## TREATMENT



The most important treatment for heart failure is to identify and address the underlying cause. However, depending upon how the problem has shown up (dilated, normal appearing or overly thickened) specific medications and lifestyle changes may help to relieve symptoms, slow progression or begin recovery.

Step one can't be overlooked. Avoid habits that may worsen problems (smoking, alcohol) and restrict dietary salt intake. A good practice is to try and limit daily salt intake to <2000 mg sodium/day.

A medical regimen must be tailored to each individual but the medications include,

- *Beta blockers* (metoprolol, bisoprolol, carvedilol) get between adrenalin and the heart. These are a very important group of medicines for many types of cardiovascular disease but may require slow initiation and titration in order to avoid side effects. Side effects include fatigue, hair loss, nightmares, cold hands/feet and stuffy nose.
- *Nitrates* are medicines like nitroglycerin that may reduce symptoms but have no other useful value.