ASE American Society of Echocardiography

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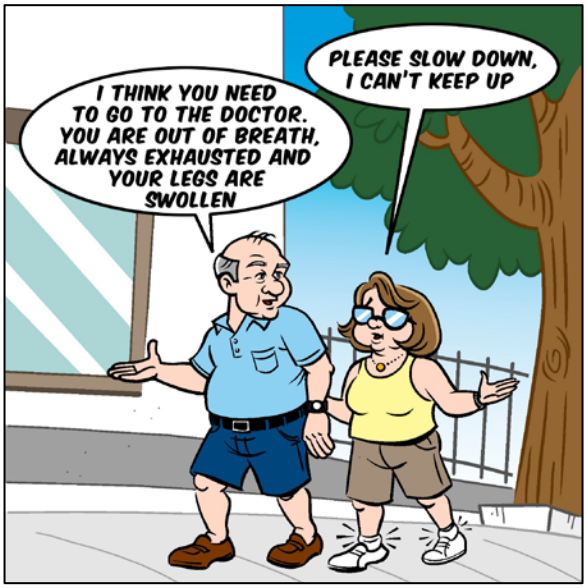
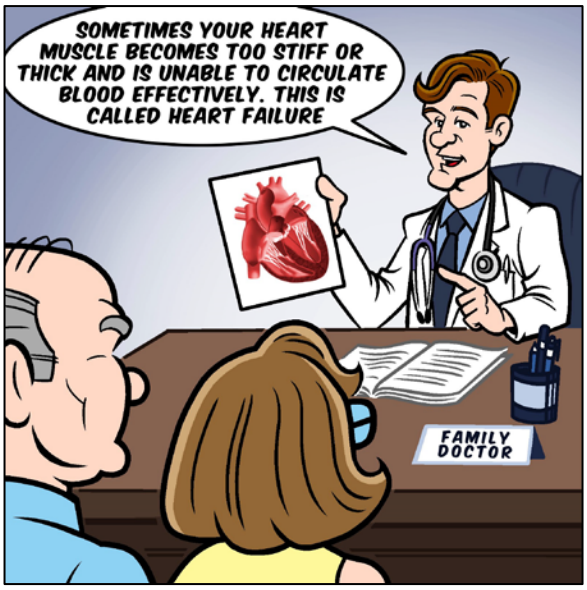
A Hardworking Muscle Needs to Relax: Information for the Diastolic Heart Failure Patient



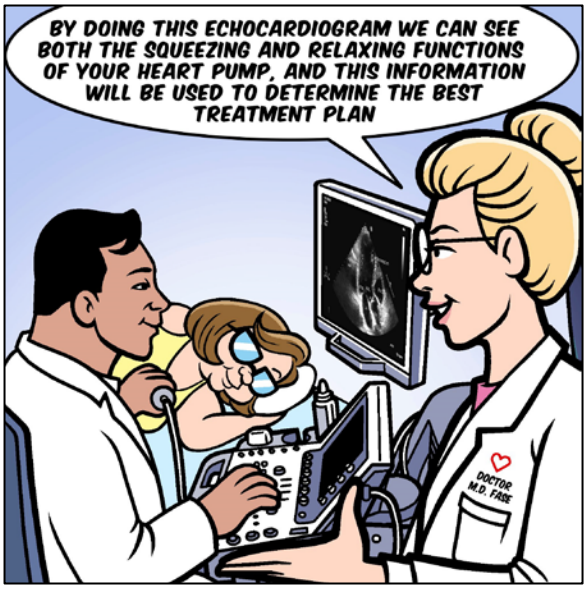
What is Heart Failure?

Heart failure is the medical term for the heart's inability to keep up with the demands of the body. The heart is a muscle which squeezes out blood to the body with every beat, then relaxes to fill with blood to be pumped out during the next beat. If the squeezing function of the heart is reduced, the heart may not be able to provide enough blood and oxygen to the body. This condition is called "systolic" heart failure. If the heart muscle is stiff and the relaxing function is reduced, the pressures in the heart may increase, causing "diastolic" heart failure. Symptoms of both types of heart failure may include shortness of breath with exertion, fluid retention (such as swelling in the legs), difficulty breathing when lying flat, and fatigue. Systolic heart failure has long been recognized as a type of heart failure, and is relatively easy to diagnose by seeing reduced pumping function on heart imaging tests, such as echocardiograms. However, diastolic heart function has only recently been widely recognized as a cause of heart failure, which may not be evident on some heart tests. Fortunately, echocardiograms can obtain information to make this diagnosis.



What causes diastolic heart failure?

A variety of different problems can cause the heart muscle to become stiff, and cause diastolic heart failure. One of the most common causes of diastolic heart failure is high blood pressure, or hypertension. You can think of high blood pressure as a load that the heart has to work against. When you lift weights, your muscles become stronger and often larger. Similarly, when the heart pumps against tight blood vessels, it thickens in order to be able to do its job. We usually think of increased muscle size or thickness as a good thing for our arm muscles, but it is not a good thing for our heart muscle. The thickened heart muscle will be stiffer and will not be able to relax as easily to accept blood. Aside from high blood pressure, other causes of increased heart muscle stiffness include increasing age, diabetes, and obesity. People who have systolic heart failure, most commonly caused by heart pump weakness due to heart attacks or heart muscle diseases, may also have diastolic heart failure, often as an earlier finding even than the systolic heart failure.



How is diastolic heart failure diagnosed?

An echocardiogram (echo), or ultrasound of the heart, is one of the most useful tests to diagnose both systolic and diastolic heart failure. Echo creates movies of the heart which are analyzed to measure pumping function, thicknesses of the heart walls, and the ability of the heart to relax. Ultimately, though, the diagnosis of heart failure is made by your physicians(s) and other medical care providers. If your echo shows evidence of heart muscle stiffness, it does not necessarily mean that you will have symptoms of heart failure. Your care providers will review your echo findings in the context of a thorough history and physical exam, and possibly blood tests, to determine whether you might have heart failure. If they are concerned that you do have heart failure, they may recommend beginning treatment with medications and/or additional testing.

The Bottom Line

It can often be difficult to sort out the cause of symptoms suggesting heart failure, such as shortness of breath and swollen ankles. The recently published expert consensus guideline[1] recommends the evaluation of heart function in patients with shortness of breath using cardiac ultrasound (echocardiogram). An echocardiogram is a very useful and safe procedure to sort out if the heart pump squeezing (systolic) and relaxing (diastolic) functions are normal or not. With this information, your healthcare team can provide you with information on the condition of your heart and make the best recommendations for any additional needed tests or treatments.

#SeeMyHeart #KnowYourHeart

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1. Recommendations for the Evaluation of Left Ventricular Diastolic Function by Echocardiography: An Update from the American Society of Echocardiography and the European Association of Cardiovascular Imaging, *Journal of the American Society of Echocardiography*, April 2016

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