Frequently Asked Questions about Diagnosing Heart Disease

Why should I be concerned about heart disease?

Many women are surprised to learn that heart disease is the leading cause of death for women. Heart disease is a general term for a wide variety of diseases and conditions that affect the function of the heart. For detailed information on the different types of heart disease, refer to the NWHIC FAQ on "Heart and Cardiovascular Disease" or click on the link above.

How can I find out if I have heart disease?

To diagnose heart disease, your doctor will first review your medical history, health behaviors, family history, and other risk factors for heart disease. Your doctor will ask you about having any chest pain, fatigue, shortness of breath, weakness, and swelling of the feet and ankles. These symptoms may mean that you could have heart disease.

Your doctor will then perform a physical exam and focus on your lungs, heart and all of the blood vessels near and around the heart. They will place a *stethoscope* on your chest to listen to your heartbeat and to other areas to hear the heart valves. They will also listen to your lungs for sounds that they could have fluid inside them (which can be the result of heart disease). Your doctor may order special heart tests to confirm or rule out heart disease, figure out the extent of disease, or help in planning a treatment that is best for you.

When a person develops heart disease, it is most often due to a number of risk factors (rather than a single factor). Some of the risk factors for heart disease are beyond your control, such as age, family history of heart disease, and prior heart disease. But, there are risk factors you can do something about. Risk factors you can control include smoking, high blood pressure, high blood cholesterol, overweight and obesity, physical inactivity, and diabetes. If you have one or more of these risk factors, talk with your doctor to find out how to reduce your risk of getting heart disease.

What is an ECG or an electrocardiogram?

An ECG, also called an *EKG*, is a simple, painless test that records the electrical activity of your heart. It is done by placing patches with metal contacts (*electrodes*) on a person's arms, legs, and chest, which are hooked up to an ECG machine. These electrodes measure the electrical impulses in the heart and record them on a moving strip of paper. An ECG also gives information about the heart's rhythm and the size of the different heart chambers. A *12-lead ECG* means that there are 12 tracings that can give a view of the heart from 12 different angles. With this type of ECG, your doctor can tell which part of the heart you are having a heart attack in.

How can a chest x-ray help diagnose heart disease?

A chest x-ray shows the size and shape of the heart, which can be larger than normal (or enlarged) in conditions such as *congestive heart failure*. The lungs are also looked at for fluid build-up, which is most often caused by heart failure.

What is an echocardiogram (echo)?

An echo provides moving pictures of the heart using sound waves. It is an *ultrasound test*, very similar to the test done on pregnant women to look at the growing fetus. An echo takes pictures of the heart chambers, valves and the major blood vessels running to and from the heart. It gives very detailed information about all areas of the heart and can detect abnormalities or problems with the heart's pumping action. Echos are not invasive (meaning there is nothing inserted into the body, such as needles, instruments, or fluids) and don't involve radiation.

How is an echocardiogram performed?

A standard echo procedure involves placing a small recording probe, called a *transducer*, on the chest. Before the echo is done, a technician or doctor will first place some clear jelly onto your chest to help the transducer, or wand, slide around easily to take pictures of different parts the heart. The image appears on a video screen and is recorded on videotape or paper.

What other tests might be performed with an echocardiogram?

A special exam, called the *Doppler*, can be done with an echo and gives information about the direction and speed of blood flow in the heart. From this, doctors can tell how heart valves are working, whether they are narrowed, and how much a valve is narrowed or leaking. Other types of echos include *M-mode* and *2-D echocardiograms*. M-mode echos look at a one-dimensional view of a small section of the heart as it moves. 2-D echocardiograms produce a moving, two-dimensional slice of the heart.

In some cases, your doctor may do an echo in a slightly different way. This may include having you exercise while the echo is done (an *exercise echo)* or having medicine injected to increase your heart muscle's blood flow before the echo (a *stress echo)*. These echos are a way to see whether or not your heart muscle gets enough blood flow and oxygen even when it is working its hardest.

I have heard many people talk about stress tests. What is a stress test?

Stress tests are done to diagnose many types of heart problems. They often look for blockages in the arteries that supply blood to the heart. A stress test most often involves monitoring your heart while you exercise. This is because the amount of exercise a person can endure, or handle, can tell a lot about heart disease and how severe it may be (when a person has heart disease). Your doctor may suggest this test if they feel that your arteries may be blocked. There are also stress tests for people who can't exercise.

What happens when a treadmill stress test is performed?

Before the treadmill stress test, an ECG will be performed and your blood pressure will be taken. A few plastic-coated wires will be taped to your arms and one leg, so that your heart's electrical pattern can be picked up while you exercise. Your heart rhythm and blood pressure are also watched the entire time the test is being done. You will be asked to walk on a treadmill for about 10 minutes. The speed and steepness of the treadmill will be increased a few times during the test. Your doctor or a technician will be with you during the test, and you should let them know if you feel any chest pain, shortness of breath, leg pain, or other symptoms that do not usually happen when you exercise. Ask to stop the treadmill if you think you can't keep on exercising.

What are some different types of exercise stress tests?

The *exercise stress test* has a person walk on a treadmill or pedal an exercise bike. This test will tell if your heart muscle gets enough blood flow and oxygen even when it is working its hardest, such as during exercise.

The exercise stress test can sometimes be combined with other techniques to take pictures of your heart before and after exercise. A *stress echo* is one such test where an echo is done before and after exercise to see if the heart muscle responds the way it should to exercise. Sometimes your doctor may order a small amount of a liquid radioactive material called *thallium* or *sestamibi* be injected through a needle into your blood stream before and after exercise. Pictures of the heart are then made after you lie down on an exam table that has a camera overhead. This test may also be called an *exercise-thallium*, *thallium-stress*, *nuclear stress*, or *exercise-mibi* test. Your doctor will talk with you about the type of stress test that is best for you.

What about stress tests for people who can't exercise?

When you have a stress test without exercising, a medicine called *dobutamine* or *dipyridamole/adenosine* is injected through a needle into your blood stream. This slowly makes the heart work harder, which simulates how your heart would function if you were exercising. Pictures of the heart are then taken, either with an echo or thallium test, to look at the heart's pumping action and whether there are any problems with blood supply to one of the heart's walls.

My heart often skips beats and my doctor ordered a Holter Monitor test. What is this?

A *Holter monitor* is a test that lets your doctor see whether there are changes in the heart's rhythm or electrical appearance over a longer period of time than can be observed during one office visit. A few stickers with attached plastic-coated wires are placed onto the skin of your chest, which connect to a small monitor that you wear. The monitor, a machine about the size of a purse that records your heart rhythm, is worn for 24 or 48 hours while you carry on with your normal daily activities. You will be given a small diary so you can write down any symptoms you may feel during the test, as well as the time they happened.

Another type of monitor, called an *event monitor*, is used for people who only have heart-related symptoms now and then. It is a small machine that you turn on only when you have a symptom that may be due to heart-rhythm changes. The event monitor may be kept for up to one month.

What is cardiac catheterization?

Cardiac catheterization is a common procedure that is done to detect problems with the heart and heart function. A small tube (*catheter*) is placed up into and around the heart through a blood vessel in the groin or arm. Moving x-rays (*angiograms*) are then taken to show any problems with the coronary (or heart) arteries, heart chambers, major blood vessels, heart valves, and congenital (at birth) heart defects. This test can also be used to treat blocked coronary arteries by blowing up a small balloon at the site of the blockage to create a larger opening, called an *angioplasty*. When a catheter is used to inject dye into the coronary arteries, the procedure is called *coronary angiography* or *coronary arteriography*.

How is a cardiac catheterization performed?

A doctor, called a cardiologist, usually does a cardiac catherization, using equipment and cameras in a special lab. During the test, you lie on your back and your heart is hooked up to a monitor. After local anesthesia is given, a *catheter* (thin plastic tube) is placed inside your body through a blood vessel in your groin or arm. The catheter is gently guided up into your body to reach the arteries around the heart. The doctor will most likely measure pressures within the chambers of the heart, take blood samples, and carefully move the catheter into the arteries that deliver blood to your heart (or *coronary arteries*). While the catheter is pointed into each of the coronary arteries, the doctor will inject a special dye into the blood vessels. Pictures are taken with an x-ray machine. The pictures will show if there are any blockages in the arteries and how severe these blockages are. Other than the brief sting of the numbing medicine and soreness in your groin or arm afterward, you are not likely to feel any pain. If blockages are found, your doctor will discuss treatment options with you.

Are CT scans or MRI tests used to diagnose heart disease?

Yes, CT (computed tomography, or CAT) scans and MRI (magnetic resonance imaging) tests may be used to detect any problems with the structure or position of the heart, lungs, or blood vessels. The CT scan and the MRI provide a much clearer picture of your organs than an x-ray. These tests are sometimes used to avoid the potential risk of other invasive heart tests, such as angiography. Some of these tests are done by injecting through a needle a small amount of radioactive material into a vein.

CT scans use a unique x-ray machine that makes a circle around your body. Using measurements from every angle around this circle, the computer takes pictures, each showing a slightly different "slice" or "cross-section" of your body. MRI is often more costly and time-consuming, but it is preferred over other non-invasive heart tests. This is because MRI provides detailed pictures of the heart and blood vessels, shows the heart from many different views, clearly shows blood vessels, identifies structures (like clots) from moving blood, and helps to better understand findings from X-rays or CT scans. The main discomfort with CT scans and MRI is the closed in, or claustrophobic, feeling that some people have from being inside the scanner. An MRI may require you to lie still in the scanner for at least one hour. But, a technician watches you during the test and may enter the room to speak to you or may speak with you over an intercom in the MRI machine.

What is a MUGA scan and how is it performed?

The MUGA scan (*Multiple Gated Acquisition scan*) is a tool that looks at how the heart functions. It takes a moving picture of the beating heart, and from this image, the health of the *cardiac ventricles* (the heart's major pumping chambers) can be determined. If a person has had a heart attack or any other disease that affects the heart muscle, the MUGA scan can identify the part of the heart muscle that was damaged. It can also figure out the degree of the damage.

When having a MUGA scan, a radioactive substance called *Technetium 99* is attached to red blood cells, which are then injected into the person's bloodstream. The person is then placed under a special camera (called a *gamma camera*), which picks up the low-level radiation being given off by the Technetium-labeled red cells. (The level of radiation to which a person is exposed during a MUGA scan is felt by experts to be quite small – it is in the same range as the level of radiation you get with a chest x-ray.) An image is produced by the gamma camera that outlines the chambers of the heart. The final image is like a movie of the heart beating.

There are so many tests to diagnose heart disease. How do I know which one is right for me?

Today, there are many tests to look at the heart and new tests are being developed. Your doctor will discuss the best test for you based on your symptoms, physical exam, health behavior, family history, and other risk factors. Remember also that new advances in the treatment of heart disease occur often, so it is important that you go to your doctor regularly for check-ups and to get any new or changing symptoms evaluated.

For more information . . .

You can find out more about testing for heart disease by contacting the National Women's Health Information Center at (800) 994-9662 (WOMAN) or the following organizations:

National Heart, Lung, and Blood Institute
Phone Number (s): (301) 592-8573
Internet Address: http://www.nhlbi.nih.gov/index.htm

The Heart Truth
National Awareness Campaign for Women about Heart Disease
National Heart, Lung, and Blood Institute
Phone Number(s): (800) 793-2665
Internet Address: http://www.nhlbi.nih.gov/health/hearttruth/index.htm

American Society of Echocardiography
Phone Number(s): 919-861-5574
Internet Address: http://www.asecho.org

American Heart Association
Phone Number(s): (800) 793-2665
Internet Address: http://www.americanheart.org/

Texas Heart Institute
Phone Number(s): (800) 292-2221
Internet Address: http://www.texasheartinstitute.org/

Women's Heart Foundation
Phone Number(s): (609) 771-9600
Internet Address: http://www.womensheartfoundation.org/

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