

Echocardiogram

What Is an Echocardiogram?

An echocardiogram (also called "echo") is a test that uses ultrasound waves to examine the heart. It is a safe and painless procedure that helps doctors diagnose a variety of heart problems.

How Does It Work?

During the test, a small microphone-like device, called a transducer, is held against the chest. The transducer sends ultrasound waves that bounce off the various parts of the heart.

A computer uses the information coming from the transducer to construct an image of the heart. The image is displayed on a television screen, and it can be recorded on videotape or printed on paper.

The echocardiogram study usually combines three different techniques. The simplest technique, called M-mode echo, produces an image that looks more like a tracing than an actual heart. The M-mode echo is especially useful for measuring the exact size of the heart chambers.

A more advanced technique, the two-dimensional (2-D) echo, shows the actual shape and motion of the different heart structures. In a way, these images represent "slices" of the heart in motion.

A third technique, the Doppler echo, allows doctors to assess the flow of blood through the heart. The signals that represent blood flow are displayed as a series of black-and-white tracings or as color images on the television screen.

If you are having a Doppler echo, you may hear a whooshing or pulsating sound. This is not the actual sound of your heart, but an amplified and computerized audio signal.

Why Is the Echo Done?

The echo test gives doctors useful information about the heart, such as:

- **Size of the heart.** The echo is used for measuring the size of the heart chambers and thickness of the heart muscle.
- **Pumping strength.** The test shows whether the heart is pumping at full strength or is weakened. It can also help determine whether the various parts of the heart pump equally.
- **Valve problems.** The echo shows the shape and motion of the heart valves. It can help determine if a valve is narrowed or leaking and show how severe the problem is.
- **Other uses.** The test may also be used to detect the presence of fluid around the heart, blood clots or masses inside the heart, and abnormal holes between heart chambers. Sometimes, the echo is combined with an exercise test, to see how well the heart pumps when made to work harder.

Before Your Echo

No special preparations are necessary. You may eat and go about your normal activities, unless you are told otherwise. Make sure you wear a two-piece outfit. The echo may be done at a hospital, test center, or doctor's office.

What Happens During the Test

You may be asked to undress from the waist up and put on a short hospital gown. Electrodes (small sticky patches) are placed on your chest and shoulders to monitor your heartbeat.

You then lie on a hospital bed or exam table. To improve the quality of the pictures, a colorless gel is applied to the area where the transducer will be placed. This may feel cool and a bit moist, but the gel will be wiped off at the end of the test.

A technician moves the transducer over the chest, to obtain different views of your heart. He or she may ask you to change positions. You may also be asked to exhale or hold your breath for a few seconds (air in your lungs can affect the echo images). The images are recorded on videotape or printed on paper, so the doctor can review them later.

How Long Does It Take?

An echo exam usually takes from 20 to 45 minutes, depending on the number of views and whether the Doppler echo is also used. Be sure to allow extra time to check in. When the test is over, you may eat and return to your normal activities.

Is the Echo Safe?

The echo test is very safe. There are no known risks from the ultrasound waves. It is also painless, even though you may feel a slight discomfort when the transducer is held firmly against the chest.

What Are the Benefits?

A major benefit of the echo test is that it gives information about the heart's structures and blood flow without anything entering the body.

The major limitation is that it is often difficult to obtain good quality images in patients who have broad chests, are obese, or are suffering from chronic lung disease (such as emphysema).

Your Test Results

If a doctor is present during the test, you may be able to get the results before you leave. Otherwise, your own doctor will discuss the test results with you during a future office visit.

The information gained from the echo test helps your doctor make an accurate diagnosis and develop a treatment plan that's best for you.