



What is a transthoracic echocardiogram?

An echocardiogram is an ultrasound scan that creates moving pictures of the heart. A small probe is used to send out high-frequency sound waves. create echoes when they bounce off different parts of the body. When the probe is placed on the chest at certain locations and angles, the sound waves move through the skin and other tissues to reach the heart. These sound waves then bounce or "echo" off of the heart structures to be sent back by the probe to a computer that can create moving images of the heart.

A transthoracic echocardiogram scan uses different types of echocardiography:

- **M-mode echocardiography.** This produces a tracing of the heart structures that is used to measure size of the different heart chambers, the thickness of the heart walls and vessels.
- **Doppler echocardiography.** This is used to assess and measure blood flow through the heart chambers and valves. The amount of blood pumped out with each beat is an indication of the heart's functioning. Also, Doppler can detect abnormal blood flow within the heart, which can indicate a problem with one or more of the heart's four valves, or with the heart's walls.
- **Color Doppler.** Color Doppler is an enhanced form of Doppler echocardiography. With color Doppler, different colors are used to designate the direction of blood flow. This simplifies the interpretation of the Doppler technique.
- **2-D (two-dimensional) echocardiography.** This technique is used to "see" the actual motion of the heart structures. A 2-D echo view appears cone-shaped on the monitor, and the real-time motion of the heart's structures can be observed. This enables the doctor to see the various heart structures at work and evaluate them.
- **3-D (three-dimensional) echocardiography.** 3-D echo technique captures three-dimensional views of the heart structures with greater detail than 2-D echo. The live or "real time" images allow for a more accurate assessment of heart function by using measurements taken while the heart is beating. 3-D echo shows enhanced views of the heart's anatomy and can be used to determine the appropriate plan of treatment for a person with heart disease.

It allows your doctor to get an information on:

- How well your heart is pumping and relaxing,
- How much is the heart muscle thickness, heart chamber sizes and if there is any other structural problem.
- How is the performance of the valves (structures that let blood flow from one heart chamber to another, or to the vessels).
- If there is a congenital heart problem.
- The big vessels around the heart.

Transthoracic echocardiograms are harmless ultrasound scans that do not involve any radiation and have no side effects. There is no special preparation needed for the day of the scan. Eat, drink and take your medication as usual.



What to expect the day of the exam?

- A medical practitioner (doctor/physiologist) will take you to the room where the exam is carried out. They will ask you to confirm your details. They may also measure your weight, if you don't know your exact weight.
- You will be asked to undress to the waist and you will be given a gown to wear leaving the front of your chest open and then to lie down on a special couch for the test.
- They will attach ECG stickers with wires to monitor your ECG during the scan.
- Before starting the scan, the medical practitioner will turn down the lights to have better visibility of your heart on monitor.
- You will be asked to turn to your left side as it gives a better view of your heart. As you turn to your left and your medical practitioner is happy with your position, they will start the scan by putting a small ultrasound probe with a gel on it on your chest. You might have a sensation of cold from the gel, as it has room temperature and colder than your body, but it will last short, and you will get used to it. They will scan your heart from different angles, so the probe will be placed on different part of your chest, stomach and neck. When they scan the blood flow in your heart you will hear some noises, so don't get surprised. You may be asked to take breaths and hold your breath during the scan when taking pictures.

The scan takes approximately half an hour but sometimes can take longer. It is not usually painful but you may experience some discomfort when they put the probe on your chest.

After the test, sometimes you can be given preliminary results, but usually they go through the pictures again carefully before reporting and it can take a couple of days to receive the report.

You can carry on your normal daily activities after the test.