

TRANSTHORACIC (TTE) and TRANSESOPHAGEAL ECHOCARDIOGRAM (TEE)

OVERVIEW

A transthoracic (TTE) or transesophageal echocardiogram (TEE) –both commonly called an echo–takes images of your heart. It shows the pumping function of your heart muscle and looks at your heart valves. There are many reasons your doctor may recommend an echo, but the three most common include:

- Chest pain • Shortness of breath • Congestive heart failure

TRANSTHORACIC ECHOCARDIOGRAM

A transthoracic echocardiogram (TTE) is the most common type of echo test. During this test, electrode stickers will be placed on your chest to monitor your heart. The lights will be dimmed so the sonographer can see the monitor better (where images of your heart will appear).

Next, the sonographer will apply a thin layer of gel to your chest or the transducer (a small wand-like instrument). Then, the sonographer will move the transducer around your chest to capture different angles of your heart, its chambers and valves. The transducer sends high-frequency sound waves into your chest, which bounce back to make an image. You may also see colors on the monitor or hear different sounds, which are different ways to check your blood flow.

Additional Studies During a TTE

Your sonographer or doctor may need to complete additional tests during your echo. Keep in mind that these do not mean that anything is wrong; they just simply give your care team a clearer picture of your heart so we can best treat you. Here are some of the most common studies during a TTE:

- **Ultrasound Enhancing Agent** – An ultrasound enhancing agent (UEA) allows your sonographer to see your heart better and delivers clearer images during the test. A nurse will insert a small needle into your vein (an IV) to administer the enhancing agent. It will be removed before you are discharged.
- **Bubble Study** – A bubble study can help identify communication between the left and right side of the heart or to enhance doppler signals. During the study, a mixture of saline and a tiny bit of air will be given to you through an IV. The sonographer will then watch images of the heart to see if the bubbles cross from one side to another.
- **3D** – Three-dimensional (3D) images create a more realistic picture of your heart. They also allow your sonographer and doctor to see your heart and its structures with more depth and detail.
- **Strain** – Strain imaging allows your doctor to better see how the heart moves and identify any underlying problems not typically visible with other types of imaging. During this test, the sonographer will trace the borders of the inside of your heart, and the machine will track movement to look for abnormalities.

TRANSESOPHAGEAL ECHOCARDIOGRAM

Transesophageal echocardiogram (TEE) is another type of echo. During a TEE, an echo transducer (a thin, long tube) is inserted into the mouth and guided down the esophagus. You will receive medicine to numb your throat and help you relax.

A TEE provides clearer images of the heart and its structures. Your doctor may recommend a TEE if you have (or may have) heart valve disease or an irregular, rapid heartbeat

PREPARING FOR YOUR TEST

Do not eat or drink anything 12 hours before your test. You will also need someone to drive you to and from your appointment and stay while you have the procedure. You will not be able to drive for 24 hours after your procedure.

DURING THE YOUR ECHOCARDIOGRAM

Your doctor will slowly insert the probe into your mouth. Then, you will be encouraged to swallow. Next, your physician will gently ease the probe down your esophagus (throat). You may feel the urge to gag, but it will soon pass. It may sound uncomfortable, but it does not hurt, and you won't remember the procedure afterward.

Once the probe is in place, your doctor will be able to see your heart on the monitor. The probe can be moved to capture images of the heart at different angles and locations.

Throughout the procedure, your care team will be in the room to closely monitor you. Your team will include:

- **Cardiologist** – Manipulates the ultrasound probe to capture images of the heart and its structures
- **Cardiac Sonographer** – Operates the ultrasound machine
- **Registered Nurse** – Administers medicine and tracks your vital signs
- **Respiratory Therapist** – Monitors your airway

After images have been captured, your cardiologist will gently remove the probe from your esophagus. Then, your nurse and respiratory therapist will monitor you until you are completely awake. Once you're ready, we will notify your loved one that they can take you home. You may have a sore throat or find it difficult to swallow for a short time after the procedure.

AFTER YOUR TEST

Your doctor will closely review the images gathered from your TTE or TEE. You may have a follow-up appointment to discuss any treatment plans or next steps.