



Transthoracic Echocardiography

What is Transthoracic Echocardiography?

Echocardiography uses sound waves to visualise the heart structures. In Transthoracic Echocardiography (TTE), ultrasound waves are transmitted from a probe or transducer placed on the chest wall into the chest cavity. The sound waves are reflected from the heart and other organs in the chest, and the reflected waves (echoes) are received by the same transducer. These echoes are then converted into electrical signals that are processed by computers to form two-dimensional images of the moving heart. The images are displayed on a video monitor.

TTE is a non-invasive test as no part of the instrument is inserted into the body.



What is the purpose of this test?

TTE is one of the most commonly performed tests in modern-day cardiology practice. It allows detailed visualisation of the heart chambers and the great vessels in the chest. It is also used to examine the flow of blood through these structures. It can reveal abnormalities of the heart valves and muscles. One of the most important uses of the TTE is to determine how well the heart functions as a pump. It is also an important tool in diagnosing congenital heart diseases, such as hole-in-the-heart.

What can I expect?

- 1 There is no need to fast or take pre-medication before the procedure.
- 2 Throughout the examination, which takes about 30-45 minutes, you will be lying mostly on your left side. You may be asked to hold your breath periodically.
- 3 Before the examination, your height, weight and blood pressure will be recorded.
- 4 Three Electrocardiogram (ECG) leads will be placed on your chest to track your heart rhythm. A water-soluble gel is applied to your chest wall, upper abdomen, or neck, to provide an air-free contact for the transducer. Your medical technologist will apply the transducer to these areas to obtain the best possible images of your heart, which will be displayed on a video monitor.

- 5 To view these images clearly, dimming of lights in the examination room would be required.
- 6 Blood flow through the heart structures may be amplified and heard as swishing sounds corresponding to the heartbeat. Do not be alarmed by these sounds.
- 7 After the examination, the medical technologist will help clean up the gel, which can be easily wiped or washed off.

What should I do before the test?

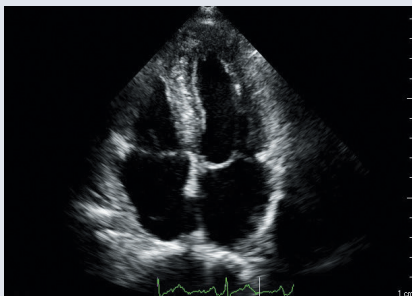
No special preparation is required. However, to facilitate the examination of the heart from the upper abdomen, it may be helpful to avoid eating, or taking fizzy drinks, about two hours before the test.



Three Electrocardiogram (ECG) leads will be placed on your chest to track your heart rhythm.

What are the potential risks/complications with this test?

TTE is extremely safe. No clinically important adverse effects have been reported, even with repeated examinations. Pregnant women may also undergo TTE, without additional risk to themselves or the unborn child. Sometimes, pressure of the transducer on the chest wall may cause some discomfort. Please inform the medical technologist if you experience any discomfort.



2-dimensional echocardiographic view of the heart showing the 4 chambers.

When will I know the results?

The supervising doctor will review the TTE images and data after the examination. Occasionally, he or she may need to obtain further images of the heart after the initial scan by the medical technologist. A formal report should be available in 24 to 48 hours. Your doctor will inform you of these results, usually at your next clinic visit. However, you may be contacted earlier if there is a severe abnormality requiring urgent attention.

National University Heart Centre, Singapore (NUHCS)

- NUHCS at National University Hospital (NUH), Kent Ridge - Main Operations
Main Building Zone F
Operating Hours: 8:00am - 5:30pm (Monday - Friday)
Closed on Weekends & Public Holidays
- NUHCS Heart Clinic @ Ng Teng Fong General Hospital (NTFGH)
Tower A - Specialist Outpatient Clinics Level 3, Clinic A34
Operating Hours: 8:00am - 5:30pm (Monday - Friday)
8:30am - 12:30pm (Saturday)
Closed on Sundays & Public Holidays
- NUHCS Heart Clinic & NUHCS Vein Clinic @ Alexandra Hospital (AH)
Operating Hours: 8:30 am - 5:30 pm (Monday - Friday)
Closed on Weekends & Public Holidays
- NUHCS Heart Clinic @ Jurong Medical Centre (JMC)
Operating Hours: 8:30 am - 5:30 pm (Monday - Friday)
Closed on Weekends & Public Holidays



Scan for
more information

OneNUHS Hotline: (65) 6908 2222

OneNUHS Appointments: appointment@nuhs.edu.sg

OneNUHS General Enquiries: contactus@nuhs.edu.sg

www.nuhcs.com.sg

Take charge of your health and
access health information and
services across NUHS institutions.

Download the OneNUHS App now!



Scan to download



Every day, we impact lives by providing assistance to
financially disadvantaged patients.

Make a donation and help us continue the fight for every heartbeat!



Scan here to donate

The information in this brochure is meant for educational purposes and should not be used as a substitute for medical diagnosis or treatment. Please seek your doctor's advice before starting any treatment, or if you have any questions related to your health, physical fitness or medical condition.

© 2023, National University Hospital (Singapore) Pte. Ltd. All rights reserved. No part of this publication may be reproduced or shared without prior permission from National University Hospital (Singapore) Pte. Ltd.

Information is correct at time of printing (Nov 2023) and subject to revision without prior notice.