

What should I do?

- 1 It is preferable to avoid eating and drinking at least 2 hours before the test.
- 2 Please wear or bring comfortable clothes and shoes suitable for walking.
- 3 If you are taking medications that slow down your heartbeat, such as atenolol and diltiazem, you may be instructed to omit these medications for 24 to 48 hours before the test. Please check with your doctor if any of your medications need to be omitted.

What are the potential risks/complications with this test?

Ultrasound is extremely safe and has no side effects, even with repeated examinations. Accompaniments or minor adverse effects of exercise on a bicycle/treadmill include fatigue, leg pain, shortness of breath and dizziness. These are temporary and will disappear within minutes after the test is terminated.

Because of close monitoring and expert supervision of the procedure, major complications are exceedingly rare. Although cases of heart attacks and severe heart rhythm abnormalities have been reported, various medications are available to counter these problems in the unlikely event of their occurrence. If you feel chest pain or any other discomfort during the test, please inform the technologist or supervising doctor.

When will I know the results?

The supervising doctor will need to review the recorded video or ultrasound images and ECG recordings of the ESE procedure. Your doctor will inform you of the results, usually at your next visit. You may be contacted earlier if there is a severe abnormality or if an urgent decision is required pending the results.

Location



National University Hospital
5 Lower Kent Ridge Road, Singapore 119074
Tel: 6779 5555 Fax: 6779 5678 Website: www.nuh.com.sg

Contact Information

National University Heart Centre, Singapore

1 Main Building of NUH, Diagnostic Cardiac Laboratory, Level 3.

Opening Hours: 8.30 am - 5.30 pm (Monday - Friday)

Closed on Weekend & Public Holidays

Website: www.nuhcs.com.sg

Getting to NUH

Circle Line Kent Ridge MRT Station

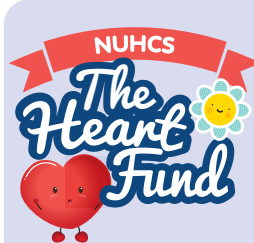
Commuters can transit at the Buona Vista MRT Interchange and alight two stops after at the Kent Ridge Station. The station is served by three exit-entry points.

Exit A: Right at the doorstep of National University Heart Centre, Singapore.

Exit B: Along South Buona Vista Road, which links to Singapore Science Park 1.

Exit C: Leads to NUH Medical Centre.

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Every day, we save lives by providing financial relief to needy patients, funding groundbreaking research and giving training to our medical specialists. This is why the support we receive is essential.

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

To make an online donation, log on to <http://www.nuhcs.com.sg/make-a-gift.html>

National University Heart Centre, Singapore

A member of the NUHS



Exercise Stress Echocardiography (ESE)

View patient education videos on **NUHCS YouTube** page!

STEP 01



Download a FREE QR Reader on your smartphone and scan the QR code.

STEP 02



The QR code will decode instantly. You'll be brought to www.youtube.com/user/NUHCS



Scan the QR code

What is exercise stress echocardiography (ESE)?

Echocardiography uses ultrasound waves (high frequency sound waves) to visualize the heart and blood vessels. Ultrasound images of the moving heart can be obtained in various planes and displayed on a video monitor.

Exercise stress echocardiography (ESE) is an exercise stress test that allows the cardiologist to study the response of the heart to stress. Ultrasound images are obtained to study the heart's function during the exercise, which is performed on a reclining bicycle or a treadmill that stimulates the heart to beat faster and harder.

These are then compared to the images obtained at rest to determine if any part of the heart contracts abnormally, indicating that the blood supply to these abnormal areas may be inadequate.

What is the purpose of this test?

When the heart or coronary arteries are narrowed, the heart muscles may only receive adequate blood supply in the resting state. However during stress, the blood flow may be insufficient to meet the increasing oxygen demands of the heart muscles. This lack of blood supply or myocardial ischaemia causes cardiac chest pain (also known as angina pectoris), and may be a warning sign of a heart attack. ESE is a safe test for inducing myocardial ischaemia. ESE is also much more accurate than an ordinary treadmill exercise electrocardiogram (ECG) test for detecting underlying coronary artery narrowing.

What can I expect?

Throughout the examination, which may take about an hour, you will be lying mostly on your back and you may be asked to hold your breath for short periods of time. The doctor supervising the test will explain the procedure and you will also be required to sign a consent form before the test. **Depending on your doctor, you will be assessed through a reclining bicycle or a treadmill.**

Before the examination:

- Multiple ECG leads will be placed on your chest to monitor the heart rhythm.
- Excess chest hair may sometimes have to be removed to facilitate this.
- Your blood pressure and ECG will be monitored throughout the test.
- A water-soluble gel is applied to your chest to improve contact for the ultrasound probe.
- A technologist will then place the probe on your chest to obtain the best possible ultrasound images before exercise.

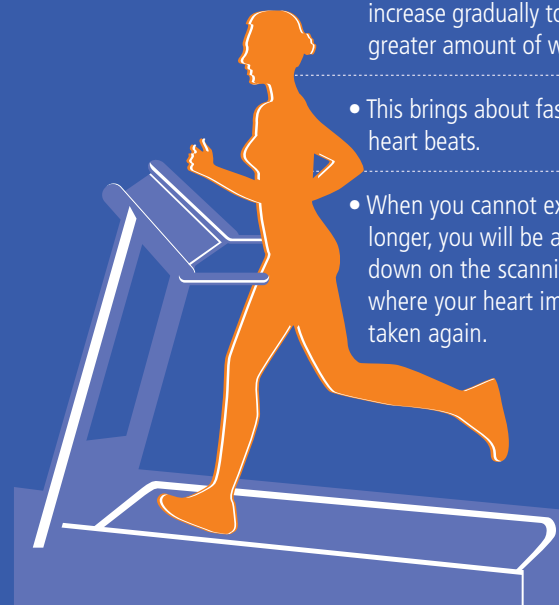
During the exercise:

Reclining Bicycle

- You will be mostly on your back.
- You will be asked to paddle at a specific speed.
- The resistance applied on the paddles will increase gradually to result in a greater amount of workload.
- This brings about faster and harder heart beats.
- When you cannot exercise any longer, your heart images will be taken again.

Treadmill

- You will be required to walk on a treadmill.
- You will be asked to walk at a specific speed.
- The speed of the treadmill will increase gradually to result in a greater amount of workload.
- This brings about faster and harder heart beats.
- When you cannot exercise any longer, you will be asked to lie down on the scanning couch where your heart images will be taken again.



End of the examination:

The technologist will help you clean up the gel, which is easily wiped or washed off. The ECG leads will be removed. You will need to rest for at least half an hour before leaving the hospital.

