

## What are the potential risks/complications with this test?

Ultrasound is extremely safe and has no side effects, even with repeated examinations. The minor adverse effects of dobutamine include palpitations, chest pain, shortness of breath, nausea, vomiting, dizziness and flushing. These are temporary and will disappear within minutes after the test is terminated. Leakage of the drug at the infusion site may cause local pain and inflammation.

Atropine may cause blurring of vision, dry mouth, flushing, abdominal discomfort and retention of urine. Because atropine persists for longer in the body than dobutamine, these symptoms may last up to a few hours after the test.

Because of close monitoring and expert supervision of the procedure, major complications are exceedingly rare. However, heart attack and severe heart rhythm abnormality 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 the supervising doctor.

## When will I know the results?

The supervising doctor would need to review the recorded video or computer images and ECG recordings of the DSE procedure. A formal report should be available in 24 to 48 hours. 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 while pending for the results.

## Location



**National University Hospital**  
5 Lower Kent Ridge Road, Singapore 119074  
Tel: 6779 5555 Fax: 6779 5678 Website: [www.nuh.com.sg](http://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](http://www.nuhcs.com.sg)

### Getting to NUH

#### Circle Line Kent Ridge MRT Station

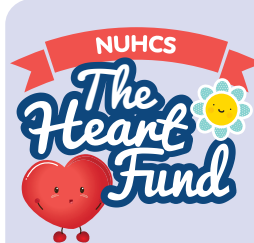
Commuters can transit at the Buona Vista MRT Interchange and alight two stops after at the Kent Ridge Station. The station is served by three exit-entry points.

**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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**National University Heart Centre, Singapore**

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## Dobutamine Stress Echocardiography

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STEP 01



STEP 02



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

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## What is dobutamine stress echocardiography?

Echocardiography uses ultrasound waves (high-frequency sound waves) to visualise the heart and blood vessels. Ultrasound images of the moving heart can be obtained in various planes and displayed on a video monitor. Dobutamine stress echocardiography (DSE) is a non-exercise stress test that allows the cardiologist to study the response of the heart to stress.



**Dobutamine, a cardiac medication, is infused through a vein in increasing doses to stimulate the heart to beat faster and harder.**

Ultrasound images are then obtained to study the heart's function during the infusion of dobutamine. 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 receive adequate blood supply in the resting state but during stress, the blood flow may be insufficient to meet the increasing oxygen demands of the heart muscles. This relative 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. DSE is a safe test for inducing myocardial ischaemia. DSE is also much more accurate than an ordinary treadmill exercise electrocardiogram (ECG) test for detecting underlying coronary artery narrowing.

## How is the test conducted?

Throughout the examination, which may take half an hour, you will be lying mostly on your left side, and may be asked to hold your breath for short periods of time. The supervising doctor will explain the procedure and you will be required to sign a consent form.

Before the examination, a small needle is inserted into a vein in your hand for the infusion of dobutamine. Multiple ECG leads will be placed on your chest to monitor the heart rhythm; excess chest hair may 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, during and after dobutamine infusion.

During the examination, it is normal to feel your heart beating faster and harder, and/or a little short of breath. These are effects of dobutamine stimulation, and will resolve once the infusion is discontinued. Sometimes, dobutamine alone may not achieve a sufficient stress level (which is set at a certain target heart rate depending on your age). Another medication called atropine may then be injected to further increase the heart beat.

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

## What should I do?

- 1 It is advisable to avoid food and drink for at least 2 hours before the test.
- 2 Come in light clothing to facilitate the examination.
- 3 If you are taking medications that slow down your heart beat, 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.
- 4 Patients who have prostate problems or glaucoma (a condition causing eye pain due to excessively high pressure in the eyeball) should not receive atropine. Please inform the technologist or doctor supervising the test if you have these conditions.

