

## 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 outpatient visit. You may be contacted earlier if there is a severe abnormality or if an urgent management decision is required while pending for the results.

## Contact information

**Non-Invasive Cardiovascular Laboratory**  
Main Building 1, Level 1

**Opening Hours:** 8.30 am - 6.00 pm (Mon - Fri)  
8:30 am - 12:00 noon (Sat)  
(except on Public Holidays)

**For appointments, please contact**  
Tel: (65) 6772 2002  
Email: [appointment@nuh.com.sg](mailto:appointment@nuh.com.sg)

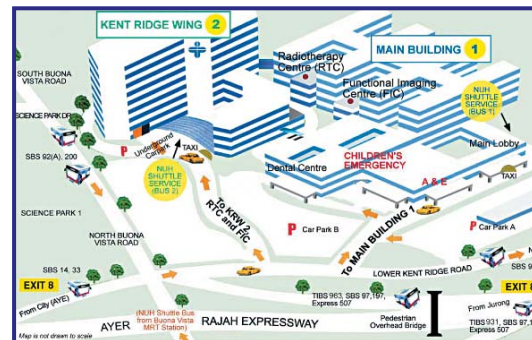
**For International Patients And Visitors**  
The International Patients Liaison Centre (IPLC) is a one-stop service centre to support all the medical needs of our foreign patients

Tel : (65) 6779 2777 (24-Hours Helpline)  
Fax : (65) 6777 8065  
Website : [www.nuh.com.sg/iplc.html](http://www.nuh.com.sg/iplc.html)



**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)

## Location



## Free Shuttle Bus Service

Free Shuttle Bus Service from Dover MRT Station to NUH

**Operation hours :** 8.00 am – 8.30 pm (Mondays – Fridays)  
8.00 am – 2.00 pm (Saturdays)  
Not available on Sundays and Public Holidays

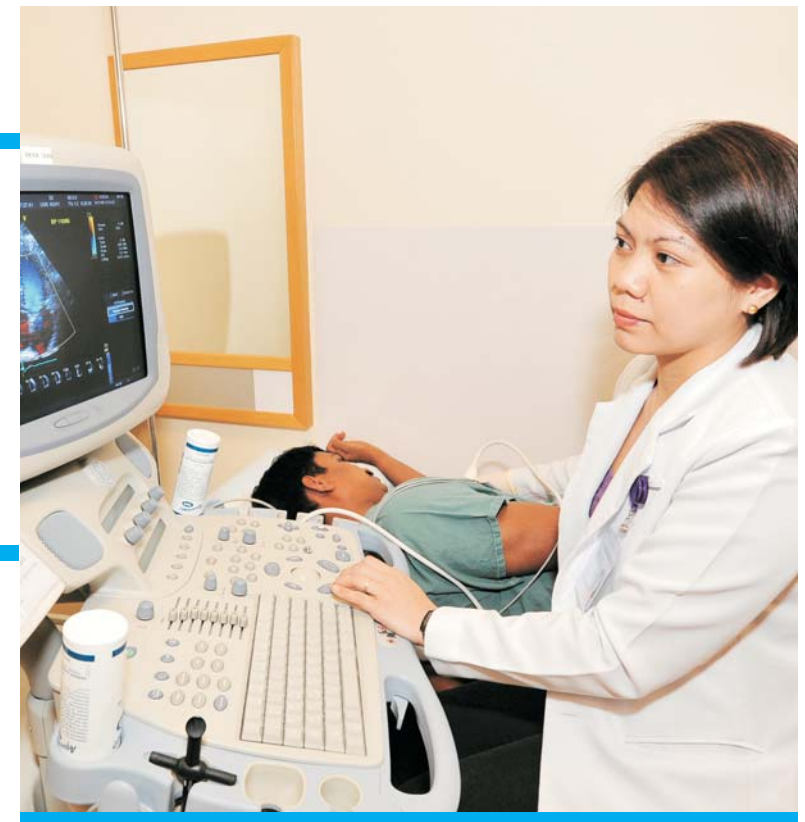
**Dover/NUH passenger pickup/ drop off point :** 1. Dover MRT Station (opposite Singapore Polytechnic)  
2. Main Building, Lobby Entrance (near roundabout)  
3. Kent Ridge Wing, Level 3, South Entrance

For more information on Shuttle Bus schedule, log on to [www.nuh.com.sg](http://www.nuh.com.sg)

Information in this brochure is given as a guide only and does not replace medical advice from your doctor. Please seek the advice of your doctor if you have any questions related to the surgery, your health or medical condition.

Information is correct at time of printing (Jan 2010) and subject to revision without notice.

## Dobutamine Stress Echocardiography



## 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.

## What can I expect?

The test is performed in the Non-Invasive Cardiac Laboratory. Throughout the examination, which may take half an hour, you will be lying mostly on your left side 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.

Before the examination, a small needle is inserted into one of the veins of 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 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, during and after dobutamine infusion. During the examination, it is quite normal to feel your heart beating faster and harder. You may also feel 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.

At the end of 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 will need to rest for at least half an hour before leaving the hospital.

## What should I do?

1. It is preferable 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.

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

Ultrasound is extremely safe and has no material side effects, even with repeated examinations. Accompaniments or minor adverse effects of dobutamine include palpitations, chest pain, shortness of breath, nausea, vomiting, dizziness and flushing. These are transient 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.