

## What should I do?

Before the electrophysiology study:

1. Your doctor may advise you to stop taking certain medications before your EPS. Please check with your doctor.
2. Inform your doctors of any allergy, particularly allergies to x-ray contrast, any heart rhythm medications and pain-relieving medications.

After discharge from hospital:

1. Medical leave may be issued so that you can rest at home for a couple of days. You should be able to resume most of your usual activities on the day after discharge.
2. Leave the puncture wounds covered with the waterproof plaster for 2 days, after which the plaster can be removed. Thereafter, the wounds can be left exposed, or simply covered with a Handiplast.

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

The EPS is an extremely safe procedure. Most complications are minor, such as pain, swelling, bruising and bleeding from the puncture sites. Occasionally the procedure itself may induce the occurrence of abnormal heart rhythm that may require an electric shock to terminate. Very rarely, major complications such as infection and damage to the blood vessels may occur. These complications can usually be treated without residual injury. Pregnant women should not undergo this test because of the exposure to X-ray radiation.

## When will I know the results?

The electrophysiologist will usually inform you of the results of the study during the procedure, or some time later. He will also discuss with you about treatment options, if necessary.

## Contact information

**NUH Angiography Centre**  
Main Building 1, Level 2

**Opening Hours:** 8.30 am - 5.30 pm (Mon - Fri)  
(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**

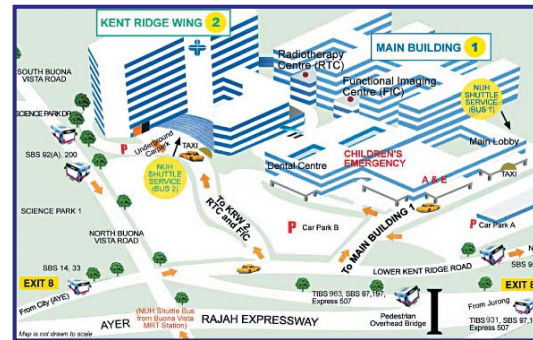
The International Patients Liaison Centre (IPLC) is a one-stop service centre to support all the medical needs of our foreign patients

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

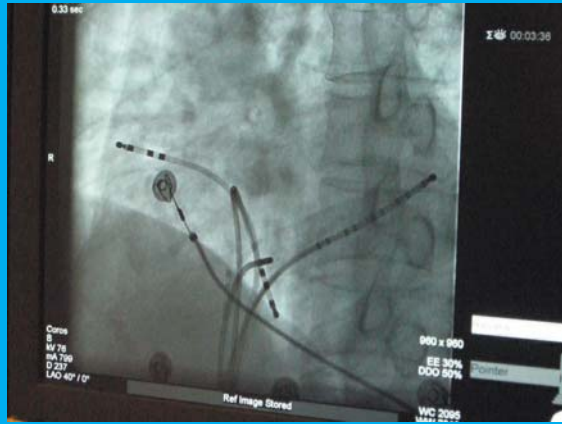
Information in this brochure is given as a guide only and does not replace medical advice from your doctor. Please seek the advice of your doctor if you have any questions related to the surgery, your health or medical condition.

Information is correct at time of printing (Jul 2009) and subjected to revision without notice.



## Cardiac Electrophysiology Study and Radiofrequency Ablation (EPS)





An X-ray showing the wires, or leads, in the heart.

## What is Cardiac Electrophysiology Study?

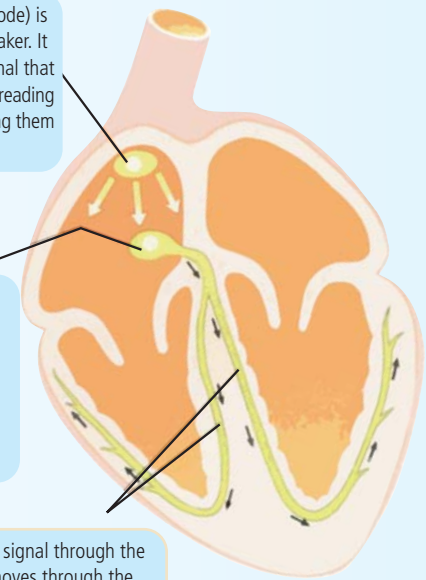
Your doctor suspects or has determined that you have a heart rhythm disturbance. When your heart beats abnormally fast or slow, you may experience dizziness or light-headedness, fatigue, palpitations, shortness of breath, chest pain or a fainting spell. A cardiac electrophysiology study (EPS) helps the cardiologist to identify your rhythm disturbance, the cause of this disturbance, and choose the best method of treatment.

During the EPS, the electrical behaviour of the heart that is responsible for controlling your heartbeat is recorded by placing conducting wires (or leads) positioned at strategic locations within your heart. Through these leads, the electrical conduction of the heart can be studied, and any abnormal conduction can be identified.

**The SA node** (or sinus node) is the heart's natural pacemaker. It sends out an electrical signal that starts each heartbeat by spreading through the atria and telling them to contract.

**The AV node** is the next stop for the signal as it travels through the heart. The AV node receives the signal from the atria and sends the signal to the ventricles.

**The pathways** carry the signal through the ventricles. As the signal moves through the ventricles, it tells them to contract.



## What is the purpose of this test?

The EPS is used to study the electrical conduction system of the heart, and to detect abnormal conduction that may be responsible for the heart rhythm disturbances that produce your symptoms. It is also useful in monitoring how effective medications are in controlling abnormal heart rhythms.

Heart rhythm abnormalities are often the result of electrical 'short circuits' in the heart. These may be treated using radiofrequency energy (much like your microwave) to eliminate (ablate) areas of abnormal conduction.

## What can I expect?

Your doctor will discuss the goals and risks of the procedure with you. You will need to stay in the hospital for 2-3 days, and you will be admitted the day before the test. Some preparatory blood tests and an electrocardiogram (ECG) will need to be performed, and you will be required to sign a consent form before the EPS. For women of childbearing age, a urine pregnancy test may be carried out. A small needle (heparin plug) will be inserted in one of the veins of your hand to facilitate injections of medications during the test, if necessary. You will be kept fasted from midnight on the day of the test until after the procedure is completed. Just before the test, your groin and chest may be shaved.



Recording of electrical activities of the heart

The EPS is performed in the Invasive Cardiac Laboratory and may take about 1½ to 2 hours or longer for complex cases. You will be given medication through the heparin plug to help you relax or sleep. To aid the cardiac electrophysiologist (a trained specialist performing this test), you will need to lie fairly still throughout the study. Several leads will be inserted through your groin as well as the neck or arm, after injection of local anaesthetic. The procedure is largely painless, except during the initial injection of the local anaesthetic. The leads are advanced into the heart using X-ray to guide positioning of the wires. When the leads are placed at the desired locations in the heart, the electrophysiologist will record the electrical activities of

your heart, as well as stimulate your heart with mild electrical current to observe the response. You may experience palpitations (a sensation of the heartbeat) during the test. If you experience any discomfort during the procedure, please inform the electrophysiologist. When the examination is completed, the leads will be removed and the tiny wounds at the puncture sites will be compressed for a few minutes to stop any bleeding. These wounds should heal within a few days.

After the test, you will need to lie in bed for about 4-8 hours. You should try to avoid moving the limbs in which the leads had been inserted, so that the blood vessels will heal rapidly, and bleeding may be avoided. If you feel pain or swelling in the area, you must inform the attending nurse. Painkillers will be prescribed if necessary. You will be able to go home the next day.