

The Bournemouth and Christchurch Heart Fund

The Bournemouth and Christchurch Heart Fund (charity no. 216161) was set up in 1989 for the purpose of developing cardiac services which would not be supplied through National Health Services resources. Several of the recent purchases of equipment since the cardiac department was established have been provided or supported through non-NHS money. In order to continue to maintain and update our facilities, donations are greatly appreciated.

If you would like to contribute, cheques should be made payable to **“The Bournemouth and Christchurch Heart Fund”** and sent to the Cardiac Department (Dr Rozkovec’s office).



University Hospitals Dorset
NHS Foundation Trust

Electrophysiological Studies

Cardiac Intervention Unit

This booklet is to help you understand about your Electrophysiology Study.


The Royal Bournemouth Hospital,
Castle Lane East, Bournemouth, Dorset, BH7 7DW

Author: **Arrhythmia Nurses** Date: **December 2021** Version: **Six**
Review date: **December 2024** Ref: **494/21**

t: 01202 303626 w: www.uhd.nhs.uk

: @UHD_NHS : @UHTrust : @uhd_nhs

t: 01202 303626 w: www.uhd.nhs.uk

: @UHD_NHS : @UHTrust : @uhd_nhs

Important Points to Remember

Please read this booklet carefully. If you have any further questions or concerns contact the Arrhythmia Nurse Specialists on **0300 019 6154** or email **arrhythmia.nurses@uhd.nhs.uk**.

- Your admission letter will give you details of where you will be admitted.

On the morning of the procedure:

Please shower on the morning of your admission and bring all your medication with you to hospital.

You will receive instructions on when you should stop eating and drinking before being admitted. A small sip of water to swallow tablets is allowed.

It is very important you follow the instructions on stopping medication before your procedure. You will receive instructions with your admission letter.

If you are unsure of your instructions, please call the arrhythmia nurse specialists.

The Electrical System of the Heart

The heart consists of two pumps side by side. One pump circulates blood around the lungs before emptying into the second pump. The second pump circulates blood around the body. Each pump consists of two chambers, the atrium and the ventricle.

Additional Notes

Symptoms of tachycardia may include:

- Palpitations
- Feeling tired
- Shortness of breath
- Chest pain or feeling of tightness in the chest
- Dizziness or light-headedness
- Episodes of faintness or blackouts

What is an Electrophysiology Study?

Your Doctor has decided that you may have a heart rhythm disturbance and has recommended that you have an Electrophysiological (EP) study.

An EP study looks at the electrical system of the heart by stimulating and recording electrical activity from within the heart's chambers. This tells us if the electrical system in your heart is working normally. With such knowledge abnormal sources or routes of electrical activity can be detected and, if required, can be abolished by a procedure called ablation.

Where is the electrophysiology study performed?

The study takes place in a special room, which looks like an operating theatre and is called a catheter lab or 'cath lab'.

- The cardiologist who will perform the test.
- Two nurses, one to look after you and one to help the doctor.
- A radiographer who takes the x-ray films.
- A cardiac physiologist who will monitor your heart while you have the test.

Are there any complications?

Although the following complications must be mentioned, the risk of them happening is extremely small. Please do discuss any particular concerns that you have prior to the EP study.

- There will be some minor bruising and short-lived tenderness around the wound site in your groin.
- There may be damage to the blood vessels at the top of your leg, resulting in a large bruise and possible bleeding. This is called a False Femoral Aneurysm. Applying extra pressure to the vessel can usually resolve this, but occasionally a small operation is required.
- Very rarely the insertion of the catheters into the heart may cause heart damage or stroke but this risk is less than 1 in 1,000 (less than 0.1%).
- Those patients who go on to have an ablation procedure may be exposed to slightly higher risks of cardiac damage sometimes including the risk of creating the need for a permanent pacemaker to be fitted. If ablation is being considered, these additional risks will be discussed with you in detail before the procedure.
- If an emergency situation occurs during the procedure, we will do whatever is possible to treat it. Although extremely rare, this emergency treatment could include 'open-heart surgery'.

Your Doctor feels that the benefits that can be gained from performing this procedure outweigh any of the risks involved.

Internet Sites

The following are web sites that provide information for patients. Whilst we recommend these sites, we cannot be held responsible for information that you collect from them. To locate the site connect to the addresses below:

www.arrythmiaalliance.org.uk

www.bhf.org.uk

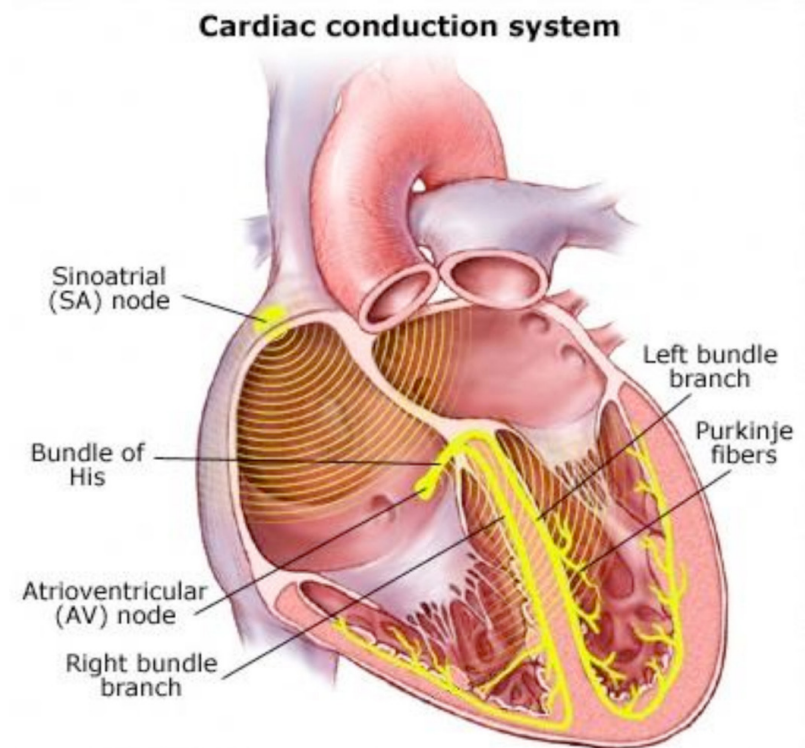
www.dvla.gov

www.guidant.com

www.medtronic.com

www.sjm.com

The heart needs an electrical impulse to generate a heartbeat. In normal heart rhythm the electrical impulse starts in the heart's natural pacemaker called the Sino Atrial node (SA node). The SA node is sited in the right atrium. The electrical impulse travels through the tissues of the conduction system causing the heart muscle to contract in sequence, the atrium before the ventricle. There is a junction between the atria and ventricles called the Atrio-Ventricular node (AV node) that allows communication between these chambers.



The heart normally beats at 50 - 100 times per minute at rest. The heart beats regularly and slowly at rest and faster during physical and emotional activity.

There are certain conditions where there is abnormal electrical activity outside the sinus node. This can cause the heart to beat very quickly (this is called tachycardia).

Once the wires are positioned, the Doctor will look at your heart's electrical system. This is done by recording the electrical signals on a computer. A special machine (an artificial pacemaker) is used to give the heart small electrical impulses to make the heart beat at different rates. You may be aware of your heart racing or missing beats, but it is the Doctor inducing this and you should not be worried. However, if you feel uncomfortable, please let the Doctor or Nurse know. It is possible that your symptoms will start at this time and it is important to tell the Doctor or Nurse about how you feel. It is usually possible to stop the fast rhythm with the artificial pacemaker quickly if you feel unwell.

Very occasionally during a study the heart may go into a fast rhythm which needs to be stopped. In such instances an electrical shock may be required to restore the heart to its normal rhythm. This may sound frightening, but you will not be aware of this as you will be given sedation before the shock. This is a rare occurrence and, once the heart has been restored to its normal rhythm, the study will then continue as before.

In order to induce an abnormal fast rhythm it may be necessary to give you a drug to speed up your heart. This will be given through the plastic tube in your arm. You may be aware of your heart racing and feel flushed for a few minutes.

After the procedure is finished, the Doctor will remove the wires and the small plastic tubes in your groin. A small plaster will then be placed on the wound. You will usually be transferred to a recovery area for close observation before being transferred back to the ward.

Before to the study

A hospital gown will be provided for you to wear. A little plastic tube will be inserted into your arm to enable you to be given any medication you might require during the procedure.

Before the EP study you will be seen by a Doctor who will explain what the procedure involves and what risks or complications may be associated with the procedure. This is a good time to ask any questions or discuss any worries that you may have. You will be asked to sign a consent form to allow the EP study to go ahead.

After the Electrophysiological Study

When you get back to the ward, your blood pressure, pulse and wound in the groin will be checked by the Nurse. A small plaster will be placed on your wound.

You will need to lie flat for approximately two hours to allow the groin to heal. Your Nurse will make sure that you have something to drink and, once you are able to sit up a little, you will be given something to eat.

Your Doctor or Arrhythmia Nurse will discuss the results of your EP study later in the day and you should be able to go home by early evening. If an abnormal heart rhythm has been identified, your Doctor may propose a treatment called 'Catheter Ablation'. This is a very similar procedure to the EP study, but one of the wires within the heart is used to damage the heart tissue that is responsible for the heart rhythm disturbance. This is usually done by heating the tip of the wire and burning the heart tissue immediately underneath it.

Going Home

- You must have someone to collect you from the ward and someone staying with you for the first night, just in case your wound bleeds or you begin to feel unwell.
- We do not advise using public transport.
- You should not drive for the next 24hrs.
- The Driving and Vehicle Licensing Agency (DVLA) have guidelines for patients who have received an electrophysiological study or ablation. Following an electrophysiological study, you normally can't drive for 24 hours. If you drive for a living or hold a Group 2 (bus/lorry) licence, please ask the arrhythmia nurses or DVLA what restrictions apply. You can access the DVLA guidelines at www.gov.uk/driving-medical-conditions.
- You must have two days off work following an EP study.
- You should continue to take your medications as normal unless the Doctor has told you not to.

If you have any new medical concerns when you return home you should contact your GP. In any medical emergency you can present to the Accident and Emergency Department or call **999**.

If you have any questions about your ablation procedure you may contact:

The Arrhythmia Nurse Specialists

on **0300 019 6154**

Monday to Friday 9.00 to 5.00pm.

How is the electrophysiology study performed?

You will be awake during the test but may be given sedation that may make you drowsy. If you are uncomfortable at any time during the test or you feel very anxious please let the nurse or the doctor know.

You will lie as flat as you are able on the x-ray table, with a pillow. The Cardiac Physiologist will place some stickers on your chest, a blood pressure cuff on your arm and a probe on your finger. This will enable your heart rate, blood pressure and oxygen levels to be observed throughout the study. An oxygen mask may also be placed on your face.

Your right groin will be cleaned with antiseptic solution and local anaesthetic will be injected here. The local anaesthetic will cause a stinging sensation for a few moments and then the groin will feel numb. The Doctor will then place some tubes in the main vein in your groin. This should not be painful but you may feel some pushing when the tubes are inserted.

Long thin wires will be passed through the tubes. These wires will then be used to record electrical signals from within the heart. The wires are guided into position using x-ray equipment. The x-ray machine will move around you to take pictures from different angles. As with all x-rays, if there is any chance you are pregnant, please let the Doctor or Nurse know before the procedure begins. The staff in the Lab will wear protective aprons because they are exposed to X-rays every day.