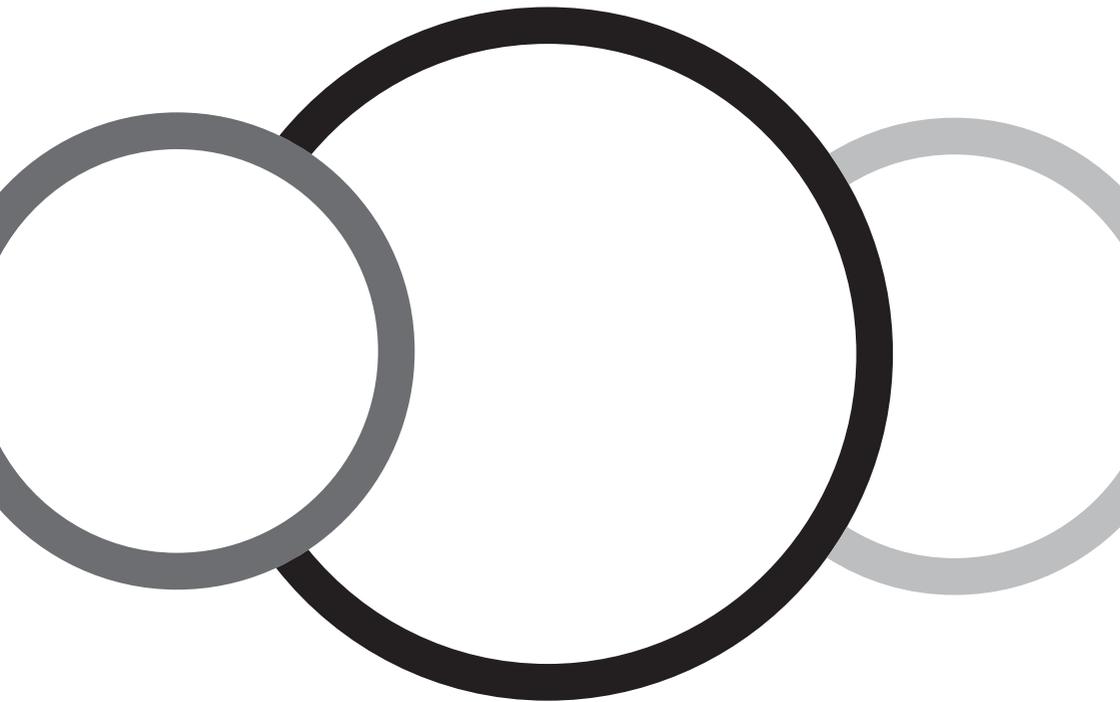


The Essex
Cardiothoracic Centre

Patient Information

Electrophysiological study and catheter ablation



Electrophysiological study and catheter ablation

You have been referred to the Essex Cardiothoracic Centre for a procedure called an electrophysiological study and catheter ablation. This is because you have been diagnosed with or are suspected of having an abnormal heart rhythm. This leaflet describes different types of abnormal heart rhythms and both procedures to explain why you have been referred.

How the heart works

The heart is a muscular pump which delivers blood containing oxygen to the body. It is divided into two upper chambers (atria) which collect blood returning through the veins; and two lower chambers (ventricles) which pump blood out.

The heart has an electrical system. This normally drives the heart to beat in a regular organised way, at a rate of 60-100 beats per minute. Each normal heart beat begins with an electrical impulse from a group of specialist cells called the Sinus Node (SA Node). These electrical impulses travel across the top two chambers of the heart, down through the Atrio Ventricular Node (AV Node), then spread across the bottom chambers, causing the heart to contract and pump.

When a heart is beating normally we refer to this as sinus rhythm, or normal rhythm.

Sometimes the electrical system in the heart does not follow the normal electrical conduction system causing an irregular or abnormal heart beat; the medical term for this is 'arrhythmia'. When an arrhythmia causes symptoms, for example palpitations, skipped beats, dizziness, fatigue or fainting, then an electrophysiology study and catheter ablation may be used in order to manage the arrhythmia.

Types of Arrhythmia

Arrhythmia is most commonly classified according to where it originates in the heart, either in the atria or the ventricles.

Atrial arrhythmias

Atrial arrhythmias originate in the upper heart chambers and are the most common type of arrhythmia, and while they can cause symptoms, they do not cause sudden cardiac death and symptoms such as fainting are rare. Atrial arrhythmias are

categorised according to their underlying mechanism of action.

Supra-ventricular arrhythmias (SVT)

SVT is a rapid abnormal heart rhythm that originates in the atria of the heart and causes rapid signals to be conducted to the ventricles. SVT is not considered a life threatening rhythm but can cause symptoms such as palpitations, shortness of breath or dizziness. SVT's are due to the presence of either extra electrical connections in the heart (pathways) or a group of extra electrical cells within the heart. Usually the pathways or extra cells have been present since birth but may only cause symptoms in adulthood.

Atrial Flutter

Atrial flutter is an abnormal electrical circuit which can cause the atria to beat very rapidly. The abnormal circuit is most commonly found in the atria on the right side of the heart but can be present in the atria on the left side of the heart. Atrial flutter is an organised and regular arrhythmia but can be responsible for rapid heart rates which may be associated with symptoms such as palpitations, shortness of breath, chest discomfort or fatigue. Atrial Flutter is not

considered a life threatening rhythm but can increase your risk of stroke; patients with atrial flutter should be assessed to see if they need anticoagulation (blood thinning medication) to reduce their risk of stroke.

Atrial Fibrillation (AF)

AF is the most common atrial arrhythmia experienced worldwide. AF consists of chaotic abnormal electrical activity in the atria which cause them to beat randomly, quickly and inefficiently. AF results in an irregular heart beat and sometimes a very fast heart rate. AF is not life threatening and fainting is rare but the irregular heart-beat, particularly if rapid, can lead to palpitations, dizziness, chest discomfort and fatigue. Due to the reduced effectiveness of atrial beats, AF results in an increased risk of stroke. Patients diagnosed with AF should be assessed regarding the need for anticoagulation.

Ventricular Arrhythmias

Ventricular arrhythmias originate in the lower heart chambers, some are benign (not dangerous) such as ectopic heart beats (skipped beats), whereas others are potentially life threatening such as some types of ventricular tachycardia (VT)

and ventricular fibrillation (VF). Ventricular arrhythmias can cause palpitations, shortness of breath; fatigue, dizziness, fainting and some can cause sudden cardiac death.

Anticoagulation

Patients diagnosed with either Atrial Fibrillation or Atrial Flutter should be assessed regarding their individual risk of stroke and their need for anticoagulation. Every patient undergoing an atrial fibrillation or atrial flutter ablation will need to be anti-coagulated for a period of time before and after their ablation. However some patients will eventually be able to stop anticoagulation and others will require lifelong indefinite anticoagulation therapy. Your specific requirement for anti-coagulation will be discussed with you during your pre-assessment clinic appointment.

Patients undergoing SVT ablations generally do not require anticoagulation unless they are already prescribed anticoagulation for another reason.

Maintaining therapeutic anti-coagulation is very important both before and after your ablation, the following advice is provided depending upon which anti-coagulant you are taking.

Warfarin Once you have been advised of your admission date we generally recommend increasing the frequency of your INR checks, if needed, to either once a week or once every two weeks for a month before and a month after your ablation. This allows us to have a record of your INR levels and to make sure you have stable and consistent results. Please bring all your INR results to your pre-assessment clinic appointment.

Rivaroxaban, Apixaban and Dabigatran If you are taking any of the above anti-coagulants it is extremely important that you do not miss any doses both before and after your ablation. If you believe that you have missed or may have missed any doses of your anti-coagulant it is important that you advise the Arrhythmia Nurse when you attend your pre-assessment clinic appointment.

Specific advice regarding management of your anti-coagulation will be discussed with you during your pre-assessment clinic appointment and written advice will be provided.

What is Electrophysiological Study?

An Electrophysiological Study (EP Study) is a procedure conducted by a heart rhythm specialist (electrophysiologist). An EP study tests the electrical activity in your heart and identifies where an arrhythmia is originating from.

The results of the study help the electrophysiologist to determine your further treatment; most commonly the decision is to proceed with catheter ablation as a continuation of the EP study.

The rationale for your procedure and probable outcome will be discussed during your pre-assessment clinic appointment.

What is catheter ablation?

Catheter ablation is a procedure that aims to manage arrhythmias by destroying the origin of the arrhythmia or the mechanism by which an arrhythmia is perpetuated.

The most common type of ablation uses radio-frequency (heat) to destroy a small area of heart muscle / cells although cryotherapy (cold) is also used in some cases to achieve the same effect.

Your planned procedure will be fully discussed with you during your pre-assessment clinic appointment.

Points to note

- A date will be arranged for you to have a pre-admission assessment. This will take place at either the Essex Cardiothoracic Centre or the Cardiac Department at Basildon Hospital. A nurse will take some details to make sure you are well enough to have your procedure. Your blood pressure, ECG, weight and pulse will be checked.
- Part of your pre-assessment appointment will include seeing an arrhythmia nurse who will discuss your procedure with you and answer any questions you may have.
- If you have any special needs or requirements, please tell the nurse during your pre-admission assessment appointment.
- You will need to arrange for somebody to bring you to the hospital and collect you by car or taxi on the day of your operation. You will not be able to drive yourself. You will not be able to travel by public transport for 24 hours following discharge.
- Unless you require someone to stay with you during your

admission to interpret or to assist with special needs, we ask that relatives or friends return to collect you when you are ready to go home.

- If you take warfarin, please bring your INR results with you to the pre-assessment clinic.
- If you need ambulance transport because of your medical condition please contact the Patient Activity Office on 01268

524900 ext 4191/4192 for advice.

- For patients attending The Essex Cardiothoracic Centre for their procedure who do not live in the local area, there is a possibility of subsidised hotel accommodation please contact the CTC Patient Activity Office on 01268 524900 ext 4191/4192 for advice.

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On the day

On the day of your operation please remember to bring with you:

- All your medication, in its original container
- Something to read or a personal stereo
- An overnight bag with your preferred nightwear, dressing gown, slippers and toiletries
- For security reasons please do not bring anything that is valuable with you into hospital. The hospital regrets that it cannot accept responsibility for loss or damage to property belonging to patients.
- Please do not wear jewellery, makeup or nail varnish. Your wedding ring may be left on if you wish and we will cover it with tape.
- Unless you are informed

otherwise you will be able to have an early light breakfast on the day of your procedure, such as a small bowl of cereal, usually no later than 6am. Once you have eaten your breakfast, you must not eat or drink thereafter.

Should I take my normal medication?

Unless advised by the nurse at your preadmission assessment appointment, you should take all your usual medication with a small sip of water.

You may be taking medications that need to be withheld prior to your procedure. If so this will be discussed and explained to you by the pharmacy technician and the nurses during your preadmission assessment.

Advice regarding your anti-coagulation will be given during your pre-admission assessment.

If you are diabetic the

management of your diabetes and your diabetic medication will be discussed with you during your preadmission assessment.

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What happens when I arrive at hospital?

You will be admitted to the ward by a nurse. Please tell the nurse if you have had any allergic reactions in the past or if you think you might be pregnant.

The consultant or doctor will come

to see you. They will explain the procedure, and any side effects or possible complications for you. They will then ask you to sign a consent form. If there is anything you don't understand or if you have any questions please ask.

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What happens during the procedure?

You will be taken to the cardiac catheter procedure room for your procedure.

There will be a team of people present, including your Consultant, a doctor, a Physiologist (providing technical support), Nurses and a Radiologist who will assist with the x-ray equipment.

You will be given a local anaesthetic and a mild sedative to make you relax or a general anaesthetic. You will be advised which type of anaesthetic you will be having during pre-assessment clinic.

If you are having a local anaesthetic and mild sedative, you will need to lay flat during

the procedure and you will be asked to lie as still and relaxed as possible. If you have difficulty lying flat please discuss this with the nurse during your pre-assessment appointment.

You will be attached to a heart monitor. The nurse will clean your groin area with antiseptic solution and cover you with sterile drapes.

A small plastic catheter (tube) will be inserted through a large vein in the top of your leg, and is advanced until it reaches your heart.

Fine wires are then passed through the tubes and positioned within the heart. This is done with the guidance of an x-ray machine.

Once the wires are positioned the

heart is electrically stimulated to try and start your arrhythmia; this may bring on your palpitations but is a necessary part of the procedure in order to find where you arrhythmia is coming from. This is called the EP study; if the origin of your arrhythmia is successfully determined then the electrophysiologist will proceed to catheter ablation.

Energy is delivered down the wire to target the culprit area within the heart using either radio-frequency (heat) or cryotherapy (cold)

It is not uncommon to experience some chest discomfort during this part of the procedure, if you feel uncomfortable please inform the doctor or a member of the team.

When the procedure is finished, the wires and tubes will be removed and you will spend a few hours recovering on the ward. You will not need any stitches.

You may go home the same day, or you may need to stay in overnight. This will depend on the complexity of your procedure and how you feel.

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Are there any side effects or possible complications?

EP Study and catheter ablation is generally considered a safe procedure although complications can occur. Specific complication and level of risk varies depending upon which type of arrhythmia

you are experiencing and which type of procedure is planned.

Specific complication risks will be discussed during your preadmission appointment.

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What happens after the operation?

Some patients will require a definite overnight stay others may be able to go home the same day; this will be discussed with you during your pre-assessment appointment. You may need to rest in bed, in a sitting position for a few hours after the operation. Once you are fully awake you will be allowed to eat and drink normally.

You will be told about any changes to your medication or when to restart any medication that was withheld, before you go home.

Returning to normal activity

We recommend resting for 24-48 hours, usually normal activity can be resumed within a day or two of an EP study or ablation. Exertional activity such as going to the gym or heavy lifting should be avoided for one –two weeks depending upon your recovery. This will be discussed during your pre-assessment clinic appointment.

Returning to work

Requirements for time off work can vary depending upon the type of ablation, the individual and type of occupation although, unless your occupation is physically demanding, you should be able to return to work quite quickly. If necessary you can self-certificate or obtain a medical certificate from your GP; please ask the nurses during your pre-assessment appointment if you have any concerns.

Driving

If you have experienced an arrhythmia which has caused incapacity you should not drive unless advised you can do so by a medical professional.

Following catheter ablation:

Group 1 (car): You should not drive for two days after your

ablation and you do not need to inform the DVLA.

If you hold a Group 2 license (LGV/PCV), then driving restrictions vary depending upon the arrhythmia you have experienced. Typically driving restrictions vary from 2 – 6 weeks. Usually you do not need to inform the DVLA unless you have or are likely to suffer incapacity because of your arrhythmia.

Specific driving guidance will be discussed during your pre-assessment clinic however, if you have access to the internet, current DVLA regulations are available at www.dvla.gov.uk

How should I feel once I'm at home?

Generally most patients recover well from a catheter ablation; however there are some symptoms you may experience which are common after a catheter ablation.

Following a catheter ablation, it is quite common to be aware of your own heartbeat, even in normal rhythm. Some people are aware of extra or 'missed' beats or are aware of a 'thumping' heart beat particularly if they lay on their left side. Following some ablations,

(such as AF) it is also common to experience a recurrence of an arrhythmia intermittently; this does not necessarily mean the procedure has been unsuccessful.

If you are feeling otherwise well, try not to worry too much about these symptoms, which usually settle in time. If you experience palpitations or a racing heartbeat which is prolonged, you should report this to the arrhythmia nurses for advice.

Chest discomfort has also been reported following catheter ablation, sometimes the discomfort is worse on taking a deep breath or when lying down.

If you are otherwise well then analgesia (painkillers) is the recommended management. Usually over the counter paracetamol taken regularly for a few days is enough to settle the discomfort. If you are concerned or you find that paracetamol is ineffective please contact the arrhythmia nurses for advice.

Sometimes patients can experience bruising and discomfort in the groin area

where access is achieved for the catheter ablation, it is not uncommon for bruising to extend onto the thigh. Again, regular analgesia such as paracetamol is recommended and symptoms should improve over time.

If you experience a new swelling or bruising that is very dark and extends below your knee, you should contact the Arrhythmia nurses for advice.

Specific advice relating to your type of ablation will be discussed with you during your pre-assessment clinic appointment.

If you experience any symptoms not described above or if you have any questions or concerns, please contact the arrhythmia nurses at the Cardiothoracic Centre for further advice (8am-4pm Mon-Fri). A messaging service is available and calls are typically returned the same day.

If your query is urgent and you require advice outside of office hours, please contact Roding Ward at the Cardiothoracic Centre.

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Where can I find further information?

Atrial Fibrillation Association

www.afa.org.uk

Arrhythmia Alliance

The Heart Rhythm Charity

www.heartrhythmcharity.org.uk

If you need to contact The Essex Cardiothoracic Centre regarding your procedure, please telephone or email us:

Arrhythmia nurses

Essex Cardiothoracic Centre

01268 394021

arrhythmia.nurses@btuh.nhs.uk

Roding Ward

Essex Cardiothoracic Centre

01268 524900 ext 4209

(For out of office hours queries)

If you need to contact Basildon University Hospital services

Basildon University Hospital

Nethermayne Basildon

Essex SS16 5NL

01268 524900

www.basildonandthurrock.nh.uk

Patient Advice and Liaison Service (PALS)

01268 394440

Email: pals@btuh.nhs.uk

www.basildonandthurrock.nhs.uk

Basildon University Hospital
Nethermayne
Basildon, Essex SS16 5NL

01268 524900

Minicom 01268 593190

www.basildonandthurrock.nhs.uk

Patient Advice and
Liaison Service (PALS)
01268 394440
pals@btuh.nhs.uk

The Trust will not tolerate
aggression, intimidation or
violence.

This is a smokefree Trust.
Smoking is not allowed in any of
our hospital buildings or grounds.

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in a different language or format
(e.g. large print, Braille or audio
version) on request