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# Electrophysiology Study and Catheter ablation

## Cardiology Department



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## Further Information

We endeavor to provide an excellent service at all times, but should you have any concerns please, in the first instance, raise these with the Manager or Cardiac Physiologist/s on duty. If they cannot resolve your concern, please contact our Patient Experience Team on 01932 723553 or email [asp-tr.patient.advice@nhs.net](mailto:asp-tr.patient.advice@nhs.net). If you remain concerned, the team can also advise upon how to make a formal complaint.

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**Author:** Clinical Measurements Dept

**Department:** Cardiology

**Version:** 2

**Published:** April 2018

**Review:** April 2020

## Contact Details

### For more information please contact:

- The Cardiac Angiography Suite: **01932 722262**  
(Monday-Friday 8am-6pm)

### For more information, the following websites are recommended:

- British Heart Foundation:  
[www.bhf.org.uk](http://www.bhf.org.uk)
- Heart Rhythm Charity:  
[www.heartrhythmcharity.org.uk](http://www.heartrhythmcharity.org.uk)
- Arrhythmia Alliance:  
[www.arrhythmiaalliance.org.uk](http://www.arrhythmiaalliance.org.uk)

## What is an Electrophysiology study?

The heart has its own electrical conduction system to beat in a regular, coordinated rhythm. Sometimes, if the conduction pathway is interrupted due to damage, blockage, or extra pathways, the heart's own rhythm becomes disrupted and replaced by a rhythm that is too slow (bradycardia) or too fast (tachycardia). These 'arrhythmias' can occur in any chamber and aren't all dangerous.

An electrophysiology study is a test that your doctor has requested in order to ascertain what type of arrhythmia you may be suffering from. This will help decide the best course of treatment for you when other tests have failed to provide enough information to diagnose any arrhythmia.

## What is an ablation?

Ablation involves creating precise, controlled lesions (using radiofrequency ablation) or freezes (using cryotherapy ablation) to the heart muscle to prevent the abnormal area of the heart being able to cause the arrhythmia. In this way the normal rhythm of the heart is restored. The choice of ablation (radiofrequency versus cryotherapy) will depend on the location of the abnormal area of your heart in order to maximize the likelihood of success.

## What are the benefits of the test?

When an arrhythmia has been identified via an electro-physiological study, catheter ablation is often the best course of treatment and offers a potential cure to your arrhythmia. If ablation is successful, in many cases, you will not need to continue to take your heart medication used to control the abnormal rhythm.

## What are the risks?

Your doctor will discuss the risks of the procedure with you before you sign the consent form.

Most patients (over 90%) can be cured during the first ablation procedure. However, the chances of the arrhythmia recurring may mean that in some cases, a further ablation procedure will be required in the future.

Bruising at the top of the leg is common and self-resolving typically within a week. More uncommonly, in less than 1 in 100 (<1%) of cases, patients have severe bleeding or bruising requiring surgery to close the hole in the blood vessel at the top of the leg.

In rare cases (1 in 200-300; 0.3-0.5%), the normal electrical circuit of the heart can be damaged with ablation. In these cases you will require the insertion of a pacemaker.

The procedure is generally very safe and serious complications are rare - overall risk of death is 1 in 1000-2000 (0.05-0.1%). Pulmonary embolus or stroke caused from blood clots to travel

has an amnesic effect so you will not remember the majority of the procedure.

If you feel any palpitations or dizziness after the procedure, please inform the nurses. You may feel the occasional palpitation or missed beat for some weeks after the procedure; this is not unusual. However, if it becomes persistent, we advise you to see your GP.

The doctor or nurse will inform you of the results, the treatment plan, and advise you of any medication changes after the procedure.

***We recommend that you do not drive any vehicle for one week although the DVLA stipulates a 2-day driving ban. If you hold a Group 2 PSV licence you are not allowed to drive for 6 weeks. You can return to work in a day or two but should avoid lifting heavy objects for a week until the incision site is healed.***

## Caring for your wound

It is important that you keep the area clean and dry until it has healed. If you notice any swelling, redness, or oozing, please see your GP. You should avoid taking baths for 10 days but can take showers instead. Try to take it easy for 3-5 days after the procedure.

If an arrhythmia is found during the study, and can be treated, the doctor will use a special catheter to deliver heat energy (radiofrequency) or cooling energy (cryotherapy) directly onto the area of abnormal activity in order to create a scar and prevent this tissue causing the arrhythmia in future.

If ablation is performed, it is not unusual to experience mild burning or chest pain. Please inform the staff if you experience this; medications may be administered to help reduce the discomfort.

### **How long will the test take?**

The duration of the test varies according to the findings of the initial study, and the type and location of the arrhythmia. Usually the test takes around one to two hours but can be longer in some cases.

### **What happens after the test?**

After the procedure the catheters are removed and the doctor or nurse will apply pressure to your groin(s) in order to stop the bleeding. You will then be monitored for several hours in recovery. The nurses will record your blood pressure and pulses and check your groin for bleeding / bruising intermittently.

You should allow up to two hours to fully wake up from any sedation after the procedure and you should not bend your leg(s) in order to avoid bruising complications. The sedation

to the lungs or brain is rare and occurs in less than 1%. Cardiac tamponade (puncture to the heart muscle causing blood to collect around the heart) also occurs in less than 1% of cases. A drain may be necessary in certain cases if these complications do occur. The risk of a heart attack is also very low, in the order of 1 in 500-1000 (0.01-0.2%).

### **What are the alternatives?**

Your doctor will recommend an electrophysiology study and ablation if they feel that benefits of the test outweigh the risks. Risks quoted in this document are average figures – your doctor will discuss specific risks that relate to you on the day of the test.

If you wish to discuss any alternative test please talk to the doctor before you sign the consent form.

### **Before Admission**

If you are taking medication to control your heart rhythm, please listen to the doctor's or nurses instructions as to whether you will need to stop taking some of your tablets in the run-up to the procedure. This may cause your symptoms to return but provides the best chance for the abnormal rhythm to occur during the test.

If you are taking warfarin, regular blood tests will usually be needed for at least four weeks prior to the procedure to ensure your INR is between 2.0 and 3.0. If this is normally performed

at your GP, please record your INR values and bring a copy with you.

## **How do I prepare for the test?**

You should not eat, or drink fluids, for six hours prior to your admission. You can drink water up to two hours prior to admission. Continue to take your other tablets as normal with a sip of water if necessary. Your stomach needs to be empty to provide clear images on the scan as well as making the procedure more comfortable.

The healthcare team will carry out a number of checks to make sure you are having the correct procedure; please ensure your personal details are correct on any paperwork you get given. Please inform the team if you are diabetic or have any allergies to medications and / or latex as soon as possible.

Before the procedure you may have a small tube ('cannula') inserted into a vein in your arm to deliver any drugs, and may have an electrocardiogram recorded (ECG). If you are having the procedure under general anesthetic, the anesthetist will come to talk to you prior to the procedure. You will be asked to shave your groins prior to the procedure.

Your doctor will explain the procedure and associated risks and benefits to you before asking you to sign the consent form.

Most patients have sedation during the test so you must arrange for somebody to take you home after your test. Please inform your family that the procedure may take a few hours.

## **What does the test involve?**

A doctor will perform the procedure. Several nurses, a radiographer, and a physiologist will be present in order to assist. Most patients have this procedure under local anesthetic, with sedation at some stage during the procedure to help you feel relaxed and sleepy. In other, special cases, general anesthetic is preferred.

Local anesthetic will be placed into one or both of your groins to numb the area. Several small tubes will then be inserted into a vein in one or both groins through which flexible wires ('catheters') are inserted into the heart to record electrical activity. The doctor and physiologist will run several tests through these catheters to start the arrhythmia and collect vital information about the type of arrhythmia you may have and how best to treat it.

It is not unusual to feel your heart speeding up or slowing down, and you may have symptoms similar to your arrhythmia symptoms during the procedure. Please inform the staff if you are uncomfortable at any point during the procedure.

X-rays will be taken during the procedure so you must inform staff if you think you may be pregnant.

## **Ablation Procedure**