General Electrophysiology Study & Ablation FAQs

What is an abnormal heart rhythm (arrhythmia)?

A normal heartbeat begins with an electrical impulse in the top chambers of the heart (atria) that travels through a specific pathway to the bottom part of the heart (ventricles). A disturbance or interruption in the impulses passing through the heart can cause an abnormal heart beat, or arrhythmia. Some arrhythmias are life-threatening, while others only cause symptoms that may interfere with your daily routine. Arrhythmias can be treated with medications, as well as with procedures.

What is an electrophysiology study (EPS)?

This is a study of the heart's electrical system. It is a minimally invasive procedure performed in the hospital in which electrical catheters are inserted through the veins in the groins, advanced into the heart, and used to identify abnormalities of the heart's electrical system. This information can be used to determine if you would benefit from a pacemaker, an implantable defibrillator or an ablation.

What is a cardiac ablation?

An ablation is a minimally invasive procedure, often performed at the same time as an electrophysiology study, to correct heart rhythm abnormalities. During an ablation, specialized catheters are used to scar the tissue that causes the abnormal heart rhythm, thus preventing it from recurring.

What types of arrhythmias are treated with ablation?

SVT, atrial fibrillation, atrial flutter, frequent premature ventricular contractions (PVCs), and ventricular tachycardia can all be treated with ablation.

Can anyone with an arrhythmia be treated with an ablation?

Many patients with arrhythmias can benefit from an ablation, but it is not for everyone. In some cases, ablation can be used as first-line therapy; in other cases an ablation is performed only if medications fail to control the arrhythmia. Your doctor will determine if you are a candidate for the procedure.

Is this the same thing as a heart catheterization?

An EP study and ablation are similar to, but not the same as, a heart catheterization. In a heart catheterization, tube like catheters are used to inject IV dye into the heart arteries to look for blockages. In an EP study/ablation, electrical catheters are used to pace the heart, record the electrical activity, and to alter the heart's electrical tissue.

How are an electrophysiology study and ablation performed?

The doctor will numb the groins and use a needle to access your veins. Several catheters will be advanced through small tubes, called sheaths, in the groins and positioned at several locations along the heart's electrical system.

The catheters can be used to record the heart's electrical activity and send electrical impulses to the heart. Medications may also be used to provoke or interrupt the heart rhythm. These catheters can also be used to make a detailed electrical map of your heart and identify the tissue that is causing the arrhythmia.

Once the abnormal heart tissue is identified, an ablation catheter can then be used to deliver heat (radiofrequency ablation) or freezing energy (cryoablation) to the abnormal tissue. This creates a scar and destroys the tissue causing the arrhythmia.

What are the risks of the procedure?

The overall risks of an EP study and ablation are very low, but rarely complications can occur. These complications will be discussed during your consultation.

Do I need to do anything to prepare for the procedure?

You will be advised on which medications to take, and which medications to stop prior to the procedure. You may need to stop your rhythm control medications and blood thinners a few days before the procedure. You will be asked not to eat or drink anything, except for certain medications, approximately 8 hours prior to the procedure or overnight.

Will I need any testing prior to the procedure?

All patients will need to have bloodwork done prior to the procedure. Some may also need to have a stress test, echocardiogram, TEE (transesophageal echocardiogram), heart monitor, or CT scan of the heart.

Am I asleep for the procedure?

Many of the procedures are performed under conscious sedation, or “twilight”. This means that you won’t be completely asleep, but you will be drowsy and comfortable. This is necessary because general anesthesia can sometimes make it difficult to provoke the arrhythmias we are looking for. For some of the more complex or prolonged ablation procedures, such as atrial fibrillation and ventricular tachycardia ablations, you are asleep for the entire procedure under general anesthesia.

Will I experience any discomfort during the procedure?

After the local anesthetic is injected into the groins, that area will be numb. There are no pain receptors inside of the blood vessels or heart, so you shouldn’t experience pain from the catheters. You may feel movement of the catheters, you may feel your heart speeding up and slowing down, and you may have symptoms similar to when you are experiencing your arrhythmia. The electrophysiology lab is a controlled environment, and the doctor can start and stop the arrhythmia. When an ablation is performed, most patients feel nothing, however some report a feeling of discomfort in the shoulders or chest, a warm sensation, or mild “queasiness”; this is very brief and will subside with discontinuation of ablation.

How long does the procedure take?

Most procedures can take up to four hours; complicated cases may take longer.

How long will I need to stay in the hospital?

Most patients will spend one night in the hospital after an ablation. If only an electrophysiology study is performed, patients are generally discharged home the same day as the procedure.

Do I need to continue to take my medications, including blood thinners, after an ablation?

You may need to continue your medications after you’ve had an ablation. For some patients, this will be short term; others may need to continue medications longterm. Your doctor will discuss this with you.

If I need to hold my medications prior to the procedure, what do I do if my heart goes out of rhythm?

If you are symptomatic (palpitations, dizziness/lightheadedness, feel like you're going to pass out, short of breath, having chest pain), you should seek medical attention by going to the emergency room or calling 911.

Are ablations always successful?

Ablations carry a high rate of success in treating arrhythmias, but the overall success will depend on the type of arrhythmia being treated and individual patient characteristics. Many patients will enjoy lifelong freedom from their arrhythmia, but a small number may require a repeat procedure. Arrhythmias such as SVT and atrial flutter have a very low risk of recurrence; others, such as atrial fibrillation and ventricular tachycardia, have a higher chance of requiring further treatment.