

# About Electrophysiology

## Study of the Heart

### What is an Electrophysiology Study?

An ElectroPhysiology (EP) Study is a test that looks at the electrical system of your heart. An EP Study will show if you have a heart rhythm problem and what is causing the problem. Heart rhythm problems are known as arrhythmias.

### Why is an EP Study done?

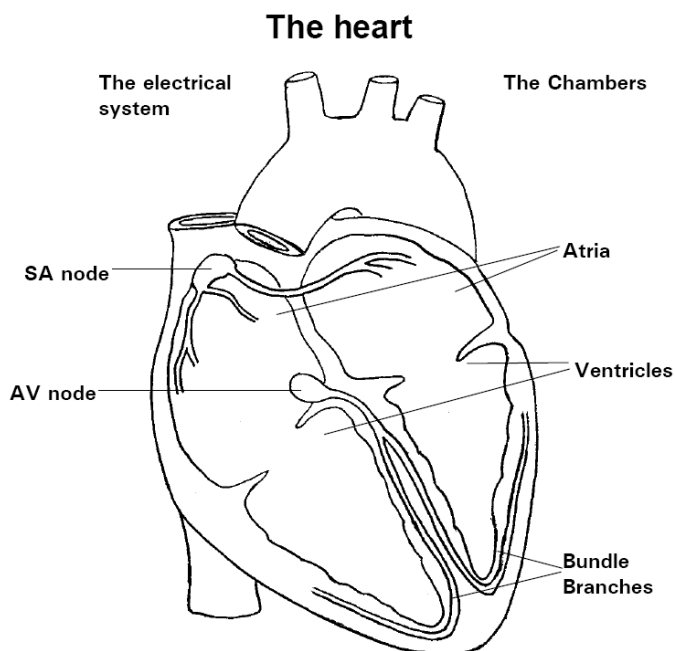
An EP Study is done when you have problems such as fainting, dizziness, heart palpitations or an abnormal heart beat.

### How does the heart work?

To understand this procedure, you need to know how the heart's electrical system works.

The sinoatrial node (SA node) is a natural pacemaker. It starts the electrical signal that travels across the upper 2 chambers or atria of the heart to the atrioventricular node (AV node).

The AV node transfers the electrical signal from the upper part of the heart to the lower 2 pumping chambers or ventricles. The bundle branches are specialized tissues that help send electrical impulses through the ventricles. This makes a normal heart beat called normal sinus rhythm.



The electrical system coordinates the pumping action of the heart's 4 chambers

## **What causes heart rhythm problems?**

Problems happen when the heart beats too fast or too slow. Some people are born with heart rhythm problems. Problems may also be caused by aging or heart disease. There are many different kinds of arrhythmias.

Problems occur when the heart beats too fast or too slow. When this happens you may feel:

- dizzy
- faint
- short of breath
- very tired
- palpitations (pounding in your chest)

The treatment for heart rhythm problems may include one or more of the following:

- medication
- a pacemaker
- a defibrillator
- ablation

## **Who will do the EP Study?**

A doctor who specializes in **ElectroPhysiology (EP)** will do the procedure. He/she will have seen and examined you before to the test and will follow your progress after the test. He/she will be assisted during the procedure by a nurse and a physiology technician. If you have any questions, please ask the doctor or nurse.

## **Where will the EP Study be done?**

Your procedure will be done in the Electrophysiology Lab, also called the EP Lab at the Royal Jubilee Hospital.

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

EP Studies are usually done as day procedures. The average EP Study takes from 2-4 hours. Some studies take longer. Your doctor will tell you if this applies to you.

## **What are the risks of an EP Study?**

The risks vary with each person and are related to your health condition and type of arrhythmia. Your doctor will explain your risks to you before the procedure and ask you to sign a consent form.

Possible risks for EP Study include:

- bleeding from the vein at the puncture site
- bruising or infection at the puncture site
- small risk of stroke, heart attack or death
- small risk of complete heart block needing pacemaker
- small risk of bleeding or air leak around the lungs and heart

## **Learn more:**

- Canadian Heart Rhythm Society – [www.chrsonline.ca](http://www.chrsonline.ca)
- Heart Rhythm Society – [www.HRSONline.org](http://www.HRSONline.org)
- Heart and Stroke Foundation – [www.hsf.ca](http://www.hsf.ca)

## Common terms

This list explains common terms you may hear or read about. If you would like more information, ask the team.

**Ablation** (also called Radio Frequency Ablation): A treatment for abnormal heart rhythms. Heart tissue that causes abnormal heart rhythms is destroyed using a special catheter. Ablation leaves the normal pathways in place.

**Ablation and Pacing:** A procedure for atrial fibrillation in which the AV node is destroyed and a pacemaker is put in to maintain a normal heart rhythm.

**Antiarrhythmic Drugs:** Medications to treat abnormal heart rhythms.

**Arrhythmia:** A change in the heart rhythm that makes the heart beat too fast, too slow or irregularly. This is also called dysrhythmia.

**Bradycardia:** The slowness of the heartbeat.

**Cardioversion:** A therapy used to treat rapid heartbeats.

**Defibrillation:** A technique where an electric shock is given to the heart to treat life threatening arrhythmias.

**Dual Chamber Pacing:** A pacemaker that senses and treats arrhythmias in both the upper and lower heart chambers.