

## South Denver Cardiology Associates



### Electrophysiology (EP) Study

An electrophysiological study (EP study) is a test used to evaluate your heart's electrical system and to check for abnormal heart rhythms. Natural electrical impulses coordinate contractions of the different parts of the heart. This helps keep blood flowing the way it should. This movement of the heart creates the heartbeat or heart rhythm.

During an EP study, your doctor inserts small, thin wire electrodes into the heart through a vein in the groin (or neck, in some cases). The procedure may take up to three hours. During this procedure, you will meet several electrophysiology lab team members, including physicians, nurses, and technicians. They are all important in performing the procedure as well as keeping you safe and comfortable.

You will be brought to the electrophysiology laboratory, a sterile room, where you are placed on a table with an x-ray machine called fluoroscopy. An intravenous line will be placed in your arm. Through this intravenous line, you will be given sedative medicine throughout the study to make you comfortable. Both of your legs, where your femoral vein and artery runs, will be cleansed as a part of the procedure. Electrodes and large patches will be placed on your chest to monitor your heart's rhythm. The femoral area on your leg will be numb using lidocaine (similar to the medicine the dentist uses).

An electrophysiology study is not painful. There may be some discomfort at the femoral site where the catheters are inserted, but you will not feel the catheters in your body. Let the doctor know if you are experiencing discomfort, chest pain, shortness of breath, or palpitations.

Through these veins and possibly arteries in your leg, catheters are placed into the heart using an x-ray to watch its movement, and baseline measurements of your electrical system are made. In addition, electrical impulses are sent to stimulate your heart to evaluate your heart's response and to try and reproduce your arrhythmias.

You may have a rapid and dangerous heart rhythm which may be reproduced, such as ventricular tachycardia or ventricular fibrillation. It may be possible that you will pass out. If this happens, the doctor will try and pace your heart out of the rhythm. Sometimes, you may need to be cardioverted (shocked) out of the rhythm.

After the procedure, the catheters are removed, and pressure will be held until the bleeding stops. You will be asked to lie flat on the bed for up to four hours without moving your legs. The doctor will discuss the study's results with you and your family. Depending on the test results, you may be discharged home afterward.

Overall, an electrophysiology study is a safe procedure. There are risks involved in having this study performed like any other invasive procedure. The risks include damage and bleeding of the vessels where the catheters are inserted and puncturing the heart wall with the catheters causing bleeding around the heart sac and infections. Blood clots and strokes have been reported, and deaths from the procedure are rare.