Metropolitan
Heart & Vascular Institute

ELECTROPHYSIOLOGY STUDY

What is an electrophysiology study? An electrophysiology (EP) study is an invasive procedure in which the cardiologist introduces flexible steerable catheters from a patient's veins up into the heart to study his or her electrical system. This procedure can diagnose abnormally slow or fast rhythms that can cause patients to experience fainting, heart racing, or other heart-related symptoms. Once an abnormal heart rhythm disturbance has been identified, this may lead to treatment after the EP study. If treatment after an EP study is needed, it may be through a pacemaker implant, a defibrillator (ICD) implant, or catheter ablation. Ablation is the use of heat or cold energy delivered through a steerable catheter to treat fast or abnormal heart rhythms.

What needs to happen before an EP study? Certain patients may require a heart echo, CT or MRI scan to assess the anatomy of their heart. Some patients may be required to hold certain medications such as beta-blockers, blood pressure medications, water pills, or diabetic medications before their procedure. Usually, blood thinners like warfarin (Coumadin), dabigatran (Pradaxa), rivaroxaban (Xarelto), or apixaban (Eliquis) will also need to be held. You will be given specific instructions if your cardiologist wants you to hold any of these medications before your procedure. Patients usually are asked to have dinner the night before and begin fasting after midnight before their procedure.

At the Hospital. On the day of the procedure, you will register in the first floor of the Heart Center and then go up to the third floor. You will be greeted by 3 Heart staff who will escort you to your pre-procedure room. Here you will have your IV started and your blood drawn. Prior to the procedure you will meet a nurse practitioner (NP) or physician assistant (PA) for a brief pre-procedure assessment. You will then be moved to the procedure room for the EP study. Family and friends may be offered to stay in the pre-procedure room or a separate waiting room while the patient is undergoing his or her procedure.

Most patients will receive short acting IV sedatives to be administered by a nurse in the procedure area. Once you are sedated, you will not have any discomfort, and you may have no memory of the procedure itself. Several soft flexible catheters will be placed into the heart through veins in your leg, and occasionally in your shoulder or neck. Patients who receive general anesthesia will usually have a bladder catheter placed after they are under anesthesia.

An EP study usually takes 60-90 minutes to do, but the total procedure time may be a few hours longer if certain types of therapy, such as a pacemaker, defibrillator, or catheter ablation is performed. If more than one arrhythmia is found and more treatment is required, procedure times can increase significantly. Once the procedure is completed, your heart rhythm specialist will meet with your family or representative in a private room to review the procedure and answer any questions they may have.

At the conclusion of the case the patient is usually transferred to the 3 Heart pre and post-procedure area where IV tubes and catheters are removed as the patient is waking up. Once the tubes in the groin are removed, bleeding will be controlled by nursing and other hospital staff by applying firm pressure at these sites. Occasionally a mechanical device may be used to apply pressure for longer periods of time. You will be asked to lie flat on your back with your head elevated a little for about 3-4 hours after the tubes are pulled.

What to expect after an EP study. Depending on the time of day and the type of procedure that was done, patients may either be discharged home on the same day or on the next day, after an overnight stay in the hospital. Prior to discharge, the cardiologist or an NP or PA will review medication changes, discharge plans, and follow-up.

Within the first week, some patients may experience mild chest discomfort if they have had an ablation as part of the EP study. Most of the time this can be controlled with acetaminophen (Tylenol) or ibuprofen (Motrin, Advil). There may also be some discomfort in the groin sites that will go away within 1-2 weeks. Patients may sometimes experience extra beats, but the heart should not race. This results when the heart is irritable after a procedure.

Patients should call us immediately at 763-427-9980 if they experience bleeding or swelling from the groin sites, severe shortness of breath, persistent heart racing, dizziness or fainting, neurologic changes, fevers, difficulty swallowing, or coughing up of blood. Patients are asked to refrain from lifting > 10 pounds or engaging in rigorous activity for usually 1-2 weeks after an EP study. Depending on what type of procedure you had done and the type of job you have, you may be asked to refrain from your work duties for a few days or up to 1 month after your procedure.