Electrophysiology Study and Cardiac Ablation
Finding and treating your child’s heart rhythm problem

This describes 2 procedures that are done to diagnose and treat your child’s heart rhythm problem (arrhythmia).

Your child’s doctor has recommended that your child have an electrophysiology study and cardiac ablation. This handout explains how these 2 procedures are done to diagnose and treat your child’s heart rhythm problem (arrhythmia). Before the procedures begin, we will go over this information with you in person and answer any questions you may have.

**What is an electrophysiology (EP) study?**

An EP study is being done to find the cause of your child’s heart rhythm problem. During the EP study, flexible tubes called catheters are used to guide tiny wires that send and receive electrical signals from several different areas within your child’s heart. Doctors use this information to test the normal electrical activity (conduction) of the heart. In this way, the doctors can find the area in your child’s heart that is causing the rhythm problem.

During the EP study, the doctor will use catheters or medicine to start the abnormal rhythm (arrhythmia). This is the only way to determine where it is happening. Once the arrhythmia is started, the doctor can easily stop it. This procedure will give your child’s cardiologist the information needed to make the best treatment plan for your child.

**What is cardiac ablation?**

If the cause of the rhythm problem is found during the EP study, the doctor may perform a procedure called cardiac ablation to correct the problem. Cardiac ablation use a special catheter to destroy (ablate) the small pieces of tissue that are causing your child’s heart rhythm problem.

The doctor may choose a catheter that heats at the tip (radiofrequency waves) or freezes at the tip (cryoablation). Either one will dry out the tissue in the area that is causing the heart rhythm problem.

Your child’s heart will pump normally during the procedure. Your child will not be in any pain. After the area is ablated, the doctor will check that your child’s heart has normal electrical activity (conduction). After this procedure, your child might not need to take medicine for their heart rhythm.

**What happens before the catheterization?**

Once your child’s heart procedure is scheduled, we will mail you instructions to help you prepare. Follow these instructions and call our office if you have any questions or concerns.

If your child takes medicine to control the abnormal heart rhythm, you might be asked to stop giving your child this medicine before the procedure. Stop the medicine only if a healthcare provider tells you to.
Stopping the medicine allows your child’s body time to clear it out of their bloodstream. This is important because the medicine can interfere with the testing during the EP study. We will tell you when to give your child the last dose of their medicine and how to slowly take them off the medicine.

In preparation for the procedure, your child will need to have an empty stomach. The Surgery Center will call you 2 days before the procedure and tell you when to stop giving your child any food and drink.

When you arrive, the Surgery Center will give you a pager. This will allow the nurses to update you during the procedure. When the pager goes off, return to the Surgery Center desk for information. The procedure will take about 4 to 6 hours. It may take more or less time, depending on how complex the procedure is.

**What happens during the catheterization?**

The procedures will be done in the EP lab (Electrophysiology Laboratory). Your child will be brought there on a stretcher or in a wheelchair. When your child is in the EP lab, they will be given medicine (anesthesia) to keep them asleep and free from pain. Many types of monitors will be used to check your child’s breathing and heart rate. Set up for the procedure takes about 1 hour. The doctor will insert catheters through the blood vessels in your child’s leg and/or neck to read the heart’s electrical signals. The catheters are thin, flexible plastic tubes that look like spaghetti. No stitches will be needed after the procedure.

**What happens after the catheterization?**

After the procedure is done, your child will be taken to the PACU (Post Anesthesia Care Unit) to recover. Your doctor may order more testing such as an EKG (electrocardiogram), echocardiogram or have your child wear a Holter monitor, which keeps track of their heart rhythm. You will be able to see your child when they are fully awake. This usually takes about 1 hour after they arrive in the PACU.

Once awake, your child will be moved to a private room until they are ready to go home. Your child’s recovery time will depend on the type of catheters used. You should plan on at least 4 hours.

A common side effect after having general anesthesia is nausea and vomiting. Your child might be given medicine to make them more comfortable. When they are able to hold down liquids, they may eat a light meal.

Most children over the age of 5 are able to go home the same evening as the procedure. Some children need to be monitored overnight in the hospital. It is a good idea to bring a change of clothes in case your child needs to stay the night.

The bandages will be removed in the evening. Your child should rest or lay flat as much as possible the night of the procedure to prevent bleeding from the catheter sites and dizziness from the medicines (anesthesia) given during the procedure. Have your child drink liquids (as much as they can tolerate). This will help reduce the side effects of the anesthesia medicine. Your child should wear loose clothing for a few days to prevent irritation to the catheter sites.
How do I care for my child at home?

- Keep the catheter sites dry for the first day. Showers are OK the day after that. Scabs will form over the catheter sites. Your child should not take a bath or swim until their scabs fall off on their own. This will take about 1 week.
- If the catheter site begins to bleed, put a cloth on the skin and press down directly on the site for 10 minutes. Then call your child’s doctor.
- Keep your child’s activity light for a few days, but they do not need to stay in bed. Ask your child’s nurse or doctor if you have questions about a specific activity.
- Bruising at the site of the catheters is normal, and should disappear in about 1 week.
- Some children might need to take aspirin for a few months after going home. Your doctor will tell you if your child will need aspirin therapy.
- Your child may experience an irregular heartbeat (palpitations) following the procedure. This is normal.

When do I call the doctor?

Call the doctor if your child has:

- Redness, swelling or bleeding from the catheter site on the leg or neck
- Increased pain
- Fever of 101.5 degrees F or higher
- Irregular heartbeat lasting longer than 20 minutes