

Electrophysiology (EP) Study/Radiofrequency Ablation

The purpose of an EP study is to identify your heart rhythm problem and to choose the best method of treatment to help you.



Your doctor may advise an EP study when the electrical system of your heart is not working as it should.

An abnormal heart rhythm can be disabling and life threatening. During the EP study, the doctor will check how the electrical system of your heart is working.

What should I expect before the EP study?

- The doctor doing the study will talk with you and your family about the test, possible treatment options and risk. This is a good time for you and your family to ask questions and share your thoughts, feelings and concerns about the study.
- If you might be pregnant, be sure to tell the doctor.
- Don't eat or drink after midnight the night before your study unless you are told otherwise.
- You may be asked to stop taking some of your medicines before your study. This gives the doctor a better idea of your usual heart rhythm. Your doctor will decide when to stop your medicine. You will receive medicine to help you relax before the study.
- The study is done in a special room called the EP lab which is in the cardiology department. Your family may go with you. They will stay in a nearby waiting room during the study.

What can I expect during the EP study?

You will be awake during the study. Once in the EP lab, you may notice that there are many machines in the room. They are needed for the procedure. The staff will:

- Clean and shave the area (usually your groin but sometimes your neck) where the doctor threads catheters through a sheath (tube) from a large blood vessel to your heart.
- Cover you with a warm blanket since the EP lab is cool.
- Attach armrests to the bed to support your arms.
- Attach monitor patches to your chest, back, arms and legs. Your chest will be shaved before the procedure so patches stick to your skin.
- Place a sterile sheet over you from your neck to your feet. The only part of your body not covered is your head and the area where the catheters are inserted.
- The doctor will inject a medicine to numb the area where the tubes will be inserted. This is like the dentist numbing your mouth before working on your teeth. You may feel the poke or sting of the small needle in your skin for a few seconds.

- During part of the test, x-ray equipment will be moving over your body. Because the staff are exposed to x-rays daily, they will wear lead aprons. You will receive only low dose x-rays.
- One to four catheters will be placed in a blood vessel in your groin. Watching the monitor, the doctor moves the catheters to your heart. You will not feel these catheters as they are moved.

The staff will ask you questions and talk to each other as they get ready for the study. They will explain to you what they are doing as they go along. You will never be alone.

- You will need to lie still and relax as much as you can. Moving or tensing your muscles interferes with the recording of your heart rhythm.
- You may feel your heart beating very fast, or you may notice “skipped” beats. The doctor is causing this to happen. Don’t be alarmed, but tell the staff if you feel any chest pain or tightness.

- A very rapid or a very slow heartbeat may occur during the EP study. The doctor may “pace” (deliver small electrical impulses) your heart to correct the rhythm. In some cases, a rapid heart rhythm continues.
- You may pass out because of this but only for a very short time. A small electrical shock may be needed to restore a normal heart rhythm. Although it may be frightening to think about this part of the study, most people do not report any pain. Some do not even know that they have passed out. There is no way of knowing if this will happen. If you do pass out, when you first wake up you may not know where you are or what has happened. The staff will be right at your side to comfort and reassure you.

After the catheters are in place, the doctor gives your heart small electrical impulses. These make your heart beat at different rates.

It is very important that the doctor knows how you are feeling.

You will be asked questions such as:

- Are you dizzy or light-headed?
- Do you feel your heart pounding?
- Do you feel faint?
- Are you having chest pain?
- Are you short of breath?

What happens after the study?

Your doctor may decide to perform treatment while you are still in the EP lab. Options include:

- Medication
- Pacemaker
- Implanted cardioverter defibrillator
- Radiofrequency ablation.

Your treatment depends on your type of heart rhythm problem.

The doctor will talk with you and your family after the EP study. Be sure to ask any questions that you have.

Medications

If the study shows that you have a very fast heart rhythm, your doctor may prescribe medicine to control this rhythm.

Pacemaker or Implantable Cardioverter Defibrillator

See **Pacemaker or Implantable Cardioverter Defibrillator (ICD)** education handouts if your doctor has recommended one of these as a treatment option.

Radiofrequency Ablation

An ablation procedure is a treatment option used to destroy parts of the abnormal electrical pathway that is causing a rapid heart beat problem. During the ablation a special catheter is positioned in the heart close to the abnormal pathway. Once the doctor locates the area of the heart that triggers your rapid heartbeat, radiofrequency energy (heat) is passed through the catheter. This causes the tip of the catheter to heat up and destroy the heart tissue that contains the abnormal pathway. You may notice a warm feeling in your chest when this energy is applied.

What happens after completing the diagnostic and treatment options?

- The study/treatment takes about one to four hours but can sometimes take longer.
- The staff will remove the tubes from your groin (or neck).
- To prevent bleeding, a staff member will apply pressure on the insertion site for about 10 to 20 minutes.
- Once the bleeding stops, the staff applies a bandage which is removed the next day. Stitches are not needed.

To prevent bleeding at the insertion site: Incision care guidelines

- Stay in bed four to six hours. When it is OK for you to get out of bed, a nurse will help you.
 - Tell your nurse if your leg or foot tingles or becomes numb.
 - Keep the leg with the bandage straight. Sitting up or bending your knee may cause the site to bleed.
 - Keep your head on a pillow.
 - Tell your nurse if you have any warmth, pain or swelling in your groin where the tubes were inserted.
 - Let your nurse know how you are feeling. He/she will make sure that you are comfortable and that you have something to eat and drink. Your blood pressure, heart rate and the bandage will be checked often after you return to your room.
- The incision may look bruised and have a small, soft to firm lump under the skin. The skin should look clean and dry.
 - Clean the incision once a day with soap and water until healed. Pat the area dry carefully.
 - Leave the incision open to the air. If clothing rubs the area, causing soreness, then you may cover it with a bandage.
 - Check your incision each day until it is healed for signs of bleeding or infection.

Signs of infection:

- Redness
- Increased swelling
- Increased pain
- Any new drainage

What to do if bleeding occurs:

- If you have a groin insertion site and you are alone when bleeding occurs, place the fist of your opposite hand over the site. Then, bend at the waist to increase the pressure.
- If another person is with you when the bleeding occurs, have the person place his/her hand firmly on the insertion site.

Signs of bleeding:

- Bleeding can occur up to several days after the study.
- Bleeding can occur under the skin and appear as a large new, hard area at the incision site.

Call your doctor for any of these problems:

- The incision site begins to bleed.
- The bruising or swelling increases.
- You have signs of infection at the incision area.
- The leg in which the catheter was inserted feels cold or numb.
- You notice dizziness, palpitations (heart pounding), light headedness or any other symptoms like those you had before your study.

Activity guidelines

- Do not do any hard work for one week. Gradually resume your usual activity after returning home.
- Do not lift more than 10 pounds for one week after the study/procedure or until the incision heals.
- If you must ride in a car for a long distance, get out and walk several steps every one to two hours.
- You may sponge bathe or shower. Do not soak the insertion site until it is fully healed.
- You may return to your usual sexual activity in one to three days.
- Ask your doctor when you can return to work.
- Climb stairs as little as possible for three to five days.

