

Electrophysiology (EP) study and Radiofrequency Ablation (RFA)

What are EP and RFA, and why are they used?

An **electrophysiology** [ee-lek-troh-fiz-ee-AW-loh-jee] (**EP**) study is a test that shows how electrical signals move in pathways through your heart. When the pathway is normal, your heartbeat is regular. When these signals are abnormal, your heartbeat is irregular. An irregular heartbeat is called an **arrhythmia** [ah-RITH-mee-ah].

Symptoms of an arrhythmia are different in each person. They can include:

- A pounding or rapid heartbeat
- A heart “flutter”
- Dizziness or feeling lightheaded
- Shortness of breath

Radiofrequency [ray-dee-oh-FREE-kwen-see] **ablation** [ah-BLAY-shun] (**RFA**) is a procedure used to treat some types of arrhythmias. In most cases, it can be done at the same time as an EP study. Your doctor will tell you if you are scheduled for an EP study, an RFA procedure, or both.

What do I need to do next?

- 1 Make a list of all your current medicines and give it to your doctor.** Write down everything you are taking, including prescription drugs, over-the-counter medicines (like Tylenol, cough syrup, or allergy pills), inhalers, patches, vitamins, herbal remedies, or street drugs.
- 2 Tell your doctor if you are allergic** to any medicines or dyes.
- 3 Follow your doctor’s directions about taking your medicines.** If you are taking an anticoagulant [an-tie-koe-AG-yoo-lant] (sometimes called a blood thinner), you may need to stop taking it before the procedure. If you are taking diabetes medications, you may need to change when you take it before and after your procedure.
- 4 Follow all instructions on when to stop eating and drinking before the procedure.** This will help prevent complications from anesthesia.
- 5 Arrange for a ride.** You will need to have a responsible adult take you home afterward and stay with you for a time after the procedure.



What happens during an EP study or RFA?

An EP study usually takes 1 to 2 hours. An RFA procedure also takes 1 to 2 hours, so it may take 3 to 4 hours to do both procedures.

- You'll receive medicine through the IV to make you feel relaxed and drowsy. Depending on your type of heart rhythm problem, you might receive general anesthesia so you sleep through the procedure. If you are awake, your doctor may give you directions during the procedure.
- A sheath (a short plastic tube) will be placed into a blood vessel. You may feel some pressure at first.
- The doctor moves one or more catheters (thin, flexible tubes) through a vein to your heart. You won't feel this.

During an EP study:

The doctor uses special x-rays to see the catheter as it moves through your body. The catheters contain tiny sensors that measure how electrical signals move through your heart.

The doctor may use a catheter to cause a temporary irregular heartbeat. Measurements taken during this period help your doctor understand what is causing the irregular heartbeat, where it starts, and the best way to treat it.

During RFA:

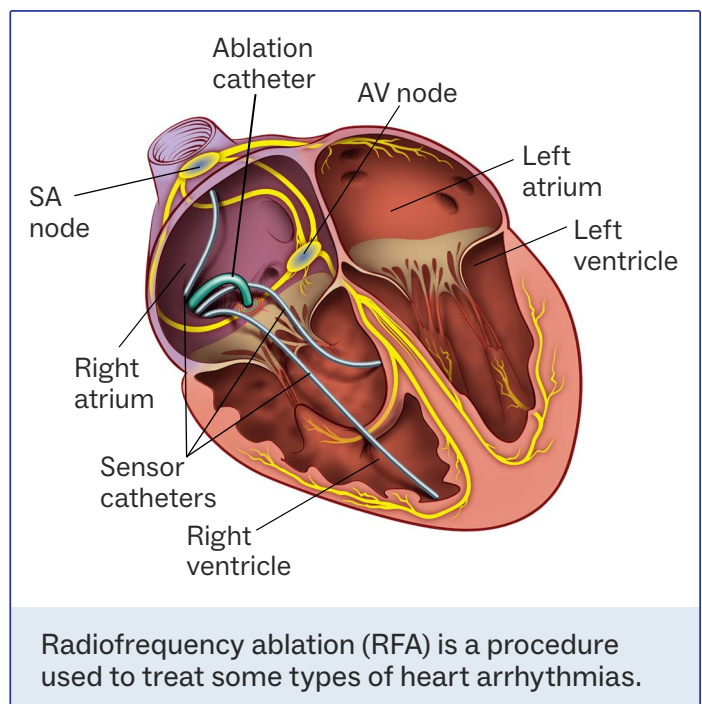
A catheter is placed next to the heart cells that are creating the abnormal electrical signals. The tip of the catheter sends RF energy to destroy the abnormal cells in that area. This can bring the heart back to a normal rhythm.

You may feel uncomfortable when the energy is used on the cells in your heart. Tell the doctor if you're feeling pain. You may need more pain medicine.

What happens after an EP study or RFA?

After EP or RFA:

- You'll be moved to a recovery unit where nurses can monitor your heart rate and rhythm.
- Your leg may be numb or weak for a short while. Special steps will be taken to make sure you're safe when you first get up.
- You will need to lie quietly for 2 to 4 hours. (You may be asked to use a bedpan rather than getting up to use the toilet at first).
- Your doctor will decide when it's okay for you to leave the hospital. Some patients can go home at the end of the day. Other patients will need to stay overnight.
- During the first 48 hours, you may have a heartbeat that feels strange at times. This is common as your heart muscle adjusts to the new heartbeat.



Talking with your doctor about an EP study or RFA procedure

It's important that you talk with your doctor about your procedure. Write down any questions you may have. Be sure to ask:

- How can this surgery help me?
- What risks or possible problems may come with this kind of surgery?
- Are there are other ways to treat my problem besides surgery?

See the table below for the most common potential benefits, risks, and alternatives for EP studies and RFA procedures. Other benefits and risks may apply to your unique medical situation.

Possible benefits	Risks and possible complications	Alternatives
<p>The benefits of EP studies and RFA are as follows:</p> <p>EP study</p> <ul style="list-style-type: none"> • Compared with other tests, it provides better information about the electrical system of your heart. • It can help your doctor better diagnose the cause of a heart rhythm problem, find its source, and test the medications used to treat it. <p>RFA procedure</p> <ul style="list-style-type: none"> • It can lessen or end the heart rhythm problem. • It can allow you to decrease or stop long-term medicine for a heart rhythm problem. 	<p>Both procedures</p> <p>Risks and possible complications include:</p> <ul style="list-style-type: none"> • Temporary leg numbness or weakness in the first few hours after the procedure (rare) • Bleeding or infection where the catheter was inserted (rare) • Allergic reaction to x-ray contrast media (dye), (very rare) • Damage to the artery or heart (extremely rare) • Heart attack or stroke (extremely rare and not typically caused by the procedure itself) • The need to use an electric shock to restore a normal heartbeat during the procedure (rare) • Low blood pressure or buildup of fluid in the sac that surrounds the heart (rare) • Clots developing at the tip of the catheter (rare) • Injury to your esophagus (rare) • Narrowing (stenosis) in the pulmonary vein (rare) <p>RFA procedure</p> <ul style="list-style-type: none"> • Damage to the heart's electrical system (rare). If this happens, a permanent pacemaker may need to be placed. • Your doctor may need to use a catheter to treat your heart rhythm problem that is not yet approved by the FDA for this specific purpose. 	<p>EP study</p> <p>Alternatives to an EP study include other heart tests, such as:</p> <ul style="list-style-type: none"> • EKG (electrocardiogram) • Echocardiogram • Heart rate recorders such as a Holter monitor • Tilt table test <p>RFA procedure</p> <p>An alternative to RFA is medication.</p>

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