



An Agency of the Provincial
Health Services Authority

RADIOFREQUENCY CATHETER ABLATION

What is radiofrequency catheter ablation?

Radiofrequency catheter ablation is a procedure to treat an abnormal heart rhythm (**arrhythmia**). Specialized catheters and mapping equipment are used to carry out the two parts of the procedure: the **electrophysiology (EP) study** and the **ablation**. An ablation catheter is a thin, flexible tube that is able to detect electrical signals from the heart and transmit energy to the heart muscle. One or more catheters are inserted into a large vein in the leg and advanced to the heart. X-rays and the electrical signals from the heart are used to guide the position of the catheter. Once the catheters are in place, they are used to record the electrical conduction and to stimulate the heart. This EP study creates a map of an individual's heart rhythm including any abnormal electrical pathways that may exist and attempts to trigger the abnormal rhythm. Once the source of the arrhythmia has been located, heat (**radiofrequency**) energy can be delivered through the catheter to **ablate** (destroy) the arrhythmia pathway.

Before considering catheter ablation...

1. It is necessary to determine whether or not there is an arrhythmia that can be triggered during the EP study. This is done by obtaining an ECG, telephone transmissions from an event monitor, or a Holter monitor of your heart rhythm while you are having symptoms.
2. An ultrasound (echocardiogram) of the heart is done to confirm that the anatomy and function of the heart are suitable for the procedure.
3. Your physician must be aware of any other medical conditions such as allergies, bleeding disorders or abnormal anesthetic reactions that you or members of your family have experienced.
4. Very young infants and individuals who are morbidly obese or pregnant face a higher risk of complications from this procedure. For these individuals, radiofrequency ablation is considered only when medically necessary and other measures have failed.

Why would I have an ablation procedure performed?

Arrhythmias may be treated with observation, medication, and/or ablation. Ablation therapy is a safe procedure that has a high success rate for curing certain types of arrhythmias. If the ablation procedure is successful, long term medications to treat the arrhythmia are no longer necessary. If the arrhythmia is cured, long term medical follow-up is not required. For certain conditions, a successful ablation can improve insurability and remove activity and career restrictions. The decision to have an ablation is usually a decision made by you and your family, in consultation with your cardiologist.

What will happen during the procedure? Will I feel anything?

The EP study is performed in a specialized procedure room called an **electrophysiology lab** or "EP lab." Radiofrequency catheter ablation usually takes 3 to 4 hours to carry out. The procedure can be longer or shorter depending on the complexity of the arrhythmia and other individual factors. Shortly before the procedure starts, an intravenous line (IV) is started. You will be asked to lie down on a narrow movable bed that can be positioned under the x-ray machine. You will be given medications through the IV to sedate you into a deep sleep for the duration of the procedure, or may be placed under general anesthesia. To minimize any discomfort you may have from the catheter placement, a local anesthetic is also used. When the procedure is complete, you will recover in a special observation room before being transferred to your hospital room or discharged.

How do I prepare for this specialized procedure?

Fasting (no liquid or food intake) is usually required starting at midnight the night before the procedure. If you are taking medication to treat your arrhythmia, discuss with your physician if and when this should be stopped prior to the procedure.

What will happen following the procedure?

After the procedure is complete, a light dressing is applied over the catheter access sites. It is important to lie quite still for a few hours to minimize any bleeding. It is not unusual to experience mild discomfort in your leg where the catheters were placed, occasional irregular heartbeats, and/or some chest pain from the ablation for a few days following the procedure. After the procedure, specific instructions will be provided about resuming normal activities and when to return to school or work.

How successful is radiofrequency catheter ablation?

Radiofrequency catheter ablation has a 90% to 95% success rate for curing most types of arrhythmias, although this will vary slightly depending on the type of condition being treated. Generally, the procedure is safe and individuals are ready for discharge the same day or the following day after a short period of observation in the hospital.

What are some of the possible complications of this procedure?

EP studies are generally safe procedures. Potential complications including infection, arrhythmias, injury to blood vessels, radiation exposure, chest pain, bleeding at the catheter access sites, and adverse effects of the anesthesia including nausea and vomiting. About one in ten people will need to go through the procedure a second time because the problem can recur even if initially it appeared to be successfully treated in the EP lab. Because this is an invasive procedure, there is also a risk of much less common but more serious complications including a 1:5000 risk of death, 1:1000 risk of a stroke or heart attack or cardiac puncture, and a 1:100 risk of conduction block requiring a permanent pacemaker. For example, this means that if one hundred individuals had this procedure performed, one of them would require a permanent pacemaker if the normal electrical system of the heart were damaged during the procedure. Although a general risk of 1:100 is given, the risk may be higher or lower and depends on what type of arrhythmia is being treated. Cardiac puncture may require emergency treatment, including placement of a drain in the chest or going to the operating room.

Will I need to take any medications following this procedure?

Acetaminophen (eg Tylenol) is recommended for any discomfort following the procedure. Your cardiologist may recommend that you take aspirin for one month to prevent blood clots from forming in the areas where ablation was performed. If you were on a medication to treat your arrhythmia prior to the ablation procedure, your cardiologist will advise you if this medication needs to be continued, weaned or may be stopped completely. After the ablation procedure it is important to clarify with your cardiologist when and how to resume any other heart medications.

Radiofrequency Ablation Procedure Websites:

Type '*Youtube BCCH EP*' into the search engine and click on the '*Introduction to Catheter Ablation*' video

<http://www.biosensewebster.com/patientEducation/ep-studies.aspx>

<http://www.biosensewebster.com/patienteducation/catheter-ablation.aspx>

http://www.uptodate.com/patients/content/topic.do?topicKey=hrt_dis/9779

<http://www.hrsonline.org/>