



Atrial Fibrillation Ablation

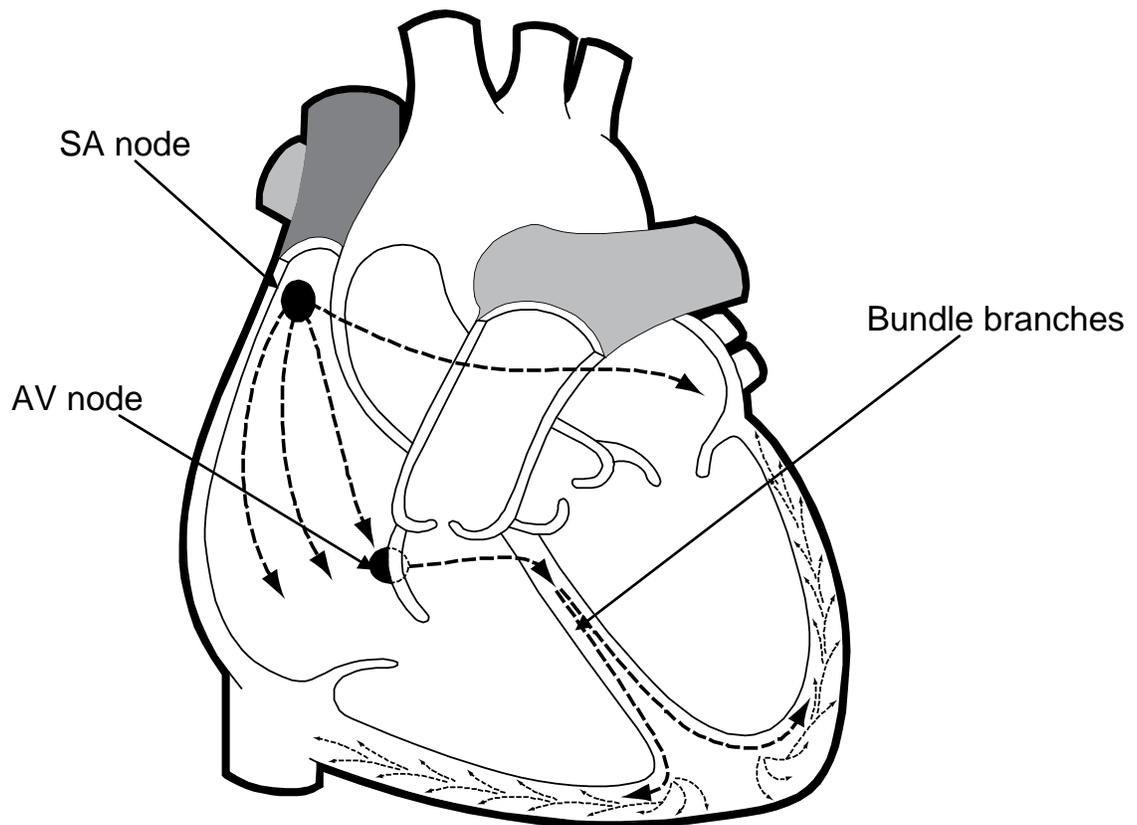
This handout will help you learn about atrial fibrillation ablation, also called pulmonary vein isolation.

How does the heart work?

To understand atrial fibrillation, you need to know how the heart's electrical system works.

The sinoatrial node (SA node) is a natural pacemaker. It starts the electrical signal that travels across the upper 2 chambers or atria of the heart to the atrioventricular node (AV node).

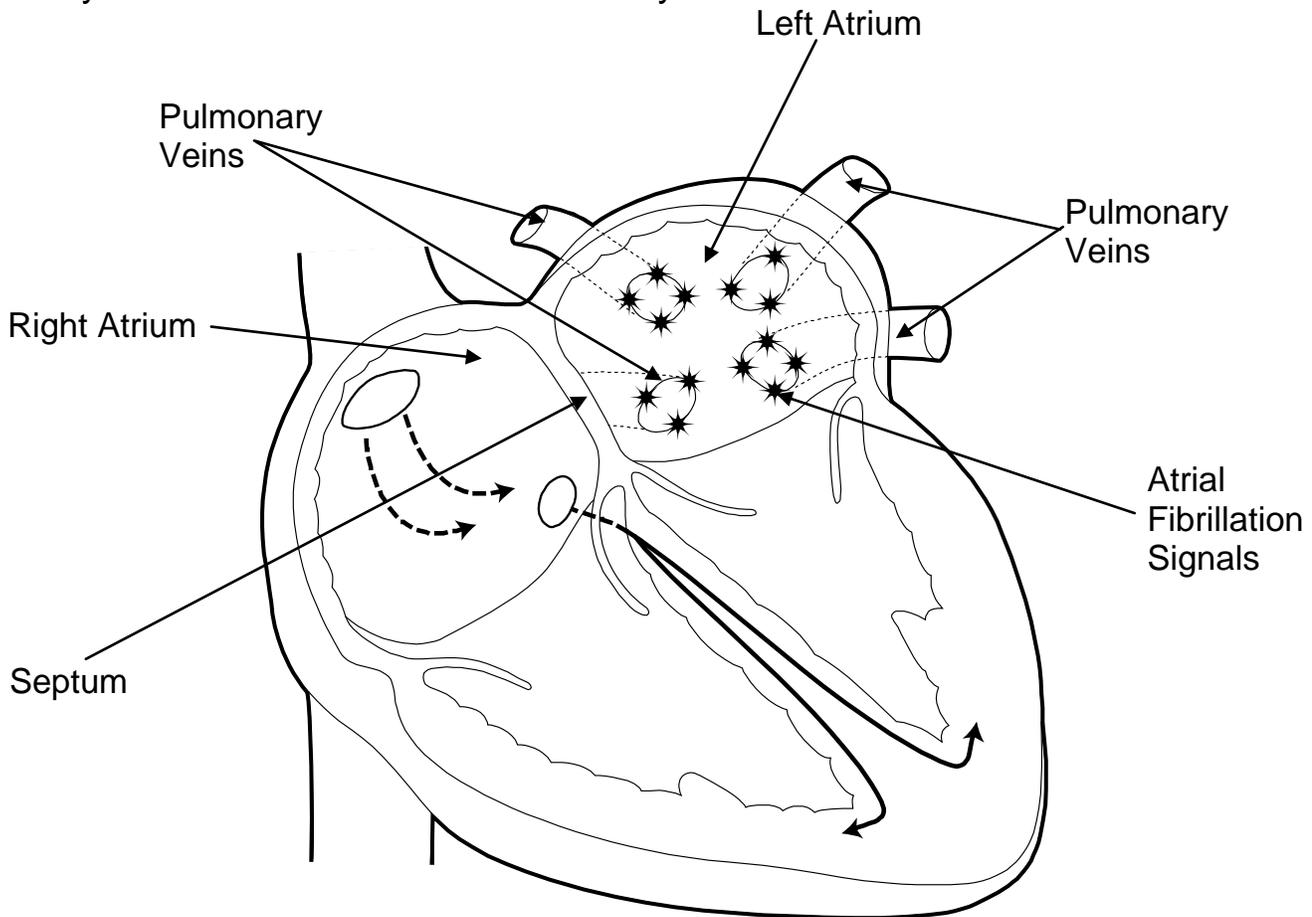
The AV node transfers the electrical signal from the upper part of the heart to the lower 2 pumping chambers or ventricles. The bundle branches are specialized tissue that help send electrical impulses through the ventricles. This makes a normal heart beat, called normal sinus rhythm.



The electrical system coordinates the pumping action of the heart's four chambers.

Atrial fibrillation is one of the most common arrhythmias, or irregular heart rhythm.

Atrial fibrillation is also called “a. fib” or “AF”. When you have atrial fibrillation electrical impulses or signals come from many different areas within the right atrium and left atrium (upper chambers), especially the pulmonary veins. These signals are disorganized and rapid. This causes your heart to beat fast and unevenly.



There are 3 types of atrial fibrillation:

- **Paroxysmal:** This is an irregular heartbeat for short periods of time.
- **Persistent:** This is an irregular heartbeat for long periods of time.
- **Permanent:** This is an irregular heartbeat all of the time.

Ask your doctor what type of atrial fibrillation you have.

What causes atrial fibrillation?

There are many causes of atrial fibrillation. Some causes are:

- high blood pressure
- heart attack
- heart failure
- a valve problem
- heart or lung surgery
- lung disease
- thyroid disease
- other heart problems
- stimulant drugs such as cocaine, caffeine and alcohol

Sometimes there is no known cause. Both men and women can have atrial fibrillation. It can happen to anyone, however it becomes more common as you get older.

How will I feel when I have atrial fibrillation?

You may feel:

- tired
- shaky
- sweaty
- trouble breathing
- chest discomfort
- anxious
- irregular or fast heart beat
- your heart pounding
- dizzy

You may feel nothing at all and feel just fine.

Is atrial fibrillation harmful?

Yes, it can be harmful.

A fast heartbeat is a great concern because it can cause heart failure. With heart failure, your heart has trouble pumping blood through your body. Fluid collects in the lungs and causes trouble breathing, swelling, coughing and extreme tiredness.

Atrial fibrillation often causes blood clots. This can be very harmful. A blood clot can block a blood vessel so blood cannot flow through the body. A clot can cause stabbing leg pain, trouble breathing, a stroke or a heart attack.

How is atrial fibrillation treated?

Atrial fibrillation may be treated with:

1. Medications

- To slow the heart rate. These medications include:
 - beta blockers such as metoprolol or bisoprolol
 - calcium channel blockers such as diltiazem
- To restore normal rhythm. These medications include:
 - anti-arrhythmics such as amiodarone or sotalol
- To help prevent blood clots from forming in the heart. This is called anticoagulant therapy. One name for this medication is warfarin (Coumadin[®]).

2. Cardioversion

Cardioversion is a procedure in which an electrical shock is applied to the heart through the chest wall. The shock is given at a specific time during the heart's rhythm to return your heart to a normal or sinus rhythm. This is a safe procedure carried out in hospital in a monitored setting with sedation.

3. Atrial Fibrillation Ablation

Your doctor has recommended that you undergo an atrial fibrillation ablation, also called pulmonary vein isolation.

What is an atrial fibrillation ablation?

During an atrial fibrillation ablation, a special catheter or wire is used to cauterize (destroy) and block the abnormal signals coming from the pulmonary veins. This prevents the abnormal signals from entering the left atrium of your heart and causing atrial fibrillation.

How do I get ready for the procedure?

In the weeks leading up to your procedure you will:

- have a transesophageal echocardiogram (TEE). You will need a ride home after this procedure because of the sedation you will receive.
- have a CT or MRI scan of your heart. The image that is created will help the doctor during the ablation procedure.
- visit the Pre-Arrhythmia Clinic to meet with the nurse and have some bloodwork taken and an ECG done.
- visit the Thrombosis Nurse regarding your Coumadin[®] (blood thinning medication).
- have bloodwork for an INR the day before your procedure.

What are the risks of an atrial fibrillation ablation?

The risks vary with each person and are related to your health condition and type of arrhythmia.

Your doctor will explain your risks to you before the procedure and ask you to sign a consent form. Make sure you understand the risks and benefits of the procedure before you sign the consent form.

Possible risks include:

- bleeding from the vein at the puncture site
 - bruising or infection at the puncture site
 - small risk of stroke
 - small of risk of needing a pacemaker
 - small risk of bleeding around the heart
-

Where will I have my procedure?

Your procedure will be done in the Cardiac Arrhythmia Unit, also called the Electrophysiology (EPS) Lab.

This unit is at the Hamilton General Hospital. The EPS is done by a specially trained doctor, called an electrophysiologist.



Where do I go when I arrive at the hospital?

Go to Patient Registration. After you have been registered, you will be directed to the Cardiac Arrhythmia Unit. You may bring 1 or 2 family members or friends to be with you before and after your procedure.

In the Cardiac Arrhythmia Unit:

- You will change into a hospital gown.
- An intravenous (IV) will be started in your arm.
- You will have hair clipped in your groin and chest areas.
- You will have a tube put into your bladder to drain urine.
- You will be given some sedation to help you relax.
- You may wear your glasses, hearing aids and dentures.
- You will be taken to the EPS Procedure Room.

What can I expect in the EPS Procedure Room?

A team of doctors and nurses who specialize in heart rhythms will greet you. They will be wearing operating room clothes. You will meet the doctor who will do the procedure. This team will be with you throughout the procedure.

The room is cool to protect the computers and special equipment.

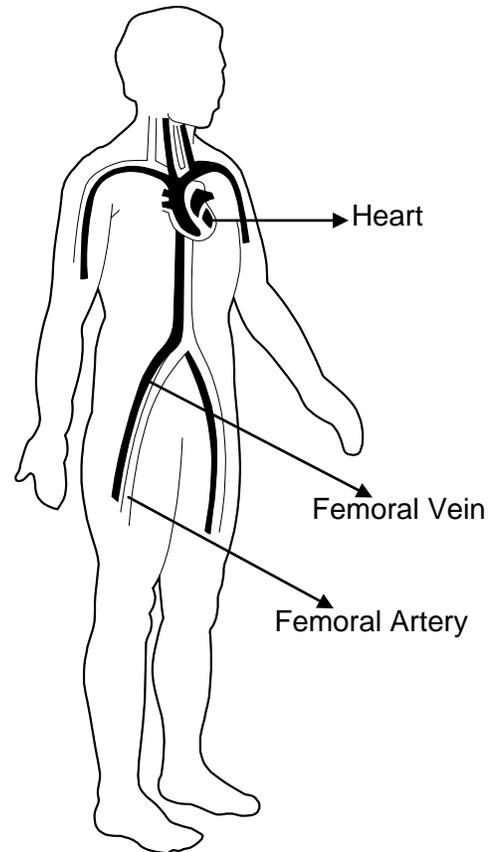
You will not receive a general anesthetic.

You will be given medication through your intravenous throughout the procedure to keep you comfortable.

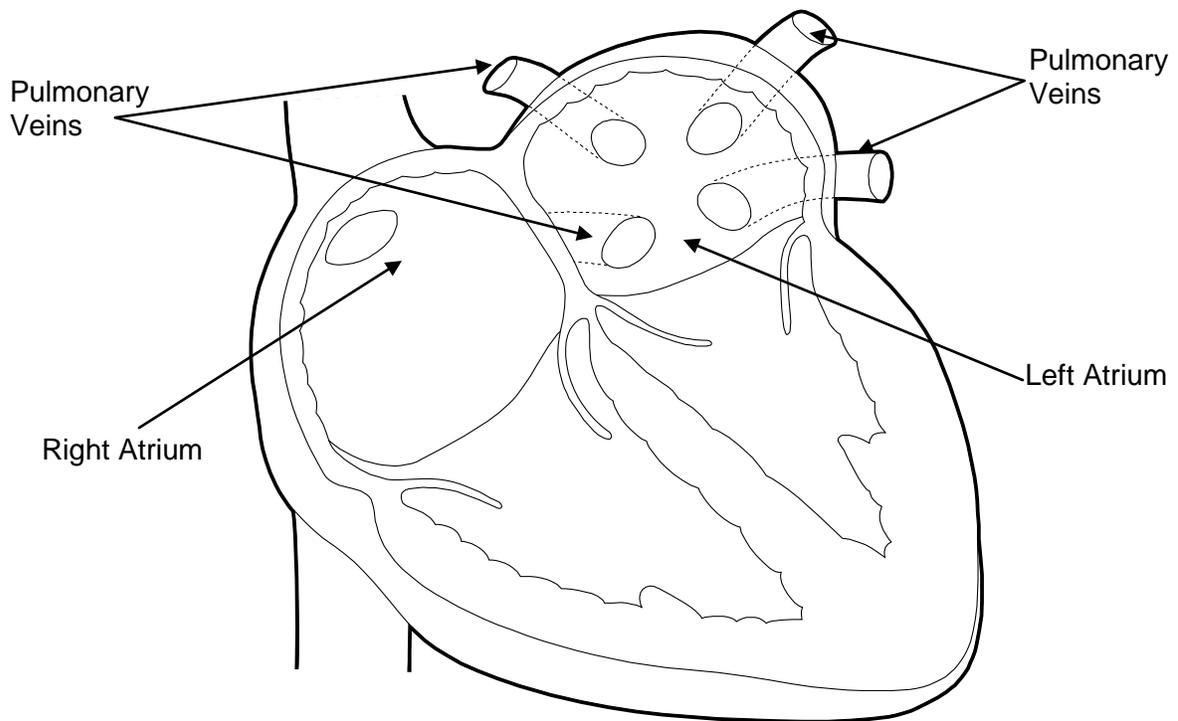
If you are uncomfortable, let your nurse know.

How is an atrial fibrillation ablation done?

- You will lie on a special table that is hard and narrow.
- You will be connected to an electrocardiography (ECG) monitor and a blood pressure cuff to monitor you during the procedure.
- You will also be connected to a number of sticky pads to help the doctor do the procedure safely.
- Clipped areas will be cleaned with an antiseptic.
- Sterile sheets will be placed over you. The staff will provide you with as much privacy as they can.
- The site will be injected with a local anesthetic or “freezing”. This will sting for a few moments and then the area will become numb. You will feel pressure and movement at the site during the procedure, but should not feel pain.
- The doctor will put a needle into a vein in your groin. A small thin hollow tube called a sheath is inserted through the skin into the veins of your groin and neck. Temporary pacemaker wires are placed through the vein into your heart. These wires are very thin and flexible. The doctor watches an x-ray screen to guide the wires into your heart.
- An x-ray camera will move over you during the procedure, but will not touch you.



- In order to reach the left atrium, the doctor will place 2 fine wires through the tissue between the right atrium and the left atrium of your heart. This is called a transseptal puncture. You will receive a small amount of x-ray dye. This puncture heals itself after the procedure.



It is very important that you do not move during the procedure. The sedation will help you to keep still.

Once the doctor has done the transseptal puncture, a special catheter will be put in the left atrium. This catheter will cauterize (destroy) the tissue causing the atrial fibrillation. This is called ablation.

This procedure can take up to 5 hours. If you are uncomfortable, let the nurse know.

When the procedure is done the wires are removed. The puncture site seals itself so there is no need for stitches. Bandages are placed over the site where the wires were put in.

What happens after an atrial fibrillation ablation?

While you are in the hospital

- You will return to the Arrhythmia reception area to recover.
- You will feel sleepy. You may have trouble remembering some parts of the procedure afterwards. When you wake up these effects will go away.
- You will rest in bed for 4 hours. The head of your bed may be raised up to 30°.
- You will keep your leg straight and your head on the pillow for 4 hours.
- Drink fluids and eat while you are resting.
- The urinary catheter will be removed when you are ready to get up.
- You may stay in the hospital overnight. You will be transferred to another ward for the night.
- Arrange to be picked up by 7:00 am.

**You must arrange to have someone drive
you home from the hospital.
Do not drive for 48 hours.**

When you go home

- Although you may feel fine the next day, the effects of the sedation may still be with you. Do not operate heavy equipment or power tools. You may want to delay signing contracts or other financial decisions for that day.
- Limit your lifting to less than 9 kilograms or 20 pounds for the next 2 to 3 days.
- You can walk or do gentle exercises when you get home. Do not do strenuous exercise for the next 3 days.
- If you see blood on your bandage, place firm pressure on the area for 5 minutes. If bleeding continues, call your doctor.
- You may remove your bandage the next morning.
- You may shower the next morning. Do not soak in water, such as a pool, hot tub or bathtub for the next 3 days.
- Ask your doctor when you will be able to return to work. The type of work you do will determine when you can return to work.

Will I have to take any medications?

Before you go home, talk about your medications with your doctor or nurse.

Follow-up appointments

Talk to your doctor or nurse about your follow-up appointments. Arrangements will be made for your follow-up appointments. You will have a holter monitor and an MRI in about 3 months. The MRI Department will call you with this appointment.

Common terms

This list explains common terms you may hear or read about. If you would like more information, ask the team.

Ablation (also called Radio Frequency Ablation)

A treatment for abnormal heart rhythms. Heart tissue that causes abnormal heart rhythms is destroyed using a special catheter. Ablation leaves the normal pathways in place.

Antiarrhythmic Drugs

Medications to treat abnormal heart rhythms.

Arrhythmia

A change in the heart rhythm that makes the heart beat too fast, too slow or irregularly. This is also called dysrhythmia.

Bradycardia

The slowness of the heart beat.

Echocardiogram

A test that uses ultrasound pulse waves. This test shows a picture of the heart and how it contracts during a heart beat.

Fibrillation

A condition where many parts of the heart muscle are starting heart beats. This causes an irregular heart beat.

Heart Failure

A condition where the heart muscle loses its strength and cannot pump enough blood for the needs of the body. The most common signs of heart failure are swollen ankles or legs or trouble breathing. It is also called congestive heart failure or CHF.

Pacing

A procedure that uses an electrical signal to stimulate the heart to beat.

Palpitation

The feeling of strong or forceful heart beats. The heart beats are usually fast or irregular.

Pulmonary Veins

Veins that return blood from the lungs to the left atrium.

Tachycardia

Fast heart beats.

Websites

Heart and Stroke Foundation – www.heartandstroke.ca/AFGuide

Canadian Heart Rhythm Society – www.chrsonline.ca

Heart Rhythm Society – www.HRSonline.org

Mayo Clinic – www.mayoclinic.com

Biosensewebster – www.biosensewebster.com/patientEducation/
