INFORMATION FOR PATIENTS AND FAMILIES

A Patient’s Guide to Living with Atrial Fibrillation

St. Michael’s
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About this guide

We have prepared this guide to help you to:

- learn about atrial fibrillation
- manage atrial fibrillation and reduce the risk of stroke
- find out about medicines and other treatment options for atrial fibrillation

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What makes a normal heart beat?

The heart is a large muscle with four chambers. There are two top chambers (left and right) called the **atria** and two bottom chambers (left and right) called the **ventricles**. The right-sided chambers collect “used” blood and then pump the blood to the lungs. In the lungs, blood gets oxygen. The left sided chambers receive oxygen rich or “fresh” blood from the lungs. Then they pump the blood out to the rest of the body (tissues, organs, muscles, etc.).

The heart muscle contracts (or pumps) because of signals it gets from your body’s natural pacemaker. The body’s natural pacemaker is called the sinoatrial node (SA node). The brain and the SA node work with each other to tell the heart how fast to beat. For example, it beats slower when resting and faster during exercise.

A regular heart beat makes the sound “lub-dub”. The SA node sends electrical signals to the upper chambers. When electrical signals from the SA node reach the upper chambers, the upper chambers beat (“lub”). Signals make their way to the lower chambers via the atrioventricular node (AV node). This causes the lower chambers to beat (“dub”).
What is Atrial Fibrillation (AF)?

Atrial fibrillation (AF) is a common rhythm problem of the upper chambers of the heart (atria). This rhythm problem may cause the lower chambers of the heart (ventricles) to move faster and in an irregular way. The picture below shows the difference between a normal heart rhythm and an AF rhythm.

AF patients have fast and disorganized electrical activity which causes abnormal heart beats. The atria “fibrillate” or quiver much faster than usual. They also beat much faster than the ventricles:

<table>
<thead>
<tr>
<th></th>
<th>Normal resting heart (beats per minute)</th>
<th>Patients with AF (beats per minute)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atria</td>
<td>50-100</td>
<td>350 to 500</td>
</tr>
<tr>
<td>Ventricles</td>
<td>50-100</td>
<td>80 to 200</td>
</tr>
</tbody>
</table>

This irregular heartbeat may reduce how well the heart pumps blood to the body. This happens because the ventricles may not have enough time to fill properly between beats.
During AF, the upper chambers of the heart do not fully contract in the normal way. This increases the risk that blood clots may form. If a blood clot forms, it could break free and travel through a blood vessel to the brain. A blood clot in the brain can cause a stroke. It can block the flow of blood to part of the brain.

**What are common signs of a stroke?**

- weakness
- trouble speaking
- vision problems
- headache
- dizziness

If you have any of these signs, go to the emergency department right away or call 9-1-1

**What is Atrial flutter?**

Atrial flutter is a condition related to AF, but the rhythm is more organized. Atrial flutter usually causes a rapid, regular heart rhythm. During atrial flutter, the upper chambers or atria contract at a very fast rate (250 to 300 beats per minute), and the lower chambers or ventricles contract at 75-150 beats per minute.

It is possible that patients can have both AF and atrial flutter. But, this is rare. When a person has both of these heart rhythms, one may be causing the other. For example, atrial flutter may be causing AF.

Some of the information in this booklet on treatment of AF also applies to atrial flutter.
What causes AF?

AF is the most common type of heart rhythm problem (arrhythmia). More than 350,000 Canadians have AF. About 1 out of every 25 Canadians over the age of 65 has AF. But, people under age 65 can have AF as well. The risk of getting AF increases with age. About 1 out of every 10 people over the age of 80 lives with AF. Some people develop AF without any known cause and without heart disease. This is called ‘lone AF’.

The root cause of AF is heart disease or another condition that leads to changes in the upper chambers and electrical changes in the heart.

Your risk of getting AF is higher if you have:
- High blood pressure (hypertension)
- Coronary heart disease
- Valvular heart disease
- Thyroid disease
- Lung disease
- Recent open-heart surgery
- another type of heart rhythm problem
- an abnormal heart structure

The risk is also higher if you:
- Are over 60 years old
- Have sleep apnea
- Drink too much alcohol (More than 2 drinks per day)
- Are obese

Certain factors may bring on an episode of AF, but do not directly cause AF. These factors, also called triggers, are still being studied. An example of a trigger may be too much caffeine or a stressful event. If you know your triggers, you should try to avoid them. This can improve your symptoms during AF. If you are not bothered by your symptoms during AF, then there is no need to avoid potential triggers of AF.
What are common symptoms of AF?

Many people live with AF. If your AF is managed well with treatment, you can live a normal life. *AF does not cause a heart attack or sudden cardiac death.* Some people feel fine during AF, but others may have one or more symptoms of:

- Feeling of a rapid heart rate or feeling of “skipped” heart beats
- Problems breathing (shortness of breath)
- Dizziness or feeling faint
- Feeling tired or not able to do daily activities
- Chest pain, tightness or pressure

What are types of AF?

1. **Paroxysmal AF** – these are episodes of AF that come and go. The AF usually stops on its own within 48 hours. Depending on the symptoms, these episodes can be reduced with treatment.

2. **Persistent AF** – these are episodes that last longer than 7 days and do not stop on their own. Usually, treatment is needed to help the heart return to a normal rhythm.

3. **Permanent AF** – this type of AF is chronic. Chronic means that the AF will usually last longer than 1 year. With chronic or permanent AF it may be hard to restore the heart back to a normal rhythm. Sometimes it is not possible to try to stop the AF episode altogether.
How is AF diagnosed?

Your healthcare team will look over your health history, do a physical exam and some tests. The results of the tests will show if you have AF.

- An **electrocardiogram (ECG)** records your heart beat and confirms if you have AF.

![ECG recording of an irregular heartbeat during an event.](image)

![ECG recording of a regular heartbeat.](image)

**Other tests that you may need**

- **A Holter monitor** is a special device that monitors your heart rhythm. You might be asked to wear the Holter for 24 to 48 hours.

![Holter monitor](image)

- **Event recorder** is like a Holter monitor but is worn for 2 weeks. This device records the heart rhythm when you press the button during symptoms.

![Event recorder](image)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Symptom</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am</td>
<td>took medicine</td>
<td>none</td>
</tr>
<tr>
<td>7:30 am</td>
<td>ate breakfast</td>
<td>none</td>
</tr>
<tr>
<td>8:00 am</td>
<td>drove to work</td>
<td>heart beat faster</td>
</tr>
<tr>
<td>9:00 am</td>
<td>meeting with boss</td>
<td>heart beat faster</td>
</tr>
</tbody>
</table>
While not all tests may apply to you, other useful tests that can help in treatment of AF are:

- **Echocardiogram** (echo - ultrasound) creates a video picture of the heart beating, using sound. The picture shows the size and function of the heart chambers, heart valves and blood flow.

- **Blood tests** show how well the thyroid, kidney and liver are functioning. Blood test for electrolytes and hemoglobin levels may also be done. These test results can show factors that play a part in getting AF episodes. There may be things we can do to change these factors.

- **Chest x-ray** to see basic heart and lung structures.

- **Nuclear stress test** to tell if the blood flow to the heart muscle is normal.
• **Heart CT (or CAT) Scan** is used to see the heart chambers and vessels of the heart.

• **Electrophysiology study (EPS)** to tell if you have other heart rhythm problems. EPS shows the exact area of the rhythm problem. Long wires called catheters are inserted and guided into the heart. These catheters transmit signals to tell the area of the heart rhythm problem.

• **Sleep Study** to tell if you have sleep apnea, a sleeping disorder. Your sleep will be monitored with special machines in the clinic or lab. Then, you will see a sleep specialist to discuss the results of the sleep study.

**How is AF treated?**

Treatment for AF is different from patient to patient. The most common goals of AF treatment are:

• to improve your symptoms
• to reduce your risk of stroke

The treatment depends on your symptoms and how AF is affecting you. It is important to keep your heart beating at a normal rate. If your heart rate is too fast and is not treated for a long time, the heart muscle can become weak.
There are two main types of treatment:

- treatment to slow down the heart rate (rate control)
- treatment to help the heart keep a regular rhythm (rhythm control)

**Rate control medicines** slow down the heart rate during AF. They do not stop AF from happening. This helps some people feel better and more able to do their usual activities.

Some patients may also need treatment with **rhythm control**. This can be a medicine or a procedure to help your heart return to a normal rhythm.

**What are the different types of treatment?**

There are many ways to treat AF. Treatment is different for every patient. Your symptoms during AF and the results of your tests will help show which choice of treatment is best for you.

1. **Medicines you take every day**

Some patients may need to take both rate control medicines and rhythm control medicines. Other patients only need one kind of medicine.

**Rate control medicines** are used to help control the heart rate. There are different types of these medicines:

- beta blockers, such as metoprolol and bisoprolol.
- calcium channel blockers, such as diltiazem and tiazac.
- cardiac glycoside, such as digoxin.

**Rhythm control medicines** (Anti-arrhythmic drugs) are used to restore or keep a normal heart rhythm.

- Examples of rhythm control medicines are: disopyramide, flecainide, propafenone, dronedarone, sotalol, and amiodarone.
2. Medicines you take when you need them (also called Pill-in-the-Pocket)

This choice is only for patients who have AF once in a while (for example once every few months). During AF symptoms, both rhythm control and rate control medicines can be taken together.

- Taking these medicines during AF episodes can help bring your heart beat back to normal.
- You may go to the Emergency Department less as you are able to better control your abnormal heart beats.
- If “Pill-in-the-Pocket” works for you, you may not need to take pills every day for AF. You may still need to take blood thinners.

3. Electrical Cardioversion

If AF does not stop with medicines, an electrical shock (or cardioversion) may be given.

- You will get medicine (sedation) that will keep you relaxed during the cardioversion.
- A machine called a defibrillator will send a brief electrical shock between two electrical pads placed on your chest and back. The electrical shock helps restore your heart to a normal rhythm.
- After the electrical shock, you may get rhythm control medicines. These medicines will help your heart stay in normal rhythm and prevent AF.

4. Catheter Ablation

You may need this if the other treatments do not work, or they cause too many side effects. This procedure puts long wires (catheters) through the veins in your groin or neck. The wires are guided into the heart using an X-ray.
• The catheters are used to burn certain heart cells that are causing the AF. This is called ablation. If you need catheter ablation therapy, your healthcare team will tell you more about it.

5. Blood thinners

Since AF increases your risk for stroke, almost everyone with AF needs blood thinners. This is also called anticoagulation. The exact type of “blood thinner” depends on your risk factors for stroke. **The risk factors for stroke are:**

- heart failure (congestive heart failure)
- high blood pressure (hypertension)
- age over 75 years
- diabetes
- prior stroke or stroke warning (transient ischemic attack or TIA).

Other risk factors may also be considered, such as: a history of vascular disease, age over 65 years and being female.

Some patients only need to take aspirin everyday to reduce the risk of stroke. Others require a stronger blood thinner such as warfarin (coumadin). Patients taking warfarin need the dose changed based on the results of a blood test called INR (International Normalized Ratio). Other available blood thinners are: dabigatran (pradaxa), rivaroxaban (xarelto) and apixaban (eliquis). These blood thinners do not need blood testing.
Patients going for a cardioversion or ablation therapy need to be on blood thinners before and after the procedure. A strong blood thinner is taken for about 1 month before and 1 to 3 months after the procedure. The need for blood thinning lifelong after a cardioversion or an ablation is determined by the individual stroke risks.

Choosing the most appropriate blood thinner is based on individual patient needs. Speak with your healthcare team to find out which blood thinner is right for you.

**Healthy Lifestyle Choices**

1. **Check your blood pressure regularly**
   High blood pressure can increase your risk for AF. See your family doctor regularly to check your blood pressure. High blood pressure (hypertension) is often controlled by diet, healthy lifestyle changes (like exercise) and medicines. Check your blood pressure regularly to help your healthcare team know how to treat you.

2. **Stop smoking**
   Smoking increases your risk for heart disease. If you are thinking about stopping, ask your heath care team for help. There are programs to help you stop smoking, such as including nicotine replacement therapy.

3. **Eat well**
   Choose foods that are low in fat. The daily amount of fat in what you eat should be no more than 65 grams for women and 90 grams for men. A low fat diet helps lower blood cholesterol levels. Your doctor may also ask you to take drugs that lower cholesterol. Use Canada’s Food Guide to Healthy Eating to help you plan healthy meals.

Some tips for healthy eating are:
- Eat more whole grains, fruits and vegetables
- Use very little salt (If your blood pressure is high, you may need to stop eating foods with salt).
If you are taking Warfarin (Coumadin), you will have to be careful about taking foods that are high in vitamin K. Foods that are high in Vitamin K include green leafy vegetables. Warfarin gets in the way of how vitamin K works in your body. Also, if you change the amount of food you eat that is high in Vitamin K, this can change the amount of Warfarin that you need. Ask your healthcare team which types of foods are high in Vitamin K, and how to keep the amount you eat steady.

4. Exercise regularly
Exercise helps you lose weight, control cholesterol, reduce blood pressure and reduce stress. Exercise is also good for the health of your heart, even if you have AF. If you take drugs for AF, your heart rate may not increase as much during exercise. This means that the drugs are doing a good job of slowing your heart rate. Your exercise routine should really depend on how you feel. Exercise is good for your health, but do not over do it. A good tip is to listen to your body.

5. Take caution with certain medicines
Some over-the-counter drugs such as nasal sprays, cold and herbal pills may make AF worse. Ask your healthcare team before taking them.

Follow-up
If your AF is monitored and treated regularly, the risks and symptoms can be reduced. The treatment can change over time and may depend on how you feel during AF. The key is for you and your healthcare teams to use the treatment that works best for you.
Useful Websites:

Afib Innovation Program
www.afibinnovationprogram.com

American Heart Association Patient Information
www.americanheart.org/presenter.jhtml?identifier=4451

Heart and Stoke Foundation
www.heartandstroke.com/site/c.iklQLcMWJtE/b.5052135/k.2C86/Heart_disease__Atrial_fibrillation.htm

Heart Rhythm Society Patient Information
www.hrsonline.org/PatientInfo/HeartRhythmDisorders/AFib/index.cfm

“Up to Date” Patient Information
www.uptodate.com/patients/content/topic.do?topicKey=~Q66zKoLylHUj1&selectedTitle=1~150&source=search_result

WedsMD Patient Education Centre
www.webmd.com/heart-disease/atrial-fibrillation/atrial-fibrillation-overview