

Atrial Fibrillation

If your heart sometimes beats unevenly, you might be experiencing atrial fibrillation. Atrial fibrillation is the most common heart rhythm problem in the US. Along with creating uncomfortable symptoms, it can also increase your risk of other serious medical conditions:

- Other heart rhythm problems
- Heart failure
- Stroke

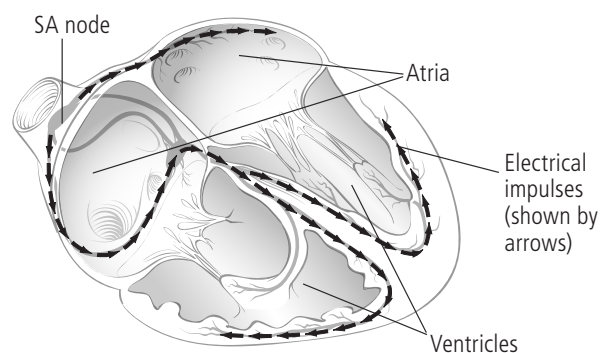
What is atrial fibrillation (Afib)?

In **atrial fibrillation (also called Afib)**, your heart beats rapidly or unevenly. Here's a comparison of how the heart beats normally and what happens with Afib:

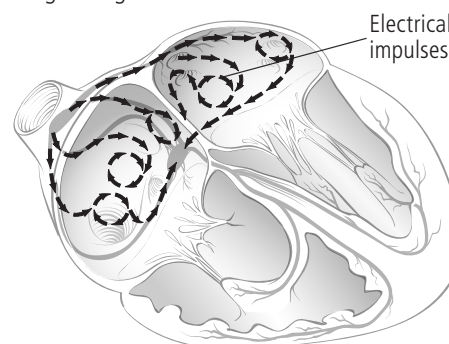
- **In a normal heart:** Electrical impulses are generated by the **SA node**, a small area in the heart's right upper chamber (atrium). As the electrical impulses travel smoothly through the heart, the two upper chambers (the atria) squeeze at the same time to pump blood down to the lower chambers (the ventricles). Then the two ventricles squeeze at the same time, pumping blood to your lungs to pick up oxygen and to the rest of your body. The heart beats regularly and evenly, about 60 to 100 times a minute.
- **With Afib,** electrical impulses come too rapidly and don't travel smoothly. Instead, many of the impulses cycle around within the atria. This can cause the atria to quiver, and in turn the ventricles can beat rapidly. The atria and ventricles don't coordinate in a normal rhythm, and the heart can beat rapidly, up to 300 times per minute.

Afib can come and go — returning to normal after a few minutes or hours — or it can persist.

In a healthy heart, electrical impulses move smoothly from the SA node through the heart. The heart beats evenly and regularly.



With Afib, the electrical impulses come too fast. Some of them circulate in the atria rather than passing through the heart.



Afib is an electrical problem that makes your heart beat rapidly or unevenly.

What are the symptoms of Afib?

For some people, Afib doesn't cause symptoms. For others, Afib can cause symptoms such as:

- **Palpitations** — a racing or irregular heartbeat
- Chest discomfort
- Shortness of breath — difficulty getting enough breath during normal activities or even at rest
- Tiredness or weakness
- Feeling dizzy, lightheaded, or confused

How can Afib cause a stroke?

Your chances of having a stroke increase 3 to 5 times if you have Afib. Strokes that occur from Afib are often larger and result in more disability and increased risk of death. Here's what can happen:

- **Blood left behind.** Because the atria are not pumping normally, not all the blood gets pumped out of them. This can cause blood to pool in the atria.
- **Clotting.** The blood that pools in the atria can form blood clots.
- **A clot in an artery.** A blood clot in the heart can move into the arteries that feed your body. If a clot enters an artery that leads to your brain and blocks the blood flow, it causes a stroke.

What causes Afib?

Many conditions can increase the risk for Afib:

- High blood pressure
- Age: Afib is more common in people over 60 years old
- Obstructive sleep apnea, a condition that causes you to stop breathing temporarily while you sleep
- Obesity
- Heart failure
- Thyroid disease
- Heart valve disease
- Lung disease
- A heart attack caused by coronary artery disease
- Family history: Research has shown some genes are linked to Afib

In some cases of Afib, the cause can't be identified.

How is Afib diagnosed?

To assess you for Afib and make a diagnosis, your doctor will do various tests, such as:

- **History, physical exam, and blood tests.** Your doctor will ask about your symptoms and medical history, listen to your heart, and test for factors that might be related to your symptoms.
- **Chest x-ray.** Your doctor may take a chest x-ray to look at your heart and lungs.

- **Electrocardiogram (ECG or EKG).** This test records the electrical activity of your heart. Sticky patches (electrodes) are attached to your chest and send signals to a recorder. You might be asked to exercise during this test to see how your heart responds to extra activity.
- **Echocardiogram (heart ultrasound).** This test uses high-frequency sound waves to create images of your heart and blood vessels. Depending on your medical situation, this might use an ultrasound probe that moves over your chest, or a TEE (transesophageal echocardiogram) that uses a tiny ultrasound probe in your esophagus.
- **Stress testing.** If your doctor feels it's needed, you might exercise on a treadmill and have an EKG or echocardiogram while your heart is working harder. If you can't exercise, medication will be used to temporarily stress your heart.
- **Holter monitor or event recorder.** Because Afib can come and go, an EKG or echocardiogram might not catch the problem. A **Holter monitor** is a small recorder that you wear for 24 to 48 hours while you go about your normal activities. It measures the electrical activity of your heart and can sometimes catch the problem. Or, you might wear an **event monitor** for a longer period — this small recorder saves a recording of your heart's activity when you feel a symptom.
- **EP (electrophysiology) study.** In this test, one or more catheters (small, flexible tubes) are inserted into a major blood vessel and threaded to your heart. Doctors use tiny sensors on the catheters to capture and record your heart's activity, and may be able to identify the heart cells that are causing the problem.

How is Afib treated?

If you have Afib, your doctor will set up a treatment plan based on your specific medical situation.

Treatments include medications and procedures to:

- Prevent blood clots
- Control your heart rate
- Help your heart beat at a more normal rhythm
- Treat other conditions that might be causing the Afib or making it worse

Preventing blood clots

It's important to prevent the blood clots that Afib can cause — clots that could block your arteries and even cause a stroke. Most patients with Afib are prescribed warfarin (Coumadin), apixaban (Eliquis), or other blood thinning medications to minimize their risk of stroke. Talk with your doctor before using aspirin.

If you are taking warfarin or another blood thinner, here are a few tips to keep in mind:

- **Tell your doctor about all other medications** you take, including over-the-counter drugs, vitamins, and herbal supplements. Before you start taking any new medication or supplement, ask your doctor or pharmacist whether it interacts with Coumadin. For example, medications such as aspirin, ibuprofen, and naproxen magnify the effect of Coumadin. And some cold and allergy medications have stimulants that can cause a rapid heartbeat.
- **Take your medication as directed.** If you miss a dose and you realize it the same day, take the dose then. If not, just take your normal dose the next day. **DO NOT** take twice as much.
- **Keep your blood test appointments.** When you're taking a blood thinner, you'll have regular testing to check your clotting time, sometimes called PT/INR testing.
- **Avoid sudden changes in your diet.** Especially, don't change your intake of foods rich in Vitamin K, such as broccoli, lettuce, and spinach.
- **Let doctors and dentists know you're taking a blood thinner.** You may need to stop the medication temporarily before a medical procedure. Consider wearing an ID bracelet so medical workers know in an emergency.
- **Watch for symptoms** that show you might be having a bad reaction. These include unusual bruises, a skin rash, nosebleeds or bleeding gums, or blood in your urine. **CALL YOUR DOCTOR** if you notice any of these symptoms.

See the Intermountain handouts Anticoagulation Therapy and Coumadin Eating Plan to learn more.

Controlling your heart rate

Even if the atria (the upper chambers of your heart) are pumping too fast, medication can help control the rate of your overall heartbeat. They include:

- **Beta blockers**, which block the effects of certain hormones to slow down your heart rate
- **Calcium channel blockers**, which lower your blood pressure and slow down your heart
- **Digoxin**, which can slow your heart rate and help your heart pump more blood with each beat

As with blood thinning medication, be sure to follow your doctor's directions.

Helping your heart beat in a normal rhythm

Several treatments can be used to help your heart's upper and lower chambers work together normally. This type of treatment might be used to reduce palpitations.

- **Medication** can help restore a normal heart rhythm. You might take medication regularly, or your doctor might have you carry a pill that you take only if you have symptoms.
- **Cardioversion:** Your doctor may use paddles or patches with an electrical current to “reset” your heart to a normal rhythm. This is most often used if medication isn't working and symptoms are severe, particularly in young patients. As part of this treatment, you'll have a TEE (transesophageal echocardiogram). The TEE test shows whether your heart has developed blood clots.
- **Cath lab and surgical procedures:** In some cases, your doctor can treat the abnormal heart cells that are causing the problem.
 - In an **ablation**, a catheter (small, flexible tube) is threaded through a blood vessel to your heart. A device on the catheter is used to make a tiny scar so the abnormal cells can't send faulty signals.
 - A **maze procedure** creates scar tissue to keep abnormal electrical impulses from traveling through your heart. This procedure is done in open-heart surgery.

Treating conditions that can cause Afib or make it worse

Your doctor will treat any medical conditions that could be involved in your Afib, such as:

- Your doctor may recommend treatment for **obstructive sleep apnea**.
- Your doctor may recommend lifestyle changes and prescribe medication to control **high blood pressure** or treat **coronary artery disease**.
- An **overactive thyroid gland** that makes too much thyroid hormone may be treated with medication or surgery.
- If a **faulty heart valve** is causing Afib, your doctor might repair it in surgery.

Lifestyle choices to manage Afib or reduce your risk

You can help manage Afib — or prevent it from recurring — by taking care of your general heart health. Follow these tips:

- **If you use tobacco, stop.** Talk to your doctor about making a plan. *Intermountain's publication Quitting Tobacco: Your Journey to Freedom* can help.
- **Limit alcohol.** Avoid alcohol completely if you are taking a blood thinner — alcohol can interfere with this medication.
- **If you have diabetes, control your blood sugar.** Take medication or work with your doctor to manage your diet.
- **Exercise regularly, and eat a heart-healthy diet** focused on fruits, vegetables, whole grains, and lean protein.
- **Avoid caffeine and substances with stimulants** that can increase your heartbeat. These may include diet aids, energy drinks, and cold or allergy remedies.
- **Be a strong partner in your health** by keeping your medical appointments, asking your doctor questions to learn more about your condition and treatment, and taking medications as directed.
- If you are taking blood thinner medication, **follow the tips on page 2.**

Resources for people with Afib

Other Intermountain handouts that are helpful for people with Afib include *Anticoagulation (warfarin) Therapy* and *Coumadin Eating Plan: What You Need to Know and Do*. To find them:

- Go to www.intermountainhealthcare.org and click the **Health Resources** tab. In the Health Resources By Topic section, click **A** and choose Anticoagulation.

Other web-based resources include:

- The Afib page at the National Heart Lung and Blood Institute:
www.nhlbi.nih.gov/health/dci/Diseases/af/af_what.html
- An interactive tutorial on Afib from MedLine Plus:
<http://www.nlm.nih.gov/medlineplus/tutorials/atrialfibrillation/htm/index.htm>
- The American Heart Association's Afib page:
<http://www.americanheart.org/presenter.jhtml?identifier=4451>
- StopAfib, a community resource by and for patients, sponsored by the American Foundation for Women's Health: <http://www.stopafib.org/>