
Understanding Atrial Fibrillation

For many patients, a diagnosis of atrial fibrillation or Afib is frightening. To help you understand your condition and the options for treating it, we have taken some commonly asked questions and provided answers to them. Please remember that this is general information. Your doctor or heart rhythm specialist that is treating you will be able to answer questions that you might have about your particular condition.

- [What makes a normal heart beat?](#)
- [What is Atrial Fibrillation \(Afib\)?](#)
- [Who gets Afib?](#)
- [What causes Afib?](#)
- [How is Afib diagnosed?](#)
- [What are the symptoms of Afib?](#)
- [Is Afib dangerous?](#)
- [Glossary of Terms](#)

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 (see Figure 1). These chambers fill with blood from the body and then squeeze to circulate or deliver blood to other areas of the body, such as the lungs so that oxygen can be added, or oxygen filled blood to the rest of the body tissues. The heart muscle contracts after it is stimulated (or told to) by an electrical impulse. There is an area of special tissue in the right atrium called the SA node, which starts an electrical impulse that will eventually travel down the electrical tracts ([AV node](#) and [bundle branches](#)) within the heart and create a heartbeat. First the atria contract and squeeze blood into the ventricles, then the ventricles contract (squeeze). That is what makes the “lub, dup” sound that we hear when we listen to someone’s heart.

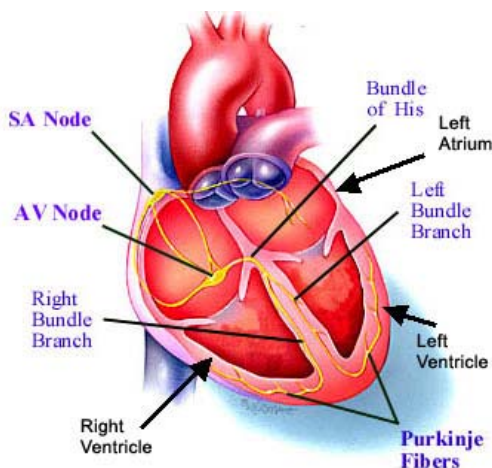


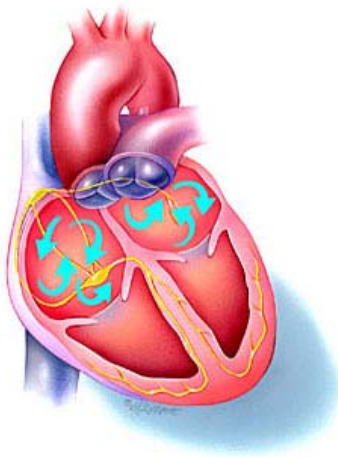
Figure 1

Normal electrical conduction, arising from SA node and transmitted down pathway (outlined in yellow).

Picture courtesy of the Heart Rhythm Society. www.hrsonline.org

What is Atrial Fibrillation? Atrial Fibrillation (Afib) is an arrhythmia, an irregularity of the heart's rhythm. Instead of only one area in the atrium starting an electrical signal, many areas send out electrical signals. This whirlwind of electrical impulses or wavelets spreads over the atrial tissue and causes the atrial muscle to quiver or fibrillate, instead of to contract in an organized way. Some of the electrical impulses still travel down through the heart and make the bottom chambers squeeze or contract. The irregularity of the impulses traveling down from the atria makes the ventricles beat irregularly, so if you take your pulse it may feel irregular. Sometimes Afib can make the pulse fast and irregular or slow and irregular. Afib alone is not a life-threatening arrhythmia, but it can be extremely bothersome and sometimes dangerous.

Atrial fibrillation can be paroxysmal (episodes come and go on their own), persistent (episodes come and last until you are put back into rhythm) or permanent (the heart stays in Afib despite efforts to convert into a normal rhythm).



Multiple foci (areas) send out impulses which cause the atria to fibrillate.

Picture courtesy of the Heart Rhythm Society. www.hrsonline.org.

Figure 2

Who gets Afib? Afib is the most common type of heart arrhythmia. About 2.4 million people in the United States are affected. People of all ages can get Afib. Young people with otherwise healthy normal hearts can develop Afib. It is most often found in older people with some other heart disease. It affects about 15% of people over age 85.

What causes Afib? Sometimes there is no obvious reason or cause for the AF. Patients, most often younger than 65, who develop Afib may have no changes in their heart structure or other particular cause for their Afib. This has been called "[Lone Afib](#) ." In other patients, AF occurs because the tissue structure of the atrium has changed and enlarged, called remodeling.

This can be due to:

- High blood pressure
- Coronary artery disease—a condition in which the normal blood flow to the heart is changed because of blockages in arteries
- Heart failure—a condition in which the heart’s main pumping chambers (the ventricles) don’t work well, and this can lead to problems with the atria
- Valvular heart disease—damage to a valve can cause the atria to enlarge and lead to Afib
- Lung diseases—some people with chronic lung diseases have changes in the structure of the atria that leads to Afib
- Thyroid problems—an overactive thyroid gland can lead to Afib
- Excessive alcohol intake—People who drink alcohol often, in large quantities, or who have drinking binges may get Afib.

Sometimes people who have had heart bypass or other heart surgery may develop atrial fibrillation soon after the surgery. This may be related to scarring or irritation. This may convert on its own, or require other treatment.

How is Afib diagnosed? Your doctor may suspect you have Afib during a routine examination when he noticed an irregular heart beat. Or your doctor may suspect that you have Afib based on the symptoms that you tell him you are having. There are several ways that your Afib can be diagnosed. First, the doctor may do an EKG (a tracing of your heart beat) in the office which might show that you are in Afib. Or if you are having short episodes or spells of Afib, your doctor might ask you to wear a special monitor for 24 hours (Holter monitor) or even as long as a month (Event monitor). These monitors can “catch” the episode of irregular heartbeat and help your doctor to see whether or not it is Afib.

What are the symptoms of Afib? Atrial fibrillation episodes can last minutes to hours to days. People with Afib may have a wide range of symptoms or have no symptoms at all. People with Afib may be bothered by the fast irregular beats, or just by the feeling that it is beating irregularly whether it is fast or slow. Sometimes after an Afib episode ends, it takes the top chamber (atrium) a short time to kick in again, and there may be a short pause in heartbeats. This may cause an uncomfortable feeling for patients that is more bothersome than the fast heart rate.

Because the way the heart is beating and pumping is changed during an Afib episode, you may feel some other symptoms especially when you are active.

- Palpitations—skipped or extra heartbeats
- Shortness of breath—especially when climbing stairs, walking long distances
- Fatigue and tiredness—especially during an AF episode
- Chest discomfort or pain—because the heart is pumping as well as when it is in normal rhythm
- Dizziness—sometimes people may feel lightheaded or dizzy, especially when the heart is beating faster than usual
- Syncope—Passing out or fainting



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Is Afib dangerous? Atrial fibrillation can increase your risk of having a stroke. There is a 5-fold increase for stroke in patients with Afib. Although the rhythm of atrial fibrillation is not life threatening by itself, there is a 2-fold higher rate of death in patients with Afib compared to those without Afib. Also, if your heart rate is fast and is left untreated, it may further change the size and function of the heart.