WHAT YOU NEED TO KNOW ABOUT

ATRIAL FIBRILLATION

Questions & ANSWERS INSIDE

JACKSON HEART

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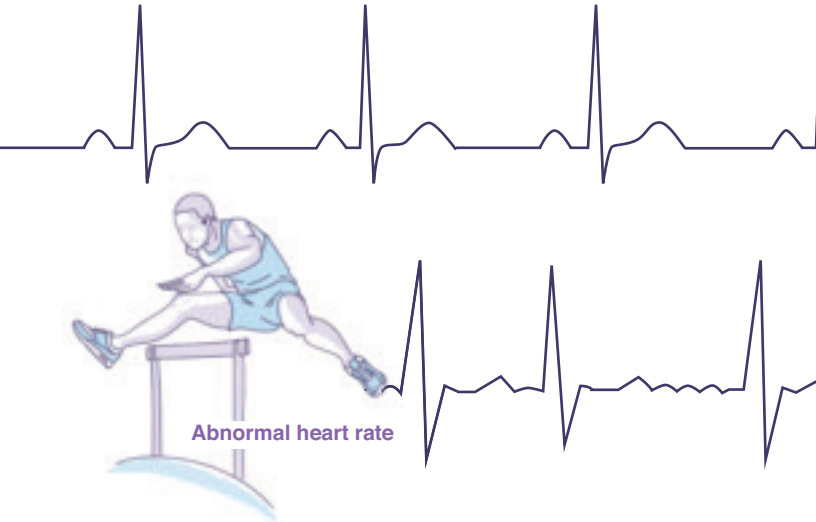
This brochure is provided by **Jackson Heart Clinic** to help you understand *atrial fibrillation*, also known as AFib. Our cardiologists and staff know that an informed patient can better participate in healthcare decisions. Working with you, we can better diagnose your problem and begin treatment to prevent complications and help you enjoy life as fully as possible.

What is atrial fibrillation?

Atrial fibrillation, commonly called **AFib**, is the most common type of **arrhythmia** (abnormal heart rhythm). It affects around three million people in the United States. That number is growing because of the aging population.

Although symptoms can be disturbing, it is usually not life-threatening, as it can be treated and controlled. But, it can lead to other problems such as stroke and heart failure.

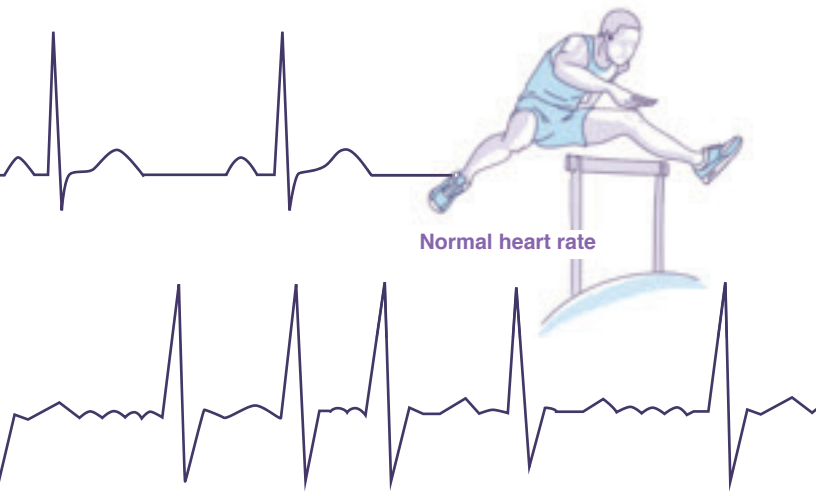


According to the CDC, AFib causes:

- **Over 750,000 hospitalizations each year**
- **Over 130,000 deaths each year**
- **Costs $6 billion each year**
- **Higher medical costs for those that have it than those that do not (by over $8,000 a year)**
- **A 4 to 5 times greater risk of a stroke**

Atrial fibrillation is a common cardiac arrhythmia. It is one that causes substantial morbidity for patients. It also increases the risk for a stroke, especially in certain patient populations. Although many patients notice significant heart racing or palpitations, others may be asymptomatic. That is why it is important to have routine physicals.

-Donny R. Stokes, M.D.



Normal heart rate

Who is at risk?

The risk of AFib increases with age, and it occurs more often in those that have underlying heart problems. A family history of this problem may also play a role. However, AFib may occur without any major risk factors. Patients with AFib who do not have underlying risk factors tend to have a lower risk of stroke than those who do have risk factors.

The most common risk factors include:

- **Age: About 2% of those under age 65 are affected by AFib and about 9% of those 65 and older have AFib.**
- **High blood pressure**
- **European ancestry (African Americans are less likely to have AFib)**
- **Other diseases:**
  - **Diabetes**
  - **Chronic kidney disease**
  - **Overactive thyroid gland (hyperthyroidism)**
  - **Chronic lung disease**
  - **Sleep apnea**
- **Risk factors related to lifestyle:**
  - **Obesity**
  - **Heavy alcohol use or binge drinking**
- **Underlying heart problems:**
  - **A previous heart attack**
  - **Heart valve disease**
  - **Heart failure**
  - **Heart surgery**
  - **A weakened heart from any cause**
  - **Enlarged chambers on the left side of the heart**

Atrial fibrillation triggers

In addition to the risk factors that are listed above, often there are “triggers” for AFib, meaning that certain things may tend to bring on or cause an episode of AFib. On the other hand, episodes of AFib can occur without any recognizable trigger.

Such triggers are very individual in nature – a trigger for one patient is not necessarily a trigger for another patient. Since they are different for everyone, those with AFib should pay attention to anything that seems to trigger an episode of AFib and share that information with your cardiologist.

Common triggers include the following:

- **Caffeine (especially in excess or high amounts like those found in energy drinks)**
- **Tobacco**
- **Alcohol (in excess or binge drinking)**
- **Stimulant drugs (such as amphetamines)**
- **Some cold and herbal remedies (that contain stimulants)**
- **Severe emotional stress**
- **Infections**
- **Recent surgery**

What causes atrial fibrillation?

Understanding the heart's electrical system

Our hearts are remarkable, normally beating more than 100,000 times a day. The *electrical system* of the heart tells your heart when to contract and pump blood to supply your entire body. If the electrical system goes haywire, the contractions of the heart get chaotic, resulting in an irregular or abnormally fast or slow rate. If that happens, blood is not pumped effectively and may pool, which can cause clots and increase the risk of a stroke, heart failure, and other life-threatening problems.

When the heart is beating normally, the two upper parts of the heart work in tandem with each other, resulting in a steady pumping action. When a person has AFib, the normal communication between the upper and lower chambers of the heart is disturbed, and the heart rhythm is affected. This is sometimes called a *quivering heart.*

Ultimately, symptoms occur because the body does not get the needed blood supply and oxygen

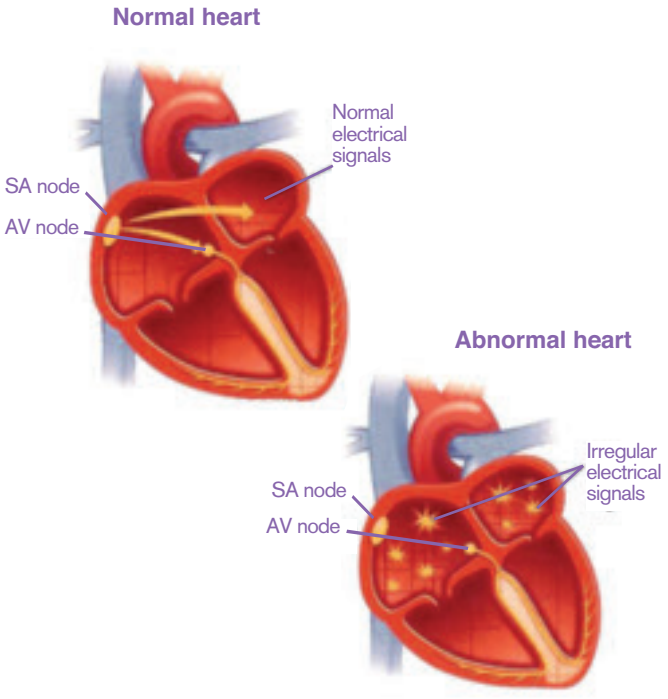
to maintain normal function. The amount of blood being pumped out of the heart with each beat can be measured and is called the *ejection fraction.*

When the heart does not beat regularly (and the amount of blood pumped out of the heart decreases), blood can collect in the chambers of the heart (instead of moving) and cause clotting and a stroke. In general, strokes caused by AFib tend to be more severe and deadly than other types of strokes.

Since AFib is an arrhythmia or disturbance of the heart's electrical system, a review of this system can help you understand AFib.

Each heartbeat is the result of an electrical signal that spreads over the heart, from top to bottom. This signal (or impulse) causes the chambers of the heart to contract and pump blood. The signal starts within the **sinus node** (also known as the *sinoatrial or SA node*), found in the right atrium. The signal travels from that area through the right and left atria, causing these areas to contract and push blood into the *ventricles (lower chambers of the heart).*

The electrical signal continues to travel to the **atrioventricular node** (*AV node*), causing the ventricles to contract and push blood out to the rest of the body. Then, the chambers of the ventricles relax, and the impulse starts over again.



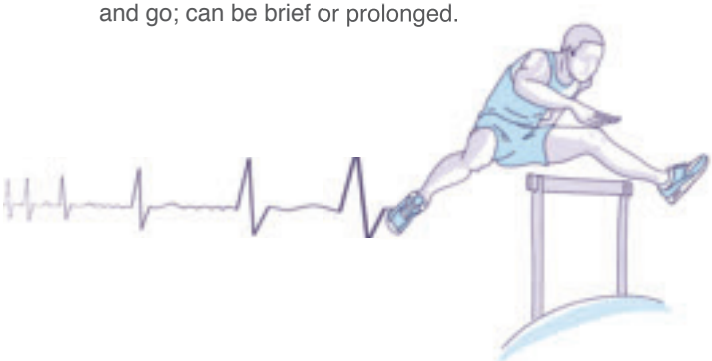
> Patients may have symptoms with atrial fibrillation that affect their quality of life.
>
> -Sandra S. McCearley, M.D.

Any disruption or interference in this electrical system can cause the heart to pump in an abnormal way, and the signal can be disrupted at any location. So, if the heart is damaged by disease or surgery, it makes sense that this system could be impacted. Sophisticated tests can now tell your cardiologist exactly where the signal is being disrupted, and in many cases, the problem can be addressed through surgical procedures. The electrical nature of the heart's signaling makes it possible to track by an electrocardiogram or EKG (a relatively simple test where electrodes are placed on your chest and the electrical system is monitored and recorded). A trained healthcare professional can read or interpret the EKG and tell whether the electrical system is functioning correctly. Further testing can indicate even more information. Great advances have taken place in the diagnosis and treatment of the heart's electrical system, so there are more options now than in the past.

Electrical problems in atrial fibrillation

In AFib, the heart's electrical impulse begins in the wrong place, and the signals do not travel as they should. So, this causes the atria of the heart to fibrillate or flutter (rather than beating normally).

The end result of the electrical malfunction is that the atria and ventricles are not beating in a coordinated pattern, rather in a fast and irregular rhythm. In comparison to a normal heart rate of 60 to 100 beats a minute, AFib causes a heartbeat of 100 to 175 beats a minute. This rapid heartbeat means that blood is not pumped into the ventricles as well as it needs to, and the amount pumped out into the rest of the body is reduced and irregular. Most persons notice the symptoms of a rapid heartbeat. Also, AFib can come and go; can be brief or prolonged.



What are the symptoms of atrial fibrillation?

Although some people that have atrial fibrillation do not have symptoms, the following symptoms may be noticed:

- **Rapid and irregular heartbeat or palpitations (This may be described as a pounding or thumping of the chest or a racing, fluttering, or sensation of skipped heart beats.)**
- **Lightheadedness**
- **Dizziness**
- **Fatigue, feeling tired, or a lack of energy**
- **Limited ability to exercise**
- **Shortness of breath**
- **Chest pain or discomfort**
- **Confusion or a sense that something is wrong**
- **Fainting is rare, but may occur**

Complications of atrial fibrillation

Most people who have atrial fibrillation and receive ongoing medical care will enjoy normal, active lives. However, some patients may experience serious health problems such as a stroke and heart failure because of atrial fibrillation. Complications of AFib are a result of a lack of control of the heart rhythm and heart rate. Remember that these symptoms can often be controlled by medication or other methods to reduce your risk of complications.

How is atrial fibrillation diagnosed?

Because some people have no symptoms of atrial fibrillation, it is sometimes found during a routine physical examination. Others have symptoms that lead them to seek medical care.

The diagnostic process usually begins with a thorough medical history and a physical examination. A medical history will also tell your cardiologist whether you have other conditions that might make you more prone to

atrial fibrillation. A record of any prescription or non-prescription medications is also an important part of the medical history. Your cardiologist will want to know when symptoms started, how often they occur, and how long an episode lasts. Also, the cardiologist will check your heart, lungs, and other parts of your body for signs of heart disease.

The following tests may be ordered to help diagnose your heart problem:

EKG (electrocardiogram) and **Exercise ECG:** An EKG records the electrical impulses of the heart. This is done by placing electrodes on the chest, arms, and legs. The electrical impulses are measured and recorded by the EKG machine, resulting in a printed record. When an EKG is completed with exercise (usually on a treadmill), it can show problems that might only happen during exercise. An exercise EKG simply gives more information to diagnose problems.

Echocardiogram: An ultrasound examination of the heart provides detailed, graphic pictures of the heart, with measurements of the heart's chambers and surrounding blood vessels. An echocardiogram also measures and records the amount of blood flowing through the heart and surrounding area, showing how effectively the heart is pumping.

Ejection fraction: An ejection fraction test measures the amount of blood that leaves the heart with each heartbeat. A reduction in the ejection fraction means that your body is not getting the blood flow it needs. A drop in the ejection fraction can also be a sign of heart failure – a complication of AFib.

Transesophageal echocardiogram (TEE): A TEE is an ultrasound of the heart that is done through the esophagus, to provide a different view of the heart. Since it requires the ultrasound instrument to be passed through the patient's mouth, sedation is necessary. This is usually an outpatient procedure.

Holter monitoring: A Holter monitor is a portable, continuous EKG that measures and records the heart rate and rhythm for 24 hours or longer. Electrodes are attached to your body and a wire runs to the monitor that you wear. An event recorder is often included with this test. It is also portable (like a Holter monitor), but when you feel symptoms, you can push a button to record what is happening at the exact time when you feel symptoms. It is generally worn for one month.

Other tests may be ordered as needed.

What are the treatments for atrial fibrillation?

If you have been diagnosed with AFib, major goals of treatment are to restore and maintain a normal heart rhythm and to prevent complications.

The treatment for AFib that is recommended by your cardiologist depends on your age, symptoms, the frequency of episodes, whether your heart rate is under control, and your individual risk for having a stroke. This risk is based on many different variables, mentioned below, that are evaluated by your cardiologist.

Age: Those who are 75 and older have a higher risk of stroke with atrial fibrillation, thus your cardiologist will likely recommend blood-thinning medications to help prevent blood clots. Those who are under 60 and have not had high blood pressure or heart disease and are not at a high risk of stroke, may be prescribed an antiplatelet drug, such as aspirin, rather than blood-thinning drugs.

Length of episodes: If an episode of AFib has lasted for less than 48 hours, your cardiologist may order medications or electric shock to bring back a normal rhythm, but if it is has lasted longer than 48 hours, restoring the normal rhythm could cause a stroke. So, blood-thinning medications (anticoagulants) may be needed before a normal rhythm can be restored.

Severity of symptoms: If symptoms are severe during an episode, emergency treatment may be necessary. If symptoms are mild, your cardiologist may determine that medication can control the atrial fibrillation.

Underlying disease: If you have underlying heart disease or high blood pressure, the risk of stroke goes up. In this case, your cardiologist may recommend blood-thinning medications to help prevent blood clots and a stroke. Treatment for any underlying problems may also be needed.

The patterns of AFib: The pattern or type of your atrial fibrillation episodes will help your cardiologist determine the best treatment approach. There are three major patterns of AFib episodes. It may occur just one time or may happen many times. An episode might last for seconds, minutes, hours, days, or longer. It sometimes stops on its own, or it may require treatment to stop the episode.

Paroxysmal AFib is defined as an episode of AFib that stops and starts on its own.

Persistent AFib is defined as multiple episodes of atrial fibrillation that do not stop on their own and last more than 7 days. These episodes require treatment (such as medication or electrical shock) to stop them.

Permanent AFib is defined as AFib that continues indefinitely. The cardiologist may decide not to restore a normal heart rhythm, after reviewing all factors. Instead, medications are used to control the heart rate and to prevent blood clots and strokes.

Medications

Medications are often prescribed by your cardiologist to help restore and maintain a normal heart rhythm. These medications may include *antiarrhythmic drugs* (for heart rate control), *anticoagulant drugs* (to thin the blood), and *antiplatelet drugs* (to reduce the risk of blood clotting).

Whatever medications are prescribed, it is very important to take the medications exactly as directed, to avoid serious problems and side effects. Also, it may be important to learn to check your pulse accurately (if the medication dosage is based on your heart rate).

> Medications for atrial fibrillation may be helpful for some patients, while a catheter ablation may be a preferred treatment option for their arrhythmia.
>
> -Sandra S. McCearley, M.D.

Electrical cardioversion

The abnormal heart rhythm may be restored to normal by electrical shock. The effect of this treatment may not be long-lasting.

Pacemakers and defibrillators

Pacemakers and defibrillators are very advanced medical devices that can be implanted in your chest. Such a device may be recommended along with other types of treatment, such as medication or ablation. Some advanced pacemaker models can predict episodes of AFib and work to reduce the symptoms.

Catheter ablation

Catheter ablation is a minimally invasive procedure that can be used when medication does not control the heart rhythm. The procedure is done in an electrophysiology lab in a hospital by a cardiologist that specializes in treating heart rhythm problems (an electrophysiologist). Advanced technology is used to map (identify) the exact area of heart tissue that is responsible for the electrical malfunction. Then that tiny area is destroyed (ablated) via a small catheter that is inserted in a vein in your groin and threaded up to your heart. The result is scar tissue that blocks an abnormal electrical pattern.

There are two different types of ablation – radiofrequency (RF), using heat, and cryoablation, using cold. The intended result of the procedure is a permanent cure for the arrhythmia or a reduction of symptoms. Very high success rates and few complications are reported for this procedure, but results can vary. As with any procedure, there are risks. Your cardiologist will explain both the procedure and risks in detail.

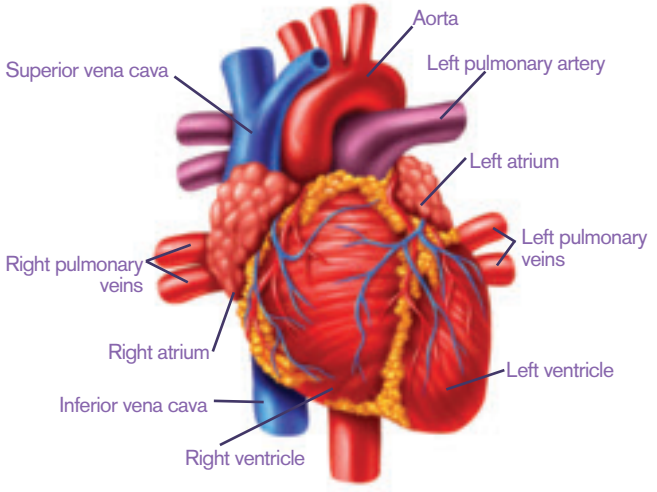
Open heart surgery

In some cases, open heart surgery may be recommended to create lines of scar tissue that will block abnormal electrical patterns.

Treatment summary

In general, treatment options for AFib include medication, electrical shock, and surgery. In addition, lifestyle changes as below may be recommended.

A recent study reported by the *American College of Cardiology* found that “the majority of heart failure cases were caused by four key risk factors: high blood pressure, obesity, smoking and diabetes.” All four of these risk factors can be prevented with a healthy lifestyle and are largely in our control. Thus, addressing any of these risk factors is especially critical for patients with atrial fibrillation, who already face increased risk for heart failure.



According to the CDC, approximately 3 to 6 million people in the United States have A-fib.

-Sandra S. McCearley, M.D.

Lifestyle changes: Avoiding any known triggers for AFib may be an important part of your treatment plan. A healthy lifestyle will also help.

Examples include:

- **A heart healthy diet with fresh fruits and vegetables, fiber-rich foods, lean meats, fish, and unsaturated fats**
- **Maintaining a healthy weight or losing weight if needed**
- **Limiting alcohol and caffeine (use in moderation)**
- **Exercising regularly with 30 minutes of physical activity most days**
- **Managing stress levels**
- **Not smoking**
- **Taking medications as directed**
- **Surgery if needed to correct underlying heart problems**

Know the signs of a stroke!

If you have AFib, knowing the warning signs of stroke and acting fast can save your life!

Call 9-1-1 right away if you have any sudden:

- **Numbness or weakness in your face, arms, or leg, especially on one side of the body**
- **Trouble walking or loss of balance or coordination**
- **Trouble seeing out of one or both eyes**
- **Confusion, trouble speaking or understanding**
- **Severe headache**

When should I call my cardiologist?

You should call/notify your cardiologist soon and schedule an appointment (or seek immediate care) if your usual symptoms of AFib change or suddenly get worse.

In Summary

This brochure has provided thorough information about the symptoms, diagnosis, and treatment of *atrial fibrillation*. Although it can be serious and even life-threatening, medical treatment can decrease symptoms, improve quality of life, and reduce your chances of having a stroke. There are many treatment options, including simple changes that you can incorporate into your daily routine. With your new knowledge about AFib, you can work with your cardiologist at Jackson Heart Clinic to develop a treatment plan that works best for your unique needs. It is our goal for you to have the highest possible level of cardiovascular health!

References & Patient Resources:

US DHSS: Centers for Disease Control, National Center for Chronic Disease Prevention and Health Promotion, Division for Heart Disease and Stroke Prevention Accessed 6/5/2017 from www.cdc.gov/dhdsp/data_statistics/fact_sheets/docs/fs_atrial_fibrillation.pdfUS DHSS

National Institutes of Health: Explore atrial fibrillation. Accessed 6/5/2017 from www.nhlbi.nih.gov/health/health-topics/topics/af

Web-based Patient Resources:

American College of Cardiology: CardioSmart
www.cardiosmart.org

For information related specifically to atrial fibrillation:
www.cardiosmart.org/For-Caregivers

Living with AFib:
www.cardiosmart.org/Heart-Conditions/Atrial-Fibrillation/Content/Living-With-Atrial-Fibrillation

Understanding AFib:
www.cardiosmart.org/Heart-Conditions/Atrial-Fibrillation

Addressing risk factors and preventing heart failure:
www.cardiosmart.org/News-and-Events/2017/08/Patients-with-AFib-Can-Prevent-Heart-Failure-with-a-Few-Key-Choices

WebMD information about atrial fibrillation:
www.webmd.com/heart-disease/atrial-fibrillation/default.htm

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