

# Atrial Fibrillation & Arrhythmias

*Symptoms and Treatments*



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# Atrial Fibrillation

According to the American Heart Association, Atrial fibrillation (AF) affects an estimated 2.7 million Americans. It is the single most common abnormal heart rhythm in the United States and a leading cause of stroke. In fact, AF is the underlying cause in about 15 percent of strokes.

On the bright side, treatment options exist for many patients with AF, and the best possible outcomes emerge when patients seek treatment as early as possible. An important factor, however, is knowing when — and where — to seek help, which is the information this guide aims to provide.



# About Atrial Fibrillation

Within the heart, blood flows through four chambers — two upper chambers (atria) and two lower chambers (ventricles). The right upper chamber (the right atrium) has a very important group of cells (the sinus node) that starts the signal to begin each heartbeat.

In a healthy heartbeat, the sinus node sends the impulse through the atria and then to a pathway between the upper and lower chambers of the heart called the atrioventricular (AV) node. When the impulse travels from the sinus node through the atria, the atria contract and pump blood down into the ventricles. As the impulse goes through the AV node to the ventricles, it signals the ventricles to contract and pump blood out to the body.

AF, a type of heart disease, happens when the heart's upper chambers (atria) receive abnormal electrical signals and begin to quiver. The AV node, which electrically connects the atria and the ventricles, becomes overwhelmed with erratic impulses

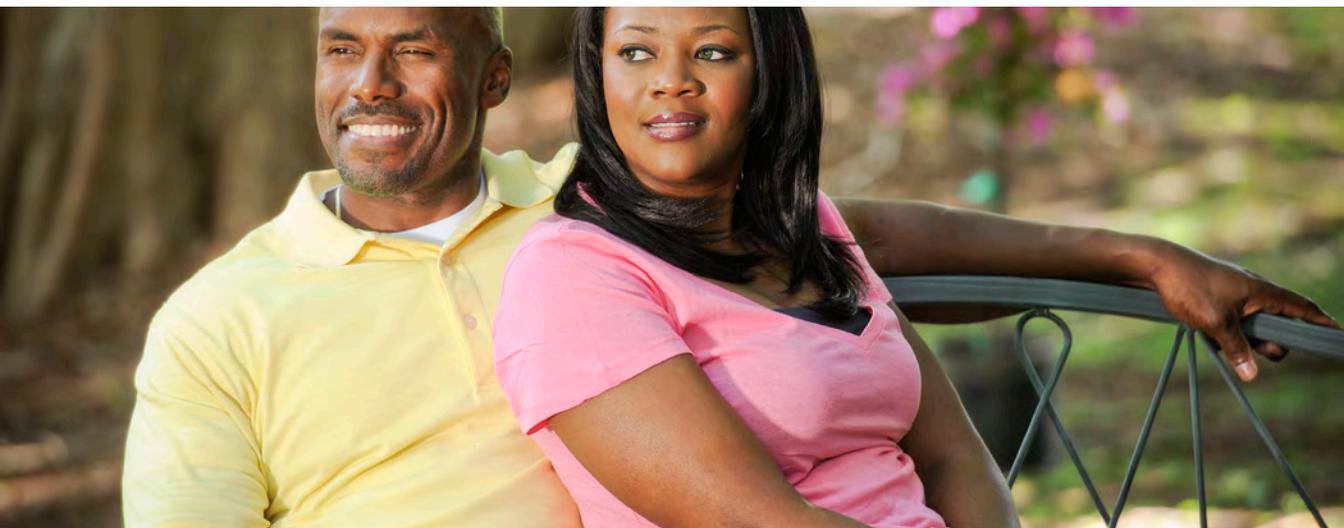
trying to get to the ventricles. Now, the ventricles also beat faster than normal.

Ultimately, the heart's entire rhythm suffers, beating too fast and irregularly. A heart rate during AF could be up to 175 beats per minute.

## Causes and Consequences

AF can be caused by anything that damages the heart's structure. There are two main types of AF, distinguished by whether a root cause can be found. In primary (lone) AF, a root cause often cannot be found. It usually affects people between the ages of 30 and 60.

AF is a serious medical condition that could need emergency treatment. In addition, it can lead to life-threatening complications. Because blood is not being carried through the heart valves correctly, it can collect and form clots in the heart. If one of these clots travels to the brain, it can block blood flow and cause a stroke. Certain co-existing risk factors can also increase the risk of stroke.



# Risk Factors

A risk factor is anything that increases the likelihood of developing a disease or injury. For AF, there are some risk factors that you can control and others that you can't. It is important to know these risk factors so that you can talk about them with your doctor.

## Controllable Risks

### Obesity

People who are overweight are more likely to have stress on their heart and other heart disease risk factors.

### Unhealthy Diet

Not eating a healthy diet is linked to being overweight or obese, having high cholesterol, and developing diabetes, which all increase heart disease risk.

### Physical Inactivity

Being active is beneficial for your blood pressure, cholesterol, blood sugar levels, blood clotting factors, the health of your blood vessels and reducing inflammation - even a small increase in activity can reduce heart disease risk, even with existing heart conditions.

### High Blood Pressure

A blood pressure of 140/90 mm Hg or higher is considered high blood pressure, or hypertension. It is a risk factor for coronary heart disease and the single most important risk factor for stroke.

### Cholesterol

A 240mg/dl or higher level for total cholesterol as well as an HDL (good) cholesterol of less than 40mg/dl (men) or 50mg/dl (women) is considered a risk factor.

### Diabetes

Even if blood sugar is controlled, diabetes increases the risk of heart diseases and stroke.

### Tobacco Use

Smoking harms nearly every organ of the body and severely damages your heart and lungs. It has been shown to increase fat in your blood; lower HDL (good) cholesterol; make blood more likely to clot; and damage, increase plaque, and narrow blood vessels.

### Stress

High stress levels can negatively influence other risk factors for heart disease, such as high cholesterol, high blood pressure, smoking, inactivity and body weight.

### Alcohol or Stimulant Use

Alcohol and stimulant use can interfere with the normal electrical impulses of the heart, causing AF.

## Uncontrollable Risks

### Age

Aging is the most common reason people develop AF. With age, certain areas of the heart can lose normal control mechanisms and produce bursts of rapid heart rate. Age can also contribute to fibrosis, or scarring in the heart that can cause problems with the electrical impulses.

### Heart Disease

Coronary artery disease, heart failure, and heart valve disease increase the risk of AF.

### Other Chronic Diseases

Sleep apnea, thyroid diseases, and other serious illnesses like metabolic syndrome, chronic kidney disease or lung disease have an increased risk of AF.



# Symptoms

Symptoms of AF can be different for each person. For example, some people with AF have no symptoms and do not find out about it until a doctor discovers it during a routine exam. Others may feel some of the following symptoms.

## A Skipped or Racing Heartbeat

Feelings of a racing, uncomfortable, irregular heartbeat or a flip-flopping in the chest; or a heartrate above the normal range of 50 to 100 beats per minute.

## Chest Pain

Discomfort that presents as pain or a tight ache, pressure, fullness or squeezing in the center of your chest.

## Shortness of Breath

Having a hard time breathing normally or deeply — without chest discomfort.

## Dizziness

Feeling dizzy or lightheaded, or fainting.

## Fatigue or Weakness

Extreme exhaustion and decreased physical and mental ability.

If you have any of these warning signs, make an appointment with your doctor for an exam. Your doctor may do further testing to see if it's AF, or some other heart rhythm disorder. It's important to note that if you have chest pain, call 9-1-1 immediately. Chest pain is also a critical symptom of a heart attack.



# Types of AF

There are three major types of AF each with different symptoms present and persist.

## Occasional

The abnormal heartrate begins suddenly and stops on its own. Symptoms can be mild or severe, but they usually stop in less than 24 hours, or no more than a week. This condition is also called Paroxysmal AF.

## Persistent

The abnormal heartrate continues for more than a week. It may stop on its own, or it may need to be resolved with treatment.

## Permanent

A normal heart rhythm can't be restored with treatment. Over time, paroxysmal and persistent AF may become more frequent and result in permanent AF.



# Diagnosis

If you have any of the warning signs above, it's very important to make an appointment with your doctor, who may review your medical and family history, do a physical exam, and perform an electrocardiogram — also called an ECG or EKG — to test for AF or another type of arrhythmia.

During the physical exam, your doctor may check to see if your heart is enlarged, listen for heart murmurs or fluid in the lungs, feel your thyroid glands or even test your reflexes. Each part of the exam can help your doctor pinpoint the cause of the AF.

The most effective tool for diagnosing AF is the ECG and heart monitors. In a normal heart, the sinus rhythm is a series of bumps and lines that show the contractions of the

atria and ventricles. When AF is present, the bumps in the ECG are replaced by irregular lines.

Finally, your doctor may suggest you have an echocardiogram, where sound waves are used to make into images of the heart. This imaging can show if your atria are enlarged or if the left ventricle and heart monitors.

Depending on the results of these tests, your doctor may run more tests, including a thyroid-stimulating hormone (TSH) test to identify an overactive thyroid or perform imaging on the legs or lungs to find any potential blood clots. Blood tests or heart monitors may also be used to help in the diagnosis.



# Treatments

AF treatment can include medications and surgery. Surgical procedures range from minimally invasive to open-heart procedures — radiofrequency ablation, robotic ablation, cryoablation and Maze procedures.

## Medications

In mild cases of atrial fibrillation — or in cases where surgery or other treatments are not an option — a doctor may recommend the following medications:

- *Anticoagulants* to thin blood and prevent blood clots
- *Digoxin* to slow the heart rate
- *Beta-blockers* to slow the heart rate
- *Calcium channel blockers* to slow the heart rate
- *Antiarrhythmic medications* used to maintain normal heart rhythm or convert the heart rhythm to normal

## Ablation Procedures

Patients with AF that aren't treatable with medical therapy may undergo ablation therapy. Ablation is a nonsurgical wire-based procedure that uses energy to correct cardiac tissue triggering AF.

## Maze Procedures

The Maze procedure was designed to disrupt the erratic impulse triggers and circuits that cause AF. The procedure creates carefully placed scar tissue lesions within the atria to stop the faulty electrical impulses from traveling. This creates only one path that the electrical impulse can take from the SA node to the AV node, which prevents the atrium from fibrillating. There are three variations of the Maze procedure, from most to least invasive: Cox-Maze procedure, Modified-Maze procedure, and Mini-Maze procedure.



# Arrhythmia and Ablation Center of Excellence

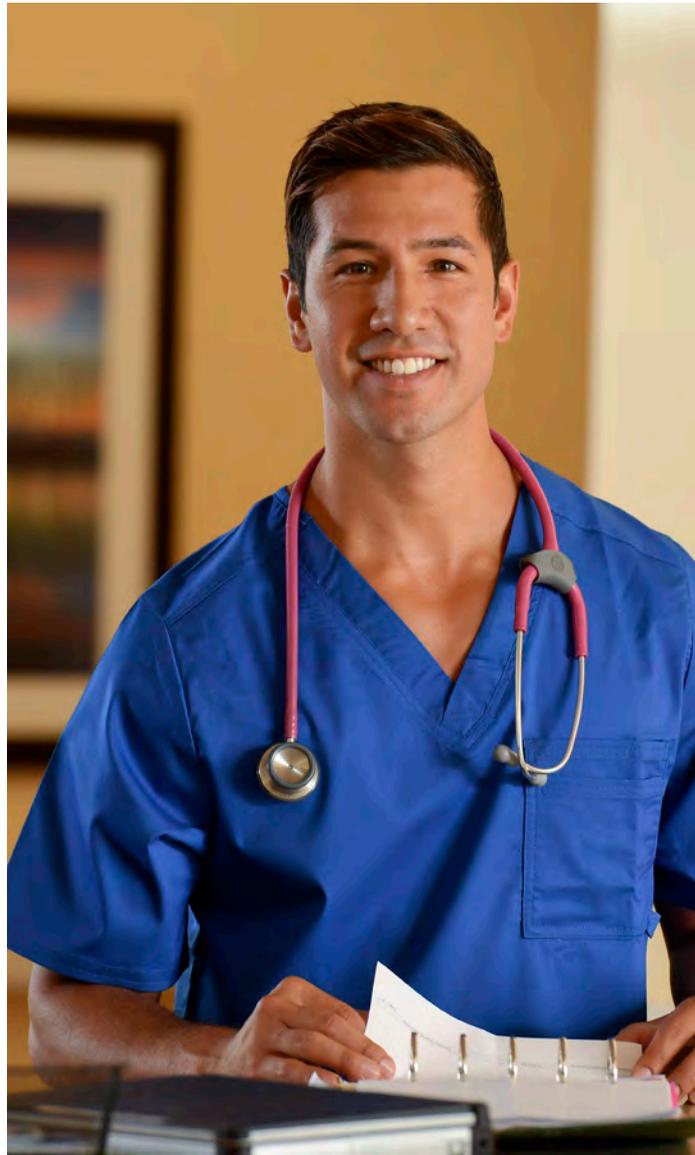
Detecting and treating AF is a priority at Florida Hospital. The Cardiovascular Institute helps people treat AF as early as possible with the goal to prevent possible life-threatening conditions such as stroke.

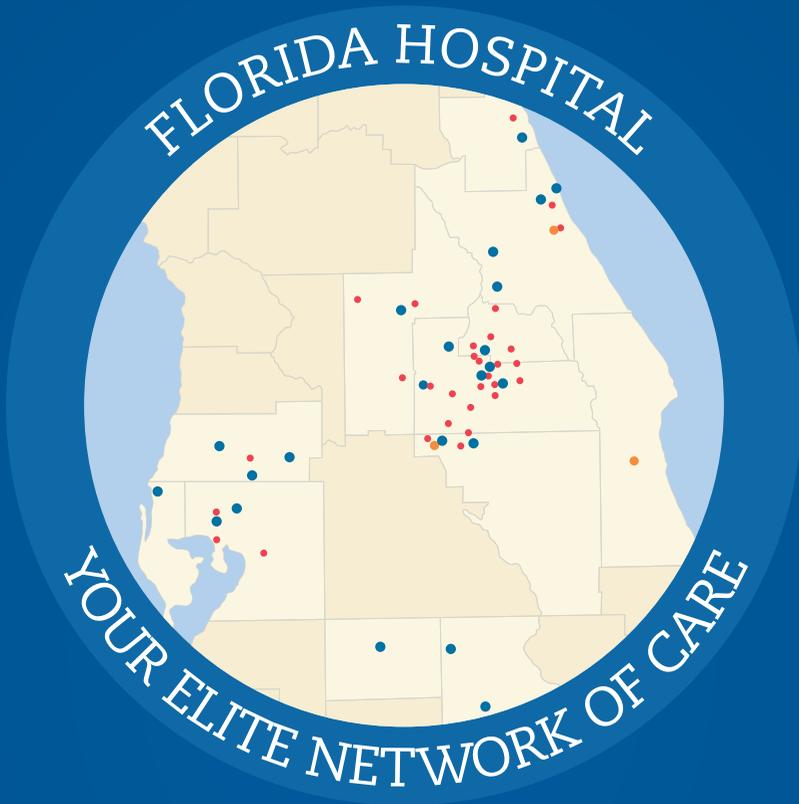
Florida Hospital has more than 160 board-certified cardiologists and cardiovascular surgeons who offer superior outcomes to our patients. Florida Hospital has been an established leader in the fight against heart disease since 1967 and addresses every facet of heart-health care. Through our Centers of Excellence in valve surgery, arrhythmia and ablation, and vascular surgery, we provide cutting-edge cardiovascular and thoracic services.

Serving more than 72,000 patients each year — including approximately 4,650 who undergo heart surgery — our centers are supported by a team of more than 1,000 specially trained nurses and technicians. Our specialists work together to deliver truly comprehensive medicine – from prevention and diagnosis to the latest advancements in AF and heart arrhythmia treatment and management.

This guide is provided to the general public to disseminate health related information. The information is not intended to be used for diagnosing or prescribing. Please consult your physician before undertaking any form of medical treatment and/or adopting any exercise program or dietary guidelines.

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