To make an appointment, call 1-866-847-7194.
Managing your AFib? We can help you.

Atrial fibrillation is the most common abnormal heart rhythm or arrhythmia and accounts for one-third of hospitalizations for rhythm disorders in the United States. It is estimated that up to 6.1 million people in the U.S. have AFib, and if you’re one of them, you probably know it is a serious condition requiring medical management to avoid severe risks such as stroke as well as heart failure.

But what you may not know is that AFib treatments extend beyond medication. New procedures can allow you to lead a more normal, active lifestyle.

This guide will provide you with a background on AFib and its diagnosis so you can be better informed about your condition. It also includes information on advanced treatment options that may help you restore your rhythm of life.

University Hospitals Harrington Heart & Vascular Institute is a nationally recognized leader in state-of-the-art diagnosis, management and treatment of atrial fibrillation. See page 11 for a list of our convenient locations.
What Is Atrial Fibrillation?

Atrial fibrillation, or AFib, is an abnormal heart rhythm. Normally, a specific group of cells in the right atrium begin the signal to start your heartbeat. These cells are in the sinoatrial (SA) node, which is in the upper right chamber of the heart. The signal quickly travels through the heart’s conducting system, triggering the chambers of the heart to contract with each heartbeat to move blood into the ventricles.

During AFib, the signal to start the heartbeat is disorganized, causing the atria to quiver or “fibrillate.” The disorganized signals are then transmitted to the ventricles. It causes them to contract irregularly and sometimes quickly. The contraction of the atria and the ventricles is no longer coordinated, and the amount of blood pumped out to the body varies with each heartbeat. The ventricles may not be able to pump blood efficiently to the body.

The quivering atria can lead to blood pooling. This increases the risk of forming blood clots. These clots can then travel to the brain, causing a stroke. This is why AFib significantly increases your risk for stroke.

There are three types of AFib:

1. **Paroxysmal AFib**: AFib usually comes on suddenly (symptoms can be mild to severe), and the episodes end spontaneously (on their own) and may last for a few seconds, minutes, hours or longer before the heart resumes a normal rhythm on its own (in seven or less days).

2. **Persistent AFib**: With this condition, the irregular heart rhythm continues indefinitely unless it is treated with medications and/or a procedure called cardioversion. AFib that lasts for seven days or longer is called persistent atrial fibrillation. AFib that lasts longer than a year is called long-standing persistent atrial fibrillation.

3. **Permanent AFib**: Persistent AFib may be called permanent AFib when a decision is made to no longer control the heart’s rhythm or when, despite best efforts, normal rhythm can’t be restored.
What Are the Risks and Complications of AFib?

AFib is usually not life-threatening if it is properly diagnosed and treated. However, AFib increases the risk of stroke, congestive heart failure or even death. Patients with AFib have a three to five times greater risk of stroke, especially individuals who are females; are older than 65; had a prior stroke or mini-stroke (TIA); or have high blood pressure, diabetes, congestive heart failure, or vascular disease. Blood-thinning medicines help reduce the risk for stroke.

AFib also sometimes causes heart failure. Because the ventricles are beating so irregularly and at times quickly, they can’t fill normally. The atria also can’t squeeze appropriately, which reduces filling in the ventricles. In some cases, this means the heart can’t pump enough blood to the body, causing heart failure. Left untreated, a rapid heart rate in AFib will increase the risk of heart failure. Heart failure is treated with lifestyle changes, medication, and surgical or nonsurgical procedures. Medicines that lower heart rate will also help prevent heart failure.

AFib Facts

- AFib is the most common heart rhythm disorder.
- It is estimated that up to 6.1 million people in the U.S. have AFib.
- About 160,000 new cases are diagnosed each year.
- AFib is uncommon among young people, although it can occur in people of any age.
- The likelihood of developing AFib increases as one grows older. After age 65, between 3 and 5 percent of people have AFib.

What Causes AFib?

AFib can result from any type of problem that changes the way the heart handles electricity. Sometimes the cause is unknown. These individuals have what is called “lone” or idiopathic AFib. Some known causes include:

- Older age
- High blood pressure
- Coronary artery disease
- Heart failure
- Rheumatic heart disease (from a previous Streptococcus infection)
- Heart valve defects (like mitral valve prolapse)
- Inflammation of the heart (pericarditis)
- Congenital heart defects
- Sick sinus syndrome
- Hyperthyroidism
- Obesity
- Diabetes
- Lung disease
- Obstructive sleep apnea
- Metabolic syndrome
- High-dose steroid therapy
- Familial AFib (a rare genetic disease)

AFib is also more likely to happen during an infection or right after surgery. Stress, caffeine and alcohol may also set off attacks.

People who engage in vigorous endurance exercises, such as running marathons, can develop atrial fibrillation. Certain people may be at greater risk of developing AFib. This is due to differences in genes they inherited from their parents, but this is not yet fully understood.
Can AFib Be Prevented?

Controlling risk factors for atrial fibrillation may prevent AFib from developing. This includes managing underlying heart disease, high blood pressure, diabetes, thyroid problems, lung diseases, obstructive sleep apnea and obesity. Risk factor control also means making healthy lifestyle choices. These choices include eating a healthy diet, exercising regularly, maintaining a healthy weight, drinking alcohol in moderation and not smoking.

Who Is at Risk?

AFib is more common in people over age 65. In general, AFib is more common in men than in women but about equal over age 75. Women carry a higher risk for stroke. Underlying heart disease, high blood pressure, thyroid problems, excess alcohol use, sleep apnea and certain lung diseases put people at risk for atrial fibrillation.

What Are the Symptoms?

The signs and symptoms of AFib vary from person to person. You may even have AFib without any of the following symptoms (asymptomatic), or you may have additional symptoms not listed here. This is especially true when AFib is not treated.

Common symptoms include:

- Heart palpitations – it might feel like your heart is skipping beats or beating too hard
- Irregular heartbeat
- Weakness and fatigue or decreased energy level
- Shortness of breath or difficulty breathing
- Chest pain
- Dizziness or lightheadedness
- Fainting
- Sweating
- Confusion
- Swelling in the feet, ankles and legs
- Anxiety or fear

Get emergency medical care if you have severe symptoms such as chest pain or sudden shortness of breath. Also get help if you have signs of severe bleeding.

See your doctor soon if your symptoms are gradually increasing, or if you have any new mild symptoms or side effects.
How Is AFib Diagnosed?

In addition to a thorough medical examination, your doctor will need to perform noninvasive tests to diagnose AFib that may include:

- **Electrocardiogram (ECG):** A test that prints an image of the electrical activity in your heart on graph paper. Doctors use this test to study the heart signal and rhythm.
- **Holter monitor:** A small, lightweight, portable device worn for a period of 24 – 48 hours that captures the electrical activity of your heart during the entire time it is worn.
- **Event monitor:** A portable device worn for seven to 30 days that records your heart’s electrical activity. This test is typically used in patients with AFib that is infrequent or less symptomatic. At times an implantable rhythm monitor is placed under the skin in the chest area for assessment of AFib burden.

Other tests might be used to help plan treatment, including:

- **Echocardiogram,** which checks the heart’s structure and function
- **Cardiac stress testing,** which checks blood flow in the heart
- **Blood work,** which checks for thyroid levels, diabetes and other possible medical conditions

**Electrophysiology studies**

UH Harrington Heart & Vascular Institute uses some of the most advanced technology available to diagnose and assess abnormal heart rhythm in patients. Our team of experts uses the results of an electrophysiology (EP) study, which records the electrical activity and electrical pathways of your heart, to determine the course of treatment for each patient’s specific rhythm problem, which can mean antiarrhythmic medication, the implantation of a device such as a pacemaker or a catheter ablation procedure.
How Can I Manage AFib?

- Keep your intake of certain foods, such as green leafy vegetables, consistent if you have been prescribed warfarin as your blood thinner.
- Eat a heart-healthy diet.
- Don’t smoke.
- Be physically active and maintain a healthy weight.
- Keep your cholesterol at healthy levels with lifestyle and medicine.
- Avoid the use of alcohol and caffeine (which can trigger abnormal heart rhythms).
- Avoid certain over-the-counter medicines (which can trigger abnormal heart rhythms).
- Discuss with your PCP if you snore, stop breathing momentarily and are very tired during the day. You may have obstructive sleep apnea and may need a sleep study for complete evaluation and possible treatment.
- Make sure all your health care providers, dentists and pharmacists know if you are taking a medicine to prevent blood clots.
- If you miss a dose of a blood-thinning medicine, do not double up your dose. Ask your doctor what you should do.

How Is AFib Treated?

Your doctors will work with you to create a specific treatment strategy for your AFib targeting stroke prevention, heart rate control and ultimately means to restore normal sinus rhythm.

Medications
Typically, medications are the initial treatment method for AFib and may include the following:

- Stroke prevention with blood thinners or anticoagulants with warfarin or one of the new drugs (apixaban, rivaroxiban or dabigatran): These are indicated based on your risk factors that increase the likelihood you will develop blood clots associated with AFib such as being over age 65 or 75, heart failure, coronary artery disease, prior heart attack, hypertension, diabetes, stroke or mini-stroke, or vascular disease. If you have two or more of these risks, you will need to be on a blood thinner.
- Heart rate control medications: These medications (beta blockers, calcium channel blockers, digoxin) are used to slow the transmission of electrical signals from the atria to the ventricles, thus slowing the heart rate.
- Heart rhythm control may be achieved with medications (antiarrhythmic drugs), but often it requires AFib ablation. A number of different medicines with different characteristics may be used to convert or prevent AFib. These drugs need to be tailored to the individual patient. With all medications, you will need regular follow-up care for your AFib.

Electrical Cardioversion
For most individuals with persistent AFib or those whose symptoms do not improve with medications, the heart’s normal rhythm may be restored by delivering a controlled electric shock to the heart through special cardioversion pads that are applied to the chest and back under general anesthesia. This procedure is called electrical cardioversion, and it can help get the heart back into a normal rhythm. The cardioversion pads are attached to a defibrillator that delivers the energy or shock that will cause a split-second interruption of the abnormal rhythm, allowing the heart’s electrical system to regain control and restore its rhythm without injury. However, this may only have temporary results and AFib recurs.

To make an appointment, call 1-866-847-7194.
What Are My More Advanced Treatment Options?

More definitive or curative procedures include catheter or surgical AFib ablation or AV junction ablation to create an electrical heart block followed by permanent pacemaker implantation. A pacemaker is the least favorable option since you will remain in AFib, but with the advantage of good rate control.

Ablation

There are many types of ablation procedures available for AFib. AFib ablation is a minimally invasive option for symptomatic patients who failed or developed side effects to at least one antiarrhythmic medication. For some patients, ablation can be considered as the first line of treatment.

Benefits of minimally invasive ablation via a heart catheterization include:
- No splitting of the breastbone (sternum)
- Faster recovery than with a large chest incision
- Less time spent in the hospital
- Less pain because the incisions are small
- Minimal blood loss
- Little scarring

AFib ablation

AFib ablation, also called pulmonary vein isolation (PVI), is a potential cure for AFib. The procedure does not necessarily require general anesthesia, and most patients are allowed to go home within 24 hours.

During AFib ablation, several catheters (thin, flexible tubes with platinum rings and tips) are inserted into blood vessels in the groin and at times at the neck and are advanced to different locations in the heart under X-ray guidance. The catheters are used to record and map the arrhythmia. One of the catheters has a larger tip and is used to deliver radiofrequency energy to electrically isolate the pulmonary veins.

Radiofrequency ablation is the most common type of ablation. Radiofrequency energy creates lesions by destroying (ablating) small areas of heart tissue containing the triggers for atrial fibrillation. After several weeks of healing, the lesions form a permanent circular scar that blocks the abnormal electrical impulses from the pulmonary veins, thus preventing AFib.

The team at UH Harrington Heart & Vascular Institute has pioneered an ablation strategy that further improves the long-term results of AFib ablation.

AFib ablation can also be performed by a cryo-balloon to isolate the pulmonary veins, the source for AFib triggers, by freezing the opening of the pulmonary veins. This procedure has been shown to be safe and successful for patients with intermittent or paroxysmal AFib.

University Hospitals offers catheter ablation at several locations. See page 12 for locations.
What Are My More Advanced Treatment Options? Continued

Surgical AFib Ablation – Maze Surgery
Patients who have conditions requiring heart surgery may benefit from surgical treatment of AFib in the same procedure. Maze surgery uses cuts or ablation to isolate the pulmonary veins to prevent AFib. Patients who have failed catheter ablation for AFib may also benefit from surgical ablation.

Atrioventricular Node Ablation and Pacemaker Implantation
Atrioventricular (AV) node ablation targets the AV node (the filter between the upper and lower heart chambers), which creates a heart block requiring a permanent pacemaker. This procedure does not cure AFib but may provide some relief of AFib symptoms and/or facilitate management of other medical problems.

Left Atrial Appendage Occlusion for Stroke Prevention Without Long-Term Blood Thinners
The implantation of a left atrial appendage occlusion device may lower the risk of stroke in AFib patients. The left atrial appendage (LAA) originates in the left atrium of the heart and is where over 90 percent of stroke-causing clots that come from the heart are formed. The doctor implants a device to seal off the LAA, and it is left permanently fixed in the heart.

To make an appointment, call 1-866-847-7194.
Expertise

Our Electrophysiology Center is a leading provider of diagnostic and individualized treatment options for cardiac arrhythmias such as AFib. Our renowned board-certified physicians have been directly involved with developing and using catheter ablation therapies with tremendous success.

Additionally, our experts are highly skilled in using the very latest medical and technological advances, including:

- 3-D mapping systems with force-sensing ablation catheters
- Intracardiac echocardiography
- Implantable cardiac devices
- Cardiac resynchronization therapy
- Cardiovascular genetics clinic
- Device clinics
- Lead extraction
- Left atrial appendage occlusion

Innovation

Our experts focus on leading-edge scientific research and ongoing clinical trials, and have been leaders in the following:

- Among a few medical centers worldwide utilizing a novel, minimally invasive left ventricular assist device called Impella® to facilitate the treatment of complex ventricular arrhythmia (VT), possibly paving the way for improved interventions for VT in the future
- Chosen as one of the first sites in the U.S. to participate in a clinical trial comparing the safety and effectiveness of an investigational left atrial appendage occlusion device compared to warfarin or dabigatran to prevent thromboembolism in patients with nonvalvular AFib
Locations
UH offers convenient access to electrophysiology and atrial fibrillation services in Northeast Ohio.

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<tr>
<th>Location</th>
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<tbody>
<tr>
<td>UH Cleveland Medical Center*</td>
<td>11100 Euclid Avenue, Cleveland, Ohio 44106</td>
<td>UH Geneva Medical Center</td>
<td>870 West Main Street, Geneva, Ohio 44041</td>
</tr>
<tr>
<td>UH Ahuja Medical Center*</td>
<td>3999 Richmond Road, Beachwood, Ohio 44122</td>
<td>UH Chagrin Highlands Health Center</td>
<td>3909 Orange Place, Orange Village, Ohio 44122</td>
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<td>UH Bedford Medical Center**</td>
<td>44 Blaine Avenue, Bedford, Ohio 44146</td>
<td>UH Parma Medical Center*</td>
<td>7007 Powers Boulevard, Parma, Ohio 44129</td>
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<tr>
<td>UH Conneaut Medical Center*</td>
<td>158 West Main Road, Conneaut, Ohio 44030</td>
<td>UH Concord Health Center</td>
<td>7500 Auburn Road, Concord Township, Ohio 44077</td>
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<tr>
<td>UH Elyria Medical Center*</td>
<td>630 East River Street, Elyria, Ohio 44035</td>
<td>UH Euclid Health Center</td>
<td>18599 Lakeshore Boulevard, Euclid, Ohio 44119</td>
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<tr>
<td>UH Geauga Medical Center</td>
<td>13207 Ravenna Road, Chardon, Ohio 44024</td>
<td>UH Portage Medical Center</td>
<td>6847 North Chestnut Street, Ravenna, Ohio 44266</td>
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<tr>
<td>UH Medina Health Center</td>
<td>4001 Carrick Drive, Medina, Ohio 44256</td>
<td>UH Richmond Medical Center**</td>
<td>27100 Chardon Road, Richmond Heights, Ohio 44143</td>
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<tr>
<td>UH Mentor Health Center</td>
<td>9000 Mentor Avenue, Mentor, Ohio 44060</td>
<td>UH St. John Medical Center*</td>
<td>29000 Center Ridge Road, Westlake, Ohio 44145</td>
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<tr>
<td>UH Twinsburg Health Center</td>
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*Medical centers that offer AFib ablation
**Campuses of UH Regional Hospitals

Schedule an Appointment
To schedule an appointment with one of our specialists, call the Atrial Fibrillation Center at 1-866-847-7194.