

UPMC Heart and Vascular Institute

Center for Atrial Fibrillation

Sandeep Jain, MD, FACC, FHRS
Professor of Medicine
Director, Cardiac Electrophysiology
Director, Center for Atrial fibrillation

Erica Byers, MSN, CRNP, CVNP-BC, AACC
Clinical Project Director, Center for Atrial Fibrillation

- **Improve community diagnosis of AF**
- **Minimize the incidence of AF-attributable stroke**
- **Diminish unnecessary AF-attributable hospital encounters**
- **Provide meaningful education to as to causes, consequences, and treatment options for AF**
- **Provide expertise in all possible AF treatment options**
- **Examine value of individual treatment options**

Our Strategy – New AF diagnosis referrals

- 24/7 consult service with the Center for AF
- Initial educational and “triage” visit through a physician extender
- Quick turn-around (within 2 business days) appointments with a Center for AF provider
- Patient education to promote disease literacy

- Cardiology
- PCP
- ED
- Self referral

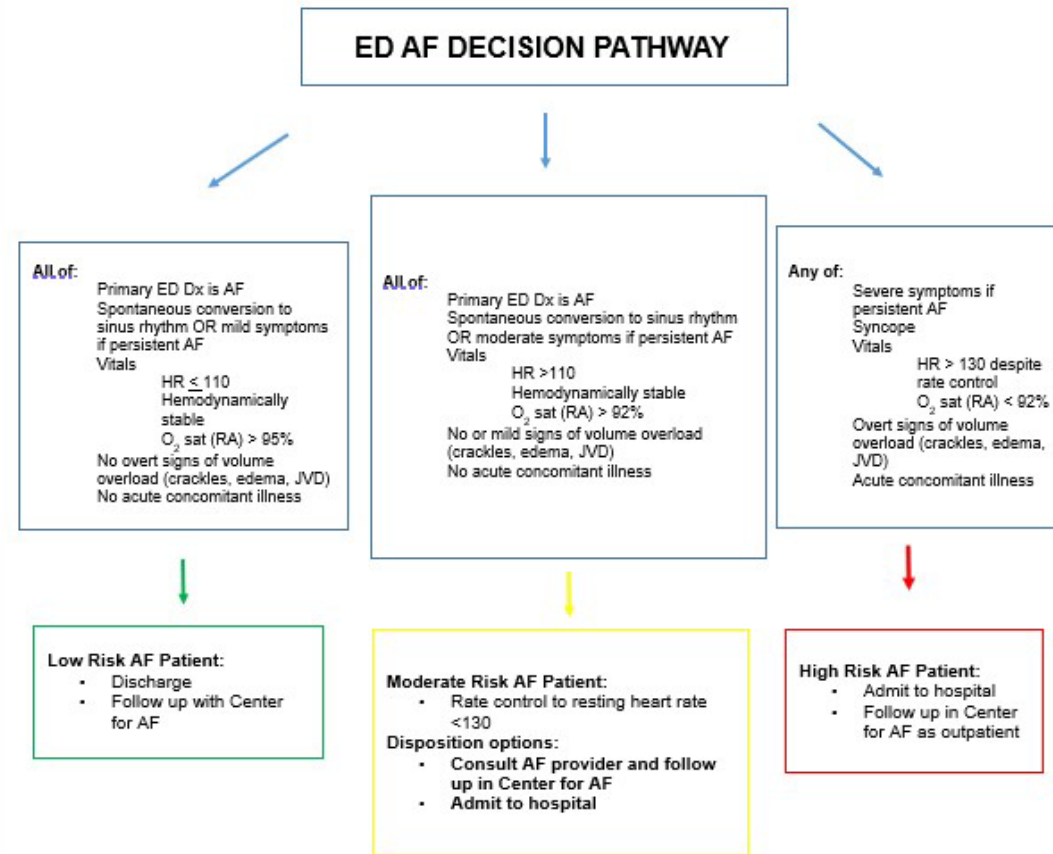
Pathways to scheduling:

- HVI scheduling line
- AF phone (ED and PCP pathway)
- Service account e-mail
- Order through Cerner/e-Record: Rapid access team

UPMC Center for Atrial Fibrillation

To consult with an EP provider call 412-748-7FIB (7342).

For low to moderate risk patients call 1-844- HVI- AFIB (484-2342) to schedule rapid clinic follow up in 1-2 business days at one of our Center for AF locations.



- Patient history
- Comprehensive review of AF: Cardiac anatomy, risk factors, triggers, lifestyle, misconceptions
- Review CHA2DS2VASc score and determine need for long-term anticoagulation
- Review of management options: Rate vs rhythm control strategies
- Plan: Assess need for testing, possible procedures/ admission, and follow up

Patient education packet

UPMC
LIFE CHANGING MEDICINE

UPMC Heart and
Vascular Institute
200 Lothrop St.
Pittsburgh, PA 15213

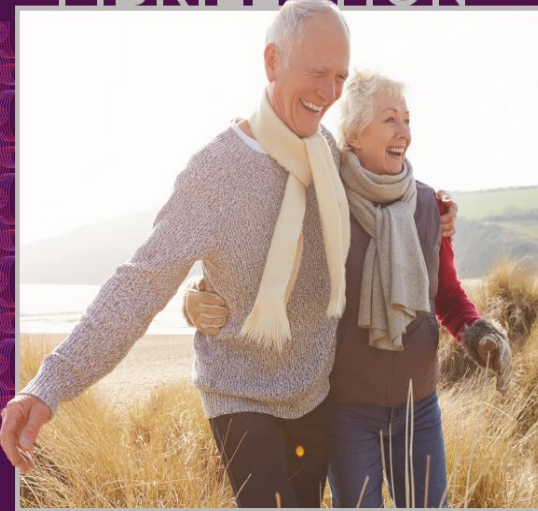
To make an appointment or for more
information, call 1-844-4VI-AFIB (484-2342),
email CenterforAFIB@upmc.edu, or visit us
at UPMC.com/afibcenter.

UPMC and its providers do not discriminate on the basis of race, color, religion, ancestry,
national origin, age, genetics, sex, sexual orientation, gender identity, marital status, familial status,
disability, veteran status, or any other legally protected group status. Further, UPMC will continue
to recruit and provide equal employment opportunity, training, dignity, and work, culture, and
cultural diversity. This policy applies to admissions, employment, and access to and treatment in
UPMC programs and facilities. This commitment is made by UPMC in accordance with federal,
state, and/or local laws and regulations.

HV150275 LSHAX 09/17

© 2017 UPMC

UPMC CENTER FOR ATRIAL FIBRILLATION



UPMC | HEART AND
VASCULAR INSTITUTE

HELPING PEOPLE WITH ATRIAL FIBRILLATION LEAD HEALTHIER LIVES



UPMC Center for Atrial Fibrillation

The UPMC Center for Atrial Fibrillation offers comprehensive care and personalized treatment for people with atrial fibrillation. As part of the UPMC Heart and Vascular Institute, we are a multidisciplinary team of experts in cardiology and cardiac surgery. Our tools are state of the art, including medicines and corrective procedures. We emphasize education first and foremost, so that patients and families can fully partner in all care decisions.

Our Services

- Screenings
- Diagnostics
- Patient and family education
- Treatment, including:
 - > Medical management
 - > Catheter ablation
 - > Implantable devices, like pacemakers and defibrillators
 - > Surgical procedures, including open MAZE and minimally invasive MAZE procedures
 - > Catheter-based treatments, including ablations
 - > Left atrial appendage closure for stroke prevention



Contact Us

The UPMC Center for Atrial Fibrillation includes a network of hospital-based clinics and physician offices throughout western Pennsylvania.

To make an appointment, or for more information, please call
1-844-4VI-AFIB (484-2342),
email CenterforAFIB@upmc.edu,
or visit UPMC.com/afibcenter.

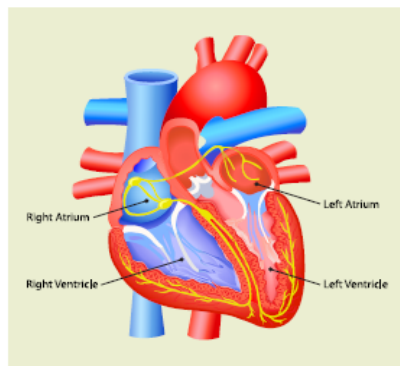
UPMC LIFE
CHANGING
MEDICINE

UPMC CENTER FOR

ATRIAL FIBRILLATION

What is Atrial Fibrillation?

The heart pumps blood and oxygen throughout the body, relying on electrical signals to keep its four chambers in rhythm. During a regular heartbeat, these electrical signals keep the top chambers, called atria, moving in time with the bottom chambers, called ventricles.



Atrial fibrillation, also called AF or AFib, happens when the heart's electrical system sends out irregular electrical signals that cause the atria to quiver, or fibrillate. Extra electrical signals are then sent to the ventricles, creating a fast and irregular heartbeat.

Symptoms of atrial fibrillation can include:

- Palpitations (fluttering in the chest)
- Shortness of breath
- Chest discomfort
- Weakness
- Dizziness or light-headedness
- Fatigue

Many people have minimal or no symptoms, and symptoms can vary from day to day or episode to episode.

Atrial fibrillation that comes and goes by itself is called paroxysmal atrial fibrillation, while atrial fibrillation that is present until and unless there is some intervention to stop it is called persistent atrial fibrillation.

What causes atrial fibrillation?

Age is a leading risk factor for atrial fibrillation. It is common in people over 60, and the older you get, the greater your risk.

Your lifestyle—including what you eat, how often you exercise, how you sleep, if you're under a lot of stress, whether you smoke or chew tobacco, and if you drink alcohol frequently or heavily—also plays a big part in your risk for atrial fibrillation.

Other risk factors include:

- Obesity
- High blood pressure
- Diabetes
- Sleep apnea
- Having other heart problems, like having heart failure, a prior heart attack, or previous heart surgery

Is atrial fibrillation dangerous?

Atrial fibrillation usually isn't life-threatening on its own, but it can lead to decreased quality of life and other serious or potentially life-threatening conditions, such as cardiomyopathy (weakened heart muscle) and stroke.

During atrial fibrillation the top chambers of the heart pump ineffectively, making it easier for blood clots to form. If a clot breaks loose and moves to the brain, a stroke can occur. The risk of stroke varies among people with atrial fibrillation based on age, gender, and medical history.

How is atrial fibrillation treated?

The experts at the UPMC Center for Atrial Fibrillation apply the latest in atrial fibrillation research and knowledge to create customized treatment plans for each patient. We also provide extensive education for each patient, because we know that patients who understand their diagnosis become more active in their treatment—and that can make a difference in their recovery.

Treatments may include:

- Lifestyle changes
- Medical management
- Cardioversion
- Implanted devices, like pacemakers or defibrillators
- Surgical procedures
- Catheter-based treatments, including ablation
- Left atrial appendage closure for stroke prevention



Lifestyle Changes

A healthy lifestyle is the foundation for your care strategy. Lifestyle changes that can prevent or decrease atrial fibrillation include:

- Losing weight
- Maintaining a healthy diet
- Exercising regularly
- Limiting alcohol intake
- Limiting caffeine intake
- Quitting smoking
- Implementing stress/anxiety reduction techniques

It's important to identify and treat other diseases that are often associated with atrial fibrillation, like high blood pressure, diabetes, and sleep problems.

And, it's critical to find out how likely you are to have a stroke. The experts at the UPMC Center for Atrial Fibrillation use a tool called the CHA₂DS₂-VASc, which assesses your age, gender, and medical history to determine your risk.

Medical Management

Some cases of atrial fibrillation may be managed through medications that prevent blood from clotting, or that slow or regulate the heart rate.

Medications that prevent blood clots are called anticoagulants and are commonly known as "blood thinners." These include:

- Warfarin (Coumadin®, Jantoven®)
- Dabigatran (Pradaxa®)
- Apixaban (Eliquis®)
- Edoxaban (Savaysa®)
- Rivaroxaban (Xarelto®)
- Aspirin

Medications that slow the heart rate include:

- Digitalis or Digoxin
- Metoprolol (Lopressor®)
- Verapamil
- Atenolol (Tenomin®)
- Diltiazem (Cardizem®)

And, medications that regulate the heart rate include:

- Sotalol (Betapace®)
- Propafenone (Rhythmol®)
- Dofetilide (Tikosyn®)
- Amiodarone (Pacerone®, Cordarone®)
- Flecainide (Tambocor®)
- Dronedarone (Multaq®)

Cardioversion

Cardioversion is a noninvasive procedure that restores your heart's normal rhythm with electrical shock or chemical intervention. Electrical cardioversion delivers an electrical shock to your heart via adhesive pads which are placed on your chest while you are under anesthesia. Chemical cardioversion uses medicine to achieve the same effect.

Implantable Devices

In some patients with atrial fibrillation, a pacemaker or defibrillator may be recommended. These are devices implanted in your body that can help regulate your heartbeat. Pacemakers ensure that your heart rate does not become too slow, and defibrillators can deliver a shock for dangerous, abnormal rhythms.

Surgical Procedures

Some people with atrial fibrillation are treated through surgery. This usually happens when less invasive treatments have been unsuccessful, or when structural changes of the heart exist—such as enlarged heart chambers or a leaking valve.

The MAZE procedure is the gold standard of open heart surgery for atrial fibrillation. In the MAZE procedure, surgeons use tiny incisions in your heart to create a maze-like pattern of scars in the atria, and these scars block the transmission of erratic electrical signals. Some patients may be able to have a minimally invasive MAZE procedure that does not involve opening the breast bone.

Catheter-based Ablation Procedures

Ablation is a minimally invasive surgical procedure that destroys the small areas of tissue in your heart that cause atrial fibrillation. The specialists at the UPMC Center for Atrial Fibrillation are experts at ablation techniques and have authored book chapters and research publications on the subject.

Left Atrial Appendage Closure for Stroke Prevention

Stroke prevention is a key part of atrial fibrillation treatment. Many people manage their stroke risk with blood thinner medicines, but patients who cannot take blood thinners may be candidates for permanent closure of the left atrial appendage (LAA), the part of the heart most often linked to blood clots in AFib patients.

UPMC is the first center in western Pennsylvania to offer the Watchman™ Left Atrial Appendage Closure Device, a parachute-shaped implanted device that permanently closes the LAA. UPMC's experts also use the LARIAT® Suture Delivery Device, a lasso-like device that uses sutures to permanently close the LAA.

UPMC CENTER FOR ATRIAL FIBRILLATION

CHA₂DS₂-VASc and Your Risk of Stroke

Risk Factors	Points	Score
C: Congestive Heart Failure	1	
H: Hypertension	1	
A: Age \geq 75 years	2	
D: Diabetes Mellitus	1	
S: Prior stroke/TIA/Thromboembolism	2	
V: Vascular Disease	1	
A: Age 65-74 years	1	
Sc: Sex Category (Female)	1	
	Your Total	

0 = Low Risk

1 = Moderate Risk

2 or greater = High Risk

Anticoagulation Recommendation _____

Catheter-based Ablation Procedures: Pulmonary Vein Isolation

What is a pulmonary vein isolation?

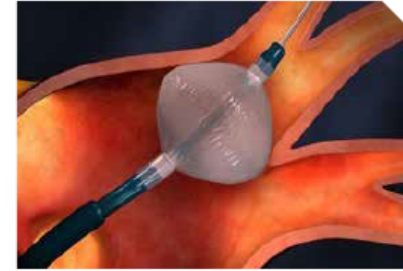
The most common triggers for atrial fibrillation occur around the pulmonary veins, blood vessels that carry oxygenated blood from the lungs to the left atrium. Most patients have four pulmonary veins although individual anatomy may vary. During an ablation for atrial fibrillation, scar tissue is created around the pulmonary veins using either freezing (cryoballoon) or burning (radiofrequency) to prevent abnormal electrical impulses from travelling to the rest of the heart. Although the pulmonary veins are the most common sites for atrial fibrillation, patients who have had prior cardiac surgery or longstanding atrial fibrillation may have triggers arising from other areas within the left atrium. The procedure is between two and six hours in duration, depending on the extent of ablation performed and the technique used. The success rate can vary and is impacted by different factors, such as the size of the left atrium. A large left atrium can decrease the success rate. Patients who go in and out of atrial fibrillation (paroxysmal) have a higher success rate at 70 to 80 percent whereas those who stay in atrial fibrillation (persistent) for an extended period have a success rate of approximately 60 to 70 percent.

Before the procedure, your doctor may order the following routine testing:

- Lab work
- Chest CT angiogram: used to assess pulmonary vein anatomy
- Transesophageal echocardiogram (TEE): ensure the absence of blood clots within the heart

Procedure

The pulmonary vein isolation procedure is a minimally invasive procedure performed under general anesthesia and requires an overnight stay in the hospital. A large vein in the right groin is accessed for the catheter, although sometimes the left groin may be used. Catheters used to study the electrical system of the heart, as well as ablation catheters, are guided to the heart via x-ray. The catheters cross a thin wall between the atrium to access the left atrium and pulmonary veins. A small amount of intravenous contrast is used during an ablation using cryoballoon. If you have an allergy to contrast, you will be premedicated to prevent an allergic reaction. The tissue around each pulmonary vein is treated to destroy the electrical impulses from atrial fibrillation. After the procedure, you need to remain flat and keep your leg straight for at least four to six hours. Your blood thinners will resume the evening of the procedure.



Procedural Risk

As with any procedure, there are a few risks associated with pulmonary vein isolation. There is a risk for bleeding or infection at the groin site, as well as a 3 to 5 percent risk associated with anesthesia, including respiratory complications or gastrointestinal discomfort. There is also a small, 1 to 2 percent risk of serious complication, including stroke, damage to the blood vessels, or damage to the heart. A rare, but serious risk of damage to the esophagus could occur during this procedure. The temperature of the esophagus is monitored continuously during this procedure.

Post-Procedure

Post-procedure, you may experience mild chest discomfort or discomfort associated with taking a deep breath. This occurs secondary to inflammation. It is not uncommon to experience an episode of atrial fibrillation for the first three months after the procedure, as the ablation causes short-term inflammation. Antiarrhythmic medications are generally continued for a short time after your procedure. Anti-reflux medications are commonly used for one month post-ablation to prevent a rare, but serious, complication that can occur within the esophagus. It is important to continue your anticoagulation without interruption for at least three months post-ablation. You should avoid lifting more than 5-10 pounds or performing vigorous activity for one week.

Office Follow up

A follow up visit will be scheduled with your physician or advanced practice provider in two to three months. If you are experiencing shortness of breath, moderate to severe chest discomfort, or lightheadedness, please call the doctor immediately or present to the local emergency department.

LEFT ATRIAL APPENDAGE CLOSURE

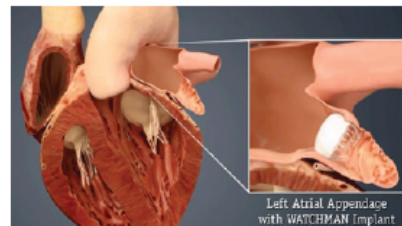
What is Left Atrial Appendage Closure?

One of the major concerns associated with atrial fibrillation is the increased risk of stroke. During atrial fibrillation, the top chambers of the heart (atria) beat rapidly, ineffectively pumping the blood to the bottom chambers (ventricles). As a result, blood pools and clots can form in the left atrial appendage, a small pouch that sits within the left atrium. These clots can dislodge and travel to the brain, causing a stroke.

Risk factors for stroke in patients with atrial fibrillation include:

- Age \geq 65
- Female sex
- Heart failure
- High blood pressure
- Diabetes mellitus
- Prior stroke/TIA
- Heart disease

Blood thinners are commonly prescribed to reduce this risk; however, some patients are unable to tolerate these medications due to an increased risk of bleeding or falls. Left atrial appendage closure using the WATCHMAN™ device is an alternative to blood thinner that has been shown to decrease the risk of stroke attributed to atrial fibrillation. The WATCHMAN™ device is a parachute-shaped device inserted during a procedure that prevents blood flow to the left atrial appendage.



Before the procedure, your doctor may order the following routine testing:

- Lab work
- Transesophageal echocardiogram (TEE): confirms the absence of blood clots within the heart and measures the size of the left atrial appendage.*
- Chest CT angiogram: used occasionally to assess the anatomy of the left atrial appendage

Procedure

Left atrial appendage closure is a minimally invasive procedure, performed under general anesthesia, and requires an overnight stay in the hospital. During the procedure, a large vein is accessed, typically in the right groin, although occasionally the left may be used, and a catheter is inserted. The catheter is guided via X-ray as it makes its way to the thin wall between the atrium to access the left atrium. A small amount of intravenous contrast is used and patients who have an allergy to this contrast are premedicated to prevent an allergic reaction. The procedure takes approximately two hours and patients are advised to remain flat and keep their leg straight for four to six hours following. The next day, a chest X-ray and transthoracic echocardiogram are performed.

* In approximately 5 percent of patients, the WATCHMAN™ device is unable to be placed due to left atrial appendage anatomy.