A Patient’s Guide to AFib Treatment
Atrial Fibrillation

Atrial fibrillation (also known as AF or AFib) is the most common abnormal heart rhythm and increases the risk for heart disease and stroke. An estimated three million Americans have been diagnosed with atrial fibrillation.\(^1\)

In a normal heart, the four chambers of the heart beat in a steady, rhythmic pattern. Atrial fibrillation causes the upper chambers of the heart (atria) to quiver or twitch rapidly (fibrillate) in an irregular, disorganized rhythm. The atria may beat as often as 500 times per minute – five times faster than normal.

When AFib occurs, instead of one electrical impulse moving through the heart, many impulses begin in the atria and have difficulty making their way through the AV node. This happens as a result of the structure of the heart and its electrical system changing over time as we age. Often, as the electrical pathway changes during the aging process, one or more “triggers” may develop, causing the development of electrical circuits which send extra impulses to the heart muscle at a faster than normal rate. These extra electrical signals cause the heart to beat in a fast, disorganized and inefficient way.

Risk Factors

According to the Heart Rhythm Society, risk factors for atrial fibrillation can include:

- Age: older than 60 years of age
- Coronary artery disease
- Prior heart attacks
- Congestive heart failure
- Prior open-heart surgery
- Untreated atrial flutter (another type of abnormal heart rhythm)
- Chronic lung disease
- Excessive alcohol or drug use
- Serious illness or infection
- Structural heart disease (valve or birth defects)
- Obesity (a risk factor for heart disease, which increases your chances of developing heart rhythm problems)
- Smoking
- Thyroid disease
- Sleep apnea
- High blood pressure
- Diabetes

Patients with atrial fibrillation often have **high rates of other serious health conditions**, including:

- High blood pressure (66%)
- Heart failure (26%)
- High cholesterol (42%)
- Coronary artery disease (66%)

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2 Source: Hendriks et al., European Heart Journal, 2012; 10:1093; Cardiovascular Roundtable research and analysis.
Possible Complications

While atrial fibrillation itself is usually not life threatening, if left untreated, the effects of AFib can be potentially life threatening. AFib makes it more difficult for the heart to pump blood efficiently. With the blood moving more slowly throughout the body, it increases the chances for a blood clot to form. If a clot is pumped out of the heart and travels to the brain, it could cause a stroke. This is the cause of about 15 out of every 100 strokes, according to the Heart Rhythm Society.

Without treatment, AFib can also make the heart beat too fast for long periods of time, causing the heart muscle to become weak. This condition is called cardiomyopathy and can lead to heart failure and result in long-term disability and/or death.

To prevent these complications, treatment for atrial fibrillation usually includes medication to reduce the chance of a blood clot forming (anticoagulant medications) and medication to regulate the heartbeat so it doesn’t beat too fast or erratically (antiarrhythmic medications).
Diagnosing Atrial Fibrillation

Several tests can be performed to help your doctor diagnose whether you have atrial fibrillation or not and what type of atrial fibrillation you have. Some of the tests your doctor may order for you include:

- **Electrocardiogram (ECG)** – A test where sticky tabs (electrodes) are attached to your chest, arms, and legs. The electrodes measure the rate and rhythm of your heart and provide your doctor with a “snapshot” of your heart’s electrical activity.

- **Holter monitor** – A portable ECG which can be worn for several days. Electrodes are attached to your chest and connected to a small recording machine which is worn around your waist. It records the electrical activity of your heart and provides your doctor with a picture of your heart’s electrical activity.

- **Mobile cardiac monitoring** – A mobile cardiac monitor is worn for longer periods up to 30 days. It records your heart’s activity when in normal and abnormal rhythm. The results are automatically sent to your doctor, who uses this information to evaluate your symptoms to determine the cause of the abnormal rhythm.

- **Event monitor** – A portable ECG used for patients who have an irregular heart rhythm occasionally. You carry the monitor with you at all times and attach it to your chest only when you notice symptoms. It records your heart rhythm during the time you are experiencing symptoms.

- **Transthoracic echocardiogram (TTE)** – A non-invasive (no incisions or cuts) echocardiogram that provides your doctor with a picture of your beating heart. An imaging device (transducer) emits and reads sound waves and records the waves bouncing off the walls and valves in your heart. A computer takes this information and creates a video of your heart. The video can show your doctor the size of your heart, how efficiently it is pumping blood and how the heart valves are functioning.

- **Transesophageal echocardiogram (TEE)** – This test is often performed when your doctor needs to see what is happening in the back of your heart. To get a clear picture, a probe is inserted into your mouth and down the tube that connects your mouth to your stomach (esophagus). The esophagus passes right behind your heart and provides your doctor with a good view of what is happening in the back of your heart. Once the probe is in place, it works the same way as does a TTE, with more precise imaging to determine if blood clots have formed within the heart.

- **Cardiac computerized tomography (CT) or magnetic resonance imaging (MRI)** – Cardiac CT uses an X-ray machine connected to a computer to take clear, detailed three-dimensional (3-D) pictures of your heart and chest. A cardiac MRI uses radio waves, magnets and a computer to create detailed pictures and video of your heart as it is beating. Cardiac CT and MRI are often used to delineate left atrial and pulmonary venous anatomy prior to ablation of atrial fibrillation.
Treatment Options

Initial treatment for many patients includes medication to prevent strokes and reduce symptoms. Treatment also may include an electrophysiology study and a type of heart catheter ablation known as a Pulmonary Vein Isolation (PVI) procedure.

Electrophysiology studies help physicians pinpoint the location and type of heart rhythm disturbance present by showing how electrical impulses move through the heart.

PVI is a cardiac ablation where catheters are inserted through the veins in the groin and are advanced to the heart in order to electrically isolate the pulmonary veins from the rest of the heart. Cardiac ablation is a procedure used to correct heart rhythm disorders where a specialized catheter (long, flexible plastic tubes) containing a wire and electrode is inserted into a vein in the groin and is carefully threaded through blood vessels and into the heart. Once in the heart, it emits heat energy to scar or destroy the tissue responsible for causing the abnormal heart rhythm. Ablation is used to treat many heart rhythm disturbances, including atrial fibrillation. About 95 percent of AFib is triggered by cells and muscle fibers found in the pulmonary veins. Isolating the pulmonary veins can greatly reduce the electrical “triggers” responsible for causing AFib and can eliminate or significantly reduce the symptoms associated with this condition.

Summa electrophysiologists perform the PVI procedure using advanced technologies, including:

- 3-D electroanatomic mapping systems to pinpoint the areas of the heart causing AFib
- Intracardiac echocardiography
- High resolution fluoroscopy
- Circumferential ablation strategies using radiofrequency (heat) energy sources

Summa also offers the modified Maze procedure, an open heart surgical procedure, for patients with valvular or ischemic heart disease and/or longstanding persistent atrial fibrillation.

Our specialists offer several specialized antiarrhythmic medications and rate control strategies, including AV node ablation and pacemaker insertion.

A pacemaker is a small, battery-powered device used to regulate the heart beat in cases where a patient’s heart beats too slowly (bradycardia). A pacemaker weighs only an ounce and is about the size of a large wrist watch. Pacemakers have two parts: the leads and a pulse generator. The leads are wires that are carefully threaded through the veins into the heart and touch the heart muscle. The pulse generator is implanted into the body just below the collarbone. When the pacemaker senses that the heart is beating too slowly, it delivers an electrical impulse to the heart muscle, causing it to contract – and the heart to beat faster.

Getting a pacemaker does not require open-heart surgery because the device is implanted in a small pocket made by the physician in the skin under the collarbone. Once implanted, routine monitoring and follow-up care are necessary to ensure the device continues to function properly.
Summa Cardiovascular Institute (SCI) offers an Atrial Fibrillation Program designed to improve patient outcomes by partnering with patients’ physicians to offer additional treatment options and support to patients with atrial fibrillation. SCI’s Atrial Fibrillation Program is designed to:

- Improve patients’ quality of life
- Improve patient adherence to treatment regimens, including medications, diet, exercise and smoking cessation recommendations
- Reduce ER visits, hospitalizations and/or readmissions
- Reduce risk of adverse events and complications associated with complex medication regimens
- Encourage patients to become active partners with physicians in their treatment

SCI’s Atrial Fibrillation Program team meets the program’s treatment goals by providing:

- Advanced technology to accurately diagnose and treat atrial fibrillation, including:
  - Two electrophysiology labs equipped with an advanced 3-D anatomical mapping system
  - Intracardiac echocardiography which provides high resolution imaging of the heart
- Providers with the training and experience to effectively treat AFib using a team-based, multidisciplinary approach, including:
  - Board-certified radiology technicians
  - Fellowship-trained heart rhythm specialists (electrophysiologists/cardiologists with board certification in cardiac electrophysiology)
- A Device Clinic managed by nurse practitioners with specialized training in heart rhythm conditions
- Heart rhythm specialists for device therapy options (pacemakers and defibrillators)
- Support from a dietitian and pharmacist in making changes to diet and managing medications
- Screening for other conditions which often accompany atrial fibrillation, including:
  - Thyroid disease
  - High blood pressure
  - Sleep apnea
  - Obesity
  - Diabetes
  - Other cardiac conditions
- Close collaboration with your primary care physician
- Access to clinical research trials, behavioral therapy, cardiovascular rehabilitation services

Many patients have risk factors for atrial fibrillation (obesity, sleep apnea, high blood pressure, smoking, diabetes) which should be addressed along with the atrial fibrillation by consultations with other care providers, including bariatrics, neurology, cardiology, behavioral health (smoking cessation/diet), endocrinology, nutrition and cardiac rehabilitation. These consultation recommendations will be shared with your doctor as part of your treatment plan.

If another condition requiring treatment is discovered, your doctor will be notified. Follow-up care may be provided by Summa, your doctor or another provider, depending on the condition and the preferences expressed by you and your family doctor.
What To Expect During Your Visits

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<thead>
<tr>
<th>Treatment Milestone</th>
<th>Visit Details</th>
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<tr>
<td>First visit before pulmonary vein isolation (PVI) is performed</td>
<td>A nurse practitioner or physician will take your vital signs; review your medical history and medication list, discuss your heart rhythm disturbance history and note any therapies you have already tried. A physician will then meet with you to explain all of your treatment options, including: medication, cardiac ablation and/or surgery. He/she will also answer any questions you or your family may have about the proposed procedure and/or treatment plan.</td>
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<td>10-14 days following PVI</td>
<td>A follow-up visit with a nurse practitioner is scheduled to review medications and discuss any telephone monitoring questions or issues.</td>
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<td>3 months following PVI</td>
<td>A follow-up visit with a nurse practitioner and/or a physician to determine whether you may discontinue your heart rhythm medications and/or anticoagulants. You will also be asked to schedule weekly transtelephonic monitoring (TTM).</td>
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<td>6 months following PVI</td>
<td>A follow-up appointment with a physician to review your medical status. The visit also includes review of seven-day home telemonitoring (as needed).</td>
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<tr>
<td>12 months following PVI</td>
<td>Follow-up appointment with physician and review of second seven-day home telemetry data (as needed).</td>
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<td>13+ months following PVI</td>
<td>At 12 months post-procedure, a standard annual check-up with a program physician is required to ensure no heart rhythm issues arise in the future.</td>
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How Information Will Be Shared With Your Doctor

Our team of healthcare professionals understands that a key element of teamwork is effective communication. That’s why they are committed to providing timely updates to your doctor at scheduled intervals throughout your course of treatment.

Updates can include information about:
• Your current medical status
• The need for any medication or treatment plan adjustments
• Labs/diagnostic test/screening results
• Treatment recommendations
• Hospital admissions and discharges

After you are enrolled in the SCI Atrial Fibrillation Program, information about your treatment and medical status will be shared periodically with your doctor. If another condition requiring treatment is discovered while you are enrolled in the program, your doctor will be notified. Follow-up care may be provided by Summa Health System, your doctor or another care provider, depending on the condition and the preferences expressed by you and your doctor.
For More Information

We hope you and your family members find the information in the A Patient’s Guide to AFib Treatment helpful.

If you have any questions, please call the SCI Atrial Fibrillation Program at (330) 376-7000. More information also is available at summahealth.org/afib.

SCI Electrophysiologists

In addition to Dr. Taigen, Summa Cardiovascular Institute has three board-certified electrophysiologists who treat a variety of heart rhythm conditions.

Otto Costantini, M.D.
Medical School:
New York University School of Medicine, New York, NY
Residency:
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Fellowship:
University Hospitals, Case Western Reserve University, Cleveland, OH

Michael A. Pelini, M.D.
Medical School:
Northeast Ohio Medical University, Rootstown, OH
Residency:
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Fellowship:
National Naval Medical Center University of Maryland Medical System, Bethesda, MD

Jason K. Smith, M.D.
Medical School:
The Ohio State University College of Medicine, Columbus, OH
Residency:
University Hospitals, Case Western Reserve University, Cleveland, OH
Fellowship:
University Hospitals, Case Western Reserve University, Cleveland, OH

SCI AFib Program Contact Information

Hours of Operation:
8 a.m. – 5 p.m., Monday thru Friday

Locations:
Procedures: Summa Akron City Hospital, 525 E. Market Street
Office Visits: Summa Akron City Hospital, Hamlin Pavilion
95 Arch Street, Suite 350

Physician Referral/Order Lines:
(330) 996-8881 (phone)
(330) 996-8800 (fax)
*Physician referral not required for program participation.

Appointment and Information Line:
(800) 237-8662
*Self-referrals are accepted, but patients may be seen instead by another program physician, depending on availability.

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University of Connecticut, Farmington, CT
Residency:
University of Virginia Health System, Charlottesville, VA
Fellowship:
Cleveland Clinic, Cleveland, OH