

WHAT IS ATRIAL FIBRILLATION?

WHAT ARE THE SYMPTOMS OF ATRIAL FIBRILLATION?

Atrial fibrillation can be symptom-free or can cause uncomfortable symptoms.

- Do you have shortness of breath when climbing steps or exerting yourself?
- Do you have frequent palpitations?
- Has your ability to exercise declined?
- Do you experience chest pain?
- Have you had episodes of dizziness or fainting?

WHAT ARE THE RISK FACTORS?

Some people develop atrial fibrillation without any apparent cause. For others, a wide range of risk factors may contribute to the disease.

Risk factors include:

- Diabetes
- High blood pressure
- Coronary heart disease
- Mitral valve disease
- Thyroid disease
- Chronic lung disease

- Recent open-heart surgery
- Age is a risk factor; atrial fibrillation is most common in people over 60.



Certain lifestyle choices can bring about or exacerbate the condition. For instance, excessive alcohol consumption or using stimulating drugs such as caffeine, decongestants and cocaine can contribute to atrial fibrillation.

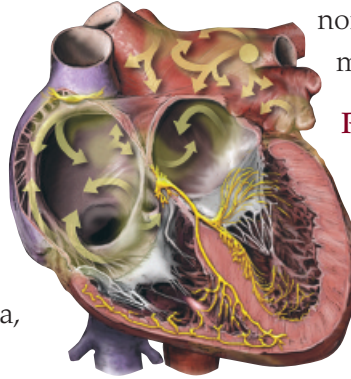
In atrial fibrillation, the heartbeat is irregular and rapid, sometimes beating as often as 300 times a minute in the upper chambers (atria) and 100-150 times a minute in the lower chambers (ventricles), about four times faster than normal. Blood does not move through the heart in a normal way, which may increase the risk of clots and stroke. If treated appropriately, atrial fibrillation seldom causes serious or life-threatening problems. Effective treatment for atrial fibrillation returns the heart to a normal rhythm or controls the heart rate, and prevents blood clots and strokes.

DIFFERENT PATTERNS OF ATRIAL FIBRILLATION

Three patterns of atrial fibrillation are recognized:

Paroxysmal atrial fibrillation: these abnormal episodes last for a short time and then end without any intervention. If the symptoms are bothersome, they can be reduced with treatment.

Persistent atrial fibrillation: patients experience lengthy periods of arrhythmia,



but their irregular rhythm can be converted to a normal rhythm with treatment such as medication or an electrical shock.

Permanent or **chronic** atrial fibrillation: the patient constantly experiences arrhythmia and remains in atrial fibrillation.

HOW IS ATRIAL FIBRILLATION DIAGNOSED?

A careful examination and thorough review of medical history by a physician are crucial to diagnosing atrial fibrillation. An **electrocardiogram** (ECG or EKG) confirms the diagnosis. During an ECG, sensors are attached to the chest, arms and legs to detect and record the electrical activity of the heart.

Sometimes, a doctor will need to view the heart's rhythm over time. In these cases, a **Holter monitor** can provide important information. Holter monitoring operates on the same principal as an ECG, but instead of patients being connected to

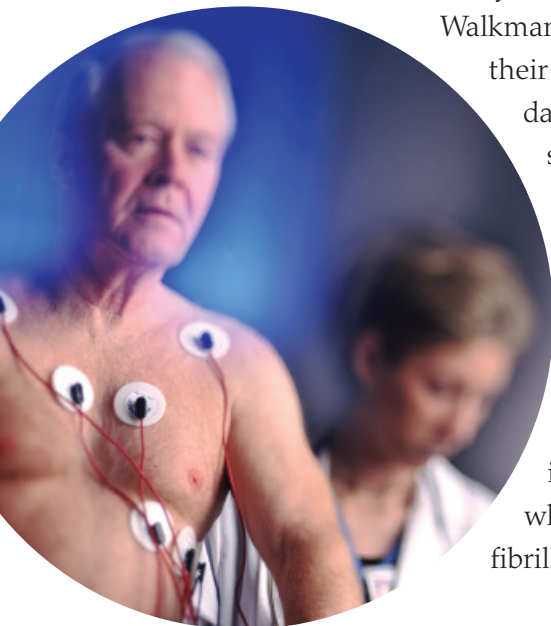
a stationary machine, they wear a Walkman®-size recorder on their chest for one-to-two days to obtain a longer sampling of heart rhythm. After the recorder is removed, the tape is analyzed.

An **event recorder** is useful in diagnosing people who experience atrial fibrillation infrequently or

for short periods. These patients carry a pager-size recording device that they trigger when they feel symptoms. The device transmits the recording by telephone to an interpreting center.

Another useful test, an **echocardiogram**, creates a videotape of the heart beating. The video shows the size and function of the left atrium and left ventricle. Another test that may be used is a **transesophageal echocardiograph**. This special echo test views the heart via a small scope placed in the esophagus, which runs behind the heart and gives very clear views of the heart chambers and valves. It is especially useful for identifying blood clots in the heart.

An **electrophysiology study (EPS)** is performed under sterile conditions and in the safety of a hospital. In the procedure, thin tubes, called electrode catheters, are introduced via veins in the groin or neck area and guided to the heart. The electrodes on these catheters record the heart's electrical activity. Sometimes doctors will deliver electrical impulses to intentionally provoke a fast heart rate. This allows them to analyze the pattern of a particular rhythm. An EPS can show symptomatic and potentially life-threatening slow and fast heart rhythms.

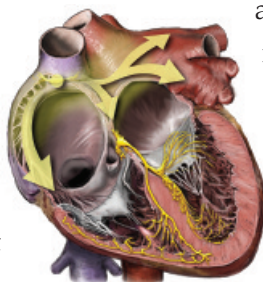


TREATMENT

Three main goals of treatment are:

To restore the heart's normal rhythm and in some cases cure the condition—

If atrial fibrillation is not treated, it can eventually weaken the heart muscle and cause permanent damage. Restoring the heart's regular rhythm can relieve the symptoms of atrial fibrillation and prevent dangerous blood clots from forming.



To slow the heart rate and relieve some or all symptoms without stopping the irregular heart rhythm—

Controlling rapid heart rate allows the

heart to pump oxygen-rich blood efficiently, relieves some or all symptoms of atrial fibrillation, and protects against a weakening of the heart muscle. Controlling rapid heart rates, however, does not address the underlying arrhythmia.

To prevent clots from forming, thus avoiding strokes—

For many patients with atrial fibrillation, anticoagulant medications are used in conjunction with other treatments.

These medications are an important way of preventing clots and reducing the risk of stroke.

WHAT ARE THE TREATMENT OPTIONS?

Today a number of treatment options are available, including:

Medication—Medication that controls the heart rate includes beta blockers and calcium channel blockers. Other medication focuses on returning the pattern of heartbeats—the heart's rhythm—to normal. Medication may reduce the frequency of—or even eliminate—episodes of atrial fibrillation.



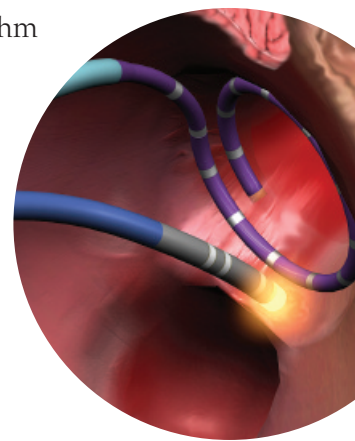
Pacemaker Therapy—While medication is usually the preferred treatment option, sometimes implanted pacemaker devices help. They monitor the heart rate and send stimulating electrical impulses to the heart if the rate slows too much. Patients with paroxysmal atrial fibrillation (where the arrhythmia comes and goes without treatment) often see a reduction in atrial fibrillation after a pacemaker is implanted if their normal heart rhythm is slow.

Electrical Cardioversion—

When medication does not restore a normal heart rhythm, electrical stimulation, known as electrical cardioversion, is an option. This is a brief procedure where an electric shock is delivered to the heart to convert an abnormal rhythm back to a normal rhythm.



Catheter Ablation—If medication is not enough, a procedure called ablation may be an option. In ablation, energy either destroys the troublesome areas that trigger abnormal electrical signals or creates a roadblock that stops such signals from traveling through the heart.



Depending upon each patient's specific case, doctors may choose from a range of ablation techniques. Some employ catheter tubes, others are surgical procedures.

IMPORTANCE OF TREATMENT

At one time, atrial fibrillation was considered harmless. Although it isn't life threatening, it is associated with blood clots and a five-to-seven-fold increase in stroke. It is also linked to chronic fatigue and heart failure, a condition in which the heart is unable to pump enough blood to the other organs and fluid accumulates in the body.

The good news is that these risks can be reduced drastically if properly monitored and treated. The key is for patients and doctors to work closely together to determine and implement the best course of care in each patient's situation.



To learn more about atrial fibrillation or other heart rhythm disorders and treatments, visit the Heart Rhythm Society's website at:

www.HRSpatients.org

This information is not intended to cover all aspects of any medical condition. It is generalized and is not intended as specific medical advice. Those with questions or who need more information should consult their physician. Heart Rhythm Society is located at 1400 K Street NW, Suite 500, Washington DC 20005. Phone: 202-464-3400 Fax: 202-464-3401 Copyright ©2005 Heart Rhythm Society. All rights reserved. Walkman is a registered trademark of Sony Corporation.

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