

Atrial Fibrillation

Atrial fibrillation (AF) is an abnormal, yet common, heart rhythm. To understand AF, it is helpful to know more about the heart.

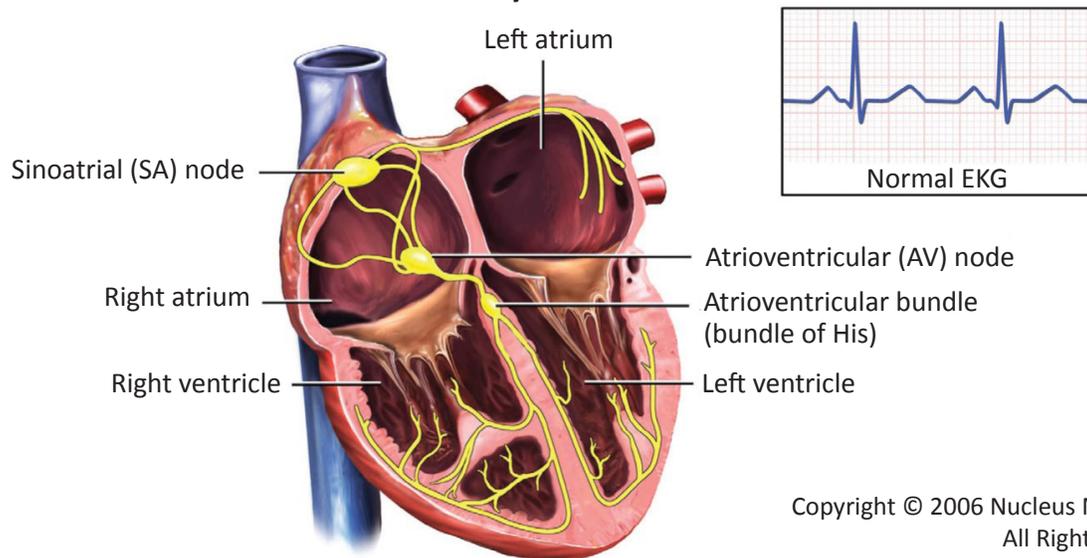
If you have any questions, ask your physician or nurse.

The heart

The heart is a muscular pump that delivers blood to the lungs and all body tissues. It has 4 chambers: 2 upper chambers (the right and the left atrium) and 2 lower chambers (the right and the left ventricle). The right atrium receives blood from the body and pumps it to the right ventricle. The right ventricle then pumps the blood to the lungs, where it receives oxygen. The left atrium receives the oxygen-rich blood from the lungs and sends it to the left ventricle. From the left ventricle, the blood is then returned to the body.

The heart also needs a “spark plug” or electrical signal to pump. This signal starts in the sinoatrial (SA) node in the right atrium. It travels through the upper chambers (atria) to the lower chambers (ventricles), creating an electrical circuit that makes the heart pump blood to all parts of the body (Figure 1). Normally, this cycle is repeated 60 to 100 times per minute in a regular rate and rhythm. It is the most efficient heart rhythm. An example of this is shown in the Normal EKG seen in Figure 1.

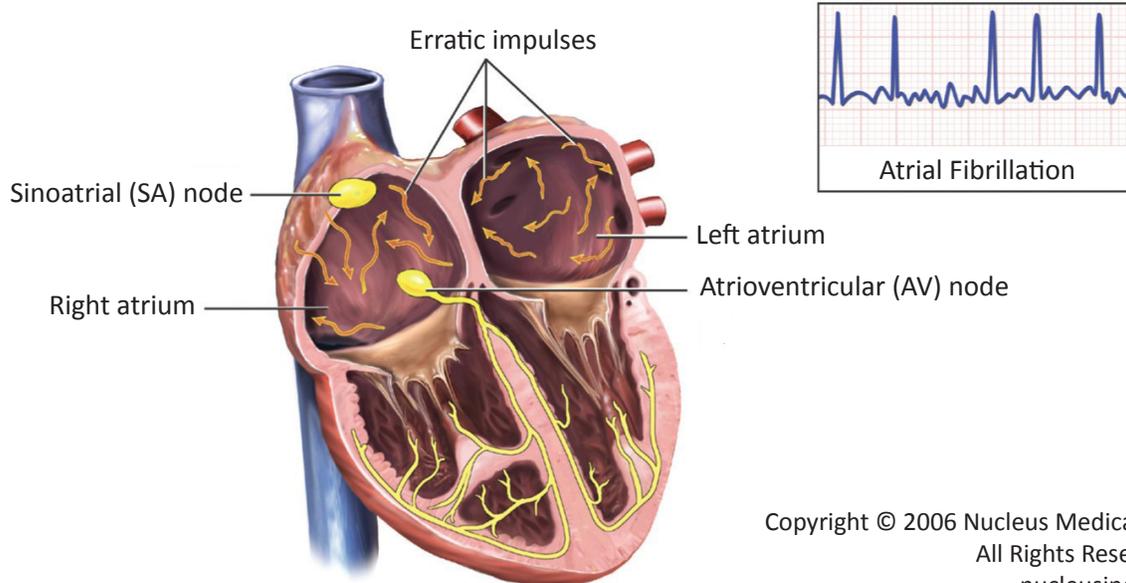
Figure 1. Normal Heart Electrical Pathway



Understanding atrial fibrillation (AF)

AF is a fast rhythm that begins in the upper chambers of the heart. The normal electrical signals become erratic (Figure 2).

Figure 2. Erratic Heart Pathway in AF



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These impulses start in different parts of the heart and move along different paths. This changes the way the heart pumps. The result is that there is less blood pumped out from the heart to the body.

When the heart does not pump well, blood clots may form inside the heart. Often, these occur in the left atrial appendage, a small pocket of tissue. If the blood clot breaks free, it can travel to the brain and cause a stroke.

AF is common and may cause:

- An increased risk of stroke and heart failure
- A need to take blood thinning medications
- A rapid, irregular heartbeat (sometimes over 200 times per minute)

Causes of AF

AF may be caused by many things, including:

- Unhealthy lifestyle (alcohol use, obesity)
- Lung disease
- Recent heart surgery
- High blood pressure (hypertension)
- Slow heartbeat due to SA node problems
- Heart problems, such as valve disease or coronary artery disease
- Sleep apnea
- Other diseases, such as thyroid problems
- Family history of AF

Symptoms of AF

AF may lead to:

- Palpitations (racing heart)
- Shortness of breath
- Tiring easily with activity
- Swelling in the ankles and feet
- Feeling dizzy or faint

Sometimes there are no symptoms at all.

These symptoms also may be a sign of other problems. To see if AF is present, it is important to record the heart rhythm when symptoms occur. That is why your physician may order a portable heart monitor for you to wear at home.

You may need to have tests to check for heart disease or problems that cause AF. These may include an echocardiogram, nuclear imaging tests, heart angiogram, exercise stress test and electrophysiology studies. Your physician or nurse can give you more details about these tests.

Treatment for AF

The first step is to control heart rate, and prevent blood clots and stroke. This is done with medicines to:

Control heart rate

- Beta blockers
- Calcium channel blockers
- Digoxin

Prevent stroke

- Xarelto® (rivaroxaban)
- Pradaxa® (dabigatran)
- Eliquis® (apixaban)
- Savaysa® (edoxaban)
- Coumadin® (warfarin)

Treatments to restore and maintain the normal heart rhythm may include:

- Lifestyle changes, as needed:
 - Weight loss
 - Exercise
 - Diagnosis and treatment of sleep apnea
 - Abstaining from alcohol
- Anti-arrhythmic medicines
- Cardioversion
- Catheter ablation
- Surgical ablation and AF surgery (Maze procedure)

Treatment to reduce the risk of stroke may include a left atrial appendage occlusion. A small sac in the heart is closed off to prevent blood clots from forming in it.

Your physician will discuss the options that are best for you, based on your history and test results.

Detailed information about the tests and treatments for AF are available from your physician and nurse and include:

Brochures

- Cardioversion
- Cardiac Surgery: AF (AF) Surgery
- Radio Frequency (RF) Ablation for AF

Videos

Videos are available in select areas to help you learn more about AF and how it can be treated. Ask your nurse if these are accessible to you.

Northwestern Medicine – Health Information Resources

For more information, contact Northwestern Memorial Hospital's Alberto Culver Health Learning Center (HLC) at hlc@nm.org, or by calling 312.926.5465. Health information professionals can help you find the information you need and provide you with personal support at no charge.

For more information about Northwestern Medicine, please visit our website at nm.org.

Para asistencia en español, por favor llamar al Departamento de Representantes para Pacientes al 312.926.3112.

The entities that come together as Northwestern Medicine are committed to representing the communities we serve, fostering a culture of inclusion, delivering culturally competent care, providing access to treatment and programs in a nondiscriminatory manner and eliminating healthcare disparities. For questions, please call either Northwestern Memorial Hospital's Patient Representatives Department at 312.926.3112, TDD/TTY 312.926.6363 or the Northwestern Medical Group Patient Representatives Department at 312.695.1100, TDD/TTY 312.926.6363.

Developed by: NMH Cardiac Nursing and Bluhm Cardiovascular Institute