

Atrial Fibrillation

by Debra Wood, RN

En Español (Spanish Version)

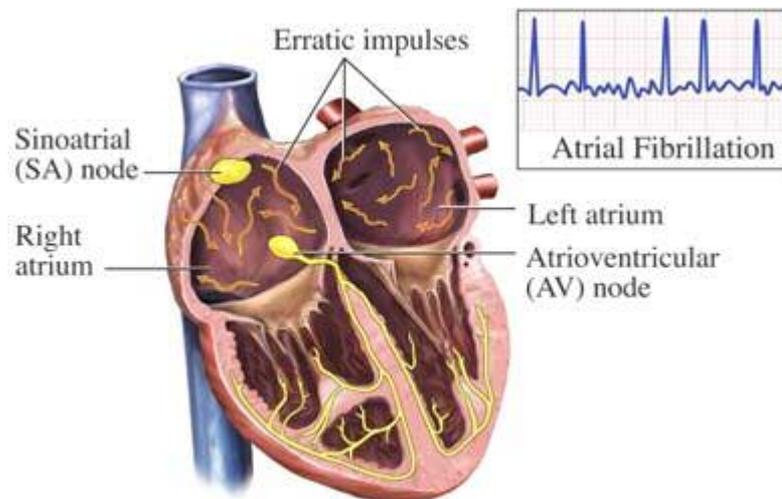
Understanding Atrial Fibrillation

Definition

Atrial fibrillation is an abnormal heart rhythm. The heart's electrical system normally sends regularly spaced, predictable signals, telling the heart muscle to contract, or beat.

The heart has two upper chambers, called atria, and two lower chambers, called ventricles. Each signal starts in the atria and travels to the rest of the heart. In atrial fibrillation, the electrical signals from the atria are fast and irregular. The atria quiver, rather than contract. Some signals do not reach the ventricles and the ventricles continue pumping, usually irregularly and sometimes rapidly. This uncoordinated rhythm can reduce the heart's efficiency at pumping blood out to the body. Blood left in the heart chambers can form clots. These clots may sometimes break away, travel to the brain, and cause a stroke.

Atrial Fibrillation



© 2011 Nucleus Medical Media, Inc.

Causes

In most cases, atrial fibrillation is due to an existing heart condition. But atrial fibrillation can occur in people with no structural heart problems. A thyroid disorder or other condition may cause the abnormal rhythm. In some cases, the cause is unknown.

Risk Factors

Risk factors include:

- Cardiovascular diseases:
 - High blood pressure
 - Coronary artery disease
 - Congestive heart failure
 - Heart attack
 - Heart valve disease
 - Endocarditis (infection of a heart valve)
 - Cardiomyopathy (disease of the heart muscle)
 - Congenital heart disease
 - Prior episode of atrial fibrillation
- Lung diseases:
 - Emphysema
 - Asthma
 - Blood clots in the lungs
- Age: 55 or older
- Smoking
- Chronic conditions:
 - Overactive thyroid
 - Diabetes
- Excessive alcohol intake
- Use of stimulant drugs, including caffeine
- Sex: male
- Undergoing general anesthesia
- Stress, either emotional or physical
- Family history of atrial fibrillation

Symptoms

Symptoms can vary from mild to severe, depending on your heart function and overall health. Some people may not notice any symptoms.

Symptoms include:

- Irregular or rapid pulse or heart beat
- Racing feeling in the chest
- Palpitations, or a pounding feeling in the chest
- Dizziness, lightheadedness, or fainting
- Sweating
- Pain or pressure in the chest
- Shortness of breath
- Fatigue or weakness
- Exercise intolerance

Diagnosis

The doctor will:

- Ask about your symptoms and medical history
- Perform a physical exam
- Listen to your heart with a stethoscope

Tests may include:

- Electrocardiogram (ECG, EKG) —a test that records the heart's activity by measuring electrical currents through the heart muscle
- 24-hour holter monitoring—wearing a heart monitor that records the heart rhythm for 24-hours
- Echocardiogram —a test that uses high-frequency sound waves (ultrasound) to examine the size, shape, and motion of the heart
- Coronary angiography —x-rays taken after a dye is injected into the coronary arteries
- Chest x-ray —to look for underlying conditions
- Blood tests—to look for underlying conditions

Treatment

The goals of treatment are to:

- Restore a regular rhythm, if possible
- Keep heart rate as close to normal
 - Your doctor will tell you what your target heart rate is. In general, the your resting rate should be between 60-80 beats per minute, and 90-115 beats per minute during moderate exercise.
- Prevent blood clots from forming

If an underlying cause of atrial fibrillation is found, it may be treated. Some patients return to a normal rhythm without treatment.

Treatments include:

Medication

- Drugs to slow the heart rate, such as:
 - Digitalis
 - Verapamil
 - Diltiazem
 - Metoprolol
 - Atenolol
- Drugs to keep the heart in a regular rhythm, such as:
 - Sotalol
 - Propafenone
 - Amiodarone
- Drugs to prevent clot formation, such as warfarin

Cardioversion

Cardioversion is a procedure that uses an electrical current or drugs to help normalize the heart rhythm. If atrial fibrillation has lasted 48 hours or more, you may be given blood thinners before this procedure.

Ablation Therapy

In some cases, an area of the atria that is deemed to be responsible for the atrial fibrillation may be surgically removed or altered (ablated) with various techniques, including cryoablation or radiofrequency ablation, to prevent it from persistently generating the rhythm disturbance.

Maze and Mini-Maze Procedures

The Maze procedure creates a pattern of scar tissue in the upper chambers of the heart. This makes a pathway for electrical impulses to travel through the heart and blocks the pathway for fast or irregular impulses.

The Maze procedure may also be done as minimally invasive surgery (called mini-Maze). It only requires one or

two small incisions in the chest.

Lifestyle Changes

Avoid caffeine and other stimulants because they may trigger another episode. Alcohol may also act as a trigger in some people.

If you are diagnosed with atrial fibrillation, follow your doctor's instructions.

Prevention

If you have risk factors for atrial fibrillation, avoid known triggers, such as alcohol and caffeine. Follow your doctor's advice for controlling heart disease, high blood pressure, and other conditions.

RESOURCES:

American Heart Association
<http://www.americanheart.org/>

Heart Rhythm Society
<http://www.hrsonline.org/>

CANADIAN RESOURCES:

Canadian Cardiovascular Society
http://www.ccs.ca/home/index_e.aspx/

Canadian Family Physician
<http://www.cfp.ca/>

REFERENCES:

American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines. ACC/AHA/ESC 2006 guidelines for the management of patients with atrial fibrillation—executive summary. *Circulation*. 2006;114:700-752.

American Heart Association. AHA medical/scientific statement: management of patients with atrial fibrillation. 1996.

Dambro MR. *Griffith's 5-Minute Clinical Consult*. Philadelphia, PA: Lippincott Williams and Wilkins; 2001.

Duthie EH, Katz PR. *Practice of Geriatrics*. 3rd ed. Philadelphia, PA: WB Saunders Company; 1998.

Fauci AS, Braunwald E, Isselbacher KJ, et al. *Harrison's Principles of Internal Medicine*. 14th ed. New York, NY: The McGraw-Hill Companies; 2000.

Rakel RE and Bope ET. *Conn's Current Therapy 2001*. 53rd ed. Philadelphia, PA: WB Saunders Company; 2001.

12/13/2010 DynaMed's Systematic Literature Surveillance <http://www.ebscohost.com/dynamed/what.php> : Lubitz SA, Yin X, Fontes JD, et al. Association between familial atrial fibrillation and risk of new-onset atrial fibrillation. *JAMA*. 2010;304(20):2263-2269.

