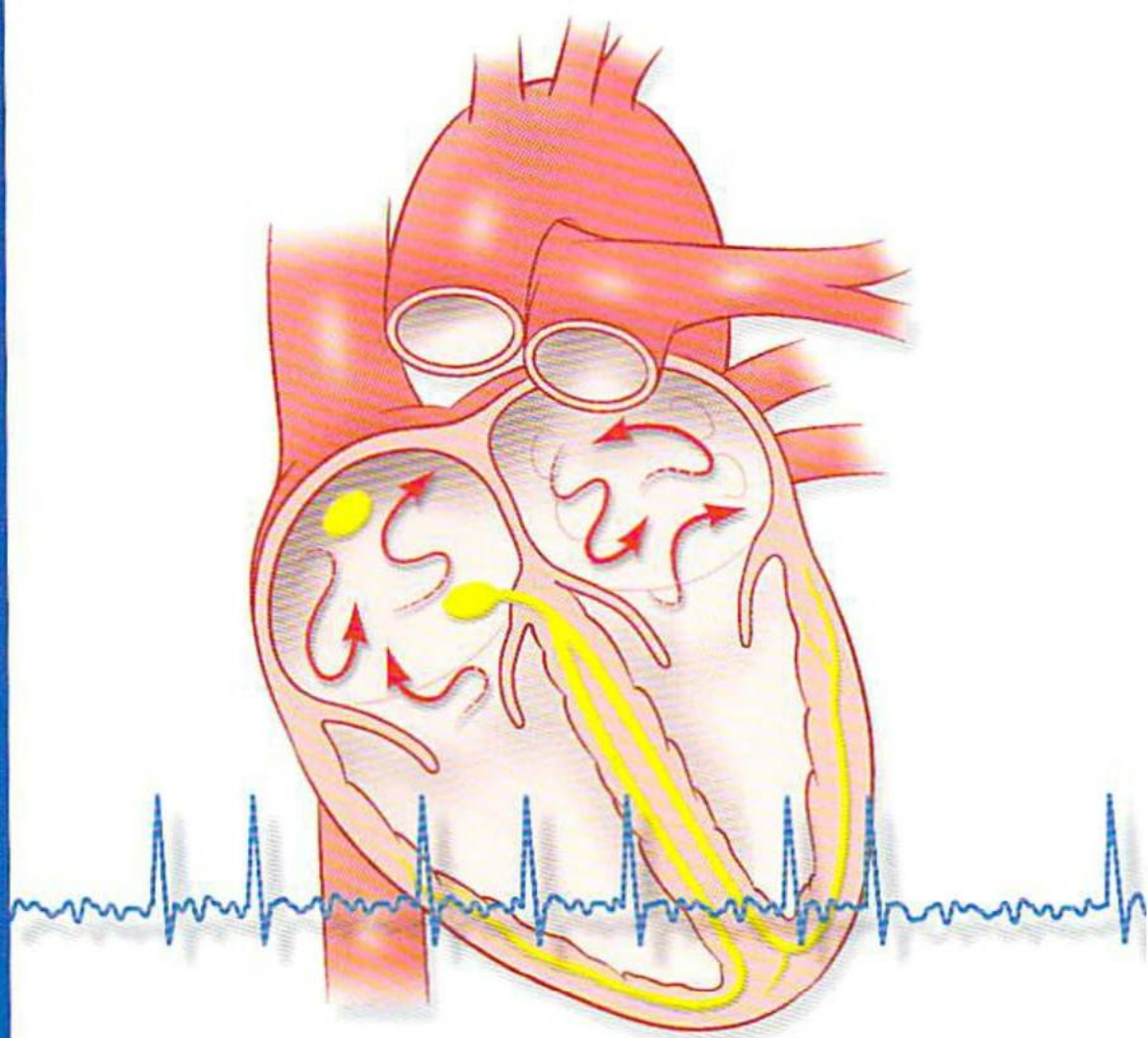



# Atrial Fibrillation



**A Patient's Guide**

*This booklet is not intended to replace professional medical care. Only your doctor can diagnose and treat medical problems.*



Perhaps you have been told by your doctor that you have atrial fibrillation. Now, you probably have questions and concerns about it. This booklet may help answer many of your questions.

### **What Is Atrial Fibrillation?**

Atrial fibrillation is an abnormal heart rhythm, or **arrhythmia**, that starts in the upper chambers of the heart (atria). It causes irregular and usually rapid beating of the heart.

Atrial fibrillation often causes a sensation of rapid and irregular pounding in the chest. Other symptoms may include fatigue, dizziness, shortness of breath, and chest discomfort. Some people, however, do not have any symptoms.

### **Living with Atrial Fibrillation**

Atrial fibrillation is the most common arrhythmia for which people seek medical treatment. Although it can cause annoying symptoms, it is usually not life-threatening. However, it can lead to other health problems, such as stroke.

In most cases, atrial fibrillation can be treated and controlled. Your doctor can explain the various treatment options and help you decide the best way to manage your problem.

With proper care, most people with atrial fibrillation can continue to lead normal, active lives.

---

## How the Heart Works

Before discussing the details of atrial fibrillation, it helps to understand how the heart works.

### The Heart as a Pump

The heart is a hollow organ made of strong muscle that constantly pumps blood throughout the body.

The heart has four chambers: two chambers on the left side and two on the right. The upper chamber on each side, called an **atrium**, receives and collects blood. The lower chamber on each side, called a **ventricle**, pumps blood out of the heart.

The four heart chambers work together to contract (squeeze) and pump blood. As it circulates, blood delivers oxygen and nutrients throughout the body.

### The Heart's Electrical System

The heart has an electrical system that produces tiny electrical impulses. These impulses travel from the upper to the lower chambers and tell the chambers to contract and pump blood.

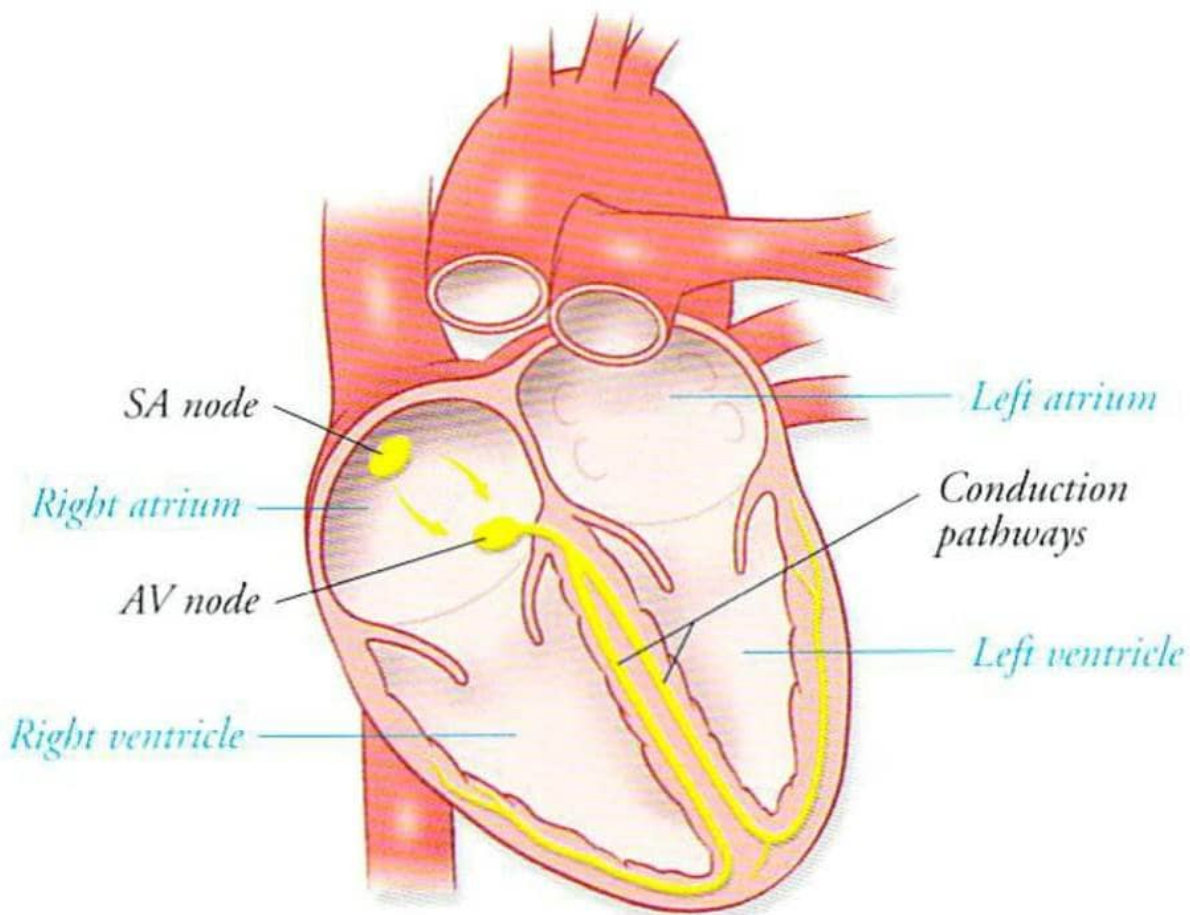
The heart's electrical impulses normally begin at the sinoatrial node, or **SA node**. This cluster of special cells, also known as the heart's natural pacemaker, is located at the top of the right atrium. It produces electrical impulses at regular intervals and sets the proper rhythm for the heartbeat.

Each electrical impulse spreads throughout the two atria (plural of atrium), causing them to contract and pump blood into the ventricles.

From the atria, the electrical impulse reaches the atrioventricular node, or **AV node**, which is located between the atria and the ventricles. The AV node slows down each electrical impulse before it passes through to the ventricles.

The impulse then travels to the ventricles through **conduction pathways**. The impulse stimulates the ventricles, causing them to contract and pump blood out of the heart.

The *speed* at which the heart beats is called the **heart rate**. The *pattern* of the heartbeat is the **rhythm**. Normally, the heart rate is between 60 to 100 beats per minute and the rhythm is regular.



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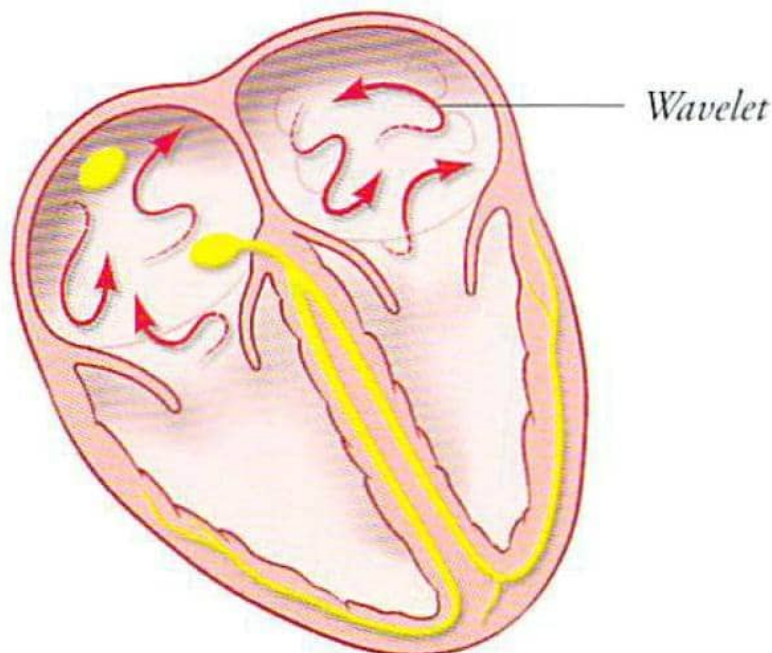
## Understanding Atrial Fibrillation


Normally, the SA node sets the proper rhythm for the heartbeat (see pages 4 and 5). The atria contract first, squeezing blood into the ventricles. A fraction of a second later, the ventricles contract and pump blood to the body. This timing sequence ensures that the atria and the ventricles beat “in sync,” which in turn helps the heart beat more efficiently.

### What Happens in Atrial Fibrillation?

In atrial fibrillation, the SA node no longer sets the proper rhythm. Instead, several sites in the atria send extra electrical impulses. Multiple tiny waves, or **wavelets**, of electrical activity flow across the atria in a continuously changing manner.

These many wavelets cause the atria to beat in a very rapid, uncoordinated fashion. Instead of contracting all at once with each heartbeat, the walls of the atria quiver, or **fibrillate**. As a result, the atria and the ventricles no longer beat in sync.





Fortunately, not all of the impulses in the atria make it through to the ventricles. The AV node, acting as the electrical gatekeeper, allows only some of these impulses to travel down the conduction pathways and stimulate the ventricles.

The impulses that do get through the AV node do so at irregular intervals. As a result, *the heart rhythm is irregular, erratic, and usually rapid* (with an average of 100 to 150 beats a minute).

When the heart beats too fast, the ventricles have less time to fill with blood. In addition, because the atria and ventricles no longer beat in sync, less blood flows into the ventricles. As a result, *the heart pumps less efficiently*.

### **Atrial Remodeling**

Atrial fibrillation itself causes changes in the atria, called atrial remodeling. These changes make it more likely that fibrillation will continue. *Generally, the longer atrial fibrillation continues, the more difficult it is to treat or control.*

### **Symptoms of Atrial Fibrillation**

Atrial fibrillation often causes a feeling of rapid and irregular pounding in the chest, called **palpitations**. Other symptoms may include dizziness, fatigue (lack of energy), limited ability to exercise, shortness of breath, chest discomfort, and fainting.

Some people with atrial fibrillation, however, do not have symptoms, and the problem is diagnosed when they have a routine medical checkup.

## What Causes Atrial Fibrillation?

Atrial fibrillation is *more common in older people*. As we grow older, our chances of having atrial fibrillation increase. About 5 percent of people over the age of 60 have this arrhythmia.

Atrial fibrillation is also *more common in people with heart disease*, especially coronary heart disease, high blood pressure, heart valve disease, or a weakened heart. Other causes include lung disease, recent heart or lung surgery, and an overactive thyroid gland.

Excess caffeine, or the use of tobacco, alcohol, and stimulant drugs (such as amphetamines or cocaine) can increase the chances of having atrial fibrillation, even in people who have normal heart function.


When atrial fibrillation occurs in younger people (under age 60) who do not have heart disease or high blood pressure, it is called **lone atrial fibrillation**. People with lone atrial fibrillation are considered at low risk for stroke.

## Is Atrial Fibrillation Serious?

Most people with atrial fibrillation can lead normal, active lives. However, problems may arise in some people with this condition.

In people with weakened hearts, atrial fibrillation *can cause heart failure*, a condition in which the heart is unable to pump enough blood to meet the body's needs. Symptoms of heart failure include shortness of breath, fatigue, and swelling of the feet and legs.





Because the atria no longer contract normally, the flow of blood through the atria is “sluggish.” In some cases, this *can cause blood clots to form* inside the heart. The clots may break loose, leave the heart, and lodge in the brain or other parts of the body.

When a loose clot lodges in the brain, it *can cause a stroke*. A stroke occurs when blood flow to the brain is suddenly interrupted. This produces brain injury which, depending on the area of the brain that is damaged, can result in symptoms such as paralysis, numbness, or loss of speech.

The risk of blood clot formation and stroke can be reduced by taking anticoagulants (see page 22).

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## Your Medical Evaluation

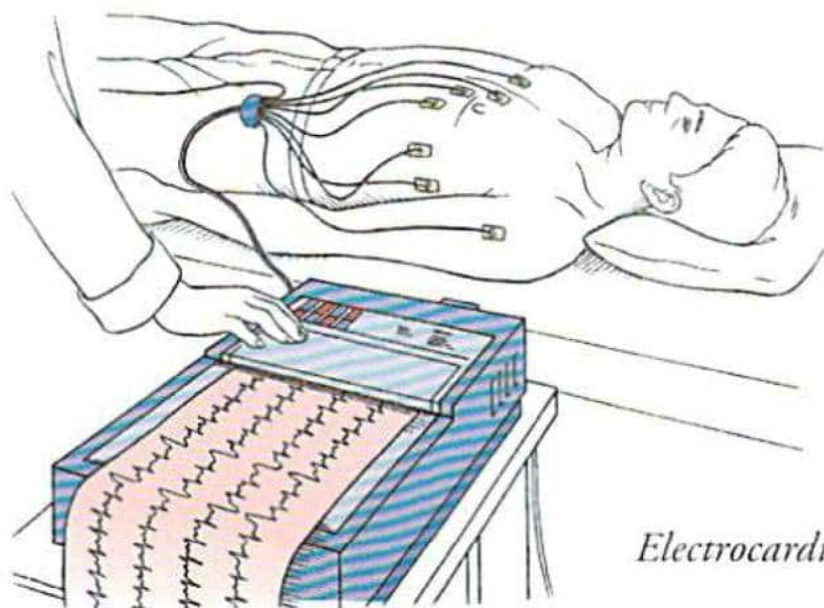
To help diagnose your arrhythmia, your doctor will take a medical history. You will likely be asked when your symptoms started, how often you notice them, and how long they last. As part of your physical exam, the doctor will check your heart, lungs, and other parts of your body, looking for signs of heart disease.

In addition, one or more tests may be done to check for an arrhythmia or determine its cause.

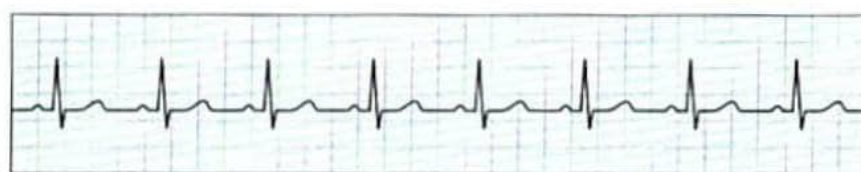
### Basic Tests

■ An **electrocardiogram (ECG)** is a simple test that records the electrical activity of your heart. Several electrodes (small pads) are placed on your chest, arms, and legs. The heart's electrical impulses cause a needle to trace the heartbeat as a wavy line.

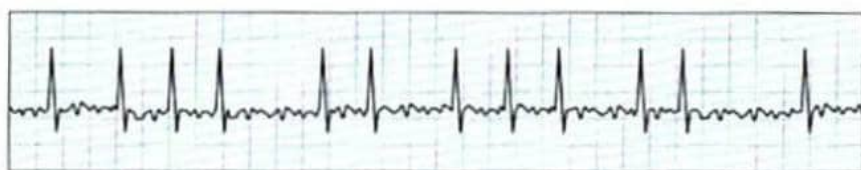
By examining the ECG tracing, doctors can diagnose arrhythmias. In atrial fibrillation, the tracing shows tiny “fibrillation” waves between heartbeats, and the rhythm is irregular and usually rapid.



*Electrocardiogram test*



*Normal  
heart rhythm*



*Atrial  
fibrillation*

The tracing can also help diagnose underlying heart problems that may cause fibrillation. For example, it can show a previous heart attack, a thickened heart muscle, and enlarged heart chambers.

■ **Holter monitoring** is a continuous recording of your heart rhythm, usually for 24 or 48 hours, while you go about your usual daily activities. It is useful for detecting arrhythmias that may not appear during a resting ECG at the doctor's office.

The recorder is small and portable. You wear it on a strap over your shoulder or at your waist. The device records the electrical signals of your heart on tape or on a memory card.

While you are wearing the recorder, you will be asked to keep a diary of your activities and symptoms. After the test period, the doctor will compare the timing of your activities and symptoms with the recording.



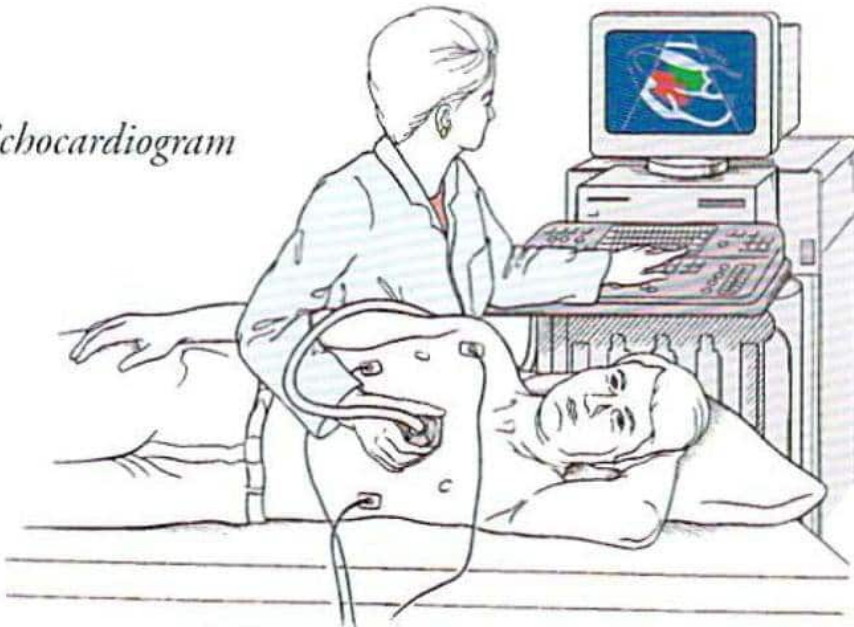
■ An **event recorder** helps detect arrhythmias that do not occur very often. It records your heart rhythm when you have symptoms, or an “event.” You carry the recorder over a period of days or weeks. When you have symptoms (such as palpitations), you press a button to activate the recorder.

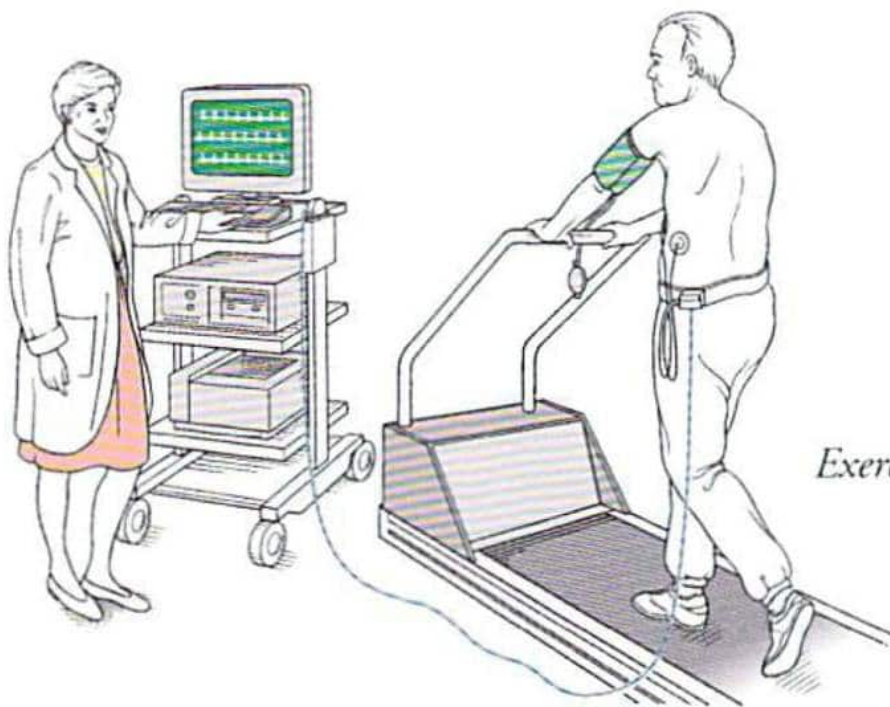
The recorder, which is usually the size of a pager, may be clipped to your belt or placed in a shirt pocket. Sometimes, the recorder is the shape of a credit card or resembles a wristwatch.

■ An **echocardiogram** uses ultrasound waves to create an image of the heart and the pattern of blood flow through it. It is a safe and painless test that helps doctors diagnose many kinds of heart problems.

The echocardiogram shows how well your heart is pumping blood and whether your heart valves are too narrow or leaking. It can help determine whether your arrhythmia is linked to a heart problem.

*Echocardiogram*





*Exercise ECG test*

- An **exercise ECG test** (stress test) may be done if you have had the arrhythmia during or shortly after exercise. It can help detect heart problems that may not show on the ECG while you are resting. During the test, you either walk on a treadmill or pedal a stationary bicycle while your heart rhythm and blood pressure are monitored.
- Your doctor may also order **blood tests** to check the function of your thyroid gland, kidneys, and liver, and a **chest x-ray** to check your lungs. These tests help determine the cause of atrial fibrillation.

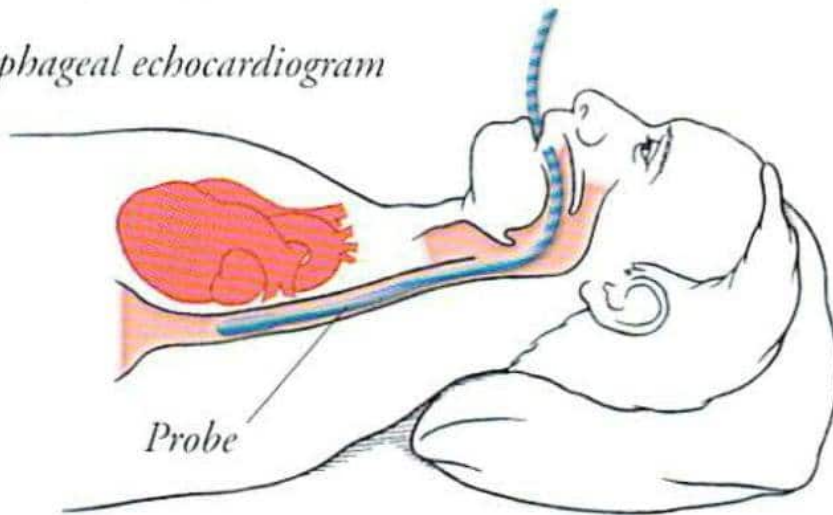
## Additional Tests

In some cases, doctors may recommend special tests, such as a TEE or an EP study.

■ A **transesophageal echocardiogram**, or **TEE**, is an echocardiogram (see page 12) that is done from inside the esophagus, which leads from the mouth to the stomach.

During the test, a long flexible tube, called a probe, is inserted down the esophagus. The probe sends ultrasound waves that bounce off the different parts of the heart. A computer turns these “echoes” into moving images of the heart.

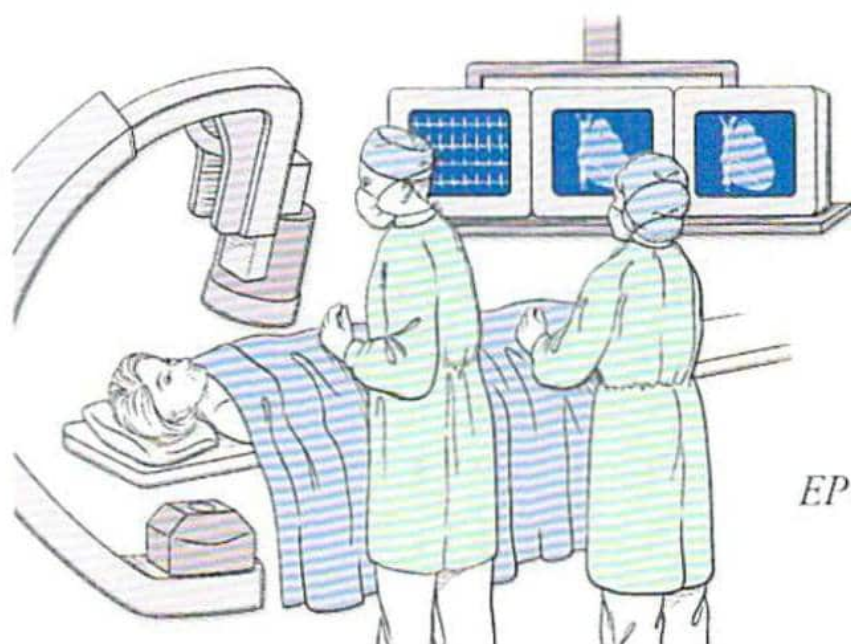
*Transesophageal echocardiogram*



Because it gives images that are sharp and clear, the TEE is often used to detect blood clots inside the heart chambers. If you need electrical cardioversion to stop your fibrillation (see page 24), your doctor may order a TEE first, to assess whether there are any blood clots inside the atria.

■ An **electrophysiology study**, or **EP study**, is an accurate method for studying the heart's electrical system. It allows doctors to find abnormal sites inside the heart that may be causing serious arrhythmias.

During an EP study, doctors insert special electrode catheters (long, flexible wires) into the heart. These catheters can sense electrical activity in different parts of the heart. They can also be used to deliver tiny electrical impulses to pace the heart (cause it to beat).



*EP study*

If you are a candidate for catheter ablation to treat your arrhythmia (see page 26), you will have an EP study first in order to find the abnormal site or sites in your heart that are causing the arrhythmia.

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## Treatment Considerations

Before your doctor decides which treatment is best for you, he or she will consider the following factors.

- *What is the pattern of your fibrillation?*

Atrial fibrillation may occur just once, or it may **recur** (return) again and again. An **episode** (attack) may last for minutes, hours, days, or longer. It may stop by itself, or it may require treatment to stop it. There are three basic patterns of atrial fibrillation:


- **Paroxysmal** atrial fibrillation. The abnormal heart rhythm tends to recur but stops on its own, without treatment.
- **Persistent** atrial fibrillation. The abnormal rhythm recurs and does not stop on its own, but it can be stopped with treatment.
- **Permanent** atrial fibrillation. The abnormal rhythm continues, and for a number of reasons, doctors decide not to restore a normal rhythm. Instead, medications are used to control the heart rate and prevent blood clots and stroke.

- *How long have you had fibrillation?*

If you have had fibrillation for *less than 48 hours*, your doctor may use either medications or an electric shock to restore a normal heart rhythm.

If you have had fibrillation for *more than 48 hours*, using medications or an electric shock to restore a normal heart rhythm could cause a stroke. You may need to take medications for several weeks to “thin” your blood before a normal rhythm can be restored.





- ***How severe are your symptoms?***

If your symptoms are severe or disabling during an episode of fibrillation, you may need to be treated at a hospital emergency room.

If your symptoms are mild, or you have no symptoms during an episode of fibrillation, your doctor may decide to allow fibrillation to become permanent and to use medications to slow down the heart rate.

- ***Do you have underlying heart disease?***

If you have underlying heart disease or high blood pressure, you are at a higher risk of having a stroke. Your doctor is likely to prescribe medications to thin your blood and help prevent a stroke.

- ***What is your age?***

If you are 75 or older and have atrial fibrillation, you are at a higher risk of having a stroke. Your doctor will most likely prescribe medications to thin your blood and help prevent a stroke.

If you are under 75 and you have no heart disease or high blood pressure, your risk of having a stroke is lower. Your doctor may prescribe aspirin instead of blood-thinning medications, or you may need no medications at all.

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## Medications to Help Your Heart

There are two general ways to treat atrial fibrillation.

- *Restoring a normal heart rhythm.* A normal heart rhythm is restored using either medications or electric shock. This is called **cardioversion**. After cardioversion, you may also be given medications to help prevent fibrillation from recurring.
- *Controlling the heart rate.* Fibrillation is allowed to continue. Instead of cardioversion, you are given medications to help make your heart beat more slowly.

In addition, anticoagulants may be prescribed to help prevent blood clots and stroke.


### Restoring a Normal Heart Rhythm

An episode of atrial fibrillation may **convert** (change) into a normal heart rhythm on its own (paroxysmal atrial fibrillation). If fibrillation does not convert on its own (persistent atrial fibrillation), however, your doctor may prescribe **antiarrhythmic drugs** to help restore a normal heart rhythm.

#### Examples of Commonly Used Drugs (List A)

These are a few of the antiarrhythmic drugs that are prescribed for restoring and/or maintaining a normal heart rhythm in patients with atrial fibrillation:

- amiodarone (Cordarone, Pacerone), disopyramide (Norpace), dofetilide (Tikosyn), flecainide (Tambocor), ibutilide (Corvert), procainamide (Procanbid), propafenone (Rythmol), quinidine (Quinidex, Quinaglute), and sotalol (Betapace, Sorine)



Cardioversion with antiarrhythmic drugs (also called pharmacological cardioversion) is usually done in the hospital. The drugs can be injected into a vein or given in pill form.

If you need cardioversion, your doctor may ask you to take anticoagulants for several weeks before and after the procedure. Anticoagulants help prevent blood clots and thus reduce the risk of stroke.

Although cardioversion works in most people, over half will have a recurrence of fibrillation within a year. You may need to continue taking antiarrhythmic drugs to help prevent the arrhythmia from recurring.

Unfortunately, antiarrhythmic drugs can cause side effects, such as nausea, fatigue, dizziness, or headache. In addition, some of these drugs *sometimes* cause dangerous arrhythmias. Be sure to discuss side effects with your doctor before you start treatment.

### ***Pill-in-the-Pocket Method***

If you have recurring atrial fibrillation, your doctor may recommend the “pill-in-the-pocket” method. With this method, instead of taking antiarrhythmic drugs every day, you take a single dose of a drug when you have an episode of fibrillation.

The pill-in-the-pocket method reduces side effects from drugs and the need to be seen in the emergency room or to be hospitalized. However, it may not be safe for some patients, and it does not always work.

## Controlling the Heart Rate

In some people with atrial fibrillation, it may not be possible to restore and/or maintain a normal heart rhythm. Doctors may decide to allow fibrillation to continue (permanent atrial fibrillation). They then prescribe drugs to control the heart rate (the speed at which the heart beats) and prevent blood clots.

Drugs control the heart rate by reducing the number of atrial signals that are transmitted through the AV node (see pages 5 and 7). These drugs allow fewer impulses to pass through to the ventricles and result in a slower heart rate. Although the heart rate is slower, the heart rhythm (pattern) remains irregular.

The slower heart rate makes the heart pump more efficiently and helps relieve bothersome symptoms, such as palpitations, dizziness, and fatigue.

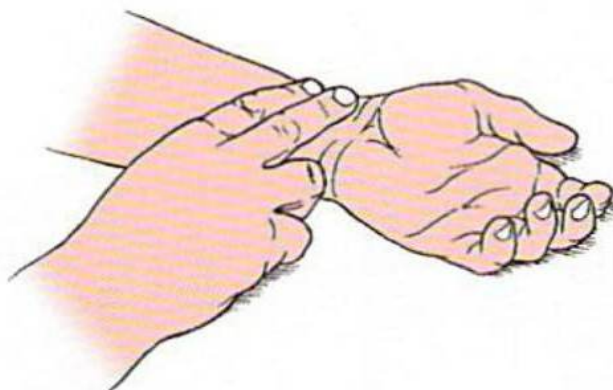
### Examples of Commonly Used Drugs (List B)

These are a few of the drugs that are commonly prescribed for slowing the heart rate in patients with atrial fibrillation:

- **beta blockers** such as propranolol (Inderal), metoprolol (Lopressor, Toprol), or esmolol (Brevibloc);
- calcium channel blockers** such as verapamil (Calan, Isoptin, Veralan), or diltiazem (Cardizem); and
- digoxin** (Lanoxin)

## Taking Antiarrhythmic Drugs

- Know when and how often you should take each medication. Try to take your medications at the same time or times each day.
- If you miss a dose or two, do not take all the pills you have missed at one time. Just get back on your regular schedule.
- If you think you are having a side effect, call your doctor. Never just stop treatment!
- Even if you start to feel better, do not stop taking your medications or change the dosage unless your doctor tells you to.



*Taking your pulse can help you know how fast your heart is beating, and whether the beat is regular or not. To take your pulse, place two fingers on the underside of your wrist, just below the base of the thumb. Count the beats for 15 seconds, then multiply by 4. This will give you the heart rate per minute.*

## Preventing Blood Clots and Stroke

Patients who have atrial fibrillation are at a higher risk of having a stroke. A stroke can occur if a blood clot forms in the atria and a piece of the clot breaks loose and travels to the brain.

To help prevent blood clots from forming in your heart, your doctor may prescribe **anticoagulants**, also called “blood thinners.” Anticoagulants increase the time it takes for a blood clot to form.

Not all patients who have atrial fibrillation are at the same risk of having a stroke. Your doctor will decide if you need to take anticoagulants based on your **risk factors for stroke** and whether it is safe for you to take anticoagulants.

Risk factors for stroke include a previous history of stroke or transient ischemic attack (“mild” stroke), age 75 or older, high blood pressure, heart failure, a weakened heart, and diabetes.

**Warfarin** (Coumadin) is the most widely prescribed anticoagulant. Warfarin helps keep blood clots from forming in your heart, but it also increases your risk of bleeding.

While taking warfarin, you will need to have your blood drawn regularly to check the clotting time (reported as a number called either protime or INR). Regular monitoring is important because too high a level of anticoagulants increases the risk of bleeding, while too low a level increases the risk of stroke.

## If You Take Warfarin

- Tell your doctor if you have any unusual bleeding, such as red blood in your stools (or black, tarry stools), blood in the urine, heavier than usual menstrual flow, or easy bruising.
- Warfarin can interact with other drugs. Do not take other prescription or over-the-counter drugs without telling your doctor.
- Some foods can affect the way warfarin works. Do not suddenly change your intake of foods that are rich in vitamin K, such as lettuce, cabbage, broccoli, asparagus, and spinach.
- Do not play rough contact sports and avoid hazardous activities while taking Warfarin. Report injuries to your doctor immediately.

If your doctor feels that your risk of having a stroke is fairly low or your risk of bleeding from warfarin is too high, he or she may prescribe **aspirin** instead of warfarin. Aspirin reduces the activity of the platelets (tiny blood cells that help prevent bleeding by causing blood clots to form).

Aspirin is safer than warfarin because it is less likely to cause significant bleeding. However, aspirin is not as effective as warfarin for preventing strokes.

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## Electrical Cardioversion

Electrical cardioversion is a procedure doctors use to stop some arrhythmias, such as atrial fibrillation. The heart is given a brief electric shock that converts the arrhythmia back to a normal heart rhythm.

### Before Cardioversion

If you have had fibrillation for more than 48 hours and are a candidate for cardioversion, your doctor will most likely prescribe anticoagulants (see page 22) for several weeks before and after the procedure. This helps prevent blood clots from forming.

In some cases, your doctor may recommend a TEE (see page 14) before cardioversion. This test can help determine whether or not there are blood clots in the atria. If the test shows no clots, cardioversion may be done right away (that is, without having to take anticoagulants for several weeks).

### How Does Cardioversion Work?

During cardioversion, two large pads (or patches) are placed on the chest and back. A perfectly-timed electrical shock is sent between the pads. The shock causes the heart cells to contract all at once. This stops all electrical activity in the heart for a moment. When the electrical activity starts again, the normal heart rhythm is restored.

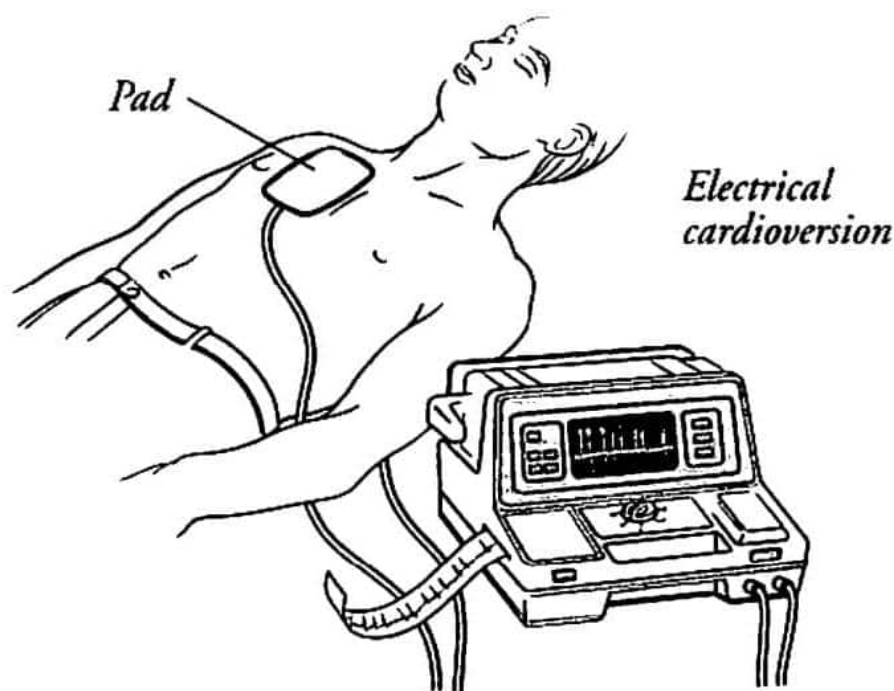


*Atrial fibrillation*

*Cardioversion  
shock*

*Normal heart  
rhythm*





You may need several shocks to convert fibrillation to a normal rhythm. You will be sedated, so you will not feel pain from the shocks. After the procedure, you may be observed for several hours to make sure your heart rhythm is stable.

While electrical cardioversion is very effective, it does not prevent atrial fibrillation from recurring. For this reason, antiarrhythmic drugs are often prescribed to prevent fibrillation from returning.

For some patients, electrical cardioversion does not work. Doctors may decide to leave these patients in permanent atrial fibrillation (see page 16), control their heart rate with antiarrhythmic drugs, and keep them on warfarin to help prevent a stroke.

---

## Other Treatment Options

Some people with atrial fibrillation are not helped by antiarrhythmic drugs or electrical cardioversion. They may experience bothersome symptoms from the arrhythmia, develop serious side effects from the drugs, or may not wish to continue taking drugs for the rest of their lives. These patients may benefit from one of the following treatment options.

### Catheter Ablation

Catheter ablation is a non-surgical procedure used to destroy an abnormal site or sites in the heart that are causing an arrhythmia.

During catheter ablation, doctors guide an **electrode catheter** (a long, flexible wire) into the heart. They place the catheter so that it lies close to the abnormal site, and then pass heat energy through the catheter.

The tip of the catheter heats up and destroys the small area of heart tissue that contains the abnormal site (the rest of the heart muscle is unharmed). This causes a scar to form, and scar tissue cannot transmit electrical impulses. As a result, the abnormal site can no longer cause arrhythmias.

Catheter ablation is a relatively low-risk procedure that may cure your arrhythmia. It may allow you to avoid a lifetime of medications and to lead a more active, productive life. If your doctor thinks you are a candidate for ablation, he or she will discuss the procedure's risks and benefits with you.

Here are examples of two ablation techniques used to treat atrial fibrillation.

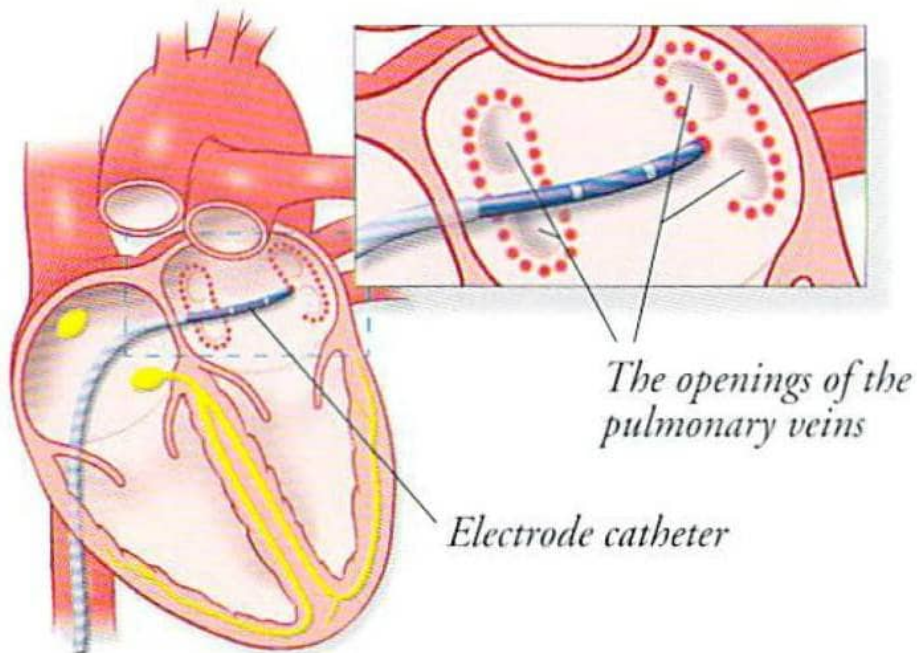
## ■ *Pulmonary Vein Isolation*

In some patients, the abnormal electrical impulses that trigger atrial fibrillation come from inside the **pulmonary veins**, the vessels that carry blood from the lungs to the left atrium.

The goal of pulmonary vein isolation is to block the electrical impulses coming from the pulmonary veins, so they can no longer reach the atria.

During the procedure, doctors use electrode catheters to apply heat energy around the openings of the pulmonary veins. With time, the treated areas will form rings of scar tissue. As a result, the abnormal electrical impulses coming from the pulmonary veins can no longer spread to the atria, so they no longer triggers fibrillation.

Pulmonary vein isolation works in most cases, but it does carry risks, such as scarring of the pulmonary veins and formation of blood clots.



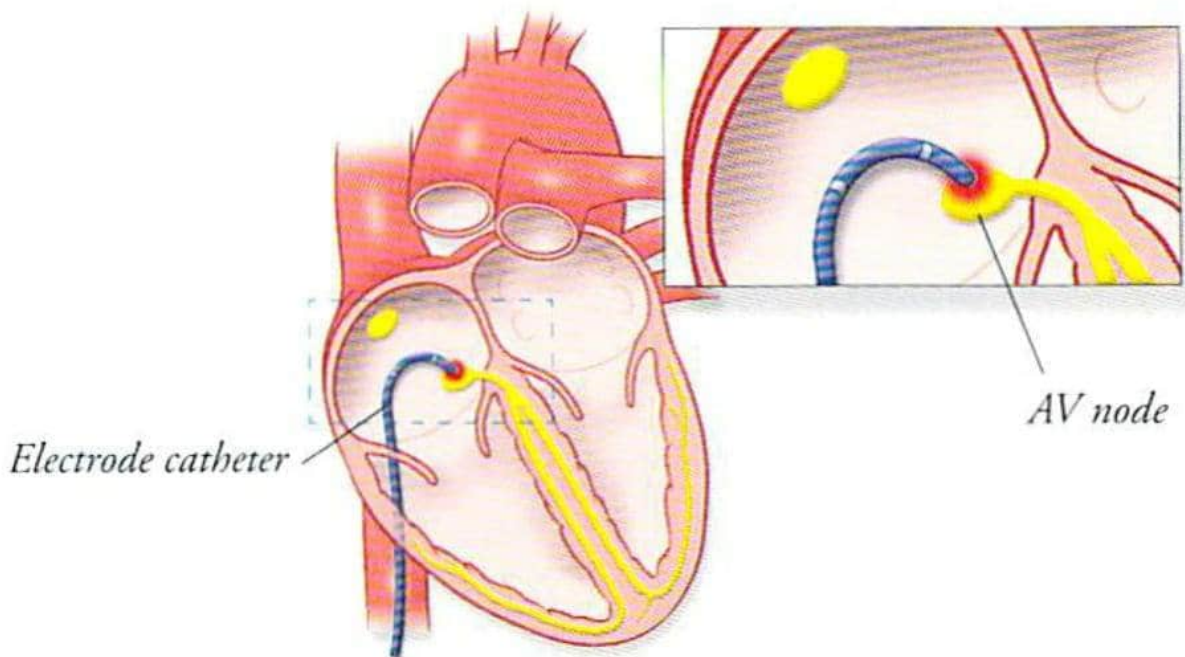
### ■ *AV Node Ablation*

During AV node ablation, doctors insert an electrode catheter into the heart and position the catheter so that it lies close to the AV node (see page 5). They then pass heat energy through the catheter. The tip of the catheter heats up and destroys the AV node.

Once the AV node is destroyed, rapid and chaotic atrial impulses can no longer pass through the node to activate the ventricles. This can help relieve disabling symptoms from a rapid heart rate and make it possible to stop drugs and avoid their side effects.

While symptoms often improve, fibrillation persists. Patients need to continue taking anticoagulants to reduce the risk of stroke.

In addition, AV node ablation often results in a very slow, unreliable heart rhythm, called heart block. A pacemaker (see next page) must then be implanted to keep the heart beating at a safe pace.



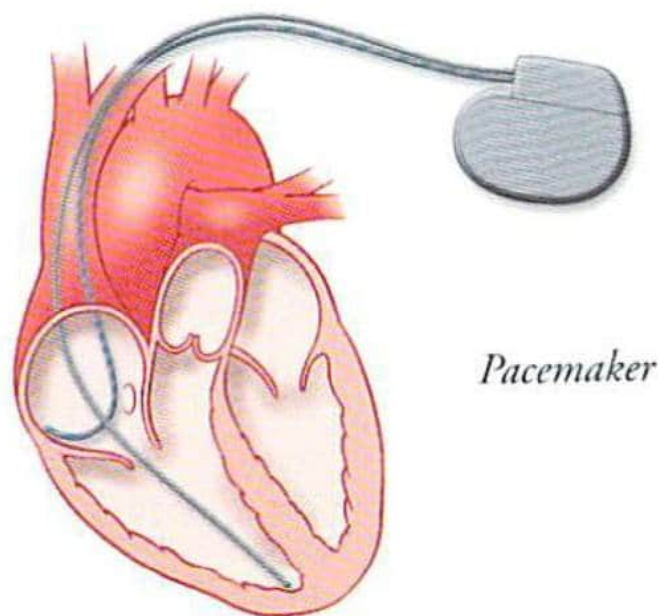
## Pacemaker

A pacemaker is an electronic device that is implanted inside the body. If it senses that the heart is beating too slowly, the pacemaker delivers electrical impulses that keep the heart beating at the proper pace.

Using a pacemaker to speed the heart rate usually will not prevent atrial fibrillation. There are some people, however, in whom fibrillation occurs only when the heart beats very slowly or is irregular. These people may benefit from a pacemaker.

In some people with atrial fibrillation, antiarrhythmic drugs may cause the heart to slow down too much. These people need drugs to prevent the heart from beating too fast *and* a pacemaker to prevent it from slowing down too much.

As we have just seen, a pacemaker is also implanted in patients who have undergone AV node ablation (see previous page).



## **Atrial Defibrillator**

An atrial defibrillator is a small electronic device that is implanted inside the chest. It can detect and convert atrial fibrillation to a normal rhythm by delivering brief electric shocks. It also functions like a pacemaker by delivering regular electrical pulses to the atria to prevent atrial fibrillation.

The shocks delivered by the atrial defibrillator are somewhat painful, however. Such a device may be suitable for a small number of patients with recurring atrial fibrillation who would otherwise require frequent hospital visits for electrical cardioversion.

## **Maze Operation**

During the maze operation, surgeons make a distinct pattern of incisions (a maze) in different regions of both atria. These incisions help prevent the chaotic transmission of electrical signals through the atria.

The maze operation is generally done on people who need to undergo open-heart surgery for reasons other than atrial fibrillation (such as mitral valve repair or coronary bypass surgery).

Most patients are helped by the maze operation and have fewer or no symptoms from their arrhythmia. However, recovery from open-heart surgery may take several months, and there may be complications.

.....

Your doctor can explain the risks and benefits of the various treatments and advise you on the treatment option that is best for you.

## Things You Can Do

There are things that you can do that will help prevent episodes of atrial fibrillation.

- Avoid too much caffeine or alcohol. Do not smoke or use stimulant drugs.
- Be aware that some over-the-counter drugs, especially cold and herbal remedies, contain stimulants that can trigger fibrillation. Talk to your doctor or pharmacist before taking any new medication.
- Control your blood pressure. Follow a low-sodium diet and take medications, if needed, to control your blood pressure.
- Since atrial fibrillation is often caused by an underlying heart condition, making changes to your lifestyle can help improve your condition. Eat a heart-healthy diet, lose excess weight, do not smoke, and exercise regularly.
- Try to help control your stress through yoga, biofeedback, and meditation.

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