



## Atrial Fibrillation

### What is atrial fibrillation?

Atrial fibrillation (AF) is the commonest serious disorder of the rhythm of the heart. The normal heart rhythm is controlled by a microscopic pacemaker, the sinus node, which is situated at the top of the right atrium (the upper heart chamber which receives blood from the body). The sinus node is sensitive to the needs of the body (e.g. exercise) and adjusts the heart rate to cope with different conditions.

If AF occurs, the 2 upper heart chambers (right and left atria) develop a very rapid, chaotic rhythm which is no longer under the body's control. As a result, the heart rate becomes rapid and irregular.

### Who gets AF?

AF can occur at any age, but becomes increasingly common in people over the age of 65 years. Up to 10% of those over age 70 have AF. It is more common in people with high blood pressure (hypertension) and those with disease of the heart valves or heart muscle. An overactive thyroid gland (hyperthyroidism) can cause rapid AF. In a proportion of AF sufferers, no clear cause can be found ("lone AF").

### How do you feel if you get AF?

While some people are unaware of AF, most develop palpitations (an uncomfortable awareness of a rapid and irregular heart beat). The rapid beat can cause dizziness or fainting, and sometimes pain in the chest.

### How is AF diagnosed?

The pulse becomes very irregular and, usually, rapid (more than 100 beats per minute). An electrocardiogram (ECG) will show the irregular heart rhythm and the chaotic rhythm of the upper heart chambers. Your doctor may detect other signs of heart disease. Further tests, such as an echocardiogram (ultrasound picture of the heart) may be needed.

### Why does it matter?

AF usually causes uncomfortable symptoms. The most serious complication is the formation of clots in the upper heart chamber which receives blood from the lungs (the left atrium). This happens because the blood is no longer pumped efficiently into the lower chamber (left ventricle), which pumps it to the rest of the body. A clot which forms in the left atrium may find its way into the left ventricle, from which it is pumped to the arteries of the body. It may lodge in an artery in the brain, blocking it and causing a stroke. The rapid heart beat reduces the efficiency of the heart and may cause heart failure.

### What can be done?

A blood test must be done to check for an overactive thyroid. Treatment of hyperthyroidism may cure the AF. High blood pressure must be treated, as must any other heart problem which may cause or aggravate AF. Drugs, such as beta blockers, calcium blockers and digoxin may be given to slow the heart rate down. This may be sufficient to improve the efficiency of the heart and to reduce symptoms. If severe symptoms persist, it may be necessary to convert the heart rhythm back to normal, using a synchronised shock, under anaesthetic (cardioversion).

Most people with AF should be on medication to prevent blood clotting (anticoagulants or "blood thinners") to reduce the risk of stroke. Warfarin is the most effective drug currently available. Its effect and dosage needs to be checked regularly by means of blood tests. The decision to use warfarin is made on an individual basis, taking into account the risk of bleeding and the patient's ability to comply with the necessary blood tests.

In patients with severe symptoms that are not relieved by controlling the heart rate, drugs such as amiodarone may be needed to prevent episodes of AF.

In a percentage of highly selected patients, AF may be cured by a procedure called catheter ablation, in which parts of the left atrium are systematically isolated from the rest of the heart.

In a few people, it is only possible to control the heart rate by means of catheter ablation of the main pathway for electrical conduction in the heart. Insertion of a permanent artificial pacemaker is then necessary.