

## Atrial Fibrillation

Atrial fibrillation (AF) is an abnormality of the heart rhythm ("arrhythmia") which affects the upper chambers of the heart, the atria, which beat very rapidly. As a result the atria do not pump effectively. As the atria control the normal ("sinus") rhythm of the heart this means that the pulse becomes irregular, often rapid, and does not speed up and slow appropriately for the body's needs. AF is the most common arrhythmia, affecting 12 out of every 100 people over the age of 65. Someone with AF may not feel any symptoms when the heart rate changes from normal sinus rhythm to AF, and so it is often only detected during a medical appointment for other reasons. However, some present with palpitation (being able to feel the heart beating abnormally in the chest), shortness of breath or chest pain. Some spontaneously return to normal (sinus) rhythm after a short period of time. Others alternate between these two rhythms (this is known as "paroxysmal AF"). There are many different causes of AF, including:

- Older age
- High blood pressure ("hypertension")
- Alcohol
- Disease of the heart valves
- Heart failure
- Overactive thyroid gland
- Lung disease
- Coronary Disease

Sometimes there is no obvious cause.

### Stroke and Atrial Fibrillation

AF can increase the risk of stroke. Blood pools in the atria and this may cause the blood to clot. This clot can then be carried to the small blood vessels

in the brain where it blocks the blood flow and causes a stroke. To reduce this risk of stroke your doctor will assess your personal risk factors. Depending on your level of risk he or she will discuss whether to start you on an aspirin or a blood thinning medication such as warfarin (See AFA factsheet "Blood Thinning").

### Specific Treatment of Atrial Fibrillation

There are various ways to treat AF and these can be grouped into two treatment pathways.

#### Rate Control

This means using medical treatment to slow the speed of the pulse without stopping or preventing AF. Beta-blockers (such as metoprolol), calcium channel blockers (such as diltiazem) and digoxin, alone or in combination, are used. If these medications are ineffective or not tolerated, catheter ablation of the AV node with permanent pacemaker implantation is occasionally used (see AFA factsheet "Pacemaker and Node Ablation").

#### Rhythm Control

This means attempting to keep the heart out of AF and in normal ("sinus") rhythm. This is achieved by combinations of three methods:

**Cardioversion:** This is the conversion of an abnormal heart rhythm to normal rhythm. With AF this can be accomplished by medication or with an electric shock (see AFA factsheet "Cardioversion") under general anaesthetic or sedation. Cardioversion does not prevent recurrence of AF.



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**Medication:** A drug designed to maintain the heart in normal rhythm, an antiarrhythmic drug (see AFA Booklet "Drug Information") such as flecainide, sotalol or amiodarone may restore and maintain normal sinus rhythm. A rate control medication as above may occasionally be required in combination with the antiarrhythmic medication.

**Catheter Ablation:** A procedure primarily used for paroxysmal AF and where antiarrhythmic medication has failed, involving passing wires (catheters) into the heart, usually via the groin. One of these wires is then used to apply heat or extreme cold (ablation) to areas of the heart, especially around the openings of the four pulmonary veins into the left atrium, to attempt to prevent initiation of AF by electrical "triggers" in the heart. There is a variable success rate depending on the patient, technique used, and operator experience. Many patients require two or more procedures, and there is some risk of serious complications (see AFA Booklet "Catheter Ablation").

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