

HEART SERIES H9

UNDERSTANDING ATRIAL FIBRILLATION



Chest
Heart &
Stroke
Scotland



Chest Heart & Stroke Scotland



**Chest Heart &
Stroke Scotland
improves the
quality of life for
people in Scotland
affected by chest,
heart and stroke
illness, through
medical research,
influencing public
policy, advice and
information and
support in the
community.**

FUNDRAISING

Chest Heart & Stroke Scotland is a wholly independent Scottish charity. We receive no core funding from Government or any public body or private agency and rely entirely on the Scottish public to raise the £7 million a year we need to help people with chest, heart and stroke illness throughout Scotland.

RESEARCH

We are one of Scotland's largest charitable funders of medical research, with a programme worth over £600,000 a year. We fund research projects throughout Scotland into all aspects of the prevention, diagnosis, treatment and social impact of chest, heart and stroke illness.

PERSONAL SUPPORT GRANTS

We provide small grants to people in financial difficulty, because of chest, heart or stroke illness, for items ranging from disability equipment and household goods to respite care and holidays.

VOLUNTEER SERVICES

We give support to people whose communication skills are impaired after a stroke and those living with heart failure. The Volunteer Stroke Service (VSS) provides weekly group meetings and home visits for patients. The Heart Failure Support Service (HFSS) provides volunteer befrienders to reduce social isolation.

CHSS NURSES

Our nurses provide independent practical advice and support to those who have chest, heart and stroke illnesses, their families, carers and health professionals. There are dedicated nursing services in Fife, Forth Valley, Grampian, Highland, Lanarkshire, Lothian and Dumfries and Galloway. There is also a Scotland wide nurse led Advice Line (0845) 077 6000. Calls are charged at a local call rate (out of hours answerphone). We have a wide range of booklets, factsheets and videos on chest, heart and stroke illnesses.

COMMUNITY SUPPORT NETWORK

CHSS provides support to affiliated chest, heart and stroke clubs through the Community Support Network. The clubs are independent and are run by local volunteers. The groups provide a range of activities and offer people support, stimulation and companionship in a friendly and relaxed environment. Please ask for more information.

**FOR FURTHER INFORMATION ABOUT ANY OF
THE SERVICES ABOVE PLEASE CONTACT HEAD
OFFICE BY PHONING 0131 225 6963 OR VISIT
www.chss.org.uk**

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ATRIAL
FIBRILLATION**

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INTRODUCTION

The function of the heart is to pump blood round the whole body. To do this the four chambers of the heart (2 atria and 2 ventricles) have to pump regularly and in sequence.

The muscular pumping action of the heart is triggered by electrical signals which are sent through the heart muscle telling it when to contract (squeeze) and relax.

If the electrical signals within the heart are disturbed this is called an arrhythmia.

The heart can beat too quickly (tachycardia), too slowly (bradycardia) and / or in an irregular way.

A normal heartbeat should be between 60 and 100 beats at rest. If you have Atrial Fibrillation (AF) your heartbeat will be irregular and may be as high as 200 beats per minute at rest.

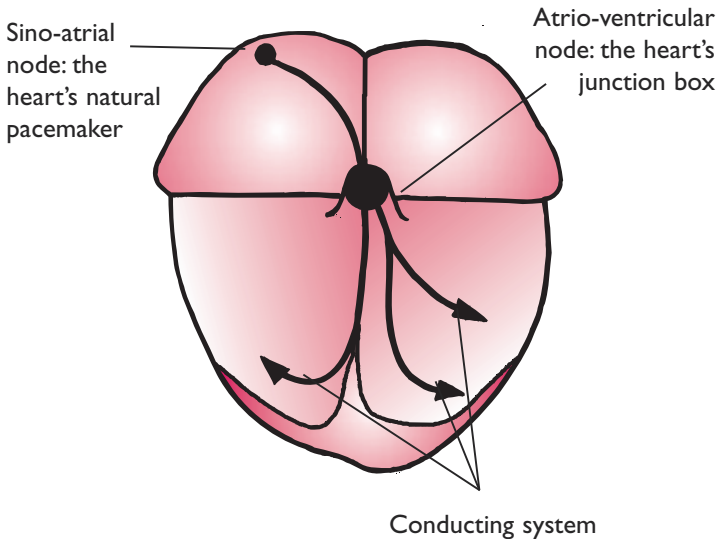
AF is the most common type of heart arrhythmia.

AF can affect adults of any age but it is more common in men than women and becomes more common with age, increasing to 10% of the population of people over 75.

HOW DO THE ELECTRICAL SIGNALS WORK?

Normally the electrical signal starts in the right atrium (see Figure 1) where the heart's natural 'pacemaker', the sino-atrial node, is situated. This signal crosses the atria, making them contract. Blood is then pumped through the valves into the ventricles.

Figure 1. Diagram of electrical pathway



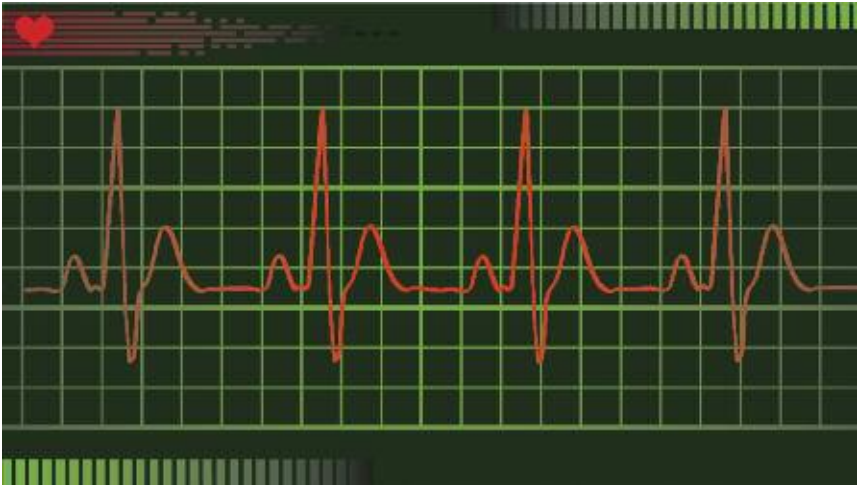
Where the atria meet the ventricles there is an area of special cells called the atrio-ventricular node. These cells act as a 'junction box' and pass the electrical signals throughout the heart muscle by a system of electrical pathways known as the conducting system. This makes the ventricles contract. Blood is then pumped through the pulmonary and aortic valves into the main arteries. The 'pacemaker' produces another electrical signal and the pumping cycle starts again.

WHAT HAPPENS IN ATRIAL FIBRILLATION?

In AF the electrical signals in the **atria** become chaotic and disorganised making the atria contract very rapidly and in an irregular way. This is known as **fibrillation**.

The atrio-ventricular node can not pass on all of these signals to the ventricles but it still results in fast and irregular contraction of the ventricles.

This fast, irregular rhythm prevents the heart from pumping effectively and the circulation of blood can be impaired.



DIFFERENT TYPES OF AF

There are different types of AF and different degrees of severity. Each situation will be treated differently depending on how it affects the individual person.

- **Paroxysmal atrial fibrillation** comes and goes and usually stops within 48 hours without any treatment.
- **Persistent atrial fibrillation** lasts for longer than 7 days and can be treated with drugs or by ‘cardioversion’ to help the heart return to beating normally (see section on ‘treatments’ later in this booklet).
- **Permanent or chronic atrial fibrillation** lasts for a long time (usually longer than a year). Cardioversion is rarely used in this case and is not usually successful. Drug treatment can be used to help control the heart rate.
- **Acute-onset atrial fibrillation** is an episode of AF that either starts suddenly (for the first time) or when existing AF becomes suddenly worse. This kind of AF can cause potentially dangerous symptoms (e.g. very fast heart rate) which may need to be treated in hospital.

WHAT ARE THE SYMPTOMS OF AF?

There are varying symptoms with AF depending on the effect it has. Some people have no symptoms and AF is only discovered when a nurse or doctor feels your pulse and finds it to be **fast** and **irregular** (no pattern to the beats).

However when the heart beats fast and in an irregular way it can not work efficiently and the following symptoms may occur:

- dizziness
- tiredness
- chest pain
- shortness of breath
- palpitations (increased awareness of your heartbeat)

If you notice a sudden change in your heartbeat and have chest pain you should always seek urgent medical advice.





WHAT CAUSES AF?

Sometimes AF develops along with other medical conditions such as:

- heart conditions such as: high blood pressure, coronary heart disease (especially after a heart attack or heart surgery), heart valve disease, congenital heart disease, cardiomyopathy
- lung conditions such as: pulmonary embolism, asthma, emphysema, chronic obstructive pulmonary disease (COPD), pneumonia and lung cancer
- an overactive thyroid gland
- diabetes
- imbalances in the blood e.g. potassium and calcium

Sometimes the cause of AF is unknown.



WHAT TRIGGERS AF?

There are a variety of situations that can trigger an episode of, or contribute to, AF:

- drinking excessive amounts of alcohol, particularly ‘binge drinking’
- being overweight
- drinking a lot of caffeine e.g. coffee, tea and fizzy drinks
- taking illegal drugs, particularly those that stimulate the heart e.g. amphetamines (‘speed’) or cocaine
- smoking

Learning to recognise your individual trigger factors and reducing, or avoiding, them can sometimes help to minimise the symptoms of AF.

WHAT ARE THE RISKS OF AF?

Stroke

The main risk of AF is causing a stroke. When the atria are not pumping effectively they do not always empty completely leaving a pool of blood in the chamber. This blood can become sludgy and may clot. If a blood clot enters the blood stream it can lead to a stroke.

Heart failure

Over time AF can weaken the heart. When the heart muscle can not meet the body’s demands for blood and oxygen the body develops a range of different symptoms. When this happens it is referred to as heart failure because of the failure of the heart to work efficiently.

WHAT TESTS MIGHT BE NEEDED?

Your doctor may decide to do some tests to diagnose AF and identify any possible underlying causes.

ECG

ECG stands for electrocardiogram, which gives a recording of the electrical activity of the heart in the form of a graph. Electrodes attached to sticky patches, are positioned on your chest, wrists and ankles and a recording is made. Each lead gives a view of the electrical activity of the heart from a particular angle across the body.

The ECG reflects what is happening in different areas of the heart and helps to show up any abnormality in conduction.

An ECG is painless and the procedure usually takes about 5-10 minutes.

An ECG can confirm the diagnosis of AF and can also help to rule out other types of arrhythmia.

Variations of ECG include:

- 24-hour ECG: (also known as ‘24-hour tape’ or ambulatory ECG) This records the activity of your heart over a 24 hour period as you go about your normal daily activities and can identify if you are having even just short periods of AF.
- Exercise ECG (‘stress test’ or ‘treadmill test’): this records the activity of your heart as you make it work harder i.e. by walking on a



treadmill. You will be closely monitored by medical staff during this test. It will be used to identify any underlying problems with the heart which have led to AF. Not everyone is able or fit enough to have this test or needs it.

Echocardiogram ('echo')

This is an ultrasound scan of the heart. It can help to identify any other heart problems and assess the structure and function of the heart and valves.

Chest x-ray

This will help to rule out any lung problems that might cause AF.

Blood tests

These are taken to rule out any imbalances in your blood that might cause AF or need to be corrected e.g. thyroid function, electrolytes.



WHAT IS THE TREATMENT FOR AF?

Factors that your doctor should consider when deciding what treatment, if any, is best for your individual circumstances include:

- what type of AF you have
- what symptoms you have
- treatment of any underlying causes you have
- your age
- your overall health

Depending on what treatment you receive you may have to attend regular follow up appointments to help assess how the treatment is working for you. These may be with your GP or with a specialist heart doctor (cardiologist) or nurse.

Treatment for AF involves the following:

- controlling the heart rate (i.e. how fast it beats)
- controlling the heart rhythm (i.e. how regularly it beats)
- prevention of blood clots and stroke



Drug treatment

It is important that you take any prescribed drugs regularly and discuss any troublesome side effects, as well as any new symptoms, with your doctor. Sometimes you may have to try several different treatments until you find the right one for you.

The following groups of drugs can be used to treat AF:

- beta-blockers
- calcium-channel blockers
- anti-arrhythmics

See the CHSS booklet ‘Understanding heart disease’ for more information about commonly used heart drugs.

Cardioversion

Sometimes a treatment called cardioversion may be used, either on its own or in addition to drug treatment. Only some people with AF will benefit from cardioversion treatment. Your heart specialist will carefully consider whether this is a possible treatment option for you.

Cardioversion uses a controlled electric shock to the heart, from a machine called a defibrillator, to restore the normal heart rhythm.

Cardioversion allows the conduction system of the heart to reset. It can be performed under a general anaesthetic or with sedation.

Cardioversion can be repeated if necessary.

Other treatments that are used to treat AF:

Catheter ablation

Catheter ablation is a surgical procedure where any areas producing electrical signals which interfere with the natural pacemaker, are destroyed using a laser.

Insertion of an artificial pacemaker device

An artificial pacemaker is a device that monitors how your heart is beating and corrects any problems. It takes over from the heart's natural pacemaker and delivers the electrical signals the heart needs to meet your body's demands.

See the CHSS booklet 'Living with a pacemaker device' for more information.

PREVENTION OF BLOOD CLOTS AND STROKE

If you have AF then you may have an increased risk of blood clots and stroke (a stroke happens when a blood clot blocks an artery in the brain). Your doctor may prescribe a blood thinning drug to reduce the risk of blood clotting and therefore reduce the risk of a stroke.

- warfarin (anticoagulant)
- new anticoagulants*
- aspirin (antiplatelet)
- heparin (anticoagulant)

Your doctor will decide which type of drug is best for you and for how long you should take it. Warfarin is the anticoagulant most commonly used in persistent / permanent AF. If you are prescribed warfarin you will need regular blood tests and your treatment will be closely monitored by your doctor and / or nurse.

*New anticoagulants are becoming available at the end of 2011. The first of these is called dabigatran. They may be suitable for some people with atrial fibrillation. Your doctor will be able to discuss this with you.

As well as benefits, there are risks associated with anticoagulants and antiplatelet drugs e.g. a risk of bleeding more than usual if you are cut or injured. Except in an emergency, your doctor should discuss these benefits and risks with you before you decide whether to go ahead with treatment.

See the CHSS factsheet ‘Warfarin’ for more information.



Anticoagulation Europe

PO Box 405, Bromley, Kent BR2 9WP

Tel: 020 8289 6875

Email: admin@anticoagulationeurope.org

Website: www.anticoagulationeurope.org

Arrhythmia Alliance

PO Box 3697, Stratford-Upon-Avon

Warwickshire CV37 8YL

24-hour helpline: 01789 450787

Email: info@arrhythmiaalliance.org.uk

Website: www.arrhythmiaalliance.org.uk

Atrial Fibrillation Association

PO Box 1219, Chew Magna, Bristol BS40 8WB

Tel: 01789 451837

Email: info@atrial-fibrillation.org.uk

Website: www.atrialfibrillation.org.uk

Chest Heart & Stroke Scotland

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9 Haymarket Terrace

Edinburgh EH12 5EZ

Tel: 0131 225 6963

Fax: 0131 220 6313

Advice Line: 0845 077 6000

E-mail: advice@chss.org.uk

Website: www.chss.org.uk

Chest Heart & Stroke Scotland improves the quality of life for people in Scotland affected by chest, heart and stroke illness, through medical research, influencing public policy, advice and information and support in the community.

**USEFUL
ADDRESSES AND
WEBSITES**

NICE Guidance Atrial Fibrillation June 2006

National Institute for Health and Clinical
Excellence

Mid City Place

71 High Holborn

London WC1V 6NA

Tel: 0845 003 7780

Email: nice@nice.org.uk

Guidelines free to download from:

www.nice.org.uk

**SIGN 94 Cardiac Arrhythmias in Coronary
Heart Disease**

Scottish Intercollegiate Guidelines Network,

Elliott House, 8-10 Hillside Crescent,

Edinburgh EH7 5EA

Tel: 0131 623 4720

Email: sign@sign.ac.uk

Guidelines free to download from:

www.sign.ac.uk

The information contained in this booklet is based on current guidelines and is correct at time of printing. The content is also put out to peer, patient and expert review. If you have any comments about this booklet please contact Lorna McTernan, Health Information Manager, at the address on the facing page.

HEART PUBLICATIONS

Booklets		Factsheets - Free	
H1	Living with Angina	F2	Salt
H2	Reducing the Risk of Heart Disease	F3	Cholesterol
H3	Understanding Heart Disease	F4	Warfarin
H4	Living with High Blood Pressure	F6	Holidays
H5	Living with Heart Failure	F7	Insurance companies
H6	Living with a Pacemaker	F8	Suggested booklist
H7	Heart Attack: A Guide to your Recovery	F13	Air travel for people affected by chest, heart and stroke illness
H8	Understanding Heart Valve Problems	F17	Diabetes: links with heart disease and stroke
H9	Understanding Atrial Fibrillation	F18	Coping with tiredness
H10	Living with an ICD	F19	Managed Clinical Networks and You
Videos and DVDs		F20	Illustrated risk factors (ethnic target)
H5V	Living with Heart Failure Video: £5.00	F21	Illustrated risk factors (general target)
H5D	Living with Heart Failure DVD: £5.00	F22	How to make the most of a visit to your doctor
H7V	Heart Attack: A guide Video: £5.00	F23	Living with stress and anxiety
H7D	Heart Attack: A guide DVD: £5.00	F24	Healthy eating
		F26	Understanding help in the community
		F28	Glossary
		F30	Just move!

A full publication list is available from Head Office.
 Rosebery House, 9 Haymarket Terrace, Edinburgh EH1 2 5EZ
 Tel: 0131 225 6963

ORDER FORM

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TITLE	No. of copies

Up to 100 booklets free, up to 100 factsheets free

If you wish to order more than 100 booklets or factsheets please contact the Health Information department at the above address.

Name: _____

Address: _____

Postcode: _____ Tel: _____

WHERE TO FIND US

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Edinburgh EH12 5EZ
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103 Clarkston Road
Glasgow G44 3BL
Open Mon – Fri

Inverness

Tel: 01463 713 433

Fax: 01463 713 699

5 Mealmarket Close
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www.chss.org.uk

Chest Heart & Stroke Scotland is a wholly independent Scottish charity. We receive no core funding from Government or any public body or private agency.

We need your help to achieve our aim of improving the lives of those in Scotland with chest, heart and stroke illness. You can help by volunteering your time with our services, by supporting your local Regional office or as a fundraiser. You can help by giving now and in the future, by making a donation, organising a local fundraising event, leaving us a gift in your will or by setting up a regular Direct Debit.

If you would like to speak to one of our Advice Line nurses, in confidence, phone Chest Heart & Stroke Scotland Advice Line.

Monday – Friday

9.30am – 4.00pm

0845 077 6000

Fax us: 0131 220 6313

Email us: advice@chss.org.uk

Text us: text chss followed by your message to 07766 40 41 42

There is a text relay service for the hearing-impaired.

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