care AF
Protecting you from AF-related stroke
Foreword

It is common to have questions when you are first diagnosed with atrial fibrillation (AF) and it is very important that you have access to the information you need to enable you to feel comfortable. If you have just been diagnosed or already have AF, you are likely to be curious as to what AF is, how it will be treated and how it will affect your day-to-day life.

**care AF** is a patient support programme for people who have been diagnosed with AF to ensure you are informed about your condition and give you all the information you need to be fully prepared for your AF treatment journey.

We hope that it helps you feel confident about managing your AF.

Best wishes,

The **care AF** team

This pack has been developed in line with the National Institute for Health and Care Excellence (NICE) guideline for AF. The NICE guideline sets standards for quality healthcare and produces guidance on medicines, treatments and procedures. A key priority set out within the guidelines includes offering and providing diagnosed patients with up-to-date and comprehensive information on AF in a ‘personalised package of care’.

Other priorities outlined by NICE are referral for specialised management, assessment of stroke and bleeding risks, interventions to prevent stroke, and rate and rhythm control.
Meet the Team

Mr Sotiris Antoniou  
*Consultant Pharmacist, Cardiovascular Medicine, Barts Health NHS Trust*

Mr Antoniou is currently chair of the cardiac committee for United Kingdom Clinical Pharmacy Association (UKCPA). He has published extensively in the pharmacy press and has a particular interest in improving anticoagulation for stroke prevention in AF and optimising adherence. He is actively involved in the training and development of clinical pharmacists including developing a curriculum and assessment tool for advanced and consultant level specialist cardiac pharmacists working with the UKCPA and Royal Pharmaceutical Society. Mr Antoniou has served on many NICE development groups including Unstable Angina/NSTEMI guideline, stable angina and STEMI guidelines and is a current NICE TA member of the highly specialist technology appraisal group. Mr Antoniou is also a member of the Arrhythmia Alliance Executive Committee, a member of the AF Association Medical Advisory Board, and an honorary senior research associate at UCL School of Pharmacy.

Ms Moira Auchterlonie  
*CEO of the Family Doctors Association*

A St Andrews University graduate, Moira holds degrees in economics, law and leadership. For two decades she has worked with GPs and practices and currently leads the Family Doctor Association, recognised as one of the top five UK Primary Care Organisations. The Association is the national voice of frontline GPs and family doctor practices that offer their patients the benefits of continuity of care; the cornerstone of UK general practice. Moira sees her role as speaking up for ‘proper general practice.’ She works with NHS England, Clinical Commissioning Groups and the Secretary of State for Health’s National Stakeholder Forum, which contributes to the effective development of policy; informs Ministers, and the Department of Health’s top team.
Meet the Team

Dr Matthew Fay
General Practitioner Principal, Westcliffe Medical Centre, West Yorkshire

Dr Fay is a Leeds Medical School graduate, graduating in 1992. He enjoyed a varied few years in hospital practice as was permitted by junior doctor training of the time, before becoming a GP at Westcliffe Medical Practice in 1999. In 2001 he established a GP with a specialist interest (GPwSI) cardiology service for North Bradford PCT with his friend and colleague Dr Andreas Wolff. They took this under the wing of Westcliffe Medical Practice and expanded the services to local people in 2006 and established a further locality service in Ilkley in 2010, Queensbury in 2011 and Thornton in 2012. As well as being the Clinical Lead for the Yorkshire & Humber AHSN AF project, he is currently a Trustee of the AF Association, and an Executive Member of the Medical Advisory Board of STARS (the Syncope Trust), Arrhythmia Alliance, Anticoagulation Europe and the West Yorkshire Stroke Research Network. Outside the clinical arena he is a council member of the Yorkshire and Humber Clinical Senate. As a father of four he insists that he is first and foremost a family doctor, spending the majority of his time seeing people in the setting of a general practitioner.

Dr David Hargroves
Consultant Physician and Clinical Lead for Stroke Medicine, East Kent Hospitals University NHS Foundation Trust, and South East Coast Strategic Clinical Network and Senate

Dr Hargroves has been a consultant for over seven years in East Kent and Clinical Lead for Stroke Medicine for the last six years. He was appointed Clinical Lead for the Strategic Health Authority in October 2010 and now to the South East Coast Strategic Clinical Network and Senate. His research interests include the use of CT perfusion in acute ischaemic stroke, MRI use in transient neurological deficit, neurological manifestations of obstructed sleep apnoea and the organisation of acute stroke services. He was elected to the British Association of Stroke Physicians (BASP) Education & Training Board in October 2011 and to Chair this group in January 2014.
Mr Nick Mills
Cardioversion and Cardiac Rehabilitation Specialist Nurse, Addenbrooke’s NHS Trust, Cambridge

Mr Mills graduated from Homerton School, Cambridge in 1998. Beginning his career on a general cardiac ward he later became a cardiac nurse on the Coronary Care Unit at Addenbrooke’s Hospital, Cambridge in 2000. In 2003 he became an early pioneer of nurse led cardioversion services for which he was awarded the first British Heart Foundation Excellence Award for his work. He became clinical lead for the Anglian Cardiac Network in 2006, before returning to the Cardioversion and Cardiac Rehabilitation Services at Addenbrooke’s as a specialist cardiac nurse. He has recently been a member of the NICE Guideline Development Group for the management of AF.

Mrs Rosemary Najim
Volunteer Patient for AF Association

Mrs Najim is an AF patient and is currently Educational Director of Southern Tutors Ltd. She is a Patient Cardiology Representative for Surrey Downs CCG and a member of the AF Association and Arrhythmia Alliance. She has represented the Arrythmia Alliance at the 2014 IAPO (International Alliance of Patients’ Organizations) congress which was concerned with global access to patient centred health care for all and as patient lead on the Surrey Arrythmia Support Group in Epsom.

Dr Raj Patel
Consultant Haematologist, King’s Thrombosis Centre, Department of Haematological Medicine, King’s College Hospital London

Dr Patel is a consultant haematologist specialising in thrombosis and anticoagulation. He works within the King’s Thrombosis Centre where he is responsible for thrombosis prevention and treatment. He has a special interest in primary care anticoagulation, novel anticoagulants and medical education.
Meet the Team

Mrs Eileen Porter
Volunteer Patient for AF Association

Mrs Porter is an AF patient and has had AF for over ten years. She has been a member of the AF Association for around six years and has volunteered with the AF Association on various occasions, both at home and abroad. She has a nursing background and was also a member of the Guideline Development Group that updated the NICE AF guideline.

Mrs Trudie C A Lobban MBE FRCP
Founder & CEO, AF Association

The AF Association is a registered charity that works to raise awareness and understanding of AF. The charity provides Department of Health endorsed information booklets and fact sheets for patients and HCPs, a telephone Help Line for patients (01789 867 502) and online moderated. Annually the AF Association holds local and national Patient Day meetings, awareness activities and educational events. Mrs Lobban founded a charity (STARS) in 1993 following the diagnosis of her youngest daughter with a heart rhythm disorder; in 2004 she brought together patients, carers, patient groups, healthcare professionals, policy makers, allied professionals and all those with an interest in or affected by cardiac arrhythmias to establish Arrhythmia Alliance. This Alliance brought about change with the introduction of Chapter 8 in the National Service Framework for Coronary Heart Disease on Arrhythmias and Sudden Cardiac Death. In 2007, following 51% of enquiries received by the Arrhythmia Alliance relating to Atrial Fibrillation Mrs Lobban established the AF Association. All three charities are independent, registered non-profit organisations. Mrs Lobban has expanded the reach of the organisations into over 40 countries worldwide. She was recognised for her services to healthcare in 2009 receiving an MBE in the Queens Birthday Honours List. In 2014 she received an honorary fellowship at the Royal College of Physicians, Edinburgh. She is recognised globally as an expert on arrhythmias and in particular AF. She writes and contributes to many research projects worldwide. As a carer to a close family member with AF, she has first-hand experience of the value of reliable information and support in managing long-term conditions and restoring confidence and well being.
Meet the Team

Professor Richard Schilling
Professor of Cardiology and Electrophysiology, Trustee & Medical Director for Arrhythmia Alliance, and Trustee of AF Association

Professor Schilling established the arrhythmia research program at St Bartholomew’s hospital. The department was one of the first centres to carry out randomised clinical trials investigating interventional treatment of cardiac arrhythmia and has developed and validated techniques for using novel technological applications like 3D image integration into cardiac mapping systems for the treatment of complex arrhythmia. These innovations have reduced radiation exposure and improved success rates for procedures that cure arrhythmia. His research interests focus on elucidating the mechanism of complex cardiac arrhythmia in the human heart and the development of percutaneous treatments for them. All of his research has been performed in vivo on the intact human heart. Clinical conditions investigated include ventricular tachycardia and fibrillation in structural heart disease, congenital heart disease, AF and cardiac dyssynchrony in heart failure. He has a busy clinical practice specialising in interventional ablation for complex arrhythmia like AF, VT and VF and is the Director of Clinical Cardiovascular Research at Barts Health and was on the Guideline Development Group for the NICE AF guidelines. Professor Schilling is also a Trustee and Medical Director for Arrhythmia Alliance, and a Trustee of the AF Association.
- What is AF?
- Who is affected?
- What are the causes and symptoms?
- What are the possible complications?
What is AF?

AF is a heart condition – more specifically a type of irregular heartbeat. It means your heart is not working as well as it should be and, if left unmanaged, may make you more likely to have a stroke.

Your heart is a muscle and its job is to pump blood around the body – this pumping action creates your pulse. Normally, your heart’s natural pacemaker sends out regular electrical impulses. A normal pulse (when resting) is regular and between 60 to 100 beats a minute.

AF happens when other electrical impulses fire off independently from the natural pacemaker from different places in the atria (the top chambers of the heart) in a disorganised way. If you have AF, your heart beats faster and in an irregular way – sometimes more than 140 times a minute.

For many people AF is associated with a risk of stroke, caused by blood clots forming in the heart and then travelling in the bloodstream to the brain. The blood clots can block the blood flow to part of your brain causing an AF-related stroke or mini-stroke (sometimes referred to as a transient ischaemic attack or TIA).

AF can come and go without warning (known as paroxysmal AF). There could be long spells between ‘episodes’. As many as half of all patients may not even be aware they have it.
AF falls into three categories.

The three types of AF are:

- **Paroxysmal AF** – multiple episodes that stop within seven days without treatment.
- **Persistent AF** – episodes that last longer than seven days, or less when treated.
- **Long standing persistent AF** – continuous AF which is not suitable for treatment. You may also hear this referred to as permanent or sustained AF.

The risk of having an AF-related stroke is increased with all types of AF so protecting against this is the most important consideration. There are other management options which will be discussed later on.

AF can be more frequent in people with other forms of heart disease, most commonly high blood pressure. Various other heart problems may also trigger AF to develop, but having AF does not mean that the patient has other forms of heart disease.

**Who is affected?**

AF is the most common heart rhythm disturbance encountered by doctors. Experts estimate that AF affects in excess of one and half million people across the UK, although this is considered to be an under estimation due to delayed detection and diagnosis.¹

It can affect adults of any age, but it is more common as people get older. In the over 65 age group, it affects about 10% of people.²

**What are the causes and symptoms?**

The causes of AF are not completely understood, but it is age related – the older you become the more likely you are to develop it. However, it is more likely to occur in patients who have other heart conditions, such as:

- **High blood pressure**
- **Heart disease** (coronary artery disease)
Mitral valve disease (caused by rheumatic heart disease, valve problems at birth or infection)

Congenital heart disease (abnormality of the heart present since birth)

Other conditions and situations that may trigger AF to develop include: alcohol consumption, an overactive thyroid, pneumonia, pulmonary embolism.

Many people with AF have no symptoms and it is only discovered during a routine medical examination or after a health problem. However, for those who do, the most common symptoms include:

- Palpitations or awareness of the heartbeat which may be beating very fast
- Tiredness
- Shortness of breath
- Dizziness
- Chest pain

If any of these symptoms are experienced, your GP should be made aware.

What are the possible complications of AF?

AF can cause turbulent blood flow in the heart chambers, sometimes leading to a small blood clot forming. A clot can travel in the blood vessels until it gets stuck in a smaller blood vessel in the brain (or sometimes in another part of the body). Part of the blood supply to the brain can then be cut off, this is what causes an AF-related stroke.

The main complication of AF is an increased risk of having an AF-related stroke. Every 15 seconds someone suffers an AF-related stroke.³
Less common complications of AF include:

- **Heart failure** – this can develop if the heart becomes weak, as a result of the rapid rhythm caused by AF. As the heart weakens, blood flows back into the lungs and affects the normal breathing pattern.\(^3\) AF can also cause heart failure even in patients who have well controlled heart rates, although this is very rare.

- **Angina (chest pains/discomfort)** – AF can cause angina to occur or become more frequent.

AF is also associated with a slightly increased risk of death although generally it is not considered a life threatening disease in its own right. Why AF is associated with increased risk of death is not fully understood.\(^4\)
AF-Related Stroke

- What is a stroke?
- How is AF linked to stroke?
- AF-related Stroke risk calculator
- Reducing the risk of an AF-related stroke
What is a stroke?
A stroke happens when the blood supply to part of the brain is reduced. This may be due to a blockage of an artery (ischaemic stroke) or by bleeding in the brain (haemorrhagic stroke). A transient ischaemic attack (TIA) is similar to a stroke, but the symptoms are temporary and there is no permanent brain damage.

Stroke is a debilitating disease which can affect bodily functions, thought processes, learning abilities, and how you feel and communicate. The effect of strokes are sudden and symptoms include feeling numb, weak or paralysed on one side of the body, slurred speech and difficulty in finding words or understanding speech. Some people lose their sight or have blurred vision, and others become confused or unsteady. It is possible to regain full control of speech and mobility after a stroke; recovery levels and times will vary from person to person depending on age, health and severity of stroke.

How is AF linked to stroke?
Your heart is a muscle and its job is to pump blood around the body – this pumping action creates your pulse. A normal pulse (when resting) is regular and between 60 to 100 beats per minute.

If you have AF, your heart has episodes where it beats faster and in an irregular way – sometimes more than 140 times a minute. You can measure your heart rate by feeling the pulse in your wrist or neck.
Monitoring devices and mobile screening applications are available for detecting and recording abnormal heart rhythms and arrhythmic episodes. These recordings should be reviewed by a HCP. Screening technologies approved by NICE are becoming readily available.

If you have a fast or irregular heartbeat, your heart may not have a chance to relax and empty itself of blood properly before filling up again. As a result, the blood does not move quickly and smoothly, and can form clots. If these blood clots then travel in the bloodstream to the brain, they could block the blood flow to part of your brain and cause a stroke or TIA.

The diagrams below help explain this process.
**AF-related Stroke risk calculator**

If you have been diagnosed with AF, your doctor will assess your personal risk of stroke, using a scoring system called the CHA$_2$DS$_2$ – VASc:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Points</th>
<th>Your score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you suffered congestive heart failure?</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Do you suffer from hypertension (high blood pressure)?</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Are you over 75?</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Are you between 65 and 74?</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Have you ever suffered from a stroke, TIA or thromboembolism?</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Have you ever been diagnosed with vascular disease e.g. angina or high cholesterol?</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Do you have diabetes mellitus?</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Are you female?</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The scoring system is used to assess whether anticoagulation medicine (a type of drug that slows down your body’s ability to clot, therefore reducing the likelihood of clots forming in your blood vessels), is required.

Treatment is recommended when your score is two or more, however in some instances treatment may even be recommended with a score of below two. Your doctor will decide your personalised treatment plan depending on your AF-related stroke risk.
Reducing the risk of AF-related stroke
There are a number of things you can do to lower your AF-related stroke risk:

› **Stop smoking**

› **Drink alcohol in moderation**

› **Eat a healthy diet**

› **Take regular exercise**

› **Have regular check-ups with your GP**

› **Manage any other medical conditions** you have, for example high cholesterol, diabetes and high blood pressure
AF Management

- Management of AF
- Medicines to reduce the risk of an AF-related stroke
- Types of anticoagulants
- Medicines to control AF
- Monitoring and check ups
- How to take your medicine effectively
Management of AF

Treatment of AF varies depending on factors including:

› The type of AF
› Symptoms
› Treatment of any underlying cause
› Overall health

You may be treated by your GP or referred to a heart specialist, known as a cardiologist or electrophysiologist. The first steps are to reduce your risk of stroke, improve your quality of life and investigate the cause of the AF. If a cause is found, you may only need treatment for this. For example, hyperthyroidism (an overactive thyroid gland) may cause AF, so medication to correct the underlying condition will treat AF.

If no underlying cause can be found, a therapeutic option would require medication to reduce the risk of an AF-related stroke. The treatment options are:

› Medicines to control AF
› Cardioversion (electric shock treatment)
› Catheter ablation
Medicines to reduce the risk of an AF-related stroke

The way the heart beats in AF means there is a risk of blood clots forming in the heart chambers. If these enter the bloodstream, they can cause a stroke.

All people with AF (except those with the lowest risk of having an AF-related stroke) should be offered anticoagulation therapy. Anticoagulation means that you take a medicine to reduce the chance of a blood clot forming and having an AF-related stroke. Some people call anticoagulation “thinning the blood” although the blood is not actually made any thinner. Warfarin has been the anticoagulant medicine traditionally used, though new medicines have recently been developed.

All anticoagulants work by interacting with certain chemicals in the blood to prevent blood clots forming so easily.

They reduce the risk of an AF related stroke by nearly two thirds of people with AF. In other words, these therapies can prevent about six out of ten AF-related strokes that would have occurred without treatment.  

Types of anticoagulants

Warfarin

Warfarin, a vitamin K antagonist (VKA), has been the most commonly used anticoagulant medicine. However, there is an increased risk of bleeding in people who take warfarin and it can interact with many medicines and some food and drinks. This is why if you take warfarin you will need regular blood tests (INR tests) to check how quickly your blood clots. The aim is to get the dose of warfarin just right so your blood does not clot as easily as normal, but not so much as to cause bleeding problems. Speak to your HCP if you have questions about taking warfarin.
Novel oral anticoagulants (NOACs)
Apixaban, dabigatran, edoxaban and rivaroxaban are known as NOACs and may be used as an alternative to warfarin. Compared to warfarin, these NOACs do not have the same interactions with other medications or food and drink, so you do not require regular blood tests. If you have had trouble getting your INR level just right, your HCP may suggest one of these medicines as an alternative to warfarin.

You may also hear NOACs referred to as new OACs, non-VKA antagonists, xabans and direct thrombin inhibitors (DTIs).

Aspirin
Although not an anticoagulant, aspirin has been traditionally used to slow blood clotting, but is no longer recommended. If you take aspirin for AF you should make an appointment to discuss it with your HCP. NICE no longer recommends aspirin as a therapy to reduce AF-related stroke.

Medicines to control AF
A rate control strategy aims to use medication to slow the speed of the heart in order to alleviate symptoms, help protect against heart failure and reduce the likelihood of stroke and other complications. A number of different types of drugs are available and you may need to try different combinations before the medications which suit you best are found. Medications are also used in a rhythm control strategy when they can convert the AF back to a normal rhythm.

Beta blockers
Beta blockers are used to slow the heart rate and are also useful in keeping AF away if the heart rhythm has been restored to normal. Most commonly bisoprolol is prescribed but metolprolol, atenolol or propanolol are also used. Sotalol is another beta blocker but it is no longer recommended for heart rate control. Patients taking beta blockers will need their blood pressure and heart rate checked regularly by their GP. Beta blockers are not recommended in patients with asthma or emphysema or patients with slow heart rates.
**Rate limiting calcium channel blockers**

There are several calcium-channel blockers but the most commonly prescribed are those that are more effective at controlling a fast heart rate, e.g. verapamil and diltiazem. They can be used alone or in combination with beta blockers or digoxin. Verapamil in particular can be useful in maintaining a normal heart rhythm if it has been restored from AF.

**Digoxin**

Digoxin can be effective in controlling the heart rate at rest, but it rarely controls the heart rate during exercise. It is therefore only used for people who do not exercise unless a beta blocker or calcium-channel blocker is also being taken. It is not used for people with paroxysmal AF.

**Antiarrhythmics**

Antiarrhythmic drugs such as amiodarone and flecanide are sometimes used to control fast heart rates that do not respond to other medications. Sometimes they are used to help restore the heart to a normal rhythm on their own, or to help during and after cardioversion. They are very strong drugs and are not recommended for everyone. Dronedarone is another antiarrhythmic drug that is only recommended for people who need help to maintain a normal heart rhythm after cardioversion. Amiodarone is not usually recommended to be taken for more than 12 months. Sotalol is a beta blocker that has an antiarrhythmic effect at high doses only. It is no longer recommended for rhythm control as high doses can increase side effects and can be dangerous.

**Pill in the pocket**

‘Pill in the pocket’ is a pill that is taken at the time a person gets AF in order to restore the normal rhythm, rather than a therapy that aims to prevent AF. A ‘pill in the pocket’ approach is not commonly recommended, but it can be useful for some people to terminate single episodes of AF (paroxysms). Close monitoring of the person will take
place in hospital. The drug flecainide is carried by the patient and may be taken as a single dose at the beginning of the attack. This is safe if the patient is properly educated when it is supplied.

**Cardioversion**
Cardioversion is a term used for restoring the heart from AF to its normal regular rhythm. Some medications can do this, but more commonly electricity is required. This is called D.C. cardioversion and involves a controlled electric shock applied across the chest using a cardiac defibrillator. The procedure takes place in hospital under a general anaesthetic. The treatment takes a few minutes but a patient is kept in hospital a few hours while the heart is carefully monitored and the anaesthetic wears off.

Anticoagulation drugs must be given prior to the procedure if AF has been present for more than 48 hours to minimise the chance of having a stroke. Your HCP will advise on which is best for you to take and dosing. You must take an anticoagulant for at least four weeks before cardioversion to ensure there are no blood clots in your heart. If you take warfarin you will need weekly INR tests for four weeks prior to the procedure during which time you must maintain an INR of two or more. If the cardioversion is successful, anticoagulation and other medications may no longer be needed. However, some people may need to continue with medication for life if the treatment was unsuccessful, if your HCP believes you have a significant risk of AF returning, or you are still at high risk from stroke.

Cardioversion is considered an extremely low risk procedure if the recommended anticoagulation regime has been followed. Speak to your cardiologist or specialist nurse about any concerns you may have.

The best candidates for cardioversion are young, active, or recently diagnosed AF patients who are in otherwise good health – for instance no underlying heart disease. It is usually recommended for people who still have significant symptoms of AF while taking rate controlling medication.
D.C. Cardioversion can also be performed using a transoesophageal echocardiogram (TOE). This is an ultrasound scan where a probe is swallowed. The probe is positioned right next to the left atrium where a HCP can look into the left atrial appendage for blood clots. If none are seen it is safe to go ahead with the cardioversion without the need for four weeks of an oral anticoagulant (OAC) before. However, you still need to be taking an OAC.

D.C. cardioversion is 80-90% effective for selected patients. However, due to its complex nature AF can easily return. Of those patients for which cardioversion was successful 50% will revert to AF within 12 months and 80% within five years.

**Catheter ablation**

Ablation is a procedure reserved for those with continued symptoms that impact significantly on quality of life or where medical therapy has been unsuccessful. The ablation procedure is considered ‘complex’ and can only be performed by highly skilled specialists called electrophysiologists (EP) who you must be referred to by your cardiologist.

Catheters (thin, soft wires) are guided through one of your veins into your heart, where they record electrical activity. When the source of the abnormal electrical impulses is found, an intense energy source is transmitted through one of the catheters to create a very small amount of scar tissue. This does not damage the function of the heart. The energy can come from high-frequency radiowaves that generate heat (radiofrequency ablation) or through freezing (cryoablation). Commonly a line is ‘drawn’ around the pulmonary veins which creates a sort of firewall around them (pulmonary vein isolation). The abnormal impulses causing AF continue to fire but they cannot transmit themselves across the firewall, therefore allowing the natural pacemaker to re-take control. Catheter ablation can be performed under either a local or general anaesthetic.
The procedure has reasonably high success rates in selected patients, but does not suit every AF patient. It comes with risks and complications that will be fully discussed with you by your HCP. It is considered a treatment for symptom control rather than stroke prevention.

**Surgical ablation**
Surgical ablation uses the same principal of making a ‘firewall’ as catheter ablation but a surgeon uses a scalpel to create the scar tissue. This is only performed during cardiac surgery such as coronary artery bypass or valve repair/replacement. It is commonly called the Maze or Cox Maze procedure.

**Left atrial appendage occlusion (LAAO)**
The left atrial appendage (LAA) is a small ‘pocket’ in the left atrium where the blood clots causing AF-related stroke are commonly formed. The LAA can be removed surgically or blocked off using an implantable device such as the Watchman. These devices are now approved by NICE. They may be considered only if you cannot take anticoagulants.

**Pacemakers**
A pacemaker is a special electronic device implanted under the skin which stimulates the heart muscle and regulates its contractions. They are usually used for people who have a problem with the electrical connection between the atria and the ventricles. They can also be used for people with AF who have a particular difficulty with a fast heart rate. The same electrical connection is permanently severed using the ablation technique and the pacemaker takes over the regulation of the heart rate gaining control of its overall speed. This is not a cure for AF as the atria continue to fire in an irregular state. The pacemaker can be programmed to fire at a rate which suits the individual. It is known as the pace and ablate strategy and is usually only recommended for patients who have continued symptoms despite medical treatment or have heart failure thought to be caused by a continued fast heart rate.
It is not a treatment to be taken lightly as you will be dependent on the pacemaker for life. However it can help regain control over the level of symptoms experienced.

**Monitoring and check ups**

It is important to visit your GP and/or cardiologist regularly so they can monitor your AF and manage your treatment. They should also check your blood pressure and heart rate and rhythm regularly. A manual pulse check should be performed at each visit.

If you are taking warfarin your blood will need to be checked on a regular basis. The ability of warfarin to make the blood less likely to clot can be affected by a number of factors such as food and other medications. Regular monitoring, measured by INR, ensures that INR is not too low (risk of clots) or too high (risk of bleeding). Your medication can then be adjusted if necessary depending on the result, to ensure your INR remains within the target required for your condition – called your therapeutic range – which will be decided by your GP or consultant. If your symptoms are inadequately controlled with your medication, you may be referred for specialised management. Your HCP will review your treatment annually and reassess if there is evidence of poor anticoagulation control.

**How to take your medicine effectively**

It is also very important that you take your medication as directed by your HCP at the right time and with food as necessary. If it is important to take your medicines at the same time every day, try to incorporate into your daily routine such as with breakfast. You could leave a note on the fridge or set an alarm called ‘AF pills’ on your mobile phone at the same time each day.

If you are experiencing any problems with your medication it is important to continue to take it and contact your HCP straight away.
Patient Stories

- Claire’s story
- Eunice’s story
- Julia’s story
- Paul’s story
- Kelvin’s story
Claire’s story...

My AF was only diagnosed six months ago at the age of 48 as the result of having a stroke. I was decorating at home one evening and felt unwell; I was very dizzy and had a terrible headache. The only way I could get any comfort was to lie on my side, so my husband phoned the paramedics and when they arrived they diagnosed AF via an ECG (electrocardiography) which records the electrical activity of the heart.

I was taken to hospital and they managed to stop the AF by giving me medication intravenously through a drip and I felt much better. The next morning I saw the consultant and had a CT scan (computerised tomography) which uses X-rays and a computer to create detailed images of the inside of the body and at this point they realised I had suffered a stroke. I was extremely lucky as I have had very few classic stroke side-effects, except extreme fatigue, limb and facial pain.

Looking back, I think that before my stroke I may have had a couple of periods of AF. On two occasions, I can remember feeling dizzy and out of breath when I moved and my pulse was racing. I didn’t know why it was happening. The first time it lasted for several hours and the second time about half an hour but then went away. I was frightened but as it got better, I decided not to acknowledge it.

When I did get the AF diagnosis I was frightened. No one really told me anything about AF, so I was worried about so many things. How would it impact my daily life? Would it get worse? I was also worried about taking medication for the rest of my life and the side effects.
I’m now taking three different tablets, one to control blood pressure, a statin to lower my cholesterol levels and a NOAC to reduce further risk of another stroke.

I’ve now been back at work for three months but having the stroke has impacted on my quality of life. Fatigue is a major problem; I become tired very quickly and lose concentration easily. After work I can’t really do anything at home and it can be difficult to visit family as driving long distances can be exhausting. I can’t get on with life like I used to, I need to manage my life carefully now.

I would say to anyone with AF, don’t worry as it can be effectively managed – but do listen to your body and don’t push yourself to hard.
Eunice’s story...

I was diagnosed with AF four years ago as following the death of my husband I suffered from very bad palpitations. I was taken into hospital and following some initial treatment to manage my heart beat, underwent further tests and a CT scan which found that I had suffered from a TIA, also known as ‘a mini stroke’. I was really surprised as I didn’t think I’d had a stroke as I had no symptoms or side effects.

Following the test my doctor wanted me to have an ablation and a pacemaker fitted but I really didn’t want to have surgery. I didn’t feel it was really necessary. I’m now on a number of different medications to slow my heart rate, keep my blood pressure normal and an anticoagulant to reduce my risk of having another stroke.

When I was told that I had AF, it didn’t really frighten me as I thought there was nothing wrong with my heart. However, I was concerned that it might slow me down a little. I was very active and I went away a lot. I didn’t know if it was going to be safe for me to travel in the future. I was worried that my AF might impact my life in the future.

I wasn’t given much information following my diagnosis but I now know a lot more about my condition. I got in contact with the AF Association who have been so helpful and put me in touch with other people in the same position as me.

I would encourage other people with AF to get as much information as possible, accept your condition and ensure that you take your time to make decisions on treatment – and that it’s the right decision for you.

I now have my condition under control. I’m 88 and still manage to lead an active life, I still travel and drive. I get on with my life and try not to worry about my AF as that can sometimes bring on an episode.
Julia’s story…

I was first aware of my heart beating very fast, making me feel slightly faint in my late twenties. When I was thirty, after having my daughter, I had to stop my car with her in the back as I thought I was having a heart attack!

A couple of years later after the birth of my son, I was at home and trying to inject one of my horses when I went into very strong irregular palpitations. I sat in the car for a bit but could see my chest leaping about! On arriving home my Mum called the GP and he tried massaging the blood vessel in my neck but in the end I had to go to A&E. There I was wired up to a heart monitor, put on a heparin drip and given some intravenous antiarrhythmic drugs.

My heart was running about 275+ beats per minute so I tried not to look at the monitor! The next day I had a scan of my lungs because they suspected that I might have suffered a blood clot after the birth of my son which might have caused the AF. The result was inconclusive.

I was put on medication to control my heart rate but I knew nothing about AF so I looked it up on the internet. It seemed to be a problem of older people with existing heart problems, so I felt quite alone and scared.

Following antiarrhythmic drug treatment, I learned of catheter ablation and was put on a waiting list. In 2000, I had my first ablation. My heart went into AF on the table, so they shocked it and then tried to map it but there was too much activity so they couldn’t do anything. I was devastated to wait a year for nothing.

Now with a diagnosis of paroxysmal AF I joined a group of fellow sufferers online and we exchanged information. I tried to stay as un-stressed as possible! And when I did get runs of AF sat quietly and focussed on slow, deep breathing.
Things went smoothly for several years and in 2007 I had to move the family and my horse business, this was a very traumatic time and resulted in a couple of big episodes of AF. I was becoming quite breathless so was referred to a specialist who suggested a PVI (pulmonary vein isolation). I went home and after a couple of days rest did too much, a BIG mistake. I collapsed a week later and was rushed by ambulance to my local A&E.

Since then I have had a number of other episodes and three more ablations. I’m on a low dose of beta-blocker for now and things have settled down! New innovations are on the way, so I will watch out for them.

*AF has made a big impact on my life but it has not stopped me doing things and the more pro-active I can be and the better informed, the easier it is to cope with. Knowing when I need to listen to my body and rest is essential, and avoiding stress as much as possible is also critical at keeping AF quiet.*
I’m a 58 year old father-of-two and a retired policeman. When I look back I knew I had AF for years. It came and went so I didn’t think it was a problem.

I diagnosed myself by searching the symptoms on the internet and took an aspirin every day because I found out about the risk of stroke associated with AF.

I would get a racing heart and then as time went on I could feel it was irregular. But I would sit down and it would go away. It’s hard to describe but it’s a strange sensation when I have an episode – a bit like there being a hamster inside your chest.

It wasn’t until January 2012 things got worse. The episodes were becoming more frequent and AF was having a bigger impact on my life. My episodes were becoming more regular and I’d have one and it would go away but a couple of days later I’d have another. It got really bad when I went on a cruise, I felt awful and spent most of my time laid on my bed.

In September 2012 things really came to a head. I had been to the gym and I was in the changing room and went into AF. I felt really rough but managed to drive home and went to bed but when I woke up the next morning I was still in AF. Eventually my heart went back into rhythm.

That night I was on my computer when suddenly I started getting all the symptoms of a stroke. It felt like sparks were going off in my head and then the whole right side of my body went numb and my speech went. I got downstairs and my wife knew something was wrong immediately and called an ambulance.

I had suffered a mini-stroke but I was very lucky because by the time I got to hospital I had already started to recover. Knowing the risk of
stroke associated with AF and how strokes are often more debilitating. I do feel very lucky that the stroke has had little impact on my life.

I have since been put on an anticoagulant and a higher dose of anti-arrhythmic medication and my episodes are a lot less frequent. But AF still has an impact on my life – psychologically it is a significant weight on your mind and you are constantly aware of it. Living with AF is very difficult and there have been times when I have been particularly bad when I couldn’t sleep and have cried because I felt so alone.

I now have my condition under control and my advice to anyone experiencing a similar situation is – don’t feel alone. There are so many other people out there with this and the support is there. I also now realise that my initial self-diagnosis and management of my condition, without correct medical advice, was not appropriate.

I’d encourage all patients to speak to their doctors and work closely with them to tailor care in line with their individual needs.
Kelvin’s story...
I’m an 85 year old, retired teacher who is married with three children who are now all in their forties.

I was first diagnosed with AF in 2003 following, what I now know, was a heart attack. At the time I thought it was nothing serious, I felt a bit sick and had a pain down my left arm but my wife thought it was a good idea to phone an ambulance and we were taken to my local hospital. After some initial examinations they referred me to a specialist cardiology unit in London for further tests.

During the tests I was diagnosed with AF, I was really surprised as I hadn’t had any symptoms and the heart attack had really come out of the blue. I had lots of tests and I can remember thinking there were just lots of wires which were stuck to my body and lots of readings were taken. I didn’t really worry when I was told I had AF, I tend not to worry about things and I thought, if that’s what the experts say then that’s fair enough and I took their advice.

As a precaution they fitted a defibrillator and a pacemaker and following surgery I was monitored every six months at the hospital and I also have a machine at home that monitors my heart.

I was then prescribed warfarin, an anticoagulant to slow how fast blood clots, to prevent a stroke, as this can be a complication of AF. You have to watch what food you eat and have an INR reading frequently which meant that over fours years I was having blood tests about once a month and travelling a long distance to the hospital.

I really wasn’t happy about this so I asked my consultant about NOACs, which I had read about, which may be used as an alternative to warfarin. However, unlike warfarin, they don’t have the same interactions with other medications or food and drink, so you don’t require regular blood tests. I am now taking one of these new agents and I’m very happy because I can eat what I want and monitoring is infrequent (but if I do need a blood test I can just go to my GP). It’s a great weight of my mind. I also take a beta blocker, an angiotensin-converting enzyme (ACE) inhibitor and a statin.
I always trust the doctors and take my medication as instructed but if I’m not happy I talk to my doctors and I don’t ignore any symptoms, if I feel unwell I go back to my doctor.

My condition is now under control and it hasn’t really impacted my life greatly, I can still do the gardening which I love but as you get older you can’t do as much as you want to anyway!
Healthy Living

- Nutrition and diet
- Management of stress and anxiety
- Sex and relationships
- Exercise and AF
Nutrition and diet
Nutritional Therapist, Caroline Skirrow (thefoodfixer) has put together dietary advice to help people with AF to reduce their risk of stroke. Caroline has over ten years experience in nutrition, helping to improve healthy eating habits of her patients in liaison with their HCP.

You may be aware that eating a healthy diet is good for reducing your risk of heart disease, but did you know that it can also be of benefit even if you already have heart disease?

As someone with AF there are a number of stroke risk factors that you can reduce by eating a healthy diet. For example, eating the right diet can:

› Help lower your blood pressure
› Help reduce your cholesterol
› Help you control your weight
› Help reduce the risk of other conditions such as diabetes\(^6\)

This guide is designed to help you understand the basic principles of healthy eating with tips and examples of things that you can follow to improve your health. There are also examples of some specific foods that evidence has shown are particularly ‘heart healthy’.

“Here we offer handy hints and tips for maintaining good heart health, including what to eat, how to exercise and the importance of managing your stress levels. These all really do help to keep AF under control, I hope it is helpful.”

Mr Nick Mills – Cardioversion and Cardiac Rehabilitation Specialist Nurse, Addenbrooke’s NHS Trust, Cambridge
What are the basic principles of a healthy diet?
A healthy diet should:

- Be high in starches, but low in sugars and refined carbohydrates
- Be high in vegetables
- Contain moderate amounts of fruit
- Contain small amounts of good fats in the right balance
- Keep you well hydrated
- Contain moderate amounts of healthy proteins, including fish, nuts and dairy products
- Be low in salt, alcohol and caffeine
- Contain plenty of fresh and unprocessed foods

The Government ‘eatwell’ plate below illustrates how these different elements can be balanced in your daily diet.
Let us take each one of the sections on the eatwell plate and look at them in more detail to:

› **Explain why they are important**

› **Provide you with more specific guidance on how much to choose from each group**

› **Show you what that looks like in terms of real food examples**

<table>
<thead>
<tr>
<th>High in starches, but low in sugars and refined carbohydrates</th>
</tr>
</thead>
</table>
| **Why?** | Our diets have become very high in processed foods high in sugars and refined carbohydrates. This means that we can be consuming a very high calorie intake whilst actually being quite low in vital nutrients. High consumption of these quick energy release foods can contribute to unstable energy levels and weight-gain.  
By choosing less refined forms of carbohydrate such as whole grains, beans and starchy vegetables we draw the energy from these foods more slowly. This helps stabilise our blood sugar and give us more consistent energy levels. The slower energy release also means we feel fuller for longer aiding weight management. 
Less processed sources of carbohydrate are also rich sources of vitamins and minerals vital for supporting our overall health. They are also high in different types of fibre which are important for a healthy gut function and the removal of toxins from the body. Oats and beans are particularly high in something called soluble fibre which can help reduce your cholesterol levels. |
| **Avoid** | **Simple carbohydrates:** sugar, syrup, corn-fructose syrup, excess fruit juice, honey, cordials, soda, sweets, puddings, sweetened jams, chutneys, sweetened canned fruit. |
| **How much?** | Under 90g per day. If you have diabetes, sugars will have a major impact on your blood glucose so you should be aiming to keep processed sugars to a minimum. |
| **What does it look like?** | There are 20g of sugar in:  
- 1 medium apple  
- 1 small glass (200 ml) of orange juice  
- 4 teaspoons of sugar  
- 4 chocolate digestives  
- ½ a can of fizzy drink  
- 1 medium bowl of tinned tomato soup |
<table>
<thead>
<tr>
<th>Limit</th>
<th>Refined carbohydrate: white flour products (bread, pasta, pastries, noodles, couscous, cakes, biscuits, crackers), processed potatoes (crisps, mash, gnocchi), white rice.</th>
</tr>
</thead>
</table>
| Choose instead | **Slow burning carbohydrate:**  
Grains: Wholemeal bread, whole wheat pasta, rye bread, rye crisp bread, brown rice, pearl barley, wholegrain cereals, porridge, oatcakes, quinoa.  
Beans: Pinto, butter, flageolet, soya, kidney, cannellini, adzuki, chick peas, lentils, split peas, baked beans, daal, hummus, gram flour, low-salt baked beans.  
**Starchy vegetables:** Potatoes, plantain, sweet potatoes, carrots, parsnips, beetroot, swede, broad beans, peas. |
| How much? | 230g per day for women. 300g for men. |
| What does it look like? | There are 50g of carbohydrate in:  
– 3 slices of brown bread  
– 75g of uncooked pasta or oats  
– 65g of uncooked rice  
– 300g of potatoes  
– 1 tin of beans  
– 500g of vegetables e.g. carrots, broad beans, peas, broccoli |
Moderate amounts of fruit

**Why?** Fruit is higher in sugar than vegetables, so although it contains high levels of protective vitamins and minerals if you have all of your 5-a-day as fruit you will be consuming quite high levels of sugar. Processed fruit products such as jams, juices, pie fillings and puddings are often naturally higher in sugar or have added sugar so opt for fresh fruit where possible and read the label on any processed product.

**Examples** Oranges, satsumas, lemons, apples, pears, all berries, stone fruits (peaches, nectarines, apricots, cherries), kiwi fruit. Some fruits release their sugars more quickly than others so if you are watching your weight moderate your intake of banana, melon, grapes, and mangos in favour of the slower release fruits above.

**How much?** A portion is 80g (3oz). Aim for at least 2-3 portions per day in a variety of colours.

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**High in vegetables**

**Why?** Vegetables are low in calories and high in vitamins, minerals, fibre and other plant based chemicals that protect our health.

**Examples** Aubergine, artichoke, beetroot, broad beans, broccoli, cauliflower, celery, carrots, coriander, courgettes, green beans, kale, leeks, lettuce, mushrooms, onion, peppers, parsnips, parsley, peas, rocket, runner beans, spinach, squash, sweet corn, sweet potato, tomatoes, watercress.

**How much?** A portion is 80g. Aim for at least 3-4 portions per day in a variety of colours.
The right fat balance

Why?
We need to eat some fat to run vital processes in the body and to absorb some vital nutrients. However, fat is highly calorific so it is important to keep the total quantity under control and to try and keep a healthy balance between the different types of fat.

The Mediterranean Diet has been shown to reduce risk factors for heart disease and includes moderate levels of the omega-3 and omega-9 fats in combination with reduced saturated fat and omega-6 intake and avoidance of trans and hydrogenated fats which are heavily processed and often used in cheaper processed foods.13

As lots of foods contain natural fat (e.g. meat, fish, dairy, nuts and some vegetables) be aware of how much food you have from these sources and be careful adding extra fat to meals. Trim fat from meats, moderate full fat dairy intake and use spreads and oils sparingly in food preparation. When buying processed foods be sure to check the label.

Fats to avoid
Saturated fats rich: full-fat dairy products, meat fats, processed meat products e.g. bacon, salami, corned beef.
Trans and hydrogenated fats: used in commercial frying and in many pre-packaged foods.
Overheated fats: Any fat that has been exposed to high temperatures such as deep fried foods.

Fats to limit
Omega-6 rich:
Safflower, sunflower, grape seed, corn, soya, sesame, spreads, dressings and products make with these oils such as baked goods.

Fats to choose
Omega-3 rich:
Oily fish: salmon, trout, anchovy, fresh tuna, mackerel, herring, sardines, Cornish sardines.
Nuts and seeds: hemp, flax (linseeds), walnuts and pumpkin seeds (and their oils).
Omega-9 rich:
Olives, avocados, almonds, cashew nuts and their oils, canola oil.

Guidelines
<table>
<thead>
<tr>
<th>Total fat</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>70g</td>
<td>20g</td>
<td>95g</td>
</tr>
<tr>
<td>20g</td>
<td>60g</td>
<td></td>
</tr>
</tbody>
</table>

How much?
There are 20g of unsaturated fat in:
- 220g of salmon (2 fillets)
- 50g of nuts (a handful)
- A tablespoon of olive oil
# Moderate amounts of lean protein

**Why?** Protein is important for running our metabolism and for building and repairing the structure of the body. It also helps us feel full\(^1\) so eating adequate protein can help you control your appetite and contribute to weight management.

<table>
<thead>
<tr>
<th>Proteins to limit or avoid</th>
<th>Processed meats which are high in salt, fat and additives e.g. bacon, ham, salami, corned beef, spam.</th>
</tr>
</thead>
</table>
| **Proteins to choose**    | - Lean poultry (e.g. chicken, turkey)  
  - 2-3 servings per week of fish and seafood especially oily fish (salmon, trout, mackerel, tuna, sardines, pilchards)  
  - Eggs  
  - Pulses (e.g. chickpeas, lentils, beans)  
  - Unsalted nuts and seeds  
  - Soy products (e.g. tofu, soya milk/yoghurt)  
  - Low fat dairy products (e.g. cottage cheese, unsweetened low fat yoghurt, ricotta) |
| **How much?**             | The guideline daily amount of protein for a woman is 45g and for a man is 55g. |
| **What does that look like?** | You would get 10g of protein in:  
Half a salmon fillet (40g)  
Half a tin of beans (200g)  
2 small eggs  
2 heaped dessert spoons of cottage cheese  
A moderate handful of almonds (50g) |
Well hydrated

**Why?**
Dehydration is very common and even mild dehydration can contribute to symptoms of fatigue, poor concentration and memory. If you have AF then staying hydrated is really important as dehydration can also affect heart rhythm and increase your blood pressure.\(^{15}\)

Caffeine is a stimulant and can affect heart rate so it is advisable to keep your consumption under control.\(^{16}\) It is also a diuretic so can contribute to dehydration, so should be consumed in moderation.

**Examples**
Water, decaffeinated or herb teas or watered down fruit juices and weak fruit cordials, milk. Wet foods such as soups and stews also count towards your hydration.

**How much?**
Consume 6-8 medium glasses (1 to 2 litres) of fluid per day

Limit your alcohol intake

**Why?**
Drinking more than the government guideline amount elevates your risk factors for stroke by causing damage to the heart muscle, affecting heart rhythm and increasing blood pressure.\(^{17}\)

**How much?**
Guidance for women is no more than 14 units per week. Guidance for men is no more than 21 units per week.

The number of units is based on the size of the drink and its alcohol strength, one unit of alcohol is:
- A small glass (100 ml) of average strength wine
- Half a pint (about 300 ml) of normal strength beer or cider
- A single measure (25 ml) of spirits (40% ABV)
- A small glass (50 ml) of sherry or fortified wine (20% ABV)
Getting Started
Making changes can be daunting even if you know you are going to get benefits in the long run, so take it one step at a time. That way the change will be easier to manage and you are more likely to sustain the new healthier pattern over the long-term. Try the steps below:

1. Keep a food diary for a week so you can realistically assess your diet
2. Pick an area where you think it is particularly weak and set yourself a goal to make an improvement
3. Make sure the goal is realistic and achievable and set yourself a timescale to reach it. Make a note of why you are setting the goal and why it is important for you to achieve it
4. Plan how you will achieve your goal
5. Tell your friends and family or colleagues about your goal and why it is important for you so they can help support you in making the change
6. When you achieve your first goal and are comfortable that you can stick with it as part of a way of life go back to step 2 and find a new area to improve

Use alternatives to salt to season food

<table>
<thead>
<tr>
<th>Why?</th>
<th>Excess salt can cause fluid retention which may cause swelling and exacerbate high blood pressure. Be aware that your salt intake is not just the salt you add to your food. Pre-packaged food is often very high in salt even in foods you would not expect like sweets, biscuits, cakes and cereals. Be sure to read food labels carefully so that you are aware of your intake and keep it below the recommended intake.</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much?</td>
<td>5g per day for women. 7g per day for men.</td>
</tr>
<tr>
<td>Examples</td>
<td>Use a potassium based salt e.g. Lo-Salt or season food with fresh and dried herbs, spices, garlic, mustard, horseradish or vinegar instead.</td>
</tr>
</tbody>
</table>
Eating Well – Top Tips

› Take time to plan ahead – for example pick a time at the weekend when you can plan your meals and shopping so you always have healthy choices to hand (use the suggested weekly food planner to help you)

› Get a really simple recipe book with quick, easy and healthy options or check online if you use a computer or tablet

› If you are buying packaged food ALWAYS read the label – see the ‘Food Labelling’ section below for guidance. Keep a particular eye on your salt, sugars and saturated fat content to help you stay within healthy limits

› If you are trying to manage weight think about:
  › Weighing portions to help with portion control
  › Using standard sized crockery and not overloading your plate
  › Adding high volumes of vegetables to your meals to fill you up as they are very low in calories and very high in protective nutrients and fibre

› Avoid keeping unhealthy items at home – for example, salted snacks, cakes and biscuits. If they are not there you cannot eat them

› If you have a freezer, then try making your own healthy ready meals – cook larger batches of food and weigh out sensible portions and freeze them

› If you are unable to cook look for pre-cooked chicken and fish in the supermarket which you could add to a healthy salad packed with different ingredients

› If you have not cooked before or do not feel confident cooking then just experiment! Cooking is very creative and can be great fun, so do not be scared of giving it a go
Healthy Living

**Heart ‘Helpful’ Foods**

<table>
<thead>
<tr>
<th>Foods</th>
<th>What is in it?</th>
<th>Why is it helpful?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oats, beans, lentils, whole grain cereal products, soy products</td>
<td>Soluble fibre</td>
<td>Helps reduce cholesterol</td>
</tr>
<tr>
<td>Chicken, turkey, fish, whole grains (oatmeal, wheat germ, brown rice), eggs, vegetables, soya beans, peanuts</td>
<td>B6</td>
<td>Preventing deficiency by ensuring adequate levels in the diet helps to lower the risk of heart conditions</td>
</tr>
<tr>
<td>Broccoli, brussels sprouts, spinach, asparagus, peas, chickpeas, brown rice, liver</td>
<td>B9 (Folate)</td>
<td></td>
</tr>
<tr>
<td>Salmon, cod, dairy products, eggs, meat, some fortified breakfast cereals</td>
<td>B12</td>
<td></td>
</tr>
<tr>
<td>Low fat dairy products, soy products, nuts and seeds (especially sesame seeds), bones of cooked fish e.g. tinned sardines</td>
<td>Calcium</td>
<td>Diets high in calcium and potassium are associated with reduced blood pressure</td>
</tr>
<tr>
<td>Bean, green leafy veg, carrots, mushrooms, bananas, avocado, salmon, potatoes</td>
<td>Potassium</td>
<td></td>
</tr>
<tr>
<td>Green leafy vegetables, nuts and seeds</td>
<td>Magnesium</td>
<td>Magnesium deficiency is associated with increased risk heart rhythm issues and incidence of AF¹⁹</td>
</tr>
<tr>
<td>Avocados</td>
<td>Plant sterols</td>
<td>Help reduce cholesterol²⁰</td>
</tr>
<tr>
<td>Green tea</td>
<td>Antioxidants</td>
<td></td>
</tr>
<tr>
<td>Garlic</td>
<td>Allicin</td>
<td></td>
</tr>
<tr>
<td>Unsweetened cocoa solids (in moderation) e.g. good quality 95% chocolate</td>
<td>Antioxidants</td>
<td>Can help lower blood pressure and reduce atherosclerosis and thrombosis risk</td>
</tr>
</tbody>
</table>

› If you have a sweet craving try fresh or dried fruit, or a small chunk of dark chocolate to see if you can avoid raiding the biscuit tin

› Dehydration and hunger can feel very similar so try a glass of water and see how you feel before you decide you need to eat
**Warfarin – diet considerations**

If you are taking warfarin you may need to modify some of the foods you eat. Warfarin works by interfering with how the liver uses the vitamin K that we get in our diet. This means its effect is altered depending on how many vitamin K rich foods you eat in your diet and how much this varies.

If your dietary intake of vitamin K is reasonably consistent then your warfarin dose will have already been adjusted to match this. If you change the level of vitamin K rich foods in your diet you will need to discuss this with your HCP as the effectiveness of your warfarin will be affected.

<table>
<thead>
<tr>
<th>Foods high in vitamin K</th>
<th>Foods low in vitamin K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Apples</td>
</tr>
<tr>
<td>Green Beans</td>
<td>Banana</td>
</tr>
<tr>
<td>Blackberries</td>
<td>Beef</td>
</tr>
<tr>
<td>Blueberries</td>
<td>All cereals (including flour, etc.)</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Cherries</td>
</tr>
<tr>
<td>Brussels sprouts</td>
<td>Chicken</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Cranberries</td>
</tr>
<tr>
<td>Chicory</td>
<td>Fish</td>
</tr>
<tr>
<td>Collard greens</td>
<td>Lamb</td>
</tr>
<tr>
<td>Cranberry juice</td>
<td>Lemons</td>
</tr>
<tr>
<td>Kale</td>
<td>Melon</td>
</tr>
<tr>
<td>Kiwi fruit</td>
<td>Oranges</td>
</tr>
<tr>
<td>Lettuce</td>
<td>Peaches</td>
</tr>
<tr>
<td>Mungo beans</td>
<td>Pork</td>
</tr>
<tr>
<td>Mustard greens</td>
<td>Shell fish</td>
</tr>
<tr>
<td>Peas</td>
<td>Strawberries</td>
</tr>
<tr>
<td>Pine nuts</td>
<td>Tofu</td>
</tr>
<tr>
<td>Raisins</td>
<td></td>
</tr>
<tr>
<td>Sugar snap peas</td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td></td>
</tr>
<tr>
<td>Spinach</td>
<td></td>
</tr>
<tr>
<td>Swiss chard</td>
<td></td>
</tr>
<tr>
<td>Watercress</td>
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</tbody>
</table>
NOACs – such as apixaban, dabigatran, rivaroxaban and edoxaban – have no food interactions.

If you are taking multiple medications follow the pack guidance or check with your HCP for any food restrictions or interactions, for example, people on statins should avoid grapefruit products.

**WEEKLY MEAL PLANNER**
This planner is intended as a guide to help you understand what a healthy eating plan looks like and where you might need to make some adjustments to your own diet.
<table>
<thead>
<tr>
<th>Sun</th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porridge with nuts and fruit</td>
<td>Grilled turkey ham, poached egg, grilled mushrooms and wholegrain toast</td>
<td>Lean cut of toast meat, unpeeled banana, salsa and wholegrain crackers</td>
<td>Vegetable soup with cottage cheese and wholegrain crackers</td>
</tr>
<tr>
<td>Mon</td>
<td>Bowl of chopped fruit with low fat live yoghurt</td>
<td>Grilled potatoes, baked beans on wholegrain toast and a side salad</td>
<td>Lean mackerel or cod in parsley sauce with new potatoes, carrots and green beans</td>
</tr>
<tr>
<td>Tues</td>
<td>Baked beans on wholegrain toast and a side salad</td>
<td>Chicken salad sandwich on whole grain bread</td>
<td>Prawn (and avocado) cocktail with watercress and a drizzle of lemon juice and a little olive oil</td>
</tr>
<tr>
<td>Wed</td>
<td>Unsweetened, wholegrain cereal (e.g., muesli) with semi-skimmed milk</td>
<td>Lentil or bean soup with a side salad</td>
<td>Cod in parsley sauce with new potatoes, carrots and green beans</td>
</tr>
<tr>
<td>Thurs</td>
<td>Baked beans on wholegrain toast</td>
<td>Salmon and cucumber sandwich with a handful of tomatoes</td>
<td>Chicken and vegetable stew with broccoli</td>
</tr>
<tr>
<td>Fri</td>
<td>Toned sardines in tomato sauce on wholegrain toast</td>
<td>Vegetable soup with cottage cheese and wholegrain crackers</td>
<td>Vegetable soup with cottage cheese and wholegrain crackers</td>
</tr>
</tbody>
</table>

**Top Tip**
- Add lentils, carrots, and mushrooms to your vegetable stew to boost your veg intake.
- Use minimal oil and then cover the pan to steam rather than fry your vegetables.
- Watch the salt if you are buying a ready-made stew.
- Frozen peas are a great emergency vegetable if you have a freezer.
- Add garlic to help lower your cholesterol.

**Healthy snacks**
- Half an avocado
- Veg sticks and low fat hummus
- Rye crispbread and peanut butter
- Veg sticks and low fat tzatziki
- Peanut butter on oatcakes

**Healthy sweet treats**
- Couple of squares of dark chocolate
- Stewed fruit

**Breakfast**
- Bowl of chopped fruit with low fat live yoghurt
- Grilled turkey ham, poached egg, grilled mushrooms and wholegrain toast
- Lean cut of toast meat, unpeeled banana, salsa and wholegrain crackers

**Lunch**
- Grilled potatoes, baked beans on wholegrain toast and a side salad
- Chicken salad sandwich on whole grain bread
- Prawn (and avocado) cocktail with watercress and a drizzle of lemon juice and a little olive oil

**Dinner**
- Lean mackerel or cod in parsley sauce with new potatoes, carrots and green beans
- Vegetable soup with cottage cheese and wholegrain crackers
- Lean mackerel or cod in parsley sauce with new potatoes, carrots and green beans

**Top Tip**
- Use minimal oil and then cover the pan to steam rather than fry your vegetables.
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Management of stress and anxiety

A small but significant percentage of people with AF experience severe impairment of their quality of life including daily activity, work life, sex life, physical activity, psychological well-being and social activity. A third of all people with AF suffer from depression or anxiety.²¹

Anxiety can trigger an AF episode and knowing that you have an irregular heartbeat can trigger anxiety – it is a cycle that may actually worsen AF. So it is important to address stress and anxiety to keep it from affecting your AF.

It is natural to feel a little nervous when you are told you have AF but you can take control of your AF management and overcome your anxiety. Anxiety may worsen if you do not really know what is happening with your health, so take an active role in your treatment and management plan. It is essential to talk to your HCP about your concerns and tell him or her about your anxiety. You can work together to manage both your anxiety and your AF. Managing anxiety through the use of medications, exercise, support groups, or mental health professionals can help reduce episodes of uncontrolled AF. Below is a list of other things which may help.

Find what helps you manage stress

Getting stress under control can help with AF and anxiety, but you have got to know what works for you. It is important for you to understand what works for your body, you may find that exercise helps or it may be relaxing and reading a book or watching a favourite movie. Having one or two things you know you can do to help manage anxiety during stressful periods is an important goal.
Get quality sleep
Poor sleep may trigger AF and may also worsen your anxiety about AF. Try these simple tips for a good night’s sleep:

› Go to bed and wake at the same time each day
› Avoid stimulating activities before bed
› Create a soothing sleep environment
› Cut out or reduce caffeine

Relaxation techniques
When you are relaxed, your body responds positively. Your blood pressure lowers, your breathing slows, and your sense of well-being improves. If you feel anxious, try to imagine yourself in a peaceful environment. Deep-breathing exercises, in which you focus on long, slow, deep, and regular breaths, may also help relax and soothe you during an episode of anxiety.

Make the effort to exercise
Exercise is especially helpful for managing AF and its associated anxiety. Getting regular exercise can help improve your mood and help you get a good night’s sleep. Exercise also helps with stress management, which is a likely AF trigger for many people. Weight loss is an added benefit.

Cognitive Behavioural Therapy (CBT)
People respond in different ways to AF, for some it may be helpful to have psychological therapy which has often been shown to be beneficial for many long term conditions.

CBT is a treatment that can help people feel better in themselves and adjust to their diagnosis of AF. It supports a self-management approach to coping with a condition and uses tried and tested methods. CBT has been found to be one of the most effective treatments for conditions where anxiety, frustration and depression are significant problems.
CBT is a talking treatment directed at the ways you respond to and cope with present difficulties. It is based on understanding the impact of particular situations on what we think, on what we do (or avoid), our physical feelings and our emotions.

Anxiety due to AF might lead you to worry about experiencing an AF episode whilst away from your ‘safe’ environment, such as while shopping, travelling or at work. This can then lead to rising concern about possible consequences and can set off adrenaline driven symptoms such as a racing heart and faster breathing, which in turn can leave you feeling dizzy or unwell. A vicious cycle develops which can make you feel worse and result in frustration and depression.

Ask your HCP for a referral to someone trained in CBT. The British Association for Behavioural and Cognitive Psychotherapies has a register of accredited CBT therapists. There may also be some self-help books on CBT approaches to coping with physical illness available from your GP.

**Sex and Relationships**

People who have experienced heart problems can often worry about having sex. We know that people often reduce or stop having sex because they are frightened it may bring on further heart problems. However, for most people with all sorts of heart problems (including AF), having sex is safe and indeed recommended by HCPs!

Think of it this way, for the average person, male or female, having sex puts the same amount of work on the heart as a steady 20 minute walk. Having an orgasm is the same exertion as walking up some stairs.
The bottom line is that exercise is good for the heart and sexual activity is just another form of exercise. So – opposite to people’s worrying thoughts and fears – regular sexual activity can actually be good for our hearts!

<table>
<thead>
<tr>
<th>Health benefits of sex</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex has cardiovascular benefits</strong></td>
</tr>
<tr>
<td>Sex helps increase blood flow; increase heart rate and deep breathing improves circulation. Fresh blood supply soaks organs and muscles with fresh oxygen and hormones, and as used blood is removed, so too are waste products. The exercise of sex lowers cholesterol and more importantly it tips the HDL/LDL (good/bad) cholesterol balance towards the healthier HDL side.</td>
</tr>
<tr>
<td><strong>Sex relieves stress</strong></td>
</tr>
<tr>
<td>Having sex lowers blood pressure and causes overall stress reduction. Science shows there is a link between partner hugs and lower blood pressure in women!</td>
</tr>
<tr>
<td><strong>Sex boosts the immune system</strong></td>
</tr>
<tr>
<td>Having sex has been linked with higher levels of an antibody (called immunoglobulin A) which can protect us from getting colds and other infections.</td>
</tr>
<tr>
<td><strong>Sex burns calories</strong></td>
</tr>
<tr>
<td>Thirty minutes of sex burns 85 calories or more. Here’s how that matches up to other activities that you may have been advised to start: yoga 114 calories per half hour, dancing 29, walking 153.</td>
</tr>
<tr>
<td><strong>Sex boosts self-esteem and improves intimacy</strong></td>
</tr>
<tr>
<td>We can start to feel better about ourselves and our relationships. Having sex and orgasms increases levels of a hormone (oxytocin) the so-called “love hormone”, which helps us bond and build trust.</td>
</tr>
<tr>
<td><strong>Sex reduces pain</strong></td>
</tr>
<tr>
<td>As the hormone oxytocin is released, our bodies “natural pain killers” (endorphins) increase, and pain reduces.</td>
</tr>
<tr>
<td><strong>Sex reduces prostate cancer risk for men and strengthens pelvic floor muscles for women</strong></td>
</tr>
<tr>
<td>Frequent ejaculations have been shown to reduce risk of prostate cancer later in life. For women, pelvic floor muscle exercises during sex offers two main benefits – allows greater pleasure and also strengthens the area and helps minimise the risk of incontinence later in life. How to do pelvic floor muscle exercises: tighten the muscles of your pelvic floor, as if you are trying to stop the flow of urine. Count to three, then release.</td>
</tr>
<tr>
<td><strong>Sex helps you relax more and sleep better</strong></td>
</tr>
<tr>
<td>The deep relaxation that typically follows sex may be one of the few times people actually allow themselves to completely let go, surrender and relax. The hormone oxytocin released during orgasm also promotes sleep; and getting enough sleep has been linked with a host of other benefits, such as maintaining a healthy weight and blood pressure.</td>
</tr>
</tbody>
</table>
Another common complaint amongst male AF patients is erectile dysfunction (ED), also known as impotence – the inability to get and maintain an erection that is sufficient for satisfactory sexual intercourse.

ED is a very common condition, particularly in older men. It is estimated that half of all men between the ages of 40 and 70 will have it to some degree.

ED is also a known side effect of beta blockers, which you may have been prescribed to help control your heart rhythm.

A number of options are available for the management of ED and you should discuss this with your HCP if you (or your partner) are experiencing difficulty getting and maintaining erections.

Exercise and AF

Why is Exercise Important?
Being inactive means our bodies become unfit. This not only means you are more likely to develop poor health related complaints such as heart disease and diabetes, it also means you are more likely to both tire and become short of breath more easily. You may already experience these as symptoms of AF. By improving your physical fitness you can help reduce these symptoms and therefore enjoy life a little more. Taking gentle to moderate levels of exercise is safe for people with AF. In general, ‘if it feels ok it is ok’, but of course there is a little more to it than that.

If you do not feel confident about having sex and/or if you still have any worries or concerns about having sex following a diagnosis of AF, please take a minute to discuss this with your HCP.

The topic of sex can be difficult for people to talk about but remember that your doctor and nurses are used to talking about these things and in fact would welcome questions to allow you to get the information and advice you need.
Regular exercise, especially aerobic exercise, has many benefits. It can:

- **Strengthen your heart and cardiovascular system**
- **Improve your circulation** and help your body use oxygen better
- **Increase energy levels** so you can do more activities without becoming tired or short of breath
- **Increase endurance**
- **Lower blood pressure**
- **Improve balance and joint flexibility**
- **Strengthen bones**
- **Help reduce body fat** and help you reach and stay at a healthy weight
- **Help reduce stress, tension, and depression**
- **Boost self-image and self-esteem**
- **Improve sleep**
- **Make you feel more fit and healthy**

**Types of exercise which can be beneficial for people with AF**

**Cardiovascular or aerobic exercise**

This is steady physical activity using large muscle groups such as your legs. Aerobic exercise has the most benefits for your heart. It also strengthens the heart and lungs and improves the body’s ability to use oxygen. Over time, aerobic exercise can help your blood pressure and improve your breathing. In other words your heart will not have to work as hard during exercise. Simple examples are walking, cycling and jogging. Anything that increases your heart rate steadily and keeps it raised for a period of time.
Strengthening exercises
These are repeated muscle contractions (tightening). When done regularly they help tone muscles, improve strength, and increase your metabolism. This can be of benefit with activities such as shopping, housework and hobbies such as gardening. Light weights are a good form of strengthening exercises. Resistance bands (like giant elastic bands) are also very useful and versatile. They come in different strengths which are different colours. Be aware that the colours are not universal as each manufacturer uses different colour codes. Ask someone who sells them for advice on which resistance to try first. They should also be able to supply information on how to use them.

How often should I exercise?
In general, you will achieve maximum benefits by gradually working up to an aerobic session of at least 20 to 30 minutes, at least three to four times a week. Exercising every other day will help you start a regular aerobic exercise schedule. The more exercise you can do, the better for your fitness, but any amount of exercise is beneficial to your health and helps ease your symptoms. You can combine aerobic and strengthening exercises or do them at separate times.

What should I include in my exercise programme?
Every exercise session should include a warm-up, a conditioning phase, and a cool-down.

Warm-up
This helps your body adjust slowly from rest to exercise. A warm-up reduces the stress on your heart and muscles, as it slowly increases your breathing, heart rate, and body temperature. The best warm-up includes beginning the activity at a low intensity level and muscle stretching.

Conditioning
This follows the warm-up. During the conditioning phase, more calories are burned, and the main benefits of exercise are gained.
The conditioning phase raises your heart rate, makes you feel slightly warmer, breathe slightly faster and possibly perspire lightly. If you experience chest pain, significant breathlessness, or dizziness, you should slow down, stop exercising and let your doctor know about your symptoms.

Cool-down
This is the last phase of your exercise session. It allows your body to gradually recover from the conditioning phase. Your heart rate and blood pressure will return to near resting levels. Cool-down does not mean sit down! In fact, do not sit, stand still, or lie down right after exercise. That could cause you to feel dizzy or light-headed or have heart palpitations (fluttering in your chest). The best cool-down is to slowly decrease the intensity of your activity.

How do I monitor my exercise intensity?
Heart rate monitoring
Exercise effort can be monitored by observing your heart rate and ensuring it does not rise higher than a specific number (target heart rate). For safe and effective exercise it is recommended that you exercise between 60% and 75% of your maximum heart rate. This can be determined by subtracting your age from 220 (estimated maximum heart rate), and multiplying this by the relevant percentage will give you the region to aim for.

It is important to remember that everyone is different and heart rate targets are very specific to each individual. This is a basic equation and you should be aware that differing levels of fitness and some cardiac medications, including beta blockers may alter your heart rate targets.

For most people the only way of obtaining an accurate target heart rate is by being assessed by an exercise professional who is experienced in cardiac conditions.
Checking your pulse
You can monitor exercise intensity by counting heart beats (your pulse) over one minute. This length of time is important when you have AF due to the variation in your heart rate and rhythm. Taking your pulse by counting your heart beats with your fingers is a very accurate and useful technique to learn. However, when you are exercising it can be impractical to do this. If you do adopt this mode of heart rate and rhythm monitoring you will usually have to stop exercising which can allow your heart rate to slow reducing the benefits, or can make you feel dizzy. It is therefore essential to keep your feet moving by marching lightly on the spot or tapping your heels. This helps to keep your blood moving back up to your heart.

Many people have trouble finding their pulse. There is a technique to it, so it is best learnt from someone who knows how. A nurse at your GP surgery would be a good person to ask for help.

Electronic Heart Rhythm Monitors (HRM)
These can be very affordable and are commonly used by people who exercise regularly. They consist of a chest monitor which is attached to the chest with a strap. This picks up an electrical signal which the heart gives off each time it beats. This signal is transmitted wirelessly to a wrist watch unit which then counts the beats and displays it as a number which is your heart rate. Handheld portable ECG HRMs and
mobile applications can be used to record and analyse ECG recordings. These will routinely be available through the NHS.

HRMs are sometimes recommended for people with AF as a way of ensuring their heart rate does not go higher than a specific number. However, caution is advised as these devices are not recommended for irregular heart rhythms as they can be very inaccurate. Arrhythmias and irregular rhythms are interpreted by the wrist unit as noise or interference which cause them to make error corrections. This often leads to sudden and dramatic changes in the rate displayed which do not represent the true speed of the heartbeat. This can be very worrying and does not help you achieve and maintain a good level of cardiovascular activity. However, the blinking heart symbol that is usually seen on the face of the wrist unit will show all heart beats received.

So HRMs work for some people and they can give you some idea of your general level of exercise effort, but you will see lots of numbers going up and down as the unit tries to make sense of your heartbeat. Counting the blinking heart symbol can help to guide you in working out if the displayed heart rate is accurate. If you do decide to try a heart rate monitor you should avoid the cheaper models.

**Rating your effort by how you feel**

This is the best monitor of exercise effort for people with AF. Working to a ‘*somewhat hard*’ level will be closely related to your target heart rate. What makes this easy is that you do not need to know your target heart rate and you can apply it to any activity you do. However it does take a little practice so you do need to think about it at first.

When participating in any activity it is important that you are able to rate how demanding or strenuous that particular activity is for you. This is called ‘Rating your Perceived Exertion (RPE)’ or the Borg Scale. It is a very good tool for keeping the intensity of your activities safe.
When rating your exertion you should think of how the entire body is feeling at that moment in time. Think of the strain and fatigue in both your muscles and your breathing. If your muscles are aching and feel very heavy, you are likely to be working at a hard intensity and should ease off slightly. If you find your breathing becomes uncomfortable, you are probably over exerting yourself and should slow down.

The ideal range to work at to encourage cardiovascular benefits during your conditioning phase is between the ‘light’ to ‘somewhat hard’ range. If you perceive your exertion as ‘hard’ or any further down the scale from this, you should reduce the intensity of the activity i.e. reduce your speed or resistance.

At a ‘light’ to ‘somewhat hard’ intensity you should feel warm, possibly slightly sweaty and your breathing should be deeper and faster. You should still be able to talk comfortably. If you are struggling to talk when walking, you are likely to be working too hard and should reduce the intensity.
How do I start to exercise?

As for any other type of exercise it is important to start with a small amount and build up gradually. Walking is an excellent way to start your exercise regime. You should begin every walk with a very gentle warm up. This can be incorporated into your walk as the first 10-15 minutes or can be conducted prior to setting out.

Start with a short walk, somewhere flat to begin, and walking at a steady pace. Progress by increasing the distance, then you can start to introduce a few hills into your route. When walking up inclines you will probably tire or become breathless faster so just reduce your walking speed to keep your RPE at light to somewhat hard. Remember that you should finish your walk with a cool down period of 10-15 minutes of low-intensity walking to help your heart rate return to a resting level.

It is normal to feel a little fatigued after exercise and a ‘tired’ day every now and again is normal. However, if you notice you are feeling ‘very tired’ on alternate days you are probably increasing your activities at too fast a rate. Consider taking a few days rest, and start again being careful not to overdo it.

A walking programme guide

<table>
<thead>
<tr>
<th>Stage of recovery (approximate)</th>
<th>Length of walk (in minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>15 minute walk, gentle pace, daily</td>
</tr>
<tr>
<td>Stage 2</td>
<td>20 minute walk, moderate pace, daily</td>
</tr>
<tr>
<td>Stage 3</td>
<td>25 minute walk, moderate – brisk pace, daily</td>
</tr>
<tr>
<td>Stage 4</td>
<td>30 minute walk, brisk pace, daily</td>
</tr>
<tr>
<td>Stage 5</td>
<td>Add extra 5 minute for each stage increase</td>
</tr>
<tr>
<td>Target</td>
<td>30 minutes, brisk pace, daily</td>
</tr>
</tbody>
</table>

If you feel you are able to walk longer for 30 minutes then you can start at stage 4
Continue at any stage until you feel confident of progressing to the next. The time taken to progress varies between individuals.

Reassess your progress at the end of each week. Think about:
- Is it time for you to move on a stage?
- Would you feel more comfortable at the same stage for a further week?

**What is too much activity?**
You are working too hard if:

- You cannot ‘walk and talk’ for example if you cannot say your telephone number, including the area code, out loud and without gasping. If this happens slow down until you can say your telephone number without gasping.
- You become excessively tired either during or sometime after exercise or general activity.
- You are uncomfortably short of breath or perspiring profusely.
- You have chest pain or discomfort (angina).

**Pacing yourself is the key to successful progress!**

**Other activities**
You can apply this principle to other activities such as cycling, or swimming or gym exercises. You might even wish to progress to some sports if your symptoms allow. Thinking about “rating your effort by how you feel” will guide you in what suits you. Contact sports such as rugby are not advised when taking anticoagulants due to the risk of bleeding.
When not to exercise

› If you feel unwell, such as having a cold, flu or a viral infection

› Directly after a meal, wait two hours before you exercise

› If you feel tired on a particular day take the day off from exercise or exercise less

› In extremely hot weather you may tire more easily

› If you have been diagnosed with heart failure, or have an Internal Cardio Defibrillator or a Cardiac Synchronisation Therapy device fitted you should consult your GP or local Cardiac Rehabilitation Service before embarking on an exercise regime
To find out more about managing your AF please visit the care AF website: www.careaf.org or visit the following independent websites and organisations:

**AF Association**
01789 867 502
AF Association Website: www.heartrhythmalliance.org

The AF Association has an online forum – HealthUnlocked, feel free to join the conversation at www.healthunlocked.com/afassociation

AF Association is also on Facebook
www.facebook.com/atrialfibrillation and twitter @AtrialFibUK

The AF Association and AntiCoagulation Europe (ACE) have developed an AF Stroke Risk Calculator that can be found at www.preventaf-strokecrisis.org/calculator/

A list of local AF patient support groups can be found on the AF Association website: www.heartrythmalliance.org

**Arrhythmia Alliance (A-A)**
01789 867 501

A-A is a coalition of charities, patient groups, patients, carers, medical groups and allied professionals. Although these groups remain independent, they work together under the A-A umbrella to promote timely and effective diagnosis and treatment of arrhythmias.

A-A website: www.heartrhythmalliance.org
AntiCoagulation Europe (ACE)
020 8289 6875
AntiCoagulation Europe is a UK registered charity founded in 2000. Their aims are: the prevention of thrombosis; the provision of information, education and support; the promotion of independence – supporting people to take an active part in their own healthcare.
ACE website: www.anticoagulationeurope.org

British Heart Foundation (BHF)
0300 333 1333
The British Heart Foundation is the UK’s number one heart charity and funds thousands of research projects around the UK that are fighting heart disease.
BHF website: www.bhf.org.uk

The Stroke Association
0303 303 3100
The Stroke Association support stroke survivors to make the best recovery they can, campaign for better stroke prevention and care and fund research to develop new treatments and ways of preventing stroke.
Stroke website: www.stroke.org.uk

Diabetes UK
0345 123 2399
Diabetes UK is the leading charity that cares for, connects with and campaigns on behalf of every person affected by or at risk of diabetes.
Diabetes UK website: www.diabetes.org.uk
Lifeblood: The Thrombosis Charity
0300 772 9603
The aim of Lifeblood: The Thrombosis Charity is to increase awareness of thrombosis among the public and health professionals and to raise research funds to improve patient care.
Lifeblood website: www.thrombosis-charity.org.uk

British Association for Behavioural and Cognitive Psychotherapies (BABCP)
0161 705 4304
BABCP is a multi-disciplinary interest group for people involved in the practice and theory of behavioural and cognitive psychotherapy.
BABCP website: www.babcp.com

Anxiety UK
08444 775 774
Anxiety UK works to relieve and support those living with anxiety disorders by providing information, support and understanding via an extensive range of services, including 1:1 therapy.
Anxiety UK Website: www.anxietyuk.org.uk

National Pharmacy Association
As well as dispensing medicines, many pharmacies now offer additional services such as blood pressure monitoring which may be useful in the management of AF. More information and a list of local pharmacies can be found on their website.
NPA website: www.npa.co.uk
Heart Research UK
0113 234 7474

Heart Research UK is a charity that has been Helping Hearts for 47 years by funding pioneering research and community projects that help people to live healthier, happier and longer lives.

Heart Research UK website: www.heartresearch.org.uk
1. **What might have caused my AF?**

AF is very common and the number of individuals that are affected is increasing. There is no question that there is a clear age-related incidence of AF. This would therefore imply that there is a powerful element of ‘wear and tear’ involved in the development of this heart rhythm abnormality, increased by factors such as smoking, obesity and drinking alcohol.

Undoubtedly there are other influences such as high blood pressure and if a close family member has had AF then the likelihood of other individual members having the condition is increased. Also, some people may have an underlying problem with the thyroid gland which may cause AF or an underlying problem with the structure of their heart.

2. **Why do I have AF? I am quite fit and healthy.**

You can develop AF if you are fit and healthy. If you have AF and are fit and healthy two factors may be at play. One is the influence of genetics and the other the influence of exercise. It is increasingly apparent, particularly in young individuals, that a family history can be a common feature. It has also become apparent that people who exercise on a regular basis, and participate in exercise to a high level, might increase their AF risk.

3. **What symptoms do you normally get during an episode of AF?**

Some patients have very rapid AF and get very few symptoms; others have infrequent short bursts of paroxysmal AF and get quite debilitating symptoms. The sorts of symptoms individuals experience include an awareness of the heartbeat and rhythm, a general feeling that things just are not right in the chest. Individuals might suffer some chest discomfort and dizziness and more rarely, a feeling that they might faint.
If AF is more persistent then a general exhaustion and debilitation might well be present. Some people with paroxysmal AF are aware of the heart beat being irregular with a general non-specific awareness that things are just not quite right during an attack and then there is substantial debilitation for a prolonged period afterwards which may extend well into the next day.

4. My AF seems worse at night. Is this normal?
An episode of AF starting at night is not uncommon. If your AF occurs at night, one of the useful investigations may be an ambulatory ECG monitor (24 hour tape). Some patients are seen to have slow heart rates at night which may predispose to the onset of AF and under these conditions the implantation of a pacemaker may allow one to control the symptom very efficiently without much drug therapy or without an AF ablation, although these should also be considered, possibly as therapies in conjunction with a pacemaker.

5. I have been diagnosed with AF. Is it likely that my children will also develop AF?
AF is an age-related condition and the very fact of ageing itself may be the determinant of AF in a particular individual simply combined with other factors that may have developed during their lifetime, such as the appearance of high blood pressure or obesity. Accordingly, the impact of AF on an individual, and the likelihood of this appearing in their children, will be determined by things like the age of appearance in the parent and other co-factors such as other environmental influences. For example, the amount of alcohol consumed or participating in an extreme amount of exertion. Because of these multiple influences you should not be concerned about the risk for family members.
6. Why does my AF come and go when others have it persistently?

The pattern of the AF and the way it affects individuals differs. In some people the attacks go on for short periods of time then spontaneously revert to a normal rhythm. This is usually called paroxysmal AF. The reason that the attacks terminate spontaneously as they do is often unclear. In some people they will be found to be in AF which is there all the time. This is generally referred to as persistent AF. This might have started in some patients as paroxysmal AF that has now become persistent. In some patients an attack will just start and never cease and that again is referred to as being persistent. Research is going on at the moment to try and work out why it is that paroxysmal becomes persistent in some individuals and not in others.

7. I have been diagnosed with AF. What investigations would the doctor generally conduct on my first visit?

If you have AF, a doctor will first take your medical history and then perform a medical examination, paying particular attention to your blood pressure to see if there is any evidence of fluid overload caused by heart failure. They would listen to the heart to see if they can hear any murmurs that might indicate that there are problems with the heart valves and obtain an ECG which will provide the diagnosis. AF cannot be diagnosed without conducting an electrical ECG recording. Once an ECG recording has been obtained and the history considered, then in most individuals appropriate treatment can be decided upon.

8. What are the main objectives that the doctor should discuss with me with regard to the management of my AF?

There are three main issues that the doctor should consider. The most important thing is the risk of an AF-related stroke. Stroke arises in patients with AF usually as a result of what is called thromboembolism. What happens under these circumstances is that a clot is formed in the heart. This arises because the atrial chambers are not properly expelling blood. For reasons that we do not fully
understand, the clot can occasionally break free and in the occasional unfortunate individual, this can result in a stroke.

The second consideration is symptom control. The main issue with AF in terms of its day-to-day impact is on quality of life, and this can vary quite substantially in individual patients. For some this has little impact upon their quality of life and in others the impact can be devastating.

The final issue is the potential impact the AF is having upon heart function in general. It might be that AF has emerged with relatively few symptoms, but has over a period of time led to damage to the main pumping chambers of the heart, the ventricles.

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9. How often should my HCP review the treatments that I am taking?

In the initial phase your HCP should give a description of your AF and outline the treatment plan.

The second phase would be the initiation and assessment of treatment and the third phase would follow entry into a period of stability. It is likely at this point that quality of life will have been improved and AF might have been completely suppressed.

In the first and second phases, relatively regular reviews are normal. Once the main treatments have been adopted, then a follow up at six or 12 months is usual.

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10. What are the differences between the anticoagulants available?

Warfarin has been used for many years and is effective when used correctly. Its downside is that it can be hard to get the dose right for some patients as warfarin’s action varies between individuals, and it can interact with certain foods and other medications. For this reason, you may need to go for regular blood tests at a clinic. There are three alternative anticoagulants to warfarin, called apixaban, dabigatran, edoxaban and rivaroxaban. These NOACs are not affected
by food or other drugs, so you do not need monitoring by regular blood tests. In terms of their ability to reduce your stroke risk, they are as good as warfarin, but some of the NOACs work differently to others. Your HCP will discuss these options with you and agree your personalised treatment plan. If you are on warfarin, your blood must be regularly monitored. Some patients prefer self-monitoring whereby the results are almost instant and reduces the frequency of visits to an anticoagulation clinic. This type of monitoring requires training and regular reviews from your HCP.

11. **Do the more recently introduced anticoagulants have an antidote like warfarin? If I start bleeding, can it be stopped?**

There are clear guidelines and measures that can be followed to manage bleeding when it does occur, whatever anticoagulation treatment you may be taking. The action of warfarin lasts for several days and an injection of vitamin K can reverse its effects, but this takes eight to twelve hours and is therefore not a true antidote (which reverses the effects immediately). Compared with warfarin, the “blood thinning” effect of NOACs wears off much faster. It is reassuring that in all the studies with the more recently introduced oral anticoagulants, they had a comparable safety profile to warfarin in terms of overall bleeding rates. A reversal agent for dabigatran is available in the UK and is a treatment that can rapidly reverse anticoagulant effects, in rare emergency situations.

12. **My GP has prescribed me aspirin – is this right?**

Recently published updated NICE guidance (June 2014) recommend anticoagulation for all patients who are thought to be at risk of an AF-related stroke, but no longer recommend aspirin as a treatment option.

13. **Does age affect how I should be treated for my AF?**

As you get older, both your chance of having AF and your chance of having an AF-related stroke increase significantly. Older patients also have a somewhat higher bleeding risk with anticoagulation. However,
overall, older patients are more likely to benefit from receiving anticoagulation when compared to younger patients. The risks and benefits of therapy should be considered for every individual to ensure the anticoagulation they receive is appropriate for them. Your own HCP, with knowledge of your medical history, is in the best position to advise you of the most appropriate therapy.

14. Where can I access information and advice about AF?
The AF Association website: www.heartrhythmalliance.org provides information which will help you understand AF and make sure you get the very best treatment, information and support.
A

**Ablation** – A procedure where the cardiac tissue responsible for an irregular rhythm is disabled to try to restore a regular heartbeat. Techniques include radio frequency, freezing and surgery.

**Angina** – A heart condition that occurs when the blood supply to the muscles of the heart is restricted.

**Antiarrhythmics** – A group of medications used to suppress the irregular rhythms of the heart.

**Anticoagulants** – A group of medications used to slow down the speed at which the blood clots, to prevent blood clots. Anticoagulants are also known as ‘blood thinners’ although their mechanism does not actually thin the blood.

**Arrhythmia** – An irregularity of the rhythm of the heart, resulting in the heart beating too slowly, too quickly or irregularly.

**Arteries** – Blood vessels that carry blood away from the heart.

**Atria/atrium** – Atria is the plural of atrium. The atria are the two upper chambers of the heart that pump blood into the two lower chambers of the heart, the ventricles. The human heart includes a right and left atrium.

B

**Beta blockers** – Medicine used to slow the heart rate that can be prescribed in AF patients.

**Blood clot** – A thickened mass in the blood formed by tiny substances called platelets.
Blood pressure – The pressure exerted by the blood against the walls of blood vessels.

Borg RPE Scale – See RPE.

C
Cardiac Resynchronisation Therapy (CRT) – A pacemaker device implanted under the skin to help improve the function of the heart and symptoms of heart failure. It can also be used as a conventional pacemaker (Cardiac Resynchronisation Therapy Pacemaker), or have an Implantable Cardioverter Device (ICD) function (Cardiac Resynchronisation Therapy Defibrillator).

Cardiologist – A doctor who specialises in diagnosis and treatment of heart disorders and diseases.

Cardioversion – Converting an abnormal heart rhythm to normal. Cardioversion may be achieved with medications and by administering an electrical shock to the heart through a defibrillator (D.C. cardioversion).

Catheter ablation – A procedure in which a physician uses catheters – thin, flexible tubes with electrodes – to locate the origin of an arrhythmia and ablate or destroy abnormal tissue in the heart.

Congenital heart disease – Abnormality of the heart present since birth.

CHA²DS₂VASc scoring system – This is a scoring system which your doctor may use to assess your risk of stroke if you have AF.

Circulatory system – A system consisting of the heart, blood vessels, and blood that circulates blood throughout the body, delivers nutrients and other essential materials to cells, and removes waste products. Also called the cardiovascular system.

D
Defibrillator – An instrument used to deliver a high-voltage electrical current to the heart, to restore a normal rhythm.
E
Electrocardiogram (ECG) – A diagnostic test that examines the electrical activity of the heart. Electrical activity is recorded by placing electrodes on the patient’s chest and arms, after which a machine makes a record of the data.

Electrophysiologist – A type of cardiologist who specialises in the diagnosis and treatment of disorders of the electrical system of the heart.

Electrophysiology (EP) study – A study performed by an electrophysiologist that examines the electrical activity of the heart.

Electrical system (heart) – The system of electrical impulses and nodes that work together to cause the heart to beat. The sinus node is part of the electrical system.

H
Haemorrhagic stroke – A stroke that happens due to bleeding in the brain.

HCP – Referes to a healthcare professional or healthcare provider

Heart failure – A term used when the heart does not contract or squeeze as well as it should. This can happen for various reasons.

Heart rhythm – Refers to the regularity with which the heart beats.

Heart rate – Refers to the speed at which the heart beats – see Pulse.

Hypertension – A condition in which blood pressure is consistently above the normal range. Individuals with hypertension have a great risk of developing AF.

I
Implantable Cardioverter Device (ICD) – A small device implanted under the skin which can deliver an electric shock to the heart if a dangerous rhythm is detected.
**INR value** – The International Normalised Ratio (INR) value shows how fast blood clots compared to what is considered ‘normal’.

**Ischaemic stroke** – A stroke that happens due to a blockage in an artery.

**L**

**Left atrial appendage (LAA)** – A small pocket found inside the left atrium where most blood clots are known to form with AF.

**Left atrial appendage occlusion (LAAO)** – A term given to the removal or closure of the left atrial appendage. This can be achieved with surgery or an implantable device.

**Long standing persistent AF** – See permanent AF.

**M**

**Maze procedure** – An ablation technique similar principle to catheter ablation where scar tissue is created to inhibit erratic electrical activity in the left atrium.

**Mitral valve disease** – Caused by rheumatic heart disease, valve problems at birth or infection.

**N**

**Non-Vitamin K antagonist oral anticoagulants (NOACs)** – Also known as non-Vitamin K antagonists to show a distinction from warfarin. Apixaban, dabigatran, edoxaban and rivaroxaban are NOACs that may be used as an alternative.

**P**

**Pacemaker** – An electronic device surgically implanted in the chest designed to prevent the heart from beating too slowly.

**Paroxysmal AF** – A type of AF that often comes on suddenly and ends spontaneously. The irregular heart rhythm may last for a few seconds, minutes, hours or longer before the heart returns to a normal rhythm on its own.
**Persistent AF** – A type of AF that lasts longer than 2 days and does not revert to a normal rhythm spontaneously.

**Permanent AF** – A type of AF characterised by the inability to restore sinus rhythm. Also called chronic or long standing persistent AF.

**Pill in the pocket** – A pill that is taken at the time a person gets AF in order to restore the normal rhythm, rather than a therapy that aims to prevent AF.

**Pulmonary isolation** – A technique of isolating erratic electrical activity to prevent it having an effect on heart rhythm – see Ablation and Maze procedure.

**Pulse** – The rate at which the heart beats.

**R**

**Rate control drugs** – Medications designed to regulate the speed at which a heart beats.

**Rhythm (heart)** – The term for the pattern and frequency of the way the heart beats.

**Rhythm control drugs** – Medications designed to regulate the rhythm of the heart beat.

**RPE (Rating Perceived Exertion)** – A technique for guiding safe exercise levels for the most fitness benefit. Also known as the Borg Scale.

**S**

**Sinus rhythm** – The normal rhythm of the heart.

**Stroke** – The sudden death of brain cells in a localised area due to inadequate blood flow.

**Surgical ablation** – See Maze procedure.

**Sustained AF** – A type of AF that persists until treated – see Permanent AF.
**Symptoms** – A physical or mental feature caused by AF e.g. shortness of breath, fatigue, depression.

**T**

**Tachycardia** – An arrhythmia that causes the heart to beat too rapidly. Tachycardias can produce palpitations, chest pain, dizziness, lightheadedness, fainting or near fainting. Rapid heartbeats may be either regular or irregular in rhythm to be classified as tachycardia, the heart rate must be at least 100 beats per minute.

**Thyroid Disease** – A condition in which thyroid hormones are elevated due to an overactive thyroid gland. Thyroid disease can increase the risk of AF.

**Transient Ischaemic Attack (TIA)** – Sometimes called a mini stroke, is similar to a stroke, but the symptoms are temporary.

**Transoesophageal Echocardiogram (TOE)** – An ultrasound scan of the heart achieved by swallowing a probe while under sedation.

**V**

**Ventricles** – The two lower chambers of the heart responsible for pumping blood. The ventricles consist of the right and left ventricle; the left ventricle pumps blood to the body and the right ventricle pumps blood to the lungs.

**Ventricular fibrillation** – Very rapid, uncoordinated, ineffective series of contractions throughout the lower chambers of the heart.

**Ventricular tachycardia** – Rapid heartbeat that originates in one of the lower chambers of the heart.

**W**

**Warfarin** – An anticoagulant which slows down the speed at which blood clots.
References


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