

Living with
Atrial
Fibrillation

AntiCoagulation Europe

publishes a quarterly magazine full of information for people on anticoagulation therapy

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AntiCoagulation Europe is committed to providing information and support to help people maintain their quality of life whilst on anticoagulation and anti-platelet therapy. ACE is also committed to the prevention of thrombosis. We support people who wish to self-monitor their own INR; however, we acknowledge that this may not be suitable for everyone.

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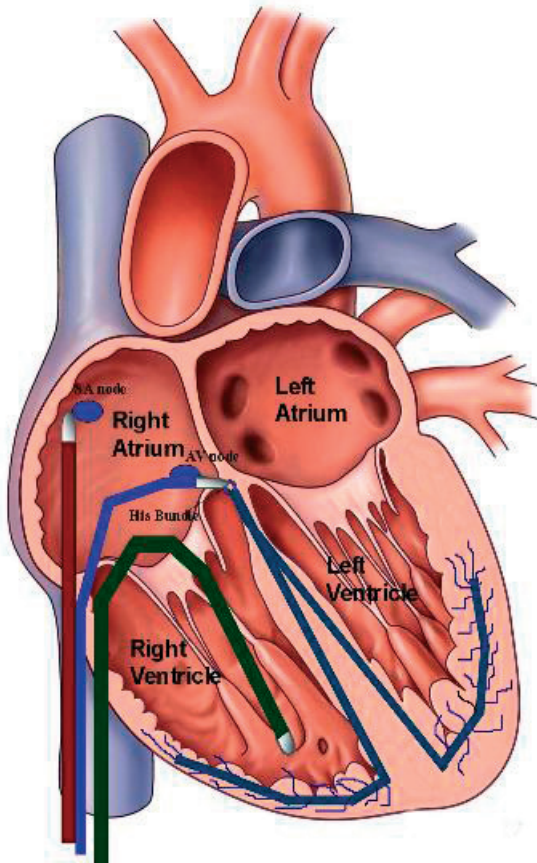
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What is Atrial Fibrillation?

If you are healthy and your heart is working normally you are likely to have a regular resting heart rate of around 60 to 90 beats per minute. If you are experiencing atrial fibrillation, however, you may notice your heartbeat becoming irregular and speeding up for no apparent reason. These feelings or “palpitations” may occur constantly or only from time to time. They are unpleasant and worrying and they should not be ignored as they may mean that something is seriously wrong with your heart.

Graphic of heart showing different chambers and sino-atrial node



Atrial fibrillation (AF) happens when the electrical control of your heartbeat becomes disrupted. Normally your heartbeat is controlled by electrical signals from its own natural pacemaker, called the sino-atrial node. These signals cause the upper chambers of your heart (the atria) to squeeze blood into the lower chambers (the ventricles) which then squeeze blood out into your blood vessels. The regular boom-boom of a healthy heart is the sound of the contracting atria quickly followed by the contracting ventricles.

In atrial fibrillation, however, the electrical signals become erratic causing the atria and ventricles to contract out of sync. Instead of beating normally, the upper chambers, the atria, start making repetitive twitching movements known as “fibrillations”. This hampers the movement of blood from the atria into the ventricles. The ventricles respond by beating faster and more irregularly. It is this irregular ventricular beat you feel when you have a palpitation.

How common is Atrial Fibrillation?

Atrial fibrillation is the most common cause of irregular heartbeat, affecting around one in every hundred people. Although the condition is relatively rare in people under the age of 50, the risk of developing it increases significantly as you get older. By the age of 70 around ten people in every hundred will have suffered the condition. Overall it is estimated that around half a million people in the UK have atrial fibrillation.

What are the symptoms?

Some people with atrial fibrillation have no symptoms at all. In these cases the condition is likely only to be discovered during a chance medical examination or when they develop another medical condition.

For most people, however, atrial fibrillation is all too obvious, causing an unpleasant feeling of an irregular or racing heartbeat. Some people describe this feeling as a “thumping” in their chest. It is also common to feel faint or light-headed during a palpitation.

You may find that you become short of breath more often than usual, feel tired a lot of the time and that your ankles start to become swollen.

What causes Atrial Fibrillation?

Atrial fibrillation can be caused by anything that damages the heart. This includes medical conditions such as:

- a heart attack
- high blood pressure
- heart failure
- rheumatic heart disease
- an overactive thyroid gland (hyperthyroidism)
- diabetes
- pneumonia

Or lifestyle factors such as drinking too much alcohol on a regular basis.

However, in around thirty per cent of people with AF it is not possible to identify the precise cause. These cases are sometimes referred to as “lone atrial fibrillation”.

How is Atrial Fibrillation diagnosed?

If your GP suspects you have atrial fibrillation, he or she will probably refer you to a heart specialist for further tests. These are likely to include an electrocardiogram (ECG) in which electrodes are placed on your chest to test for any irregularity in the electrical activity of your heart. If your palpitations are occurring only occasionally the specialist may ask you to wear a portable ECG machine for a period of 24 hours.

The specialist will also want to perform some tests for possible causes of your irregular heartbeat. These will include a blood test to look for high levels of the thyroid hormone thyroxine. Images of your chest, taken with a chest X-ray and an ultrasound machine (an echocardiogram), may also be used to try to identify any abnormality in your heart that could be causing the problem.

What will happen to me?

If you have been diagnosed with atrial fibrillation, or are concerned that you may have the condition, the good news is that there are a number of effective treatments that can both help bring your heartbeat back under control and reduce the risk of more serious medical consequences.

However, it is important to take the problem seriously. Atrial fibrillation can be the first sign of potentially life-threatening conditions such as heart failure, coronary artery disease, heart valve disease and high blood pressure. It is also a significant cause of illness in its own right. It has been estimated that untreated atrial fibrillation raises the risk of premature death by 50 per cent in men and 90 per cent in women.

One of the most serious consequences of atrial fibrillation is due to the development of blood clots. This can happen when blood, that should be being pumped out of the heart, instead collects in the atria where it begins to form clots. These clots usually remain in the atria where they do little harm. However, occasionally a clot will break away and travel through the blood to other parts of the body.

If the blood clot travels to the brain then it can lodge in one of the smaller blood vessels and block the blood supply. This, in turn, may cause a stroke.

How great is the risk of stroke?

If you have atrial fibrillation then, without treatment, you have a five per cent risk of having a stroke within a year. This risk will be even higher if you have other risk factors such as high blood pressure or other heart disease. It also rises as you get older. Overall, people with atrial fibrillation have five times the normal risk of suffering a stroke.

What is more, having a stroke appears to be more serious for people with atrial fibrillation than in those without. Your chances of having a second stroke, suffering severe disability or of dying are all significantly increased if you have an abnormal heart rhythm.

If all this sounds rather alarming then please be reassured, there is plenty you can do to reduce these risks and protect yourself from the more serious consequences of atrial fibrillation.

What can I do to protect myself?

Treatment of atrial fibrillation has been shown to offer significant benefits in both reducing immediate symptoms and in offering protection against serious long-term consequences.

If you have been diagnosed with atrial fibrillation your doctor may recommend a number of different treatments. The aim of these therapies is:

- to restore the natural rhythm of your heart
- to relieve any symptoms you may have of heart failure, high blood pressure or angina that may be linked to your atrial fibrillation
- to improve the overall performance of your heart
- to reduce your breathlessness when you exercise
- to reduce your risk of suffering blood clots and stroke

Treatment of Atrial Fibrillation

What treatments are available?

Treatments for atrial fibrillation can be loosely divided into three categories:

- those intended to restore the natural rhythm of the heart
- those intended to treat the underlying cause of the atrial fibrillation
- those intended to reduce the risk of blood clotting and thereby offer protection against stroke

How will my heart's normal rhythm be restored?

Success in restoring the heart's normal rhythm will depend on how seriously your heart's rhythm is disrupted and on whether or not the doctor discovers any signs of an underlying medical condition.

If your heart appears to be healthy then drugs may be used to bring your speeding heart rate back under control. This will then allow your heart to correct its own rhythm a process known as spontaneous conversion. This can be achieved using:

- Low-dose aspirin
- Calcium channel blockers -- eg: diltiazem, verapamil. These can also offer good relief from breathlessness on exercise.
- Beta blockers - eg: metoprolol, propranolol.
- Digoxin - although this can cause toxicity especially in the elderly and in those with kidney disease

In more serious cases, or where the above approach does not work, the doctor may decide to restore the heart's rhythm directly. This is known as cardioversion and can be achieved using either drugs or by applying an electrical current to your chest.

Drugs used to achieve cardioversion include:

- Class I antiarrhythmic drugs - eg: quinidine flecainide propafenone. Although quinidine and flecainide are effective they have been associated with a high incidence of side effects and are usually only started in hospital.
- Class III antiarrhythmic drugs - eg: amiodarone. This has been shown to be highly effective, restoring the hearts rhythm in up to three quarters of cases. Side effects include sensitivity to light, skin rashes, hepatitis and thyroid problems
- Verapamil - used occasionally but has a much lower success rate of conversion than the class I and III antiarrhythmics.

Electrical cardioversion is carried out under general anaesthetic and usually involves the patient being given a small electric shock to the chest to restores the normal heartbeat.

Its success rate ranges from 20 per cent to 90 per cent depending on the cause of the atrial fibrillation. It is most likely to be successful if your disrupted heart rhythm is caused by an overactive thyroid gland and least likely to be successful if it is due to diseased heart valves.

In cases where drug or electrical cardioversion does not work atrial fibrillation can be corrected by surgery. The most common procedure is to implant a pacemaker that uses electrical signals to control your heartbeat. There is also an operation known as the “maze” procedure, in which the faulty electrical pathways causing your atrial fibrillations are destroyed.

How will the doctor treat my underlying disease?

This obviously depends on whatever underlying disease the doctor has identified.

Common conditions associated with atrial fibrillation and some of their treatments are listed below:

- high blood pressure - treated with diuretics, beta-blockers, angiotensin-converting enzyme (ACE) inhibitors and calcium channel blockers. Lifestyle changes such as increased exercise, a low-salt diet, quitting smoking and reducing drinking can also reduce your blood pressure.
- heart failure - treated with ACE inhibitors, diuretics, betablockers, digitalis.
- rheumatic heart disease - treatment may involve surgery to replace damaged heart valves. An overactive thyroid gland (hyperthyroidism), treated with anti-thyroid drugs radioactive iodine or surgery.
- diabetes - treated by dietary changes and/or anti-diabetic drugs (such as insulin)

How can I protect myself against stroke?

Although everybody with atrial fibrillation has an above average risk of suffering a stroke, the danger is much higher in some than others. Your first step in protecting yourself against stroke is therefore to calculate your own risk. This will depend on your age, whether or not you have had a stroke in the past and whether you have other risk factors such as high blood pressure, diabetes or heart disease.

Table 1 will help you. Produced by the Scottish Intercollegiate Guidelines Network (SIGN) the table assigns you to one of four risk groups and calculates your risk of stroke in one year if you leave your atrial fibrillation untreated.

Table 1 Risk of stroke in people with untreated atrial fibrillation

Risk group	One year risk of stroke
Very high Previous ischaemic stroke or transient ischaemic accident (TIA)	12%
High Age over 65 and at least one other risk factor from: hypertension, diabetes, heart failure, left ventricular dysfunction	5 - 8%
Moderate Age over 65, no other risk factors Age under 65, other risk factors	3 - 5 %
Low Age under 65, no other risk factors	1.2%

Now I know my risk group, what should I do about it?

Regardless of your risk status there are a number of things you can do to reduce your risk of stroke. Some of these are listed on the next page.

- Stop smoking
- Lose any excess weight
- Take exercise
- Eat fewer fatty foods
- Eat more fruit and vegetables, fresh, frozen or canned
- Reduce the salt in your diet
- Don't drink to excess

If you are in the low risk category, these measures may be all you need to protect yourself from stroke. Your doctor may also prescribe low-dose aspirin to be taken once a day.

For those in the moderate, high and very high risk groups, however, lifestyle changes alone are unlikely to be enough to significantly reduce your risk of stroke. The SIGN group recommends that all those whose annual stroke risk is greater than three per cent should be considered for anticoagulant therapy with warfarin.

What is anticoagulant therapy?

Anticoagulant therapy is usually given in the form of the drug warfarin. Warfarin slows down the ability of your blood to clot. Delaying clotting may be called “thinning” the blood although that is not what it does. Clotting is delayed because the warfarin inhibits the production of vitamin K in your liver thus making your blood take longer to clot.

This reduces the chances of a blood clot forming in the heart and travelling to the brain, thereby cutting the risk of stroke.

Indeed, studies suggest that patients with atrial fibrillation who used the anticoagulant therapy warfarin reduced their risk of stroke by around sixty per cent.

What are the side effects of anticoagulant therapy?

Although reducing the blood's ability to clot can be beneficial, it can also raise the risk of bleeding. This bleeding can be minor - you may find you are more susceptible to bruising or nose bleeds or that it takes longer to stop the bleeding from a simple cut. However, more serious bleeds can include bleeding in the brain (haemorrhages) or in the stomach (an ulcer). The most serious bleeds can be fatal.

It is therefore important that in patients who are considered at high risk of bleeding the benefits of anticoagulation therapy are weighed against the potential dangers. Common risk factors for bleeding include:

- Age over 75
- History of uncontrolled high blood pressure
- Excessive drinking of alcohol
- Liver disease
- Poor compliance with drug therapy
- Stomach ulcers
- Recent surgery
- Recent cerebral haemorrhage

What anticoagulant therapy will I be prescribed?

The gold standard anti-coagulant therapy is warfarin, a drug that works by interfering with the chemical process that is involved in forming blood clots. This process requires the presence of a “clotting factor” known as pro-thrombin, which relies on the presence of vitamin K in the body to be made. Warfarin inhibits the action of vitamin K, thereby preventing the synthesis of the clotting factor pro-thrombin.

If you have atrial fibrillation, then taking warfarin will reduce your risk of suffering a stroke by around sixty per cent. This compares with a risk reduction of just twenty per cent in patients who take aspirin (the other most commonly used anti-clot therapy). Warfarin also protects those who have already suffered one stroke from having another. It appears to be particularly useful in preventing the more serious and debilitating strokes. .

There is no denying that you may need to review your lifestyle and eating and drinking habits. However the benefits of prevention of stroke outway any minor changes you may have to make.

Nevertheless, despite these complications and risks, the benefits of warfarin are so significant that warfarin treatment has been advised for all patients at risk of stroke.

It is, therefore, somewhat disappointing that some studies have shown that only about one half of people with atrial fibrillation eligible for warfarin therapy were actually prescribed the treatment. The elderly appear to be particularly likely to be denied warfarin treatment. This may be due to the supposed increased risk of bleeding in elderly patients. However, it belies the fact that the elderly also have the greatest risk of blood clots and stroke.

Warfarin comes in tablet form and is taken every day. Your blood clotting times will then be monitored and the dose of the drug altered accordingly. The daily maintenance dose of warfarin should be taken at the same time each day.

Why does my blood clotting time need to be monitored,

Anticoagulation therapy is a balancing act. If your blood clotting time is too short you may be at risk of stroke if it is too long you could be at risk of bleeding. To make sure your therapy is protecting you adequately, it will be monitored using a measurement called the “INR” - the International Normalised Ratio. This is a measurement of the time your blood takes to clot compared to normal. Normal blood has an INR of 1.0. You will be given a target INR and your dose of warfarin will be adjusted to help you achieve this target.

When you first begin warfarin therapy your response to the drug may fluctuate a little. For this reason the blood tests will initially be taken every few days. With time, however, your response is likely to stabilise, and monitoring may be reduced depending on your response.

What are the risks with warfarin therapy?

As already mentioned the main risk with warfarin therapy is an increase in bleeding. Every year fifteen per cent of patients taking warfarin suffer a minor bleed, such as a nose bleed, bruising or excessive bleeding after a minor injury. The incidence of serious bleeds such as bleeding in the brain area and gastrointestinal bleeds is between 2.4 and 8.1 per cent of patients and up to 4.8 per cent of patients suffer bleeding serious enough to kill them.

The risk of bleeding may also be increased by interactions between warfarin and other drugs. Some of the drugs known to interact are listed on the next page.

- Antibiotics - (eg: erythromycin, clarithromycin)
These can interfere with your INR readings.
If you are prescribed antibiotics you should inform your haematology clinic so they can check your INR readings
- Non-steroidal anti-inflammatories (eg: aspirin, ibuprofen)
- Many heart drugs (eg: clopidogrel, amiodarone)
- Lipid-lowering drugs including statins.
- Drugs to treat Parkinson's disease
- Cancer drugs
- Drugs to prevent malaria
- Drugs to treat depression
- Drugs to treat asthma

Whenever you are prescribed a new medication you should always ask the doctor if it interferes with warfarin. Likewise always seek advice from your pharmacist before using any over-the-counter medicines or food or herbal supplements. You should always tell your doctor, nurse or haematologist what other drugs you are taking, whether prescribed or over the counter. Other side effects with warfarin may include rashes, thinning of hair and diarrhoea. Remember not everyone will experience side effects. You should always speak to your doctor if you are concerned about something and do not stop taking your warfarin unless you are advised to by your doctor.

Will warfarin therapy affect my lifestyle?

On beginning warfarin therapy you may be required to make a few alterations to your lifestyle to ensure that the treatment has an optimal effect. Areas in which you may need to be careful include:

- **Diet** - It is important that you eat a healthy low fat diet and have plenty of fruit and vegetables. Do not avoid foods that contain vitamin K, such as dark green vegetables and liver, but try to make sure you have roughly the same amounts on a regular basis.
Being consistent is the most important thing.
- **Alcohol** - although drinking in moderation is fine dramatic changes in your alcohol consumption may affect your INR reading. You should therefore avoid binge drinking.
- **Travel** - you should have your INR checked before any travel overseas so you can be sure you are taking the correct dose while away from home. It is also essential to ensure that your travel insurance is adequate and that it includes cover for anticoagulation therapy, see back page.
Pack two sets of medication Put one in your suitcase and one in your hand luggage in case your main baggage is delayed or lost in transit.
Depending on the length of your stay you may need to have your INR checked whilst abroad. Always tell your clinic or GP how long you will be away from home.

- Dental surgery - make sure your dentist knows you are taking anticoagulant therapy and that it is added to your dental records. Small fillings and check-ups can usually be carried out without any problems. But contact your haematology clinic before undergoing a tooth extraction or any other major procedure. They will help if you need to adjust your warfarin levels. People who have valve disease or have had a replacement valve may need to take an antibiotic before dental treatment. It is always sensible to check with your clinic or GP first.

What other drugs can be used to prevent blood clots?

The other main drugs that are used to prevent blood clots and stroke in people with atrial fibrillation are called anti-platelet drugs. Their anti-clot action occurs due to its ability to inhibit small structures within the blood known as platelets. These platelets produce the chemicals that start the blood clotting process. They also act by clumping together around damaged areas of blood vessels to form a plug. They reduce the platelets stickiness making it harder for them to form clots. The changes caused to the platelets are permanent and last for the lifetime of the platelet. There are a number of antiplatelet drugs, the two most common being aspirin and clopidogrel.

Anti-platelets do not offer the same level of protection against stroke as warfarin.

There have been clinical trials with new oral anticoagulants that do not require the same level of monitoring as warfarin. These anticoagulants have been licenced for use in hip and knee surgery. They are expected to be given a licence for use in atrial fibrillation in 2011.

Questions to ask your doctor

Before diagnosis:

- What is causing my heart palpitations, do I have an underlying disease?
- I have other symptoms. Are these related to my palpitations
- Am I likely to have a heart attack?
- Am I likely to have a stroke?
- What tests do I need?
- What do these tests involve?

After diagnosis:

- What drugs can I take to restore my heart's rhythm?
- Do they have side effects?
- What should I do if I experience side effects?
- Will I need to be on treatment for the rest of my life?
- Will I need to have electric cardioversion?
- What does this involve?
- Will I need a pacemaker?
- Should I alter my lifestyle?
- Should I alter my diet?
- Can I still play sport?
- Can I still have sex?
- Is it safe for me to drive?
- Is it safe for me to fly
- Now my atrial fibrillation has gone, how likely is it to come back?
- What can I do to reduce my risk of stroke?
- Do I need anticoagulant therapy?

On receiving anticoagulant therapy:

- Does my anticoagulant therapy need monitoring?
- How will you monitor my anticoagulant therapy?
- How do I find out my target INR?
- Can I monitor my own treatment?
- Who can I ring for advice?
- Are there any new treatments I could try?

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