

# Atrial Fibrillation (AF) and Heart Failure



Providing information, support and access to established,  
new or innovative treatments for atrial fibrillation

# Glossary

**Ablation** A treatment which destroys a very small area of tissue inside the heart which is causing an arrhythmia

**Arrhythmia** Irregular heart rhythm disorder

**Atria** The two upper chambers of the heart

**Atrial Fibrillation (AF)** A common heart rhythm disorder that causes an irregular and often abnormally fast heart rate

**AV Node** Part of the electrical pathway between the atria and the ventricles

**Cardioversion** The use of a small synchronised energy shock to stop fast or irregular heart rhythms

**Ejection fraction** A measurement expressed as a percentage of how much blood the left ventricle (the main pumping chamber of the heart) pumps out with each heart beat

**Heart failure** The medical term used to describe the situation where the heart is unable to pump blood around the body as efficiently as it should

**Hypertension** High blood pressure

**Sinus node** The natural pacemaker of the heart

**Sinus rhythm** Normal rhythm of the heart

**Stroke** A medical condition where the brain is deprived of oxygen, which can be caused by a blood clot or a bleed in the brain

**Ventricles** The two lower chambers of the heart which provide the most pumping force

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# What is heart failure?

The heart's role is to pump blood around the body, ensuring that oxygen, blood and nutrients get to all of the muscles and organs. Heart failure is a condition in which your heart does not pump blood as efficiently around your body as it should, which makes it difficult for your body to get as much oxygen and blood as it needs. When the organs do not get enough oxygen to work effectively, this can then cause a number of symptoms, particularly when being active.

Although the term heart failure can sound scary, it does not mean that your heart is just going to stop working. Although heart failure is a serious medical condition, it only means that the heart is not working properly and needs some support to help it work better.

Doctors often refer to two main types of heart failure (there are other types also). These two main types are based on the ejection fraction, which is the proportion of blood pumped out of the main pumping chamber of the heart (the left ventricle) during a heartbeat. The most common type of heart failure is that with a low ejection fraction (less than 40%). Increasingly common is the other main type of heart failure, where the ejection fraction is still normal (between 50% and 75%). Your doctor will tell you what type of heart failure you have, and what the treatment options are.

Another classification of heart failure that is occasionally used is right heart failure and left heart failure. Right heart failure is when blood may back up on the right side of the circulation, causing swelling in the legs, abdomen or other organs. Left heart failure is when blood may back up from the left side of the heart to the lungs which causes congestion in the lungs and breathlessness.

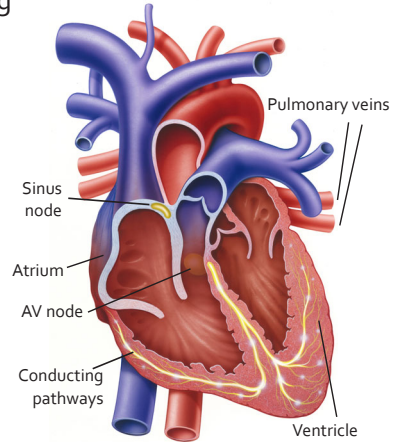
# What is AF?

Atrial fibrillation (AF) is an abnormality in the rhythm of the heart (an arrhythmia). It involves the upper chambers of the heart, the atria, beating irregularly. As the atria controls the normal (sinus) rhythm of the heart, this means that your pulse becomes irregular.

AF occurs when chaotic electrical activity develops in the atria, and completely takes over from the sinus node. As a result, the atria no longer beat in an organised way, and pump less efficiently. The AV node (a specialised cluster of heart cells) will stop some of these very rapid impulses from travelling to the ventricles, but the ventricles will still beat irregularly and possibly rapidly. This may contribute to symptoms of palpitations, shortness of breath, chest discomfort, light headedness, fainting or fatigue. The goal of treatment in AF is to restore the heart's normal rhythm and if this is not possible, then to slow the irregular heart rate, to alleviate symptoms and prevent complications of AF-related stroke and heart failure.

AF is the most common arrhythmia, affecting four out of every 100 people over the age of 65.

## The heart and normal conduction



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# Symptoms of heart failure

One of the most common symptoms of heart failure is breathlessness, which worsens with physical activity or exercise. Congestion, or fluid, can also build up in the lungs which can make it difficult to breathe. This can happen when you are exercising or have been active, or in more severe cases can also happen at rest. It can also happen at night when lying down and may affect sleep. This build-up of fluid can also cause swollen ankles, legs or abdomen, as the heart is not pumping effectively enough to remove this fluid. A persistent cough may also develop, due to the excess fluid sitting in the lungs.

Tiredness caused by the heart's reduced function is very common, as less oxygen and nutrients for energy are being delivered around the body. This in turn can make everyday activities more difficult and exhausting, particularly exercise.

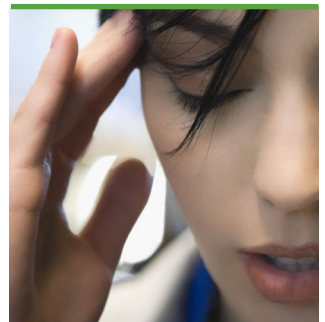
Other symptoms can include palpitation, a rapid or irregular heartbeat, weakness, dizziness or fainting, rapid weight gain from fluid retention or decreased alertness.

## Symptoms of AF

Some people with AF do not have any symptoms, and it may only be discovered at a routine medical examination or following an admission to A&E with another condition. However, some patients may present with palpitations (being able to feel the increased and irregular heart rate), shortness of breath or chest pains. The easiest way to detect AF is to feel your pulse. This should then be confirmed using an ECG.

Common symptoms of AF can include:

- Palpitations which may be rapid
- Tiredness
- Shortness of breath
- Dizziness
- Chest pains



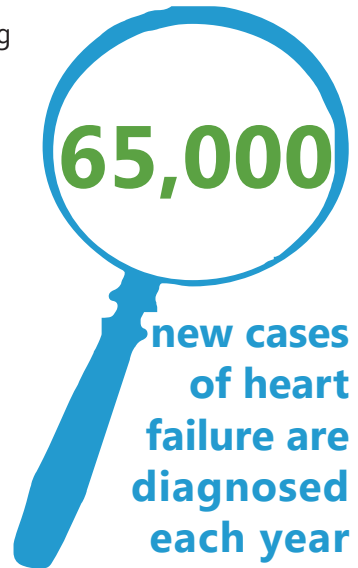
# AF and heart failure

AF and heart failure have been described as growing epidemics worldwide, with the number of people affected by both conditions increasing. AF is the most common arrhythmia, affecting 1.5 million people in the UK alone, and there are roughly a further 500,000 people undiagnosed. This figure is set to double by 2050. There are at least 900,000 people in the UK that have been diagnosed with heart failure, and at least 65,000 new cases are diagnosed each year. AF affects 1 in 4 people over the age of 65, while heart failure will affect 1 in 5 people at some point in their lives.

## So why do heart failure and AF so frequently exist alongside each other?

It is thought that one of the many reasons that these conditions so frequently coexist is because the underlying risk factors for both conditions are similar (hypertension, diabetes, obesity, sleep apnoea etc). Age also plays a very important role in both AF and heart failure, as both conditions are more common in those over 65.

There is a clear relationship between AF and heart failure, although it is not fully understood whether AF causes heart failure or heart failure causes AF, as both conditions can cause changes to the heart that predispose a patient to the other condition. A diagnosis of either condition can promote the development of the other. The presence of AF itself is a risk factor for developing heart failure, with a three-fold increase in heart failure developing in patients who have AF.



AF may increase the risk of developing heart failure due to an increased resting heart rate, an exaggerated heart rate in response to exercise, and a reduction in cardiac output (the amount of blood the heart pumps through the circulatory system in a minute).

Heart failure can increase the risk of AF due to the pressure inside the heart being higher, which can stretch the atria (the upper chambers of the heart) and make it more likely that AF develops.

While it is accepted that a diagnosis of both AF and heart failure combined has a worse prognosis than either condition individually, there are many treatment options available that make living with either or both conditions much easier.

But please note that just because you have been diagnosed with either AF or heart failure, it does not necessarily mean that you will develop the other condition.

**At least 15 million**  
**people across Europe,**  
**and 900,000**  
**people in the UK**  
**have heart failure**



# Treatment options for AF and heart failure

## Anticoagulants

The most important consideration for AF and heart failure is stroke prevention, as both AF and heart failure are a risk factor. If you have both conditions it is more likely for you to get blood clots, and therefore be at risk of an AF-related stroke. Due to this, it is highly likely that an anticoagulant will be prescribed for you. Anticoagulants work to reduce the risk of blood clots forming in the body. If you would like more information about anticoagulants, please contact AF Association on 01789 867502 or email [info@afa.org.uk](mailto:info@afa.org.uk).

## Beta blockers and calcium channel blockers

Another important consideration for the treatment of AF and heart failure is rate control. It is usually recommended that a beta blocker such as bisoprolol, or a calcium channel blocker if beta blockers are contraindicated or not tolerated, is essential to control your heart rate. Beta blockers and calcium channel blockers not only slow down the heart rate but can also lower blood pressure and help to control arrhythmias. They help to improve the symptoms and gradually over time may improve the heart's pumping ability.

## Digoxin

Digoxin is a medication which helps to slow down the heart rate and strengthen the heartbeat. Digoxin is typically used when beta blockers and calcium channel blockers don't work effectively or can be used as a first-line treatment for people with heart failure and atrial fibrillation.

## Diuretics

Often known as water tablets, diuretics aim to reduce water retention in the body, by encouraging kidneys to produce more urine. The water retention causes swelling of the legs, ankles and abdomen, and fluid build up on the lungs, and many people feel they are able to breathe better once they start taking this medication.

## ACE inhibitors

Angiotensin-converting enzyme (ACE) inhibitors work by widening the blood vessels, making it easier for your heart to pump blood around your body, and taking strain off your heart. ACE inhibitors are also used for hypertension (high blood pressure), so are also helpful to lower blood pressure.



## Angiotension II receptor blockers (ARBs)

ARBs work in a similar way to ACE inhibitors and enlarge blood vessels while also lowering blood pressure. ARBs are often prescribed for people who cannot take ACE inhibitors.

## Sacubitril-valsartan

This combination treatment of an ARB (valsartan) and a neprilysin inhibitor (sacubitril) works also by widening the blood vessels and helping the heart to pump better. For some patients this treatment is preferred to that of an ACE inhibitor, or an ARB alone. This drug must not be taken at the same time as an ACE inhibitor.

## Cardioversion

A cardioversion is the conversion of an abnormal heart rhythm to normal (sinus) rhythm, using an electric shock to activate the whole heart at once. This aims to prevent the continuation of an arrhythmia, so that after the shock, the normal heart beat (sinus rhythm) will be able to emerge.

## Ablation

Catheter ablation aims to treat the abnormal heart rhythm by destroying the area of heart cells responsible for the arrhythmia without affecting the rest of the heart. Catheter ablation is a minimally invasive procedure, which is usually performed using local anaesthetic and sedation, although in some cases, such as in children or adolescents, a general anaesthetic may be used.

## Pace and ablate

An option which is available for those who have a pacemaker is for your doctor to perform an ablation procedure of your AV node, which is the part of the electrical pathway between the atria and ventricles. Ablation of the AV node would disconnect the top from the bottom chambers of the heart, making it impossible for your heart to beat quickly on its own accord in AF. In this instance, patients then become dependent on their pacemaker for normal heart functioning.

## Devices

Sometimes it may be necessary for a device to be implanted to help with the symptoms of heart failure and AF, particularly if the condition has worsened, or if other treatment options have not been successful. There are a number of various devices that can be used, such as:

- **Pacemaker**- Pacemakers electrically stimulate the heart, making sure your heart beat never goes too slowly. This may be particularly helpful if one of your symptoms is fainting.
- **Cardiac resynchronisation therapy (CRT) device**- CRT devices work by making the lower chambers (ventricles) pump and contract at the same time, improving the overall function of the heart. These devices work in a similar way to traditional pacemakers, helping the heart to beat in a regular rhythm, particularly when the heart's natural pacemaker stops working properly. This device can restore the heart's coordination and make it pump more efficiently.
- **CRT ICD**- A CRT ICD is suitable for someone who is at risk of developing a dangerously fast heart rhythm. It works in much the same way as a standard ICD (see below) but also has the advantage of often improving symptoms of heart failure.
- **Implantable cardioverter defibrillator (ICD)**- An ICD can recognise a dangerously fast or irregular heart rhythm and will deliver electrical therapy or a shock to get your heart back into normal sinus rhythm if it is required.

For more information about any of these devices, please contact Arrhythmia Alliance at [info@heartrhythmalliance.org](mailto:info@heartrhythmalliance.org) or call 01789 867501.

# Psychological impact and coping

Receiving a diagnosis of heart failure or AF can be very frightening for a lot of people. A diagnosis can be a dramatic event and can often come as a surprise. It can bring about a feeling of uncertainty, and there may be a period of psychological adjustment following diagnosis. Not only is the diagnosis itself very concerning, but some of the symptoms can make it difficult for people to live a normal life.

A feeling of anxiety or sadness about your condition and symptoms is a normal and common reaction. It is important to find ways to manage these feelings, as this can have a negative impact on your condition. It can be helpful to talk to friends and family about your feelings, and you may find it helpful to speak to your doctor or arrhythmia/heart failure nurse.

Cognitive Behavioural Therapy (CBT) is a structured talking therapy that can help an individual to accept and adjust as best as they can to their condition. It can be very effective in addressing the feelings of anxiety, depression or shock, and can help with quality of life. Therapy can be particularly useful in helping you to cope better with some of the symptoms and can help if your mood has become low. CBT is available as an NHS treatment and is provided by Improving Access to Psychological Therapies (IAPT) or it may be available through your cardiology service.

Learning about your condition can also be very helpful and powerful in managing your condition. Knowing all of your treatment options, how best to manage heart failure and AF and any lifestyle changes may help you to feel more in control.

The most important thing to remember, is that not only is there life after diagnosis, but also that you can lead a normal, healthy lifestyle with the right treatment.

For more information about mindfulness, meditation and relaxation techniques, please contact the AF Association for a copy of our mindfulness and healthy living with AF booklet.

# Lifestyle advice

After the diagnosis of heart failure or AF, it will almost always be necessary to make small changes to your lifestyle. Of course, it is extremely important to live as healthy a lifestyle as possible and eat a nutritious and balanced diet to maintain a healthy weight. Not only will this help with your overall health and fitness but being overweight can exacerbate your symptoms due to added pressure on your heart and lungs.



Cutting down on salt is an important part of your diet, as salt can increase water retention and raise blood pressure. It is a good idea to talk to your specialist about guidelines for salt intake.

Alcohol is not only known to be a trigger for AF episodes, but can also increase your blood pressure and worsen the symptoms of heart failure, so minimising your intake or cutting it out completely is a good idea.

Caffeine can also raise your heart rate as well as increase blood pressure and is a common trigger for episodes of AF. Switching to decaffeinated options may be beneficial for people with AF and heart failure.

If you take warfarin, you need to be mindful of the vitamin K content in food, because this has a knock-on effect on INR levels, and in turn affects your dose of warfarin. If your diet is reasonably consistent, the amount of vitamin K in your diet will be matched by the warfarin dose.

It may be a good idea to keep a food and drink diary to monitor your triggers, which may highlight patterns and something you need to avoid in the future.

Exercise is an important component of a healthy lifestyle and exercising according to a paced approach, at a level with which you are individually comfortable is sensible from a cardiovascular and emotional perspective. Not only will exercise help to improve your condition but will help to maintain overall health and fitness. Prolonged periods of inactivity can be as harmful as overly strenuous exercise, remember that moderation is key. Walking regularly is an excellent way of keeping fit. Exercise programmes for people with heart failure and AF have shown to increase the ability of your heart and muscles to work together to do exercise, and to improve the overall quality of life. An exercise assessment should usually be organised before you are offered an exercise programme.

There are small changes that you can make to the way that you perform everyday tasks, that may make it easier to live with your condition. One thing you can do, is to try and do any jobs or activities in smaller tasks or sections, which will help you to conserve your energy. It may take you longer to perform daily activities than it did before, but listen to your body, and take more time to do things. Rest if you need to, especially if you are feeling unwell or tired.

# Driving with AF and heart failure

It is important to contact the DVLA to let them know about a diagnosis of AF and/or heart failure, as you may be fined if you do not tell them about a medical condition that may affect your driving. In general, reporting your condition is seldom an issue unless you are prone to experiencing blackouts or severe symptoms which could impede driving ability. If you do need to stop driving, you can restart when your doctor tells you it is safe.



DVLA guidelines are subject to change on short notice, so their website will have the most up to date information. For up to date information about driving with your condition, please contact DVLA or check the website for current guidance [www.gov.uk/driving-medical-conditions](http://www.gov.uk/driving-medical-conditions).

# Travelling with AF and heart failure

Before you go away on holiday, it may be helpful to make an appointment with your doctor or specialist nurse. They know your medical history, so are always the best person to advise you.

It is a good idea to find out about local medical facilities where you are going and make a list of hospital telephone numbers and addresses.

Check that your travel insurance policy covers you for AF and heart failure, but if you need any help finding insurance, AF Association can provide a list of travel insurance companies who have been known to provide policies to those with pre-existing medical conditions.

It is a good idea to carry a medication alert card or wear a medical ID bracelet or necklace during your trip. This can state your condition, any implanted devices you may have, medication you take and your doctor's contact details. Digital ID can carry a lot of information on your condition. Ask AF Association for a free anticoagulation alert card by calling us on 01789 867502 or emailing [info@afa.org.uk](mailto:info@afa.org.uk).



This booklet has been written to support AF and heart failure patients who struggle to find information on these debilitating conditions. Without donations and fundraising, we would not be able to provide support through our award-winning resources and helpline.

Please donate to support our vital work at [www.afa.org.uk/donate](http://www.afa.org.uk/donate)

Please remember that this publication provides general guidelines only. Individuals should always discuss their condition with a healthcare professional.

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AF Association, Unit 6B, Essex House,  
Cromwell Business Park, Chipping Norton,  
Oxfordshire OX7 5SR



+44 (0)1789 867 502



info@afa.org.uk



www.afa.org.uk

If you would like further information or would like to provide feedback please contact AF Association.