

## Understanding NICE guidance

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Information for people who use NHS services

### Atrial fibrillation

*NICE 'clinical guidelines' advise the NHS on caring for people with specific conditions or diseases and the treatments they should receive.*

This booklet is about the care and treatment of people with atrial fibrillation in the NHS in England and Wales. It explains guidance (advice) from NICE (the National Institute for Health and Clinical Excellence). It is written for people with atrial fibrillation, but it may also be useful for their families or carers or for anyone with an interest in the condition.

The booklet aims to help you understand the care and treatment options that should be available in the NHS. It does not describe atrial fibrillation or the tests or treatments for it in detail. A member of your healthcare team should discuss these with you. There are examples of questions you could ask throughout this booklet to help you with this. Some sources of further information and support are on the back page.



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### The advice in the NICE clinical guideline covers:

- the tests that should be used to diagnose atrial fibrillation (or AF for short)
- the treatment people can expect to be offered depending on the type of AF (or atrial flutter) they have. This includes AF that:
  - comes on suddenly (acute-onset AF)
  - lasts longer than a week or doesn't stop without treatment (persistent AF)
  - is more longstanding (permanent AF)
  - comes and goes (paroxysmal AF)
  - occurs after having surgery (post-operative AF)
- the treatment people can expect if they have AF and then have a stroke.

### It does not specifically look at the treatment of AF for people:

- who are under 18 years of age
- whose AF is caused by heart disease that they were born with.

## Your care

Your treatment and care should take into account your personal needs and preferences, and you have the right to be fully informed and to make decisions in partnership with your healthcare team. To help with this, your healthcare team should give you information you can understand and that is relevant to your circumstances. All healthcare professionals should treat you with respect, sensitivity and understanding, and explain atrial fibrillation and the treatments for it simply and clearly.

The information you get from your healthcare team should include details of the possible benefits and risks of particular treatments. You can ask any questions you want to and can always change your mind as your treatment progresses or your condition or circumstances change. Your own preference for a particular treatment is important and your healthcare team should support your choice of treatment wherever possible.

Your treatment and care, and the information you are given about it, should take account of any religious, ethnic or cultural needs you may have. It should also take into account any additional factors, such as physical or learning disabilities, sight or hearing problems, or difficulties with reading or speaking English. Your healthcare team should be able to arrange an interpreter or an advocate (someone who supports you in asking for what you want) if needed.

If you agree, your carers and relatives should have the chance to be involved in decisions about your care. Carers and relatives also have the right to the information and support they need in their roles as carers.

## What is atrial fibrillation?

Atrial fibrillation (AF for short) is a condition that affects the heart, causing an irregular pulse. It occurs when the electrical impulses controlling the heartbeat become disorganised, so that the heart beats irregularly and too fast. When this happens, the heart cannot efficiently pump blood around the body. This may cause symptoms such as palpitations, chest pain or discomfort, shortness of breath, dizziness and fainting. Severe symptoms can be life-threatening and require immediate treatment. However, many people with AF have no or only mild symptoms.

Atrial fibrillation may increase the risk of blood clots because when the heart beats irregularly, the blood does not flow properly through the heart and the rest of the body. People with AF may need medication to reduce or prevent this risk (see section on 'Anticoagulation' on page 7).

Atrial flutter is a condition related to AF, where the heartbeat is not always irregular, but can still occasionally be too fast. Some of the information in this booklet on treatment for AF also applies to atrial flutter.

### Questions you might like to ask your healthcare team

- Can you please tell me more about atrial fibrillation?
- What type of AF do I have?
- Is there a leaflet or tape about AF that I can have?
- Are there any local support organisations I can contact?
- Can you provide any information for my family or carers?

## What are the types of atrial fibrillation?

There are different types of AF, and NICE has recommended slightly different treatment options for each.

- Persistent atrial fibrillation lasts for longer than 7 days and needs treatment to help the heart return to beating normally. (This treatment is called 'cardioversion' and is explained on page 6.) This type of AF may come back after treatment.
- Permanent atrial fibrillation is AF which is more longstanding (usually longer than a year) and which cannot be successfully treated with cardioversion.
- Paroxysmal atrial fibrillation comes and goes, and usually stops within 48 hours without any treatment.
- Acute-onset atrial fibrillation is an episode of AF that has started suddenly or has made symptoms get worse. This may be the first time it has happened ('recent-onset AF'), or you may have had AF before. It can happen in people with persistent or paroxysmal AF, and in those who are already being treated for AF as well as those who aren't being treated. Some people with acute AF that results in potentially dangerous symptoms may need to be treated in hospital.
- Post-operative atrial fibrillation may occur after surgery. It usually stops by itself, but may require treatment.

*If you don't know what type of AF you have, ask your healthcare professional.*

## Diagnosis

If your doctor thinks you may have AF because you have breathlessness, palpitations, dizziness or chest discomfort, he or she should take your pulse. If your pulse is irregular, you should then be offered a heart-tracing test called an ECG to confirm the diagnosis. Depending on the results, you may then be offered further tests (usually in a hospital department as an outpatient) to measure how your heart is performing. These tests may include an ambulatory ECG, or echocardiography. Your healthcare professional can explain the tests you may need in more detail.

### Questions you might like to ask about diagnosis

- Can you please give me more details about the tests I should have?
- What do these tests involve?
- Where will these be done? Will I need to have them in hospital?
- How long will I have to wait for these tests?
- How long will it take to get the results?

## Types of treatment

The aim of treatment for AF is to control the heart rate (how fast it beats) and the heart rhythm (how regularly it beats). Medication can help control both the rate and rhythm of the heart. Sometimes people also need treatment called cardioversion to return their heart to its normal rhythm. Many people with AF need treatment called anticoagulation to reduce the risk of blood clots and stroke. The types of treatment that are best for a particular person depend on many things, including their symptoms and how long their AF has lasted. The different treatments for AF, including anticoagulation, are explained in more detail below.

### Medication to control heart rate and rhythm

Medication (drugs) may be needed either to help your heart maintain a regular rhythm ('antiarrhythmic drugs') or to help control your heart rate.

### Cardioversion

Cardioversion uses either medicine or electric shock, or sometimes both, to help the heart return to its normal rhythm. Treatment with medicine is called 'pharmacological cardioversion'. Treatment with electric shock is called 'electrical cardioversion'.

Doctors decide which type of cardioversion to recommend depending on how long the heart has been beating irregularly and what symptoms the person has. Your doctor should discuss the advantages and disadvantages of each type of cardioversion with you before you agree to go ahead with it, except in an emergency.

### Pharmacological cardioversion

This type of cardioversion is most likely to be used within the first 48 hours of AF starting. Medicines (called 'antiarrhythmic drugs') are used to help your heart return to a normal rhythm. Your doctor will decide which one to offer you after considering a number of factors, including whether you have heart disease that affects the structure of the heart.

### Electrical cardioversion

If your AF has lasted longer than 48 hours then you should usually be offered electrical cardioversion. Under sedation or a light general anaesthetic, a brief, controlled electric shock is given to the heart, usually through two pads placed on the wall of the chest.

Sometimes antiarrhythmic drugs are used together with electrical cardioversion to help maintain a regular heartbeat after the procedure. This may be needed if electrical cardioversion alone has not worked previously or if your AF has come back after previous treatment.

*Some treatments may not be suitable for you, depending on your exact circumstances. If you have questions about the specific treatments and options covered in this booklet, please talk to a member of your healthcare team.*

## Anticoagulation

People with AF may be at increased risk of blood clots, because their heart does not pump blood round the body as efficiently as usual. This means they may be more likely to have a stroke, which can happen if a clot blocks an artery in the brain. Most people with AF will be offered medication known as an anticoagulant to 'thin' their blood and reduce the risk of clotting. Depending on your individual circumstances, this may be needed before or after you have cardioversion, and some people are advised to take an anticoagulant on a long-term basis. If you agree to anticoagulation treatment, this should start as soon as possible.

Some of the anticoagulants used to prevent blood clots are aspirin, warfarin and heparin. Your doctor will advise which medication is most appropriate and how long you need to take it for. This advice will be based on whether you have certain risk factors, such as high blood pressure, diabetes or a heart condition, or if you have had a stroke.

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

The type of anticoagulant that you will be offered depends on the type of AF you have. There is more information in the sections below on the treatment of each type of AF.

*If you think that your care does not match what is described in this booklet, please talk to your healthcare team.*

### Questions about preventing blood clots and strokes

- What is my risk of having a stroke?
- Do you recommend that I take medication to prevent blood clots or stroke (an anticoagulant)?
- What type of medication are you offering me?
- How will the medication help me?
- How long will I need to take the medication for?
- What are the most common side effects? Is there a risk of serious side effects? Are there any I should look out for?
- What should I do if I get any side effects? (For example, should I call my GP, or go to the emergency department at a hospital?)
- Will I need to have regular blood tests to check that the treatment is working safely?
- What will happen if I choose not to have the recommended treatment?
- Is there a leaflet or other information about anticoagulation treatment that I can have?

## Treating persistent atrial fibrillation

### Controlling your heart rate and rhythm

Most people with AF that has lasted longer than 7 days ('persistent atrial fibrillation') need treatment with medication, and cardioversion may also be necessary. There may be different options to choose from, and your doctor should explain the possible risks and benefits to you before a decision is made.

Factors that your doctor should consider when deciding whether to try to control your heart rate or heart rhythm include whether you have heart failure, coronary artery disease or structural heart disease, your age, whether cardioversion is suitable for you, whether you can tolerate the medicine's side effects, and which medicines will work for your specific condition.

If rhythm-control is used to treat your persistent AF, medication may not always be needed. This might be the case, for example, if your AF was caused by a chest infection or fever which has since cleared, and your AF was successfully treated with cardioversion.

### **Medicines for persistent atrial fibrillation**

Your doctor may offer you medicine to control your heart rate or your heart rhythm depending on your particular needs. You may also be offered medicine to prevent blood clots.

#### ***Medicine to control your heart rate***

Beta-blocker (for example, atenolol, bisoprolol, metoprolol)  
Calcium-channel blocker (verapamil or diltiazem)  
Digoxin  
Amiodarone

#### ***Medicine to control your heart rhythm***

Beta-blocker (for example, atenolol, bisoprolol, metoprolol)  
Amiodarone  
Class 1c agent (flecainide, propafenone)  
Sotalol

#### ***Medicine to prevent blood clots***

Warfarin  
Heparin

## Questions about medicine to control heart rate and rhythm

- What type of medication are you offering me – is it to control my heart rate or my heart rhythm?
- How will the treatment help me? What effects will it have on my symptoms and everyday life? What sort of improvements might I expect?
- What are the most common side effects of treatments? Is there a risk of serious side effects? Are there any I should look out for?
- What should I do if I get any side effects? (For example, should I call my GP, or go to the emergency department at a hospital?)
- How long will I need to take the medication for?
- Do I need to take the medication all the time or only when I have symptoms?
- What should I do if my symptoms come back or get worse?
- Are there any other options for treatment for my type of AF?
- Is there a leaflet or other information about the treatment that I can have?

## Preventing blood clots and stroke

Because of the risk of blood clot and stroke, all people with persistent AF (or atrial flutter) should be offered anticoagulation treatment where this is appropriate, and on a long-term basis if necessary.

If you need cardioversion for persistent AF, you should take the anticoagulant warfarin for at least 3 weeks beforehand, and for at least 4 weeks afterwards. While you are taking warfarin, you will need to have regular blood tests to make sure that the dose you are taking is suitable.

If you need to have cardioversion urgently or immediately (that is, without taking warfarin for 3 weeks first), you should be given an injection of the anticoagulant heparin beforehand. You should then take warfarin for at least 4 weeks afterwards.

If your AF has definitely lasted for less than 48 hours, then you do not need to take warfarin after successful cardioversion.

*All treatments have risks, and it is important that you discuss these with your doctor. Your doctor should give you information about the treatment options for your condition and answer any questions that you have. You may need to carefully consider how you feel about the risks and benefits of treatment before deciding whether to go ahead.*

## Treating permanent atrial fibrillation

If you have had longstanding AF (usually longer than a year), then you have what is known as permanent atrial fibrillation. You may need to take medication regularly to control the rate at which your heart beats. You may also be advised to take an anticoagulant (see box below).

The main types of medicine used to control your heart rate should be either beta-blockers or calcium-channel blockers. Another medicine, called digoxin, may also be used. It is usually used on its own only for people with AF who are not physically active. But if treatment using just one medicine does not control your heart rate well enough, then you should be offered digoxin in combination with either a beta-blocker or a calcium-channel blocker.

If you have permanent AF, your doctor should assess and discuss with you the risks and benefits of anticoagulation treatment. If it is decided that anticoagulation treatment is needed to prevent a stroke, you should be offered warfarin. If you take warfarin, you will need to have regular blood tests to ensure that the dose you are taking is suitable. If you cannot take warfarin, your doctor may prescribe aspirin, but you should not take both medicines together without checking with your doctor first.

### Medicines for permanent atrial fibrillation

Your doctor may offer you one or more of these medicines depending on your particular circumstances. However, you should not take warfarin and aspirin together.

#### **Medicine to control your heart rate**

Beta-blocker (for example, atenolol, bisoprolol, metoprolol)

Calcium-channel blocker (diltiazem, verapamil)

Digoxin

#### **Medicine to prevent blood clots**

Warfarin **or**

Aspirin

## Treating paroxysmal atrial fibrillation

Attacks ('paroxysms') of AF that come and go and stop within 48 hours without any treatment are known as paroxysmal atrial fibrillation. If you have this type of AF and it happens only occasionally, if your symptoms are not severe, or if you know what causes the paroxysms (such as drinking alcohol or caffeine), you may not need to take medication regularly. If this is the case, your doctor should discuss the possibility of not taking any medicine or taking medicine only when you have symptoms. (Doctors call this a 'pill-in-the-pocket' approach.)

The 'pill-in-the-pocket' approach may be more suitable for you if:

- you have not had other kinds of heart disease previously
- you have paroxysmal AF only once in a while
- your blood pressure and heart rate are not too low
- you are comfortable with deciding how and when to take the medicine.

Some people with paroxysmal AF have symptoms more frequently and they may be severe. If this is true for you, then you should be offered medicine to take regularly to prevent the attacks (see box below). The first medicine that you should be offered is usually a beta-blocker, but you may be offered a different drug if it is more suitable for you or if the beta-blocker doesn't work. You should be offered regular check-ups to assess how the medicine is working and whether you have any side effects.

When choosing the best medicine for you, your doctor will consider whether you have heart disease or coronary artery disease, and if the parts of your heart that pump blood are working normally.

If you have paroxysmal AF you may also be advised to take an anticoagulant. Your need for anticoagulation should be assessed and discussed with you in the same way as for people with permanent AF (see page 10).

### Medicines for paroxysmal atrial fibrillation

#### *Medicine to control your heart rhythm*

Some people with this type of AF may need to take this medicine only when they have symptoms ('pill-in-the-pocket'). Others may need to take it every day.

Beta-blocker (for example, atenolol, bisoprolol, metoprolol)

Amiodarone

Class 1c agent (flecainide, propafenone)

Sotalol

#### *Medicine to prevent blood clots*

Heparin (by injection)

Warfarin **or**

Aspirin

## Treating acute-onset atrial fibrillation

AF that occurs suddenly is called acute-onset atrial fibrillation. It can be life-threatening if it interrupts the way the heart normally works. If this happens, immediate medical attention is needed. Emergency electrical cardioversion should be given in such a situation, however long the AF has lasted.

Acute-onset AF is not always life-threatening, and electrical cardioversion may not be necessary immediately. But if there is a delay before a person has electrical cardioversion, then they should be given the medicine amiodarone while arrangements to perform cardioversion are being made.

Instead of electrical cardioversion, this type of AF may sometimes be treated with medicine given through a vein ('pharmacological cardioversion' – see box below). The NICE guideline recommends which medicines should be used in particular circumstances. It also recommends which medicines should be used for people with Wolff–Parkinson–White syndrome (a condition that some people are born with that affects the heart rhythm).

When treating acute-onset AF, doctors should consider your need for anticoagulation treatment, as for other kinds of AF. If you are not already taking an anticoagulant, you should be offered heparin straightaway (after any emergency treatment needed). You should carry on taking heparin until your condition has been fully assessed.

If your AF lasts less than 48 hours and your heart rhythm has returned to normal during that same 48 hours, then you may not need any more anticoagulation treatment.

### **Medicines for acute-onset atrial fibrillation**

If your AF is life-threatening you may have electrical cardioversion before you are offered any medicine. If your AF is not life-threatening but there will be a delay before you have electrical cardioversion, your doctor may offer to start you on medicine.

#### ***Medicine used for pharmacological cardioversion***

Amiodarone

Class 1c agent (flecainide) (This may be used if you have a condition known as Wolff–Parkinson–White syndrome)

#### ***Medicine to control your heart rate***

Beta-blocker (for example, atenolol, bisoprolol, metoprolol)

Calcium-channel blocker (diltiazem, verapamil)

Amiodarone

#### ***Medicine to prevent blood clots***

Heparin

## Preventing and treating atrial fibrillation after surgery

Some people may develop AF after surgery on their heart or chest area (cardiothoracic surgery). Because of this risk, people having cardiothoracic surgery should be given medicine before and after their operation to help prevent AF (see box below for details). If you are already taking a beta-blocker, you will usually keep taking this after you have had surgery (unless it is no longer suitable).

If you do develop AF after cardiothoracic surgery, you should be offered medicine to help your heart return to its normal rhythm. If you develop AF after any other type of surgery, then you should be treated as if you have acute-onset AF (see page 12).

### **Medicines to prevent and treat atrial fibrillation after surgery**

These are the medicines that should be given to you if you are having surgery on your heart or chest area (cardiothoracic surgery). If you have another type of surgery and develop AF then you should be offered the same treatment as that offered to people with acute-onset AF.

#### ***Medicine to prevent atrial fibrillation after surgery***

Amiodarone  
Beta-blocker (for example, atenolol, bisoprolol, metoprolol)  
Calcium-channel blocker (diltiazem, verapamil)  
Sotalol

#### ***Medicine to treat atrial fibrillation after surgery***

Beta-blocker (for example, atenolol, bisoprolol, metoprolol)  
Calcium-channel blocker (diltiazem, verapamil)  
Amiodarone

## Treatment for people with atrial fibrillation who have had a stroke<sup>1</sup>

If you have AF and have also had a stroke or a mini-stroke you may be offered an anticoagulant medicine. (Doctors call a mini-stroke a 'transient ischaemic attack', or 'TIA'.) Warfarin is usually the first choice of medicine for this treatment. But it will only be prescribed after your doctor has made a full assessment of the risks and benefits, and treated any other health problems, such as high blood pressure.

If you have just had a stroke and have AF your doctor should check whether you have high blood pressure and whether it needs treatment. If you have high blood pressure that needs treatment, your doctor should offer you this treatment before anticoagulant treatment. You should also have a scan to assess whether you have had bleeding in the brain. The results of the scan will affect whether you are offered anticoagulant treatment, or whether it needs to be delayed.

If you have recently had a mini-stroke (also called a TIA) and you have AF, then you should have a brain scan to make sure that you have not had any bleeding in the brain. If you have not, then you should be given an anticoagulant medicine as soon as possible.

### **Medicine to treat people with atrial fibrillation who have had a stroke**

Before offering you anticoagulant medicine your doctor should fully assess the risks and benefits, and treat any other health problems, such as high blood pressure, first.

#### ***Medicine to prevent blood clots***

Warfarin

<sup>1</sup>NICE is developing a clinical guideline on the diagnosis and management of stroke (publication expected 2008).

## Follow-up and monitoring

If you have had cardioversion for your AF, you will need to be seen for follow-up visits. You should be seen at least twice to make certain that your heart continues to beat with the proper rhythm and at the proper rate. You should be seen first at 1 month after your heart rhythm has returned to normal. At this visit, you and the doctor or nurse will decide when you should be seen next. This decision will be based on whether you have any other medical conditions that affect AF and on what other medicines you are taking. If everything seems fine, then you will probably have another follow-up visit in 6 months. After that, you should be able to see your GP for follow-up. But if you notice anything unusual or your symptoms come back, you should seek medical attention from your GP or specialist promptly.

People on long-term anticoagulation need to be monitored regularly using blood tests to check that the treatment is working safely. If you would prefer to do the tests yourself at home, known as 'self-monitoring', your doctor should consider this option, provided that:

- you or your carer understand how to do the tests and are physically able to do them
- you or your carer can be trained and supported to do the tests
- there are regular checks on how the self-monitoring is going
- the equipment you use for the tests is regularly checked.

Sometimes people with AF are referred to other specialists for further tests or treatment. This may happen if medicine has not helped you or if the doctor thinks you have certain types of heart problems. Your doctor should explain why you are being referred for more tests or treatment.

### Questions about following up on your treatment and about lifestyle

- When should I have another appointment?
- Will I need to make changes to my lifestyle? If so, what help is available?
- Is there a leaflet or tape about keeping healthy that I can have?

*If it appears that a treatment described in this booklet is suitable for you, but it is not available, you should talk to your local Patient Advice and Liaison Service (PALS) in the first instance. If they are not able to help you, they should refer you to your local Independent Complaints Advocacy Service.*

## More information about atrial fibrillation

The organisations below can provide more information and support for people with AF. Please note that NICE is not responsible for the quality or accuracy of any information or advice provided by these organisations.

- Anticoagulation Europe, 020 8289 6875  
[www.anticoagulationeurope.org](http://www.anticoagulationeurope.org)
- Arrhythmia Alliance, Helpline 01789 450787  
[www.arrhythmiaalliance.org.uk](http://www.arrhythmiaalliance.org.uk)
- The Stroke Association, Stroke Helpline 0845 3033 100  
[www.stroke.org.uk](http://www.stroke.org.uk)
- British Heart Foundation, Heart Information Line 08450 70 80 70  
[www.bhf.org.uk](http://www.bhf.org.uk)

NHS Direct online ([www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk)) may also be a good starting point for finding out more. Your local Patient Advice and Liaison Service (PALS) may also be able to give you further information and support.

### Questions that family, friends or carers might like to ask

- What can we do to help and support the person with AF?
- Is there any extra support available that might help me as a carer?

## About NICE

NICE produces advice (guidance) for the NHS about preventing, diagnosing and treating different medical conditions. The guidance is written by independent experts including healthcare professionals and people representing patients and carers. They consider the best available evidence on the condition and treatments, the views of patients and carers, and the experiences of doctors, nurses and other healthcare professionals working in the field. Staff working in the NHS are expected to follow this guidance.

To find out more about NICE, its work and how it reaches decisions, see [www.nice.org.uk/aboutguidance](http://www.nice.org.uk/aboutguidance)

This booklet and other versions of this guideline aimed at healthcare professionals are available at [www.nice.org.uk/CG036](http://www.nice.org.uk/CG036)

You can order printed copies of this booklet from the NHS Response Line (phone 0870 1555 455 and quote reference N1055).