

## Hypertension (persistently high blood pressure) in adults

This booklet is about the care and treatment of people with hypertension (high blood pressure) 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 high blood pressure but it may also be useful for their families or carers or for anyone with an interest in the condition.

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

The booklet aims to help you understand the care and treatment options that should be available in the NHS. It does not describe high blood pressure or the tests or treatments for it in detail. A member of your healthcare team, such as your GP or nurse, should discuss these with you. Throughout this booklet there are examples of questions you could ask to help you with this. Some sources of further information and support are on page 17.



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

- how doctors should find out whether someone has high blood pressure
- how doctors should assess someone's risk of developing problems with their heart or blood vessels such as a heart attack or stroke (also called 'cardiovascular disease')
- how lifestyle factors such as smoking, diet and exercise can affect blood pressure
- the use of medicines to lower blood pressure
- how high blood pressure should be monitored.

### **It does not specifically look at:**

- screening for high blood pressure (routine checking of blood pressure in healthy people to detect the disease early)
- high blood pressure during pregnancy

- treatment by specialists for secondary hypertension (where the high blood pressure is happening because of another medical problem).

This guideline is an update of advice on high blood pressure that NICE produced in 2004. The advice on medicines for high blood pressure has changed, but all the other advice is the same.

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

## 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 high blood pressure and the treatments for it simply and clearly.

This 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 people are unable to understand a particular issue or are not able to make decisions for themselves, healthcare professionals should follow the advice that the Department of Health has produced about this. You can find this advice by going to the Department of Health website ([www.dh.gov.uk](http://www.dh.gov.uk)) and searching for information on 'consent'.

## Blood pressure and hypertension

Blood pressure measures how strongly blood presses against the walls of your arteries as it is pumped around your body by your heart.

(Arteries are the large blood vessels that carry blood, oxygen and nutrients through your body.) Blood pressure goes up and down as the heart pumps (as the heart pumps the blood out, the blood pressure is highest, and when the heart is filling up with blood again ready for the next pump, the blood pressure is lowest). The highest reading is called the systolic pressure and the lowest reading is called the diastolic pressure. Blood pressure is recorded as systolic blood pressure over diastolic blood pressure, and it's measured in millimetres of mercury (which is written as mmHg), for example 120/70 mmHg.

If you are diagnosed as having hypertension it means your blood pressure is consistently higher than it should be. This is important because the higher your blood pressure, the greater your risk of a heart attack (where the blood supply to your heart is affected) or stroke (where the blood supply to your brain is affected).

There may not be a clear cause of your high blood pressure. It may be happening partly because you're overweight (if you are), because of the food you eat, because of your lifestyle or because of your genetic make up. This is sometimes called essential hypertension.

However, if the cause of the high blood pressure can be found – for example, some kidney problems can increase the blood pressure – it may be called secondary hypertension.

## Measuring blood pressure

### *Training and equipment*

GPs and practice nurses should be trained how to take blood pressure measurements. And from time to time there should be a check made that they are still measuring it correctly.

Your local GP practice, clinic or health centre is responsible for making sure that the equipment used to measure blood pressure is properly maintained and tested.

### *Taking the measurements*

Blood pressure is measured by placing a cuff around the upper arm, inflating it until no blood can flow through the upper arm, and then gradually deflating it. Usually the doctor or nurse listens to the blood flow using a stethoscope but sometimes the device itself reads the blood pressure.

When you have your blood pressure taken you should be sitting down with your arm outstretched and supported by something, if possible. You shouldn't be too hot or too cold (ideally, the conditions in the practice or health centre should always be the same when you have your blood pressure taken). You should be quiet while it's being done, so it shouldn't be taken when you're in the middle of saying something.

Your blood pressure should be measured from both arms, and the one that gives the highest reading should be the one used for future measurements (this is in case you have an unusual condition that makes the blood pressure different in your left and right arms). If your reading is higher than 140/90 mmHg you should have it measured again at the end of your appointment, if possible, to see whether it was a true reading.

### ***If you have been feeling dizzy or have fallen***

If you have been feeling dizzy or have had a fall because you went dizzy, you may have something called postural hypotension.

Hypotension means blood pressure is lower than normal and postural hypotension is when your blood pressure drops when you stand up, with the result that you feel dizzy or faint. If this happens, you should have your blood pressure taken when you're standing up. If you seem to have postural hypotension, your doctor may discuss seeing a specialist.

### ***Home testing***

You can buy devices to measure blood pressure at home, and there are also devices that you can wear that give a reading of your blood pressure as you go about your normal activities. It has not been possible to say how useful these are, and further studies are needed in this area.

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

- Can you please tell me more about high blood pressure?
- Is there a leaflet or tape about high blood pressure that I can have?
- Are there any local support organisations I can contact?

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

- What can I do to help and support someone who has high blood pressure?
- Can you provide any written information on how I can help them?

### Diagnosing high blood pressure

A person is said to have high blood pressure if either their systolic blood pressure is higher than 140 mmHg or their diastolic blood pressure is higher than 90 mmHg, and if this is the case when their blood pressure is measured at a number of different visits. If you have a high reading at your first appointment you should be asked to go back for at least two more appointments so that your measurements can be checked. Normally, the measurements should be made a month apart, but if your blood pressure is very high you may need to go back sooner.

### *Referral to a specialist*

There are some circumstances where a person should be offered an immediate referral to see a specialist. These are:

- if blood pressure is higher than 180/110 mmHg and there are signs of increased pressure in the eye
- if there are signs of a rare condition called phaeochromocytoma
- if there are other unusual symptoms.

A person may also be offered a referral if it's very important that their blood pressure is measured accurately.

## Lifestyle changes to help reduce blood pressure

### *Diet and exercise*

Your GP or practice nurse should talk to you about what you normally eat and the amount of exercise you do. They should discuss how a healthy diet and regular exercise can reduce your blood pressure, and they should offer you information sheets, booklets, videos or audio tapes about how you can make the changes needed.

### *Alcohol*

If you drink large amounts of alcohol, your GP or practice nurse should advise you to cut back. (A large amount of alcohol is taken to be more than 21 units per week for a man or 14 units per week for a woman. A unit of alcohol is one half pint of ordinary strength beer or lager, or a small glass of wine, or a single measure of spirits.) Cutting down can reduce your blood pressure and is generally good for you.

### *Coffee and other drinks with caffeine*

If you drink large amounts of coffee, tea or other caffeine-rich drinks (such as cola and some other soft drinks), your GP or practice nurse should encourage you to cut back. Drinking more than four cups of coffee per day may increase your blood pressure.

### *Salt*

Your GP or practice nurse should recommend you try to reduce the amount of salt you eat as a way of reducing your blood pressure. You can do this either by cutting it out from your food as far as possible, or by using a salt substitute (which has a lower amount of sodium than normal salt). High levels of salt are found in some processed foods so it is a good idea when buying food to check the salt content by reading the label.

### ***Taking calcium, magnesium or potassium supplements***

Calcium, magnesium and potassium supplements have been looked at as ways of reducing blood pressure. But these supplements don't seem to work, and they aren't recommended (and they shouldn't be offered to you).

### ***Smoking***

If you smoke, your GP or practice nurse should offer advice on how to stop, and should help you stop. Smoking greatly increases your chances of getting heart and lung diseases, and treatment is available on the NHS to help you to quit. The NHS website [www.givingupsmoking.co.uk](http://www.givingupsmoking.co.uk) will give you further facts and information about giving up smoking.

### ***Relaxation therapies***

Relaxation therapy and exercise can reduce blood pressure. These therapies include:

- stress management, meditation or yoga
- cognitive therapy (which focuses on how thoughts and beliefs can affect the way you feel and how you cope with problems)
- biofeedback (where a small monitor constantly shows you your heartbeat or blood pressure, and is used to help you try to control your blood pressure).

These treatments are not normally provided by the NHS, although you may want to find out more about them for yourself.

### Questions you might like to ask about lifestyle

- What information and support is available to help me make changes to my lifestyle, such as taking more exercise, changing my diet or reducing stress?
- Are there any things that I should avoid doing? For example, are there any types of exercise that I shouldn't do?

### *Getting further help*

Your GP or practice nurse should tell you about the local events and courses that are organised to help and support people who want to live more healthy lives. You may find it helpful to meet other people making similar changes to their lifestyle.

### Assessing the risk of cardiovascular disease

Having high blood pressure puts a person at a higher risk of having a heart attack or stroke. If your blood pressure doesn't come down, your GP should assess your risk of heart attack and stroke. The tests may also help to show if you have diabetes or damage to your heart or kidneys.

### *The tests*

The tests should include a urine test, blood tests (from a blood sample) and an ECG (a test that records how well your heart is working – ECG stands for electrocardiogram).

### *After test results are known*

Your GP should explain your test results and use them to work out the likelihood of you developing heart disease or stroke in the coming years. This can be done using a cardiovascular risk chart or a computer

program. Your GP should discuss this with you and talk to you about ways of reducing your risk.

### **Seeing a specialist**

If the tests suggest that there may be a problem that's causing your raised blood pressure, your GP may recommend that you see a specialist.

#### **Questions about tests to assess your risk of heart attack and stroke**

- 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?
- What is my risk of having a heart attack or stroke?
- What can be done to reduce this risk?

### **Treating high blood pressure with medicines**

If your blood pressure has been measured several times at several different visits and has been repeatedly 160/100 mmHg or more, your GP should offer you a medicine to bring it down. Someone whose blood pressure is repeatedly more than 140/90 mmHg and who has an increased risk of heart attack or stroke should also be offered a medicine, as should someone whose systolic blood pressure is repeatedly 160 mmHg or higher. If possible, your GP should recommend medicines that need to be taken only once a day, to make things easier for you.

*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 your doctor or nurse.*

You should be offered information about how different medicines can help and their possible side effects so that you can be involved in all the decisions about your treatment. The information should be provided through a discussion with your GP, another healthcare worker or a pharmacist, and backed up by the offer of leaflets, videos or audio tapes.

The aim of treatment is to get your blood pressure below 140/90 mmHg (but treatment may be stopped before this if you or your GP think that it's best to do so – see 'Continuing or stopping treatment' on page 16).

### **Using different medicines**

Certain types of medicine work better for certain people, and sometimes people need to take more than one type of medicine to lower their blood pressure. So if you and your GP decide that medicine is the right treatment for you, your GP will need to consider specific things about you, such as whether you have any other health problems, how old you are and your ethnic group.

If you are 55 or older, or if you are black of African or Caribbean descent (not mixed-race), then the first choice for treatment should be a medicine called a calcium-channel blocker or a thiazide-type diuretic (a 'water pill').

If you are younger than 55, and not black, the first medicine that you will usually try is called an ACE inhibitor. (ACE stands for 'angiotensin-converting enzyme'.) Some people develop a cough when taking an ACE inhibitor. If this happens to you, you should be offered a type of medicine known as an angiotensin-receptor blocker instead.

Many people need to take more than one type of medicine to control their blood pressure. The NICE guideline makes recommendations about which medicines you should be offered if taking one medicine on

its own does not bring down your blood pressure. For example, if you started on a calcium-channel blocker or a thiazide-type diuretic, you should normally be offered an ACE inhibitor as well. If you started on an ACE inhibitor, you should normally be offered a calcium-channel blocker or thiazide-type diuretic as well. Your GP or specialist may try giving you up to four medicines at the same time.

### Questions about medicines to reduce blood pressure

- Can you please tell me why you have decided to offer me this type of medicine?
- How will the medicine help me?
- What are the most common side effects of treatment? 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 treatment?
- Are there any long-term effects of taking this treatment?
- Are there any other options for treatment?
- What will happen if I choose not to take the medicine?
- Is there a leaflet or tape about the treatment that I can have?

### New advice about beta-blockers

The NICE guideline also makes recommendations about a type of medicine called a beta-blocker. Because new evidence has become available, this type of medicine is not usually the first choice for

treatment of high blood pressure any more, but it may be helpful for some younger people such as women who could get pregnant, people who have certain medical conditions or people who cannot take ACE inhibitors or angiotensin-receptor blockers. If you are taking a beta-blocker and need a second medicine to control your blood pressure, you should be offered a calcium-channel blocker as well.

*If it appears that you are suitable for the treatment described in this booklet, 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.*

### **If you are already having treatment with a beta-blocker**

If you are taking a beta-blocker (either on its own or with some other medicine), then you should continue taking it. Your GP may discuss other treatments with you at your next regular visit. If treatment with the beta-blocker is not working, then your GP may suggest trying one of the treatments described above (see 'Using different medicines' on page 13).

Sometimes people need to continue taking a beta-blocker to treat a condition other than high blood pressure, such as angina (a pain in the chest) or if they have had a heart attack. But if you and your GP decide that there is a better drug for you, your GP will offer you advice about how to stop taking the beta-blocker gradually. You will take lower and lower doses until it is safe to stop taking it altogether. It is important that you do not stop taking this medicine suddenly.

### **A note about brands of medicine**

It's often possible to get less expensive non-branded medicines that are just as good as the branded versions. GPs are recommended to use the non-branded versions when this is possible, to get the best value for money.

### **Questions about following up on your treatment**

- Are there different treatments that I could try?
- Do we need to change the dose of my current treatment?
- When should I have another appointment?

### **Continuing or stopping treatment**

The aim of treatment is to get your blood pressure down to 140/90 mmHg or below and keep it there. In some circumstances, your GP may not feel that it's right to keep on with treatment, and sometimes a person may not want further treatment. In general, though, it's worthwhile carrying on with the treatment if it's bringing your blood pressure down, even if you don't get down to the target.

You may want to reduce or stop taking medicines altogether – maybe you're keen to try making other changes that could bring or keep your blood pressure down, such as exercising, eating a healthy diet, reducing your salt intake and losing weight if necessary. But you should stop or cut down your medicines only after you've talked to your GP because stopping suddenly may be harmful. Your GP should usually recommend trying to reduce or stop treatment only if your risk of heart attack or stroke is not high and your blood pressure is under control. In this case, your GP should keep a check on your blood pressure while you reduce or stop treatment and try to make other lifestyle changes.

### **Reaching the target**

If you reach and keep to the target blood pressure, you should have a yearly check up. At this visit, your GP or practice nurse should measure your blood pressure and offer further support and advice. This check up also gives you a chance to ask questions about your treatment and discuss any symptoms or side effects you may have noticed.

## More information about high blood pressure

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

- Blood Pressure Association, telephone 020 8772 4994 (all enquiries) or 0870 770 0600 (to order information sheet), [www.bpassoc.org.uk](http://www.bpassoc.org.uk)
- British Heart Foundation, Heart Information Line 08450 708070, [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.

## 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/CG034](http://www.nice.org.uk/CG034)*

*You can order printed copies of this booklet from the NHS Response Line (phone 0870 1555 455 and quote reference N1051).*

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