

Blood pressure

Heart Information Series Number 4



**British Heart
Foundation**

This is one of the booklets in the *Heart Information Series*. For a complete list of booklets, see page 45.

We welcome your comments on this booklet.
Please fill in the feedback form on page 61.

We update this booklet regularly. However, you may
find more recent information on our website
bhf.org.uk

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About this booklet

This booklet is for people with high blood pressure, and for their family and friends. It explains:

- what high blood pressure is
- why it is so important to bring your blood pressure down to a normal level, and
- what you can do to help lower your blood pressure.

It also describes the medicines that your doctor may give you to help lower your blood pressure.

This booklet is not a substitute for the advice your doctor or cardiologist (heart specialist) may give you based on his or her knowledge of your condition.

But I don't feel ill!

High blood pressure – also known as hypertension – rarely makes people feel ill. It can cause headaches in a very small number of people, but only if their blood pressure is very high.

Problems with sight, breathlessness and nose bleeds can sometimes be a sign of high blood pressure. But the only way of knowing if you have hypertension is to have your blood pressure measured.

Why is high blood pressure harmful?

To put it very plainly, the higher your blood pressure, the shorter your life expectancy. People with high blood pressure run a higher risk of having a stroke (which damages the brain) or a heart attack. If left untreated for a long time, high blood pressure can lead to kidney failure and even damage your sight. It can also make the heart abnormally large and less efficient (a condition called 'left ventricular hypertrophy'). This can lead to heart failure, which is when the pumping action of the heart becomes less effective.

If you have high blood pressure, reducing your blood pressure can lower your risk of having all of these problems. In this booklet we give information on the different ways of lowering blood pressure.

Why me?

You're not alone. About 3 in every 10 adults in England have high blood pressure. It's more common in older people than in younger people. Among people in their 60s, about 6 out of 10 have high blood pressure, and among people in their 70s, 7 out of 10 people have it. But you are luckier than many because at least you know you have

high blood pressure, and so you can take steps to try and reduce it. Nearly a third of people with high blood pressure are not being treated.

People of African-Caribbean origin are at a higher risk of high blood pressure than the rest of the population of the UK. Also, South Asians who live in the UK need to make sure that their blood pressure is monitored and well controlled because of their increased risk of heart disease and diabetes.

What is high blood pressure?

Blood pressure is the pressure of the blood in your arteries – the tubes that take the blood away from your heart to the rest of your body. You need a certain amount of pressure to keep the blood flowing. High blood pressure develops if the walls of the larger arteries lose their natural elasticity and become rigid, and the smaller blood vessels become narrower (constrict).

Your heart is a pump that beats by contracting and then relaxing. The pressure of blood flowing through the arteries varies at different times in the heartbeat cycle.

- the highest pressure, known as **systolic pressure**, is the pressure when the beat or contraction of your heart forces blood round your body
- the lowest pressure, **diastolic pressure**, is the pressure between heartbeats when the heart is resting.

Blood pressure is measured in millimetres of mercury (shortened to 'mmHg'). A blood-pressure reading gives two numbers. The first number is the systolic pressure and the second is the diastolic pressure. (For information on how a blood-pressure measurement is taken, see page 15).

Your target is to have a blood pressure below 140/85mmHg (140 systolic and 85 diastolic). If you have diabetes, kidney disease, or disease of the heart and circulation, your target is below 130/80mmHg. There is no fixed dividing line between normal blood pressure and slightly raised blood pressure. However, the British Hypertension Society suggests that the ideal blood pressure is 120/80mmHg, normal is less than 130/80mmHg, and 'high-normal' is 130/80 to 139/89mmHg.

A sample blood pressure measurement

130
/
80

Systolic pressure – the pressure when the beat or contraction of the heart forces the blood around the body.

Diastolic pressure – the lowest pressure, which occurs between heartbeats when the heart is resting.

What causes high blood pressure?

In over 9 out of every 10 people there is no definite cause of high blood pressure. This condition is known as 'essential hypertension'. The following can all play a part:

- not doing enough physical activity
- being overweight
- having too much salt in your diet
- drinking too much alcohol, and
- not eating enough fruit and vegetables.

Genes are another factor. So, if one or both of your parents have (or had) hypertension, you have a greater chance of developing it too.

In a very small number of people, a single cause is found, such as narrowing of the artery to a kidney or abnormal production of hormones from the adrenal glands. Severe kidney disease can also cause high blood pressure.

Occasionally, some medicines used to treat ulcers, arthritis or depression may cause a rise in blood pressure. So, when you buy over-the-counter medicines at the pharmacist, it is important to tell your pharmacist that you have high blood pressure. If you buy them somewhere else and you can't ask a pharmacist, check the instructions to make sure

the medicine is OK for people with high blood pressure. Always tell your doctor about any other medicines or herbal remedies that you take.

What tests will I have?

Your doctor will probably examine your chest and generally look for signs that show whether your circulation is healthy. This includes looking at your eyes with an ophthalmoscope to see whether the high blood pressure has affected the blood vessels at the back of your eye.

If you have hypertension, your doctor may also do simple blood and urine tests to find out more about the health of your heart and circulation.

The main tests are:

- an electrocardiogram (ECG) – a test to record the rhythm and electrical activity of your heart
- blood tests to find out your cholesterol levels and blood sugar levels, and whether your high blood pressure has caused any damage to your kidneys, and
- a urine test to look for signs of blood or protein in the urine.

What about low blood pressure?

People with low blood pressure tend to live longer than people with high or even 'normal' blood pressure. Low blood pressure is sometimes discovered during a routine examination. Most people with low blood pressure don't have any noticeable symptoms. However, in some people who have blood pressure below 90/60mmHg, it can cause dizziness or even fainting when they get up after bending over or lying down, especially in older people.

If you have low blood pressure, simple measures may help, such as making sure you are taking enough fluid and possibly using well-fitting support stockings. Some people with low blood pressure may be encouraged to add more salt to their diet as this may help improve their blood pressure. (However, it is important to remember that having too much salt in the diet can lead to high blood pressure.) Low blood pressure can also be a side effect of drug treatment for high blood pressure, heart disease or depression. If so, your doctor may need to adjust the dose of the drugs you are taking, or give you a different drug.

Sometimes low blood pressure can be the result of another illness or condition. So if you are having symptoms of dizziness, it is important that you see your doctor. If your blood-pressure reading is unusually low, your doctor should check to make sure there is not a medical cause.

There is usually no need to treat low blood pressure. Only a very small number of people need to take medication for it.

How is blood pressure measured?

Your doctor or nurse will measure your blood pressure using a sphygmomanometer (pronounced 'svig-mo-man-ometer'). This is usually a digital blood-pressure monitor, which is made up of a box with a tube leading to a cuff. (See the picture on the front cover.) The cuff is wrapped round your upper arm. At the press of a button, the cuff inflates to a certain level and then automatically deflates. While it is inflated, the cuff will feel slightly uncomfortable as no blood can get through to your lower arm. In the cuff there is a sensor which detects your pulse and changes the information into blood-pressure readings which appear on a display screen. The size of the cuff is important. If a cuff is too large, it can give an artificially low reading. Fat arms will need larger cuffs – otherwise the blood-pressure measurement will be higher than it actually is.

Before you have your blood pressure taken, you should have rested for at least five minutes. You should be sitting down when you have the measurement taken.

Some doctors or nurses may use a mercury sphygmomanometer instead of the digital blood-pressure monitor described above.

The doctor or nurse wraps the cuff round your arm and pumps up the cuff to a pressure above your likely systolic pressure. The doctor or nurse will then use a stethoscope to listen to the artery at the bend of your arm, and will then gradually release the pressure in the cuff. At systolic pressure, the blood will start to flow again. The doctor or nurse will hear this through the stethoscope as a thumping noise. As the pressure falls, the sound becomes muffled and then disappears when your blood pressure is at diastolic pressure and the blood is no longer obstructed.

Your doctor or nurse will probably check your blood pressure several times before confirming a diagnosis of high blood pressure. Once your blood pressure is well controlled, they will usually measure it every three to six months.

24-hour monitoring

Some doctors use '24-hour ambulatory monitoring' to measure your blood pressure. This involves strapping a recording device – about the size of a large personal stereo – round your waist. The monitor is connected by a narrow tube to a cuff which is wrapped round your upper arm. The cuff inflates and deflates regularly throughout the day and night to take, and record, your blood pressure.

While you are wearing the monitor you can carry on with all your regular daily activities apart from having a bath or shower, or swimming.

24-hour monitoring is used for several reasons, including measuring blood pressure in borderline cases, and closely monitoring the effect of drug treatment for high blood pressure.

The readings from 24-hour monitoring tend to be quite a bit lower than the measurements taken in a clinic.

Changes in blood pressure

Everyone's blood pressure varies during the day. It tends to be highest in the morning and lowest at night. Blood pressure may also become high if you are anxious or under stress. Some people get worried about seeing their doctor, and having their blood pressure taken can make it go up. Nearly everyone is nervous on the first visit and their blood pressure is usually higher than at later appointments. That is why your doctor will probably want to take two or three separate measurements, or suggest 24-hour monitoring, before deciding whether you really do have consistently high blood pressure.

Home blood-pressure monitors

Some people have their blood pressure assessed by using a blood-pressure monitor at home. Many GP surgeries now loan out monitors for a week or two for people to use at home. This provides a number of readings to assess, in much the same way as 24-hour monitoring.

It might be helpful for you to measure your own blood pressure if your doctor thinks it is much higher when it is measured at the clinic than at other times (the 'white coat effect'). Also, some people like to monitor their own blood pressure as it makes them feel more in charge of their care. However, home blood-pressure monitors are not a good idea for everyone as some people feel more anxious taking their own blood pressure than having it taken by someone else.

Most home blood-pressure monitors are digital and are similar to the one shown on the front cover of this booklet. They display a digital reading of your blood pressure. They are becoming more popular but some are not very reliable. If you are buying one, only buy one that is approved for use within the UK. You can ask your doctor for advice on which type of monitor to buy, or contact the Blood Pressure Association. (Their contact details are on

page 47.) The Blood Pressure Association also has guidelines for measuring blood pressure at home, which you may find useful.

To get the best from your home monitor, ask your doctor or practice nurse to show you how to use it, and how to read and record the results.

Will I have to start taking medicines straight away?

In many cases your doctor will monitor your blood pressure for a few weeks or months before deciding whether to treat it with medicines. In the meantime you can do a lot to help your own health by looking at your lifestyle and making changes where necessary. (See the next section.)

What can I do to help control my blood pressure?

It's helpful to look at the areas of your lifestyle that can cause high blood pressure. For example:

- not doing enough physical activity
- being overweight
- too much salt in your diet
- drinking too much alcohol, and
- not eating enough fruit and vegetables.

It's also important to look at the areas of your lifestyle that cause extra risk to your heart, such as smoking or having a diet that is high in fat.

Be more physically active

The type of activity recommended for the heart is moderate, rhythmic (aerobic) activity such as brisk walking, cycling or dancing. Walking and cycling are particularly good as you can often build them into your daily routine.

If you have high blood pressure but do not have heart disease or angina

If you have high blood pressure that is well controlled, and you don't have heart disease or angina, your target is to build up to 30 minutes of moderate activity on at least five days of the week. ('Moderate activity' means any activity that makes

you feel warm and slightly out of breath – for example, brisk walking.) Research shows that physical activity can help reduce high blood pressure and may also prevent it from developing in the first place. Regular moderate physical activity for at least 30 minutes a day can help to lower your blood pressure by between 4 and 9mmHg.

If you play a sport or enjoy gardening, there is no reason to stop. However, blood pressure tends to rise during 'isometric' exercises such as weightlifting or weight training. So, if you have high blood pressure, it is best to avoid this type of activity.

If you are starting a new activity, it is important to ask your GP if you are fit enough, and whether the activity is suitable for you. Also, start off slowly and build up your exercise time and intensity gradually. You can split the 30 minutes a day into two sessions of 15 minutes, or three sessions of 10 minutes.

If you have angina as well as high blood pressure

If you have angina, you need to find out what you can easily manage without getting chest pain, and then gradually increase the amount of activity you do.

It may be helpful to plan a weekly exercise programme based on walking. Choose a walking distance and speed that you know you can cover easily without getting angina. Make this your target. Do this much twice a day for two days. Each time, assess whether the activity was easy or difficult. If it was fairly easy or easy, very gradually increase the distance each day for the next two days. If the activity was difficult, limit yourself to a slower speed or shorter distance until you find it easy.

Make sure that you can easily do the activity before increasing your target. And keep your activity regular and frequent and within, rather than beyond, your limits.

For more information on physical activity, see our booklets *Physical activity and your heart* and *Get active!*

Lose that weight!

If you are overweight, shedding the pounds will help control your blood pressure. For some people, losing weight is all they need to do to get their blood pressure down. Healthy eating can also help you to lower your blood cholesterol level.

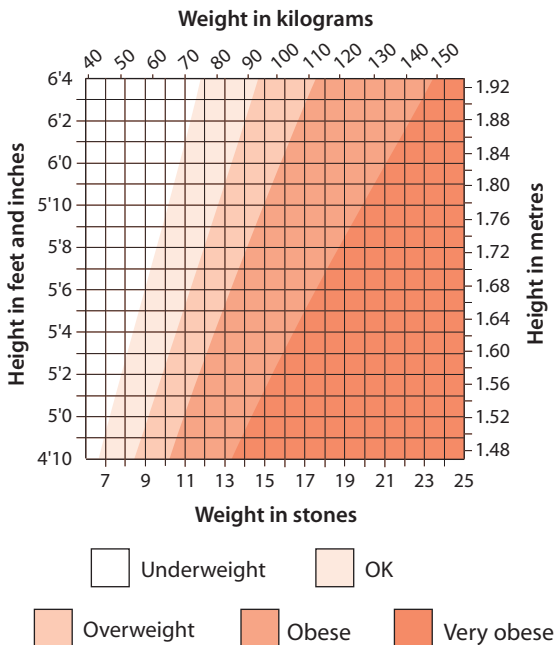
To find out if you need to lose weight, check the chart on the next page. If you fall into the overweight, obese or very obese category, you need to lose some weight.

Don't try to lose the extra weight too quickly. Losing weight slowly and steadily (about a pound a week) is more healthy, and you're more likely to keep the weight off for good. If you are very overweight, losing even 10 kilos (22 pounds) can reduce your blood pressure by between 5 and 10mmHg. For more information on how to lose weight, see our booklet *So you want to lose weight ... for good*.

Being physically active plays an important part in losing weight. For more information on how to increase the amount of physical activity you do, see our booklets *Physical activity and your heart* and *Get active!*

Are you a healthy weight?

Take a straight line across from your height (without shoes), and a line up or down from your weight. Put a mark where the two lines meet to find out if you need to lose weight.



Adapted from *Treat Obesity Seriously*, by J Garrow 1981.

By permission of Churchill Livingstone

Cut down on salt

There is a link between having too much salt in your diet and high blood pressure. It is the sodium in the salt that contributes to high blood pressure. The body needs very small amounts to function properly and we are eating much more than twice what we need. In fact, reducing your salt intake by about 5 grams a day can lower your blood pressure by about 5mmHg. The target should be to have less than 6 grams of salt a day, although we don't even need as much as this.

Try cooking without adding any salt, and not adding salt to your food at the table. Most of the salt you eat is 'hidden' in processed foods and bread. Check the ingredients labels on foods to find out which have the least salt. Choose 'low-sodium' or 'low-salt' products and avoid foods that contain a lot of salt such as sauces, canned soups, processed meats and snacks. The British Heart Foundation produces a useful pocket-sized *Guide to food labelling*, (see page 46). You will find that within a month your taste will have adjusted and you won't need so much salt to enjoy the flavour of your food.

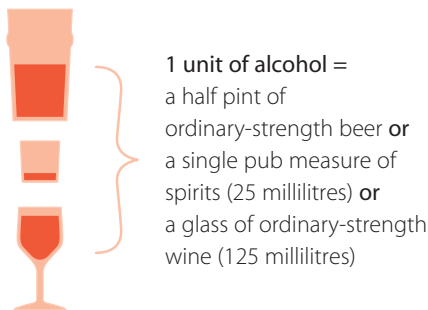
Eat more fruit and vegetables

Fruit and vegetables contain potassium, which can help keep blood pressure down. They're also low in

salt. Aim to eat at least five portions of a variety of fruit and vegetables each day, but preferably have seven to nine portions a day to help lower your blood pressure. Eating plenty of fruit and vegetables each day and cutting the fat from your diet, especially saturated fat, can lower your blood pressure by between 8 and 14mmHg.

Drink within the sensible limits

Moderate drinking – between 1 and 2 units of alcohol a day – may have a protective effect on the heart in men aged over 40 and women who have been through the menopause. One unit of alcohol equals half a pint of ordinary-strength beer, or a small glass of ordinary-strength wine, or a pub measure of spirits.



However, heavier drinking can contribute to disorders of the heart and circulation, including high

blood pressure and stroke. If you have high blood pressure, you should drink less than 21 units a week if you are a man, and less than 14 units a week if you are a woman. If you drink over this limit, your systolic blood pressure is likely to increase.

Drinking within sensible limits

If you are a man with high blood pressure, drink less than 21 units of alcohol a week.

If you are a woman with high blood pressure, drink less than 14 units of alcohol a week.

What about stress?

Stressful situations can cause your blood pressure to rise, but the blood pressure usually returns to normal once the stress has gone away. However, relaxation and meditation may help you to avoid those short-term rises in blood pressure. Also things that cause long-term stress – such as financial worries, or strain at work – are not thought to cause high blood pressure.

Smoking

Smoking is a major risk factor for coronary heart disease. Your blood pressure rises during the time you actually smoke a cigarette. If you smoke and you also have high blood pressure, your arteries will become narrowed much more quickly. Stopping smoking is a great lifestyle change. If you stop smoking, your risk of a heart attack and stroke falls to about half that of a smoker within one year.

Medicines for blood pressure

There are many drugs available for reducing blood pressure. The aim is to lower the pressure gradually over several weeks or months.

Most people need at least two types of medicine to lower their blood pressure enough. The effect of taking two or more drugs can be much better than taking just one. Your doctor will be able to tell you which drugs may work best together, and can answer any questions you have about your medicines. Sometimes combination medicines which have two drugs are used. Don't be worried if your doctor changes your medicines several times in order to get your blood pressure low enough. Your doctor may also change your medicines if they give you side effects.

Side effects

Most people taking medicines for high blood pressure feel perfectly well and have no side effects from the medicines.

After starting new medicines, it is only natural to think that any new symptoms must be caused by the medicines. If you do seem to have any side effects, discuss them with your doctor who will be

able to tell whether or not the medicines are to blame. You can also check the box below for side effects to look out for, and the information on pages 33 to 39 about the possible unwanted effects of individual types of drugs.

Side effects to look out for

If a rash develops soon after you start a new treatment

Report this to your doctor. You may have an allergy to the medicines.

If you feel light-headed or dizzy, or if you faint. These effects may be particularly noticeable when you get up from bending or lying down, or if you are older.

If these side effects are severe, it may be that your tablets have reduced your blood pressure too much. Tell your doctor who might reduce the dose of the drug or give you different medicine.

Most of the medicines for treating high blood pressure can also be used for other heart conditions. So don't be surprised or worried if you know someone with a different condition who is taking the same medicines as you.

Medicines for high blood pressure can react with other medicines, including some that are available

without a prescription. So always check with your doctor or pharmacist before you take them. Tell your doctor if you are taking any herbal remedies too.

Drugs used to treat blood pressure include: ACE inhibitors, angiotensin II antagonists, beta-blockers, calcium channel blockers (calcium antagonists), diuretics, alpha-blockers and centrally-acting drugs. We look at each of these in turn.

Examples of medicines for people with high blood pressure

	Name of drug
ACE inhibitors See page 34.	Enalapril Lisinopril Perindopril Quinapril Ramipril
Angiotensin II antagonists See page 35.	Candesartan Irbesartan Losartan Valsartan
Beta-blockers See page 35.	Atenolol Bisoprolol Metoprolol
Calcium channel blockers (calcium antagonists) See page 36.	Nifedipine Amlodipine Diltiazem Verapamil
Diuretics See page 37.	<i>Thiazide diuretics:</i> Bendrofluazide Hydrochlorothiazide <i>Loop diuretics:</i> Bumetanide Frusemide <i>Potassium-sparing diuretics:</i> Amiloride Spironolactone
Alpha-blockers See page 38.	Doxazosin Prazosin Terazosin
Centrally-acting drugs See page 39.	Methyl dopa Moxonidine

ACE inhibitors

These work by making the walls of the arteries relax and widen. They are particularly effective in treating high blood pressure when used with a diuretic. In young people with high blood pressure they are often used on their own.

ACE stands for 'angiotensin converting enzyme'. ACE inhibitors help to prevent an inactive substance in the blood called angiotensin I from converting into the very potent angiotensin II. Angiotensin II produces spasms and narrows the blood vessels.

Unwanted effects

Some people develop a persistent, dry, irritating cough. If this happens, you should tell your doctor about it.

In some rare cases, ACE inhibitors can cause a significant fall in blood pressure when the person takes his or her first dose.

When your doctor first prescribes the treatment, he or she will start you on a low dose and will regularly check your blood pressure. They will also check whether your kidneys are working well, by taking a blood test.

Some ACE inhibitors may cause skin rashes and, very occasionally, a major allergic reaction. If you think you have an allergy to these medicines, stop taking them and contact your doctor.

Angiotensin II antagonists

Most people get on better with angiotensin II antagonists than most other drugs used for similar purposes. These drugs act in a similar way to ACE inhibitors (see page 34), but do not cause the persistent dry cough that ACE inhibitors can sometimes cause. So they are a useful alternative to ACE inhibitors.

Beta-blockers

Beta-blockers block the action of adrenaline – a hormone which makes the heart beat faster and more vigorously. Beta-blockers help to prevent the heart from beating too quickly and too forcefully at times such as when you are exercising or feeling stressed. Beta-blockers are usually added to other drugs to lower the blood pressure further.

Sometimes beta-blockers work too well and the heart rate can become too slow. So it is worth checking your pulse regularly. Aim for a pulse rate of over 45 beats a minute.

Unwanted effects

Serious side effects are uncommon if beta-blockers are prescribed with care. However, minor side effects are common and include tiredness, and cold hands and feet. Other less frequent effects can include feeling sick, diarrhoea, skin rashes, impotence, nightmares and dizziness.

Beta-blockers are not usually given to people with asthma as they can make this condition worse. And they are not usually given to people who are taking diuretics because this combination could increase the risk of developing diabetes. However, for people with angina, a combination of beta-blockers and diuretics may be beneficial.

You should not stop taking beta-blockers suddenly without medical advice. If you also have angina, stopping beta-blockers too quickly can make your angina worse, or bring on a heart attack.

Calcium channel blockers (calcium antagonists)

There are three types of calcium antagonists. They all cause the arteries to relax, but some increase and others decrease the heart rate. Calcium channel blockers are most often used to treat high blood pressure in elderly people or in people of African-Caribbean origin. They can also be used to treat angina in people who cannot take beta-blockers.

Unwanted effects

Serious side effects are uncommon. Minor effects include flushing, headache, dizziness, swollen ankles, indigestion, feeling sick and vomiting.

Diuretics

These are often known as ‘water pills’. They work on the kidneys, helping them to pass more salt and water into the urine. This triggers hormonal reactions which lower the blood pressure.

When you first start taking diuretics, you will probably find that you need to pass water more often. If this makes your life difficult, or leads to incontinence, tell your doctor.

There are three types of diuretics. These are:

- thiazide diuretics
- loop diuretics, and
- potassium-sparing diuretics.

Of these three, thiazide diuretics are the drugs most often used to treat high blood pressure. If you take a thiazide diuretic or loop diuretic, your doctor will arrange a blood test a few weeks after you start, to check the potassium level in your blood.

If this is getting low, you will be given potassium supplements, or you will be given a potassium-sparing diuretic instead.

Unwanted effects

Diuretics may lower your blood pressure too much, so your doctor may need to adjust your dose. Some of them may cause low potassium levels so, if you are taking diuretics, you may need to have tests from time to time to check on the levels of potassium in your blood.

People with diabetes may find that some diuretics raise their blood sugar level. Diuretics may also cause impotence in men. And if you have gout, you may find that diuretics make your condition worse.

Alpha-blockers

Alpha-blockers are useful in people with diabetes or kidney damage. The first dose of these drugs can cause a sudden drop in blood pressure, so it should be taken at bedtime. However, this sudden drop in blood pressure doesn't happen if you take the slow-acting version of alpha blocker.

Unwanted effects

Side effects include dizziness, particularly when standing up, tiredness, and sometimes stress incontinence. (Stress incontinence is when there is stress or pressure on the bladder – for example when you are coughing.)

Centrally-acting drugs

Centrally-acting drugs – such as methyldopa and moxonidine – stimulate the brain to lower the blood pressure. They may be used with other drugs for lowering blood pressure, or your doctor may prescribe them if other drugs are not suitable for you or have failed to control your high blood pressure. Methyldopa is the safest drug for women who need to have treatment for high blood pressure during pregnancy.

Unwanted effects

These drugs can cause a dry mouth, dizziness and fatigue. Methyldopa can cause drowsiness, which can interfere with skilled tasks including driving. Moxonidine can also cause headaches.

If you forget to take your medicine

It can be difficult to remember to take your medicines when you have no symptoms. Luckily, missing the occasional tablet does not usually affect your blood pressure. So, if you forget to take your medicine, there's no need to take an extra one. Just take your normal dose next time.

Can I still drive?

High blood pressure has few symptoms, so it should not affect your ability to drive. However, you should not drive if your medicines cause symptoms which affect your driving ability. If this happens, ask your doctor if he or she can change your medicines to prevent the symptoms.

If you have a licence to drive a large goods vehicle (LGV) or passenger-carrying vehicle (PCV), you will need to tell the Driver and Vehicle Licensing Authority (DVLA, Swansea SA99 1TU) if you have uncontrolled high blood pressure or if your medicines cause symptoms which affect your driving ability. You may need to stop driving and apply to renew your licence once your high blood pressure is under control.

What about holidays?

Always remember to take enough medicines to last the whole holiday. Carry some in your hand luggage, and keep a separate note of their names and strength in case your baggage goes missing.

Air travel does not affect blood pressure, but rushing and carrying heavy cases might. So leave plenty of time for your journey, and make sure that your cases are not too heavy and that you don't have to carry them too far.

Always make sure that you have good insurance cover when you go away. If you want to know about insurance companies that other people have found to be sympathetic to heart patients, call the British Heart Foundation Heart Information Line on **08450 70 80 70**.

Women with high blood pressure

The contraceptive pill

The pill (oral contraceptive) may cause a rise in blood pressure. So if you are taking the pill, you should have your blood pressure checked regularly – about every six months. If you have high blood pressure, your doctor may change the type of pill you take, or suggest a different form of birth control. You can get advice from your GP or family planning clinic.

Pregnancy

Women have their blood pressure checked regularly throughout pregnancy, whether they have high blood pressure or not. Blood pressure usually falls in the first few months of pregnancy, even in women who have been diagnosed with high blood pressure. It usually then returns to pre-pregnancy levels in the last months. However, sometimes the pressure can become too high during these last few months.

High blood pressure can develop for the first time in pregnancy – a condition called ‘pregnancy-induced hypertension’. This may lead to a more serious condition called ‘pre-eclamptic toxæmia’, which needs treatment with bed rest and drugs.

Blood pressure usually returns to normal after the pregnancy and the problem may not happen again in future pregnancies.

Even if you already have hypertension, you should be able to have children without too much risk to yourself or your babies. But you will need extra supervision. Some of the medicines that are used to treat high blood pressure are known to be relatively safe (such as methyldopa), but others (such as ACE inhibitors) may not be suitable for pregnant women.

HRT

Hormone replacement therapy (HRT) does not affect blood-pressure levels, so women with high blood pressure may take HRT if their blood pressure is well controlled. HRT helps to prevent menopausal symptoms, but it should not be taken specifically to protect against coronary heart disease.

For more information

British Heart Foundation website

bhf.org.uk

For up-to-date information on the BHF and its services.

Heart Information Line 08450 70 80 70

An information service for the public and health professionals on issues relating to heart health.

Publications and videos

The British Heart Foundation (BHF) also produces other educational materials that may interest you. To find out about these, or to order a **Publications and videos catalogue**, or to order publications, please go to **bhf.org.uk/publications**, call the **BHF Orderline on 0870 600 6566** or email **orderline@bhf.org.uk** You can download many of our publications from **bhf.org.uk/publications**

Our publications are free of charge, but we would welcome a donation.

Heart Information Series

This booklet is one of the booklets in the *Heart Information Series*. The other titles in the series are as follows.

- 1 Physical activity and your heart
- 2 Smoking and your heart
- 3 Reducing your blood cholesterol
- 4 Blood pressure
- 5 Eating for your heart
- 6 Angina
- 7 Heart attack and rehabilitation
- 8 Living with heart failure
- 9 Tests for heart conditions
- 10 Coronary angioplasty and coronary bypass surgery
- 11 Valvular heart disease
- 12 Having heart surgery
- 13 Heart transplantation
- 14 Palpitation
- 15 Pacemakers
- 16 Peripheral arterial disease
- 17 Medicines for the heart
- 18 The heart – technical terms explained
- 19 Implantable cardioverter defibrillators (ICDs)
- 20 Caring for someone with a heart problem

For more information on eating well and physical activity

You can get these publications from the British Heart Foundation.

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Heart health magazine

Heart health is a free magazine, produced by the British Heart Foundation especially for people with heart conditions. The magazine, which comes out four times a year, includes updates on treatment, medicines and research and looks at issues related to living with heart conditions, like healthy eating and physical activity. It also features articles on topics such as travel, insurance and benefits.

To subscribe to this **free** magazine, call **0870 600 6566**.

Heartstart UK

For information about a free, two-hour course in emergency life support, visit our website at bhf.org.uk or contact Heartstart UK at the British Heart Foundation. The course teaches you to:

- recognise the warning signs of a heart attack
- help someone who is choking or bleeding
- deal with someone who is unconscious
- know what to do if someone collapses, and
- perform cardiopulmonary resuscitation (CPR) if someone has stopped breathing and his or her heart has stopped beating.

Other useful organisations

Blood Pressure Association

60 Cranmer Terrace

London SW17 0QS.

Phone: 020 8772 4994

Website: www.bpassoc.org.uk

Provides information and support for people with high blood pressure.

For more information on statistics quoted in this booklet

Statement	Where you can find out more about this
<p>Page 6</p> <p>If you have high blood pressure, reducing your blood pressure can lower your risk of having [stroke, heart attack, and kidney failure].</p>	<p>From: 'New meta-analysis of treatment trials of hypertension improving the estimate of therapeutic benefit', by F Gueffier, A Froment, and M Grouton. Published in 1996, in the <i>Journal of Human Hypertension</i>, volume 10, pages 1-8.</p>
<p>Pages 6-7</p> <p>About 3 in every 10 adults in England have high blood pressure. ... Among people in their 60s, about 6 out of 10 have high blood pressure, and among people in their 70s, 7 out of 10 people have it. ... Nearly a third of people with high blood pressure are not being treated.</p>	<p>From the <i>Health Survey for England 2002</i>, by the Joint Health Surveys Unit. Published in 2003 by The Stationery Office, London.</p>
<p>Page 7</p> <p>Black people of African-Caribbean origin are at a higher risk of high blood</p>	<p>From: Blood pressure levels and hypertension status among ethnic groups' by P Primatesa, L Bost, and NR</p>

<p>pressure than the rest of the population of the UK. Also, South Asians who live in the UK need to make sure that their blood pressure is monitored and well controlled because of their increased risk of heart disease and diabetes.</p>	<p>Poulter. Published in 2000, in <i>Journal of Human Hypertension</i>, volume 14, pages 143-148; and: 'Relation of central obesity and insulin resistance with diabetes prevalence and CVD risk in South Asians' by PM McKeigue, B Shah, and MG Marmot. Published in 1991, in <i>The Lancet</i>, volume 337, pages 382-386.</p>
<p>Page 9 Your target is to have a blood pressure below 140/85mmHg. If you have diabetes, kidney disease, or disease of the heart and circulation, your target [blood pressure] is below 130/80mmHg.</p> <p>Page 9 The British Hypertension Society suggests that the ideal blood pressure is 120/80mmHg, normal is less than 130/80mmHg, and 'high-normal' is 130/80 to 139/89mmHg.</p>	<p>From: 'Guidelines for management of hypertension: report of the fourth working party of the British Hypertension Society, 2004', by B Williams, NR Poulter, MJ Brown, GT McInnes, and others. Published in 2004, in <i>Journal of Human Hypertension</i>, volume 18, pages 139-185.</p>

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Physical activity can help reduce high blood pressure and may also prevent it from developing in the first place.

From: 'Lowering blood pressure: a systematic review of sustained non-pharmaceutical intervention', by S Ebrahim and G Davey Smith. Published in 1998, in the *Journal of Public Health Medicine*, volume 20, pages 441-448.

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Regular moderate physical activity for at least 30 minutes a day can help to lower your blood pressure by between 4 and 9mmHg.

From: 'Effect of aerobic exercise on blood pressure', by SP Whelton, A Chin, X Xin, and J He. Published in 2002, in *Annals of Internal Medicine*, volume 35, pages 836-843.

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If you are very overweight, losing even 10 kilos (22 pounds) can reduce your blood pressure by between 5 and 10mmHg.

From: 'Effects of weight loss and sodium reduction intervention on blood pressure and hypertension incidence in overweight people with high-normal blood pressure' by the Trials of Hypertension Prevention Collaborative Research Group. Published in 1997, in *Archives of Internal Medicine*, volume 157, pages 657-667.

<p>Page 26</p> <p>Reducing your salt intake by about 5 grams a day can lower your blood pressure by about 5mmHg.</p>	<p>From: 'Fall in blood pressure with modest reduction in dietary salt intake in mild hypertension', by the Australian National Health and Medicine Research Council Dietary Salt Study Management Committee. Published in the <i>Lancet</i>, in 1989, volume 1, pages 399-402.</p>
<p>Page 27</p> <p>Eating plenty of fruit and vegetables each day and cutting the fat from your diet, especially saturated fat, can lower your blood pressure by between 8 and 14mmHg.</p>	<p>From: 'Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet', by FM Sacks and others, DASH Sodium Collaborative Research Group. Published in 2001, in the <i>New England Journal of Medicine</i>, volume 344, pages 2-10.</p>
<p>Page 27</p> <p>Moderate drinking – between 1 and 2 units of alcohol a day – may have a protective effect on the heart in men aged over 40 and women who have been through the menopause.</p>	<p>From: 'Alcohol consumption and mortality from all causes, CHD, and stroke: results from a cohort study of Scottish men with 21 years of follow up', by CL Hart, D Smith, DJ Hole and VM Hawthorne. Published in 1999, in the <i>British Medical Journal</i>, volume 318, pages 1725-1729.</p>

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If you have high blood pressure, you should drink less than 21 units a week if you are a man, and less than 14 units a week if you are a woman. If you drink over this limit, your systolic blood pressure is likely to increase.

From: 'Binge drinking and ambulatory blood pressure', by K Seppe. Published in 1999, in *Hypertension*, volume 33 (7), page 79.

Page 29

If you stop smoking, your risk of a heart attack and stroke falls to about half that of a smoker within one year.

From: *The Health Benefits of Smoking Cessation. A Report of the Surgeon General*, by the Department of Health and Human Services. Published in 1990, by the National Centers for Disease Control and Prevention, Office on Smoking and Health, Rockville, Maryland, USA.

Notes

About the British Heart Foundation

The British Heart Foundation (BHF) is the leading national charity fighting heart and circulatory disease – the UK's biggest killer. The BHF funds research, education and life-saving equipment and helps heart patients return to a full and active way of life.

We rely on donations to continue our vital work. If you would like to make a donation, please ring our **credit card hotline on 0870 606 3399**. Or fill in the form opposite.



Please send me information about the following.

- BHF publications**
- Giving regular donations**
Regular donations through a standing order give us the long-term support we need. Just tick for information on how to set up a standing order.
- Remembering us in your Will**
Many people choose to leave a gift to their favourite charities in their Will. We can send you a useful information pack to tell you how to go about it.
- Local fundraising activities and sponsored events**
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How you and your work colleagues can donate from your salaries before tax.
- Buying BHF Christmas cards and gifts**
- Becoming a volunteer in a British Heart Foundation shop**

Please send your form to the British Heart Foundation. The address is over the page.

Technical terms

ACE inhibitor	A drug used to treat high blood pressure. It works by making the walls of the arteries relax.
alpha-blocker	A drug used to treat high blood pressure. Often prescribed for people with diabetes or kidney damage.
angiotensin II antagonist	A drug used to treat high blood pressure. Acts in a similar way to ACE inhibitors.
arteries	The tubes that take the blood away from the heart to the rest of the body.
beta-blocker	A drug used to treat high blood pressure. It reduces the force of the heart beat.
blood pressure	The pressure of blood in the arteries.
calcium antagonist	See 'calcium channel blocker'.
calcium channel blocker	A drug used to treat high blood pressure. It works by making the walls of the arteries relax.
cholesterol level	A fatty substance mainly made in the body by the liver. Cholesterol plays a vital role in how every cell in the body works, but too much cholesterol in the blood can increase the risk of getting coronary heart disease.
coronary heart disease	When the walls of the arteries become narrowed by a gradual build-up of fatty material called atheroma.
diastolic blood pressure	The lowest pressure, which occurs between heartbeats, when the heart is resting.

digital electronic monitor	An instrument to measure blood pressure. It can be used at home.
diuretic	A drug used to treat high blood pressure. It works by triggering hormone reactions that lower the blood pressure.
ECG	See 'electrocardiogram'.
electrocardiogram	A test to record the rhythm and activity of the heart. Also called 'ECG'.
heart failure	When the pumping action of the heart is poor.
hypertension	High blood pressure.
left ventricular hypertrophy	When the heart becomes abnormally large and less efficient.
monitor	See 'digital electronic monitor'.
palpitation	When you feel as if your heart is beating abnormally fast, irregularly or heavily.
pregnancy-induced hypertension	High blood pressure that develops for the first time in pregnancy.
sphygmomanometer	An instrument used to measure blood pressure.
systolic blood pressure	The highest pressure, which occurs when the beat or contraction of the heart forces the blood round the body.

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Your comments please

We would be very interested to hear your views about this booklet.
Please fill in this form and send it to:

British Heart Foundation

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I got it directly from the British Heart Foundation.

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2 Do you find this booklet...

very helpful?

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3 Do you find this booklet ...

very easy to understand?

easy to understand?

not very easy to understand?

4 What do you think of the design of the booklet (how it looks, the size of the text, the front cover, the size)?

Very good

Good

Not very good

Poor



5 Are there any issues that you need to know about that are not covered in this booklet? If so, what are they?

6 Do you have any other suggestions for how we could improve this booklet?

7 Are you...

...a patient with a heart condition?

...a carer (for example, a relative or friend of someone with a heart condition)?

Other (Please give details.) _____

Acknowledgements

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Heart health is a free magazine produced by the British Heart Foundation especially for people with heart conditions. See page 46 for more information.

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Heart Information Line • 08450 70 80 70

(A local rate number.)

An information service for the public and health professionals on issues relating to heart health.