



British Heart
Foundation

I've got my

Blood pressure

under control

Lindsay Thompson

**FIGHT
FOR EVERY
HEARTBEAT**

bhf.org.uk

ABOUT THE BRITISH HEART FOUNDATION

As the nation's heart charity, we have been funding cutting-edge research that has made a big difference to people's lives.

But the landscape of cardiovascular disease is changing. More people survive a heart attack than ever before, and that means more people are now living with long-term heart conditions and need our help.

Our research is powered by your support. Every pound raised, every minute of your time and every donation to our shops will help make a difference to people's lives.

If you would like to make a donation, please:

- call our donation hotline on **0300 330 3322**
- visit **bhf.org.uk/donate** or
- post it to us at BHF Customer Services, Lyndon Place, 2096 Coventry Road, Birmingham B26 3YU.

For more information, see **bhf.org.uk**

CONTENTS

About this booklet	02
But I don't feel ill!	03
Why is high blood pressure harmful?	04
What is blood pressure?	06
What causes high blood pressure?	10
What about low blood pressure?	12
How is blood pressure measured?	15
What do the blood pressure measurements mean?	23
What tests will I have?	25
What can I do to help control my blood pressure?	28
Medicines for blood pressure	41
Can I still drive?	56
What about holidays?	57
Women with high blood pressure	58
Heart attack? The symptoms ... and what to do	60
Stroke? The symptoms ... and what to do	62
For more information	63
Index	70
Have your say	72

This booklet is for people who want to know more about blood pressure. It explains:

- what high blood pressure (hypertension) is
- why it is so important to control your blood pressure
- what you can do to help lower your blood pressure, and
- the medicines that your doctor may prescribe as treatment.

This booklet does not replace the advice your doctor or nurse may give you, but it should help you to understand what they tell you.

High blood pressure – known as **hypertension** – rarely makes people feel ill. It is called a 'silent killer' because usually there are no symptoms and it can go undiagnosed.

Unfortunately, very often the first time someone finds out that they have high blood pressure is when they are taken to hospital because their high blood pressure has led to a stroke or a heart problem.

The only way of knowing if you have high blood pressure is to have it measured. Your GP or nurse can do this for you. It only takes a few minutes. If you have a health check (see page 18), your blood pressure will be taken as part of the check.

Having high blood pressure greatly increases your risk of having a **heart attack** or **stroke**. It can also lead to other problems, such as **kidney failure**, **heart failure** and **problems with your vision**.

Understanding how to manage your blood pressure allows you to take more control of your condition, and also helps prevent complications.

Why me?

You're not alone. Around one in four adults in the UK has high blood pressure, and your risk of developing it increases as you get older. High blood pressure is thought to cause around one in every five heart attacks and half of all strokes.

People of an African Caribbean or South Asian background

People of an African Caribbean or South Asian background may be more likely to have high blood pressure. So, you may need to have your blood pressure checked more often.

If you're of an African Caribbean or South Asian background, you also have an increased risk of

developing diabetes which can further increase the risk of developing high blood pressure, or of having a heart attack or a stroke. For more information on diabetes, see our booklet *Diabetes and your heart*.

Your heart is a pump that keeps blood moving around your body. Blood travels through your arteries, delivering oxygen and nutrients to every tissue and organ in your body.

Blood pressure is the pressure of blood running through your arteries. You need a certain amount of pressure in your arteries to keep the blood flowing. Your blood pressure will vary throughout the day, depending on what you are doing. For example, it's likely to be lower if you are sitting quietly.

Your blood pressure reading is written as two numbers – for example, 120/80mmHg. ('mmHg' is the unit used for measuring blood pressure. It stands for millimetres of mercury.)

The first number is the systolic pressure and the second is the diastolic pressure.

- **Systolic pressure** is the highest level your blood pressure reaches. This is when your heart contracts and blood is forced through the arteries.

- **Diastolic pressure** is the lowest level your blood pressure reaches. This is when your heart relaxes between each beat.

For information on how a blood pressure measurement is taken, see page 15.

A sample blood pressure measurement

120mmHg
/
80mmHg

Systolic pressure is the highest pressure, when the beat or contraction of your heart forces the blood around your body.

Diastolic pressure is the lowest pressure, which occurs between heartbeats when your heart is relaxing.

What is high blood pressure?

High blood pressure – known as **hypertension** – develops if the walls of the larger arteries lose their natural elasticity and become rigid, and if the smaller blood vessels become narrower. The higher your blood pressure, the higher your risk of health problems.

If your blood pressure is **140/90mmHg or above** when it is measured at the GP's surgery or in a blood pressure clinic, you **may** have high blood pressure. We explain more about this on page 23.

Your blood pressure target

For most people, the target is to have a blood pressure **below 140/90mmHg**.

Your doctor or nurse may tell you that your blood pressure target is slightly lower or higher than this. This will depend on other medical conditions you may have, your other risk factors for cardiovascular disease, and sometimes your age.

High blood pressure is called a 'silent killer', because usually there are no symptoms and it can go undiagnosed.

For most people, there is no obvious cause for their high blood pressure. Doctors sometimes call this **primary hypertension** or **essential hypertension**.

There are a number of factors that can increase the risk of developing high blood pressure:

- smoking
- being overweight or obese
- not doing enough physical activity
- eating too much salt
- drinking too much alcohol
- having high blood pressure in your family, and
- your age.

In a very small number of people, the cause of high blood pressure can be identified. Doctors sometimes call this **secondary hypertension**.

For example, an abnormal production of hormones from the adrenal glands can lead to high blood pressure. If your doctor gives you treatment for the hormonal condition, your blood pressure should then return to normal.

Other causes of secondary hypertension include:

- kidney disease
- diabetes, and
- some medicines, such as oral contraceptives and some over-the-counter and herbal medicines.

If you are concerned that any medicine or remedy might affect your blood pressure, ask your doctor or pharmacist about it.

Low blood pressure – known as **hypotension** – is when your blood pressure is **below 90/60mmHg**. This does not necessarily mean that there is a problem. In fact, people with low blood pressure generally tend to live longer than those with high, or even normal, blood pressure.

Signs and symptoms

Low blood pressure is sometimes found during a routine check-up. Most people with low blood pressure don't have any noticeable symptoms. However, it can cause dizziness or even fainting.

What causes low blood pressure?

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

Low blood pressure can sometimes be a side effect of medicines taken for high blood pressure, heart disease or depression. If this happens to you, your

doctor may need to adjust the dose of the medicines you are taking, or give you a different medicine. Low blood pressure can also be caused by some over-the-counter and herbal medicines.

Postural hypotension

Postural hypotension is where your blood pressure drops after you change your body position (your posture). For example, it may happen when you stand up after sitting, bending over or lying down. This can make you feel dizzy or light-headed, and may cause you to fall. Everyone gets a small drop in their blood pressure from time to time, but in people with postural hypotension there is a larger drop than normal. Postural hypotension is quite common in adolescents and in older people.

If your doctor thinks you may have postural hypotension, he or she will take two separate blood pressure readings – one while you are sitting and another when standing. If there is a fall in your blood pressure when you stand up, you may need further tests, such as a 'tilt table test'. For information on this test, see our booklet *Tests*.

How to manage low blood pressure

If you have low blood pressure, simple measures may help, such as making sure you are drinking enough. This is especially important if you are sick or have diarrhoea, as these can cause dehydration and lower your blood pressure.

If you get postural hypotension (see page 13), there are certain things you can do to help reduce the symptoms – such as getting up slowly and avoiding standing still for too long.

Fortunately, most people don't need any treatment for their low blood pressure.

Your doctor or nurse will measure your blood pressure using a sphygmomanometer (pronounced 'svig-mo-man-ometer'). This is usually a digital electronic blood pressure monitor, which is connected to an inflatable cuff that is wrapped around your upper arm.

At the press of a button, the cuff inflates and then automatically deflates. While it is inflated, the cuff will feel slightly uncomfortable as the blood flow through to your lower arm is temporarily reduced. A sensor inside the cuff detects your pulse and changes the information into blood pressure readings that appear on a display screen.

Before you have your blood pressure taken, you should have emptied your bladder and rested for at least five minutes. You should be sitting on a chair that supports your back, and not be talking, when you have the measurement taken.

It's important that the correct cuff size is used. Using a cuff that is too small or too large for your arm can give an inaccurate reading.

Some doctors and nurses may prefer to use a traditional sphygmomanometer instead of a digital blood pressure monitor. This works in much the same way, but the doctor or nurse inflates the cuff using a hand pump, and listens to your pulse using a stethoscope. This can give a more accurate blood pressure reading if you have a very faint or irregular pulse.

Before confirming a diagnosis of high blood pressure

If your blood pressure is 140/90mmHg or higher when measured at your GP surgery or blood pressure clinic, you will probably need to have this re-checked several times. Your doctor may suggest that you have **ambulatory blood pressure monitoring** (24-hour monitoring) or **home blood pressure monitoring** before confirming a diagnosis of high blood pressure. We explain more about these on pages 19 and 20.

Many people only find out that they have high blood pressure after having a stroke or developing a heart problem.

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 temporarily high if you are anxious or under stress. Some people get worried about seeing their doctor, and having their blood pressure measured can make it go up. (This is known as the 'white coat syndrome' or 'white coat effect'.) Some people may feel nervous on their 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, and may suggest that you have ambulatory monitoring or home monitoring, before deciding whether you really do have consistently high blood pressure.

Having your blood pressure measured as part of a health check

Your doctor or nurse may measure your blood pressure as part of a health check. A health check also includes a cholesterol test and an assessment of your lifestyle. For more information on health checks, see our booklet *Keep your heart healthy*.

Ambulatory blood pressure monitoring (24-hour monitoring)

Ambulatory blood pressure monitoring can be used to measure your average blood pressure. This helps to find out whether you have high blood pressure.

Ambulatory blood pressure monitoring measures your blood pressure automatically, wherever you are. You will wear a blood pressure cuff that is wrapped around your arm, and is connected to a small device on a belt or strap worn on your body. The monitor usually measures your blood pressure at regular intervals – for example, twice an hour during your normal waking hours and hourly during the night. Your doctor or nurse will use a number of these measurements to work out your average blood pressure.

If you need to have this type of monitoring, your doctor or nurse will explain what you need to do. While you're wearing the monitor, you can carry on with all your usual daily activities apart from having a bath or shower, or swimming. You will also be advised not to drive while wearing the monitor.

Home blood pressure monitoring

Your doctor may suggest that you measure your blood pressure yourself at home, using a monitor similar to the one used in your GP practice or clinic. Your nurse or doctor will show you how to do this, and tell you how often you will need to do it.

Using your own home blood pressure monitor

Checking your own blood pressure can help make you feel more in charge of your care, so some people decide to buy their own monitor.

If you find that your blood pressure readings are always changing, it is a good idea to monitor this and also keep a diary of the measurements and a note of what you do during the day. This can help you find out if you are doing anything that might cause a change in your blood pressure.

However, home blood pressure monitors are not a good idea for everyone. Some people feel more anxious when taking their own blood pressure, and some end up checking it far too often. Also, if you are having difficulty using your machine, you may get inaccurate blood pressure readings.

If you are thinking about buying a blood pressure monitor to use at home, only buy one that is approved for use within the UK. You can ask your doctor for advice on which type to buy, or contact Blood Pressure UK. (Their contact details are on page 68.) Blood Pressure UK has guidelines for measuring blood pressure at home, which you may find useful. Also, the British Hypertension Society website www.bhsoc.org has a list of validated blood pressure monitoring devices.

It is also important to have your machine regularly serviced and calibrated to make sure it is working properly.

Other places where you can have your blood pressure checked

Some local pharmacies offer blood pressure checks. Or, if you are working in an organisation that has an occupational health department, they may be able to check your blood pressure for you.

How often do I need to have my blood pressure measured?

If you are diagnosed with high blood pressure, or if it is close to 140/90mmHg, you will need to have your blood pressure measured fairly often. How often will depend on how well controlled it is, any other medical conditions you may have, and your risk of developing cardiovascular disease. Your doctor or nurse will tell you how often you need to have it checked.

If your blood pressure is not high, your doctor or nurse should measure it again within five years. You may be advised to have it checked more often as you get older.

WHAT DO THE BLOOD PRESSURE MEASUREMENTS MEAN?

Your blood pressure is **not considered to be high** if:

- your blood pressure is below 140/90mmHg, or
- your blood pressure is 140/90mmHg or above, but your average daytime ambulatory or home blood pressure is below 135/85mmHg.

Your blood pressure is **considered to be high** if:

- your blood pressure is 140/90mmHg or above, and your average daytime ambulatory or home blood pressure is 135/85mmHg or above.

If your blood pressure is considered to be high, your doctor will tell you about **lifestyle changes** you can make to help lower your blood pressure. We explain these on page 28. Your doctor may also offer you **medicines to lower your blood pressure**, depending on how high it is and whether you have any other health problems. For more about medicines, see page 41.

If your blood pressure is considered to be high and you're aged under 40, or if your doctor thinks that your high blood pressure might be caused by another problem – such as kidney disease – he or she may refer you to a specialist. This is to find out more about the possible cause of your high blood pressure and the best treatment for you.

If your doctor finds that you have high blood pressure, he or she will examine you to look for signs that show whether your circulation is healthy. This includes listening to your heart and looking at the blood vessels in the back of your eyes.

Your doctor may also ask you to have some simple tests, such as:

- **blood tests** to find out your cholesterol and blood glucose levels, and to check how well your kidneys are working
- a **urine test** to look for signs of blood, protein or sugar in your urine, and
- an **electrocardiogram (ECG)**, which is a test to record the electrical activity of your heart.

LINDSAY'S STORY

In 2007, Lindsay Thompson began to experience some odd symptoms.

"I would wake up in the mornings feeling very shaky and tense. When my heart began racing during Sunday lunch one day, I decided it was time to go and see my GP. My heart was racing at around 170 beats a minute. I was diagnosed with an abnormal heart rhythm and my blood pressure was high. I was immediately given medicines to bring both my heart rate and my blood pressure down. It wasn't easy for me, but I started to feel better.

I think more about what I'm eating now, and check the salt content of food. I eat less take-away meals and prepare things myself. I rarely eat salt if I can help it. My blood pressure has come down now. This lifestyle change has now become second nature for me."



The following can all help to control your blood pressure.

- Be physically active.
- If you're overweight, try losing some weight.
- Cut down on salt.
- Eat more fruit and vegetables.
- If you drink alcohol, limit the amount of alcohol you drink.
- Stop smoking.
- Reduce stress.

Physical activity

Regular physical activity can help to reduce and control your blood pressure. Try and do something every day, and where possible keep the amount of time that you are inactive to a minimum.

Your target is to build up to at least **150 minutes (2½ hours) of moderate-intensity physical activity a week, in bouts of 10 minutes or more.**

'Moderate-intensity' means any activity that makes you feel warmer, breathe harder and makes your heart beat faster than usual. These activities include brisk walking, cycling or swimming.

Start off slowly, and gradually build up both the intensity of the exercise and the amount of time you exercise for.

If your blood pressure is not well controlled, or if you have any other heart or medical conditions, check with your doctor before doing any new activity.

Activities such as weight lifting or weight training tend to increase blood pressure, so they are often unsuitable for people who have high blood pressure. If you're unsure about which types of activities you can do and how much, it is important to check with your doctor.



For more information on physical activity, see our booklet **Get active, stay active.**

Weight and body shape

Around three in every five adults in the UK are overweight or obese.

If you're overweight or obese, you have a higher risk of developing high blood pressure, high cholesterol, cardiovascular disease and diabetes.

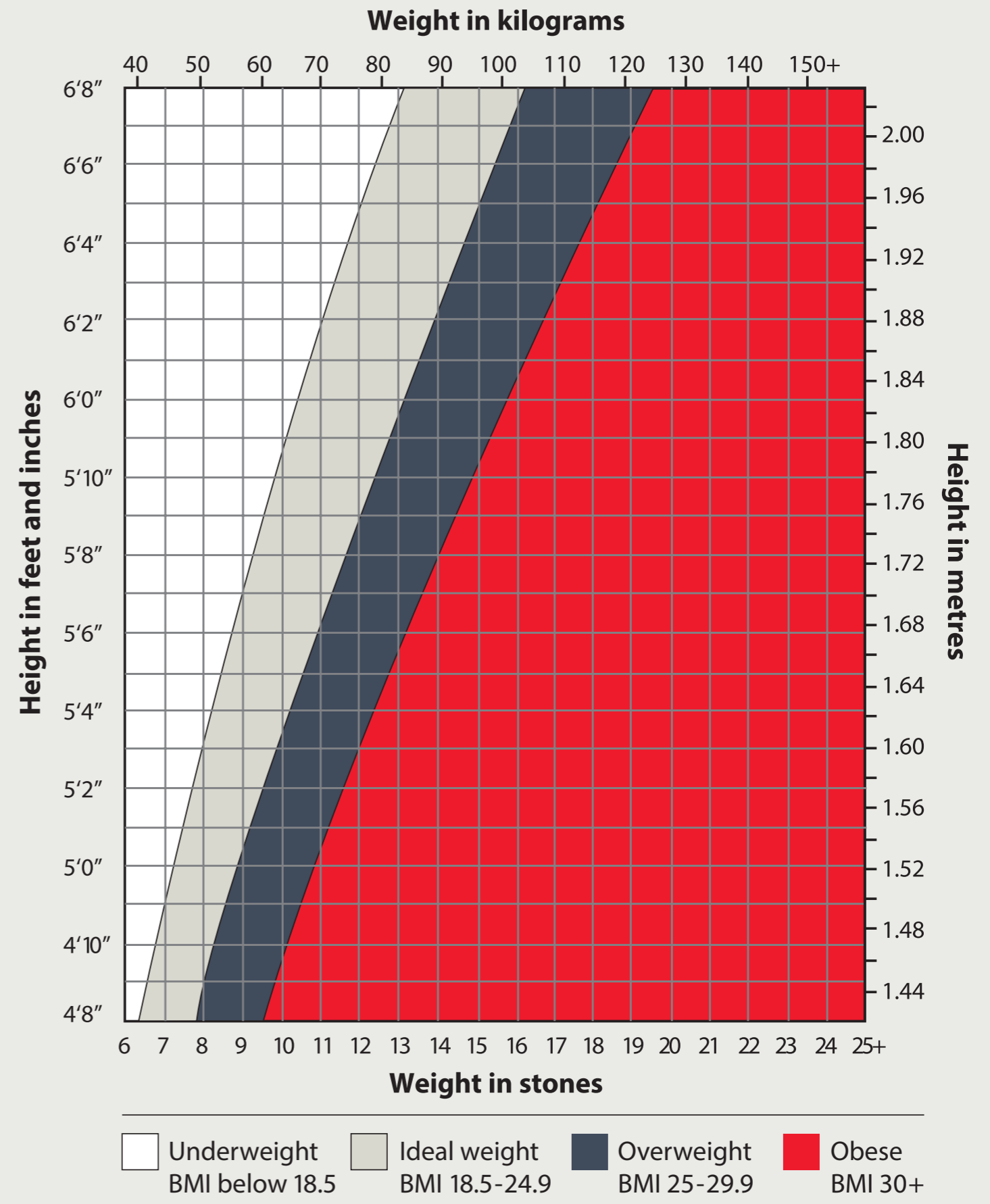
Your weight

For some people, losing weight is all they need to do to get their blood pressure down.

To find out if you're an ideal weight – that is, a healthy weight for your height – a measurement called body mass index (BMI) is often used. This is calculated from your weight and height.

Use the chart on the next page to see if you're a healthy weight. Take a straight line up or down from your weight, and a line across from your height (without shoes). Put a mark where the two lines meet to find out if you are a healthy weight. If you fall into the 'Overweight' or 'Obese' category in the chart, your health may be at risk. This is only an approximate guide.

Are you a healthy weight?



Your body shape

Carrying too much weight around your middle increases your risk of developing cardiovascular disease, high blood pressure and diabetes.

To find out if your body shape is increasing your risk, measure your waist with a tape measure. Find the midpoint between the bottom of your ribs and the top of your hips. For most people this is at the level of the tummy button. Breathe out normally and measure around your waist. Try to relax, and avoid breathing in while taking your measurement. Check your measurement on the next page.

Research shows that if you're South Asian, African Caribbean, Black African, Chinese, Middle Eastern or have parents of two or more different ethnic groups, you may be at increased risk of some health conditions at a lower BMI and waist size than people from white European backgrounds. This means the measurements that indicate high risk are lower for people from these groups.

	Your health is at risk if your waist size is:	Your health is at high risk if your waist size is:
Men – White European	Over 94 centimetres (about 37 inches)	Over 102 centimetres (about 40 inches)
Men – African Caribbean – South Asian – some other minority ethnic groups	–	Over 90 centimetres (about 35½ inches)
Women – White European	Over 80 centimetres (about 31½ inches)	Over 88 centimetres (about 34½ inches)
Women – African Caribbean – South Asian – some other minority ethnic groups	–	Over 80 centimetres (about 31½ inches)

What you can do

If you are overweight or if you have a waist size that shows you are at risk, it is important to make healthy lifestyle changes to reduce, or prevent any further increase in, your weight and waist size. This will help to reduce your blood pressure and improve your health.

The best way to lose weight and reduce your waist size is to do the following.

- **Reduce your calorie intake.** You can do this by reducing portion sizes and cutting down on the amount of fat and sugar in your diet.
- **Increase your daily physical activity.** Physical activity helps you to burn calories, which will help you to lose weight.

For more information on how to increase the amount of physical activity you do, see page 28.

Losing even a small amount of weight will benefit your health, but try not to lose weight too quickly. Slow and steady weight loss – about one or two pounds (between a half and 1 kilo) a week – is healthier, and you're more likely to keep the weight off for good.



For more information on how to lose weight, see our booklet **Facts not fads – Your simple guide to healthy weight loss.**

Regular physical activity can help to reduce and control your blood pressure.

Cutting down on salt

People who have a lot of salt in their diet are more likely to have high blood pressure. Salt makes your body hold onto extra water, which can increase your blood pressure. Most people eat far more salt than they need. It is recommended that adults have no more than 6 grams of salt a day – that's about one teaspoonful.

It is the sodium in salt that contributes to high blood pressure. There is sodium in all types of salt, whether it's salt in grains, crystals or flakes.

What you can do

- **Cut down on processed foods that contain a lot of salt.** Three-quarters of the salt we eat is hidden in processed foods such as ready meals, packet and canned soups, instant noodles, ketchups and sauces, sausages and burgers, and salty savoury snacks. See *Using food labels* on the next page, to find out how much salt a food contains.
- Don't add salt to your food at the table.

- Cook without adding any salt. Use extra pepper, herbs, garlic, spices or lemon juice to add flavour to your food instead.

Within a few weeks, your taste buds will change and you will get used to less salt and appreciate other flavours more.

Using food labels

To find out if a product has 'a lot' or 'a little' salt or sodium, look at the nutrition information label. Compare the 'Per 100g' figures with the information below.

This is a lot

(per 100 grams of food):

1.6 grams of salt or more

0.6 grams of sodium or more

This is a little

(per 100 grams of food):

0.3 grams of salt or less

0.1 grams of sodium or less



For more information on cutting down on salt, see our booklets **Cut down on salt** and **This label could change your life**.

Eating plenty of fruit and vegetables

Eating a healthy, balanced diet that includes plenty of fruit and vegetables each day will ensure you get a combination of vitamins and minerals to help keep you healthy, and can help to lower your blood pressure.

What you can do

Eat a wide variety of fruit and vegetables. They can be fresh, frozen, chilled, canned, dried, cooked or raw.

There is no evidence that taking vitamin tablets or supplements has the same benefits as eating fruit and vegetables.


Alcohol

If you drink alcohol, make sure you drink within the recommended limits.

- **Men** should not regularly drink **more than 3 to 4 units of alcohol a day.**
- **Women** should not regularly drink **more than 2 to 3 units of alcohol a day.**

These guidelines apply whether you drink every day, once or twice a week, or just occasionally.

1 unit of alcohol =



- a small glass (100ml) of wine (10% ABV [alcohol by volume])
- **or** a pub measure (25ml) of spirits
- **or** half a pint (about 300ml) of normal-strength lager, cider or beer (for example, 3.5% ABV).

You should avoid binge drinking, as this has been shown to increase blood pressure over time. If you've had a heavy drinking session, try not to drink alcohol for at least two days.

Drinking over the recommended limits can cause damage to your heart muscle, and can cause a stroke and some cancers. Alcohol is high in calories too, so it can make you put on weight.

To work out how many units of alcohol you're drinking, use our interactive alcohol unit calculator at [bhf.org.uk/alcoholcalculator](https://www.bhf.org.uk/alcoholcalculator)

Smoking

Smoking is a major risk factor for cardiovascular disease. The nicotine in cigarettes stimulates your body to produce adrenaline, which makes your heart beat faster and temporarily raises your blood pressure. **If you are a smoker, stopping smoking is the single most important step you can take to improve your heart health.**

For more information on smoking, see our booklet *Stop smoking*. For support if you are finding it hard to stop, contact one of the organisations listed on page 69.

Reducing stress

Challenges can help to keep us motivated, but when we feel unable to cope with the high demands that are placed on us, we experience stress. Feeling isolated can make you feel even more stressed.

The way you deal with stress can affect your blood pressure, so it's important to learn how to relax and manage stressful situations effectively.

For more information on stress, see our booklet *Coping with stress*.

There are many medicines available for reducing blood pressure.

Your doctor will offer you medicines if your blood pressure is considered to be high (see page 23) and any of the following apply to you:

- if you have damage to the blood vessels in your heart, brain, kidneys or eyes
- if you have cardiovascular disease, or you are at high risk of developing it
- if you have kidney disease, or
- if you have diabetes.

Your doctor may also recommend that you take medicines to lower your blood pressure if your blood pressure is consistently very high, regardless of any other problems you may have.

On page 46 we give a list of the different types of medicines used to treat high blood pressure. Most people need to take more than one type of medicine to lower their blood pressure, and research suggests that taking two or more medicines often has a much better effect than taking just one.

If you have any questions or concerns about any of the medicines you are taking, talk to your GP, pharmacist or specialist about it.

Keeping to a healthy lifestyle

It is important to understand that, once you are taking medicine to lower your blood pressure, you still need to make every effort to maintain a healthy lifestyle to protect your heart. Your medicines are not a replacement for healthier lifestyle changes. Once you've been taking your medicines for a few months, your blood pressure is likely to come down. But, if you continue to smoke or if you don't exercise enough, this will continue to put your heart health at risk.

What happens if my blood pressure is still too high?

It may take some time for the medicines you are taking to lower your blood pressure to an acceptable level. If your blood pressure still remains high after a period of time, your doctor may suggest changing the dose, or trying a different combination of medicines that might work better for you. If your blood pressure still remains high, your doctor may consider adding

another medicine until you reach your target blood pressure level.

Don't be worried if your doctor changes your medicines several times in order to get your blood pressure low enough.

Interactions with other medicines

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 other medicines. Tell your doctor if you are taking any herbal remedies or alternative medicines too.

Pregnant or breastfeeding women

If you are pregnant or trying to get pregnant, or if you're breastfeeding, there are some medicines that you should not take. For example, you should avoid taking ACE inhibitors or angiotensin-II receptor antagonists.

If you may become pregnant, or if you are pregnant or breastfeeding, tell your doctor or nurse. They will check whether the medicines you are taking to lower

your blood pressure are still safe for you to take. You may be advised to change to another type of medicine.

If you need to take medicines to lower your blood pressure, your doctor will consider the risks to both you and your baby very carefully, and you will be given the safest ones available. Generally, medicines should only be prescribed in pregnancy if the expected benefit to the mother is thought to be greater than the risk to the baby.

You should always talk to your doctor or midwife before taking any medicines – even ones you can buy over-the-counter without a prescription.

Even when you're taking medicine to lower your blood pressure, you still need to maintain a healthy lifestyle to protect your heart.

Medicines used to treat high blood pressure

We explain more about these medicines on page 48.

Type of medicine	Examples of medicine
ACE inhibitors See page 48.	Enalapril Lisinopril Perindopril Ramipril
Angiotensin-II receptor antagonists See page 49.	Candesartan Irbesartan Losartan Valsartan
Calcium-channel blockers See page 49.	Amlodipine Nifedipine Lacidipine
Diuretics See page 50.	<i>Thiazide and thiazide-like diuretics:</i> Bendroflumethiazide Chlortalidone Indapamide

Type of medicine	Examples of medicine
Diuretics (continued) See page 50.	<i>Loop diuretics:</i> Furosemide <i>Potassium-sparing diuretics:</i> Amiloride Spironolactone
Alpha-blockers See page 51.	Doxazosin Prazosin
Beta-blockers See page 50.	Atenolol Bisoprolol Metoprolol

ACE inhibitors

ACE inhibitors can reduce the activity of an enzyme called angiotensin-converting enzyme – or ACE for short. This enzyme has a powerful narrowing effect on the blood vessels, which leads to an increase in blood pressure. ACE inhibitors work by making your blood vessels relax and widen, which lowers your blood pressure.

ACE inhibitors work very well in treating high blood pressure and can be used either on their own, or alongside other medicines used to lower blood pressure. However, if you are of black African or Caribbean origin, your doctor may recommend other medicines that are best for you.

If you take an ACE inhibitor, it is very important that you have regular blood tests to check your kidney function and potassium levels. Your doctor will arrange these tests for you. You will probably need to have the tests less frequently as time goes on. Eventually, you may only need to have the test once a year.

A few people develop a persistent, dry cough when they take ACE inhibitors. If this happens and the cough is troublesome, you should tell your doctor, who may prescribe a different medicine for you.

Angiotensin-II receptor antagonists

These are also called **angiotensin receptor blockers** or **ARBs**.

Angiotensin-II receptor antagonists act in a similar way to ACE inhibitors, but they don't cause the dry cough that ACE inhibitors can. If you are taking this medicine, you'll need to have regular blood tests, as we've described on page 48.

Calcium-channel blockers

These are also called **calcium antagonists**.

You need a regular flow of calcium into the cells of your heart muscle and arteries for them to work normally. Calcium-channel blockers reduce the amount of calcium entering the muscle cells of the arteries and the heart, causing them to relax and widen. As a result, the blood pressure falls.

Diuretics

Diuretics act on the kidneys to increase the output of water and salt in the urine. They are commonly called 'water tablets' as they remove excess fluid from your body. Some diuretics can also make your blood vessels relax and dilate, which can lead to a further fall in blood pressure.

When you first start taking diuretics, you may find that you need to pass water more regularly.

The diuretics most often used to treat high blood pressure are thiazide and thiazide-like diuretics.

If you take a diuretic, it is very important that you have regular blood tests to check the levels of potassium and sodium in your blood. Your doctor will arrange these tests for you. You will probably need to have the tests less frequently as time goes on. Eventually, you may only need to have the test once a year.

Other medicines used for high blood pressure

Sometimes the more commonly used medicines to treat high blood pressure are not enough to keep it under control, or they may have unacceptable side effects. Other medicines, such as beta-blockers and

alpha-blockers, are also sometimes used to control high blood pressure. See our booklet *Medicines for your heart* for more information on these.

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 odd 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.

Side effects

Most people don't experience any side effects from their medicines. Some of the medicines may cause side effects, but these may disappear after you've been taking the medicine for just a short time.

Some side effects result from the action of the medicine. For example, if you are given too large a dose of a medicine for treating high blood pressure, your blood pressure may fall too low and you may feel faint. Other side effects are not related to the main action of the medicine – for example, skin rashes.

For more information about the possible side effects of the medicines that you are taking, read the information leaflet that comes with your medicine. If you're worried about side effects, speak to your doctor or pharmacist.

What to do if you get side effects

See the next page for advice on what to do if you get side effects. If you develop any new, persistent or troublesome symptoms or problems after starting a medicine, it is important to tell your doctor about them immediately. But don't stop taking your prescribed medicines without medical advice, as this could make your condition worse.



For more information on the medicines described on pages 46 to 51, see our booklet **Medicines for your heart.**

Side effects to look out for	
Common side effects of medicines for lowering blood pressure	Action or advice
If a rash develops soon after you start taking a new medicine	If the rash is severe or widespread, report this to your doctor as soon as possible. You may have an allergy to the medicine.
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 medicine, or give you a different medicine.
If you develop a dry, irritating cough	This may be a side effect of taking ACE inhibitors. Tell your doctor, who may be able to put you on a different kind of medicine.
If you notice mild swelling of your ankles	This could be a side effect of taking a calcium-channel blocker. Tell your doctor, who might reduce the dose of the medicine, or give you a different medicine.

BETTINA'S STORY

Bettina Wallace couldn't believe it when her GP told her she had high blood pressure.

"I thought 'Don't be daft, I don't get these sort of things,' and I tried to ignore it. But then I thought about my mum. She had it too and developed heart disease, and the penny dropped.

I decided to lose weight and take control of my life. I started doing more activity and volunteered with a local BHF community project, learning and sharing tips for healthy lifestyle changes. I really cut down on salt and instead I use herbs and spices as seasoning.

Once I started medication, lost some weight and ditched the salt, my blood pressure started to come down. Recently I had my blood pressure checked and it's the lowest it has ever been since being diagnosed. Now I'm looking forward to a healthy future, and I'm enjoying my grandchildren – something my mum was never able to do."



In most people, high blood pressure doesn't cause any symptoms, and it shouldn't affect your ability to drive. However, you should not drive if your medicines cause any symptoms that affect your driving ability. If this happens, discuss it with your doctor, as you may need to change your medicines to prevent the symptoms.

If you have a licence to drive a bus, coach or lorry, and if you have very high blood pressure or if your medicines cause symptoms which affect your driving ability, you will need to tell the Driver and Vehicle Licensing Agency (DVLA) about your condition and check with them whether you can continue to drive. Visit www.gov.uk/health-conditions-and-driving. Or you can call them on 0300 790 6806, or write to them at DVLA, Swansea SA99 1TU. You may need to stop driving and apply to renew your licence once your high blood pressure is under control.

If you have high blood pressure and want to go on holiday, you may want to discuss this with your doctor first.

You will need to take enough medicines to last the whole holiday, and make sure you have adequate travel insurance.

For more information about travelling and your heart, visit the BHF website at bhf.org.uk or order a copy of our information sheet *Travel and your heart*.

Around one in every four adults in the UK have high blood pressure. As with men, the risk of developing high blood pressure in women increases with age.

Pregnancy

If you already have high blood pressure, you should be able to have children without too much risk to yourself or your babies. But you will need extra medical supervision.

High blood pressure can develop for the first time in pregnancy – a condition called ‘pregnancy-induced hypertension’ or ‘gestational hypertension’. This may lead to a more serious condition called pre-eclampsia.

If your doctor thinks you may have pre-eclampsia, you may need to have tests to check how your liver and kidneys are working, and you may need to go to hospital. If your blood pressure is high, you may need to take medicines during your pregnancy to help keep your blood pressure under control.

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

The contraceptive pill

The pill (oral contraceptive) can sometimes 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.

Hormone replacement therapy (HRT)

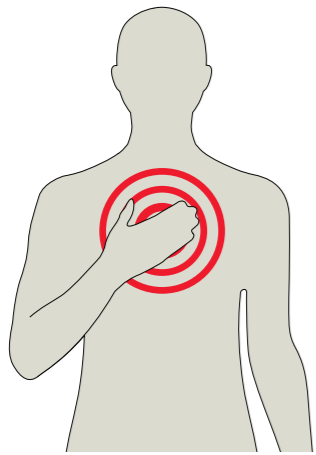
HRT helps to prevent some symptoms of the menopause, but it should not be taken specifically to protect against coronary heart disease or strokes, because research suggests it does not offer protection against these conditions.

The effect of HRT on blood pressure has not yet been fully investigated, so there is no clear evidence of a link between high blood pressure and HRT. If you are taking HRT, you should have your blood pressure checked regularly – about once every six months. If you have any concerns about possible effects of HRT on blood pressure, talk to your doctor.

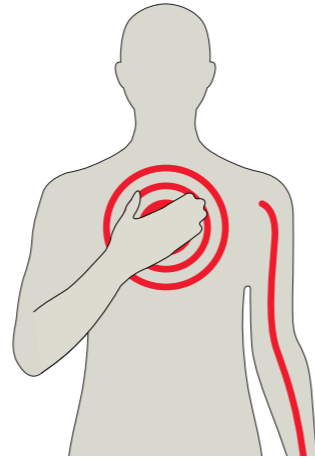
HEART ATTACK? THE SYMPTOMS ... AND WHAT TO DO

A heart attack is when a part of the heart muscle suddenly loses its blood supply. This is usually due to coronary heart disease.

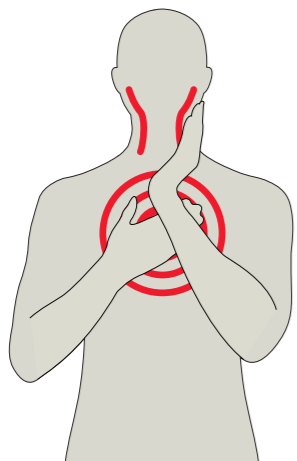
The symptoms of a heart attack



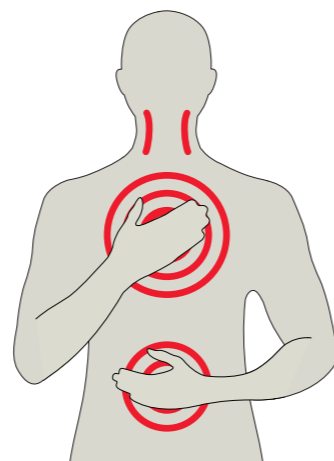
Pain or discomfort in the chest that doesn't go away.



The pain may spread to the left or right arm ...



... or may spread to the neck and jaw.



You may feel sick or short of breath.

Think quick ... act fast. Call 999 immediately.

ACT FAST...

What to do if you think someone is having a heart attack

- 1** Send someone to call 999 for an ambulance immediately.

If you are alone, go and call 999 immediately and then come straight back to the person.
- 2** Get the person to sit in a comfortable position, stay with them and keep them calm.
- 3** Give the person an adult aspirin tablet (300mg) if one is easily available, unless they're allergic to aspirin or they've been told not to take it.

If you don't have an aspirin next to you, or if you don't know if the person is allergic to aspirin, just get them to stay resting until the ambulance arrives.

If you suspect that you or someone else is having a stroke, you need to act **FAST**. To remember the signs of a stroke and what to do, think 'FAST':

Facial weakness – Can you smile? Has your mouth or eye drooped?

Arm weakness – Can you raise both arms?

Speech problems – Can you speak clearly and can you understand what others are saying?

Time to call 

If these symptoms disappear within 24 hours, it may have been a transient ischaemic attack or TIA (sometimes called a mini stroke). A TIA is a warning sign that you are at a very high risk of having a stroke – so it is vital that you don't ignore these symptoms. **If you get these symptoms or see them in someone else, call 999 immediately.**

For more information, contact the Stroke Association on **0303 3033 100** or visit **www.stroke.org.uk**

British Heart Foundation website
bhf.org.uk

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

Genetic Information Service
0300 456 8383

(A similar cost to 01 or 02 numbers.)
For information and support on inherited heart conditions.

Online community
community.bhf.org.uk
Share your experiences, stories, tips and ideas with other people like you in our online community.

Heart Helpline
0300 330 3311
(A similar cost to 01 or 02 numbers.)
For information and support about your heart condition and keeping your heart healthy.

Twitter
@TheBHF
Get our latest news and views directly into your twitter feed.

Facebook
facebook.com/bhf
Join the conversation and get our latest news and updates on Facebook.

Booklets and DVDs

To order our booklets or DVDs:

- call the BHF Orderline on **0870 600 6566**
- email **orderline@bhf.org.uk** or
- visit **bhf.org.uk/publications**

You can also download many of our publications from our website. For a list of resources available from the BHF, ask for a copy of our catalogue *Take heart*.

Our resources and services are free of charge, but we rely on donations to continue our vital work. If you'd like to make a donation, please call our donation hotline on **0300 330 3322** or visit our website at **bhf.org.uk/donate**

Heart Information Series

This booklet is part of the *Heart Information Series*. The booklets in this series are:

- Angina
- Atrial fibrillation (AF)
- Blood pressure
- Cardiac rehabilitation
- Caring for someone with a heart condition
- Coronary angioplasty
- Diabetes and your heart
- Having heart surgery
- Heart attack
- Heart rhythms
- Heart transplant
- Heart valve disease
- Implantable cardioverter defibrillators (ICDs)
- Keep your heart healthy
- Living with heart failure
- Medicines for your heart
- Pacemakers
- Peripheral arterial disease
- Primary angioplasty for a heart attack
- Reducing your blood cholesterol
- Returning to work
- Tests

Our services

For more information about any of our services, contact the BHF on **0300 330 3322** or visit **bhf.org.uk**

Nation of Lifesavers

This BHF campaign aims to help save an extra 5,000 lives each year by increasing knowledge of CPR (cardiopulmonary resuscitation) and how to use public access defibrillators (PADs) in an emergency. Join our Nation of Lifesavers at **bhf.org.uk/lifesavers**

- **Heartstart** is a free, two-hour course where you can learn CPR and other emergency life saving skills.
- Our **Call Push Rescue Training Kit** is available free to secondary schools and community groups, and for a small fee to workplaces. It has everything you need to learn CPR, including a training DVD.

Heart Matters

Heart Matters is the BHF's free, personalised service offering information to help you lead a heart-healthy lifestyle. Join today and enjoy the benefits, including

Heart Matters magazine and access to online tools. Call the **Heart Matters Helpline** on **0300 330 3300**, or join online at **bhf.org.uk/heartmatters**

Heart Support Groups

Local Heart Support Groups give you the chance to talk about your own experience with other heart patients and their carers. They may also include exercise classes, talks by guest speakers, and social get-togethers. To find out if there is a Heart Support Group in your area, contact the **Heart Helpline** on **0300 330 3311**.

Make yourself heard – Heart Voices

Heart Voices gives you the skills, confidence and knowledge you'll need to influence health services for the benefit of heart patients and their families across the UK. By signing up, you'll join a network of representatives that speaks out on behalf of heart patients and their carers, and get opportunities to have your say. Visit **bhf.org.uk/heartvoices** for more information and to sign up.

Other resources

For more information on blood pressure

Blood Pressure UK

Phone: 020 7882 6255

Website: www.bloodpressureuk.org

For support on making healthcare decisions

NHS – Shared decision making

Website: sdm.rightcare.nhs.uk

Provides information on high blood pressure and some options that are available to you in order to help you think about your healthcare decisions.

For support with stopping smoking

For information on stopping smoking, and for support if you are finding it hard to stop, contact one of these organisations:

Quit

Quitline: 0800 00 22 00

Website: www.quit.org.uk

QUIT also has helplines in different languages.

Smokefree

Phone: 0800 022 4332

Website: www.smokefree.nhs.uk

ASH (Action on Smoking and Health)

Phone: 020 7404 0242

Website: www.ash.org.uk

No Smoking Day

Email: nosmokingday@bhf.org.uk

Website: nosmokingday.org.uk

ACE inhibitors	48
activity	10, 28
alcohol	10, 38
alpha-blockers	51
ambulatory blood pressure monitoring	19
angiotensin receptor blockers	49
angiotensin-II receptor antagonists	49
ARBs	49
beta-blockers	50
breastfeeding	43
calcium antagonists	49
calcium-channel blockers	49
causes of high blood pressure	10
contraceptive pill	59
diastolic blood pressure	06
diuretics	50
driving	56
effects of high blood pressure	04
essential hypertension	10
exercise	10, 28
fruit	38
health check	18
heart attack	04, 60
herbal remedies	43
holidays	57
home blood pressure monitoring	20
HRT	59
hypertension	08

hypotension	12
low blood pressure	12
measurement of blood pressure	15, 23
medicines	41
missed medicines	51
monitors	15, 20
pill (contraceptive pill)	59
postural hypotension	13
pregnancy	43, 58
primary hypertension	10
salt	10, 36
secondary hypertension	10
side effects of medicines	51
smoking	10, 40
stress	40
stroke	04, 62
symptoms:	
of high blood pressure	03
of low blood pressure	12
systolic blood pressure	06
target blood pressure	08
tests	25
vegetables	38
waist measurement	32
weight	10, 30
women	58

HAVE YOUR SAY

We would welcome your comments to help us produce the best information for you. Why not let us know what you think? Contact us through our website [bhf.org.uk/contact](https://www.bhf.org.uk/contact). Or, write to us at:

BHF Customer Services
Lyndon Place
2096 Coventry Road
Birmingham B26 3YU.

ACKNOWLEDGEMENTS

The British Heart Foundation would like to thank all the doctors, nurses and other health professionals who helped to develop the booklets in the *Heart Information Series*, and all the patients who commented on the text and design.

Particular thanks for their work on this booklet are due to:

- **Professor Rhian Touyz**, BHF Chair in Cardiovascular Medicine; Director, Institute of Cardiovascular and Medical Sciences, BHF Glasgow Cardiovascular Research Centre, University of Glasgow
- **Professor Christian Delles**, BHF Glasgow Cardiovascular Research Centre, University of Glasgow, and
- **Professor Sandosh Padmanabhan**, BHF Glasgow Cardiovascular Research Centre, University of Glasgow.

THANK YOU

This booklet is part of the *Heart Information Series*. We distributed 2 million booklets from this series last year. Without your hard work and support the British Heart Foundation wouldn't be able to provide this vital information for people with heart conditions.

Donate to the fight at [bhf.org.uk/donate](https://www.bhf.org.uk/donate), or text **FIGHT** to **70080** to donate £3 to fund our life saving research.



**British Heart
Foundation**

For over 50 years we've pioneered research that has transformed the lives of millions of people living with cardiovascular disease. Our work has been central to the discoveries of vital treatments that are changing the fight against heart disease.

But cardiovascular disease still kills around one in four people in the UK, stealing them away from their families and loved ones.

From babies born with life-threatening heart problems, to the many mums, dads and grandparents who survive a heart attack and endure the daily battles of heart failure.

Join our fight for every heartbeat in the UK. Every pound raised, minute of your time and donation to our shops will help make a difference to people's lives.

Text FIGHT to 70080 to donate £3*

**FIGHT
FOR EVERY
HEARTBEAT**

bhf.org.uk

*This is a charity donation service for the BHF. Texts cost £3 + 1 standard rate msg. The BHF will receive 100% of your donation to fund our life saving research. To opt out of calls and SMS text NOCOMMS BHF to 70060, or if you have any questions about your gift call 0203 282 7863.

© British Heart Foundation 2015, a registered charity in England and Wales (225971) and Scotland (SC039426).

HIS4/0615