LIVING WITH HIGH BLOOD PRESSURE
Chest Heart & Stroke Scotland improves the quality of life for people in Scotland affected by chest, heart and stroke illness, through medical research, influencing public policy, advice and information and support in the community.

The information contained in this booklet is based on current guidelines and is correct at time of printing. The content has undergone peer, patient and expert review. If you have any comments about this booklet please email: publications@chss.org.uk or tel: 0131 225 6963.
# LIVING WITH HIGH BLOOD PRESSURE

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UNDERSTANDING YOUR BLOOD PRESSURE

WHAT IS BLOOD PRESSURE?

Blood is pumped around your body through a network of blood vessels:

• Arteries transport oxygen-rich blood from your heart to all parts of your body. The arteries get smaller as they get further away from the heart.

• Capillaries are the smallest of blood vessels. They connect the smallest arteries to the smallest veins.

• Veins carry blood, lacking in oxygen, back towards your heart. The veins get bigger as they get nearer the heart.

Blood pressure is the measurement of the pressure within your arteries. It plays a vital role in the way your heart delivers fresh blood, containing all the oxygen and nutrients required, from your heart to all the blood vessels throughout your body.

In order for your blood to travel that far, quickly enough, it has to be under pressure. This pressure is created by the relationship between three things: your heart’s pumping action, the size and stretchiness of your blood vessels and the thickness of your blood.
Some blood vessels have a layer of spiral muscle within their walls. This makes them able to widen or narrow depending on how much blood each part of your body requires. The action on these muscles is a very complex mechanism which is partly controlled by hormones.
Blood pressure can be compared to a central heating system. Three vital components work together to make the system work: the boiler (heart), the pipes (blood vessels) and the hot water (blood). The radiators are the different organs and parts of the body.

In order for the same amount of heat to be delivered to the furthest away radiator, the boiler has to send the water out under pressure. The size of the pipes will affect this pressure as will the power of the boiler itself.
RECORDING BLOOD PRESSURE: WHAT THE NUMBERS MEAN

Your blood pressure is measured in millimetres of mercury (mmHg) and is recorded as two readings:

• Systolic pressure (the higher reading)
  Records the pressure within your blood vessels as your heart contracts and forces blood out into your arteries.

• Diastolic pressure (the lower reading)
  Records the pressure when your heart relaxes and fills up with blood again.

These readings are recorded for example as 120/80mmHg.
WHAT IS NORMAL BLOOD PRESSURE?

Most doctors agree that the ideal blood pressure is around 120/80mmHg.

The aim is to keep your blood pressure as close to the ‘target’ range as possible:

• This is currently 140/90mmHg or less.
• If you have diabetes the lower target range of 130/80mmHg is used.
• If you are aged over 80 years the higher target range of 150/90mmHg is used.

If your blood pressure is within this range you have a lower risk of heart disease and stroke.

Your blood pressure is considered to be low if it is less than 90/60mmHg. Some people naturally have a low blood pressure; other people may have low blood pressure as a result of illness or treatment.
WHAT IS HIGH BLOOD PRESSURE?

If your blood pressure is consistently higher than it should be it is called high blood pressure or hypertension.

High blood pressure is not a disease in itself. However, it can lead to an increased risk of heart disease and strokes.

Types of high blood pressure

There are two main types of high blood pressure:

• Secondary hypertension

  This is when the change in blood pressure comes as a result of (or secondary to) a specific disease or defect. This is rare and is caused by conditions such as kidney disease, problems with glands that produce hormones, and congenital problems affecting a blood vessel near the heart or brain.

• Essential (or primary) hypertension

  This is the type of high blood pressure that most people have. With primary hypertension there is no specific disease process involved and there is likely to be no single cause.

*It is normal for blood pressure levels to go up and down throughout the day. This is why there is a normal range of blood pressures and not one correct answer.*
WHAT CAUSES HIGH BLOOD PRESSURE?

Primary hypertension is usually a result of a number of factors, known as risk factors:

- Some risk factors you cannot control, such as your age, family history or ethnic origin.
- Most risk factors you can control and are to do with the way you lead your life, for example, being overweight, how active you are, having a high salt intake, having a high alcohol intake and how you cope with stress.

Making changes to these lifestyle risk factors can significantly reduce high blood pressure in some people, improve your overall health and reduce your risk of heart disease and strokes.
WHY IS HIGH BLOOD PRESSURE DANGEROUS?

Over the years high blood pressure slowly damages your blood vessels, making them narrower and more rigid. This means that your heart has to work harder to push the blood through your vessels, making your overall blood pressure rise even more. This can lead to serious problems throughout your body.

Without careful monitoring and treatment high blood pressure can cause:

- angina and heart attacks due to damaged and blocked arteries supplying blood to the heart
- heart failure as the heart has to work much harder
- strokes due to damage to the blood vessels in the brain
- kidney failure due to damage to the arteries in the kidneys
- vision problems and blindness due to damaged blood vessels in the eyes

Heart disease and stroke are sometimes put together using the term ‘cardiovascular disease’ (CVD). Because high blood pressure puts you at an increased risk of cardiovascular disease your doctor may do a cardiovascular risk assessment to help decide what treatment is best for you. This involves looking at what other ‘cardiovascular risk factors’ you may have, i.e. things that put you at increased risk of heart disease and / or stroke.
Sometimes a risk assessment tool is used to work out your CVD risk. Various findings such as blood pressure, cholesterol, weight, smoking and diabetes may be looked at.

These findings can be used to show your risk as a percentage, e.g. 10% CVD risk means that there is a 1 in 10 chance of experiencing heart disease or stroke in the next 10 years. Your doctor can then recommend possible treatment, or lifestyle management, as necessary.

See the CHSS booklets H2 ‘Reducing the risk of heart disease’ and SS3 ‘Reducing the risk of stroke’ for more information.
HOW WILL I KNOW IF I HAVE HIGH BLOOD PRESSURE?

High blood pressure very rarely has any symptoms so there is usually nothing to tell you that anything is wrong. The only way to know your blood pressure reading is to have it measured. High blood pressure is more common as you get older so having it checked regularly is very important.

A one-off high measurement is not enough to make a diagnosis of high blood pressure. You may have your blood pressure closely monitored by your doctor or he/she may want you to monitor your blood pressure at home over a short period of time.

WHAT HAPPENS IF I HAVE HIGH BLOOD PRESSURE?

If you have been diagnosed with high blood pressure you will need a thorough check-up with your doctor. This is to look for any signs of damage (e.g. to your eyes or kidneys) and to get a detailed medical history to look for any possible causes.

• Your urine will be checked for protein and blood. This can indicate if you need your kidneys examined more closely, either to look for a cause of high blood pressure or to look for any damage to your kidney(s).

• You will have blood tests taken to check: your kidney function (by looking at the chemical balance within the blood stream); your hormone levels (as a possible cause of high blood pressure); your blood sugar level and your cholesterol level.
• Your heart will be checked by listening for evidence of any heart muscle damage and by having an ECG (electrocardiograph). This gives a tracing of the electrical activity of the heart.

• Your eyes will be looked into with an ophthalmoscope to examine the blood vessels at the back of the eye directly. Any damage to these vessels can be seen by the doctor.

• The condition of your circulation may be assessed by checking pulses in your wrists, legs and feet.

What treatment you receive to lower your blood pressure will depend upon your individual situation. You doctor will take into account how high your blood pressure is as well as your ethnic origin, your general fitness, your age and any other medical conditions you might have before deciding what treatment is best for you.

If you have high blood pressure you will:

• have your blood pressure monitored regularly
• be given advice on making healthy lifestyle changes
• be treated with drugs to lower your blood pressure as necessary

The following sections look at each of these 3 points in more detail.
WHEN SHOULD I HAVE MY BLOOD PRESSURE CHECKED?

It is recommended that you should have your blood pressure checked, as part of an overall cardiovascular risk assessment, at least every 5 years if:

• you are 40 years old or above

• you have a close relative (parent, brother, sister or child) who has had heart disease and / or stroke illness before the age of 65 (women) or 55 (men) or your family has a genetic cholesterol problem (called familial hypercholesterolaemia)

You should also get your blood pressure checked if:

• you are of Afro-Caribbean, Asian or Chinese descent as you will genetically have an increased risk of high blood pressure

• you are taking the contraceptive pill as it can sometimes cause a rise in blood pressure

• you are diabetic: diabetes can cause damage to blood vessels

• you are concerned about your lifestyle, e.g. being overweight, excess alcohol intake, high salt intake, high saturated fat diet, lack of exercise

• you go to the doctor with symptoms that could be related to having untreated high blood pressure
• you are taking any other prescribed drugs that may affect your blood pressure

If you have been diagnosed with high blood pressure then your doctor / nurse will monitor you closely to see how your blood pressure responds to treatment.

HOW IS BLOOD PRESSURE MEASURED?

Traditionally, blood pressure is measured using an instrument called a sphygmomanometer (also known as a ‘sphyg’). The cuff is wrapped around your upper arm, inflated and then slowly deflated. Meanwhile the person taking your blood pressure listens to the pulse of the main artery in your arm whilst looking at the readings. This method uses a column of mercury as a scale.

Nowadays electronic devices are often used to measure blood pressure. With an electronic device the cuff is still wrapped around your arm; however, it is set to automatically inflate / deflate and an electronic reading is taken. These devices do not use mercury but the reading is based on the same principle and means the same thing.

*If your blood pressure is ever found to be high, you should have it checked every year.*
DOES MY BLOOD PRESSURE STAY THE SAME?

Your blood pressure fluctuates throughout the day, depending on what you are doing. For example, during physical work or exercise the muscles need a greater supply of blood and oxygen. If you are working hard mentally, e.g. you are concentrating or under stress, the demand is also greater.

To meet this demand, the blood flow has to be increased so your heart has to beat faster and harder and your blood pressure rises. When you are asleep your blood pressure is at its lowest. Even then, there are fluctuations as you dream.

As well as blood pressure levels going up and down throughout the day depending on demand, there are many other things that can affect your blood pressure. Hurrying, strong emotions, pain, alcohol, some drugs (including recreational drugs such as cocaine) and even a full bladder can all result in a misleading blood pressure reading.
GETTING AN ACCURATE READING

Some people suffer from a ‘white coat effect’ where their blood pressure rises at the thought of having their blood pressure taken.

If you are due to have your blood pressure taken:

• Remember to tell the person taking your blood pressure about any drugs you are taking.
• Try to relax.
• Sit quietly for at least 5 minutes beforehand.
• Make sure your bladder is empty.
• Try to avoid having a heavy meal immediately before.

A one-off high measurement is not enough to make a diagnosis of high blood pressure. Often you will have your blood pressure closely monitored over a short period of time before any treatment is started.

You may be asked to have your blood pressure rechecked on at least 2 further occasions, usually about a month apart.

Your doctor may want you to monitor your blood pressure at home over a period of time. This can either be by 24-hour ambulatory blood pressure monitoring or by monitoring your blood pressure yourself at home. Both these methods tend to produce more accurate readings than in a clinic setting. These readings can be particularly helpful when diagnosing high blood pressure as well as monitoring your response to treatment.
AMBULATORY BLOOD PRESSURE MONITORING (ABPM)

ABPM aims to provide a more accurate measurement of your blood pressure. It involves wearing a device that automatically takes your blood pressure, at intervals over a 24-hour period, as you go about your daily activities. The monitor has a cuff that is wrapped around your arm, and is connected to a small device on a belt or strap worn on your body. The device is fitted by a doctor or nurse at your clinic / hospital.

Normally you will have your blood pressure monitored at 15 - 30 minute intervals during the day and 30 - 60 minute intervals at night. These measurements can be used to work out your average day and night-time readings and so establish more accurately if your blood pressure is raised for long periods.

For some people the ambulatory method can be more helpful than home or clinic measurements as it provides a full 24-hour profile.
HOME BLOOD PRESSURE MONITORING

Home monitors allow you to measure your blood pressure yourself. The advantages of home monitoring include:

• Being able to take several recordings over a number of days or weeks. These recordings let you see what your blood pressure is doing and how it may be responding to blood pressure lowering drugs and / or lifestyle changes.

• Helping to reduce the ‘white coat effect’. Many people find that their blood pressure recordings are lower when taken at home.

• Allowing you to become actively involved in your care and the management of your blood pressure.

Home monitoring: things to remember

Before

• If you are being treated for high blood pressure you should talk to your doctor / nurse before you start monitoring your blood pressure at home. It’s helpful to know how often to check it and what your ideal blood pressure should be.

• If you don’t have high blood pressure you can still monitor it at home as part of a ‘lifestyle checker’. In this case you would only need to check it once a week, at the same time each week.
Buying a monitor

• When choosing a device make sure it has been ‘clinically validated’ and is listed by the British Hypertension Society. Ask your pharmacist for advice or contact the Blood Pressure UK (see ‘Useful addresses and websites’ section).

• Machines that measure your blood pressure on your upper arm tend to be more reliable than wrist monitors.

• Make sure you buy a monitor with the correct cuff size for your arm.

• They vary in price so shop around before you buy.

Using your monitor

• Follow the general advice for getting an accurate reading (see p14). Avoid taking your blood pressure if you are upset, feeling stressed, have had a very busy day, have just been exercising or have recently had a cigarette.
• Follow the advice from your doctor / nurse as to how often you should monitor your blood pressure. It is good to take readings at the same time each day.

• Keep a note of your results. See the table towards the end of this booklet (Appendix 1).

• Remember your readings may be lower at home than at the clinic. Look at the general trend of your blood pressure. Don’t directly compare figures taken at home to those at the clinic.

• Don’t round measurements up or down.

• Try not to worry if you get an unexpected high reading. It is normal for your blood pressure to fluctuate. Continue to monitor your blood pressure and if it continues to be high, or you feel unwell, contact your doctor or nurse.

• Keep your monitor calibrated. To ensure accurate readings most automatic monitors need to be re-calibrated. Follow the manufacturer’s instructions as to how often this is needed (usually at least every 2 years) and where to send your monitor.

• Don’t measure your blood pressure too often. Your monitor is meant to help you feel in control of your blood pressure care; it is not meant to add to your stress levels.
Making Changes

If you have high blood pressure you need to look at the way you lead your life and do what you can to reduce your blood pressure.

You can learn to take control of your high blood pressure and not let it control you. This involves making some changes to your lifestyle as well as controlling your cardiovascular (CV) risk factors.

Small changes can have a direct effect on your blood pressure, significantly reducing high blood pressure in some people (see Table 1). Controlling your CV risk factors can help to minimise damage to your blood vessels and reduce your overall risk of heart disease and stroke.

See the CHSS booklets H2 ‘Reducing the risk of heart disease’ and SS3 ‘Reducing the risk of stroke’ for more information.

Effective lifestyle modification may lower blood pressure as much as a single blood pressure lowering drug. Combinations of two or more lifestyle modifications can achieve even better results.
WHAT ARE THE THINGS I CAN CHANGE?

Stop smoking: nicotine raises your blood pressure for up to an hour after you smoke. Smoking throughout the day means your blood pressure may remain constantly high.

Control your weight: losing weight will help to lower your blood pressure.

Eat a healthy diet: reduce the saturated fat in your diet and increase the amount of fruit and vegetables.

Reduce the salt in your diet: reducing a high salt intake can sometimes help to lower your blood pressure.

Keep active: exercising regularly can bring your blood pressure down by as much as many blood pressure lowering drugs.

Moderate your alcohol intake: cutting down on your alcohol intake can bring your blood pressure under control.

Control diabetes and cholesterol levels: to minimise damage to your blood vessels it is especially important to monitor and control diabetes and high cholesterol levels if you also have high blood pressure.

Reduce stress: stress increases your blood pressure for short periods of time.

Avoid recreational drugs: cocaine causes your arteries to constrict, raising your blood pressure and reducing the blood supply to your heart.
WHAT ARE THE BENEFITS OF LIFESTYLE CHANGES?

Addressing all of these lifestyle measures at the same time will have the biggest effect on your blood pressure and can reduce the need for drug treatment in some people. If you do need drugs to control your blood pressure then you should try to make and maintain these lifestyle changes as they can enhance the effect of your blood pressure lowering drugs.

According to British Hypertension Society (BHS) guidelines, lifestyle interventions for blood pressure reduction can achieve the following:

**Table 1: Possible reductions in blood pressure**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Recommendation</th>
<th>Expected systolic blood pressure reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight reduction</td>
<td>Maintain ideal body mass index (BMI) 20-25</td>
<td>5-10mmHg per 10kg weight loss</td>
</tr>
<tr>
<td>DASH eating plan*</td>
<td>Increase fruit and vegetables, low fat dairy products with reduced saturated and total fat</td>
<td>8-14mmHg</td>
</tr>
<tr>
<td>Salt reduction</td>
<td>Reduce to 6g salt (2.4g sodium)</td>
<td>2-8mmHg</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Regular moderate physical activity for at least 30 minutes most days</td>
<td>4-9mmHg</td>
</tr>
<tr>
<td>Alcohol moderation</td>
<td>Men &lt;= 21 units per week Women &lt;= 14 units per week</td>
<td>2-4mmHg</td>
</tr>
</tbody>
</table>

* DASH stands for Dietary Approach to Stopping Hypertension – an eating plan (created by American scientists) which is low in saturated fat, cholesterol, and total fat. It also promotes fruits, vegetables, and fat-free or low-fat milk / milk products.
STOP SMOKING

• Smoking increases your blood pressure and speeds up your heart rate.

• Smoking makes the smooth lining of your blood vessels rough. This encourages the build up of atheroma, the fatty material that narrows and blocks your blood vessels.

• Smoking increases the chance of blood clots forming. These blood clots can cause heart attacks and strokes.

If you smoke, you are much more likely to develop life-threatening conditions such as heart disease, stroke, cancer, circulation problems and chronic lung problems. The risk of cardiovascular disease increases substantially when smoking is combined with high blood pressure.

Stopping smoking may not be easy. To begin with it can help to work out why you smoke and how you could benefit from giving up.

There are all sorts of reasons why you may smoke (apart from the addiction to nicotine) even though you know it is doing you harm. Benefits or reasons to stop could include freedom from an addictive habit, poor health, smelly breath and being a bad role model for children.

Once you have made the decision to stop, try to get as much support as you can to keep you motivated.
How can I find out how to stop smoking?
If you find it very difficult to give up you may benefit from some professional help. Most areas run free local stop smoking services which can include:

- group support
- one-to-one support
- support from your local pharmacy or GP practice

In addition, there are drug treatments available which can help you to stop smoking. Most drugs will need to be prescribed by your doctor and work best when combined with professional support.

To find out what information and support is available in your area contact:

- Smokeline Scotland: call free on 0800 84 84 84 (9am - 9pm)
- ‘Can Stop Smoking’ website: www.canstopsmoking.com

Will nicotine replacement therapy (NRT) affect my blood pressure?
Yes. Nicotine, in any form, raises your blood pressure. However, the level of nicotine in the patches is less than in a cigarette.

If you want to use nicotine patches, gum or nasal sprays it is advisable to check with your doctor or pharmacist first.

See the CHSS factsheet F1 ‘Smoking’ for more information.
CONTROL YOUR WEIGHT

Being overweight can be one of the main causes of high blood pressure. Losing weight (and maintaining a healthy weight) can help to lower your blood pressure as well as reduce your overall risk of heart disease and stroke.

There are two accurate ways of assessing if you are overweight; both are recognised as helping to identify weight as a risk factor.

• Body Mass Index (BMI)
• Measurement of waist size / circumference

**Body Mass Index (BMI)**

Your Body Mass Index (BMI) is measurement of your body fat based on your height and weight.

BMI is expressed as a number which is calculated by dividing your weight (in kilograms) by your height (in metres squared: m²). This is done for you on some weight charts.

\[
BMI = \frac{\text{Weight (kg)}}{\text{Height (m²)}}
\]

There are various websites that can calculate your BMI for you, e.g. www.nhs.uk (search for ‘BMI’).

There is a weight chart at the end of this booklet (Appendix 2).
What does your BMI mean?
In the UK the following levels apply:

**Table 2: Classification of BMI measurements**

<table>
<thead>
<tr>
<th>BMI Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 18.5</td>
<td>You are underweight</td>
</tr>
<tr>
<td>18.5-24.9</td>
<td>You are an ideal weight for your height</td>
</tr>
<tr>
<td>25-29.9</td>
<td>You are overweight for your height</td>
</tr>
<tr>
<td>30-39.9</td>
<td>You are obese</td>
</tr>
<tr>
<td>Over 40</td>
<td>You are very obese</td>
</tr>
</tbody>
</table>

Your BMI is a less accurate indicator of risk if you are an athlete or very muscular. This is because the weight of your muscles may put you in a higher BMI category even if you have a healthy level of body fat.

Your BMI is a ratio of your weight in relation to your height. It is not a direct measurement of body fat, and therefore does not tell you about the distribution of your body fat.


**Waist measurement**

The measurement of your waist size (circumference) is increasingly being regarded as a more accurate indicator of risk than your BMI. It provides information about where your body fat is stored. If you carry extra weight around your stomach (‘central obesity’) you are at increased risk of heart disease and stroke.

**Table 3: Classification of waist measurements**

<table>
<thead>
<tr>
<th>Waist measurement</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td></td>
</tr>
<tr>
<td>37 – 40 inches</td>
<td>94 – 102 cms</td>
</tr>
<tr>
<td>&gt;40 inches</td>
<td>&gt;102 cms</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
</tr>
<tr>
<td>32 – 35 inches</td>
<td>80 – 88 cms</td>
</tr>
<tr>
<td>&gt;35 inches</td>
<td>&gt;88 cms</td>
</tr>
</tbody>
</table>

**What is the best way of losing weight?**

You gain weight when you take in more calories from food than you use up (calories are a measure of energy). When this is balanced your weight remains stable. So, to lose weight you have to eat fewer calories and use up more energy, i.e. by being more physically active.
If you combine increased physical activity, moderate alcohol intake and reduced salt intake along with your reduced calorie eating plan you will lose weight and achieve the best blood pressure lowering effect.

**How quickly should I expect to lose weight?**
The most effective way to lose weight is slowly. The safe rate of weight loss is between 1lb and 2lb (0.5kg and 1 kg) a week.

If you lose weight too quickly you will be far more likely to put weight back on again.

You are also more likely to be successful if you lose weight with other people, e.g. if you join a slimming club. You can attend weekly classes or gain support online.
EAT A HEALTHY VARIED DIET

There are some key changes you can make to your eating habits which can help to reduce your blood pressure.

The main diet recommendations are:

• Eat at least 5 portions of fruit and vegetables each day.

• Reduce the fat in your diet: replace saturated fats with unsaturated fats / oils.

• Reduce your salt intake.

You may notice the best reductions in your blood pressure if you combine all of these recommendations into your diet.

Eating a healthy varied diet will also help to reduce your overall risk of heart disease. A varied diet should include a proportion of food from all the foods groups: plenty of carbohydrates (such as pasta, rice, potatoes and bread); plenty of fruit and vegetables; some milk and dairy products; some proteins (such as meat, eggs, fish, poultry) and a small amount of fatty foods.

Fruit and vegetables

Evidence has shown that an increase in fruit and vegetables in your diet can lower your blood pressure. The mechanism for how this works is not yet fully understood.

Try to eat at least 5 portions of fruit and vegetables every day.
Here are some tips to help you work out what a ‘portion’ is:

- One portion could be a banana, two plums, a couple of broccoli florets, one carrot, a handful of strawberries or two tablespoons of peas.
- All dried, canned and frozen fruit and vegetables count towards your daily portions.
- Fruit juice counts as a portion once a day.
- Beans and pulses count as a portion once a day.
- Potatoes do not count as they are carbohydrates.

Eating at least 5 portions of fruit and vegetables every day may seem a lot at first. Try to get into the habit of eating some fruit and / or vegetables with each meal.

Here is an example of how you could spread your portions throughout the day:

**Table 4: A suggested daily meal plan**

<table>
<thead>
<tr>
<th>Time</th>
<th>Meal</th>
<th>Portion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td>Breakfast cereal with a couple of spoonfuls of dried fruit added.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Glass of orange juice.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Lunch</strong></td>
<td>Sandwich of your choice with a grated carrot or sliced tomato or salad.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Smoothie drink made from fresh fruit.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Snack</strong></td>
<td>An apple or a banana.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Main meal</strong></td>
<td>Broccoli florets and a spoonful of carrots as part of your meal.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Serving of strawberries and yoghurt or ice cream.</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>
Some food labels shows how many portions of fruit and vegetables are in foods such as ready meals. However, remember to read the labels carefully for fat, salt and total calories.

**Reduce your fat intake**

The aim is to reduce the saturated fat in your diet and replace it with unsaturated fat. Saturated fat is usually solid when cold (e.g. butter, lard, fat on meat). Unsaturated fat is liquid at room temperature (e.g. most oils).

Saturated fat is found in things like red meat and in full-fat dairy products such as butter and cream. It is also used in processed foods, ready meals and snacks that have been fried.

Excess saturated fat in your diet increases your blood cholesterol. When your cholesterol level is high it contributes to the fatty build-up in the lining of your blood vessels, called atheroma, which contributes to the risk of heart disease and strokes.

*See the CHSS factsheet F3 ‘Cholesterol’ for more information.*
Saturated fat is also very high in calories. Reducing your intake of saturated fat can help to control your weight.

Ways to help you reduce the amount of saturated fat in your diet include:

• choosing low-fat varieties of cheese (e.g. cottage cheese) as the harder the cheese, the higher the fat content
• switching from butter to reduced-fat spreads
• switching from full-fat milk to semi-skimmed or skimmed milk
• choosing low-fat varieties of yoghurt and fromage frais
• choosing unsaturated oils (such as rapeseed, sunflower or olive oil) rather than vegetable oil: remember being ‘oily’ is not necessarily bad for you
• replacing meat with fish, especially oily fish, e.g. mackerel, herring, sardines, trout, salmon or pilchards
• eating fewer meat products such as pies, pasties, sausage rolls, hamburgers and sausages
• trimming all visible fat from meat before cooking and discarding any fat that comes out of food during cooking
• grilling instead of frying
• avoiding pastry as it is high in fat
• replacing snacks such as crisps, cakes and biscuits with fruit

Fat content: food labels may list ‘fat content’ and / or ‘of which saturates.’

**Table 5: Fat content per 100g**

<table>
<thead>
<tr>
<th>Fat content per 100g</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low fat content</td>
<td>3g fat or less</td>
</tr>
<tr>
<td>Low saturated fat</td>
<td>1g saturated fat or less</td>
</tr>
<tr>
<td>High fat content</td>
<td>20g fat or more</td>
</tr>
<tr>
<td>High saturated fat</td>
<td>5g saturated fat or more</td>
</tr>
</tbody>
</table>
Check the food labels!

If you get into the habit of checking the labels on the food that you buy you will become more aware of what it is that you are actually eating.

Many supermarkets and brands are now labelling food more clearly to make these choices easier but labelling can still be confusing. Traffic light systems on labelling can also be helpful in making the best choices, basically green for go and red for stop.

Read the labels carefully; look for amounts ‘per 100g’ and ‘per serving’. Remember that the amount you eat of a particular food (serving size) affects the total amount of fat, sugar, salt etc you will get from it. Your serving size may be different to what’s recommended on the label!

Be wary of products such as ‘low-fat’, ‘low-salt’ etc. Take time to actually read the exact contents and compare with similar options.

See the CHSS factsheet F24 ‘Healthy eating’ for more information.
**REDUCE YOUR SALT INTAKE**

It is the sodium content in salt that can affect your blood pressure. Sodium has an effect on your kidneys, a pair of organs in your body that help to regulate your blood pressure. If you usually eat a lot of salt and you reduce this substantially you can reduce your blood pressure by 2-8 mmHg. If you combine this with other healthy lifestyle interventions then you can reduce your blood pressure even more.

Salt content on food labels can be listed as salt or as sodium. The amounts are not the same. You can multiply the amount of sodium by 2.5 to see how much salt is in the food: 1g of sodium (per 100g) is 2.5g of salt (per 100g). Read the labels on foods and look for low-salt varieties.

**Table 6: Salt content per 100g**

<table>
<thead>
<tr>
<th>Salt content per 100g</th>
<th>Salt content per 100g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtually salt free</td>
<td>0.005g sodium or less</td>
</tr>
<tr>
<td>Low salt</td>
<td>0.1g sodium or less</td>
</tr>
<tr>
<td>Medium salt</td>
<td>0.2 - 0.4g sodium</td>
</tr>
<tr>
<td>High salt</td>
<td>0.5g sodium or more</td>
</tr>
</tbody>
</table>

**What is the recommended salt intake?**

It is generally accepted that you should try and reduce your total salt intake to less than 6g of salt a day (this is the same as 2.4 g of sodium), the equivalent of one level teaspoon.
How do I cut down my salt intake?
You can easily cut down on the amount of salt you add to your food by not using it in cooking and only adding it at the table to taste. In time you will adjust your taste to do without it altogether, especially if you use other seasoning such as garlic, pepper, herbs and spices.

Hidden salt
Be aware that processed foods such as bread, meat products, vegetables, soups, sauces and ready meals may contain a lot of salt. There are many foods that you would not expect to be high in sodium such as bread and breakfast cereals. Take-away meals are also high in sodium in the form of monosodium glutamate and soy sauce.

Can I use a low sodium salt instead?
Even low-salt substitutes have some sodium in them. Some salt substitutes replace some of the sodium with potassium, which can cause its own problems if you take too much. It is much better to allow your taste to adjust to less salt and more flavour.

See the CHSS factsheet F2 ‘Salt’ for more information.
KEEP ACTIVE

Most people know that regular physical activity (exercise) is good for you. One of the benefits is that it can help to reduce your blood pressure. By keeping active you can bring down your blood pressure by 4-9mmHg. Keeping active can also help you to control your weight, especially if combined with a healthy eating plan.

What sort of activity is best?
If you have high blood pressure you should be doing exercise which keeps you moving (dynamic) and makes you breathe in more air (aerobic), e.g. walking, swimming, cycling, dancing, and jogging. The aim is to do some form of aerobic activity for 30 minutes most days of the week.

What sort of exercise should I avoid?
If you have high blood pressure, you should avoid any form of exercise that involves staying in one place and straining to lift or move something, e.g. weight lifting. This is called static exercise. It strains your heart and will raise your blood pressure.

Even if your high blood pressure is controlled by drugs you should talk to your doctor before taking part in any ‘extreme’ sports (e.g. skydiving, parachuting, scuba diving, motor racing) as they can have an effect on your blood pressure.
If you are advised that you can still take part in extreme sports then you are likely to need a medical certificate to say you are fit to do so. You may also need to take out an insurance policy which would cover your high blood pressure. Each of these sports has a governing body which can provide you with more information.

If you are unsure whether your sport is safe or classed as ‘extreme’ then talk to your doctor.

**How do I start?**

Before you begin any new kind of exercise it is advisable to ask your doctor how much and what kind of exercise would be suitable for you. If your blood pressure is very high, or is poorly controlled, your doctor may suggest that you begin taking blood pressure lowering drugs before you start any new physical activity.

It is important to build up your activity levels gradually. The best way to start is to be more active, more often. This is something you can build into your daily routine without making a special effort.
• Get up and do something during the adverts when watching television.
• Use the stairs instead of the lifts and escalators.
• Walk instead of taking the bus or get off a few stops early.
• Play with the kids outside.
• Go for walks – try not to sit for long periods.

Joining a club or exercise class can help to keep you motivated. If you chose an activity that you enjoy you are more likely to keep exercising.

• Start off with shorter periods of approximately 10 minutes at a time and gradually increase the time spent and the number of times a week you do it.
• Once you are used to doing an activity every day you can make it more strenuous or spend longer doing it, e.g. walk or swim faster in the same amount of time.
• Don’t push yourself too hard at the beginning. Slow down or stop if it is painful! Learn to listen to your body.
• Exercise should make you puff and pant a little but you should be able to continue a conversation.

See the CHSS factsheet F30 ‘Just move!’ for more information.
MODERATE YOUR ALCOHOL INTAKE

Drinking heavily on a regular basis:
• increases your blood pressure
• affects your cholesterol level
• can make you gain weight

Drinking large amounts of alcohol over a short period of time (i.e. binge drinking) at any age can cause a temporary but significant rise in blood pressure and an increased risk of stroke.

What is the recommended limit?
The recommended daily limit for adults is measured in units. If you have high blood pressure you should limit your alcohol intake to the lower recommended limits (see Table 7). Drinking above these levels is associated with raising blood pressure.

You should also aim to have a minimum of 2 alcohol-free days per week.

Drinking large quantities of alcohol is a common cause of sustained high blood pressure, especially in young males.
Table 7: Recommended maximum alcohol intake if you have high blood pressure

<table>
<thead>
<tr>
<th></th>
<th>per day</th>
<th>per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>3 units</td>
<td>21 units</td>
</tr>
<tr>
<td>Women</td>
<td>2 units</td>
<td>14 units</td>
</tr>
</tbody>
</table>

What is a unit of alcohol?

In the UK a unit of alcohol is equivalent to 8g or 10mls of pure alcohol. The strength of alcohol is measured by the percentage of alcohol by volume (% ABV).

For example:

- There is 1 unit of alcohol in a single measure (25mls) of spirit of 37.5% vol
- There are 1.5 units of alcohol in one small glass (125mls) wine or champagne of 12% vol
- There is 1 unit of alcohol in half a pint of standard strength (3.5% vol) beer or lager

Some people still think that 1 drink = 1 unit. This is not true! Remember it is the strength and size of a drink that determines how many units it contains. You have to read the label to be accurate. Home measures are often more generous than those in a pub or restaurant. For example, a large 440ml bottle / can of strong beer (6.5%) has 3 units of alcohol in it.

If you have a calculator handy you can work out how many units you are having in each drink: Multiply the amount of fluid in mls by the % ABV and divide the result by 1000!
CONTROL DIABETES AND HIGH CHOLESTEROL

It is important to monitor and control diabetes and high cholesterol levels to reduce your risk of heart disease and stroke, especially if you also have high blood pressure.

See the CHSS booklets H2 ‘Reducing the risk of heart disease’ and SS3 ‘Reducing the risk of stroke’ for more information.

REDUCE STRESS

Stress is an inevitable part of everyday life and we all need a degree of stress in order to make us perform well.

Stress increases your blood pressure for short periods of time. Once the stress is relieved your blood pressure returns to normal. Stress itself has not been proven to actually cause high blood pressure. Prolonged stress, however, can become a trigger for unhelpful behaviours (e.g. smoking, drinking too much alcohol, eating poorly and not getting enough physical activity) which can all contribute to high blood pressure.

In order to make the necessary lifestyle changes to lower your blood pressure you need to be well motivated, learn to reduce and control the amount of stress in your life and to recognise if you are down or possibly depressed. Speak to your doctor if you think you might need some help.

See the CHSS factsheet F23 ‘Living with stress and anxiety’ for more information.
AVOID RECREATIONAL DRUGS

Some recreational drugs (e.g. cocaine, amphetamines (speed) and ecstasy) can cause your blood pressure to rise.

Cocaine causes your coronary arteries to constrict, raising your blood pressure and reducing the blood supply to your heart. During the first hour after cocaine use, the risk of a heart attack increases by nearly 24 times.

The risk of heart disease amongst cocaine users is compounded by other risk factors including smoking and drinking excess alcohol; the combination of all 3 can be a lethal cocktail.
DRUG TREATMENT FOR HIGH BLOOD PRESSURE

If your blood pressure is high it is likely that you will need blood pressure lowering drugs. When you start treatment will depend upon your individual situation.

- Sometimes you may need to start treatment straight away, e.g. if your blood pressure measurement is 180/100mmHg or greater. You may also be referred to a specialist.
• Sometimes your doctor may want you to monitor your blood pressure at home to confirm a diagnosis of high blood pressure (see pages 17 - 20). This may be suggested if your blood pressure is 140/90mmHg, or greater. As well as these blood pressure readings your doctor will also consider your general health (e.g. if you have cardiovascular disease or are at risk of developing it, you have diabetes or kidney disease) and if high blood pressure has caused any damage throughout your body. He / she may then suggest you start treatment to lower your blood pressure or he / she may want to see what effect lifestyle changes may have on your blood pressure before starting drug treatment.

• If you are under 40 years old and you do not have cardiovascular disease, kidney disease or diabetes then you may be referred to a specialist to see if there is another cause of your high blood pressure.

In all situations you will be recommended to make life style changes to lower your blood pressure.

It is essential to try making some lifestyle changes and to maintain these changes even if you have to take drugs to lower your blood pressure.
WHAT ARE THE AIMS OF DRUG TREATMENT?

The aim of drug treatment is to **reduce** your blood pressure to an agreed ‘target range’ and to **keep it as close** to this target range as possible.

It is likely that you will have to continue with your treatment in order to keep your blood pressure well-controlled. If you stop taking your drugs your blood pressure may quickly rise again.

The target range for blood pressure is currently 140/90mmHg or less.

- If you have diabetes the lower target range of 130/80mmHg is used.
- If you are aged over 80 years the higher target range of 150/90mmHg is used.

If your doctor has suggested ambulatory blood pressure monitoring (ABPM) or home blood pressure monitoring (HBPM) to monitor your response to treatment then the following lower target ranges may be used. This is because blood pressure readings tend to be slightly lower at home / away from the clinic (see p17).

- Below 135/85mmHg if you are under 80 years old
- Below 145/85mmHg if you are over 80 years old

Sometimes it is not possible to reach your target range even with treatment. However, any **reduction** in high blood pressure helps to **reduce your risk of heart disease and stroke**.
HOW DO BLOOD PRESSURE LOWERING DRUGS WORK?

There are various groups of drugs that are used to treat high blood pressure; each works in a different way.

Generally, they work by manipulating your body’s own mechanisms for controlling the blood flow to the different organs in your body. The end result is that they widen your blood vessels and/or reduce the work of your heart.

More specifically, they work on your brain, kidneys, heart or arteries, all of which are involved in regulating your blood pressure.

It is essential to try making some lifestyle changes and to maintain these changes even if you have to take drugs to lower your blood pressure.
COMMONLY USED BLOOD PRESSURE LOWERING DRUGS

To reduce your blood pressure to within the target range it is very common to need a combination of different types of blood pressure lowering drugs. As each group works in a different way, taking a combination of drugs can often be the best way to target all the organs involved in controlling your blood pressure.

Your treatment may involve a combination of two, or more, of the following groups of drugs to lower your blood pressure:

• ACE inhibitors (Angiotensin Converting Enzyme inhibitors)
• ARBs (Angiotensin II Receptor Blockers)
• Calcium channel blockers
• Thiazide diuretics (‘water’ tablets)
• Alpha blockers
• Beta blockers

Because high blood pressure puts you at an increased risk of cardiovascular disease (see pages 10 & 11) the following drugs may also be prescribed to help reduce your risk of heart disease and stroke:

• Antiplatelets (‘blood thinners’)
• Statins (cholesterol lowering drugs)
COMBINATION THERAPY

One of the benefits of taking a combination of blood pressure lowering drugs is that you are likely to need lower doses of each drug and will have fewer side effects.

The British Hypertension Society (BHS) have worked with the National Institute for Health and Clinical Excellence (NICE) to produce guidelines for the management of high blood pressure. Your doctor will suggest the best combination for you based on these guidelines. This will depend on your individual situation (particularly your age and ethnic origin) and how well your blood pressure responds to treatment.
Your doctor and / or nurse may go through a number of well-recognised steps before finding the best drug combination for you (see Table 8). This is often known as the ‘A / CD’ approach. (If you are of Afro-Caribbean descent you should start treatment with calcium channel blockers regardless of what age you are.)

Table 8: The A / CD approach for people with newly diagnosed hypertension.

<table>
<thead>
<tr>
<th>People under 55 years old</th>
<th>People over 55 or Afro-Caribbean* descent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP 1</strong></td>
<td><strong>STEP 1</strong></td>
</tr>
<tr>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td><strong>STEP 2</strong></td>
<td><strong>STEP 2</strong></td>
</tr>
<tr>
<td>A + C</td>
<td>A + C</td>
</tr>
<tr>
<td><strong>STEP 3</strong></td>
<td><strong>STEP 3</strong></td>
</tr>
<tr>
<td>A + C + D</td>
<td>A + C + D</td>
</tr>
<tr>
<td><strong>STEP 4</strong></td>
<td><strong>STEP 4</strong></td>
</tr>
<tr>
<td>Add:</td>
<td>Add:</td>
</tr>
<tr>
<td>• further diuretic or</td>
<td>• further diuretic or</td>
</tr>
<tr>
<td>• alpha blocker or</td>
<td>• alpha blocker or</td>
</tr>
<tr>
<td>• beta blocker</td>
<td>• beta blocker</td>
</tr>
<tr>
<td>Consider seeking</td>
<td>Consider seeking specialist advice</td>
</tr>
<tr>
<td>specialist advice</td>
<td></td>
</tr>
</tbody>
</table>

**Key:**

A = ACE inhibitor (or ARB)  
C = calcium channel blocker  
D = thiazide diuretic  

*(Black African or Caribbean descent and not mixed race, Asian or Chinese patients)*

Note: The above recommendations were updated in 2011. If your treatment started before 2011 you may be on a different regime.
The table over the next few pages (Table 9) shows commonly used blood pressure lowering drugs as well as drugs that may be used to lower your risk of heart disease and stroke.

Please note: if you are thinking of having a baby, or you become pregnant, you will need to talk to your doctor as your treatment will have to be reviewed.
Table 9: Blood pressure lowering drugs and their side effects.

**DRUGS TO LOWER BLOOD PRESSURE**

<table>
<thead>
<tr>
<th>Drug group names and examples</th>
<th>How they work / action</th>
<th>Possible common / side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACE inhibitors</strong> (Angiotensin Converting Enzyme inhibitors)</td>
<td>Reduce blood pressure and increase cardiac output (improve the efficiency of the heart).</td>
<td>Persistent cough, dizziness, kidney problems.</td>
</tr>
<tr>
<td>• captopril</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• enalapril</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• lisinopril</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• ramipril</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• fosinopril</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• perindopril</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• trandolapril</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ARBs</strong> (Angiotensin II Receptor Blockers)</td>
<td>Reduce blood pressure and increase cardiac output (improve the efficiency of the heart).</td>
<td>Can cause dizziness, kidney problems.</td>
</tr>
<tr>
<td>• candesartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• losartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• irbesartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• valsartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• eprosartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• olmesartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• telmisartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Calcium channel blockers:</strong></td>
<td>Relax blood vessels to reduce blood pressure and decrease workload of the heart. Verapamil and diltiazem can also be used to reduce heart rate.</td>
<td>Can cause flushing, headaches, dizziness, stuffy nose, nausea, palpitations, slow pulse and ankle swelling.</td>
</tr>
<tr>
<td>• amlodipine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• nifedipine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• diltiazem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• verapamil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• felodipine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• nisoldipine</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
<td><strong>When used</strong></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>ACE inhibitors are usually started with a small dose and increased gradually to prevent dizziness (due to blood pressure being lowered). Sometimes taking it at night can help if you have dizziness. Avoid salt substitutes.</td>
<td>High blood pressure, coronary artery disease such as after a heart attack or unstable angina episode and in the treatment of heart failure or after a stroke.</td>
<td></td>
</tr>
<tr>
<td>ARBs are usually started with a small dose and increased gradually to prevent dizziness (due to blood pressure being lowered). Sometimes taking it at night can help if you have daytime dizziness. Avoid salt substitutes.</td>
<td>High blood pressure and in addition or as a substitute to ACE inhibitors.</td>
<td></td>
</tr>
<tr>
<td>Avoid grapefruit juice with CCBs except diltiazem.</td>
<td>High blood pressure, angina and can be used in place of betablockers.</td>
<td></td>
</tr>
<tr>
<td>Drug group names and examples</td>
<td>How they work / action</td>
<td>Possible common / side effects</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>Thiazide-type diuretics</strong></td>
<td>These remove excess fluid from the body by increasing urine volume. This lowers the blood pressure and eases the workload of the heart.</td>
<td>Can cause tiredness, muscle cramps, gout and kidney problems. Can also cause a low potassium blood level.</td>
</tr>
<tr>
<td>• indapamide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• chlortalidone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• bendroflumethiazide</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Alpha blockers</strong></td>
<td>Relax blood vessel walls to reduce blood pressure.</td>
<td>Nausea, dizziness on standing.</td>
</tr>
<tr>
<td>• doxazosin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• indoramin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• prazosin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• terazosin</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Beta blockers</strong></td>
<td>Reduce blood pressure, lower heart rate and ease workload of the heart.</td>
<td>Can cause fatigue, dizziness, cold fingers/ toes, sleep disturbance/ nightmares, male impotence.</td>
</tr>
<tr>
<td>• atenolol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• bisoprolol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• metoprolol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• carvedilol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• labetalol</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antiplatelets:</strong></td>
<td>Blood clotting occurs due to special cells, called platelets, sticking together. Antiplatelets drugs make this harder to do. Reduces the risk of developing blood clots used to prevent heart attacks and strokes.</td>
<td>Can cause stomach irritation, headache and bruising.</td>
</tr>
<tr>
<td>• aspirin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• clopidogrel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• dipyridamol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• ticagrelor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• prasugrel</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Statins</strong></td>
<td>Lower LDL (bad cholesterol) and reduce the risk of coronary heart disease.</td>
<td>Can cause nausea, stomach upsets, headache, muscle pains and fatigue.</td>
</tr>
<tr>
<td>• simvastatin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• atorvastatin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• pravastatin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• fluvastatin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• rosuvastatin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional information</td>
<td>When used</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>A low dose is often used so you may not notice much of an increase in the amount of urine you pass. Report diarrhoea and vomiting lasting over 24 hours to your nurse / doctor.</td>
<td>High blood pressure.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High blood pressure. Often used when other medicines not effective.</td>
<td></td>
</tr>
<tr>
<td>Discuss impotence with your nurse/doctor. Usually avoided in people with asthma and chest problems.</td>
<td>High blood pressure, after a heart attack, angina, heart failure and heart rhythm problems (arrhythmias).</td>
<td></td>
</tr>
<tr>
<td>Take with food. Do not take additional medicines containing aspirin. Report black bowel motions to your doctor immediately, as this may indicate bleeding from gut.</td>
<td>As a preventative measure. Used for people at risk of heart disease and strokes.</td>
<td></td>
</tr>
<tr>
<td>Avoid grapefruit juice when taking simvastatin.</td>
<td>As a preventative measure. Used for people at risk of heart disease and strokes.</td>
<td></td>
</tr>
</tbody>
</table>
All drugs have two names: their scientific (generic) name and their brand name (e.g. simvastatin is the generic name and Zocor® is an example of a brand name). The list of drugs on Table 9 is not exhaustive. If you are not sure which groups your drugs belong to ask your doctor or pharmacist to explain. You can also look at the patient information leaflet that came with your drugs.

Talk to your doctor if you are having problems with troublesome side effects as a change of drug may be needed. Sometimes side effects can wear off so your doctor may ask you to persevere with taking your drugs for a few weeks.

**CURRENT USE OF BETA BLOCKERS**

Beta blockers are no longer considered routine first treatment for high blood pressure. This is because there are other drugs that have fewer side effects (e.g. ACE inhibitors and calcium channel blockers) and are better at reducing your blood pressure as well as reducing your risk of heart attack or stroke.

- If you take beta blockers and they are not controlling your blood pressure your doctor may well consider changing your treatment as shown in Table 8.

- If your blood pressure is well controlled by beta blockers your doctor may still talk to you about changing your treatment at your next routine review.

- For some people beta blockers will still be the drug of choice, for example, younger people, women of
child-bearing potential or people who can not tolerate ACE inhibitors.

• Beta blockers will continue to be used in situations where there are other indications for using them such as for people with angina or after a heart attack.

• If a second drug is added to beta blockers it should be a calcium channel blocker rather than a diuretic to reduce the risk of developing diabetes.

Stopping treatment with beta blockers should always be done by gradually reducing the dose. They should never be stopped suddenly or without talking to your doctor.
FREQUENTLY ASKED QUESTIONS ABOUT BLOOD PRESSURE LOWERING TREATMENT

How long will I have to stay on treatment?
Most people will have to have treatment for life.

Some people feel they would really like to try and manage without drug treatment. In this case your doctor may consider a trial reduction or withdrawal of therapy if you have a low cardiovascular risk and your blood pressure is well controlled.

How often will I have to take my drugs?
Always take your drugs as prescribed by your doctor.

Some blood pressure lowering drugs need to be taken twice a day, e.g. in the morning and evening. Other drugs need only to be taken once a day. If this is the case you should take them at the same time every day.

If you are starting 2 different blood pressure lowering drugs at the same time, your doctor may ask you to start them separately to see how you respond to each drug. If there are any side effects you will then know which one is the cause.

Stopping your drugs suddenly can be harmful.
How should I take slow release tablets?
If your drugs are slow release they will have SR after the name. All slow release drugs are designed to be taken either with your meal or soon after.

Don’t crush slow release tablets as they are designed to be absorbed slowly.

Can I drink alcohol if I’m on blood pressure lowering drugs?
Yes, in moderation. However, if your drugs make you feel drowsy then drinking alcohol can make this much worse.

Some people who have difficulty controlling their blood pressure find that cutting down their alcohol intake helps to keep their blood pressure under control.
Drinking large quantities of alcohol is a common cause of sustained high blood pressure in younger males.

What about alternative remedies? Some herbal and natural remedies can actually raise blood pressure or interfere with the action of conventional drugs. Always talk to your doctor, or pharmacist, before taking any alternative remedies. Do not stop taking your prescribed blood pressure lowering drugs.

Always read any instructions about taking your drugs carefully.

Your pharmacist will tell you any special instructions when you start a new drug. An information leaflet is usually provided with your drugs providing more information about the drug itself.

Never stop or alter your dose without consulting your doctor – this can be dangerous.

There is no reason why you can not live a perfectly normal and active life while being on treatment.
LIVING WITH HIGH BLOOD PRESSURE

If you have been told that you have high blood pressure there may be lots of thoughts and questions going through your mind and you may wonder what the future is going to be like.

Remember that high blood pressure is not a disease in itself. For most people, making the necessary lifestyle changes as well as taking any drugs that have been prescribed means that you can lead a normal active life.

DRIVING

If any of the drugs you are taking give you side effects which may affect your driving (e.g. drowsiness) then you are not allowed to drive.

- Group 1 Licence Holders (Motorcars and Motorcycles): you only have to stop driving if your drugs give you side effects such as drowsiness or dizziness. DVLA need not be notified.

- Group 2 Licence Holders (Lorries and Buses): you will not be allowed to drive if your resting blood pressure is consistently 180mmHg (systolic) or more and / or 100mmHg (diastolic) or more. The DVLA
and your insurance company must be notified. Re-licensing may be permitted when your blood pressure is controlled.

For more information contact the Driver and Vehicle Licensing Agency (DVLA): see ‘Useful addresses and websites’ section for details.

**WORK**

If your blood pressure is well controlled then you should be able to continue working. However, there are certain jobs that you may not be able to do if you have high blood pressure, or you may have to restrict your duties:

- If you work as a diver, submariner or airline pilot then it is unlikely that you will be able to continue working. This is because extreme changes in speed and/or pressure can sometimes cause problems if you have high blood pressure.

- If you work with machinery you must tell your doctor, before any treatment is prescribed, as some drugs can make you drowsy.

It is important that you are honest with your employer. Sometimes they may require you to undergo a medical examination to fulfil conditions for pension funds and insurance purposes. Unfortunately, if you choose not to disclose any type
of information which is relevant for your job, you can legally be dismissed.

If you decide that the physical requirements of your job are too much for you, it may be necessary to retrain or find alternative duties at your workplace. If your work has an occupational health department, they can be a useful source of support and information.

**SEX**

You may worry about how sex will affect your blood pressure, or if it is safe to have sex at all. These fears are natural so it can be reassuring to know that sex, like any exercise, raises your blood pressure but only briefly. Your blood pressure falls immediately afterwards. This temporary increase in blood pressure is normal and safe.

Sex should be thought of as another form of physical activity, no more stressful to the heart than other forms of moderate exercise.

Sometimes high blood pressure, and blood pressure lowering drugs, can cause problems with sex.

- Some men may have problems with impotence. Some of the physical causes of impotence include high blood pressure and heart disease. Sustained high blood pressure can affect the blood vessels in the penis, making it more difficult to have an erection.
• Impotence can also occur as a side effect of blood pressure lowering drugs, in particular thiazide diuretics and beta blockers. Impotence that is caused by drugs is always reversible.

• High blood pressure can reduce blood flow to the vagina. Women may occasionally find that sex is painful or that they are less likely to have an orgasm.

• High blood pressure itself does not cause loss of libido (sexual desire). However, if you are worried about your health you may find that you do not want to have sex. Try to talk to your partner about how you are feeling; it’s easy to feel rejected when sexual intimacy changes. Retaining closeness and intimacy within your relationship will help to overcome difficulties. Remember that you can express your feelings in many different ways, for example through talking, with body language and physical contact such as kissing and cuddling.

• Very rarely heart attacks and strokes can occur during sexual activity. This is relatively rare in comparison with other activities which raise your blood pressure for similar lengths of time.

Even though you may find it embarrassing, talk to your doctor if you are having problems with sex. If you think that your problems started after you began your treatment your doctor can try you on a different drug.

Do not buy or use drugs such as Viagra© unless your doctor has prescribed it for you.
FEMALE CONTRACEPTION

Some forms of hormonal contraception are not recommended if you have high blood pressure.

Before you start using any form of hormonal contraception (e.g. the pill, patch, injection, implant, ‘coil’/intra-uterine device or vaginal ring) your doctor / family planning nurse will talk to you about which method is best for you.

• ‘Combined’ contraceptives (e.g. the ‘pill’, patches, vaginal rings) all contain 2 hormones: oestrogen and progestogen. These can all cause a small rise in your blood pressure and your doctor / family planning nurse may not recommend these methods if you have high blood pressure. Combined contraceptives should be avoided if you have high blood pressure and you have a family history of heart disease, you are overweight, you smoke or you have diabetes / migraines.

• ‘Progesterone only’ contraceptives (e.g. the ‘mini-pill’, injections, implants and Mirena® ‘coil’) are not known to affect blood pressure; however, you will need to have your blood pressure closely monitored.

If your blood pressure rises while you are taking any form of hormonal contraception you may wish to consider another form of contraception.
HORMONE REPLACEMENT THERAPY (HRT)

Hormone replacement therapy (HRT) can reduce the unpleasant effects of the menopause by increasing your hormone levels (progesterone and/or oestrogen).

HRT is not known to have any effect on your blood pressure as the amount of oestrogen in HRT treatments is very low. However, your doctor may advise that your blood pressure needs to be under control before starting HRT.

HRT is not suitable for everyone. If you are considering it, you must talk to your doctor about the risks and benefits.

HOLIDAYS, FLYING AND INSURANCE

If your blood pressure is well controlled then you should be safe to fly. If your blood pressure is very high, or is poorly controlled, you will need to speak to your doctor before you arrange to fly.

If you have any concerns about your health you need to contact the airline’s medical department before travelling. This will allow medical clearance and fitness to fly to be assessed before you travel and allow the airline staff to help you with early boarding and inflight care if required.
Sitting in one position for a long time and becoming dehydrated can cause the blood to thicken, increasing the risk of clots forming. To protect yourself when flying always:

- drink plenty of fluids
- avoid alcohol
- get up regularly for short walks
- make sure you have plenty of leg room
- stretch and move your feet and legs about when sitting
- make sure you have any tablets or treatment you may need in your hand luggage

If you are thinking about going on a holiday at high altitude you should check first with your doctor to see that you are fit enough to go. This is because your blood thickens and your blood pressure rises at high altitude. This may increase your risk of a stroke.

You have to declare if you have high blood pressure when buying travel insurance to ensure that you have the appropriate cover when abroad.

See the CHSS factsheets F13 ‘Air travel’, F6 ‘Holiday information’ and F7 ‘Travel and motor insurance’ for more information.
Summary of important information about high blood pressure

• High blood pressure does not get better or just go away.
• High blood pressure rarely has any symptoms.
• Without treatment many organs are at risk of permanent damage.
• Lifestyle changes will always need to be maintained and can prevent the need for drug treatment.
• Drug treatment + lifestyle changes can reduce your blood pressure to within the target range.
• Drug treatment will usually be needed for life.
• Your thorough medical check-up should be repeated every 5 years.
• You will always have to have your blood pressure monitored regularly.
USEFUL ADDRESSES
AND WEBSITES

**Alcohol Focus Scotland**
166 Buchanan Street
Glasgow
G1 2LW
Tel: 0141 572 6700
Fax: 0141 333 1606
Email: enquiries@alcohol-focus-scotland.org.uk
Website: www.alcohol-focus-scotland.org.uk

*Alcohol Focus Scotland is committed to improving the quality of people’s lives by changing Scotland’s drinking culture – promoting responsible drinking behaviour and discouraging drinking to excess.*

**Blood Pressure UK**
Wolfson Institute Charterhouse Square
London
EC1M 6BQ
Tel: (020) 7822/5793
Website: www.bloodpressureuk.org

*Blood Pressure UK is the UK-wide charity dedicated to lowering the nation’s blood pressure. Their aim is to prevent unnecessary death and disability from heart disease, heart attacks and stroke caused by high blood pressure.*
CASH (Consensus Action on Salt and Health)
Wolfson Institute of Preventive Medicine
Queen Mary University of London
EC1M 6BQ
Tel: 020 7882 5941
Email: cash@qmul.ac.uk
Website: www.actiononsalt.org.uk

Information and news on all aspects of salt and health.

Chest Heart & Stroke Scotland
Rosebery House
9 Haymarket Terrace
Edinburgh EH12 5EZ
Tel: 0131 225 6963
Fax: 0131 220 6313
Advice Line nurses: 0808 801 0899
Email: adviceline@chss.org.uk
Website: www.chss.org.uk
CHSS improves the quality of life for people in Scotland affected by chest, heart and stroke illness, through medical research, influencing public policy, advice and information and support in the community.
Diabetes UK Scotland
The Venlaw
349 Bath Street
Glasgow G2 4AA
Tel: 0141 245 6380
Fax: 0141 248 2107
Careline Scotland: 0345 123 2399
Email: carelinescotland@diabetes.org.uk
Website: www.diabetes.org.uk/In_Your_Area/Scotland/

Diabetes UK Scotland is dedicated to putting the interests of people with diabetes first, through the best in campaigning, research and care.

Drinkline Scotland
Helpline: 0800 7 314 314
(9am to 11pm Monday to Friday)

Drinkline offers free, confidential advice and support, information and self help materials.

Drinkaware
Samuel House, 6 St Albans St
London SW1Y 4SQ
Tel: 020 7766 9900
Fax: 020 7504 8217
Email: contact@drinkaware.co.uk
Website: www.drinkaware.co.uk

Drinkaware aims to change the UK’s drinking habits for the better. They promote responsible drinking and find innovative ways to challenge the national drinking culture to help reduce alcohol misuse and minimise alcohol-related harm.
**DVLA**

Drivers Medical Enquiries  
DVLA  
Swansea  
SA99 1TU  
Tel: 0300 790 6806  
Website: www.gov.uk/government/organisations/driver-and-vehicle-licensing-agency

To find out if you need to tell DVLA about a medical condition: www.direct.gov.uk/DrivingAndMedicalConditions

**Heart UK**

7 North Road, Maidenhead SL6 1PE  
Cholesterol Helpline: 0845 450 5988  
(Monday - Friday from 10am to 3pm - Advice in Punjabi Urdu and Hindi available on Fridays.)  
Email: ask@heartuk.org.uk  
Website: www.heartuk.org.uk

Heart UK are committed to raising awareness about the risks of high cholesterol, lobby for better detection of those at risk, fund research into improved treatment and support health professional training. It’s also why we work with a variety of partners to promote healthier lifestyle options.
NHS 24
Tel: 08454 24 24 24
Website: www.nhs24.com

This phone service is designed to help you get the right help from the right people at the right time and GP out of hours advice.
The website provides comprehensive up-to-date health information and self care advice for people in Scotland.

Sexual Advice Association
Suite 301, Emblem House, London Bridge Hospital, 27 Tooley Street, London SE1 2PR
Helpline: 0207 486 7262 (9am to 5pm Monday, Wednesday, Friday)
Email: info@sexualadviceassociation.co.uk
Website: www.sda.uk.net

The Sexual Advice Association is a charitable organisation, to help improve the sexual health and wellbeing of men and women and to raise awareness of the extent to which sexual conditions affect the general population.
**Smokeline**
Tel: 0800 84 84 84 (9am - 9pm, seven days a week)
Also text or chat online 7 days a week: 8am - 10pm
at: www.canstopsmoking.com

*Smokeline is Scotland’s national stop smoking helpline. Smokeline makes it easy for you to talk to someone who knows all about quitting smoking. Smokeline advisers give free advice and information about how to stop smoking. They can work with you to come up with a quit plan that’s right for you and your lifestyle. Advisers also provide information about the free stop smoking services provided by every health board in Scotland – so it’s easy to find out what you need to know.*

www.canstopsmoking.com

Website run by Healthier Scotland to help you find the support you need to stop smoking.

**Take Life on One Step at a Time**
Website: www.takelifeon.co.uk

*Take Life On is a campaign run by the Scottish government initiative Healthier Scotland. It aims to promote everyday changes to diet and lifestyle which can provide significant health benefits and will help to reduce the risk of cancer, heart disease and diabetes, and can make you feel really good about yourself.*
**APPENDIX 1**

Remember to try to record the blood pressure at the same time(s) each day / week.

Note down any changes to your treatment, if you were feeling unwell or anything else you think may have affected your blood pressure.

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APPENDIX 2: WEIGHT CHART

Your height in feet & inches (without shoes)

Your weight in stones (without clothes)

- You are underweight and could do with a few extra pounds
- This is the ideal weight for your height
- You are getting too fat so choose your food carefully
- You are obese and need to lose weight
- You are severely obese and must lose weight
Do you have any questions about chest, heart or stroke illness?

Ask the nurse
0808 801 0899

www.chss.org.uk
HEART PUBLICATIONS

<table>
<thead>
<tr>
<th>Booklets</th>
<th>Factsheets – Free</th>
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<td><strong>F22</strong> How to make the most of a visit to your doctor</td>
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<td><strong>F26</strong> Understanding help in the community</td>
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<td><strong>H16</strong></td>
<td><strong>F30</strong> Just move!</td>
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<td><strong>F40</strong> Losing weight</td>
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<td><strong>H20</strong></td>
<td><strong>F41</strong> Financial support for people affected by chest heart or stroke illness</td>
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<td><strong>H5D</strong></td>
<td>Living with Heart Failure DVD: £5.00</td>
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<td><strong>H7V</strong></td>
<td>Heart Attack: A guide DVD: £5.00</td>
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A full publication list is available from Head Office.
Rosebery House, 9 Haymarket Terrace, Edinburgh EH12 5EZ   Tel: 0131 225 6963

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**Up to 100 booklets free, up to 100 factsheets free**

If you wish to order more than 100 booklets or factsheets please contact the Health Information department at the address above.

Name: ____________________________
Address: ____________________________
_________________________________________ Postcode: ________________________

Tel: ____________________________ Email: ____________________________
Chest Heart & Stroke Scotland is a wholly independent Scottish charity. We receive no core funding from Government or any public body or private agency.

We need your help to achieve our aim of improving the lives of those in Scotland with chest, heart and stroke illness. See insert for more information.

CONTACT US

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Fax: 0131 220 6313
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