

BLOOD PRESSURE AND YOUR HEART

This is one of the booklets in the CHIKE OKOLI FOUNDATION Heart *Information Series*.

Contents

About this booklet

But I don't feel ill!

Why is high blood pressure harmful?

What is high blood pressure?

What causes high blood pressure?

What tests will I have?

What about low blood pressure?

How is blood pressure measured?

Will I have to start taking medicines straight away?

What can I do to help control my blood pressure?

Medicines for blood pressure

Can I still drive?

What about holidays?

Women with high blood pressure

About the Chike Okoli Foundation

Technical terms

About this booklet

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

- What high blood pressure is?
- Why it is so important to bring your blood pressure down to a normal level
- What you can do to help lower your blood pressure.

It also describes the medicines that your doctor may give you to help lower your blood pressure. This booklet is not a substitute for the advice your doctor or cardiologist (heart specialist) may give you based on his or her knowledge of your condition.

But I don't feel ill!

High blood pressure – also known as hypertension rarely makes people feel ill. It can cause headaches in a very small number of people, but only if their blood pressure is very high. Problems with sight, breathlessness and nose bleeds can sometimes be a sign of high blood pressure. But the only way of knowing if you have hypertension is to have your blood pressure measured.

Why is high blood pressure harmful?

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

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

Why me?

You're not alone. About 3 in every 10 adults in Nigeria has high blood pressure. It's more common in older people than in younger people.

Among people in their 60s, about 6 out of 10 have high blood pressure, and among people in their 70s, 7 out of 10 people have it. But you are luckier than many because at least you know you have high blood pressure, and so you can take steps to try and reduce it. Nearly a third of people with high blood pressure are not being treated.

What is high blood pressure?

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

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

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

Blood pressure is measured in millimetres of mercury (shortened to 'mmHg'). A blood-pressure reading gives two numbers. The first number is the systolic pressure and the second is the diastolic pressure.

Your target is to have a blood pressure below 140/85mmHg (140 systolic and 85 diastolic). If you have diabetes, kidney disease, or disease of the heart and circulation, your target is below 130/80mmHg. There is no fixed dividing line between normal blood pressure and slightly raised blood pressure.

What causes high blood pressure?

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

- Not doing enough physical activity
- being overweight
- having too much salt in your diet
- drinking too much alcohol
- Not eating enough fruit and vegetables.
 - Genes are another factor. So, if one or both of your parents have (or had) hypertension, you have a greater chance of developing it too.

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

Occasionally, some medicines used to treat ulcers, arthritis or depression may cause a rise in blood pressure. So, when you buy over-the-counter medicines at the pharmacy, it is important to tell your pharmacist that you have high blood pressure.

If you buy them somewhere else and you can't ask a pharmacist, check the instructions to make sure the medicine is OK for people with high blood pressure. Always tell your doctor about any other medicines or herbal remedies that you take.

What tests will I have?

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

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

The main tests are:

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

What about low blood pressure?

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

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

Sometimes low blood pressure can be the result of another illness or condition. So if you are having symptoms of dizziness, it is important that you see your doctor. If your blood-pressure reading is unusually low, your doctor should check to make sure there is not a medical cause. There is usually no need to treat low blood pressure. Only a very small number of people need to take medication for it.

How is blood pressure measured?

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

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

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

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

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

24-hour monitoring

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

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

24-hour monitoring is used for several reasons, including measuring blood pressure in borderline cases, and closely monitoring the effect of drug treatment for high blood pressure. The readings from 24-hour monitoring tend to be quite a bit lower than the measurements taken in a clinic.

Changes in blood pressure

Everyone's blood pressure varies during the day. It tends to be highest in the morning and lowest at night. Blood pressure may also become high if you are anxious or under stress. Some people get worried about seeing their doctor, and having their blood pressure taken can make it go up.

Nearly everyone is nervous on the first visit and their blood pressure is usually higher than at later appointments. That is why your doctor will probably want to take two or three separate measurements, or suggest 24-hour monitoring, before deciding whether you really do have consistently high blood pressure.

Home blood-pressure monitors

Some people have their blood pressure assessed by using a blood-pressure monitor at home. This provides a number of readings to assess, in much the same way as 24-hour monitoring.

It might be helpful for you to measure your own blood pressure if your doctor thinks it is much higher when it is measured at the clinic than at other times (the 'white coat effect'). Also, some people like to monitor their own blood pressure as it makes them feel more in charge of their care.

However, home blood-pressure monitors are not a good idea for everyone as some people feel more anxious taking their own blood pressure than having it taken by someone else.

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

Will I have to start taking medicines straight away?

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

What can I do to help control my blood pressure?

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

- Not doing enough physical activity
- Being overweight
- Too much salt in your diet
- Drinking too much alcohol
- Not eating enough fruit and vegetables.

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

Be more physically active

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

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

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

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

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

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

If you have angina as well as high blood pressure

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

It may be helpful to plan a weekly exercise programme based on walking. Choose a walking distance and speed that you know you can cover easily without getting angina. Make this your target. Do this much twice a day for two days.

Each time, assess whether the activity was easy or difficult. If it was fairly easy or easy, very gradually increase the distance each day for the next two days. If the activity was difficult, limit yourself to a slower speed or shorter distance until you find it easy.

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

Lose that weight!

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

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

Don't try to lose the extra weight too quickly.

Losing weight slowly and steadily (about a pound a week) is healthier, and you're more likely to keep the weight off for good. If you are very overweight, losing even 10 kilos (22 pounds) can reduce your blood pressure by between 5 and 10mmHg.

Cut down on salt

There is a link between having too much salt in your diet and high blood pressure. It is the sodium in the salt that contributes to high blood pressure.

The body needs very small amounts to function properly and we are eating much more than twice what we need. In fact, reducing your salt intake by about 5 grams a day can lower your blood pressure by about 5mmHg. The target should be to have less than 6 grams of salt a day, although we don't even need as much as this.

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

Eat more fruit and vegetables

Fruit and vegetables contain potassium, which can help keep blood pressure down. They're also low in salt. Aim to eat at least five portions of a variety of fruit and vegetables each day, but preferably have seven to nine portions a day to help lower your blood pressure. Eating plenty of fruit and vegetables each day and cutting the fat from your diet, especially saturated fat, can lower your blood pressure by between 8 and 14mmHg.

Drink within the sensible limits

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

However, heavier drinking can contribute to disorders of the heart and circulation, including high blood pressure and stroke. If you have high blood pressure, you should drink less than 21 units a week if you are a man, and less than 14 units a week if you are a woman. If you drink over this limit, your systolic blood pressure is likely to increase.

What about stress?

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

Smoking

Smoking is a major risk factor for coronary heart disease. Your blood pressure rises during the time you actually smoke a cigarette. If you smoke and you also have high blood pressure, your arteries will become narrowed much more quickly. Stopping smoking is a great lifestyle change. If

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

Medicines for blood pressure

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

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

Your doctor may also change your medicines if they give you side effects.

Side effects

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

After starting new medicines, it is only natural to think that any new symptoms must be caused by the medicines. If you do seem to have any side effects, discuss them with your doctor who will be able to tell whether or not the medicines are to blame.

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

Medicines for high blood pressure can react with other medicines, including some that are available without a prescription. So always check with your doctor or pharmacist before you take them. Tell your doctor if you are taking any herbal remedies too.

Side effects to look out for:

If a rash develops soon after you start a new treatment, Report this to your doctor. You may have an allergy to the medicines.

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

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

Tell your doctor if you are taking any herbal remedies too.

Drugs used to treat blood pressure include: ACE inhibitors, angiotensin II antagonists, beta-blockers, calcium channel blockers (calcium antagonists), diuretics, alpha-blockers and centrally-acting drugs

Can I still drive?

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

What about holidays?

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

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

Always make sure that you have good insurance cover when you go away.

Women with high blood pressure

The contraceptive pill

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

Pregnancy

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

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

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

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

HRT: Hormone replacement therapy

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

About the CHIKE OKOLI Foundation

The Chike Okoli Foundation is a Nonprofit Organization formed to promote healthy living and entrepreneurial culture. It is named after Chike Edward Okoli, a young Nigerian entrepreneur who died at 25 from undetected cardiovascular disease.

Technical terms:

ACE inhibitor: A drug used to treat high blood pressure. It works by making the walls of the arteries relax.

Alpha-blocker: A drug used to treat high blood pressure, often prescribed for people with diabetes or kidney damage.

Angiotensin II antagonist: A drug used to treat high blood pressure acts in a similar way to ACE inhibitors.

Arteries: The tubes that take the blood away from the heart to the rest of the body.

Beta-blocker: A drug used to treat high blood pressure. It reduces the force of the heart beat.

Blood pressure: The pressure of blood in the arteries.

Calcium antagonist ('calcium channel blocker'): A drug used to treat high blood pressure. It works by making the walls of the arteries relax.

Cholesterol level: A fatty substance mainly made in the body by the liver. Cholesterol plays a vital role in how every cell in the body works, but too much cholesterol in the blood can increase the risk of getting coronary heart disease.

Coronary heart disease:
When the walls of the arteries become narrowed by a gradual build-up of fatty material called atheroma.

Diastolic blood pressure:

Digital electronic monitor: An instrument to measure blood pressure. It can be used at home.

Diuretic: A drug used to treat high blood pressure. It works by triggering hormone reactions that lower the blood pressure.

ECG: electrocardiogram- A test to record the rhythm and activity of the heart

Heart failure: When the pumping action of the heart is poor.

Hypertension: High blood pressure.

Left ventricular hypertrophy: When the heart becomes abnormally large and less efficient.

Monitor: See 'digital electronic monitor

Palpitation: When you feel as if your heart is beating abnormally fast, irregularly or heavily.

Pregnancy-induced hypertension: High blood pressure that develops for the first time in pregnancy.

Sphygmomanometer: An instrument used to measure blood pressure.

Systolic blood pressure: The highest pressure, which occurs when the beat or contraction of the heart forces the blood round the body.

Acknowledgements

The CHIKE OKOLI Foundation would like to thank all the GPs, cardiologists and nurses who helped to develop the booklets in the *Heart Information Series*.

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

-
-
-

Heart health is a free magazine produced by the Chike Okoli Foundation especially for people with heart conditions.