

HIGH BLOOD PRESSURE

- Is high blood pressure important?
- What is blood pressure?
- What is high blood pressure?
- What are the causes of high blood pressure?
- What are the symptoms of high blood pressure?
- What problems can high blood pressure cause?
- How should high blood pressure be treated?
- Why can the blood pressure go out of control during treatment?
- What is malignant or accelerated hypertension?



www.kidney.org.uk

HELPLINE 0800 169 0936

Key messages

- *Getting blood pressure down is one of the most important actions to protect against damage to the kidneys, heart and circulation*
- *The blood pressure should be 140/90 or under, or 130/80 if someone has diabetes with kidney involvement (for a leaflet on Diabetes and the Kidney please ring the Helpline) or a lot of protein in the urine (for a leaflet on Proteinuria please ring the Helpline)*
- *Measuring at home can give the best control - so consider buying a blood pressure monitor*

Is high blood pressure important?

Yes! For a kidney specialist, treatment of high blood pressure is one of the most important measures that can be taken to protect the kidneys against damage, and to protect the heart and circulation even when the kidneys have failed. Nearly everyone who comes into a kidney specialist's surgery will benefit from treatment of high blood pressure. Most kidney specialists can list many people they have treated who are alive and well and not needing dialysis because high blood pressure has been treated.

What is blood pressure?

Each time the heart beats, it pumps blood around the body. The pressure of blood inside the blood vessels is at its highest after each heart beat, and this is called the systolic blood pressure. The lowest pressure in between heart beats is called the diastolic blood pressure. Blood vessels in the body are elastic, so they stretch and relax during each heart beat. This is one of the reasons that the blood pressure does not drop to zero in between heart beats.

The blood pressure is measured according to how high it pushes a column of mercury (though mercury is not often used to measure blood

pressure now). The blood pressure is normally shown as the systolic and then the diastolic blood pressure, separated by a stroke, for example 130/70 mmHg (where 130 is the systolic, 70 is the diastolic, mm means millimetres and Hg is the chemical abbreviation for mercury).

What is high blood pressure?

The definition of high blood pressure has been adjusted by doctors over the years, and different sources may quote slightly different levels. The current definition of high blood pressure agreed by the British Hypertension Society (hypertension is the medical term for high blood pressure) is blood pressure greater than 140/90 mmHg.

There are some special circumstances where blood pressure levels lower than this are regarded as too high. If someone has diabetes and protein in the urine, many doctors would give treatment if the blood pressure was greater than 130/80. During the later stages of pregnancy, the blood pressure should not rise significantly, and a systolic BP of 130 mmHg or a diastolic blood pressure of 90 mmHg may merit treatment.

How should the blood pressure be measured?

The blood pressure varies from minute to minute, according to the demands on the circulation and the need for blood and oxygen to be delivered around the body. Someone may have a blood pressure of 130/80 when they are sitting quietly at rest, but it should rise to perhaps 160/110 if they run up a couple of flights of stairs. Stress can cause high blood pressure, and this is a particular problem when people come to have their blood pressure measured in a hospital or clinic, even if they do not feel stressed, the blood pressure may rise. This is sometimes called white coat hypertension though it can still occur if your doctor does not wear a white coat.

Therefore the blood pressure should be measured after someone has been sitting quietly for a few minutes. The normal method is to use an inflatable cuff on the upper arm, usually actuated by a small machine. If the blood pressure is consistently high in hospital or in a clinic, and it is

suspected that the readings are not representative, the blood pressure can be measured at home when someone is leading their normal day to day life. Probably the best way of doing this is with a home blood pressure monitoring machine. These have to be purchased by the individual, but are not very expensive and are very accurate. Those that use a cuff around the upper arm are preferable. If someone measures their blood pressure at home a couple of times a week and keeps a written record of the exact results, this is often more useful than blood pressure levels taken in a clinic or hospital.

Another method for measuring blood pressure is called ambulatory monitoring (ambulatory means walking around), also called 24 hour blood pressure monitoring. This can be arranged by a hospital specialist or GP surgery. A cuff is fitted on the upper arm and connected to a small box worn on the waist. The machine measures the blood pressure every hour during the day and every two hours at night.

What are the causes of high blood pressure?

The majority of people with high blood pressure have an inherited tendency to the condition. The exact cause of this is unknown. The medical term for this is essential hypertension. The term 'essential' is potentially quite misleading in modern English, but was coined in the 19th and early 20th centuries for medical conditions where the cause was not known.

Any type of kidney disease may lead to high blood pressure. This is especially important as high blood pressure can damage the kidneys further, causing a vicious circle of progressive high blood pressure and kidney damage. One particular type of kidney disease that may cause high blood pressure is narrowing of one or both arteries supplying blood to the kidneys, and doctors may test for this if the kidneys are of unequal size on a scan.

There are other causes of high blood pressure, such as hormonal conditions, which are very rarely seen in younger people with high blood pressure. A young person who develops high blood pressure and who has no kidney disease and no family history of high blood pressure may

have a series of tests performed by a hospital specialist to see if there is a treatable cause for the high blood pressure.

What are the symptoms of high blood pressure?

Most people with high blood pressure feel completely well. Very severe high blood pressure can cause headaches, and affect the vision, but this is rare. Some people get headaches with moderately high blood pressure, but they are in the minority. It is only possible to know what the blood pressure is by measuring it.

What problems can high blood pressure cause?

High blood pressure puts a strain on every part of the circulation, and ultimately can contribute to problems in any part of the body. It is important to recognise that most people with high blood pressure have a fairly low risk of developing the problems listed below. However, getting good treatment of the blood pressure is very important to reduce the chances of developing these problems.

If someone has reduced kidney function then high blood pressure can be especially damaging, and effective treatment of the blood pressure is one of the most important things doctors can do to keep people well with stable kidney function, and reduced chances of heart attack or stroke.

Problems that high blood pressure can cause:-

1. Kidney damage, especially if the high blood pressure is caused by kidney disease in the first place, a 'vicious circle' of progressive kidney damage and high blood pressure can develop.
2. Stroke is more likely to occur with high blood pressure.
3. Heart disease may occur, either thickening of the heart muscle because it has to work too hard, or because of narrowing of the arteries supplying the heart, leading to heart attack.
4. Hardening and narrowing of arteries anywhere in the body, which could lead to reduced blood flow and gangrene in the feet, or

problems with blood flow to the eyes.

How should high blood pressure be treated?

Although drugs are often used to treat high blood pressure, they will not work properly if someone does not take general measures to help themselves. For some people with high blood pressure, these general measures may be enough to normalise the blood pressure without the need to use drugs.

The general measures are:-

1. Lose weight. If someone is overweight, the blood pressure will be reduced if they lose a significant amount of weight.
2. Reduce the amount of salt in the diet. Try using the foodswitch app which can help you to make healthier food choices (foodswitch.co.uk)
3. Regular alcohol consumption may cause a slight increase in the blood pressure, and people should cut back to below the national recommended alcohol intake levels.
4. Drink an appropriate amount of fluid every day. Too much fluid in the body can cause high blood pressure. Although it doesn't matter much how much fluid someone drinks if they have normal kidneys, for people with kidney disease, there may be a limit as to how much the kidneys can get rid of each day. Someone with kidney disease should check with their doctor to see if the fluid intake should be restricted.
5. Take some regular moderate intensity exercise.

Drugs to treat high blood pressure are generally used if the blood pressure is 140/80 or more despite the above measures, with the aim being to get the blood pressure down to 140/80, or 130/80 if someone has diabetes or heavy proteinuria. There are many different types of blood pressure drug, and they can be used in order to get the best effect on the blood pressure, avoiding any side effects that might occur.

For most people with kidney disease, two types of blood pressure drug seem especially good, as they have an extra effect on blood flow inside the kidney. These are ACE inhibitors or ARBs. ACE inhibitors have names which end in -opril (like captopril), and ARBs have names which end in -sartan (like losartan). There are several similar agents in each class, and your doctors will choose whichever one suits you best, or is recommended for use in their locality. For people of black ethnicity, a class of drug called calcium blockers may be more effective than ACE inhibitors or ARBs, and may be used as the first line drug in someone with mild kidney disease. In more severe kidney disease, most people require a combination of several blood pressure drugs to get the desired effect. However, it can be worth the effort, as good blood pressure control can achieve excellent results, keeping people off dialysis and reducing protein excretion in the urine.

Why can the blood pressure go out of control during treatment?

Just as the blood pressure varies from minute to minute in normal life, it can vary over time when someone is on medication. The commonest cause for this is someone stopping taking their tablets regularly. This may occur for a variety of reasons, such as a feeling that the tablets are giving side effects, or a belief that because someone feels well that treatment is no longer needed. Most people who don't take their medication all the time are reluctant to admit this to their doctors. But doctors know a lot of people don't take all their drugs, and the doctor may take some convincing that someone really is taking 100% of their medication. There is nothing to be ashamed of if someone is forgetful about their medication, or just doesn't like taking it - it is better to tell the doctor.

The effects of drugs do vary over time, even when they are taken regularly, and it is common to need to change the doses or types of drugs to get the best effect.

What is malignant or accelerated hypertension?

This is a rare form of high blood pressure which is a medical emergency. The blood pressure may rise to extremely high levels, such as 240/140. At these levels there may be blurred vision, headaches and abdominal

pain. Stroke, fits and kidney failure may occur over a period of days or weeks.

Treatment is normally coordinated through a hospital specialist, and tests will be performed to see how much kidney damage has occurred, and whether kidney disease has triggered the very high blood pressure levels in the first place. Treatment with drugs is normally able to get the blood pressure down, and so long as someone continues to take their medication in the future, further damage may not occur.

Should I buy a home blood pressure monitoring machine?

Home blood pressure monitors have become increasingly accurate over the years, and cheaper. Those that use a cuff around the upper arm are probably the best. The NHS does not give these out on prescription, but if someone does buy their own machine and checks the blood pressure a couple of times a week, writing down the exact readings to show their doctor, this gives the best measurement of what the blood pressure is in normal day to day life.

The National Kidney Federation cannot accept responsibility for information provided.

The above is for guidance only. Patients are advised to seek further information from their own doctor.

© 2010-2020 National Kidney Federation (NKF)
All rights reserved

Reviewed 11 September 2017

www.kidney.org.uk

The NKF - the largest Kidney Patient charity in the UK

A federation of more than fifty patient charities, supporting kidney patients & carers

NKF(National Kidney Federation)

The Point, Coach Road, Shireoaks, Worksop, Nottinghamshire, S81 8BW

Charity No 1106735 Company No 5272349 Reg. in England & Wales Give as you earn contributions No CAF.GY511

