

Blood pressure in kidney disease

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High blood pressure

Blood pressure is measured often because it has important effects on the heart and circulation, and because nowadays high blood pressure (also called **hypertension**) can be easily treated.

The kidneys have a major influence on blood pressure and it is particularly important to monitor blood pressure whenever kidney disease is suspected. There are three reasons for this:

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| 1. Many kidney diseases cause high blood pressure - high blood pressure is very common in people with kidney diseases |
| 2. High blood pressure can cause further damage to diseased kidneys |
| 3. People with kidney disease are at high risk of developing heart disease and circulation problems |

What trouble does high blood pressure cause?

High blood pressure rarely produces any symptoms at all, unless it is very high. However people with high blood pressure have more strokes and heart attacks than people with normal blood pressures, and it may damage kidneys. How often high blood pressure damages normal kidneys is uncertain, but it is probably quite rare compared to the heart disease and strokes that it causes. Kidney damage caused by blood pressure seems to be more common in some races, particularly in black people.

Rarely, very severe high blood pressure may cause serious damage much more quickly - over days and weeks, rather than months and years. This is called 'accelerated phase', or 'malignant' hypertension, and it usually causes a severe illness requiring hospital admission. Fortunately very few people (even with kidney disease) get this condition. More information about [malignant hypertension](#) (accelerated phase hypertension).

What causes high blood pressure?

Very often the cause of high blood pressure is not known - this is called **essential hypertension**, and it is the most common kind. The next most common cause is

kidney disease. Diseases within the kidney itself can cause high blood pressure, and so also can disease of the artery that carries blood to the kidney. After that there is a long list of rare causes, but in fact many of these also work through the kidney.

High blood pressure with one of the less common causes is more likely in young people, and in people with particularly severe blood pressure trouble.

Do I have to take tablets?

Some simple things can improve blood pressure without taking drugs. If blood pressure is only moderately raised, these may be enough on their own. They may also mean that you get better blood pressure with fewer tablets.

Salt - reducing the amount of salt that you eat can have an important effect. Most of us eat far more than we need and it may be harmful. It is difficult to lower it a lot if you eat a lot of fast food, which is often very high in salt.

Weight - blood pressure falls if obese people lose weight

Exercise - although your blood pressure rises during exercise, regular exercise reduces average blood pressure, and is good for you in other ways as well.

Not smoking - smoking raises blood pressure, but even more importantly, the combination of smoking and high blood pressure increases the risk of getting serious problems with the arteries to the heart and elsewhere. Generally having a healthy lifestyle (exercise, diet, etc) will reduce the risk of complications from high blood pressure, as well as reducing the blood pressure itself.

What if I need tablets?

Treatments for high blood pressure have improved hugely in the last 20 years. The table shows the major types of drugs used - but these are only examples. For each type of drug, there are many alternatives, and there are some additional types of drug not mentioned in this short list of commonly used drugs.

Type of drug	Examples	Comments
Diuretics	Bendrofluazide (bendroflumethazide)	Cause the kidneys to lose more salt and water. Also used in heart failure.

Beta-blockers	Atenolol, metoprolol, carvedilol	Cannot be used in asthmatics, or in those with very poor circulation, but well tested and proved
ACE inhibitors	Ramipril, enalapril	Particularly effective in kidney diseases if there is protein in the urine, e.g. diabetes Cause high potassium and worsening kidney function in some people; blood tests needed. Sometimes cause cough but very few other side effects
ARBs	Losartan, Irbesartan	Similar to ACE inhibitors; can be used if ACE inhibitors cause side effects (e.g. cough) but also require blood tests
Calcium channel blockers	Diltiazem, nifedipine, verapamil	In kidney disease these are usually added to other therapy when the pressure is still not low enough
Alpha-blockers	Doxazosin	again useful as a second or third drug when blood pressure is difficult. Also used in prostate enlargement
Centrally acting drugs	Methyldopa, moxonidine	Methyldopa is used less nowadays because it sometimes has side effects, but it is known to be safe in pregnancy

How low should my blood pressure be?

As the years have gone by, it has been found that lower and lower blood pressures are better for preventing some complications of high blood pressure. In kidney

disease this is particularly true. Really low blood pressures seem to protect the kidney from further damage in many diseases. Unfortunately this often requires more than one drug to achieve it - sometimes up to four or even more.

For **people with poor kidney function**, or at risk of developing it, a currently recommended **MAXIMUM** blood pressure is **140/90**. If there is a protein leak from the kidney, this should be lowered to a maximum of **130/80**. Lower values than this are probably better.

All patients are different though, and the type of kidney disease, or the presence of other diseases, or age may lead to recommendation of different target blood pressures - either upwards or downwards from the figures mentioned.

What if I get side effects?

No effective medicine can be completely free of side effects. However drugs nowadays are much better, and the number of different types of treatment available means that almost everyone can find something that suits them well. Sometimes it may be worth tolerating mild side effects if the benefit is worth it.

Most packs of blood pressure medication now come with a frightening list of possible side effects. Mostly these will be rare side effects that you are unlikely to get. However you should discuss any problems that you think could be caused by treatment with your doctor. Often these will not be related to the treatment, but sometimes it is difficult to know.

Can I stop the tablets?

Usually you will need to remain on treatment 'for ever'. It is important therefore to find treatment that suits you as well as possible. However there are a few kidney diseases where treatment of the disease may improve the blood pressure so that you can stop some drugs.

Things often change with time, and you may need more or less treatment, or different drugs.

If your kidneys fail completely and you start dialysis, you may need less treatment, because dialysis alone may control the blood pressure. Most people would prefer to prevent their kidneys getting this bad, if they could.

Further information

Elsewhere on EdREN you can find info on the following:	
Malignant hypertension - very severe high blood pressure that causes symptoms and illness very quickly (this is rare)	Chronic renal failure and its progression
Information from elsewhere:	
Keep your on BP chard online - free at bplog.com	
Lots of information about blood pressure in general, e.g. the Blood Pressure Association (especially its LINKS, which are very good)	
Its difficult to find good information particularly about kidney disease. Let us know if you do.	

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