

ney disease is substantially reduced. Most anti-hypertensives (blood pressure lowering drugs) are well tolerated and it is usually possible to select drugs with a low risk of side effects.

## For more information

Refer to the section on drug information for more details on anti-hypertensive medication.

Visit the British Hypertension Society website:

<http://www.hyp.ac.uk/bhs/home.htm>

**Dr. Nishan Wijenaiké, Consultant Physician**

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# Diabetes and Blood Pressure

## What is Hypertension?

The heart pumps blood round the blood vessels (arteries) of the body. Everybody's blood is pumped around at a pressure and this pressure varies from person to person, and in a single person at different times of day and under different circumstances. High blood pressure or hypertension is a condition where the pressure in these blood vessels is too high. If the pressure is high your heart must work harder in order to maintain the blood flow around your body. Over a period of time this strain takes its toll.

The blood pressure is usually lower when resting or sleeping and needs to be higher during activity. The level that is accepted as "normal" for blood pressure is one which falls within a range based on the average blood pressure of the majority of people. As people grow older the 'normal range' of blood pressure slowly rises.

The pump action of the heart generates a blood pressure wave. The height of this wave is called the Systolic pressure and the bottom of the wave is the Diastolic pressure. You would have seen blood pressure measuring instruments (sphygmomanometers) which use a column of mercury. Traditionally blood pressure is measured as the height of this column of mercury in millimetres (mmHg).

Hypertension does not usually cause symptoms in itself but can lead to damage to various organs in the body if the blood pressure remains up for a long time. Over years it can lead to damage to the heart and blood vessels, making it more likely that the individual will develop a stroke or heart attack.

Occasionally, especially when the blood pressure is extremely high, the individual may experience dizziness, headaches or alterations in vision. These symptoms are unusual and could well be due to other reasons.

Once diagnosed, high blood pressure like diabetes is a lifelong condition which may be controlled but rarely disappears.

## What causes it?

Blood pressure can occur due to various reasons, however most of the time the cause is not known. This form of hypertension is called 'essential hypertension' and it often runs in families. Kidney disease is an important cause of high blood pressure. Diabetic kidney disease (nephropathy) and sometimes narrowing of the arteries (blood vessels) carrying blood to the kidneys can cause this condition.

## Is high blood pressure common in Diabetes?

Yes high blood pressure occurs in over 50% of people with diabetes.

## What are the dangers of hypertension?

We have long known that having untreated hypertension increases the risk of strokes and heart attacks even in people without diabetes. It can also increase your risk of getting other

complications of diabetes involving your eyes and kidneys which are more vulnerable to damage with untreated hypertension. The good news is that recent research has clearly shown that treating hypertension reduces the risk of heart attacks as well as other complications of diabetes. We now accept that controlling blood pressure is every bit as important as controlling blood sugar in people with diabetes.

## How is blood pressure lowered?

There are two main approaches to treating hypertension.

1. Diet and lifestyle changes - these are described in the next section
2. blood pressure lowering drugs - there are many different types of tablets for treating hypertension. The individual medications are described in another section. Achieving 'target' blood pressure is important and may require several different tablets.

## What can I do to help?

- If you are overweight, try to lose weight.
- If you are a smoker STOP SMOKING. (Smoking greatly adds to the risk of suffering a heart attack or stroke)
- Exercise helps. At least 30 minutes of continuous exercise three times a week.
- Do not add salt to food at the table and reduce the salt in your cooking.

- Keep your alcohol intake to less than 21 units of alcohol per week for men or 14 units for women. (In fact one unit per day can help the circulation, but more than this can increase your blood pressure.)
- Stick to healthy food . A diet low in fat with more fibre (plenty of fruit and vegetables).
- If you have been prescribed medication take it regularly. Many patients with high blood pressure frequently forget to take their tablets
- If you have diabetes and do not know your blood pressure, ask your practice nurse or doctor to check it for you. If it is high find out what the 'ideal' or 'target' blood pressure should be and aim to achieve these levels.

## What is the normal blood pressure?

Blood pressure varies from person to person depending on age, sex. It also varies continuously during the day depending on your level of activity and stress. Patients attending hospital clinics often have high blood pressure due to anxiety and perhaps related in part to the stress of parking their car! If your systolic blood pressure is persistently higher than 140 mmHg or your diastolic blood pressure is persistently higher than 90 mmHg your doctor is likely to initiate treatment.

## What are the benefits and risks of treatment?

By achieving a target blood pressure of 140/80 mmHg or less, the risk of heart attack, stroke, diabetic eye disease and diabetic kid-