

HIGH BLOOD PRESSURE EXPLAINED

A/P Goh Lee Gan

WHAT IS HIGH BLOOD PRESSURE?

When your heart beats, it generates a pressure that pumps blood through the arteries in order to bring nourishment to various parts of the body. The force of the blood against the walls of the arteries is called the blood pressure. If the pressure in your arteries is consistently higher than 135/85 millimeters of mercury (mmHg), you have high blood pressure (*hypertension*).

WHAT DO THE NUMBERS IN THE BLOOD PRESSURE READING MEAN?

A blood pressure reading is really a record of two measurements, separated by a slash when written down, such as 120/80. You may also hear someone say, “the blood pressure is ‘120 over 80’”. The first number is the systolic blood pressure. The *systolic blood pressure* is the peak blood pressure generated in your arteries when the heart beats to squeeze blood out and into circulation. The second number is the diastolic blood pressure. The *diastolic blood pressure* represents the pressure in the arteries when the heart is at rest.

WHAT PROBLEMS DOES HIGH BLOOD PRESSURE CAUSE?

When your blood pressure is above normal, there is a risk of damage to the blood vessels. This in turn raises the risk of damage to target organs in your body – the heart, eye, brain and kidney, resulting in heart disease & heart attack, failure of eyesight, stroke and kidney failure.

WHAT CAUSES HIGH BLOOD PRESSURE?

There are two categories of causes:

- κ *“Essential or idiopathic”* hypertension – high blood pressure where there is no identifiable cause and comprises over 95% of all cases of hypertension. It may be due to genetic factors and environmental factors such as stress or salt intake.
- κ *“Secondary”* hypertension – high blood pressure that is caused by another medical condition. This can be due to kidney disorders, certain tumours, narrowing of the kidney arteries or certain medications such as oral contraceptive.

DOES HIGH BLOOD PRESSURE HAVE ANY SYMPTOMS?

High blood pressure does not usually have any symptoms until damage to the target organs occur. This is why high blood pressure has been nicknamed “the silent killer”.

HOW IS HIGH BLOOD PRESSURE DIAGNOSED?

Blood pressure is measured by putting a pressure cuff around the arm, inflating the cuff and listening to the flow of blood with a stethoscope. If the reading is high, the blood pressure will be measured again after you have rested for 5 minutes and if it is still high, it will be measured again at another visit. If the blood pressure is persistently above normal, then high blood pressure is diagnosed.

SHOULD I GO FOR BLOOD PRESSURE SCREENING?

Yes. Blood pressure is easy to measure and does not cause much discomfort. The recommendation is for adults, where screening is to be done for any person aged 18 years or older when first seen and also at every health care encounter (Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, in its 6th Report released in 1997). The action to take following the initial blood pressure measurement is given in the Table 1.

Table 1: Initial Blood Pressure Measurement and Recommended Follow-Up Interval

Initial Blood Pressure Measurement		Recommended Follow-up Interval
Systolic	Diastolic	
<130	<85	Recheck in 2 years
130-139	85-89	Recheck in 1 year *
140-159	90-99	Confirm within 2 months*
160-179	100-109	Evaluate or refer within 1 month
>180	>110	Evaluate or refer immediately or within 1 week depending on the clinical situation

Footnote (*) provide advice on lifestyle modifications.

Source: Sixth report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, 1997.

CAN HIGH BLOOD PRESSURE BE PREVENTED?

Lifestyle changes help. Even if you must take blood pressure lowering medicine, making some changes in your lifestyle can reduce the amount of medicine you must take. The lifestyle changes and the impact for some of them are shown in Table 2.

Table 2: Prevention of high blood pressure

Lifestyle changes	
κ	Don't smoke cigarettes or use any tobacco product
κ	Lose weight if you are overweight – reduces BP up to 5/7 mmHg
κ	Exercise regularly – reduces BP up to 10/10 mmHg
κ	Eat a healthy diet that includes plenty of fruits and vegetables and is low in fat – reduces BP up to 4/2 mmHg in people with normal blood pressure and 11/6 mmHg in people with high blood pressure
κ	Limit the sodium in your diet – halving salt intake from 10g/day to 5g/day reduces BP 5/3 mmHg
κ	Limit how much alcohol you drink
κ	Try relaxation techniques or biofeedback if you are not relaxed

WHEN IS BLOOD PRESSURE LOWERING MEDICINES NEEDED?

If the lifestyle changes do not control or prevent hypertension, then drug treatment is necessary. There are various types of medication that treats high blood pressure and your doctor will choose the most appropriate one for you. Hypertension is controllable with treatment. It requires lifelong monitoring and the treatment may require adjustment periodically.

ACKNOWLEDGEMENTS

The use of the information in the following patient education materials is gratefully acknowledged:

- κ Singapore Medical Association. Concerning Your Health: Hypertension, 2000.
- κ American College of Family Physicians. Living With Hypertension, 2001.