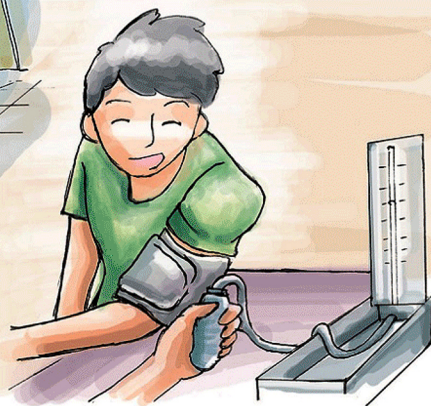
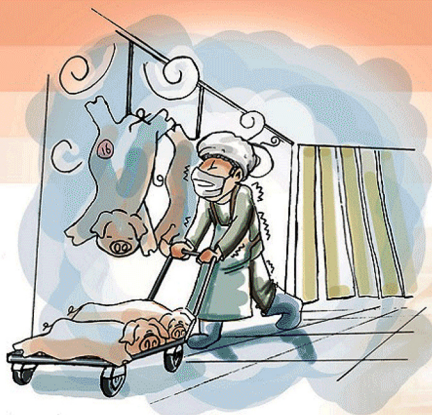


Work and Hypertension

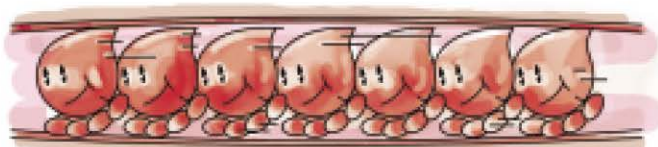


Occupational Safety and Health Branch
Labour Department

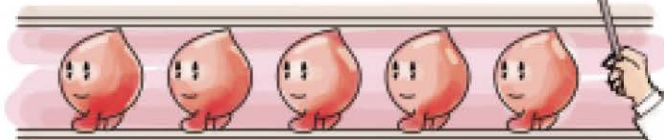


What is hypertension

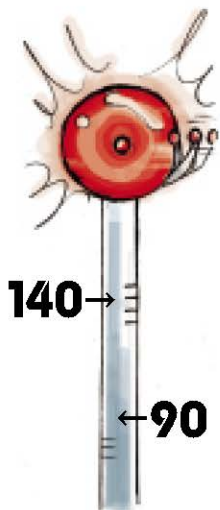
Blood pressure is the pressure exerted by blood on the wall of blood vessels and it varies with each heartbeat. When the heart contracts, blood flow in the blood vessels increases. The maximum force thus acting on the vessel walls is known as “systolic blood pressure”. When the heart relaxes, blood flow in the blood vessels decreases and the pressure also reduces. The pressure recorded during relaxation of the heart is called “diastolic blood pressure”.



Blood flow in blood vessels increases



Blood flow in blood vessels slows down



Hypertension is a common chronic disease. According to the World Health Organisation (WHO), it is defined as blood pressure persistently equal to or higher than 140 (systolic) /90 (diastolic) mmHg at rest.

Classification of Hypertension

Hypertension can be classified into two types : primary and secondary.

Primary Hypertension

About 90% of patients with hypertension belong to this category. It has no definite cause and is associated with ageing, hereditary, eating habit, smoking, alcoholism, stress, fatigue, lack of exercise and obesity.

Secondary Hypertension

It accounts for about 10% of patients with hypertension and is secondary to other diseases such as chronic renal disease, thyroid disease, coarctation of the aorta, etc. Blood pressure will usually return to normal when the underlying causes are treated.

Symptoms and signs

Mild hypertension is usually asymptomatic and most of the patients are found to have hypertension during periodic medical check up. However, extremely high blood pressure may cause symptoms like headache, dizziness, easy fatigue, etc.

Treatment

- If the blood pressure is mildly elevated without any specific cause, it can be effectively controlled by adopting a healthy eating habit and lifestyle as well as doing exercises regularly.
- If the blood pressure is persistently high, apart from adopting the aforementioned non-pharmacological treatments, the patients may need to take anti-hypertensive

drugs. The choice of the appropriate anti-hypertensive drugs depends on a lot of factors such as severity of the disease, impact of the disease on daily activities, other concomitant diseases of the patients, etc. Therefore, you should seek your doctor's advice and take the medications according to the prescription with the right dose and at the right time.

○ Common anti-hypertensive drugs include:

● Diuretics

It enhances urine excretion and thus lowers the blood pressure.

Side effects : Hypokalaemia may occur and some patients may experience fatigue, dizziness or lethargy at the initial stage of treatment.

● β - blockers

It inhibits the sympathetic nervous system, thus slowing down the heart rate and reducing the blood pressure.

Side effects : It may exacerbate asthma or chronic obstructive pulmonary disease. It may also mask the symptoms of hypoglycaemia and therefore decreases the alertness of diabetics to hypoglycaemia. Some patients may experience fatigue, dizziness, clammy limbs and even insomnia, etc.

● Acetylcholinesterase (ACE) inhibitors

It inhibits the functions of the ACE enzyme and thus lowers the blood pressure.

Side effects : Some patients may have cough, dry mouth or light-headedness, etc.

● Calcium channel blockers

It lowers the blood pressure by inhibiting the influx of calcium ions into the cells.

Side effects : Some patients may experience headache, dizziness, flushing, swelling of the gums or oedema, etc.

○ Even though the symptoms have disappeared completely or blood pressure is satisfactorily controlled, the patients must not reduce the dosage or stop taking the medications by themselves. Moreover, the patients should arrange regular follow-up consultations and monitor the blood pressure.

Complications

Coronary heart disease, stroke and renal failure are the common complications.

Coronary artery disease (coronary heart disease)

- Coronary arteries deliver nutrients and oxygen to the cardiac muscles. When the coronary arteries are narrowed and hardened by atheromatous plaques, its blood flow decreases resulting in reduction of nutrients and oxygen supply to the cardiac muscles. In severe cases, this will cause damage to the cardiac muscles.
- It is a common cardiovascular disease in Hong Kong and is increasingly common in the younger age groups.
- Risk factors include hypertension, high lipid levels in blood, diabetes mellitus, smoking and lack of exercise, etc. Moreover, men are more prone to develop coronary heart disease.

Stroke

- Stroke is caused by the blockage of blood supply to the brain resulting in insufficient supply of oxygen and nutrients and hence damage and even death of the brain cells.
- There are two main types of stroke:
 - > Haemorrhagic stroke is caused by the rupture of blood vessels in the brain due to hypertension or abnormality of the brain vessels such as aneurysm.
 - > Ischaemic stroke is either due to the narrowing and occlusion of brain vessels by atherosclerosis or blockage of the vessels by a blood clot.
- Risk factors include elderly people, hypertension, high lipid levels in blood, diabetes mellitus, smoking and lack of exercise, etc. Moreover, men are more prone to develop stroke.



Renal failure

- Renal failure is a consequence of kidney damage which results in reduction or loss of renal function and failure of excretion of water, urea and other metabolic wastes.
- Statistics of the Hospital Authority reveal that about 10% of the newly diagnosed patients with renal failure in 2005 were due to hypertension. This type of cases is also increasing in the younger age groups.

How work affects the disease

Patients with hypertension should pay particular attention to certain work situations or requirements that may affect the stability of their blood pressure, for example:

1. Cold work environment

- Working in a cold environment may induce constriction of blood vessels causing the blood pressure to rise.



2. Work stress

- It can result in tension causing a rise in the blood pressure.



3. Physical demand

- Metabolism will rise when workload is heavy and work is physically demanding, leading to a rise in blood pressure.

4. Hot and humid work environment

- Manual works may result in excessive sweating and dilation of blood vessels that may cause postural hypotension.



Moreover, patients with hypertension may forget to take medicine because of their busy work schedule, adversely affecting the effectiveness of treatment. They should take the medications according to prescribed schedule every day. This should be observed despite heavy workload. If you miss a dose of the medicine, DO NOT try to make up for the missed dose by doubling the dosage because this may cause a sudden drop in the blood pressure and could be fatal in serious cases. If your blood pressure increases, you should consult your doctor as soon as possible rather than increase the dosage yourself.

How disease affects work

Treatment aspect

- In general, there is minimal impact on work when hypertension is well under control.
- However, some patients may have side effects such as dizziness and fatigue or disturbance of their mood and work, especially during the initial stage of treatment. Before these patients engage in work which is inherently hazardous or where the safety of others can be affected such as working at height, underground work, work on water or under water, machine operation and driving, they should seek medical advice to avoid the occurrence of accidents.

Complication aspect

Hypertension may cause complications such as coronary heart disease, heart failure, stroke, renal failure and pathological changes of the arteries in the retina, which may affect working abilities. Therefore, patients with hypertension should have regular follow-up consultations with their attending doctors so that any complications can be diagnosed and treated early and appropriate advice on safety and health at work given.

Preventive Measures



- Have a balanced diet with food that is low in sugar, salt and fat, and high in fibres



- Exercise regularly



- Maintain ideal body weight

Timetable



- Have a regular living habit



- Take adequate rest



- Have regular follow-up consultations to monitor the blood pressure level



- Quit smoking



- Avoid alcoholism

Patients with hypertension should

- Adopt the aforementioned measures so as to prevent a deterioration in the disease
- Understand your own illness such as monitoring the blood pressure regularly and pay attention to any symptoms of complications
- Know the therapeutic actions, side-effects, and details of dosage instructions of the medications



- Follow the treatment advice given by medical personnel and observe the schedule for taking the medications every day



- Arrange regular follow-up consultations



Although there is still no cure for primary hypertension, a good eating habit, regular exercises and a healthy lifestyle, together with appropriate medications, can effectively control the blood pressure as well as delay complications, and help maintain good health conditions for work.

Enquiries

For enquiries on this booklet or advice on occupational health and hygiene matters, please contact the Labour Department's Occupational Safety and Health Branch through:

Telephone : 2852 4041

Fax : 2581 2049

E-mail : enquiry@labour.gov.hk

Information on the services offered by the Labour Department and on major labour legislation can also be found on our website <http://www.labour.gov.hk>.

Information on the services offered by Occupational Safety and Health Council can be obtained through hotline 2739 9000.

Complaints

If you have any complaints about unsafe workplaces and practices, please call the Labour Department's occupational safety and health complaint hotline at 2542 2172. All complaints will be treated in the strictest confidence.

