

## Hypertension - the Preventable and Treatable Silent Killer

### What is blood pressure?

- Blood pressure is the pressure exerted on the walls of blood vessels as the heart pumps. We need normal blood pressure to push blood through the body so that oxygen and nutrients can reach the tissues.
- Blood pressure is measured by blood pressure monitors, and is usually measured in millimeters of mercury (mmHg). A blood pressure reading consists of two numbers: The first number (systolic pressure) represents the pressure in the blood vessels when the heart contracts to pump blood, whereas the second number (diastolic pressure) represents the pressure when the heart relaxes between beats.
- Blood pressure is not static. It fluctuates throughout the day and varies with emotions and different levels of physical activities. For example, blood pressure goes up with anger and anxiety, and drops during rest or sleep.

### What is hypertension (high blood pressure)?

- Hypertension, or high blood pressure, is a chronic disease. It occurs when the pressure exerted on the walls of arteries is *persistently* elevated.
- The criteria of diagnosing hypertension are different between adults and children.
  - An adult is said to have hypertension if systolic blood pressure (SBP) is *persistently*  $\geq 140$  millimetres of mercury (mmHg) or diastolic blood pressure (DBP) is *persistently*  $\geq 90$  mmHg. Typically, an adult should keep his or her SBP and DBP below 120 mmHg and 80 mmHg respectively. SBP between 120 mmHg and 139 mmHg or DBP between 80 mmHg and 89 mmHg is considered pre-hypertension and should be of concern.
  - A child or adolescent is said to have hypertension if the SBP or DBP is  $\geq 95^{\text{th}}$  percentile for age, height and gender *on repeated measurements*.
- Occasional elevation of blood pressure above the normal range may not be hypertension, since this can be a normal response of the body to stress. But if you are in doubt, seek medical advice.

### How common is hypertension in Hong Kong?

- Hypertension is actually very common among adults in Hong Kong, but the problem is many do not realise they have the disease. A study by the School of Public Health of the University of Hong Kong in 2012 revealed that about 1 in 3 adults in Hong Kong has hypertension, and among them, half did not know about it. In other words, about 1 in 6 persons in Hong Kong has hypertension without knowing it. Among those ever diagnosed with hypertension, 70% were prescribed blood pressure lowering medication, but only about 40% of this treated group attained good control of blood pressure.
- The study confirmed the well-known “rule of halves” in hypertension –
  - roughly only half of all hypertensive cases are diagnosed,
  - half of those diagnosed are treated, and
  - half of those treated are well-controlled.

### What are the causes of hypertension?

- About 90% of all patients with hypertension are of unknown causes. This type of hypertension is called “primary hypertension” (or “essential hypertension”) and is probably related to hereditary factors. It usually presents after middle age.
- The remaining 10% patients have the disease because of other diseases, such as kidney diseases or endocrine disorders. This type of hypertension is called “secondary hypertension”.

### How do I know if I have hypertension?

- While very few patients may suffer from headache, dizziness and fatigue, many people with hypertension for years are not aware of it because hypertension typically does not give rise to symptoms. If hypertension goes untreated or is not well controlled, it will damage

the arteries and vital organs, in turn leading to coronary heart disease, stroke, retinal disease, kidney failure etc. which are serious consequences. As the first presenting symptom can be stroke or heart attack, this is why hypertension is often called the “silent killer”.

- Getting regular, accurate blood pressure readings is thus essential for early detection of the problem. Adults aged 18 years or above should have their blood pressure checked at least once every two years. More frequent blood pressure monitoring may be required according to the blood pressure level, age, overall cardiovascular risk profile, and doctor’s advice.

<b>Categories of blood pressure levels in adults and recommended follow-up actions</b>			
<u>Category</u>	<u>Systolic pressure</u>	<u>Diastolic pressure</u>	<u>Recommended follow-up actions</u>
Normal	< 120	< 80	Re-check within two years
Pre-hypertension	120 – 139	80 - 89	Re-check within a year
Hypertension	≥ 140	≥ 90	Consult your family doctor for advice

### **Why is detecting and controlling hypertension so important?**

- Uncontrolled or untreated hypertension can lead to serious, even fatal consequences, including:
  - coronary heart disease and heart attack
  - heart failure
  - stroke
  - retinal disease
  - kidney failure
- The higher the blood pressure and the longer it goes uncontrolled, the higher the chance and seriousness of complications.

### **What are common myths about hypertension?**

<b>Myth</b>	<b>Fact</b>
1. Hypertension cannot be prevented.	The risk of hypertension can be reduced by having a healthy lifestyle, in particular reduced salt intake.
2. Patients with hypertension experience headache and fatigue.	Most patients with hypertension have no symptom at all. Therefore, it is not reliable to only look out for symptoms. Regular check of the blood pressure is needed.
3. Only overweight or anxious people get hypertension.	The risk of having hypertension increases with age. Therefore, everybody should watch their blood pressure, and seek medical advice if in doubt.
4. I have hypertension. My doctor told me that if I start taking medication, I need to take it for life. So I’d better not start taking it.	Avoiding drug use will not change the fact that you have hypertension. But if you don’t take medication as directed, you run a much higher chance of having complications and a shorter life.
5. There is no need to continue taking medicine after the blood pressure returns to normal.	Hypertension is a chronic disease. It can be controlled with medication, but it cannot be cured. Therefore, patients need to continue with the treatment and lifestyle modifications as advised by their doctor, and attend regular medical follow up, usually for life.

## How to prevent and control hypertension?

- Adopting a healthy lifestyle is essential for preventing and controlling hypertension, including:
  - **Cut back on salt (sodium).** Healthy adults should consume less than 2 grams of sodium (approximately one level teaspoon of salt) per day. Check the nutrition labels of prepackaged foods for their sodium content.
  - **Eat a balanced diet.** Consume a diet that is rich in fruit and vegetables with appropriate amounts of whole grain products, fish, nuts, lean meat, and low-fat or fat-free dairy products. Avoid frequent consumption of foods that are high in salt, sugar or oil.
  - **Be active and avoid prolonged sitting.** Adults should do at least 150 minutes of moderate-intensity physical activity or 75 minutes of vigorous-intensity physical activity throughout the week. Inactive persons should start to build up a regular exercise regimen gradually.
  - **Maintain an optimal body weight and waistline.** For Asian adults, aim to maintain a body mass index (BMI) between 18.5 and 22.9. Irrespective of their BMI, Asian men should keep their waist circumference below 90 cm (~ 36 in) and Asian women should keep theirs below 80 cm (~ 32in).
  - **Do not smoke.** Quitting smoking markedly reduces overall cardiovascular risk. Those who want to quit smoking can call the Integrated Smoking Cessation Hotline of the Department of Health at 1833 183 for free advice and help. They can also visit the website of the Tobacco Control Office at <http://www.tco.gov.hk/e/index.html> to download the free Quit Smoking iPhone or Android App.
  - **Limit alcohol.** Avoid alcoholic drinks. If you must drink alcohol, limit its intake to minimise alcohol-related harm.
  - **Manage stress** with healthy coping strategies, such as practising yoga, Tai Chi or deep breathing. Seek help from family and friends or health professionals if necessary.
  - **Ensure enough sleep** and rest.
- If you have hypertension, you need to take your medication as directed by the doctor. Understand what the medication is for, how and when to take it. Attend regular medical follow up.

## How to monitor blood pressure at home?

- Checking your blood pressure at home is an important part of monitoring blood pressure and managing hypertension. There are many easy-to-use digital automatic blood pressure monitors in the market for home blood pressure monitoring.
- Blood pressure measurements taken casually, without following standard procedures, produce unreliable results. Imprecise measurements, even those that are off by just a few points, can lead to inappropriate treatment. So it is important to get accurate blood pressure readings.
- Here are a few tips on how to choose blood pressure monitors and how to get accurate readings:

### How to choose blood pressure monitors

#### **Arm monitor or wrist monitor:**

- ♦ The common digital monitors can be fitted on the upper arm or the wrist. Upper arm devices should preferably be used as they are more accurate. Wrist monitors may be used by people for whom a large upper arm cuff is too small or cannot be used because of shape or pain from the pressure of the cuff when it inflates. Speak with a doctor or qualified health care provider about which blood pressure monitor is right for you. Devices that measure blood pressure at the finger are not recommended.

#### **Cuff size:**

- ♦ Blood pressure cuffs of upper arm devices come in different sizes. The wrong cuff size will give incorrect readings: using a cuff that is too small for the arm may overestimate blood pressure and one that is too big may underestimate it. So make

sure the cuff size fits your arm. The cuff should be wide enough to cover two thirds of the upper arm and its length should be long enough to encircle the whole arm. Most monitors will come with medium-sized cuffs which suit most adults. People with large arm or overweight people may need bigger cuff. You may seek advice from your doctor or the supplier of the blood pressure monitor.

***Validation of monitor:***

- ♦ Make sure the monitor you choose has been clinically validated for accuracy. Read the manual carefully and operate the device according to the manufacturer's instructions. It is not uncommon for blood pressure readings taken at home to be different from those taken at your doctor's office. If the blood pressure monitor is not too bulky, it is a good idea that you bring it along to your doctor's appointment. Your doctor can help validate your monitor's accuracy.

**How to get accurate readings**

***When to measure:***

- ♦ Measure blood pressure at around the same time each day.
- ♦ Do not measure blood pressure when you feel unwell, cold, anxious, stressed, in pain, or have a full bladder.

***Before recording:***

- ♦ Do not exercise, smoke or consume foods or drinks containing caffeine (such as tea or coffee) at least 30 minutes before measurement.
- ♦ Remember to wear loose-fitting clothes.
- ♦ Rest and relax for 5 minutes without distractions (e.g. watching television).

***Arm position:***

- ♦ Be seated comfortably with the back supported.
- ♦ Push up the sleeve to bare your upper arm and wrap the cuff around your upper arm.
- ♦ Make sure your arm is supported and your upper arm is at the same level as your heart.
- ♦ Keep feet on the floor and do not cross legs.

***Recording:***

- ♦ Relax and do not talk while taking the reading.
- ♦ After the first measurement, release cuff pressure completely and repeat the same steps to obtain another reading of blood pressure. The two measurements should be taken at least 1 minute apart.
- ♦ Take the average value of at least two readings. If the first two readings differ by more than 5 mmHg, additional readings should be obtained before taking the average.
- ♦ Record down the readings to obtain a continuous monitoring.
- ♦ Consult a doctor or a nurse if you have any concerns.

**Further Information**

- For more information on hypertension and how to adopt a healthy lifestyle to prevent it, please visit the **Central Health Education Unit** website at <http://www.cheu.gov.hk>, or the **Primary Care Office** website at [www.pco.gov.hk](http://www.pco.gov.hk) for Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings or its patients version.