

Hypertension

Key Messages

- ※ An adult is said to have hypertension if systolic blood pressure persistently higher than or equal to 140 millimetres of mercury (mmHg) and/or diastolic blood pressure persistently higher than or equal to 90 mmHg. Hypertension can lead to serious health problems including stroke, heart attack and kidney failure.
- ※ The Department of Health (DH) conducted the Population Health Survey 2020-22 and observed that 29.5% of non-institutionalised persons aged 15–84 had hypertension, including 17.4% with self-reported doctor-diagnosed hypertension and 12.1% with no self-reported history but raised blood pressure by physical measurement. The total prevalence of hypertension increased with age from 4.9% among persons aged 15–24 to 57.4% among persons aged 65–84.
- ※ Hypertension is a ‘silent killer’ and seldom causes symptoms until complications develop. The Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings recommends adults aged 18 or above to have regular measurement of blood pressure for early detection and treatment.
- ※ Adopting a healthy lifestyle is essential for the prevention and control of hypertension. Members of the public are urged to maintain an optimal body weight and waist circumference, cut back on salt and eat a balanced diet, be physically active and limit sedentary behaviour, refrain from alcohol drinking, do not smoke and avoid secondhand smoke.
- ※ The Hong Kong Special Administrative Region Government is committed to reducing the impact of hypertension among local population. The DH will continue to monitor the health status of local population, organise health promotion campaigns, as well as work in close partnership with various stakeholders to increase people’s health literacy and foster a health-enhancing environment.

Hypertension

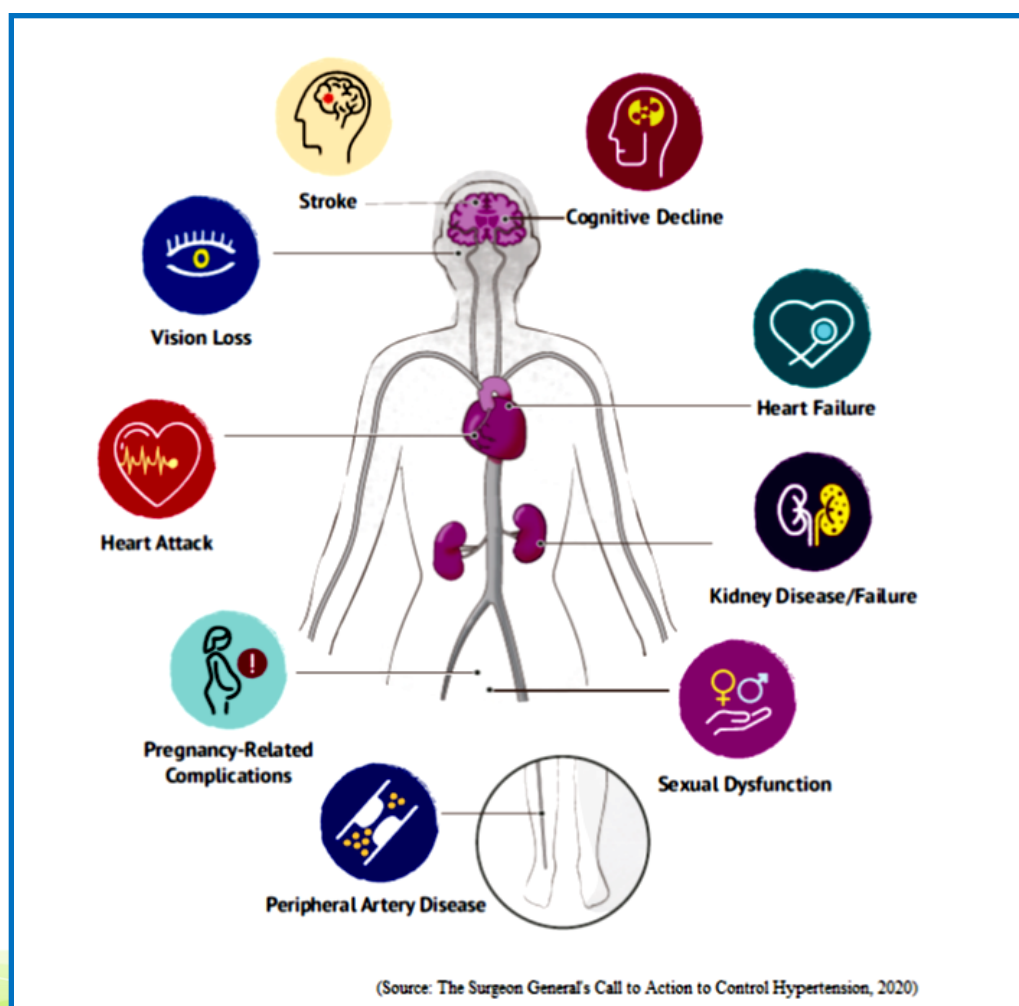
Hypertension (or high blood pressure) is a chronic disease in which the blood pressure in the arteries is persistently elevated. For an adult, hypertension is usually defined as systolic blood pressure persistently higher than or equal to 140 millimetres of mercury (mmHg) and/or diastolic blood pressure persistently higher than or equal to 90 mmHg. Globally, an estimated 1.28 billion adults aged 30–79 years have hypertension¹. Since hypertension seldom causes symptoms in the early stages, an estimated 46% of adults with hypertension are unaware that they have the disease¹. As shown in Figure 1, hypertension can lead to

serious health problems including stroke, heart attack and kidney failure².

Risk Factors of Hypertension

Many factors contribute to the development of hypertension and related complications. While some risk factors are not modifiable (such as advancing age and a family history of hypertension), lifestyle-related risk factors known to increase hypertension risk are modifiable (Box 1) through adoption of a healthy lifestyle and sound public health policies.

Figure 1: Health problems caused by hypertension



Box 1: Major modifiable risk factors of hypertension

Overweight and Obesity — Excessive body fat (whether assessed as higher body mass index (BMI) or larger waist circumference) raises blood pressure. As estimated, 65–75% of primary hypertension are attributed to obesity³. Studies showed that the risk of hypertension increased by 49% per a 5-unit increment in BMI and by 27% per 10-cm increment in waist circumference⁴.

Unhealthy Eating, in particular excessive consumption of salt, saturated fat and trans fat — Detrimental effects of high salt consumption on blood pressure (especially systolic blood pressure) are well-recognised: the higher the salt intake, the higher the risk of hypertension⁵. Processed meat and associated products are usually high in salt and fats. Epidemiological studies showed that each additional daily 50-gram of processed meat consumption was associated with 12% increased risk of hypertension⁶.

Physical Inactivity / Sedentary Behaviours — Habitual physical inactivity and high volume of prolonged sitting can result in weight gain, reduced vascular volume, endothelial damage and stiffening of large arteries, thereby potentially contributing to sustained elevation in peripheral resistance and blood pressure⁷. For each 1-hour increment per day in total sedentary behaviour, a meta-analysis of 14 studies found a 4% increased risk of hypertension⁸.

Alcohol Consumption — The neural, hormonal and physiological actions of alcohol would cause constriction of blood vessels, elevated heart rate and increased cardiac output. As a result, peripheral resistance and blood volume upsurges can lead to elevated blood pressure and increase the risk of hypertension⁹. Compared with non-drinkers, men consuming 1–2 drinks (12 grams of pure alcohol per drink), 3–4 drinks and 5 or more drinks per day would have 19%, 51% and 74% increased risk of hypertension. In women, alcohol consumption beyond 2 drinks per day was associated with 42% increased risk of hypertension¹⁰.

Smoking — Smoking tobacco or e-cigarette would cause acute blood pressure elevation, mainly through the stimulation of the sympathetic nervous system and resulting in vasoconstriction¹¹. Smoking would also damage the walls of blood vessels, accelerate arterial aging and stiffen arteries, leading to a rise in blood pressure and contributing to the development of hypertension^{11, 12}. A study investigated the associations between smoking and e-cigarette use with self-reported diagnosed hypertension among 19 147 persons aged 18–55 observed that current smokers had 27% increased risk of hypertension than those who did not currently smoke. The corresponding risk among current vapers was 31% higher compared to those who did not currently vape¹³.

Local Situation

The Department of Health (DH) conducted periodic territory-wide surveys to collect pertinent information on the patterns of health status and health-related issues among the general population in Hong Kong Special Administrative Region (SAR), including both self-reported doctor-diagnosed hypertension and undiagnosed cases with raised blood pressure. Among non-institutionalised persons aged 15–84, the Population Health Survey 2020–22

observed that 29.5% of them had hypertension, including 17.4% with self-reported doctor-diagnosed hypertension and 12.1% with no self-reported history but raised blood pressure by physical measurement¹⁴. As shown in Table 1, the total prevalence of hypertension was higher in males (33.2%) and increased with age from 4.9% among persons aged 15–24 to 57.4% among persons aged 65–84¹⁴.

Table 1: Proportion of raised blood pressure or hypertension (including self-reported doctor-diagnosed and no self-reported history but raised blood pressure by physical measurement) among non-institutionalised persons aged 15–84 by gender and age group

	Self-reported doctor diagnosed hypertension	No self-reported history but raised blood pressure by physical measurement*	Total
Gender			
Male	18.5%	14.7%	33.2%
Female	16.4%	9.8%	26.2%
Age group			
15–24	1.3%	3.5%	4.9%
25–34	0.9%	5.9%	6.8%
35–44	4.4%	11.4%	15.7%
45–54	16.8%	17.2%	34.0%
55–64	24.7%	13.6%	38.4%
65–84	41.8%	15.5%	57.4%
Overall	17.4%	12.1%	29.5%

Base: All respondents aged 15–84 who had participated in the health examination.

Notes: *No self-reported history but raised blood pressure by physical measurement — systolic blood pressure higher than or equal to 140 mmHg and/or diastolic blood pressure higher than or equal to 90 mmHg.

Figures may not add up to the total due to rounding.

Source: Population Health Survey 2020–22.

Watch Out for Hypertension

Hypertension is a ‘silent killer’ and seldom causes symptoms until complications develop. The Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings recommends adults aged 18 or above to have regular measurement of blood pressure for early detection and treatment according to the blood pressure categories as shown in Table 2¹⁵. However, the Population Health Survey 2020-22 found that about half (52.3%) of population aged 18 or above reported that they had their blood pressure checked within 2 years¹⁴.

Prevention and Control of Hypertension

While having regular blood pressure checks allows early detection and monitoring of hypertension, adopting a healthy lifestyle is essential for the prevention and control of hypertension. Key actions include:

- **Maintain an optimal body weight and waist circumference.** Chinese adults in Hong Kong SAR should aim to maintain a BMI between 18.5 and 22.9. Irrespective of BMI, men should keep their waist circumference below 90 cm (about 36 inches) and women should keep theirs below 80 cm (about 32 inches);

Table 2: Categories of blood pressure levels in adults and recommended follow-up actions

Blood pressure categories	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)	Recommendations
Optimal	lower than 120	lower than 80	Recheck in 2 years (once a year for people aged over 75)
Normal	120 to 129	80 to 84	Recheck in 1 year
High normal	130 to 139	85 to 89	Recheck in 6 months
Hypertension	higher than or equal to 140	higher than or equal to 90	Consult family doctor as soon as possible for advice

Source: Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings [Patient Version], Revised Edition July 2022.

- **Cut back on salt and eat a balanced diet.** The World Health Organization recommends that adults consume less than 5 grams (just under 1 teaspoon) of salt as a preventive measure against hypertension and other cardiovascular diseases¹⁶. Members of the public are also advised to follow the principles of the “Healthy Eating Food Pyramid¹⁷” with at least 2 servings of fruit and at least 3 servings of vegetables per day and be active in limiting the intake of processed meat as well as foods high in fats and sugars;
- **Be physically active and limit sedentary behaviours.** Adults are urged to engage in at least 150–300 minutes of moderate-intensity aerobic physical activity (e.g. brisk walking, cycling and swimming), or at least 75–150 minutes of vigorous-intensity aerobic physical activity (e.g. jumping rope and jogging); or an equivalent amount of aerobic physical activity throughout the week. In addition, they should limit the amount of time spent being sedentary and replace sitting time with physical activity of any intensity including light-intensity physical activity (such as walking)¹⁸;
- **Refrain from alcohol drinking.** Members of the public should note that alcohol is an important causal factor in more than 200 diseases, injuries and other health conditions¹⁹. For health, drinkers are urged to stop drinking or reduce alcohol intake. A study observed that a reduction of alcohol consumption to near abstinence for people

who consumed 3 alcoholic drinks per day would result in an average 1.18 mmHg reduction in systolic blood pressure and 1.09 mmHg reduction in diastolic blood pressure. In people who drank 6 or more drinks per day, systolic and diastolic blood pressure would on average reduce 5.5 mmHg and 3.97 mmHg respectively if they reduced their intake by about 50%²⁰. For tips on cutting down or stopping drinking, please visit the Change for Health website at <https://www.change4health.gov.hk/en/index.html>;

- **Do not smoke and avoid second-hand smoke.** Quitting smoking yields significant and immediate health benefits, including improvement in blood pressure. Smokers and members of the public can visit <https://www.livetobaccofree.hk>, or call the Quitline 1833 183 for free quit tools and services.

The Hong Kong SAR Government is committed to reducing the impact of hypertension among local population. While members of the public are encouraged to lead a healthy lifestyle and have regular blood pressure checked as recommended, DH will continue to monitor the health status of local population, organise health promotion campaigns, as well as work in close partnership with various stakeholders to increase people's health literacy and foster a health-enhancing environment.

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May Measurement Month & World Hypertension Day



May Measurement Month (MMM) incorporating World Hypertension Day on 17 May aims to promote public awareness of hypertension and to encourage citizens of all countries to check their blood pressure and take actions to prevent and control this silent killer. For more information about the campaign, please visit the thematic website at <https://ish-world.com/public/may-measurement-month-whd/>.

Having regular blood pressure checks allow early detection of hypertension. The Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings recommends adults aged 18 or above to have regular blood pressure checked at least every two years. More frequent intervals may be required according to the blood pressure level, individuals' age, overall cardiovascular risk profile, and doctor advice.

Other than having regular blood pressure checks, members of the public are encouraged to lead a healthy lifestyle for the prevention and control of hypertension. Key actions include cutting back on salt and eating a balanced diet, being physically active, maintaining an optimal body weight and waist circumference, avoiding smoking and secondhand smoke, and refraining from alcohol drinking.

Non-Communicable Diseases (NCD) WATCH is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to so_dp3@dh.gov.hk.

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