

UNDERSTANDING HYPERTENSION

What is Hypertension?

Hypertension is having high blood pressure for a prolonged period of time, and is a major contributor to heart disease, stroke, kidney disease, visual impairment, and even premature death. As it rarely causes symptoms in the early stages, many people remain undiagnosed for years. Thus, hypertension is often called the “silent killer”.¹ It is important to know the normal and elevated blood pressure range, as early detection and treatment are vital to prevent and reduce long-term risks and complications.

When visiting your doctor, a blood pressure meter is used to measure the pressure in your blood vessels when the heart beats (systolic) and when it rests (diastolic). A normal blood pressure in adults is defined as a systolic blood pressure ≤ 120 millimeters per mercury (mmHg) and a diastolic blood pressure ≤ 80 mmHg. High blood pressure is diagnosed when a person has either a systolic blood pressure ≥ 140 mmHg or a diastolic blood pressure ≥ 90 mmHg, or both (Figure 1 and Table 1).²

Am I at risk of hypertension?

Certain risk factors may increase your risk of getting hypertension (Table 2).

Table 2. Some risk factors for high blood pressure⁵










	Age <ul style="list-style-type: none"> • High blood pressure risk increases with age • Men ~45 years; Women: ~65 years
	Family history <ul style="list-style-type: none"> • Hypertension tends to run in the family, and there is increased risk of developing hypertension when there is positive family history.
	Overweight or obese <ul style="list-style-type: none"> • Being overweight/obese means more blood is needed to supply oxygen and nutrients to the body • As blood volume increases, so does the pressure on your artery walls
	Physical inactivity <ul style="list-style-type: none"> • Less active people tend to have higher heart rates • Higher heart rate means the heart is working harder to contract and push blood against your arteries, which can take a toll on your heart and raise your blood pressure
	Smoking <ul style="list-style-type: none"> • Has immediate effect on blood pressure, raising it temporarily during exposure • Chemicals in tobacco have a cumulative effect on your artery walls, causing them to narrow and subsequently increase your blood pressure
	Diet <ul style="list-style-type: none"> • Excessive salt intake in your diet causes your body to retain fluids, causing an increase in blood pressure • Potassium works with sodium in your cells, and if insufficient, can cause your body to hold onto too much sodium in your blood and subsequently elevate blood pressure
	Excessive alcohol drinking <ul style="list-style-type: none"> • Over time, heavy drinking can damage your heart (ie, >2 drinks/day for men and >1 drink/day for women*) *1 drink = 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of 80-proof liquor
	Stress <ul style="list-style-type: none"> • High levels of stress can lead to a temporary increase in blood pressure
	Certain chronic conditions <ul style="list-style-type: none"> Chronic conditions like kidney disease and diabetes may increase your risk of high blood pressure

Table 1. Blood pressure levels (mmHg)³

	Systolic	Diastolic
Normal	≤ 120	≤ 80
Raised/High normal blood pressure	130-139	85-89
Hypertension	≥ 140	≥ 90

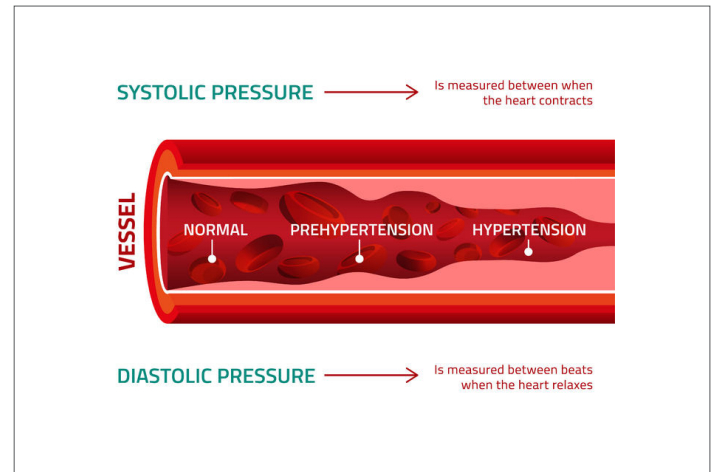


Figure 1. Your blood pressure and what happens to your blood vessels when you have hypertension

Hypertension: A growing concern in Singapore⁴



~1 in 4

adults aged 30 to 96 years

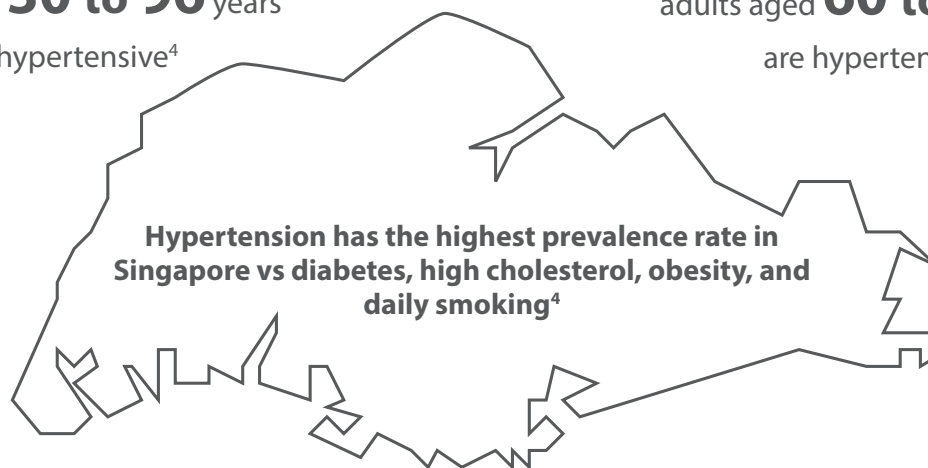
are hypertensive⁴



~1 in 2

adults aged 60 to 69 years

are hypertensive⁴



How do I know if I have hypertension?

During a regular primary care physician visit, if your blood pressure is greater than 140/90 mmHg, a confirmatory diagnosis will be necessary and can be done by getting the average of several of your blood pressure measurements, which are obtained through either of the following methods.^{5,6}

- **Home blood pressure monitoring** involves using home blood pressure monitors, which are widely available, inexpensive, and readily accessible.
- **Ambulatory blood pressure monitoring** involves using a device to measure your blood pressure at regular intervals over a 24-hour period to provide a more accurate picture of your blood pressure changes throughout the day.

Are blood pressure fluctuations okay?

Blood pressure variability, or excessive fluctuations occurring in one's blood pressure over a short (ie, 24 hours) or long period of time (ie, months) may result in significant organ damage (eg, kidney disease), cardiovascular events, and even death.

Patients with greater blood pressure variability are believed to be at increased risk of cardiovascular events such as heart attacks, strokes, and sudden death. Fortunately, adequate blood pressure control can be achieved through lifestyle modifications (eg, healthy diet and regular exercise) and appropriate blood-pressure-lowering agents, which have been proven to play a significant role in stabilizing extreme blood pressure fluctuations.^{7,8}

References

¹ A global brief on hypertension: Silent killer, global public health crisis, World Health Day 2013. World Health Organization (WHO) website. Available at: http://www.who.int/iris/bitstream/10665/79059/1/WHO_DCO_WHD_2013.2_eng.pdf?ua=1. Accessed April 7, 2018. ² Q&As on hypertension. WHO website. Available at: www.who.int/features/qa/82/en. Accessed April 7, 2018. ³ Ministry of Health (MOH) Singapore. Hypertension: MOH Clinical Practice Guidelines, 2017. Available at: https://www.moh.gov.sg/content/dam/moh_web/HPP/Doctors/cpg_medical/current/2017/hypertension/cpg_Hypertension%20Booklet%20-%20Nov%202017.pdf. Accessed February 19, 2018. ⁴ Prevalence of hypertension, diabetes mellitus, high cholesterol, obesity and daily smoking. Data.gov.sg website. Available at: <https://data.gov.sg/dataset/prevalence-of-hypertension-diabetes-high-total-cholesterol-obesity-and-daily-smoking>. Accessed April 7, 2018. ⁵ High blood pressure (hypertension). Mayo Clinic website: <https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/symptoms-causes/syc-20373410> and <https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/diagnosis-treatment/drc-20373417>. Accessed April 7, 2018. ⁶ Hypertension overview. National Institute for Health and Care Excellence (NICE) website. Available at: <https://pathways.nice.org.uk/pathways/hypertension#content=view-nodes%3Anodes>. Accessed April 7, 2018. ⁷ Hocht C. Blood pressure variability: prognostic value and therapeutic implications. *Int Sch Res Notices Hypertens* 2013. Available at: <https://www.hindawi.com/journals/isrn/2013/398485w>. Accessed April 7, 2018. ⁸ Sheps SG. Blood pressure: Does it have a daily pattern? Mayo Clinic website. Available at: <https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/expert-answers/blood-pressure/faq-20058115>. Accessed April 7, 2018.