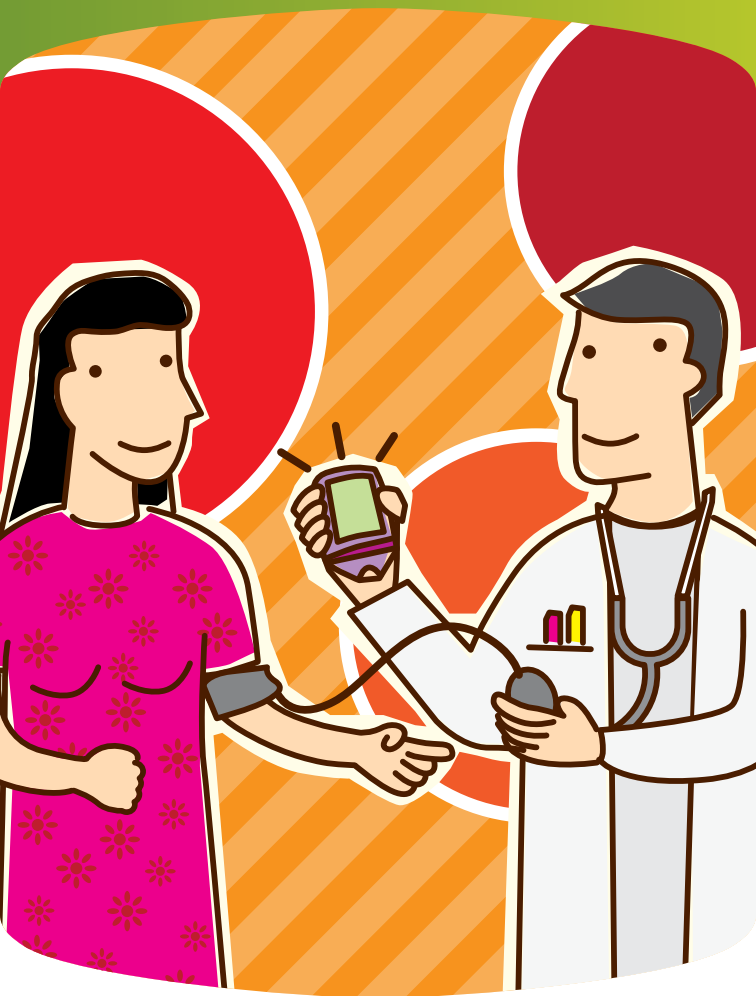
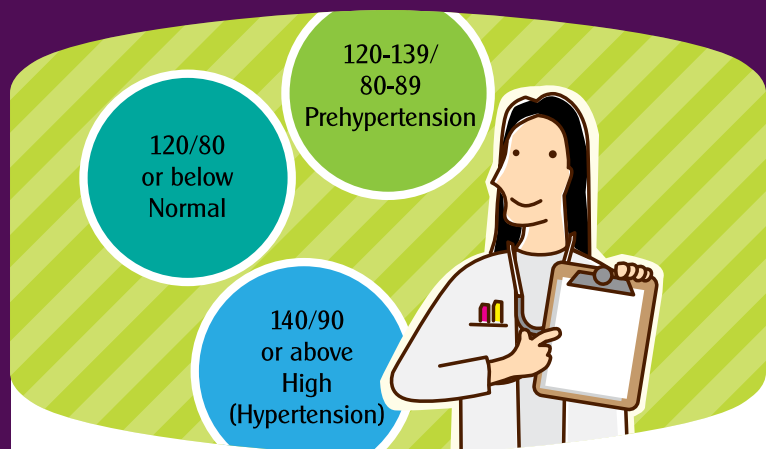


Managing Hypertension (High Blood Pressure)



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What is Hypertension (High Blood Pressure)?

Blood pressure that stays persistently above 140/90 mmHg is considered high blood pressure.

High blood pressure often causes no symptoms or immediate problems.

However, it should be treated seriously as it is a chronic medical condition and a risk factor for heart diseases (such as heart attack and heart failure), stroke and kidney failure.

- The heart of a person with high blood pressure needs to work extra hard to pump blood around the body, resulting in weakening of the heart over time.
- This increased pressure can also cause damage to the walls of arteries, resulting in blockage or splitting of the artery (haemorrhage). Both can cause a stroke.

There are two types of high blood pressure:

- Essential (Primary) Hypertension - where the cause cannot be identified
- Secondary Hypertension - which is the result of an underlying cause, such as kidney diseases or medications.

High Blood Pressure in Singapore

According to the National Health Survey 2010

- One out of 3 aged 50 – 59 suffers from Hypertension.
- One out of 2 aged 60 – 69 suffers from Hypertension.
- The older you are, the higher the chance of developing Hypertension. This is especially so beyond age of 40.
- More males develop Hypertension as compared to females.
- Hypertension is more prevalent in Chinese, followed by Malays and Indians.

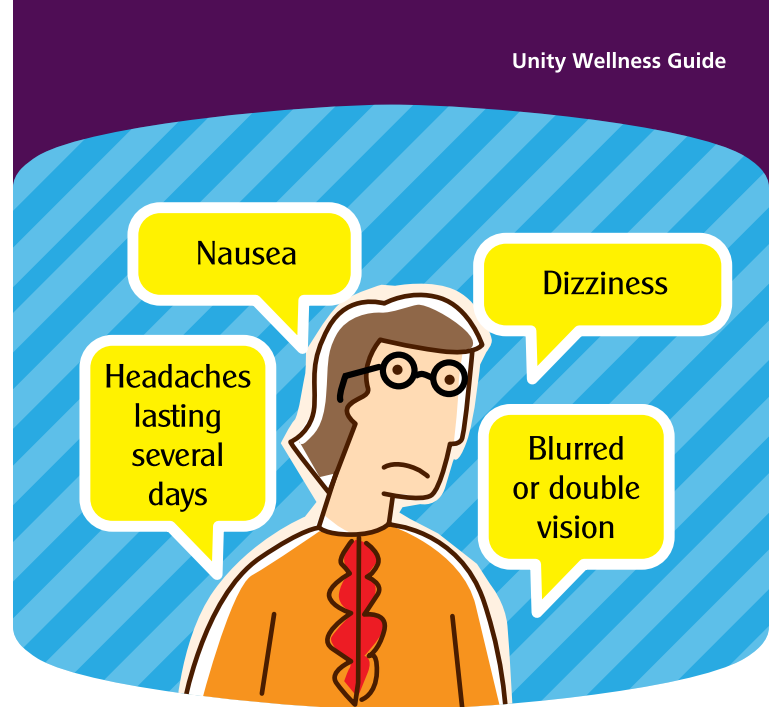
Who is likely to develop Hypertension?

The cause of hypertension is unknown in most cases. In some cases however, hypertension may be due to kidney disease, narrowing of certain blood vessels or hormonal imbalance.

Certain risk factors increase the chance of developing hypertension.

You are at a higher risk if you:

- are you obese
- smoke
- have genetic factors
- lead a stressful lifestyle
- are age 40 and above
- lead a sedentary lifestyle
- have a diet high in salt
- have a family history of hypertension
- have a high intake of stimulants such as caffeine and alcohol
- suffer from disease conditions such as Diabetes, kidney problems, Cirrhosis, Cushing's disease
- take medications such as steroids, oral contraceptives, and oestrogen
- use over-the-counter non-steroidal anti-inflammatory agents (nsaids), such as aspirin and ibuprofen for a long period of time, which can cause kidney damage and lead to further problems with high blood pressure



Signs & Symptoms

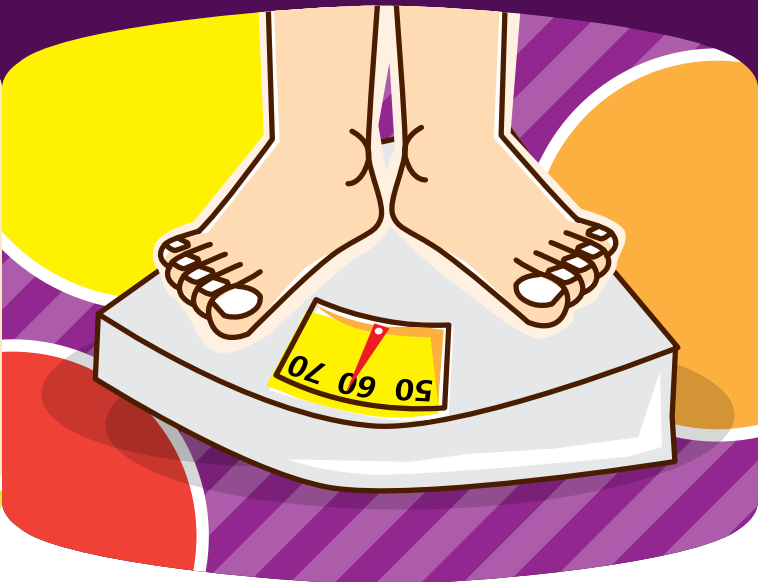
Generally, hypertension has no symptoms. Sufferers usually do not feel unwell, causing it to be labelled the "silent killer."

Signs and symptoms usually only start to appear after blood pressure has reached very high levels, typically 180/110 mmHg.

These include:

- Headaches lasting several days
- Nausea
- Dizziness
- Drowsiness
- Blurred or double vision
- Nosebleeds
- Irregular heartbeat (palpitations)
- Shortness of breath

However, as these symptoms are not specific to hypertension and are also present in many other diseases, it is best to consult a doctor for proper diagnosis.



Preventive Measures

• Lifestyle Modifications

Lifestyle modifications can reduce blood pressure, prevent or delay the occurrence of hypertension, enhance anti-hypertensive drug effectiveness, and lower the risk of heart problems. Lifestyle modifications include:

Regular exercise

- HPB recommends 150 minutes (e.g. 30 minutes per session, 5 times a week) of moderate intensity aerobic activity, such as brisk walking or cycling. Each session should be at least 10 minutes in duration.

Weight control

- Maintain a healthy body mass index of between 18.5-22.9kg/m²
- Lose excess weight if overweight or obese
 - Reduce calorie intake and exercise regularly
 - Achieve a target body mass index of less than 23kg/m²

Maintain a healthy and balanced diet

- Cut down on salt
 - Eat no more than 2g (about 1 teaspoon) of salt per day
 - A diet high in salt increases the risk of high blood pressure and stroke
 - Choose fresh foods instead of processed or preserved foods
 - Avoid stock cubes and artificial seasonings when you cook. Choose natural seasonings such as shallot, onion, garlic, ginger or natural ingredients such as mushrooms, chicken bones or soybeans.

Salt content per serving of common local dishes:

Mee Soto	2.68g
Nasi Briyani with Chicken	1.66g
Char Kway Teow	1.46g
Chicken Rice	1.29g

Salt content per teaspoon of commonly used seasonings:

Salt Substitutes	0.865g
Stock Cube	0.92g
Monosodium Glutamate, MSG	0.62g
Oyster Sauce	0.345g
Light Soy Sauce	0.365g
Tomato Sauce	0.114g
Chilli Sauce	0.057g

Choose low-fat foods

- Avoid foods that are high in saturated fats as they raise blood cholesterol levels and increase the risk of cardiovascular diseases
 - Saturated fats include: animal fats, ghee, coconut oil, palm oil, butter and hard cheese
- Consume foods that are high in unsaturated fats as they can lower blood cholesterol levels
 - Unsaturated fats include: olive oil, sunflower oil, nuts and seeds, avocados and oily fish such as tuna and salmon

When cooking:

- Use less oil, and use oils that are higher in unsaturated fat.
- Replace coconut cream or coconut milk with reduced-fat milk.
- Use reduced-fat milk in beverages and cereals instead of creamer and condensed milk.
- Limit deep-frying to twice a week at most.
- Cool soups, curries and stews to allow the fat to solidify; then remove the solidified fat before reheating.
- Limit the use of high fat spreads such as peanut butter, margarine, butter, cheese spreads and kaya.
- Choose soft margarine over hard margarine.
- Replace meat dishes with tofu, peas and lentils every now and then.
- Choose lean cuts of meat and poultry, and remove all visible fat and skin.

When eating out:

- Ask for less oil.
- Remove visible fat and skin from meat and poultry dishes.
- Choose dishes cooked without coconut cream or coconut milk.
- Choose plain rice over flavoured rice, such as chicken rice, nasi lemak and nasi briyani.

Increase fibre intake

- Eat 2 servings of fruits and 2 servings of vegetables daily

One serving of fruit can be:	One small apple, orange, pear or mango
	One wedge of papaya, pineapple or watermelon
	4 small seeds of durian or jackfruit
	10 grapes or longans
	6 lychees
	¼ cup of dried fruit
	½ cup of canned fruit (drained)
	1 cup (250ml) of pure fruit juice

One serving of vegetable can be:	150g of raw leafy vegetables
	100g of raw non-leafy vegetables
	¾ cup * of vegetables

* 1 cup = 250ml



- Fruits and vegetables are good sources of soluble and insoluble fibres.
- Soluble fibre lowers blood cholesterol and reduces cardiovascular risks
 - Typical sources of soluble fibre are legumes (such as peas, soybeans and other beans), fruits and fruit juices (such as prune juice, plums, berries, bananas, and the pulp of apples and pears), and vegetables (such as broccoli and carrots)
- Insoluble fibre helps promote healthy bowel function
 - Typical sources of insoluble fibre are whole grains, cereal foods, nuts and seeds
- A diet rich in fruits and vegetables lowers the risk of developing heart disease, stroke and certain types of cancer by 20-30%.

Stop Smoking

Limit caffeine consumption

- Drink less than 5 cups a day

Limit alcohol intake

- Alcoholic beverages are harmful when consumed in excess. Excess alcohol consumption can increase the risk of:
 - High blood pressure
 - Stroke
 - Liver diseases
 - Certain cancers
 - Injuries and deaths caused by alcohol induced car accidents



- It is recommended that:
 - Men should drink no more than 3 standard drinks a day
 - Women should drink no more than 2 standard drinks a day

***Note:

A standard alcoholic drink contains 10g of pure alcohol, equivalent to 2/3 can (220 ml) regular beer, a glass (100 ml) wine, a nip (30 ml) spirits

Relaxation therapy

- Meditation

Positive outcomes of lifestyle modifications:

Modification	Recommendation	Approximate Systolic BP Reduction
Weight Reduction (if > 25kg/m ²)	Attain/Maintain a BMI of less than 23kg/m ²	5-20 mmHg per 10kg weight loss
Healthier Eating Plan (with sufficient potassium)	Consume a diet rich in fruits, vegetables and low fat dairy products with reduced saturated fat and total fat	8-14 mmHg
Limit Dietary Salt	Limit dietary salt to no more than 2g per day	2-8 mmHg
Physical Activity	Engage in regular aerobic physical activity such as brisk walking (for 30 minutes, at least five days a week)	4-9 mmHg
Sensible Drinking	Limit to: Men: 3 standard drinks per day Women: 2 standard drinks per day	2-4 mmHg

Medication for Hypertension

- Depending on the individual’s blood pressure level and health conditions, the doctor will prescribe a suitable anti-hypertensive drug.
- Sometimes, more than one drug may be needed to keep blood pressure at acceptable levels.
- Optimal blood pressure control is crucial in reducing the risks related to hypertension.
- Drug treatment for hypertension is often life-long and medication should not be stopped or adjusted without consulting a doctor.



Advice to patients:

1. It is important to know the names and doses of medicines you are taking and how to take them. If you have questions about your medicines, talk to your doctor or pharmacist.
2. Make sure that the medicines are replenished before they run out. Take your medicines exactly as your doctor has prescribed. Do not skip doses or cut pills in half, unless instructed to do so.
3. Talk to your doctor if you experience any side effects after taking the medication. Your doctor may want to adjust the dose or switch to a different medicine.
4. Some medications may have unpredictable effects when taken together with other supplements and/ or over-the-counter medicines. You should seek advice from your doctor or pharmacist if you decide to take such products concurrently.



Self-monitoring of Blood Pressure

Home monitoring is recommended for all people with high blood pressure to let you keep tabs on your condition and help your doctor determine whether the treatments are working. Home monitoring is not a substitute for regular visits to your doctor. Do not stop taking your medication without first consulting your doctor even if your blood pressure readings are normal during home monitoring.

There are various types of blood pressure monitors in the market and the most popular and highly recommended option is the automatic, cuff-style, bicep (upper-arm) monitor.

Wrist and finger monitors are not recommended as their readings are less reliable.

How to choose the right blood pressure monitor

Reliability

- Check that the monitor has been tested according to the protocols of internationally renowned organisations such as
 - European Society of Hypertension (ESH)
 - British Hypertension Society (BHS)
 - Association for the Advancement of Medical Instruments (AAMI)

Or

- Check that the monitor meets the following technical specifications:
 - Accuracy/Calibration : Pressure \pm 3mmHg or 2% of reading; pulse: \pm 5% of reading

Cuff Size

- Ensure that the cuff fits. Children and adults with smaller or larger than average-sized arms may need special-sized cuffs. Check with your pharmacist about the right fit.

Size of Monitor

- Smaller sets are more portable.
- Wrist monitors can be considered if necessary.

Memory

- Monitors with built-in memory store readings that save you the hassle of manually recording blood pressure readings.

Screen Size

- Elderlies may require a larger screen size for clarity and ease of reading.
- Smaller screen sizes are compact and more portable.

Technology Features

- Dual check system
 - Provides confirmation on the accuracy of measurement by a second sensor.
- IntelliSense monitor inflates cuff to the optimal level with each use
 - Less arm discomfort and misreading from improper cuff inflation.

Body Movement Detector

- Movement can cause a temporary rise in blood pressure.

Irregular Heartbeat Detector

- Frequent irregular heartbeat is a cause for concern and warrants medical attention.

Cuff Wrapping Guide Indicator

- Indicates that the cuff is wrapped correctly to ensure accurate results.

Other special features such as speaker function with a selection of different languages to announce the readings to the user

- Useful for elderlies or those with reading difficulties.

Your pharmacist can show you the correct way to use the blood pressure monitor and help you choose the right one that suits your needs and lifestyle preferences.

Tips for home monitoring

- Do not smoke, eat or drink caffeinated beverages, or exercise 30 minutes before measuring your blood pressure.
- Empty your bladder before taking measurement. Having a full bladder can affect blood pressure readings.
- Sit down 2-3 minutes before the measurement and do not move or talk during the measurement as this can cause a temporary rise in blood pressure.
- When taking measurement, sit with your back straight and supported, with feet flat on the floor. Do not cross your legs. The arm used for measurement should be supported on a flat surface (such as a table) with the upper arm at heart level. The middle of the cuff should be placed directly over the brachial artery (located at the upper arm).
- The average of 2 readings should be taken, with both readings taken at least 2 minutes apart.
- Record all readings, including the date and time taken and show them to your doctor or pharmacist to better understand them.
- Remember that a single high reading of blood pressure is not an immediate cause for alarm. However, if consistently high readings are obtained after several measurements, medical attention should be sought.

*Written by Unity's pharmacist:
Alice Chen, B.Sc (Pharm) Hons*

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