

Tips on measuring blood pressure

1. Choose a clinically validated monitor

- ♥ Make sure that the monitor you choose has been clinically validated for accuracy. Read the manual carefully, have the device operated and calibrated according to the manufacturer's instructions.
- ♥ DO NOT subject the blood pressure monitor to vigorous shocks or vibrations. If you accidentally drop it on the floor, have it inspected by your local agent to ensure that it works properly.

2. Cuff with right size

- ♥ Correct measurement of blood pressure requires the use of a cuff that is appropriate to the size of the upper arm. The cuff length should be able to encircle the upper arm completely.
- ♥ 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 the supplier.

3. Relax

- ♥ One should refrain from smoking, consumption of coffee or tea, and physical exercise half an hour before blood pressure measurement.
- ♥ Wear loose-fitting clothes and rest for 5 minutes before you take the measurement.

4. Arm position

- ♥ Push up the sleeve to bare your upper arm. Make sure your arm is supported (see figure) and the cuff around your arm is at the same level as your heart.



5. Recording

- ♥ 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 2 minutes apart.
- ♥ To ensure accuracy, one should obtain the average value of at least two readings. If the two readings differ by more than 5 mmHg, additional readings should be obtained before taking the average.

For more information, please refer to the following websites and hotline of the Department of Health:

1. Central Health Education Unit Website : www.cheu.gov.hk
2. Men's Health Programme Website : www.hkmenshealth.com
3. 24-hour Health Education Hotline : 2833 0111

Blood Pressure Monitors



Medical Device Control Office
E-mail : mdco@dh.gov.hk
Website : www.mdco.gov.hk



Department of Health

What is blood pressure?

Blood pressure refers to the pressure exerted on the walls of blood vessels as the heart pumps, and constitutes one of the principal vital signs. The systolic blood pressure is defined as the peak pressure in the arteries, which occurs when the heart contracts; the diastolic blood pressure is the lowest pressure when the heart relaxes.

World Health Organization (WHO) defines hypertension as: The continuous measurement of blood pressure at rest equal to or greater than 140 (systolic blood pressure) / 90 (diastolic blood pressure) mmHg.

Regular measurement

Untreated hypertension can lead to heart diseases, stroke, retinal diseases, kidney failure and even death. However, hypertension may have no specific symptoms. It can only be detected through measuring blood pressure. Therefore measuring blood pressure at regular intervals is also important to those without history of hypertension.

Patients with hypertension are advised to measure and record their blood pressure twice a day when the hypertension is newly diagnosed, and on starting or changing drug treatment. The measurement could be performed, for example, after getting up in the morning and before going to bed at night. When patient's condition becomes stable, frequency of measurement may be adjusted according to health care professionals' advice. This can help the patients to monitor the effects of medication on the blood pressure levels so that they can report to their attending doctors during follow up. However, patients should not adjust the dosage of antihypertensive drugs by themselves.

For people without a history of hypertension, but consistently detected high blood pressure, they are advised to seek their doctor's advice as soon as possible. They should not buy medication over the counter.



Types of blood pressure monitors

There are two common types of blood pressure monitors: mercury and digital. Although mercury blood pressure monitor is more accurate and has always been regarded as the standard tool for blood pressure measurement, it is comparatively more difficult to operate than digital blood pressure monitor.

Mercury Blood Pressure Monitor

1. To measure blood pressure, one should place the cuff 2-3cm above the elbow of the upper arm and inflate the cuff until the wrist pulse cannot be felt. The pressure indicated by the mercury column at this time is the estimated systolic pressure. Then deflate the cuff and take a rest for 30 – 60 seconds.
2. Place the stethoscope onto the elbow over the brachial artery. Reinflate the cuff to the level of 30 mmHg above the estimated systolic pressure. Then gradually release the pressure. When the characteristic sound of blood flow is heard, the pressure indicated by the mercury column at this time is the systolic pressure. Continue to gradually release the pressure until the characteristic sound of blood flow disappears or muffling sound heard. The pressure indicated by the mercury column at this time is the diastolic pressure.
3. Caution should be taken not to inflate the cuff excessively to prevent spillage of mercury. Also, pressure needs to be released slowly to ensure accurate measurements.



Digital Blood Pressure Monitor

There are different types of digital blood pressure monitors in the market: arm-type, wrist-type and finger-type. Comparatively, arm-type monitor gives the most accurate result.

A digital blood pressure monitor is battery-operated. It has a cuff, a valve and a pressure transducer which transforms pressure to electrical signals. To operate, apply the cuff and press the button. The monitor will automatically display the systolic pressure, diastolic pressure and pulse rate.

