

## How to measure blood pressure using digital monitors

### What is high blood pressure?

- Blood pressure is the pressure exerted by circulating blood upon the walls of blood vessels. “Systolic pressure” is the blood pressure when the heart contracts. “Diastolic pressure” is the pressure when the heart relaxes
- Hypertension (high blood pressure) is a chronic disease. An adult is said to have hypertension if his systolic blood pressure (SBP) is persistently above or equal to 140 mmHg or diastolic blood pressure (DBP) is persistently above or equal to 90 mmHg. Generally, an adult should keep his SBP below 120 and DBP below 80 mmHg
- Checking blood pressure regularly and accurately helps early detection and management of hypertension. Adults 18 years or above should have their blood pressure checked at least once every two years (Once a year for people aged over 75)
- The frequency of blood pressure monitoring may need to be adjusted depending on the individual’s blood pressure level, age, overall cardiovascular risk profile and doctor’s advice

### How to monitor blood pressure at home?

- Easy-to-use digital blood pressure monitors are now available. Users can measure blood pressure themselves for self-monitoring of blood pressure at home

- It is important that blood pressure is measured properly. Otherwise, the readings may be inaccurate, leading to inappropriate treatment
- Here are some tips on choosing an appropriate blood pressure monitor and getting accurate measurements:

### **How to choose an appropriate blood pressure monitor:**

#### ***Design of blood pressure monitor:***

- ◆ The common digital monitors can measure blood pressure on the upper arm or the wrist. Upper arm devices are preferred as they are more accurate. Devices that measure blood pressure at the finger are not recommended

#### ***Cuff size:***

- ◆ Blood pressure cuffs come in different sizes. Make sure the cuff size fits your arm as using an incorrect cuff may give inaccurate results
- ◆ The width of the cuff should cover two-thirds of the upper arm. The cuff should be long enough to encircle the whole arm. People with brawnier arm or who are overweight may need bigger cuffs
- ◆ You can consult your doctor or the supplier on the appropriate type of blood pressure monitor and cuff size

### *Validation of monitor:*

- ♦ Choose blood pressure monitors that are clinically validated. Read the manual carefully before operating the device, and follow the manufacturer's instructions
- ♦ The blood pressure monitor should have regular maintenance and periodic calibration
- ♦ Blood pressure readings taken at home may differ from those taken at your doctor's office. If you have any doubts, bring your blood pressure monitor along to your doctor's appointment. Your doctor can help validate your blood pressure readings

### **How to get accurate readings:**

#### *Consider the following when measuring blood pressure:*

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

#### *Before taking measurements:*

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

### *Measuring blood pressure:*

- ♦ Choose a stable table and chair of appropriate height
- ♦ Sit comfortably and relaxed with your back supported
- ♦ Make sure your arm is supported on a tabletop at an even level with your heart
- ♦ Keep your feet on the floor and do not cross the legs
- ♦ Roll up the sleeve to expose your upper arm and wrap the cuff around it
- ♦ Place the cuff on your exposed arm 2cm (approximately two finger-breadths) above the elbow. Make sure the tubing is placed at the centre of your arm facing the front, and that the sensor is correctly placed. Pull the end of the cuff so that it is wrapped evenly and firmly around your arm. Check that the tightness of the cuff is appropriate: you should be able to just slip two fingertips beneath the cuff, near its edge at the top end. When the cuff inflates it should not cause any painful sensation
- ♦ Before starting, wait and relax for a few moments. Press the “start” button. During measurement, stay relaxed, keeping still and quiet
- ♦ The cuff will inflate, then slowly deflate. When the measurement is complete, readings of your systolic and diastolic blood pressures and your pulse rate will be displayed on the digital panel
- ♦ Record the reading of the first measurement
- ♦ After completing the first measurement, release cuff pressure completely
- ♦ Obtain another reading of blood pressure after resting. Allow an interval of at least 1 minute between the two measurements

### ***Recording the BP readings:***

- ♦ Take the average value of the two readings. If the two readings differ by more than 5 mmHg, one additional reading should be obtained before taking the average
- ♦ Record the readings for ongoing monitoring of blood pressure
- ♦ Bring your blood pressure readings at your next follow-up appointment, for your doctor's reference
- ♦ Consult a doctor or a nurse if you have any concerns

### **Further Information**

- Youtube Channel: How to measure blood pressure using digital monitors  
[www.youtube.com/watch?v=fvBVONRkAgo&feature=youtu.be](http://www.youtube.com/watch?v=fvBVONRkAgo&feature=youtu.be)