

# Keeping blood pressure stable

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Measuring blood pressure accurately

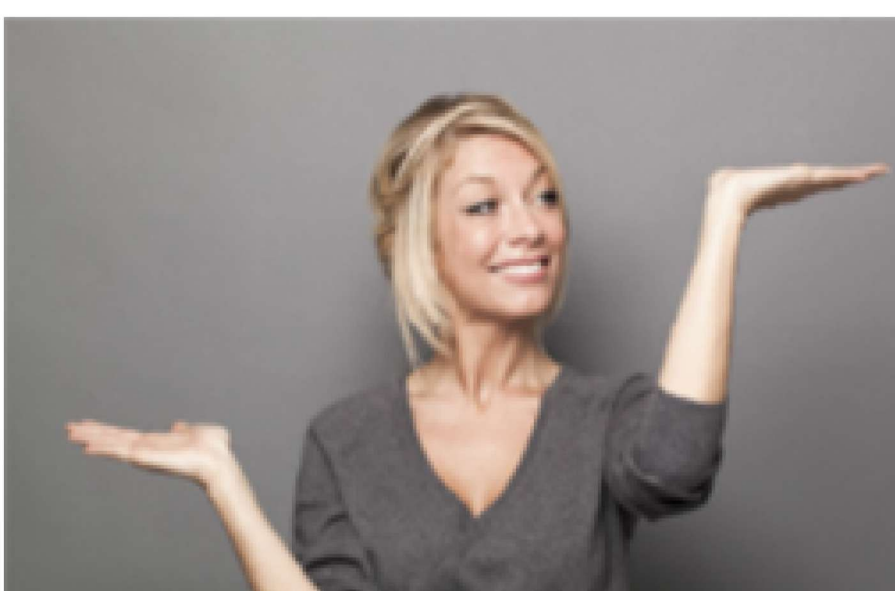
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## What is blood pressure variability?

Our blood pressure (BP) changes all the time. This happens naturally throughout the day due to the various activities and emotions we experience, and is not a cause for concern. However, some people who have high BP may have greater variability—very high sometimes and normal at other times—and may need to be cautious as they appear to have an increased risk of stroke, heart disease and death compared with people whose BP does not vary too much.

The variations in BP that cause concern are those where there are wide fluctuations from one BP reading to another BP reading.



## Why does my blood pressure differ in clinic and at home?

If your blood pressure (BP) measurements are higher at home than at your doctor's office, you have what is called **masked hypertension**. It may be due to a decrease in stress at your doctor's office or an error in measuring your BP at home.

Masked hypertension occurs if a calm, quiet environment at your doctor's office is less stressful than the environment at home.

Additionally, if you have consumed alcohol, caffeine or smoked at home before taking your BP reading, it may cause a spike in the reading as well.



On the other hand, if the opposite is true, you may be experiencing what is known as **white-coat hypertension**. This occurs because the stress or anxiety of being in your doctor's office causes your BP to be higher than it normally is at home.

On average the difference between the reading at home and at the clinic is around 10 mmHg for the top (systolic BP) number and 5 mmHg for the bottom (diastolic BP) number. In some people this difference can be greater.

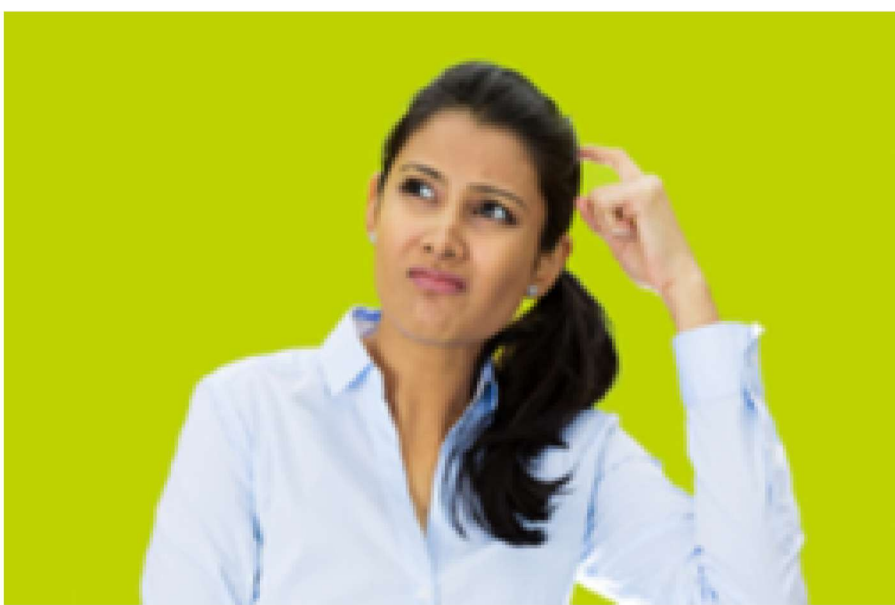


## What should I do if my blood pressure reading is always different?

Firstly, make sure that everything is in order with your blood pressure (BP) monitor at home and that you are using the correct technique. If you are not sure of this, share your concerns with your doctor.

Sometimes, BP readings are different because measurements are taken in different arms. Generally, a small difference in BP readings between arms is not a health concern. However, if you notice a difference of more than 10 mmHg for either your systolic or diastolic BP, it may be a sign of underlying problems such as blocked arteries in your arms, kidney disease, diabetes or heart defects.

In any case, your doctor is likely to manage your BP based on the higher BP readings.



## Measuring blood pressure accurately



There are many kinds of blood pressure (BP) monitors available. The sphygmomanometer is the device used by your doctor to take your BP reading. It includes an arm cuff, a squeeze bulb to inflate the cuff, a stethoscope, and a gauge to measure the BP or a unit to display the BP reading.

The cuff is inflated around the upper arm and the stethoscope placed on the skin over an artery. The inflating of the cuff temporarily stops flow of blood in the artery. This is when the BP measurement is taken, which is displayed on a circular dial with a needle. The reading on the gauge when blood flow is first heard is the systolic BP, whereas the reading when blood flow can no longer be heard is the diastolic BP.

When choosing a BP monitor for home use, there are several types you can choose from<sup>7,8</sup>:

### Automatic/electronic/digital monitors

These are battery-operated monitors that use a microphone to detect blood pulsing in the artery. A cuff wrapped around your upper arm, automatically inflates and deflates when the start button is pressed.

### Manual monitors

These models are similar to those that your doctor might use to take your BP measurement. When used correctly, the manual devices are very accurate. However, they are not recommended for home use.

### Ambulatory monitors

These are small devices worn throughout the day, usually for 24 or 48 hours that take your BP reading automatically. Your doctor may recommend this monitor if they think you have white-coat hypertension or if other methods do not give consistent results.

## How is blood pressure measured at home?



A home blood pressure (BP) monitor is needed to measure BP at home. There is a wide range of monitors available, but it is important to be sure that the monitor you choose is the right one for you.

- **Choose the right type of monitor.** It is easiest to use a fully automatic monitor. Choose one that measures your BP at your upper arm, rather than your wrist or finger.
- **Make sure your monitor is accurate.** Choose a monitor that has been 'clinically validated' for accuracy.
- **Make sure you have the right cuff size.** The wrong cuff size will not give you accurate readings.
- **Choose a monitor to suit your budget.** Price variations in BP monitors are usually due to the features a monitor has. All you need is a monitor that correctly measures your BP. Extra features are helpful but not necessary.
- **Keep your monitor calibrated.** Your BP monitor will need to be recalibrated at least once every 6 months to a year to give you accurate results.

### Before you take your reading

- Make sure you do not have a full bladder, have just eaten a big meal, drunk caffeine or smoked within 30 minutes of taking your BP. These factors can raise your BP in a short time.
- Wear loose-fitting clothes.
- Always use the same arm for readings.
- Rest for 5 minutes by sitting down in a quiet place, with your arm resting on a firm surface, your legs uncrossed and feet flat on the floor.
- Have your arm supported and make sure that the cuff around your arm is at the same level as your heart. You may use a cushion to support your arm to be sure it is at the correct height.

### Taking your reading

- 1 Put the cuff on following the instructions that come with your monitor.
- 2 Make sure you are relaxed and comfortable.
- 3 When you are taking your reading, keep still and silent.
- 4 Take two or three readings, each about two minutes apart, and then work out the average.
- 5 Record your readings, either in the memory of your monitor or on computer or paper.

## References

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