

# Blood Pressure Measurement – OSCE Guide

 [geekymedics.com/blood-pressure-measurement/](https://www.geekymedics.com/blood-pressure-measurement/)

**Blood pressure (BP) measurement** often appears in OSCEs and you'll be expected to confidently carry out the procedure. This blood pressure measurement OSCE guide provides a clear step-by-step approach to measuring blood pressure, with an included video demonstration.

Download the blood pressure measurement [PDF OSCE checklist](#), or use our [interactive OSCE checklist](#). You may also be interested in how to perform a [cardiovascular examination](#).

## Gather equipment

Gather the relevant equipment for **measuring blood pressure**:

Stethoscope

Sphygmomanometer: ensure you have an appropriately sized cuff. A cuff that's too small may overestimate BP and a cuff that's too large will underestimate BP.

## Introduction

**Wash your hands** and **don PPE** if appropriate.

**Introduce yourself** to the patient including your **name** and **role**.

Confirm the patient's **name** and **date of birth**.

Briefly **explain** what the procedure will involve using **patient-friendly language**:

*“Today I would like to measure your blood pressure, this will involve inflating a cuff around your arm whilst listening to your pulse with my stethoscope. The procedure shouldn't be painful, but it may feel a little uncomfortable when the cuff is fully inflated and you might experience some pins and needles in your hand. If at any point you want me to stop, just let me know.”*

**Gain consent** to proceed with blood pressure measurement.

**Position** the patient sitting on a chair, with their arm comfortably placed at approximately **heart level**.

Check if the patient has a preference as to **which arm** to use. Avoid using an arm that has local pathology such as post-mastectomy lymphoedema.

Ask the patient to adequately **expose** their **upper arm** on the relevant side by rolling up their sleeve.

Check if the patient has any **pain** before proceeding with blood pressure measurement.

## Attaching the blood pressure cuff

1. Check that the blood pressure cuff size is appropriate for the patient's arm and that it is fully deflated.
2. Confirm the location of the brachial artery by palpating medial to the biceps brachii tendon and lateral to the medial epicondyle of the humerus.
3. Wrap the blood pressure cuff around the patient's upper arm, lining up the cuff marker with the brachial artery.



Ensure the cuff size is appropriate



Ensure the cuff marker is aligned with the brachial artery

## Measuring blood pressure

### Estimate an approximate systolic blood pressure

To begin with, you need to determine an **approximate systolic blood pressure**. This is helpful in preventing over-tightening of the cuff during the accurate measurement of blood pressure.

1. Ensure the valve on the blood pressure cuff is closed.
2. Palpate the patient's radial pulse, located at the radial side of the wrist, with the tips of

your index and middle fingers aligned longitudinally over the course of the artery.

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**3.** Inflate the blood pressure cuff until you can no longer feel the patient's radial pulse. Note the reading on the sphygmomanometer at the point at which the radial pulse becomes impalpable. This reading is an approximate estimate of the patient's systolic blood pressure.

**4.** Open the valve and deflate the blood pressure cuff.



Palpate the radial pulse



Inflate the cuff until the radial pulse is no longer palpable



Note the reading when the radial pulse is no longer palpable

### **Measure the blood pressure accurately**

Now that you have an approximate systolic pressure, you can perform an **accurate assessment** of **systolic** and **diastolic blood pressure**.

- 1.** Close the valve on the blood pressure cuff.
- 2.** Position the diaphragm of your stethoscope over the brachial artery.
- 3.** Re-inflate the cuff 20-30 mmHg above the systolic blood pressure you previously estimated.
- 4.** Then slowly deflate the cuff at around 2-3 mmHg per second.

5. Using your stethoscope, listen carefully for the onset of a pulsatile noise. The first of these pulsatile noises is known as the first Korotkoff sound. The pressure at which the first Korotkoff sound becomes audible represents the patient's systolic blood pressure.

6. Continue to deflate the cuff, whilst listening through your stethoscope until the pulsatile sound completely disappears. The final pulsatile noise you hear is known as the fifth Korotkoff sound and represents the patient's diastolic blood pressure.

7. If the patient's blood pressure is outside of the normal range you should repeat the assessment on the same arm after a few minutes and also consider assessing blood pressure using the patient's other arm.



Palpate the brachial artery



Place the stethoscope over the brachial artery



Re-inflate the blood pressure cuff



Slowly deflate the cuff



Listen for first Korotkoff sound and note the systolic blood pressure



Listen for fifth Korotkoff sound and note the diastolic blood pressure



Remove the blood pressure cuff

Blood pressure abnormalities

Blood pressure **abnormalities** may include:

**Hypertension:** blood pressure of greater than or equal to 140/90 mmHg if under 80 years old or greater than or equal to 150/90 mmHg if you're over 80 years old.

**Hypotension:** blood pressure of less than 90/60 mmHg.

**Narrow pulse pressure:** less than 25 mmHg of difference between the systolic and diastolic blood pressure. Causes include aortic stenosis, congestive heart failure and cardiac tamponade.

**Wide pulse pressure:** more than 100 mmHg of difference between systolic and diastolic blood pressure. Causes include aortic regurgitation and aortic dissection.

**Difference between arms:** more than 20 mmHg difference in blood pressure between each arm is abnormal and may suggest aortic dissection.

**To complete the procedure**

Once a blood pressure recording has been obtained, **remove the blood pressure cuff.**

**Explain** to the patient that the procedure is now **complete.**

**Discuss** the blood pressure results with the patient, including any **further steps** that may need to occur (e.g. follow-up, further investigations, initiation of treatment).

**Thank the patient** for their time.

**Dispose of PPE** appropriately and **wash your hands.**

**Document** the lowest blood pressure recording in the patient's notes.

**Reviewer**

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