

Table 4.1 Measurement and evaluation of clinic blood pressure

Measurement of clinic blood pressure	
Devices	• Auscultation methods using an accurately validated mercury sphygmomanometer. Use of electronic sphygmomanometer, calibrated according to manufacturer's instructions. • A cuff with bladder length of $\geq 80\%$ and width $\geq 40\%$ of mid-upper arm circumference. Using standard-sized cuffs on large arms can artificially overestimate blood pressure. Where the arm is too large for oversized cuffs, consider using an appropriate cuff on the forearm and auscultating the radial artery. • Some digital/automated devices may not measure blood pressure accurately if there is pulse irregularity (e.g. atrial fibrillation).^{19–20} Thus palpate the radial or brachial pulse before measuring with an automated device. If pulse irregularity is suspected, measure blood pressure manually using direct auscultation over the brachial artery.
Measurement conditions	• A quiet, appropriate environment at room temperature. • Patient should be seated (with legs not crossed) and relaxed for several minutes before measurement. • Patients should refrain from caffeine and smoking for at least 2 hours before measurement.
Measurement methods	All clinic measurements • Selected arm should be free of constricting clothing to avoid impediment of the cuff. • Wrap cuff snugly around upper arm with the centre of the cuff bladder positioned over the brachial artery and the lower border of the cuff approximately 2 cm above the elbow bend. • Place cuff at heart level by supporting the arm. Non-automated blood pressure measurement • Palpate the radial pulse while inflating the cuff and note the pressure at which it ceases to be palpable. Inflate the cuff a further 30 mmHg above this pressure. • Deflate cuff at rate of 2–3 mmHg/beat or less and note the pressure at which radial pulse appears. • Fully deflate the cuff, wait approximately 30 seconds, and then inflate the cuff to at least 30 mmHg above that at which the radial pulse reappeared. • While deflating, auscultate over the brachial artery in the antecubital fossa (elbow pit). • Record systolic and diastolic blood pressure to the nearest 2 mmHg. For the systolic reading, record the level at which two consecutive beats are heard (phase I Korotkoff), even if they then disappear transiently with progressive deflation (known as the auscultatory gap). For the diastolic reading use disappearance of sound (phase V Korotkoff). Use muffling of sound (phase IV Korotkoff) only where the sound continues to 0 mmHg. • Wait 30 seconds before repeating on the same arm. Automated office blood pressure measurement • Health professionals should ensure correct cuff size and positioning. • Health professionals should set the automated device to start the first measurement after 5 minutes of rest and to take a total of three blood pressure readings at 1–2 minute intervals. • Patients should be seated in a quiet room alone for measurement. • Health professionals should push the start button before leaving room.
For first blood pressure measurements	• Measure both arms, particularly if there is evidence of peripheral arterial disease. • Where there is variation >5 mmHg between arms, use the arm with the higher reading for all subsequent measures. • Where there is suspected postural hypotension (e.g. older patients and/or those with diabetes), measure both sitting and standing blood pressure. Repeat measurement after patient has been standing for at least 2 minutes.