

Table 2: Recommended technique for measuring blood pressure using a sphygmomanometer and stethoscope

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- I. Measurement should be taken with a sphygmomanometer known to be accurate. Although a mercury manometer may be preferable, a recently calibrated aneroid or a validated and recently calibrated electronic device can be used. Aneroid devices and mercury columns need to be clearly visible at eye level.
- II. Choose a cuff with an appropriate bladder width matched to the size of the arm.
- III. Place the cuff so that the lower edge is 3 cm above the elbow crease and the bladder centered over the brachial artery. The client should be resting comfortably for 5 minutes in the seated position with back support. The arm should be bare and supported with the antecubital fossa at heart level, as a lower position will result in erroneously higher systolic blood pressure and diastolic blood pressure. There should be no talking and client's legs should not be crossed. At least two measurements should be taken in the same arm with the client in the same position. Blood pressure should also be assessed after 2 minutes of standing, and at times when clients report symptoms suggestive of postural hypotension. Supine blood pressure measurements may also be helpful in the assessment of elderly in those with diabetes.
- IV. Increase the pressure rapidly to 30 mmHg above the level at which the radial pulse is extinguished (to exclude the possibility of a systolic auscultatory gap). Continue to auscultate at least 10 mmHg below phase V* to exclude a diastolic auscultatory gap.
- V. Place the bell or diaphragm of the stethoscope gently and steadily over the brachial artery.
- VI. Open the control valve so that the rate of deflation of the cuff is approximately 2 mmHg per heart beat. A cuff deflation rate of 2 mmHg per beat is necessary for accurate systolic and diastolic estimation.
- VII. Read the systolic level (the first appearance of a clear tapping sound [phase I*]). Record the blood pressure to the closest 2 mmHg on the manometer (or 1 mmHg on electronic devices) as well as the arm used and whether the client was supine, sitting or standing. Avoid digit preference by not rounding up or down. Record the heart rate. The seated blood pressure is used to determine and monitor treatment decisions. The standing blood pressure is used to assess for postural hypotension, which if present, may modify the treatment.
- VIII. If Korotkoff* sounds persist as the level approaches 0 mmHg, then the point of muffling of the sound is used (phase IV*) to indicate the diastolic pressure.

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- IX. In the case of arrhythmia, additional readings may be required to estimate the average systolic and diastolic pressure. Isolated extra beats should be ignored. Note the rhythm and pulse rate.
- X. Leaving the cuff partially inflated for too long will fill the venous system and make the sounds difficult to hear. To avoid venous congestion, it is recommended that at least 1 minute should elapse between readings.
- XI. Blood pressure should be taken at least once in both arms and if an arm has a consistently higher pressure, that arm should be clearly noted and subsequently used for blood pressure measurement and interpretation.

NOTE: Some steps may not apply when using automated devices.

* For a definition of Korotkoff sounds and description of phases, refer to *Appendix B Glossary of Clinical Terms*.