

BLOOD PRESSURE RECORDING

Introduction

Blood pressure measurements are obtained for a wide variety of reasons, including screening for hypertension, assessing a person's suitability for a sport or certain occupations, estimating cardiovascular risk and determining risk for various medical procedures

Indications

- Screening for hypertension
- Assessing a person's suitability for a sport or certain occupations
- Estimation of cardiovascular risk
- Determining for the risk of various medical procedures

Equipment

- Stethoscope
- Blood pressure cuff with a sphygmomanometer
- (OR) An automated auscultometric cuff

Procedure

- Initially before taking the blood pressure, the patient should remain seated and at a rest for 5 minutes
- Consumption of caffeinated products such as coffee, cola, or tea should be avoided for at least 30 minutes prior to measuring the blood pressure. Additionally, activities such as smoking and exercise 30 minutes prior to measuring the blood pressure should also be avoided.
- Choose a standardized mercury or aneroid sphygmomanometer with an adequate cuff size based on patient's arm size
- Place the chosen cuff on either the right or left arm of the participant
- While obtaining the blood pressure, neither the patient nor the person obtaining the blood pressure should talk.
- The stethoscope should be placed tightly over the brachial artery. If the stethoscope is pressed too firmly against the artery, it may cause turbulence and the disappearance of sound, thus artificially reducing the diastolic pressure.
- Inflate the cuff to a pressure of 30mmHg above the level at which the radial pulse is no longer palpable
- While slowly deflating the cuff (approximately 2-3 mmHg per heartbeat), listen for korotkoff phase 1 while watching the blood pressure gauge.

Korotkoff phase 1 can be identified by when the first pulse is auscultated. This sound is clear, repetitive, and tapping in nature and often coincides with the reappearance of a palpable pulse. Record the measurement from the sphygmomanometer at which the sound first appear, this represents the patient's systolic blood pressure.

- While watching the sphygmomanometer, continue to slowly deflate the cuff. Initially, an abrupt soft, indistinct, muffling sound may be heard (korotkoff phase IV). After this sound, continue listening until the sounds disappear completely (korotkoff V). Record the measurement from the sphygmomanometer when the korotkoff V starts; this represents the patient's diastolic pressure. If there is a 10mmhg or greater difference between korotkoff phase IV and phase V then the pressure reading at phase IV should be recorded as diastolic blood pressure. This may occur in cases of high cardiac output or peripheral vasodilation, children under 13 years old, or pregnant women.

After the last korotkoff sound is heard, continue deflating the cuff for another 10mmhg to ensure that no further sounds are heard. Then deflate the cuff and allow the patient to rest.

- Wait at least 30 seconds and repeat the previous 3 steps to obtain a second blood pressure measurement. If the measurements have greater than a 5 mmhg difference, then readings should continue until 2 consecutive stable measurements are obtained. An average of the 2 stable measurements should be recorded as the patient's blood pressure.
- Wait another 1-2 minutes and repeat the steps 4-10 to measure the blood pressure in the patient's opposite arm. If a measurement discrepancy exists between the 2 arms, then the arm with the highest measurement should be used.
- When recording the blood pressure measurement, note not only the pressure but also which arm was used, the arm position, and the cuff size used.
- Alternatively, the blood pressure may be obtained using the thigh or the wrist. A thigh blood pressure is typically obtained when an arm to leg gradient is suspected such as with aortic coarctation or if there is a contraindication to upper extremity measurements.

The wrist blood pressure is typically obtained in obese patients, where it may be difficult to find an appropriately sized cuff for the arm or thigh. The same measurement techniques are used for the leg and wrist as discussed above for the arm. Of note, values obtained from thigh or wrist measurements may be higher than arm pressures due to increased hydrostatic pressure related to the lower position of the thigh and wrist to the heart.

- The accuracy of the wrist measurements can be improved by keeping the wrist at the level of the heart.

Contraindications

- Avoid obtaining blood pressure in the same arm in which arteriovenous fistula (such as used in hemodialysis) is present or where lymphedema exists
- Exercising before measuring the blood pressure can lower the reading
- Caffeine or other exogenous adrenergic stimulants taken before the measurement can acutely raise the blood pressure reading.

- One should delay obtaining a blood pressure if the patient has smoked, exercised, or had caffeinated products or other stimulants prior to the measurement. Smoking 30 minutes before the procedure can transiently elevate the blood pressure.

SIGNATORIES

Name of staff(MO/NO/CO/COI/MIDWIFE/ ETC)

Name:

sign.....

Date:

Department in charge

Name:.....

sign.....

Date:

Nursing Officer in charge

Name:.....

sign.....

Date:

Hospital Administrator

Name:.....

sign.....

Date: