

Procedure #10: Assessing Blood Pressure

PURPOSES

- To obtain a baseline measurement of arterial blood pressure for subsequent evaluation
- To determine the client's hemodynamic status (e.g., cardiac output: stroke volume of the heart and blood vessel resistance)
- To identify and monitor changes in blood pressure resulting from a disease process or medical therapy (e.g., presence or history of cardiovascular disease, renal disease, circulatory shock, or acute pain; rapid infusion of fluids or blood products)

Equipment

- Stethoscope
- Blood pressure cuff of the appropriate size
- Sphygmomanometer

Preparation

1. Ensure that the equipment is intact and functioning properly. Check for leaks in the tubing between the cuff and the sphygmomanometer.
2. Make sure that the client has not smoked or ingested caffeine within 30 minutes prior to measurement.

Performance

1. Prior to performing the procedure, introduce self and verify the client's identity using agency protocol. Explain to the client what you are going to do, why it is necessary, and how he or she can participate. Discuss how the results will be used in planning further care or treatments.
2. Perform hand hygiene and observe appropriate infection prevention procedures.
3. Provide for client privacy.
4. Position the client appropriately
 - The adult client should be sitting unless otherwise specified.
 - Both feet should be flat on the floor.
 - The elbow should be slightly flexed with the palm of the hand facing up and the arm supported at heart level. Readings in any other position should

be specified. The blood pressure is normally similar in sitting, standing, and lying positions, but it can vary significantly by position in certain persons.

- Expose the upper arm.



5. Wrap the deflated cuff evenly around the upper arm. Locate the brachial artery. Apply the center of the bladder directly over the artery.

- For an adult, place the lower border of the cuff approximately 2.5 cm (1 in.) above the antecubital space.



6. If this is the client's initial examination, perform a preliminary palpatory determination of systolic pressure.

- Palpate the brachial artery with the fingertips.
- Close the valve on the bulb.
- Pump up the cuff until you no longer feel the brachial pulse. At that pressure the blood cannot flow through the artery. Note the pressure on the sphygmomanometer at which pulse is no longer felt.
- Release the pressure completely in the cuff, and wait 1 to 2 minutes before making further measurements.



7. Position the stethoscope appropriately.

- Cleanse the earpieces with antiseptic wipe.
- Insert the ear attachments of the stethoscope in your ears so that they tilt slightly forward.
- Ensure that the stethoscope hangs freely from the ears to the diaphragm.



- Place the bell side of the amplifier of the stethoscope over the brachial pulse site.
 - Place the stethoscope directly on the skin, not on clothing over the site
8. Auscultate the client's blood pressure.
- Pump up the cuff until the sphygmomanometer reads 30 mmHg above the point where the brachial pulse disappeared.
 - Release the valve on the cuff carefully so that the pressure decreases at the rate of 2 to 3 mmHg per second.
 - As the pressure falls, identify the manometer reading a Korotkoff phases 1, 4, and 5.
 - Deflate the cuff rapidly and completely.
 - Wait 1 to 2 minutes before making further determinations.
 - Repeat the above steps to confirm the accuracy of the reading—especially if it falls outside the normal range (although this may not be routine procedure for hospitalized or well clients). If there is greater than 5 mmHg difference between the two readings, additional measurements may be taken and the results averaged.
9. If this is the client's initial examination, repeat the procedure on the client's other arm. There should be a difference of no more than 10 mmHg between the arms. The arm found to have the higher pressure should be used for subsequent examinations
- -

Variation: Obtaining a Blood Pressure by the Palpation Method

If it is not possible to use a stethoscope to obtain the blood pressure or if the

Korotkoff sounds cannot be heard, palpate the radial or brachial pulse site as the cuff pressure is released. The manometer reading at the point where the pulse reappears is an estimate of systolic value.

Variation: Taking a Thigh Blood Pressure

- Help the client to assume a prone position. If the client cannot assume this position, measure the blood pressure while the client is in a supine position with the knee slightly flexed. Slight flexing of the knee will facilitate placing the stethoscope on the popliteal space.
- Expose the thigh, taking care not to expose the client unduly.
- Locate the popliteal artery
- Wrap the cuff evenly around the midthigh with the compression bladder over the posterior aspect of the thigh and the bottom edge above the knee.
- If this is the client's initial examination, perform a preliminary palpatory determination of systolic pressure by palpating the popliteal artery.
- In adults, the systolic pressure in the popliteal artery is usually 20 to 30 mmHg higher than that in the brachial artery; the diastolic pressure is usually the same.



11. Wipe the cuff with an approved disinfectant.

12. Document and report pertinent assessment data according to agency policy. Record two pressures in the form "130/80" where "130" is the systolic (phase 1) and "80" is the diastolic (phase

5) pressure. Record three pressures in the form "130/90/0," where "130" is the systolic, "90" is the first diastolic (phase 4), and sounds are audible even after the cuff is completely deflated. Use the abbreviations RA or RL for right arm or right leg and LA or LL for left arm or left leg.