Accurate Assessment: Blood Pressure

1. Use a properly calibrated and validated sphygmomanometer
2. Have the patient sit quietly for 5 minutes in a chair with feet on the floor and arm supported at heart level.
3. Use an appropriate-sized cuff with the cuff bladder encircling at least 80% of the arm
4. Place the cuff on a bare arm, approximately 2 cm above the elbow crease with midline of the bladder directly over the brachial artery; fit should be snug but still allow 2 fingers under the cuff.
5. Place the bell or the diaphragm of the stethoscope over the brachial artery, using sufficient pressure to provide good sound transmission without over-compressing the artery.
   a. Systolic BP is the point at which the first of 2 or more sounds is heard
   b. Diastolic BP is the point before the disappearance of sounds
6. Take at least 2 measurements allowing time between measurements

Blood pressure measurement should be postponed if the patient has:

- Engaged in recent physical activity
- Used tobacco within the past 30 minutes
- Ingested caffeine within the past 30 minutes
- Eaten within the past 30 minutes

Korotkoff Sounds –The turbulent blood flow that flows through the brachial artery and generates sounds classified in 5 phases:

- Phase 1 (**Systolic Blood Pressure**): Clear, repetitive tapping that coincides with the reappearance of a palpable pulse
- Phase 2: Audible murmurs in the tapping sounds
- Phases 3, 4: Muted changes in the tapping sounds occur and are usually within 10 mm Hg of the diastolic pressure
- Phase 5 (**Diastolic Blood Pressure**): Not a sound but the disappearance of sounds Continue to deflate the cuff pressure for an additional 10 m Hg beyond the last sound.

Persistent systole: audible Korotkoff sounds that continue even to deflation of 0 mm Hg. May occur in older patients and during pregnancy. Estimate diastole by noting appearance of 4th Korotkoff sound.

In certain situations, blood pressure may need to be obtained with the cuff on the forearm and auscultation of the radial artery OR even measurement in the leg if neither arm can be used after discussing with the PCP.

Situations in which blood pressure should be assessed in opposite arm:

- Presence of an arterial–venous shunt
- Recent axillary node dissection
- Any deformity or surgical history that interferes with proper access or blood flow to the upper arm

Pre-existing conditions that can interfere with the accuracy or interpretation of readings:

- Aortic coarctation
- Arterial–venous malformation
- Occlusive arterial disease
- Presence of an antecubital bruit

References for *Blood Pressure Accuracy*:
Whelton, et. al, 2017; Liu, Griffiths, Murray, & Zheng, 2016; Williams, Brown, & Conlin, 2009; & Chobanian, et al., 2003

Accurate Assessment: Orthostatic Hypotension

Orthostatic hypotension (postural hypotension) can be a **significant and common problem** that often is a contributing factor to the incidence of falls. Technique, timing and positioning ***contribute* to accurate orthostatic hypotension assessment.**

What is Orthostatic Hypotension?

- A physical finding, not a disease and may be either symptomatic or asymptomatic. Treatment is generally aimed at the underlying cause.
- Occurs when blood pressure drops in response to position change.
- Commonly defined as occurring when there is any one or combination of the following vital sign changes:
  - Decrease of 20 mm Hg (or more) in systolic blood pressure
  - Decrease of 10 mm Hg (or more) in diastolic blood pressure
  - Increase in heart rate of greater than or equal to 20 bpm

Recommendations for Assessment Procedure: Follow agency-specific practice standard/policy and procedure, while using clinician judgment with assessment and evaluation of findings for intervention selection.

1. Explain procedure and reason for assessment to patient/caregiver. Instruct patient to report any symptoms of dizziness, lightheadedness or faintness at any time during the assessment.
2. Obtain ***supine*** blood pressure (BP) and heart rate (HR) measurement once patient has been in supine position for **3 - *5 minutes.***
3. Assist the patient to a safe ***sitting*** position with legs dangling over the edge of bed/couch—wait **one minute** then obtain and document BP, HR and patient symptoms.
4. If the patient tolerates position change with no orthostatic hypotension and the patient is able to stand, assist patient to a ***standing*** position.
   - ***Wait 1 - 3 minutes*** —obtain BP/HR then document BP, HR and patient symptoms—if orthostatic changes are present, return patient to a safe, comfortable position
   - Intervene according to agency protocol and clinical indications
5. Evaluate assessment findings and continue according to agency protocol and clinical indications.

Interventions for Orthostatic Hypotension may include but are NOT limited to:

1. Notify physician when assessment indicates orthostatic hypotension (ensure that medication reconciliation has been completed)
2. Instruct patient to sit at the edge of bed or couch for ***30-60 seconds*** when moving from a lying to standing position
3. Instruct patient to walk in place for ***1 minute*** after standing before walking away (e.g., avoid rushing to answer phone or doorbell)
4. Instruct patient NOT to bend over at the waist to reach for something low
5. Instruct on not rising too quickly after a meal (meals can induce hypotension)
6. Inform interdisciplinary team members to adjust treatment plan accordingly with inclusion of fall prevention interventions
7. **Review medications and obtain orders for lab work to asses for volume depletion**

Accurate Assessment: Orthostatic Hypotension References

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HHQI Home Health Quality Improvement

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