

## Assessing Etiology of Orthostatic Hypotension in Older Adults

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**WHY:** Orthostatic hypotension is a drop in systolic blood pressure of at least 20 mm Hg or a drop in diastolic blood pressure of at least 10 mm Hg within 3 minutes of standing from a supine or sitting position (Feldstein & Weder, 2012). It is common in at least 30% of older adults and may lead to falls, diminished function and decreased quality of life (Feldstein & Weder, 2012; Irvin & White, 2004; Lee, 2013; Ricci, De Caterina, & Fedorowski, 2015; Lipsitz, 2017). Assessing for the etiology of orthostatic hypotension may help identify reversible causes and expedite possible treatment.

**BEST PRACTICE APPROACH:** Nurses and other health care professionals should gather information to help determine the etiology of orthostatic hypotension by obtaining orthostatic pulses while concurrently obtaining orthostatic blood pressures. If possible, blood pressure AND pulse should be recorded in the lying, sitting, and standing positions. However, if a person reports dizziness or lightheadedness when lying or sitting, they should not be instructed to stand.

If the pulse rises over 20 beats per minute while blood pressure drops, this suggests hypovolemia (e.g. dehydration, acute blood loss) or an adverse effect from a medication (e.g. anti-hypertensives, psychotropic medications) (Gupta & Lipsitz, 2007; Irvin & White, 2004).

If the pulse stays constant or rises less than 10 beats per minute while blood pressure drops, this suggests autonomic dysfunction (e.g. Vitamin B12 deficiency, Parkinson's disease, diabetic neuropathy) (Gupta & Lipsitz, 2007).

Orthostatic blood pressure measurements should be included in the assessment of all older adults (Lipsitz, 2017). Early identification of the etiology of orthostatic hypotension is important as it helps guide appropriate treatment. If hypovolemia is identified, acute intervention (e.g. intravenous fluids or blood transfusion) may be required. If a more chronic or progressive etiology, such as Parkinson's, is suspected, the older adult will need to be educated to move slowly from a lying or seated position and on other techniques to reduce occurrences. Depending upon the etiology, older adults may require and benefit from referral to a neurologist and/or physical therapist.

**TARGET POPULATION:** The etiology of orthostatic hypotension should be investigated in older adults with known orthostatic hypotension and/or symptoms of dizziness or lightheadedness upon sitting or standing up, as well as in older adults with dementia and a history of falls who may not articulate symptoms. Additionally, screening should be performed at least yearly in all older adults given the high prevalence of orthostatic hypotension in this population (Lee, 2013) and the frequent occurrence of asymptomatic cases (Feldstein & Weder, 2012).

Older adults may acquire orthostatic hypotension in any healthcare setting; however prevalence is higher in hospitalized individuals due to possible prolonged bed rest with deconditioning and frequent addition of new medications (Feldstein & Weder, 2012). Hence, frequent assessment for orthostatic hypotension and pulse changes in the acute care setting is vital (Feldstein & Weder, 2012). It is also crucial to assess for orthostatic hypotension post-hospitalization in sub-acute rehabilitation, assisted living, outpatient, or home settings to assure that the condition resolves once the person is discharged. It is also important to assess that any new medications are not causing new onset orthostatic hypotension.

**STRENGTHS AND LIMITATIONS:** This is a simple, important assessment that may be conducted in less than 10 minutes using only a blood pressure cuff and a stethoscope, which are tools readily accessible in any health care setting. There is the potential for human error in measurement of these vital signs. Furthermore, time of day of assessment may affect values given normal variations in blood pressure throughout the day and given timing related to medication administration. Assessment of blood pressure related to a previous meal may also affect values given the incidence of postprandial hypotension (Gupta & Lipsitz, 2007).

The risk of an orthostatic person becoming symptomatic with position change, resulting in fall or syncope is a potential risk of this assessment, though may be minimized by having the practitioner guarding the person. Results may be affected by rate controlling medications, such as beta-blockers, which could prevent the compensatory rise in pulse with orthostatic hypotension. Older adults with arrhythmias may have variations in pulse rate that are unrelated to blood pressure. Additional diagnostic testing for dehydration and blood loss need to be considered for the older adult with autonomic dysfunction as orthostatic blood pressure and pulse cannot solely be used to detect hypovolemia in this population.

**FOLLOW UP:** If a reversible etiology is identified, orthostatic blood pressure and pulse should be repeated once the etiology is corrected to assure improvement and that multiple etiologies were not contributing factors. If a non-reversible etiology is identified, older adults, their family members, and caregivers should be educated on the non-pharmacological and pharmacological interventions that may potentially improve symptoms and function.

#### **MORE ON THE TOPIC:**

Best practice information on care of older adults: <https://consultgeri.org>.

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The Hartford Institute for Geriatric Nursing recognizes Elizabeth B. Esstman as the original author of this issue.