



Reader Feedback

Orthostatic Blood Pressure Measurement: How Long Does It Take?

In the article "Making Vital Signs Vital: The Blood Pressure Revisited," which appeared in the June 2008 issue (starting on page 42), the authors state that the correct orthostatic blood pressure (BP) measurement technique is to "stand the patient unsupported for one minute...and record the BP and pulse." One minute, however, is an insufficient time to gauge accurately the degree of orthostatic drop in BP in many patients with chronic orthostatic hypotension (OH).

The Consensus Committee of the American Autonomic Society defines OH as a reduction in systolic BP of at least 20 mm Hg or diastolic BP of at least 10 mm Hg within three minutes of standing.¹ This definition is affirmed in a recent review article.² Three minutes should be considered the standard duration of standing needed to measure orthostatic BP accurately.

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REFERENCES

1. Consensus Committee of the American Autonomic Society and the American Academy of Neurology.

The opinions expressed in reader letters are those of the writers and do not necessarily reflect those of Federal Practitioner, Quadrant HealthCom, Inc., the U.S. government, or any of its agencies.

- Consensus statement on the definition of orthostatic hypotension, pure autonomic failure, and multiple system atrophy. *Neurology*. 1996;46(5):1470.
2. Freeman R. Clinical practice. Neurogenic orthostatic hypotension. *N Engl J Med*. 2008;358(6):615–624.

The authors respond:

We greatly appreciate Dr. Meuleman's cogent comments on orthostatic BP measurement recommendations as delineated in our article.

We acknowledge that a variety of durations have been recommended for the measurement of standing BP. Two older studies were particularly seminal to our recommendation of one minute. Gehrking and colleagues looked at systolic BP responses at one, two, three, and five minutes after 70° tilt testing in 66 patients with OH.¹ Their results indicated that 88% of patients developed OH by one minute, 11% did so between one and two minutes, and 1% did so between two and three minutes. The authors concluded that one minute could be the minimum duration for detecting a positive response. Maurer and colleagues also reported a comparison of one- and three-minute BP responses with beat to beat systolic BP and heart rate measurement in a tilt test performed on elderly patients.² These authors determined that the one-minute systolic BP change was the most sensitive to OH.

Nevertheless, we agree that a three-minute standing duration is acceptable and may increase the yield of OH over a one-minute duration. ●

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1. Gehrking JA, Hines SM, Benrud-Larson LM, Opher-Gehrking TL, Low PA. What is the minimum duration of head-up tilt necessary to detect orthostatic hypotension? *Clin Auton Res*. 2005;15(2):71–75.
2. Maurer M, Rivadeneira H, Bloomfield D. Should orthostatic changes in blood pressure be measured after one or three minutes in elderly subjects? *Am J Geriatr Cardiol*. 1998;7(4):29–33.