

# Home Sleep Testing: Appropriate Screening Is the Key

Commentary on Morales et al. In-home, self-assembled sleep studies are useful in diagnosing sleep apnea in the elderly. *SLEEP* 2012;35:1491-1501.

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In 2008, the Centers for Medicare and Medicaid Services (CMS) approved the use of home testing for the diagnosis of obstructive sleep apnea.<sup>1</sup> The decision was based at that time on two studies in which a home sleep testing (HST) device was used in comparison to the standard in-lab polysomnography (PSG).<sup>2,3</sup> Rather than showing that the disordered breathing indices were comparable with both tests, these studies demonstrated that the mode of testing did not impact the patient's use of CPAP. In both of those studies, the mean age was considerably less than the Medicare age (Whitelaw et al.<sup>2</sup> mean age = 46.9 y for both groups; Mulgrew et al.<sup>3</sup> mean age = 52 y for PSG and 55 y for HST). There have been a plethora of studies subsequent to those two that have consistently shown relative equivalence comparing HST to PSG with regard to CPAP outcomes.<sup>4-7</sup> However none of those studies focused on an older population. In this issue of *SLEEP*, Morales and colleagues,<sup>8</sup> present a population study with an average age of 71.4 y (SD = 5.4 y) in which they utilized HST but specifically concentrated on seniors with Medicare. Their study was done differently than the earlier investigations.

Morales et al. concentrated on how to best identify patients with OSA examining both clinical parameters and a simple home sleep test (i.e., an airflow measure). Prior studies used a variety of methods to screen patients for HST. The AASM Clinical Guidelines for Use of Portable Monitoring<sup>9</sup> recommends that HST only be performed on patients who have *high pretest probability of having moderate to severe sleep apnea*. However, determining "high pretest probability" has not been clearly elucidated in most studies, which has led to significant confusion. Currently, many insurers or care utilization companies are the ones determining whether a patient is a candidate for a HST or a PSG—based on my experience, adequate assessment of a "pretest" probability is not typically part of the algorithm. In fact, the opposite often occurs. Third parties are approving an HST in most patients if they don't have comorbid illness such as COPD, heart failure, or hypoventilation syndromes, but they pay little attention to the patient's risk for or probability of having OSA. The study by Morales et al.<sup>8</sup> and others<sup>10</sup> have shown that HST works best for those who are MOST LIKELY to have significant OSA (moderate to severe) and should not be used as a test to "rule out" OSA.

The other interesting finding of Morales et al. is the characteristics of the clinical parameters that were the best predictors of OSA in their population of older adults. The best clinical predictors did not include BMI but instead neck circumference, in addition to age, gender, and apnea symptoms. This is contrasted to this group's earlier study<sup>11</sup> on truck drivers in which BMI was a better predictor. This points out that the determination of high pretest probability may be somewhat different for different populations. Clearly, as has been shown in other HST studies, the clinical history is key in assessing the appropriateness for HST.

In conclusion, the findings of Morales et al.<sup>8</sup> offer important insights into how best to utilize HST as we move ahead in trying to limit health care costs without hampering quality. Their study demonstrates that HST can be a valuable tool to diagnose severe OSA in a senior population if it is used appropriately. Sleep medicine needs to help insurers appreciate the findings of Morales et al. and related studies, regarding how best to use HST. Educating them on which population is appropriate for HST is the key determinant in really driving down the costs.

## CITATION

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## DISCLOSURE STATEMENT

Dr. Collop has indicated no financial conflicts of interest.

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