**Review: Screening tests are not as accurate as overnight polysomnography for the diagnosis of adult sleep apnea**


**Main results**

71 studies (7572 participants) compared overnight PSG (diagnostic standard) with portable monitoring devices (25 studies), reduced-channel PSGs (3 studies), daytime PSGs (3 studies) partial-night PSGs (4 studies), oximetry (12 studies), radiologic tests (5 studies), clinical measures (17 studies), chemical assay (1 study), questionnaires (3 studies), and multivariate models (8 studies). Sensitivity and specificity for the tests vary (Table).

**Conclusion**

Screening tests are not as accurate as overnight polysomnography for diagnosing sleep apnea in adults.

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**Data sources**

Studies were identified by searching MEDLINE (1980 to November 1997) and Current Contents (1997) using the terms sleep apnea syndrome; monitoring, physiologic; airway resistance; and index. Bibliographies were scanned.

**Study selection**

English-, French-, German-, Spanish-, and Italian-language studies were selected if a diagnostic test or intervention was used to support a diagnosis of sleep apnea and ≥10 adults with any form of sleep apnea were studied. Studies of patients with other potentially confounding diseases were excluded.

**Data extraction**

Data were extracted on study quality and description, patient and test characteristics, and results.

**Commentary**

The review by Ross and colleagues attempts to determine whether sleep studies without electrophysiologic monitoring of sleep are clinically useful. It includes a serious methodologic flaw: Polysomnography is used as the diagnostic standard, but no evidence has shown that it is such. Polysomnography became accepted as the usual standard for diagnosing sleep apnea in North America, but this conclusion was not evidence based. Studies that have attempted to determine whether electrophysiologic monitoring adds to the accuracy of diagnosing sleep apnea have found that it does not (1). Further, electrophysiologic variables are not the best predictors of improvement with therapy (2). Despite this flaw, the review is useful because it shows the lack of agreement between diagnostic techniques and highlights the need for more carefully done studies. If the major clinical conclusion of the review is reduced to the statement that no severely symptomatic patient should have the diagnosis excluded on the basis of a negative limited sleep study, then I believe this is a reasonable, although not evidence-based, statement. The finding of a pristine sleep and breathing pattern in all postures in a patient who is known to be asleep remains the best excluder of sleep apnea. This belief has been reinforced by evidence from randomized controlled trials of continuous positive airway pressure (CPAP) therapy showing that large placebo responses can be obtained in patients with sleep apnea (3, 4). Thus, a response to a trial of CPAP cannot be used as evidence of disease, despite recent trends in this direction.

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**References**