

## At-home sleep testing equal to overnight in a sleep lab in treatment results

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Patients with suspected obstructive sleep apnea (OSA) may no longer have to spend an expensive and uncomfortable night at a sleep center to monitor their sleep-disordered breathing. According to new research, those who performed sleep testing in their home with portable monitors showed similar improvements after three months of treatment with continuous positive airway pressure (CPAP) in daytime function as compared to patients who underwent overnight testing in a sleep center.

Furthermore, patient adherence to CPAP over the first three months of treatment was similar in patients with OSA who received home versus in-lab testing.

The research will be presented at the ATS 2010 International Conference in New Orleans.

Obstructive [sleep](#) apnea, a breathing disorder during sleep, is common, dangerous, and relatively easy to treat, but expensive to diagnose. "These findings represent a possible turning point for both patients with sleep-disordered breathing and the clinicians who treat them," said Samuel T. Kuna, M.D., Chief of the pulmonary, critical care and sleep section at the Philadelphia VA Medical Center, who led the research. "One of the biggest and most insurmountable barriers to treatment is the need for overnight testing in a sleep laboratory. Our research suggests that this may no longer be a mandatory for diagnosis."

It is conservatively estimated that four percent of women and nine

percent of men in the United States have moderate to severe OSA and that 80 percent of these individuals are undiagnosed and untreated. Patients with untreated OSA are at increased risk for [traffic accidents](#), hypertension, and [cardiovascular disease](#).

"Currently, most patients with OSA need to perform overnight sleep testing (polysomnogram) in a sleep center," explained Dr. Kuna. "The result has been unacceptably long patient wait times and restricted access to care."

The researchers conducted a two-site study in which they randomized nearly 300 patients to undergo either standard in-laboratory sleep-testing or at-home testing. Of the 223 patients who started CPAP treatment after evaluation, 185 completed three months of follow-up.

They found that those who had undergone at-home testing showed improvements after three months of CPAP treatment similar to those who had undergone in-lab diagnosis.

The CPAP machines used in the study recorded the patient's use of the treatment. Average hours of daily use over the 3 month period were similar in the two groups.

"Proponents of in-laboratory testing argue that patients performing in-lab testing might have better outcomes than those performing home testing. For example, during in-lab testing, the patient spends a greater amount of time with a technologist who is able to educate the patient about OSA and CPAP and help the patient overcome any barriers to diagnosis and treatment that might arise during testing," said Dr. Kuna. "But our results did not find a difference between home versus in-lab testing in terms of clinical outcomes. The two management pathways appear to be equivalent in terms of patients' functional outcomes and ability to use CPAP treatment."

While prospective studies are needed to evaluate the cost effectiveness of home portable monitor testing, medical care costs were examined in the study. "Those results are still being analyzed, but we believe that they will show that home portable monitor testing is less expensive than in-laboratory testing," said Dr. Kuna. Such a result, combined with the equivalent results of portable monitor testing in terms of health-related outcomes suggest that the portable devices may soon make in-lab testing a thing of the past for many OSA patients.

"Our study indicates that home portable monitor testing can be used to diagnose and manage patients with OSA," said Dr. Kuna. "Greater use of portable monitors will improve patient access to care and hopefully reduce medical care cost by replacing an expensive test (in-lab polysomnography) with the less expensive home testing."

Provided by American Thoracic Society

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