



Oral Appliances and CPAP Therapy

A study in New Zealand and Australia with newly diagnosed sleep apnea patients applied both Continuous Positive Airway Pressure Therapy (CPAP) and oral appliance therapy (OAT) to determine which had a better effect on treatment of obstructive sleep apnea. Each patient used each treatment for about around four to eight weeks, and then the resulting blood pressure, daytime sleepiness, and quality of life.

At the end of both of the trials, there were no notable differences between either of the categories of treatment. In both CPAP and oral appliance trials, high blood pressure did not change, and both treatments lessened the average sleepiness levels for the patient. CPAP was greater at reversing the physiological effects of obstructive sleep apnea, especially in those who had moderate to severe sleep apnea. Fewer people can tolerate the invasive nature of CPAP, which is why many doctors believe that the therapy is weaker than oral appliance therapy. Neither CPAP nor the oral appliance relieved the subjects of blood pressure, but CPAP has been proven to lower blood pressure in other studies. The overall adherence was higher with oral appliance therapy at 51.4%, while 23% preferred CPAP, 21% had no preference, and 4.6% preferred no treatment at all.

To lessen the amount of people who are either worrisome of sleep apnea treatment, or who are not told about other options, patients must be given an individual choice. Physicians and dentists must take the patients' personal preferences, severity of their sleep apnea, cost of treatment, and insurance coverage into account when looking for the proper therapy option. Both are expensive options, but oral appliances must be custom-fitted, while CPAP pressure can be initiated on a trial basis. In the end, CPAP remains to be the first choice for many physicians, although the American Academy of Dental Medicine recently said that oral appliances are suitable treatment for those with mild to moderate cases of sleep apnea, or anyone who cannot tolerate a CPAP machine. With regard to how effective each is at treating sleep apnea, and how well they provide the user with a good night's sleep, they are both equals.

Phillips CL, Grunstein RR, Darendeliler MA, et al. Health outcomes of continuous positive airway pressure versus oral appliance treatment for obstructive sleep apnea: a randomized controlled trial. *Am J RespirCrit Care Med.* 2013;187:879-87.



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How Obstructive Sleep Apnea Treatments Affect Depression

Obstructive sleep apnea is often associated with a decreased quality of life and an increase in morbidity and mortality. Many of those who suffer from obstructive sleep apnea also present symptoms of depression, although it remains unknown whether or not sleep apnea treatment will alleviate those symptoms. Researchers believe that sleep apnea may cause depression since it causes sleep loss, sleep disruption, and overall cognitive decline. CPAP and oral appliance therapy reduce daytime sleepiness, which may alleviate those symptoms and depression.

Since it's increasingly difficult to quantify concepts such as depression, researchers gathered information from a variety of randomized control trials of CPAP or oral appliance therapy. Those studies that were selected provided a validated questionnaire of depressive symptoms, taken before and after treatment. The studies that were selected were analyzed and assessed for the sake of uniformity, and were divided into two groups: those treated with CPAP and those treated with an oral appliance. There were some limits to the study, namely the fact that each randomized control trial was different, therefore there were going to be some discrepancies noted. Another limitation was

the fact that the use of depressive symptom scales that have not been validated specifically in people with OSA, therefore there is no clear baseline for depression.

In the end, there was evidence that showed both CPAP and an oral appliance had an effect on depressive symptoms. CPAP resulted in an overall emotional improvement in those with depression, likely because patients were finally able to get rest. Those who were treated with oral appliances also showed significant improvement, probably due to the restful sleep they had missed out on for so long. The overall consensus was clear: both CPAP therapy and oral appliance therapy were both effective in reducing the symptoms of depression.

Povitz M., Bolo, C.E., Heitman, S.J., Tsai, W.H., Wang, J., James, M.T., (2014) "Effect of Treatment of Obstructive Sleep Apnea on Depressive Symptoms: Systematic Review and Meta-Analysis" PLoS Med 11(11): e1001762. doi:10.1371/journal.pmed.1001762.



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