

Even mild sleep apnea increases cardiovascular risk

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People with even minimally symptomatic obstructive sleep apnea (OSA) may be at increased risk for cardiovascular disease because of impaired endothelial function and increased arterial stiffness, according to a study from the Oxford Centre for Respiratory Medicine in the UK.

"It was previously known that people with OSA severe enough to affect their daytime alertness and manifest in other ways are at increased risk of cardiovascular disease, but this finding suggests that many more people—some of whom may be completely unaware that they even have OSA—are at risk than previously thought," said lead author of the study, Malcolm Kohler, M.D.

The study will be published in the first issue for November of the American Thoracic Society's *American Journal of Respiratory and Critical Care Medicine*.

"Only one out of approximately five subjects with [clinically defined OSA] complains of excessive daytime sleepiness in population studies," wrote Geraldo Lorenzi-Filho, M.D., Ph.D. in an editorial in the same issue of the Journal. "[I]t is now recognized that OSA triggers a cascade of biological reactions, including increased sympathetic activity, systemic inflammation, oxidative stress, and metabolic alterations that are potentially harmful to the cardiovascular system."

To determine the exact nature of some of these effects, Dr. Kohler and colleagues performed a controlled, cross-sectional study to assess

differences in endothelial function (often a harbinger for cardiovascular problems to come), arterial stiffness and blood pressure in patients with minimally symptomatic OSA. They compared 64 patients who had proven OSA to matched control subjects without OSA.

Their findings suggested that minimally symptomatic OSA is a cardiovascular risk factor to a degree not previously known.

"In our study, the augmentation index, a measure of central arterial stiffness that independently predicts cardiovascular events in high-risk populations, was significantly higher in patients with minimally symptomatic OSA compared to matched controls," said Dr. Kohler. "We also found impaired endothelial function as indicated by decreased vascular reactivity of their arteries compared to control subjects without OSA."

The difference in arterial stiffness between OSA patients and control subjects, Dr. Kohler said was "comparable in size to the effect seen after four weeks' continuous positive airway pressure (CPAP) therapy in patients with moderate to severe symptomatic OSA."

This suggests that asymptomatic or minimally symptomatic patients with OSA may enjoy a cardiovascular benefit from CPAP therapy.

Dr. Kohler and colleagues from the Oxford Centre for Respiratory Medicine are currently investigating the effects of 6 month CPAP therapy on arterial stiffness and endothelial function as part of an international randomized controlled trial (Multicentre Obstructive Sleep Apnoea Interventional Cardiovascular Trial; MOSAIC) which will show the impact of CPAP therapy on cardiovascular risk in patients with minimally symptomatic OSA.

Source: American Thoracic Society

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