

CPAP may reduce resting heart rate in prediabetic patients

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Picture of a patient undergoing CPAP. Credit: ATS

People with prediabetes have blood sugar levels higher than normal but below Type 2 diabetes levels. People with OSA experience times during sleep when air is obstructed from flowing normally into the lungs. CPAP

is considered the "gold standard" treatment for OSA.

According to Sushmita Pamidi, MD, lead study author and a sleep physician-scientist at McGill University, previous studies have found that OSA is associated with increased sympathetic activity, which activates our "fight or flight" response. This response, in turn, raises our heart rate.

"Both prediabetes and higher [resting heart rates](#) have been linked to cardiovascular disease," she said. "We wanted to see if CPAP would lower resting heart rates both during the day and at night in this group of patients with abnormal glucose metabolism."

Of 39 participants in this study, twice as many were randomly assigned to CPAP as an oral placebo for 14 days. All-night adherence to CPAP was assured by monitoring all participants in a sleep lab throughout the two weeks. Resting heart rates were measured 24 hours a day for the two weeks using a portable monitoring device.

The study found that those using CPAP had significantly lower resting heart rates throughout the day and night than those in the placebo arm of the study. The differences between the two groups were more pronounced during the second week of the trial.

"The effect of CPAP on resting heart rate is comparable to using beta blockers," said Esra Tasali, MD, senior study author and director of the Sleep Research Center at the University of Chicago. Commonly prescribed for [heart](#) problems, [beta blockers](#) block stress hormones, such as adrenaline that raise [heart rates](#).

"OSA is exceedingly common among individuals with abnormal glucose tolerance," Dr. Tasali added, noting recent estimates indicate that 80 percent of those with OSA in the general U.S. population are

undiagnosed. "Our study is a first step in demonstrating that optimal treatment of sleep apnea reduces cardiovascular risk in those with prediabetes."

More information: Abstract 13808: All-Night CPAP Treatment Reduces 24-Hour Resting Heart Rate in Prediabetes: A Randomized Placebo- Controlled Study

Provided by American Thoracic Society

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