

Obstructive sleep apnea linked with later risk of heart disease

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Severe obstructive sleep apnea (OSA) raised the risk of heart failure for middle-aged and older men — and significantly raised the risk of coronary heart disease in men up to age 70, according to research reported in *Circulation: Journal of the American Heart Association*.

After adjusting for known heart risk factors, researchers found that men with the most severe OSA faced a 58 percent higher risk of developing [heart failure](#) than those without OSA. And those ages 40 to 70 with the most severe OSA had a 68 percent higher risk of developing coronary heart disease than those without OSA.

"The Sleep Heart Health Study is the first to demonstrate prospectively that [sleep apnea](#) is associated with an increased incidence of heart failure," said Daniel J. Gottlieb, M.D., M.P.H., lead study author and associate professor at Boston University's School of Medicine. "It's also the first large community-based study specifically designed to examine the association of sleep apnea with either coronary heart disease or heart failure. Previous work has focused more narrowly on patients receiving care at sleep clinics."

In obstructive sleep apnea, the airway collapses during sleep, leaving patients struggling to breathe.

In the study, researchers defined severe apnea as an hourly average of 30 or more breathing interruptions causing oxygen depletion and lasting at least 10 seconds. This can cause [blood oxygen](#) to drop and can rouse

people from sleep with a burst of adrenaline that increases blood pressure, which may contribute to vascular problems.

OSA is common, affecting 24 percent of adult men and 9 percent of adult women, said Gottlieb, who is also director of the [Sleep Disorders Center](#) at VA Boston Healthcare System.

Research from the Sleep Heart Health Study also breaks ground because it included many women, Gottlieb said. However, researchers found no link between OSA and heart problems in women. Women are about half as likely as men to have sleep apnea, making it difficult to detect an apnea-heart disease link. This is an area for further study, he said.

The 1,927 men and 2,495 women were 40 or older and free of heart problems when the study began. Twenty-four percent of the men and 11 percent of the women had at least moderately severe obstructive sleep apnea. Researchers assessed participants' health for a median follow-up of 8.7 years.

The ages of the study subjects may have limited researchers' ability to detect a stronger link between apnea and coronary heart disease, Gottlieb said. Coronary heart disease risk from sleep apnea may be greatest at a relatively young age, with previous research suggesting increased risk of cardiovascular related death from sleep apnea in individuals ages 30 to 50.

Furthermore, sleep apnea is typically diagnosed years or decades after its onset. So, the requirement that study subjects be free of heart problems at enrollment would have excluded people who already suffered heart disease consequences that might be linked to long-term apnea, Gottlieb said.

By contrast, heart failure tends to occur more frequently in elderly

people. Heart failure is a chronic weakening of the heart, leaving it unable to pump enough blood to meet the body's needs. Coronary heart disease is a narrowing of the coronary arteries that reduces blood flow to the heart.

The study didn't include enough minorities to detect trends for specific racial or ethnic groups, Gottlieb said.

Given the evidence that men 40 to 70 years old with obstructive sleep apnea face a higher risk of coronary heart disease, "it's really time for us to perform clinical trials to assess whether [coronary heart disease](#) risk can be reduced in patients with severe sleep apnea by treating the apnea," he said.

The most common treatment, called continuous positive airway pressure, involves the use of a machine that forces air into the airways to prevent breathing interruptions.

"The take-away from our study is that obstructive sleep apnea is a serious condition that warrants medical treatment," said Gottlieb. "Many patients don't experience symptoms of obstructive sleep apnea, such as daytime sleepiness, or if they do, don't mention it during routine medical exams. It's important for anyone who suspects they have obstructive sleep apnea to discuss it with their primary care physician."

Provided by American Heart Association

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