

Obstructive sleep apnea associated with incident heart failure, death in women

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Illustration of obstruction of ventilation. Credit: Habib M'henni / public domain

Risk factors for obstructive sleep apnea (OSA) and the development of

subsequent cardiovascular (CV) complications differ by sex, but it is not clear from prior research whether the effects of sleep apnea on heart disease is similar for men and women.

To evaluate whether sex-based differences exist in the relationship between OSA and CV disease, researchers at Brigham and Women's Hospital (BWH) evaluated the links among [sleep apnea](#), cardiac biomarkers that provide early evidence of heart disease, and occurrence of adverse heart outcomes in 1,625 individuals who were free of heart disease when first studied, and followed for an average of almost 14 years.

Results of the research, published in *Circulation* in October, found that sex-specific differences exist in the relationship between OSA and CV disease and that, in [women](#), sleep apnea was associated with higher blood levels of troponin (hs-TnT), a marker that provides information on early evidence of heart injury.

"The finding that sleep apnea is associated with evidence of early heart injury and an elevation in long term risk of heart failure, [coronary heart disease](#), enlargement of the heart muscle, and death in women highlights the importance of sleep apnea screening and treatment for women, a group who often are not routinely screened for sleep apnea," said co-author Susan Redline, MD, MPH, associate clinical director, in the Division of Sleep and Circadian Disorders at BWH.

The study examined post-menopausal women, who are at a greater risk for sleep apnea and heart disease. Researchers found that older women may be at relatively greater risk of sleep apnea related heart disease compared to men.

At the beginning of the study, when participants were an average age of approximately 63 years, 23 percent of men and 10 percent of women

had undiagnosed moderate to severe sleep apnea. Over a 14 year follow up, 46 percent of men and 32 percent of women experienced a significant adverse cardiac event, death, or had an enlarged heart. Women with moderate to severe sleep apnea were more than 30 percent likely to experience these adverse heart problems compared to women without sleep apnea. This relationship was not statistically significant in men, suggesting that factors such as age, obesity, hypertension and diabetes explained most of the observed [heart disease](#) risk in the men studied.

"We hope these results focus attention on the importance of sleep apnea in women, who historically are under-diagnosed in this area," Redline noted.

Provided by Brigham and Women's Hospital

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