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 bio-markers 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.
Trouble Sleeping? The Size Of Your Tongue, Tonsils Could Be Why

The best time to identify signs of obstructive sleep apnea may not be at night while snoozing in bed but, instead, while sitting in the dentist’s chair. According to a new study led by University at Buffalo orthodontic researcher Thikriat Al-Jewair, dentists are in the unique position as health care professionals to pinpoint signs of obstructive sleep apnea (OSA), a disorder in which breathing repeatedly stops and starts during sleep due to blocked upper airways.

The research found that oversized tonsils and tongue indentations, which are teeth imprints along the tongue that indicate it is too large for the mouth, placed people at high risk for OSA. Obese patients were almost 10 times more likely to report OSA symptoms than non-obese patients. Sleep apnea affects more than 18 million American adults, but many cases go undiagnosed, according to the National Sleep Foundation. Severe cases of the disorder are linked to cardiovascular disease, diabetes, depression, memory loss and more.

Although dentists cannot diagnose the disorder, they can spot an enlarged tongue or tonsils and recommend a patient to a sleep medicine specialist. “Dentists see into their patient’s mouths more than physicians do and the signs are easy to identify,” says Al-Jewair, clinical assistant professor in the UB School of Dental Medicine.

“We need to teach students about this condition before they get out in the field and educate dentists about the major role they play in identifying and treating patients with sleep-related disorders.”

The study, “Prevalence and risks of habitual snoring and obstructive sleep apnea symptoms in adult dental patients,” was published last month in the Saudi Medical Journal and funded by the Deanship of Scientific Research grant from the University of Dammam.

Analyzing 200 patients at the dental clinics at the University of Dammam’s College of Dentistry in the Kingdom of Saudi Arabia, the researchers tested participants for OSA using the Berlin Questionnaire, a validated assessment used to screen people for OSA. Participants were then screened for potential risk factors of OSA, such as weight, neck circumference, blood pressure, and size of the tongue, tonsils and uvula- the tissue that hangs in the back of the throat. The results found that 23 percent of participants were at risk for OSA, of which nearly 80 percent were male.

The factors most common among people who were identified as high risk for OSA on the Berlin Questionnaire -- along with obesity -- were large tonsils, tongue indentations and a high Epworth Sleepiness Scale score, another questionnaire used to measure daytime sleepiness. Future research will expand the sample size to include various age groups and monitor participant sleep overnight to confirm the prevalence and severity of OSA, says Al-Jewair.