

Snoring and Headaches

A recent study searched for a relationship between chronic snoring and chronic daily headaches. Someone suffering from chronic daily headaches experiences at least fifteen headaches per month, while someone with occasional headaches only suffers from at least 104 headaches per year. Patients who were suffering from chronic headaches were more than twice as likely to be chronic snorers than those with occasional headaches. When taking age, weight, and alcohol consumption into account, these numbers still did not change.

Researchers believe that if snoring is the trigger for chronic headaches, an oral appliance or other snoring therapy could alleviate them. This solution could offer great relief to those looking for reprieve from their headaches. The study included people aged eighteen to sixty-five with chronic daily headache over a period of five years. Those with chronic headaches were more likely to be women than men, and were more likely to have a lower education and have been previously married. These findings are interesting because while more women are likely to have chronic headaches, more men are likely to be chronic snorers.

More research is required to adequately determine the link between snoring and chronic headaches, because it is currently unclear whether one causes the other. Someone with chronic headaches could have disturbed sleep as a result, and sedation medications often lead to and aggravate sleep disordered breathing. Likewise, sleep deprivation over prolonged periods of time or even too much sleep can trigger chronic migraines. A more globalized approach to treating sleep apnea is necessary to clearly find the root of the problem in each patient. Since every patient is different and may experience varying degrees of sleep apnea, there is not one defining cause of sleep apnea. Thus it is extremely difficult to determine which affects the other, and it is possible that each case for each patient is different.

American Academy Of Neurology. "Snoring Linked To Headaches." ScienceDaily. www.sciencedaily.com/releases/2003/04/030422080309.htm (accessed March 9, 2015).



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Can Asthma Predispose a Patient to Sleep Apnea?

Adults have a much higher risk of developing sleep apnea than others, as risk increases with age. Obstructive sleep apnea is highly related to other disorders that could possibly result in early death, which is why there is a great importance and need to learn about any co-morbidity. Since both asthma and obstructive sleep apnea are disorders related to the respiratory system of the body, some physicians and researchers believe them to share a connection. Adults who struggle with asthma may very well face an increased risk of later developing obstructive sleep apnea, but the fundamental causes as to why both disorders develop are still unclear.

A study beginning in 1988 followed 550 men and women, aged 30-60, had the subjects participate in a questionnaire and sleep study every four years. Within the first four years, a whopping twenty-seven percent of those with asthma developed obstructive sleep apnea, while only sixteen percent of those without asthma developed it. Over the entirety of the study, asthmatic patients faced about forty percent greater risk of developing obstructive sleep apnea than their non-asthmatic counterparts. According to the study, the longer the patient was afflicted with asthma, the more likely they were to develop obstructive sleep apnea.

While the study successfully indicated that there was an association between the two disorders, the data did not show a cause and effect relationship. Some limitations of the study were that the questionnaires relied on self-reported data, which is almost always skewed due to the subjects' perception of themselves. Those with asthma had an increased risk of new onset obstructive sleep apnea, and as also associated with new onset obstructive sleep apnea with habitual feelings of sleepiness. When two disorders occur at the same time, it becomes difficult to determine which causes the other, but physicians can see how the two interact. The truth is that both are life-threatening disorders, and if either of them is left untreated, further problems may manifest themselves within the patient's body. Obstructive sleep apnea should be viewed as a systemic illness, as it affects so many different parts of the body's functions. Obstructive sleep apnea is very common among patients with asthma, but the connection is still unknown.

Mihaela Teodorescu, Jodi H. Barnet, Erika W. Hagen, Mari Palta, Terry B. Young, Paul E. Peppard. Association Between Asthma and Risk of Developing Obstructive Sleep Apnea. JAMA, 2015; 313 (2): 156 DOI: 10.1001/jama.2014.17822



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Poor Sleep Could Lead to Cognitive Decline in Elderly Patients

Sleep rules a large part of our lives, and can fundamentally affect our brains and bodies. Researchers performing a new study on older men found a link between poor sleep quality and cognitive decline over a span of three to four years. When patients experience frequent fragmented sleep and lower sleep quality, they have a forty to fifty percent chance of experiencing a decline in executive functions. Executive function is classified as the ability to plan or make decisions, correct errors or troubleshoot, and the ability to think and understand abstract concepts. Surprisingly, sleep duration was unrelated to the subsequent decline caused by fragmented sleep.

This study involved 2,822 community-dwelling elderly men with an average age of 76 to see how their sleep affected their brain function. A team of researchers collected data for five nights from each patient, and during that time they evaluated the patients' cognitive and executive function through a series of tests. The biggest predictor of cognitive decline was the patient's quality of sleep, and was unrelated to quantity of sleep. Realistically and optimistically, healthy sleep involves both quality and quantity. Those who were constantly woken up throughout the night scored significantly lower on the various tests of cognitive function compared to those who slept soundly.

Sleep has grown to be considered a pillar of health in recent years, therefore it makes sense that it is essential for optimal cognitive function. The higher rates of cognitive impairment lead to an increased demand to determine the associations between sleep and cognitive decline. Fragmented sleep can stem from obstructive sleep apnea, insomnia, and other sleep disordered breathing issues. Obstructive sleep apnea could potentially affect

a patient's cognitive function because they are constantly waking up throughout the night and experiencing fragmented sleep, and the oxygenated blood that enriches the brain drops during each apnea event. The underlying mechanisms connecting fragmented sleep to overall cognitive decline have yet to be discovered.

Terri Blackwell, Kristine Yaffe, Alison Laffan, Sonia Ancoli-Israel, Susan Redline, Kristine E. Ensrud, Yeonsu Song, Katie L. Stone. Associations of Objectively and Subjectively Measured Sleep Quality with Subsequent Cognitive Decline in Older Community-Dwelling Men: The MrOS Sleep Study. *SLEEP*, 2014; DOI:10.5665/sleep.3562



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Sleep Apnea Could Promote Development of Osteoporosis in Women

Sleep is such an integral part of human life and our health; therefore interrupted sleep can cause a plethora of different and dire consequences. A person suffering from sleep apnea will constantly wake up throughout the night to catch their breath, and this disrupts their sleep and oxygen flow to the brain and blood. Obstructive sleep apnea could potentially raise the risk of osteoporosis, particularly in women or elderly apnea patients. Each apnea event works to deprive the blood of oxygen, effectively weakening bones and raising the risk of developing osteoporosis. Ongoing and consistent sleep disruptions can actually harm the body's functions including the skeletal system.

As obstructive sleep apnea progresses along with osteoporosis, it can weaken bones and lead to fractures, increased costs of medical care, and greatly reduce the patients' quality of life. Researchers are scrambling to find and accurately identify the relationship between obstructive sleep apnea and bone health, but the main suspect is the lack of oxygen flow to the blood and bones. A retrospective cohort study was conducted, tracking over 1,400 people diagnosed with obstructive sleep apnea from 2000 to 2008. Those in charge of the study compared the rate of osteoporosis diagnoses to people who were not diagnosed with obstructive sleep apnea. The incidence of osteoporosis was almost three times higher in those with sleep apnea, which is a big

enough number to warrant further investigation.

The people who are most prone to developing osteoporosis after a diagnosis of obstructive sleep apnea are women and older individuals. Researchers believe that the daily progression of bone cell turnover and synthesis is likely important for normal bone health. The effects of sleep duration and the quality of oxygen levels in the body and in the blood may very well have an impact on bone metabolism within our bodies. The daily rhythms of our bodies are an intrinsic and essential element of bone creation and sustainability.

Christine M Swanson, Steven A Shea, Katie L Stone, Jane A Cauce, Clifford J Rosen, Susan Redline, Gerard Karsenty, Eric S Orwoll. Obstructive Sleep Apnea and Metabolic Bone Disease: Insights Into the Relationship Between Bone and Sleep. *Journal of Bone and Mineral Research*, 2015; 30 (2): 199 DOI: 10.1002/jbmr.2446



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