

# Severe breathing disorders during sleep are associated with an increased risk of dying

August 17 2009

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Severe breathing disorders during sleep are associated with an increased risk of dying from any cause according to research published this week in the open access journal *PLoS Medicine*. The study finds that the increased risk of dying is most apparent in men between 40 and 70 years of age with severe sleep-disordered breathing, and suggests a specific link between this condition and death from coronary heart disease in men.

Sleep-disordered breathing is characterized by a collapse of the upper airway during [sleep](#), leading to numerous, brief interruptions of breathing known as [sleep apnea](#), and it is experienced by one in four [men](#) and one in ten women. Although it is increasingly recognised as a serious condition—linked with hypertension, [heart failure](#) and stroke, as well as causing [daytime sleepiness](#) with dangerous consequences such as impairing a person's ability to drive safely—previous studies investigating sleep-disordered breathing have not included participants in sufficient numbers to identify specific factors (such as age and sex) that might predict an increased risk of dying.

In the Sleep Heart Health Study, Naresh Punjabi of Johns Hopkins University, Baltimore and colleagues studied over 6,000 men and women, initially assessing their night-time breathing, sleep patterns and blood oxygen levels, and calculating each participant's apnea-hypopnea index (AHI), defined as the number of pauses in breathing severe enough to cause a 4% drop in blood oxygen saturation, per hour of sleep.

Following the study participants over an average of 8 years, they found that those with severe sleep disordered breathing (AHI of 30 or above) at the outset were one and a half times more likely to die from any cause, irrespective of age, sex, race, [body mass index](#), smoking status and prevalent medical conditions. Men aged 40-70 with severe sleep-disordered breathing were twice as likely to die from any cause as men the same age not suffering from the condition (that is, those with AHI less than 5). Death from coronary heart disease was found to be associated with sleep-disordered breathing in men, but not in women. Those who had milder sleep-breathing disorders did not have a statistically significant increased risk of dying.

As an observational study, this research cannot determine whether sleep-disordered breathing is the actual cause of deaths, rather than a factor that happens to be associated with fatal conditions, nor whether treating sleep-disorder breathing can lengthen life. To address this question, the authors suggest "additional research in the form of randomized clinical trials... to assess if treatment [of sleep-disordered breathing] can reduce premature mortality associated with this common and chronic disorder."

More information: Punjabi NM, Caffo BS, Goodwin JL, Gottlieb DJ, Newman AB, et al. (2009) Sleep-Disordered Breathing and Mortality: A Prospective Cohort Study. *PLoS Med* 6(8): e1000132.

[doi:10.1371/journal.pmed.1000132](https://doi.org/10.1371/journal.pmed.1000132)

- Sleep Apnea, [www.nhlbi.nih.gov/health/dci/D...eepApnea\\_WhatIs.html](http://www.nhlbi.nih.gov/health/dci/D...eepApnea_WhatIs.html)
- Your Guide to Healthy Sleep, [www.nhlbi.nih.gov/health/publi...ep/healthy\\_sleep.htm](http://www.nhlbi.nih.gov/health/publi...ep/healthy_sleep.htm)
- The NHLBI Study Shows Association Between Sleep Apnea and Hypertension, [www.nhlbi.nih.gov/new/press/apr11-00.htm](http://www.nhlbi.nih.gov/new/press/apr11-00.htm)

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