

## Too much, too little sleep increases ischemic risk in postmenopausal women

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Postmenopausal women who regularly sleep more than nine hours a night may have an increased risk of ischemic stroke, researchers reported in *Stroke: Journal of the American Heart Association*.

Compared to women sleeping seven hours, the risk of ischemic stroke was 60-70 percent higher for those sleeping nine hours or more, said lead author Jiu-Chiuan Chen, M.D., Sc.D., assistant professor of epidemiology at the University of North Carolina's School of Public Health in Chapel Hill.

"After accounting for all common clinical conditions predictive of stroke, we found this increase was statistically significant: sleeping nine hours or more is strongly associated with increased risk of ischemic stroke," he said.

Researchers also found that women who slept six hours or less were at 14 percent greater stroke risk than those who slept seven hours a night. Nearly twice as many women reported sleeping less than six hours (8.3 percent) than those who reported sleeping nine hours or more (4.6 percent).

"The prevalence in women of having long sleep duration is much lower than having sleep duration less than six hours. So the overall public health impact of short sleep is probably larger than long sleep," Chen said. "This study provides additional evidence that habitual sleep patterns in postmenopausal women could be important for determining the risk

of ischemic stroke."

The findings apply only to postmenopausal women and cannot be applied to other groups, including men and younger women.

Postmenopausal women 50- to 79-years-old may be more susceptible to the detrimental effects of sleep deprivation than others.

"Our study population is a very specific group, and the duration of sleep needed for optimal health probably differs for various population groups," he said. "People who feel that their sleep problems are a burden to their daytime activities are encouraged to discuss their concerns with physicians who can better interpret their significance and offer advice in the context of their overall health."

Three large previous studies have addressed the role of sleep duration in coronary artery disease and/or stroke. They yielded mixed results and didn't account for the many factors that may increase the risk of cardiovascular disease and stroke, including: age, race, socioeconomic factors such as family income and employment, smoking, depression, exercise, hormone therapy in postmenopausal women, high-blood pressure, high cholesterol, diabetes, and obstructive sleep apnea.

Chen and his colleagues included known risk factors that might confound any apparent association of sleep duration and ischemic stroke in this analysis of data from the multi-ethnic Women's Health Initiative Observational Study. The study's 93,676 women were 50 to 79 years old at the time of their enrollment at 40 U.S. clinical centers. Researchers conducted the study from 1994 to 2005.

Researchers asked the women how long they typically slept each night. The results were: five hours or less, 8.3 percent; six hours, 26.9 percent; seven hours, 37.5 percent; eight hours, 22.7 percent; nine hours, 4.0 percent and 10 hours or more, 0.6 percent.

After accounting for the common risk factors for ischemic stroke, the increased relative stroke risks compared to the seven-hour-sleep group were: 14 percent for six hours or less sleep; 24 percent for eight hours of sleep; and 70 percent for nine or more hours of sleep. Among the team's other results:

- Long sleep durations were associated with being retired or unemployed; smoking, being physically inactive or having cardiovascular disease, diabetes, hypertension, high cholesterol or depression.
  
- Overweight women and minority women were more likely to sleep six hours or less.
  
- Women with current hormone therapy were less likely to sleep six hours or less.
  
- Income, physical activity, depressive symptoms and other cardiovascular risk factors correlated with sleep duration, but didn't fully account for the link between stroke and sleep patterns.

Medical, psychosocial and lifestyle variables included in their analysis could not completely explain the increased ischemic stroke risk associated with short and long sleep among postmenopausal women. But Chen said many studies have documented physiological consequences of sleep deprivation.

"Our data do not imply that if women with long sleep cut their sleep hours they would be at a lower risk," Chen emphasized. "At this point, we still cannot determine that long sleep causes ischemic stroke. The observed increase in stroke risk in long sleepers may be due to some unmeasured factors, such as undiagnosed sleep disorders, although we did attempt to account for that in our analysis."

"Further studies are needed to help us understand the possible mechanisms involved in the associations found in this study," he said, "because there are very limited neurobiological data relating long sleep to an increased risk of coronary heart disease or ischemic stroke that also is found in other large epidemiologic studies."

Source: American Heart Association

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