

# Less sleep associated with high, worsening blood pressure in middle age

June 8 2009

---

Middle-aged adults who sleep fewer hours appear more likely to have high blood pressure and to experience adverse changes in blood pressure over time, according to a report in the June 8 issue of *Archives of Internal Medicine*, one of the JAMA/Archives journals.

Almost one-third of Americans have hypertension or high [blood pressure](#), a condition that contributes to 7 million deaths worldwide each year, according to background information in the article. "Identifying a novel lifestyle risk factor for high blood pressure could lead to new interventions to prevent or reduce high blood pressure," the authors write. "Laboratory studies of short-term [sleep](#) deprivation have suggested potential mechanisms for a causal link between sleep loss and hypertension." Sleep deprivation is associated with increased activity in the sympathetic nervous system, which controls the body's stress response. Over time, this activation could contribute to high blood pressure.

Kristen L. Knutson, Ph.D., of the University of Chicago, and colleagues studied 578 adults who first had their blood pressure and other clinical, demographic and health variables measured between 2000 and 2001. In 2003 and 2005, sleep duration was measured using surveys and wrist actigraphy, in which a sensor is worn on the wrist to record periods of rest and activity. Blood pressure, demographic and self-reported sleep information were measured again in 2005 and 2006.

Participants (average age 40.1) slept an average of six hours per night;

only seven (1 percent) averaged eight or more hours of sleep. After excluding patients taking medication for high blood pressure and controlling for age, race and sex, the researchers found that individuals who slept fewer hours were significantly more likely to have higher systolic (top number) and diastolic (bottom number) blood pressure.

Sleeping less also predicted increases in blood pressure over five years, along with the onset of hypertension. Each hour of reduction in sleep duration was associated with a 37 percent increase in the odds of developing high blood pressure.

"Consistent with other studies, we observed higher blood pressure levels in men, particularly African American men," the authors write. "Also, as described in a previous report from this study, African American men slept much less than white women. These two observations suggested the intriguing possibility that the well-documented higher blood pressure in African Americans and men might be partly related to sleep duration."

"In summary, the present study provides evidence for a link between the duration and quality of sleep and high blood pressure levels using objectively measured sleep characteristics," they conclude. "Intervention studies are needed to determine whether optimizing [sleep duration](#) and quality can reduce the risk of increased blood pressure."

Source: JAMA and Archives Journals ([news](#) : [web](#))

Citation: Less sleep associated with high, worsening blood pressure in middle age (2009, June 8) retrieved 5 May 2024 from

<https://medicalxpress.com/news/2009-06-high-worsening-blood-pressure-middle.html>

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.