

Lack of Sleep in Midlife Associated with Increased Risk of Late-Onset Dementia

By: Science News



Short sleep duration in midlife is associated with the higher risk of dementia later in life, independently of sociodemographic, behavioral, cardiometabolic, and mental health factors, according to a new study published in the journal *Nature Communications*.

“Changes in sleep patterns are common in persons with Alzheimer’s disease and other dementias,” said Dr. Séverine Sabia, a researcher at the Université de Paris and the Department of Epidemiology and Public Health at University College London, and colleagues.

“These changes are believed to result from sleep-wake cycle dysregulation due to pathophysiological processes in dementia, particularly those affecting the hypothalamus and the brainstem.”

“Besides sleep disturbance, there is growing interest in the association between sleep duration and dementia.”

“Observational studies show both short and long sleep duration to be associated with the increased risk of cognitive decline and dementia.”

“Some studies also report change in sleep duration in older adults to be associated with the risk of dementia.”

The researchers used data from 7,959 British adults who are part of the Whitehall II cohort study.

The participants self-reported their sleep duration six times between 1985 and 1988 (age range: 35 to 55 years) and 2015 and 2016 (aged 63 to 86) enabling the authors to gauge sleep duration at ages 50, 60, and 70.

Some participants also wore watch accelerometers over a full week, to derive an objective measure of sleep duration.

A total of 521 participants had developed dementia by the end of the study period in 2019.

The scientists found that those who slept six hours or less each night while middle-aged were significantly more likely to develop dementia later in life, compared to those who slept seven hours per night.

They did not find any significant link between sleeping for eight or more hours, and dementia risk.

They found that the association was independent of potentially confounding factors such as mental health, or differences in behavior, sociodemographic status, or heart health.

“Sleep problems are known to occur in people with dementia, but it remains unclear whether sleep duration in midlife affects the risk of developing dementia at older ages,” Dr. Sabia said.

“By using a very long follow-up period, we have found that short duration sleep in midlife, assessed more than 25 years before mean age at dementia onset, is associated with dementia risk in late life.”

“While we cannot confirm that not sleeping enough actually increases the risk of dementia, there are plenty of reasons why a good night’s sleep might be good for brain health. These findings confirm the importance of sleep hygiene for health.”

“We know that sleep is important to our brain health, as it is involved in learning and memory, waste clearance from the brain, and the ability of our brain cells to remain healthy,” said Dr. Archana Singh-Manoux, also from the Université de Paris and University College London.

“A better understand of how sleep features might shape our risk of dementia is needed, as this might help researchers develop new ways to reduce the risk of dementia, or to delay its progression.”

S. Sabia *et al.* 2021. Association of sleep duration in middle and old age with incidence of dementia. *Nat Commun* 12, 2289; doi: 10.1038/s41467-021-22354-2