

Love to nap? Here's more evidence it's good for your brain

July 29 2023, by Hanna Webster



Credit: Unsplash/CC0 Public Domain

A study published last month in the journal *Sleep Health* found that regular napping is linked to larger brain volume and could indicate anti-aging properties of napping.

While past research looked at people's brains and sleep habits and made correlations, this study—with global collaboration including Harvard Medical School—took it one step further in analyzing participants' genes to locate specific traits associated with napping. The Allegheny Health Network Center for Sleep Medicine thinks it's a step in the right direction for learning more about sleep and cognition.

It is estimated that one in three U.S. adults does not get [adequate sleep](#) (an average 7 to 8 hours a night), and that around 18% of Americans have a sleep disorder. Teens need more sleep than adults, to accommodate a [developing brain](#). Chronic poor sleep can decrease immune function and increase risk of high blood pressure, diabetes and other health conditions.

However, power naps—characterized as an intentional 15- to 30-minute nap, typically in the afternoon—can temporarily relieve the burden of a sleep deficit, and some studies have shown they have benefits for cognition.

The new study's researchers asked people aged 40 to 69 about their power-napping habits: Did they nap regularly, sometimes or rarely? They then combed through participants' genomes to find similarities. The study sample came from more than 300,000 people who had registered with the UK Biobank, a vast consortium of participant genetic and medical data. The National Institutes of Health's All of Us Research Program, of which Pitt is a partner, is a similar cohort-based program but said it does not yet have the data to conduct a similar study, an NIH spokesperson said.

In those who napped regularly, they found [specific genes](#) consistent across the cohort that were associated with napping behavior, suggesting that some sleep habits are ingrained.

"Although our question is not necessarily unique, our approach is," said Hassan Dashti, assistant investigator in anesthesia, critical care and pain medicine at Massachusetts General Hospital Research Institute, a professor of anesthesia at Harvard Medical School and an author on the study.

Variables such as disease, depression, sleep disorders and poor sleep quality might impact a person's propensity to nap, making it hard to parse out the true reason for napping in a scientific study. But looking at genes, which a person has over their lifetime, can help rule out some of those confounders. "Relying on genetics is a powerful tool because now we can control for those variables," said Dashti.

In addition to the napping genes shared among those who snoozed regularly, the researchers also found that those who reported napping had larger total [brain](#) volumes compared to those who only napped sometimes or not at all.

Brain volume has been a measure of overall brain health and propensity for aging in previous studies, as the aging brain tends to shrink. In this study, researchers estimated that the brain size of those who napped was protective against the equivalent to 2.6 to 6.5 years of aging.

"Napping does have a protective effect on overall brain health," said Dashti.

The study also looked at markers of cognition, such as reaction time, visual memory and the size of a participant's hippocampus—a region deep in the brain largely responsible for memory. Researchers did not find correlations between regular napping and these functional measures of cognition, which they said surprised them, as previous research has found benefits to napping on these measures.

Daniel Shade, medical director of the AHN Sleep Disorders Center and a board-certified sleep medicine specialist, said like any study, this one had some strengths and some flaws.

"Brain volume is nice as an anatomical finding, but it's not a functional finding," he said, meaning the results don't signal that a larger brain is linked to functional changes like better reaction time or memory. "I was surprised not to see [that]." Shade was not involved in the research. He said the study was a great foundation to build upon scientific knowledge of links between sleep, napping and dementia, which more than 7 million Americans suffer from. "This is starting to show directions of where we need to go with research," he said.

Being both a researcher and a clinician in a sleep clinic, Shade thought the genetics component was a novel addition to the study, and that it reflected in part what he sees in the clinic. "Some people have a daily nap and that's just them, and others can't nap," he said. "If you don't need to nap, you shouldn't."

Dashti echoed this: "Even with these findings, I would never recommend people to start napping if they don't need it. However, if you feel the need to, napping is OK."

It's important to recognize, said both researchers, that power naps can't erase chronic bad sleep.

"If you consistently sleep six hours, you're going to accrue a sleep deficit," said Shade. "Short naps will increase attention for a period of a few hours, but what [they] won't do is compensate for a preexisting sleep debt."

When we stay awake for long hours and lag on proper sleep, a chemical in our bodies called adenosine builds up, causing us to feel sleepy

(caffeine is an adenosine blocker). This behavior, said Shade, also promotes a sort of proinflammatory response, as proteins called cytokines ramp up production. Napping can reduce this sleep pressure, temporarily alleviating the urge to sleep, which accrues throughout the day.

And while the [genetic analysis](#) gave more evidence that this protective napping behavior is ingrained in some people, it could also be true that people who nap regularly are able to do so based on other proffered benefits.

"They have the gene, but they also have the opportunity," said Shade.

"Daytime napping is a privilege and a luxury," said Dashti. "These people have a comfy bed, and they have time in the day to nap." And this could signal that those populations are enjoying other health benefits, too.

Using the UK Biobank, study participants were only white Europeans, so there's an opportunity to replicate the study in a more diverse cohort. Shade also suggested the possibility of a longitudinal study, looking at people's napping habits over a period of many years and tracking who gets dementia and who doesn't.

He was also interested to see the napping and memory aspect of the study explored further. "It would be great to see a functional correlation, but that's probably their next step," said Shade.

Researchers reiterated that feeling extremely sleepy throughout the day, sleeping long hours at night (typically 10 hours or more) or taking longer naps of around 2 hours could be a sign of an underlying problem that should be checked by a sleep specialist if these problems persist. Naps should be intentional, 15- to 30-minute periods.

"We don't want to use a nap as a mechanism to compensate for poor [sleep](#)," said Dashti.

More information: Valentina Paz et al, Is there an association between daytime napping, cognitive function, and brain volume? A Mendelian randomization study in the UK Biobank, *Sleep Health* (2023). [DOI: 10.1016/j.sleh.2023.05.002](#)

2023 PG Publishing Co.

Distributed by Tribune Content Agency, LLC.

Citation: Love to nap? Here's more evidence it's good for your brain (2023, July 29) retrieved 29 April 2024 from <https://medicalxpress.com/news/2023-07-nap-evidence-good-brain.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.