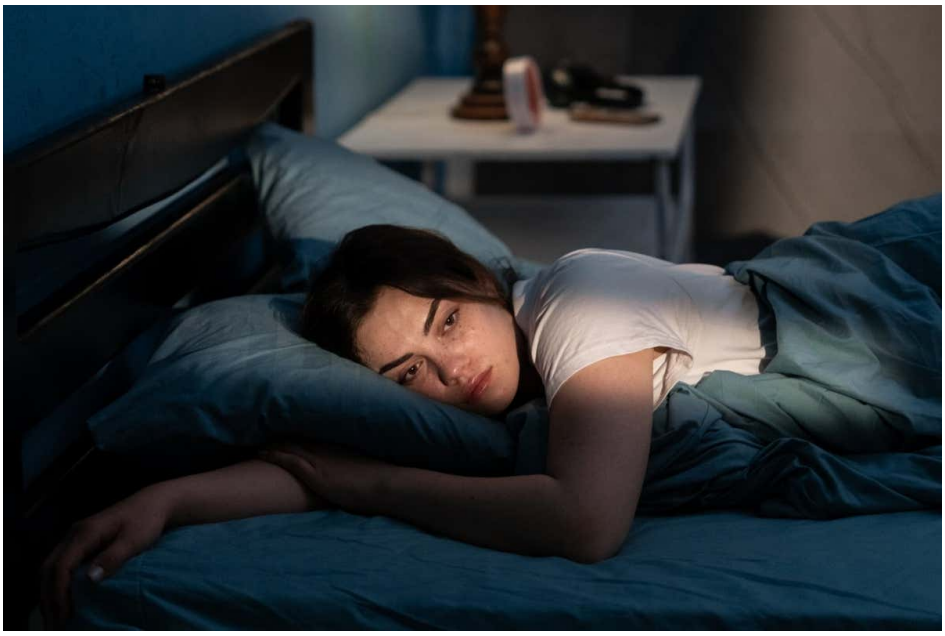
**Analysis and Health**

# You probably don't need 8 hours of sleep for a healthy brain

The largest analysis of brain scanning data yet casts doubt on the idea that shorter sleep duration is linked to shrinkage of the brain

By Clare Wilson 30 October 2023



Not getting enough sleep may be less harmful to the brain than some have feared.

Everyone knows that going to bed too late can leave you less alert the next day. But recent claims have gone further, promoting the idea that regularly getting too little sleep raises the risk of Alzheimer's disease and even shrinks the brain.

Now, this idea has been challenged by one of the most comprehensive analyses of brain scanning studies to date. So how much do we really need to worry about getting enough shut-eye?

Most health bodies, such as those in the US and the UK, advise that adults generally need between 7 and 9 hours of sleep a night. And, thanks to the recent availability of wrist-worn sleep tracking devices, it has never been easier to know if you are meeting this quota.

It is understandable if some people obsess over getting enough sleep. Widely covered animal research – including in *New Scientist* – shows that at night, the brain's cleaning system ramps up, ridding it of toxic compounds linked to Alzheimer's disease, such as a protein called beta-amyloid. And large population studies have generally found that people with unusually short or long sleep durations have worse health by several measures, including memory loss and brain shrinkage, one of the hallmarks of Alzheimer's.

Typically, there is a roughly U-shaped curve for the relationship between hours of slumber and the chances of a bad health outcome, such as dementia, and an inverted U-shaped curve for measures where a higher value signifies better health, such as brain volume seen on an MRI scan.

But such population studies can only find correlations between sleep duration and health, they can't tell us if poor sleep is causing the health problem. Only a randomised trial could do that, but these are almost impossible to do in this case, because few people would agree to change their sleeping habits for any length of time in the name of science, says Anders Fjell at the University of Oslo in Norway.

Fjell and his team have now tried to take a deeper look, through a series of studies that used brain volume as a proxy for brain health. First, they looked at brain volume in relation to sleep duration at a single point in time, using existing data on about 47,000 people. Here, they found an inverted U-shaped curve, although the highest brain volume was linked with a surprisingly low 6.5 hours of sleep a night.

The team then carried out a further analysis that tracked about 4000 people for up to 11 years. In this case, there was no correlation between sleep duration at the beginning of the study and brain shrinkage over this period. "It would be very surprising to see this, if short sleep had a negative effect on the brain," says Fjell.

The correlation in the first analysis could be explained by brain shrinkage causing sleep disturbance, rather than the other way round. Alternatively, it could just reflect stable differences between people rather than the result of brain shrinkage, such as that people with naturally smaller or larger brains tend to sleep less for some unknown reason, he says.

https://www.newscientist.com/article/2399776-you-probably-dont-need-8-hours-of-sleep-for-a-healthy-brain/