



Health Advisory: Sleep and Alzheimer's Disease

Millions of older adults have Alzheimer's disease, a brain disorder that slowly destroys memory and thinking skills. It is the most common cause of dementia and a leading cause of death in the U.S. Alzheimer's disease develops as abnormal protein deposits known as "plaques and tangles" build up in the brain over time. Nerve cells in the brain die, and their connections are lost as critical brain regions grow smaller. People who have Alzheimer's disease commonly experience disturbed sleep.

Sleep is now understood to be essential for brain health, playing central roles in learning and memory. Adults should sleep 7 or more hours per night on a regular basis to promote optimal health. Significant evidence suggests that insufficient sleep or poor sleep may in fact contribute to the development of Alzheimer's disease. Because toxic material increases in the brain during wakefulness, one purpose of sleep may be to decrease its production and flush it out. A protein called beta-amyloid – a key component of amyloid plaques – increases in the brain over hours of sleep deprivation. Therefore, years of chronic sleep loss, or poor sleep, may contribute in this manner to the gradual accumulation of beta-amyloid in the brain of people who develop Alzheimer's disease. Epidemiologic studies of sleep among large numbers of people, as they age, support this concern.

Research also suggests that obstructive sleep apnea, one common cause of poor sleep, may increase the risk of Alzheimer's disease. This sleep disorder involves repetitive episodes of upper airway obstruction – choking -- during sleep. These events can reduce oxygen levels in the blood and cause brief arousals from sleep. In severe cases, the cycle of breathing obstruction followed by sleep disruption can repeat hundreds of times every night. When sleep apnea remains untreated, the ongoing, repetitive sleep disturbance, low oxygen levels, or other adverse effects such as increased beta-amyloid may contribute to progression of Alzheimer's disease.

More research is needed to clarify the role of insufficient sleep, poor sleep, and obstructive sleep apnea in the development of Alzheimer's disease and related dementias. Research is also needed on the impact of sleep disorders treatment on Alzheimer's disease risk. This research should be prioritized by the National Institutes of Health (NIH), including the National Institute on Aging (NIA), and by other federal and private funding agencies.

Clinicians should screen adults for signs of a possible sleep disorder. These signs include excessive daytime sleepiness, snoring, and unrefreshing sleep. The American Academy of Sleep Medicine believes that existing evidence is sufficient to justify this important health advisory: Early intervention to ensure sufficient sleep and treat sleep disorders such as obstructive sleep apnea *may* help prevent or delay Alzheimer's disease.

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The American Academy of Sleep Medicine (AASM) is a professional membership society that improves sleep health and promotes high quality, patient-centered care through advocacy, education, strategic research, and practice standards (aasm.org).

A searchable directory of AASM-accredited member sleep centers is available at sleepeducation.org.