

Light therapy may improve symptoms of Alzheimer's disease

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The research suggests that light therapy may be a promising treatment option for patients with Alzheimer's disease. Credit: Rad Cyrus, Unsplash, CC0 (creativecommons.org/publicdomain/zero/1.0/)

Light therapy leads to significant improvements in sleep and psycho-

behavioral symptoms for patients with Alzheimer's disease, according to a new study [published](#) in *PLOS ONE* by Qinghui Meng of Weifang Medical University, China, and colleagues.

The [cognitive decline](#) associated with Alzheimer's disease is often accompanied by sleep disturbances and psycho-behavioral symptoms including apathetic and depressive behavior, agitation and aggression. Photobiomodulation is a non-pharmacological therapy that uses [light energy](#) to stimulate the suprachiasmatic nucleus (SCN), a sleep modulator in the brain. Despite [light therapy](#) receiving increased attention as a potential intervention for Alzheimer's, a systematic evaluation of its efficacy and safety has been unavailable.

In the new study, researchers searched multiple research databases to identify all randomized controlled trials related to light therapy intervention for Alzheimer's disease or dementia. Fifteen high-quality trials with available methods and relevant outcomes were selected for further analysis. The included trials were written in English, published between 2005 and 2022, and performed in seven countries. They included a combined 598 patients.

The meta-analysis of all 15 trials found that light therapy significantly improved sleep efficiency, increased interdaily stability (a measure of the strength of circadian rhythms), and reduced intradaily variability (a measure of how frequently someone transitions between rest and activity during the day). In patients with Alzheimer's disease, light therapy also alleviated depression and reduced patient agitation and caregiver burden.

Given the limited sample sizes in studies included in this [meta-analysis](#), the authors advocate for larger future studies, which could also explore if bright light exposure could cause any adverse behavior in patients. They conclude that light therapy is a promising treatment option for some symptoms of Alzheimer's disease.

The authors add, "Light therapy improves [sleep](#) and psycho-behavioral symptoms in patients with Alzheimer's disease and has relatively few side effects, suggesting that it may be a promising treatment option for patients with Alzheimer's disease."

More information: Qinghui Meng et al, The effect of light therapy on sleep disorders and psychobehavioral symptoms in patients with Alzheimer's disease: A meta-analysis, *PLoS ONE* (2023). [DOI: 10.1371/journal.pone.0293977](#). [journals.plos.org/plosone/arti ... journal.pone.0293977](#)

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