

Exploring the connection between hearing loss and cognitive decline

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Hearing loss affects tens of millions of Americans and its global prevalence is expected to grow as the world's population ages. A new study led by investigators at Brigham and Women's Hospital adds to a growing body of evidence that hearing loss is associated with higher risk of cognitive decline. These findings suggest that hearing loss may help

identify individuals at greater risk of cognitive decline and could provide insights for earlier intervention and prevention.

"Dementia is a substantial public health challenge that continues to grow. There is no cure, and effective treatments to prevent progression or reverse the course of dementia are lacking," said lead author Sharon Curhan, MD, MSc, a physician and epidemiologist in the Channing Division for Network Medicine at the Brigham. "Our findings show that hearing loss is associated with new onset of subjective cognitive concerns which may be indicative of early stage changes in cognition. These findings may help identify individuals at greater risk of cognitive decline."

Curhan and colleagues conducted an eight-year [longitudinal study](#) among 10,107 men aged >62 years in the Health Professionals Follow-up Study (HFPS). They assessed subjective cognitive function (SCF) scores based on responses to a six-item questionnaire administered in 2008, 2012 and 2016. SCF decline was defined as a new report of at least one SCF concern during follow-up.

The team found that hearing loss was associated with higher risk of subjective cognitive decline. Compared with men with no hearing loss, the relative risk of cognitive decline was 30 percent higher among men with mild hearing loss, 42 percent higher among men with moderate hearing loss, and 54 percent higher among men with severe hearing loss but who did not use hearing aids.

Researchers were interested to see if hearing aids might modify risk. Although they found that among men with severe hearing loss who used hearing aids, the risk of cognitive decline was somewhat less (37 percent higher), it was not statistically significantly different from the risk among those who did not use hearing aids. The authors note that this may have been due to limited power or could suggest that if a difference

truly exists, the magnitude of the effect may be modest.

The authors also note that the study was limited to predominantly older white male health professionals. This allowed for greater control of variability but further studies in additional populations would be helpful. In addition, the study relies on self-reported hearing loss and subjective measures of cognitive function. In the future, the team plans to investigate the relationships between self-reported hearing loss, change in audiometric hearing thresholds, and changes in cognition in women using several different assessment measures.

"Whether there is a temporal association between [hearing](#) loss and cognitive decline and whether this relation is causal remains unclear," said Curhan. "We plan to conduct further longitudinal studies of the relation of [hearing loss](#) and cognition in women and in younger populations, which will be informative."

More information: Curhan, S et al. "Longitudinal study of hearing loss and subjective cognitive function decline in men" *Alzheimer's & Dementia* [DOI: 10.1016/j.jalz.2018.11.004](https://doi.org/10.1016/j.jalz.2018.11.004)

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