



Hearing Loss and Dementia: How Are They Related?

Key Points:

- With a large aging population, dementia is a growing public health crisis.
- Hearing loss is strongly linked to an increased risk of developing dementia.
- Being studied: whether treating hearing loss reduces risk of developing dementia.
- Hearing loss is treatable, and there are significant barriers to accessing care.

Dementia is a growing public health crisis. Globally, 47M people in 2015 were living with dementia, and this number is expected to triple by 2050 because of the aging population. In the U.S., this means that 1 of every 30 Americans will be living with dementia in 2050. There are currently no proven therapies that can cure, prevent, or reduce the risk of dementia, but the research on the role of hearing interventions in dementia is promising. (Source: Alzheimer's Association website facts & figures)

Hearing loss is the single risk factor that accounts for the greatest number of dementia cases¹. While there are several risk factors that have been linked to dementia (e.g., low education, high blood pressure, smoking), an international group of scientists convened by the Lancet Commission to examine dementia concluded that *hearing loss accounted for the greatest number of potentially preventable cases of dementia*. One study found that people with a mild, moderate, and severe hearing loss, respectively, had a 2x, 3x, and 5x greater risk of being diagnosed with dementia over time compared to people without hearing loss².

Researchers believe that hearing loss increases the risk of developing dementia through its effects on the brain and communication³. Hearing loss prevents sounds from clearly reaching the brain, forcing the brain to work harder to understand sound. This stress may lead to faster aging of the brain and limit a person's optimal thinking and memory abilities. Hearing loss can also limit our ability to optimally communicate and engage with others which contributes to social isolation and dementia risk.

Treating hearing loss could possibly reduce the risk of developing dementia but further research is needed. Determining if treating hearing loss with technologies such as hearing aids could possibly lower the risk of dementia will require a randomized trial in which people are followed for many years after some people receive hearing treatment and others do not. This definitive study, the Aging & Cognitive Health Evaluation in Elders (ACHIEVE) trial, is being sponsored by the National Institute on Aging and will be completed in 2023⁴.

Hearing loss is treatable, but there are significant barriers to accessing care. The National Academies of Sciences, Engineering, and Medicine published consensus recommendations on how to address these barriers in the U.S. (National Academies "Hearing Health Care for Adults"). One recommendation to create a category of over-the-counter hearing aids to spur innovation and increase affordability was passed into law in 2017 and will go into effect in 2020-2021.

References

1. Livingston G, Huntley J, Sommerlad A, Ames D, et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. *Lancet*. 2020 Aug 8;396(10248):413-446. doi: 10.1016/S0140-6736(20)30367-6. Epub 2020 Jul 30. PMID: 32738937; PMCID: PMC7392084
2. Lin FR, Metter EJ, O'Brien RJ, Resnick SM, Zonderman AB, Ferrucci L. Hearing loss and incident dementia. *Arch Neurol*. 2011 Feb;68(2):214-20. doi: 10.1001/archneurol.2010.362. PMID: 21320988; PMCID: PMC3277836
3. Lin FR, Albert M. Hearing loss and dementia - who is listening? *Aging Ment Health*. 2014;18(6):671-3. doi: 10.1080/13607863.2014.915924. PMID: 24875093; PMCID: PMC4075051
4. Aging and Cognitive Health Evaluation in Elders (ACHIEVE) trial: <https://clinicaltrials.gov/ct2/show/NCT03243422>

About Us

At the Johns Hopkins Cochlear Center for Hearing and Public Health, we are training a generation of clinicians and researchers to study the impact that hearing loss in older adults has on public health, and to develop and implement public health strategies and solutions for hearing loss in the U.S. and globally. We approach our work with the foundational understanding that strategies and solutions that allow older adults with hearing loss to communicate and effectively engage with their environment are fundamental to optimizing human health and aging.

For more information on hearing loss, hearing device legislation, and hearing care and Medicare

Cochlear Center Fact sheets:

- Hearing Loss in the US: Increasing, Undiagnosed, Undertreated
- Hearing Loss and Dementia: How Are They Related?

Cochlear Center Policy briefs:

- The Over-The-Counter Hearing Aid Act of 2017: Increasing the Accessibility and Affordability of Hearing Aids in the U.S.
- Overview of Medicare Coverage for Hearing Treatment: Inadequate and Ready for Improvement
- Proposals for Medicare hearing care coverage: To be Effective, They Must Distinguish Between - and Cover - Both Hearing Care Services and Hearing Aids

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