

Update on Dementia and Hearing Loss

Evidence continues to mount relative to the relationship between dementia and hearing loss

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Although we cannot yet say there is a causal link between hearing loss and dementia—or that hearing aids can do anything to forestall dementia—the evidence from scientific studies is intriguing.

New York Times health columnist Jane Brody described hearing loss as “a hidden disability, often not obvious to others or even to those who have it.” In her January 16, 2012 article,¹ Brody summarized the findings of several studies that persons with untreated hearing loss “are likely to become frustrated and socially isolated. That isolation has been linked to depression.” She also reported on evidence there may be a causal relationship between untreated hearing loss and dementia.

In a more recent (February 11, 2013) *New York Times* article,² Katherine Bouton, who has a significant hearing loss, discussed the relationship between hearing loss and dementia. For example, otolaryngologist Frank Lin³ studied 639 individuals and found “for individuals older than 60 years, more than one third of the risk of dementia was associated with hearing loss.”

Although the cause of the increased risk of dementia is *not* clear, one possible cause is the social isolation caused by untreated hearing loss. There also may be a more direct mechanism, referred to as “cognitive load.” Lin theorized: “When the clarity of words is garbled, the brain has to reallocate resources to hear at the expense of other brain functions.”³

A third possible cause is a pathological process affecting both hearing and cognitive function, although no such pathology has been identified.

This begs the question about whether hearing aids can reduce the risk of dementia for people with hearing loss. There are considerable data that hearing aids reduce the social isolation, depression, and anxiety that

untreated loss can cause.⁴ Another study found that “amplification reduces effortful listening for people with hearing loss,” which should reduce the cognitive load.

However, there are few data specifically on the effects of hearing aid use on dementia. The question is an important one since, as previous investigators have pointed out, reducing cognitive decline and delaying the onset of dementia *even slightly* could lead to billions of dollars in healthcare savings and improve the quality of life of millions of older adults.

One small study⁵ investigated hearing aid use and cognition in elderly adults. A group of 12 adults was divided into three subgroups: normal hearing, hearing loss without use of hearing aids, and hearing loss with use of hearing aids. The group who had hearing loss without hearing aid use showed the lowest scores on the Wechsler Intelligence Scale-Revised, while there were no differences in the normal hearing and hearing loss with hearing aid use groups. However, this was a retrospective study of a very small sample.

There is increasing evidence of a causal link between untreated hearing loss and dementia. Although we cannot definitively say that hearing aids can stave off dementia, the evidence for such a benefit is intriguing.

References

1. Brody J. Personal Health: Lifelines for People With Hearing Loss. *New York Times*, January 16, 2012. Available at: http://well.blogs.nytimes.com/2012/01/16/personal-health-lifelines-for-people-with-hearing-loss/?_r=0
2. Bouton K. Straining to Hear and Fend Off Dementia. *New York Times*, February 11, 2013. Available at: <http://well.blogs.nytimes.com/2013/02/11/straining-to-hear-and-fend-off-dementia>
3. Lin FR, Metter EJ, O'Brien RJ, Resnick SM, Zonderman AB, Ferrucci L. Hearing loss and incident dementia. *Arch Neurol*. 2011;68(2):214-220. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3277836/#_ffn_sec_title
4. Kochkin S, Rogin C. Quantifying the obvious: the impact of hearing aids on quality of life. *Hearing Review*. 2000;7(1):8-34.
5. Obuchi C, Harashima T, Shiroma M. Age-related changes in auditory and cognitive abilities in elderly persons with hearing aids fitted at the initial stages of hearing loss. *Audiology Research*. 2011;1:41-42. Available at: <http://www.audiologyresearch.org/index.php/audio/article/view/13>



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