

A New Take on Research: Dementia and Hearing Loss

By Linda S. Remensnyder

“I hear what I want to hear.” How many of us over the years have heard this from our patients? Could new research regarding hearing loss and dementia reflect that commonly voiced misconception—that if one hears what one wants to hear, one hears enough?

Could it be that if we increase our patients’ incidental hearing via hearing aids that provide “surround sound” that “stretches” the audibility more than the typical 3–6 feet, dramatically improve our patients’ ability to hear on the telephone, enhance the clarity of their television, and provide audibility in poor acoustical venues previously closed to them by insisting upon hearing aids with telecoils and loop systems with which to interface, we would be not just treating our patients’ hearing loss but also forestalling their cognitive decline?

New research from Johns Hopkins University—National Institute on Aging has found that seniors with hearing loss are significantly more likely to develop dementia over time than those who retain their hearing (Lin, 2011). This research documents that the greater the degree of hearing loss, the greater the risk. Compared with volunteers with normal hearing, those with mild (25–40 dB), moderate (41–70 dB), and severe (>70 dB) hearing loss had, respectively, a twofold, threefold, and fivefold risk of developing dementia over time.



Specifically, the risk of developing Alzheimer’s disease also increased with diminishing hearing, with the authors noting that for every 10 dB decrement in hearing, the extra risk increased by 20 percent.

As audiologists, we all know from studies in pediatric audiology that so much of hearing is incidental

hearing—hearing conversation that is not directed to the listener personally. Hearing colleagues greeting one another in the morning, hearing the grocery store clerk speak to another customer, and hearing the speech of others at a neighboring table are all examples of incidental hearing. Incidental hearing provides

a rich, diverse, and omnipresent means of language stimulation that is not deliberately sought out by the listener.

So many of our senior patients say they “hear what they want to hear,” and note that they only hear others when they face them, speak up, or get close before talking. As their hearing diminishes, their range of audibility gets smaller and smaller, causing concentric rings of sound isolation.

As their hearing loss further unfolds, the condition begins to trigger social isolation as well. Those with hearing loss often cease frequenting activities where their hearing is challenged. They might avoid certain restaurants, stop going to large gatherings, cease attending services at their place of worship, and restrict conversing with certain speakers whose voices they can't understand.

In his concluding statement, the lead author of the research, Frank R. Lin, MD, notes that

Hearing loss may be associated with cognitive decline through a causal pathway, possibly mediated by social isolation or cognitive load, or through a direct neuro-biologic mechanism. The effect of hearing loss on cognitive load is suggested by studies demonstrating that under conditions where auditory perception is difficult, i.e., hearing loss, greater cognitive resources are dedicated to auditory perceptual processing to the detriment of other cognitive processes such as working memory.

My take on this is that audiologists should begin treating the *whole* patient by

- Providing audiologic rehabilitation classes to teach patients strategies to help their hearing aids work optimally (e.g., teaching them where to sit for maximum audibility or empowering them to demand that a speaker use a microphone).
- Providing amplified telephones or providing a completed application in those states where an amplified phone is complimentary.
- Demonstrating and providing links to the television (whether it's a hearing loop or a manufacturer's device—as long as it's not closed captioning, which should be the last line of defense).
- Becoming their patients' advocates by facilitating the placement of hearing loops in all venues with poor acoustics such as local places of worship, community theaters, and senior citizen meeting halls.

Maybe, just maybe, by assuming this proactive stance, the high incidence of dementia in our target population may also be reduced while we are fulfilling our primary goal of improving communication.

Providing a total approach for our patients is our responsibility, and if it reduces incidence of cognitive decline, the ramifications of that intervention are all the more significant.

It is currently estimated that 24 million people are living with some form of dementia worldwide. By 2030, 10 million baby boomers will be inflating that number with the total

number afflicted worldwide expected to reach 84 million by 2040.

In his follow-up article in the July edition of the *Journal of Gerontology*, Dr. Lin concludes

Our findings potentially have significant implications for public health. Hearing loss is highly prevalent, and hearing loss may be both potentially preventable and treatable with rehabilitative devices **and strategies that remain grossly underutilized** [emphasis mine].

What an enormous impact this intervention may have, not only on our patients but also on society. 🎧

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References

Lin FR, Metter EJ, O'Brien RJ, Resnick SM, Zonderman AB, Ferrucci L. (2011) Hearing Loss and Incident Dementia. *Arch Neurol* 68(2):214–220.

Lin FR (2011) Hearing Loss and Cognition Among Older Adults in the United States. *J Gerontol: A Biol Sci MEd Sci* 66A(10):1131–1136.



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Go to www.audiology.org and search keyword “dementia” or use the QR code to view this on your mobile device.