

Hearing loss and the connection to Alzheimer's disease, dementia

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Sound has the power to stimulate the brain, which is why hearing loss

has the potential to have a profound effect on health—especially among older adults.

About 1 in 3 people in the United States between the ages of 65 and 74 has hearing loss, according to the National Institutes of Health. A 2016 study in the *American Journal of Public Health* found about two-thirds of adults ages 70 or older suffer from hearing impairment that may affect daily communication.

Hearing loss is associated with cognitive decline, though more research is needed to determine the degree of the connection, said Dr. Costantino Iadecola, director of the Feil Family Brain and Mind Research Institute at Weill Cornell Medical College in New York City.

A 2011 study in *Archives of Neurology*, now named *JAMA Neurology*, found those with mild hearing loss had nearly twice the risk of developing dementia compared to people with [normal hearing](#). Those with moderate loss had three times the risk, while those with severe loss had five times the risk.

"All we know is that people who tend to have hearing loss tend to have more dementia," Iadecola said. "It doesn't mean that the hearing loss is causing the dementia, it doesn't mean that the dementia is causing the hearing loss."

There were about 5 million people in the United States living with Alzheimer's disease and related dementias in 2014, about 1.6% of the U.S. population, according to the Centers for Disease Control and Prevention. The number is expected to grow to 13.9 million, or roughly 3.3% of the population, by 2060.

Dementia can develop for a variety of reasons, including vascular, neurogenerative and neuroimmune conditions, Iadecola said. "Each has a

different impact on the brain."

One theory behind the connection between dementia and hearing loss is that dementia creates certain conditions that may affect the ability to hear, Iadecola said. Or, he added, it could be the reverse, with hearing loss somehow impairing the brain's ability to function.

"If you break down what hearing is, it is a major component in our ability to connect with the rest of the world," said Nicholas Reed, an audiologist and core faculty member at the Cochlear Center for Hearing and Public Health at Johns Hopkins Bloomberg School of Public Health in Baltimore.

Hearing loss is "highly related to social isolation and loneliness," he said, "and we've known for a long time that [social isolation](#) and loneliness are related to important age-related health outcomes like dementia and cognitive decline."

Reed is part of a Johns Hopkins team leading a federally funded study looking at the potential of hearing treatments to reduce [cognitive decline](#) in older adults. It's the kind of research that could make a difference in the quality of life of older populations for generations to come.

Results aren't expected for a few years. For now, Reed said, while existing research hasn't definitively concluded whether hearing aids can help, "I think many of us believe that most likely, hearing care does help."

But not everyone with mild hearing loss needs a hearing aid right away, he said. "You very much may be able to get by adjusting the way you live your life. Making sure you face sounds you want to hear, making sure you're avoiding background noise for important conversations, and use simple amplifiers to help in more difficult situations."

He advises people to start getting their hearing checked regularly in their 60s, and to use earplugs at loud sporting events or concerts, regardless of age.

Reed points to a 2017 report from *The Lancet* International Commission on Dementia Prevention, Intervention and Care as proof of the importance of prevention. The report identified hearing loss as one of nine potentially modifiable risk factors that contributed to about 35% of dementia cases, with hearing loss the biggest contributor at 9%.

"What that means is 9% of [dementia](#) cases could be eliminated theoretically if all [hearing loss](#) were eliminated," Reed said. That assumes, however, there were no other contributing factors, he said.

Staying healthy overall, like getting enough exercise and preventing high blood pressure, also may affect hearing health.

"In terms of health, the primary concern as we go through aging, is to maintain our ability to function independently as much as possible," Iadecola said, "and [hearing](#) is one of the central elements of this."

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