

Ask the expert

Ulrike Lemke on hearing loss and dementia

The link between hearing loss and cognitive decline has been a hot topic in audiology research for several years. Many publications have established strong correlations between the two conditions, and the evidence continues to grow with new, more powerful studies evaluating the impact of treating hearing loss on preventing or delaying the progress of dementia. We have talked to Dr. Ulrike Lemke, who has been driving research projects on this topic for Sonova for several years, about the latest study findings, how to leverage these results in clinical practice and the potential of early detection and management of hearing loss for healthy aging.

How are hearing health and brain health linked?

We understand that the ears and the brain act as equal partners: While the ears pick up auditory signals, the brain gives meaning to the puzzle of sounds. Hearing loss means that it gets harder or impossible for the brain to put the overall picture together. While listening and communication become more effortful, it may still be difficult to participate in conversations, to engage in activities and to cherish relationships. This may result in social withdrawal or isolation which is known to negatively impact cognition, physical function, and overall well-being.

Despite the fact that hearing loss is increasingly recognized as a risk factor for brain health, it is very common in old age and often goes untreated over a long duration. It has been identified as the single largest potentially modifiable risk factor for dementia by the Lancet commission.



Implication from the ACHIEVE study: Treating hearing loss may be a low-risk intervention for slowing down cognitive decline in older adults at increased risk.¹

Why is cognition and hearing care a relevant topic?



Currently, **65% of people over age 60** have hearing loss. Globally, **1.5 billion people** live with hearing loss, and with aging population, this number is projected to increase to **2.5 billion** by 2050.^{2, 3}



Approximately **10% of people over age 65** have dementia.⁴



Hearing loss has been identified as the **largest potentially modifiable risk factor** for dementia, **contributing 8%** to the **total risk of dementia**.⁵

Which insights has the latest evidence provided?

At this year's Alzheimer's Association International Conference, the long-awaited results of the multicenter randomized controlled ACHIEVE trial led by investigators from John Hopkins University have been presented. The study's key finding showed that hearing intervention slowed down loss of thinking and memory abilities by 48% over 3 years in older adults at increased risk for cognitive decline.¹ This research has provided powerful evidence of the benefits of hearing care on cognitive decline.

The ENHANCE study⁶ by Professor Julia Sarant from the University of Melbourne, with a slightly different setup, also focused on the effect of hearing intervention on cognition, came to a similar result: individuals using hearing aids maintained their cognitive abilities over 3 years, whereas participants without hearing intervention showed a decline in cognition

over the same time. Prof. Sarant's conclusion: referral for hearing screening and hearing intervention may facilitate maintaining good cognitive health in old age.

And what can these latest research findings tell us about the benefits of older adults having their hearing checked regularly?

Hearing loss and dementia are both strongly related to age. Considering that untreated age-related hearing loss is a risk factor for dementia timely identification and management of hearing loss is strongly recommended. Corrected hearing fosters participation and an active healthy lifestyle.



Dr. Ulrike Lemke, Senior expert in Healthy Aging at Sonova AG, Switzerland. Ulrike holds a PhD in psychology, a M.Sc. in gerontology, and is licensed as a psychotherapist for cognitive-behavioral therapy.

¹ Lin, F. et al., (2023). Hearing intervention versus health education control to reduce cognitive decline in older adults with hearing loss in the USA (ACHIEVE): a multicentre, randomised controlled trial. The Lancet. Advanced online publication. [https://doi.org/10.1016/S0140-6736\(23\)01406-X](https://doi.org/10.1016/S0140-6736(23)01406-X) ² Institute for Health Metrics and Evaluation (IHME). (2018). Findings from the Global Burden of Disease Study 2017. Seattle, WA: IHME. http://www.healthdata.org/sites/default/files/files/policy_report/2019/GBD_2017_Booklet.pdf ³ World Health Organization. (2021). World report on hearing. Geneva: World Health Organization. Retrieved March 8th, 2021. from <https://www.who.int/publications/i/item/world-report-on-hearing> ⁴ United Nations Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022: Summary of Results. UN DESA/POP/2022/TR/NO. 3. ⁵ Livingston, G., Huntley, J., Sommerlad, A., Ames, D., Ballard, C., Banerjee, S., ... Mukadam, N. (2020). Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. Lancet (London, England), 396(10248), 413-446. doi:10.1016/S0140-6736(20)30367-6. ⁶ Sarant, J., Harris, D., Schembri, A., Lemke, U., Launer, S., Phillips, ... Davine, E. (2023, July 16-20). Cognitive function in older adults with hearing loss: Outcomes for treated versus untreated groups at 3-year follow-up [paper presentation]. Alzheimer's Association International Conference, Amsterdam, NL.