



THE AMERICAN OTOLOGICAL SOCIETY



CLINICIAN SCIENTIST AWARD 2015-2018

“Exploring the Impact of Hearing Loss on Impaired Cognition in Older Adults”

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PUBLICATIONS:

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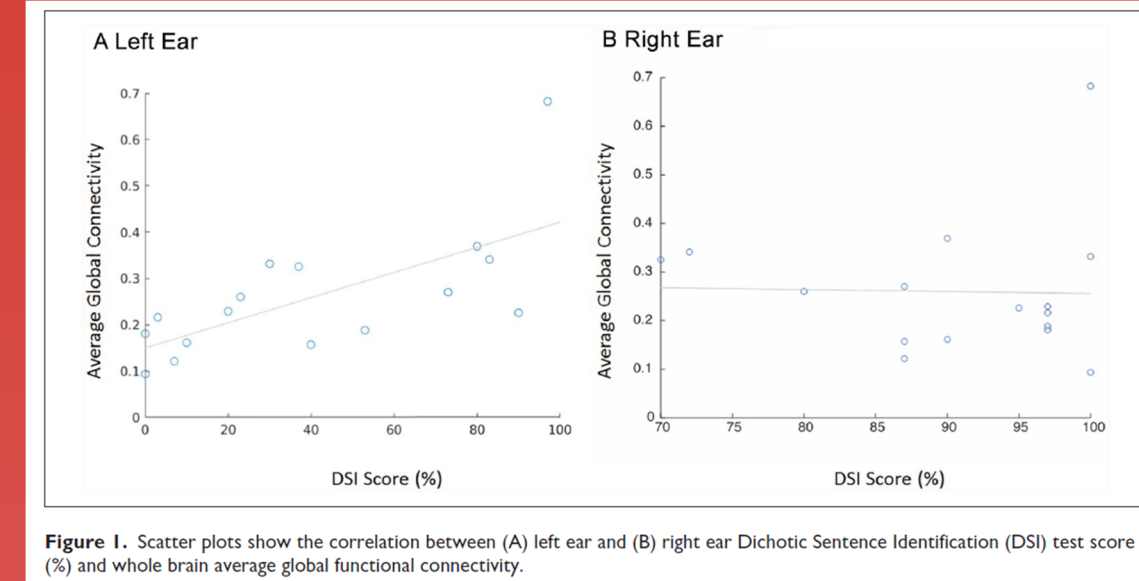
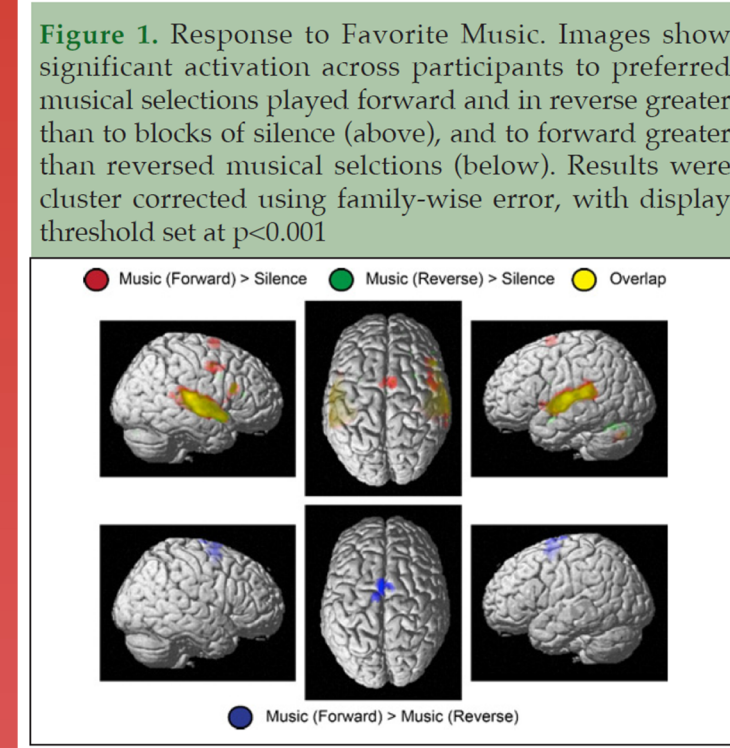
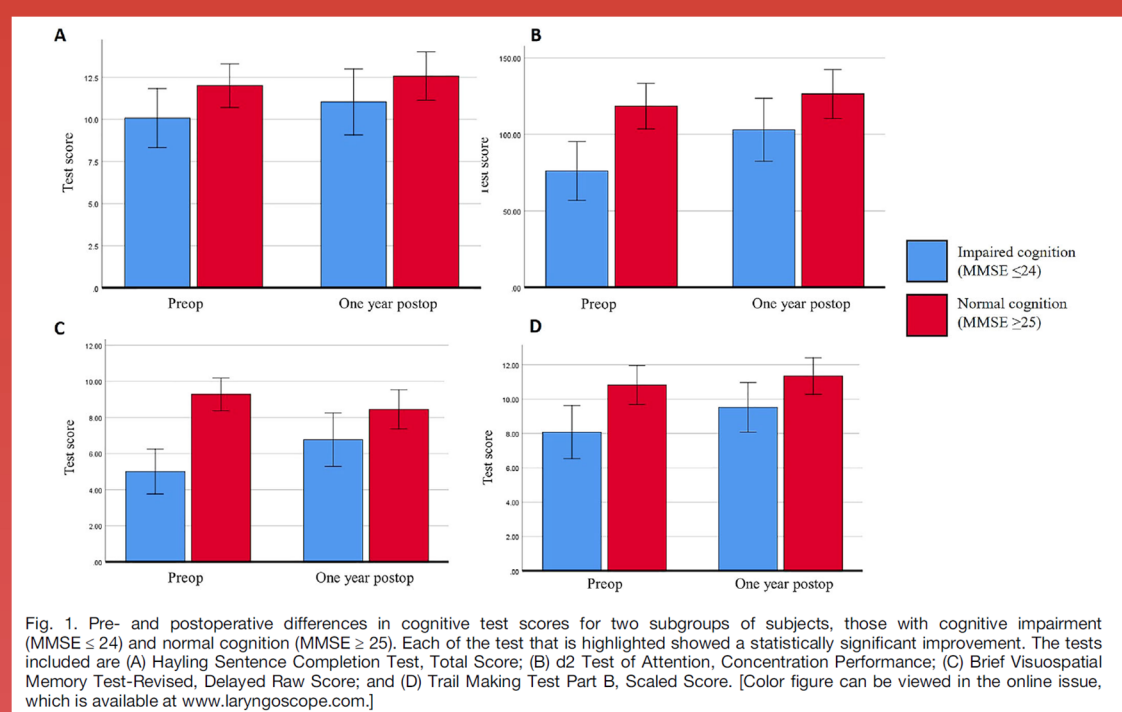
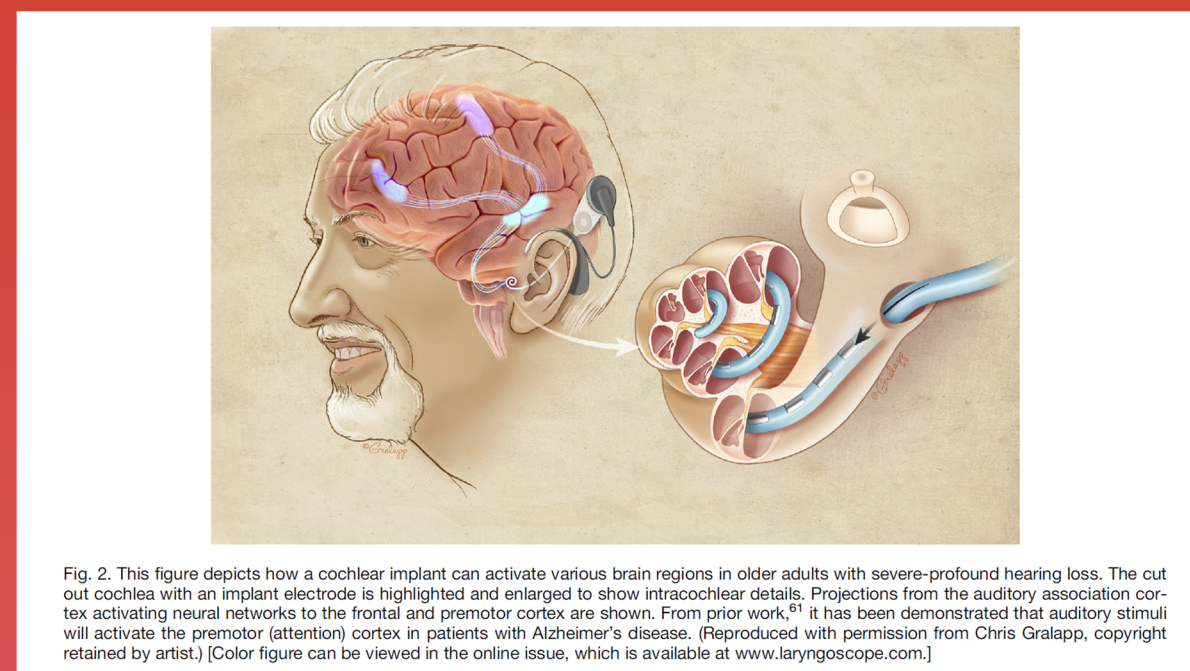
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RESEARCH SUMMARY: Our research of the “Hear and Know” group focuses on the impact of hearing loss on cognition in older adults. Our group is comprised of experts from Otolaryngology, Neurology, Epidemiology, Biostatistics, and Population Health Sciences. We study patients with hearing loss and how hearing restoration, specifically via cochlear implantation, can improve or maintain cognitive function and prevent Alzheimer’s disease dementia.

OUTCOMES: In our research, we have shown:

- Hearing loss leads to a 1.24-4 fold increased odds ratio of developing dementia in older adults (Thomson, Gurgel, 2017).
- That the auditory association cortex has less grey matter density in individuals with dementing illnesses compared to those with mild cognitive impairment (Aylward, Gurgel, 2020).
- That left ear hearing predicts function activity in the brains of patients with Alzheimer’s disease as determined by functional MRI (Aylward, Gurgel, 2021)
- That familiar music, as an auditory percept, can increase functional connectivity in the brains of patients with Alzheimer’s disease dementia (King, Gurgel, 2019)
- That cochlear implants can improve cognitive function in older adults, especially in those with impaired cognition (Gurgel, 2022)



FURTHER FUNDING HAS ENABLED US TO EXPAND OUR RESEARCH TO:

- Build a multidisciplinary team that is focused on hearing loss and cognition in older adults
- Develop a research infrastructure with research coordinators, graduate students and trainees, and collaborators across many academic departments.
- Increase awareness about hearing healthcare and the many non-hearing related consequences of hearing loss and benefits of hearing restoration.

LAY SUMMARY OF FINDINGS AND IMPLICATIONS OF THIS RESEARCH: We have been able to demonstrate that hearing loss is associated with increased rates of dementia. We have also shown that by treating severe-profound hearing loss with cochlear implantation, individuals experience improved cognitive function. The implications from this research are that hearing health is critically important to cognitive health in older adults.