

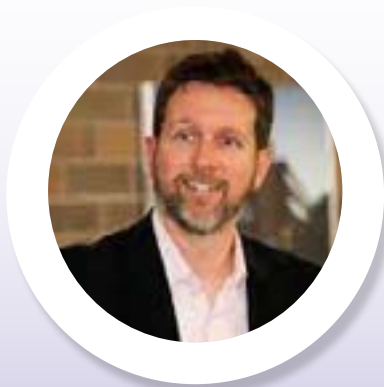
17th Annual Congress on Neuroscience

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Hearing loss & increased risk of dementia: Treatment options

Hearing loss is estimated to plague nearly 500 million people worldwide and can grow to affect 1 billion by 2050. With advances in modern medicine that extend the human life-span, rates of presbycusis (i.e. age-related hearing loss) will only continue to increase, and for many, is considered inevitable as a result of genetic disposition¹. The hallmark features of presbycusis are a progressive loss of cells within the cochlea followed by, or in tandem with, a degeneration of nerves throughout the central auditory pathway². Presbycusis has a major impact on social, emotional and cognitive health by increasing the risks of isolation, depression, cognitive decline and dementia. Recent reporting indicates that hearing loss can increase the risk of cognitive decline and dementia by a factor of 200%-500%, depending on degree of loss³. Current treatment for presbycusis with hearing aids is encouraging and indicated to improve quality of life⁴, increase cognitive function⁵, reduce tinnitus⁶, and reduce the risk of cognitive decline⁷, and perhaps slow down, the progression of dementia⁸. However, estimates indicate that nearly 50-80% of people do not treat their hearing loss for several reasons including price, aesthetics and believing that they provide minimal benefit (i.e. patient dissatisfaction). The goal of this study is to understand if new hearing loss treatment technology that can enhance semantic features of speech and reduce background noise can increase patient satisfaction. Methodology & Theoretical Orientation: Study participants of older adults with presbycusis included two groups: 1) new users (i.e. those who have not had hearing aids before or have not worn them consistently in the past year) and 2) current users, i.e. those who have worn traditional hearing aids consistently for the prior six months or more. Subjects were given the



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APHAB (Abbreviated Profile of Hearing Aid Benefit) prior to treatment and after approximately 30 days of use. Four categories of patient experience with the new technology were judged pre- and post-treatment, including ease of communication, reverberation, background noise, and aversion to sound. Results indicate significant improvements in patient experience and auditory capabilities in a significant number of users. Conclusion & Significance: Overall, a significant number of subjects, in both the 'new user' (81.4%) and 'current user' (96.3%) groups experienced significant benefit across all listening experiences. This 'benefit' was noted across all subscales of the APHAB, including hearing conversation in background noise (measured in both the BN and RV subscales). These two scales were of particular interest because they align with the two most common difficulties reported by people with hearing loss, both treated and untreated. Given the recent advances in technology and data from this study, in combination with the indication that the early treatment of hearing loss is a significant factor for preventing dementia⁷, recommendations are made to help encourage more patients over 50 years of age to have their hearing evaluated and begin treatment once diagnosed.

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Biography

Dr. Keith N. Darrow is a Harvard Medical School and M.I.T. trained neuroscientist, clinical audiologist, tenured professor, author of two Amazon.com best-selling books and Director of Treatment at AuDExperts. Dr. Darrow's clinical experience is vast and includes a clinical fellowship at the Department of Otolaryngology at Brigham and Women's Hospital and he is co-founder of the Hearing and Brain Centers of America. Dr. Darrow has chosen to lead the Excellence In Audiology movement across the country to improve the lives of the 42 million people living with untreated hearing loss. Dr. Darrow is a nationally recognized speaker, trainer, and researcher and has been conducting research at the Massachusetts Eye and Ear Infirmary for over fifteen years. His publications and research have been cited over 1000 times

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