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## Speech, Hearing and Learning in Older Adults

Last reviewed April 2023

### **Efficacy and Effectiveness of Advanced Hearing Aid Directional and Noise Reduction Technologies for Older Adults with Mild to Moderate Hearing Loss**

<https://pubmed.ncbi.nlm.nih.gov/30379683/>

This study sought to investigate the laboratory efficacy and real-world effectiveness of advanced directional microphones (DM) and digital noise reduction (NR) algorithms relative to basic-level DM/NR features of contemporary hearing aids (HAs). The study also examined the effect of premium HAs compared to basic HAs, and the effect of DM/NR features relative to no features. (PAID ACCESS)

### **Neural Processing During Older Adults' Comprehension of Spoken Sentences: Age Differences in Resource Allocation and Connectivity**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2837088/>

This study investigated the cortical network underlying speech comprehension in healthy aging using short sentences differing in syntactic complexity, with processing demands further manipulated through speech rate. (PAID ACCESS)

### **Decoding Hearing-Related Changes in Older Adults' Spatiotemporal Neural Processing of Speech Using Machine Learning**

<https://www.frontiersin.org/articles/10.3389/fnins.2020.00748/full>

Speech perception in noisy environments depends on complex sensory and cognitive symptoms interactions. This study assessed the temporal and spatial characteristics of cortical speech-evoked responses that distinguish older adults with or without mild hearing loss. (OPEN ACCESS)

### **Hearing Loss and Depression in Older Adults: A Systematic Review and Meta-analysis**

<https://pubmed.ncbi.nlm.nih.gov/30835787/>

With studies reporting an association between hearing loss and depression in older adults being conflicting, this study sought to examine the evidence through a systematic review and meta-analysis. (PAID ACCESS)

### **Does Hearing Loss in Older Adults Improve Cognitive Outcomes? A Review**

<https://www.mdpi.com/2077-0383/9/3/805>

This review aims to synthesize an association between hearing loss and mental health outcomes, including poorer cognitive performances. (OPEN ACCESS)

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### Hearing Loss is A Risk Factor of Disability in Older Adults: A Systematic Review

<https://pubmed.ncbi.nlm.nih.gov/31352184/>

This systematic review was conducted to comprehensively examine current evidence and determine the association between hearing loss and disability regarding impairment, activity, and participation in older adults. (PAID ACCESS)

### Can Hearing Aids Delay Time to Diagnosis of Dementia, Depression, or Falls in Older Adults?

<https://pubmed.ncbi.nlm.nih.gov/31486068/>

This retrospective cohort study examined the association between hearing aids and time to diagnosis of Alzheimer's disease or dementia, anxiety or depression, and injurious falls among older adults within three years of a hearing loss diagnosis. (PAID ACCESS)

### The Effect of Hearing Aid Use on Cognitive in Older Adults: Can We Delay Decline or Even Improve Cognitive Function?

<https://www.mdpi.com/2077-0383/9/1/254>

Hearing loss is a modifiable risk factor for dementia in older adults. This study assessed participants before and eighteen months after a hearing aid fitting on hearing, cognitive function, speech perception, quality of life, physical activity, loneliness, isolation, mood, and medical health. (OPEN ACCESS)

### Characteristics and Health Outcomes Associated with Hearing Loss and Hearing Aid Use Among Older Adults

<https://pubmed.ncbi.nlm.nih.gov/31092107/>

This study recruited older adults to explore physical and psychosocial conditions and other health outcomes associated with hearing loss and hearing aid use. (PAID ACCESS)

### Effects of Aging and Hearing Loss on the Recognition of Emotions in Speech

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6606405/>

Few studies have examined the combined effects of aging and hearing loss on vocal emotion recognition by adults. The objective of this study was to compare vocal emotion recognition in adults with hearing loss relative to age-matched peers with normal hearing. (PAID ACCESS)

### How Cognitive Reserve Influences Older Adults' Cognitive State, Executive Functions and Language Comprehension: A Structural Equation Model

<https://pubmed.ncbi.nlm.nih.gov/31228674/>

This study aimed to develop a structural equation model that reflects the direct influence of cognitive reserve on older adults' general mental status and executive functioning and indirectly on sentence comprehension performance through executive function mediation. (PAID ACCESS)

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## Hearing Loss in Older Adults Affects Neural Systems Supporting Speech Comprehension

<https://pubmed.ncbi.nlm.nih.gov/21880924/>

This study sought to examine the effects of hearing ability on the neural processes supporting spoken language processing in older adults. (PAID ACCESS)