



# Speech, Language & Hearing in Older Age

Last reviewed December 2019

## Hearing Loss in Older Adults - It's Effect on Mental Health

<https://www.socialworktoday.com/archive/071510p18.shtml>

The author discusses the challenge of hearing loss as an invisible disability that can result in significant challenges in the lives of older adults. **(OPEN ACCESS)**

## Hearing Screening in Older Adults: Hearing Handicap Inventory for the Elderly Screening Version (HHIE-S)

<https://consultgeri.org/try-this/general-assessment/issue-12.pdf>

This "try this: Best Practices in Nursing Care to Older Adults" handout provides an introduction to the HHIE-S and information on how to interpret scores. **(OPEN ACCESS)**

## Caring for Older Patients who Have Significant Hearing Loss

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4120069/pdf/nihms600209.pdf>

The authors use a case study approach to illustrate the possible adverse outcome associated with hearing loss in older adults. Potential approaches and resources are suggested. **(OPEN ACCESS)**

## Tackling Hearing Loss to Improve the Care of Older Adults

<https://www.bmj.com/content/bmj/360/bmj.k21.full.pdf>

This article reviews some of the communication challenges to tackle when caring for older adults in an acute care setting. **(OPEN ACCESS)**

## How do Aging and Age-Related Hearing Loss Affect the Ability to Communicate Effectively in Challenging Communicative Conditions?

<https://www.sciencedirect.com/science/article/pii/S0378595517305166>

The authors described a study investigating whether older adults are as able as younger adults to make 'clear speech adaptations' in challenging conditions, whether these adaptations were affected by hearing status and if these adaptations were as effective as those utilized by younger adults. They conclude that there is a need to consider the impact of presbycusis on speech production and communication effectiveness. **(OPEN ACCESS)**

## Comorbidities of Hearing Loss and the Implications of Multimorbidity for Audiological Care

<https://www.sciencedirect.com/science/article/pii/S0378595517305191>

This literature review examined the association between hearing loss and other health conditions with consideration of the management of hearing loss in a multimorbidity context. **(OPEN ACCESS)**

## Speech, Language & Hearing in Older Age

### Hearing Loss and Depression in Older Adults

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3773611/pdf/nihms500879.pdf>

This article discusses an investigation of the impact of hearing rehabilitation to mitigate the effects of hearing loss on depression. (OPEN ACCESS)

### The Impact of Hearing Loss on the Quality of Life of Elderly Adults

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3393360/pdf/cia-7-159.pdf>

The authors argue that optimal management of hearing loss includes an evaluation of quality of life (QoL) status and assessment. (OPEN ACCESS)

### Association Between Hearing Impairment and Self-Reported Difficulty in Physical Functioning

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4084895/pdf/nihms596523.pdf>

This article discusses a research study undertaken to determine whether hearing impairment is associated with multiple categories of self-reported physical functioning in a cross-sectional, nationally representative sample of older adults 70 years and older. (OPEN ACCESS)

### Hearing Loss and Cognitive Decline Among Older Adults

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3869227/pdf/nihms536265.pdf>

The authors conducted a prospective observational study to determine if there is an association between hearing loss and accelerated cognitive decline. (OPEN ACCESS)

### Hearing Loss and Cognition in the Baltimore Longitudinal Study of Aging

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3193888/pdf/nihms296852.pdf>

This article describes a cross-sectional cohort study of older adults aimed at determining the relationship between hearing loss and cognitive function. (OPEN ACCESS)

### Hearing Loss and Incident Dementia

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3277836/pdf/nihms-336097.pdf>

The authors conducted a prospective study of 639 participants of the Baltimore Longitudinal Study of Aging to determine if hearing loss is independently associated with incident all-cause dementia. (OPEN ACCESS)

### Aging, Hearing Acuity, and the Attentional Costs of Effortful Listening

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2773464/pdf/nihms138201.pdf>

This article investigated the consequences of divided attention when impacted by hearing difficulty. (OPEN ACCESS)

### The Stigma of Hearing Loss

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2904535/pdf/gnp107.pdf>

This publication explored the dimensions of stigma experienced by older adults with hearing loss and those they frequently communicated with to target interventions which promote engagement and positive aging. (OPEN ACCESS)

### Speech Problems with Dementia

[https://www.dementiacarecentral.com/video/effect\\_speech/](https://www.dementiacarecentral.com/video/effect_speech/)

This webpage includes a video clip which helps learners understand and recognize speech changes and declines through the stages of dementia. (OPEN ACCESS)

## Speech, Language & Hearing in Older Age

### Treating Clients with Primary Progressive Aphasia: 7 Tips for the Speech-Language Pathologist

<https://tactustherapy.com/ppa-treatment-slp-primary-progressive-aphasia/>

This webpage highlights key ways to support those with Primary Progressive Aphasia and their carepartners. (OPEN ACCESS)

### Practice Standards and Guidelines for Acquired Cognitive Communication Disorders

[http://www.caslpo.com/sites/default/uploads/files/PSG\\_EN\\_Acquired\\_Cognitive\\_Communication\\_Disorders.pdf](http://www.caslpo.com/sites/default/uploads/files/PSG_EN_Acquired_Cognitive_Communication_Disorders.pdf)

This publication outlines the standards of practice for all Speech-Language Pathologists in Ontario when providing services to individuals who present with acquired cognitive communication disorders. (OPEN ACCESS)

### Age-Related Hearing Loss

<https://www.nidcd.nih.gov/sites/default/files/Documents/health/hearing/AgeRelatedHearingLoss.pdf>

This fact sheet overviews how we hear, why people lose their hearing as they age, tips for prevention, assessment and treatment. (OPEN ACCESS)

### Effects of Aging and Adult-Onset Hearing Loss on Cortical Auditory Regions

<https://www.frontiersin.org/articles/10.3389/fnins.2016.00199/full>

This paper discusses the evidence of aging and adult-onset hearing loss and negative impacts on the structure and function of cortical auditory regions. (OPEN ACCESS)

### Working Memory, Age and Hearing Loss: Susceptibility to Hearing aid Distortion

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3636195/pdf/nihms411443.pdf>

This article describes a study which aimed to determine the effects of cognitive ability (working memory) on individual listeners' responses to distortion caused by frequency compression applied to noisy speech. (OPEN ACCESS)

### The Cognitive and Behavioral Consequences of Hearing Loss, Part 1

<https://practicalneurology.com/articles/2017-oct/the-cognitive-and-behavioral-consequences-of-hearing-loss-part-1/pdf>

This publication discusses the connection between hearing loss and cognitive decline. (OPEN ACCESS)

### The Cognitive and Behavioral Consequences of Hearing Loss, Part 2: Evaluation and Treatment

<https://practicalneurology.com/articles/2017-nov-dec/the-cognitive-and-behavioral-consequences-of-hearing-loss-part-2-evaluation-and-treatment/pdf>

This publication advocates for patients with cognitive symptoms to be evaluated for hearing loss, overviews hearing loss treatments and introduces the potential of cognitive behavioral therapy in combination with auditory training. (OPEN ACCESS)

### Age-Related Hearing Impairment and Frailty in Alzheimer's Disease: Interconnected Associations and Mechanisms

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4460423/pdf/nagi-07-00113.pdf>

The authors state that age-related hearing loss is a substantial marker for frailty in older age and is also a contributing factor to cognitive disorders such as Alzheimer's disease.

(OPEN ACCESS)

## Speech, Language & Hearing in Older Age

### Hearing Impairment and Incident Dementia and Cognitive Decline in Older Adults: The Health ABC Study <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5964742/>

The authors describe a prospective analysis where they quantified the association of hearing impairment with incident dementia as well as domain-specific cognitive decline in memory, perceptual speed and processing speed. (OPEN ACCESS)

### Aging, Cognitive Load, Dementia and Hearing Loss

<https://www.karger.com/Article/Pdf/371593>

This study offers a brief literature review on the issues and prospects relating to the unique relationship between hearing and cognitive decline, with a general introduction to the main topics before focusing on rehabilitation training with hearing aids and cochlear implants to combat cognitive decline. (OPEN ACCESS)

### Hearing Impairment is Associated with Smaller Brain Volume in Aging

<https://www.frontiersin.org/articles/10.3389/fnagi.2017.00002/full>

The authors of this article studied the relationship between hearing impairment and brain volume in a large elderly cohort. (OPEN ACCESS)

### Speech-Perception Training for Older Adults with Hearing Loss Impacts Word

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4234634/pdf/nihms597862.pdf>

This article describes a study examining the impact of speed-perception training on word recognition effort in older adults with hearing loss. (OPEN ACCESS)

### Working Memory Training and Speech in Noise Comprehension in Older Adults

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4801856/pdf/fnagi-08-00049.pdf>

The authors investigated the efficacy of adaptive working-memory training in 24 older adults to examine the effect of cognitive training. (OPEN ACCESS)

### Overview of Central Auditory Processing Deficits in Older Adults

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4906303/>

The aim of this article is to provide an overview of assessment and rehabilitative approaches for central auditory processing deficits in older adults. (OPEN ACCESS)

### Sensory-Cognitive Interactions in Older Adults

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4930008/pdf/nihms-762252.pdf>

The authors describe different models to explain sensory-cognitive interactions with a focus on age-related changes in older adults. (OPEN ACCESS)

### Hearing, Cognition, and Healthy Aging: Social and Public Health Implications of the Links Between Age-Related Declines in Hearing and Cognition

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4906310/>

This publication discusses the evidence regarding the associations between age-related hearing loss and other age-related health issues and describes how social factors influence and are influenced by age-related hearing loss to guide new approaches to audiology practice. (OPEN ACCESS)

## Speech, Language & Hearing in Older Age

### **Induction of Neuroplasticity and Recovery in Post-Stroke Aphasia by Non-Invasive Brain Stimulation** <https://www.frontiersin.org/articles/10.3389/fnhum.2013.00888/full>

This review examined the state of knowledge of post-stroke language recovery including the contributions from the dominant and non-dominant hemispheres. The authors discuss and review the use of inhibitory and excitatory repetitive transcranial magnetic stimulation (rTMS) and transcranial direct current stimulation (tDCS) in patients who experience post-stroke aphasia as rehabilitative tools. (OPEN ACCESS)

### **Musical Experience and the Aging Auditory System: Implications for Cognitive Abilities and Hearing Speech in Noise**

<https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0018082&type=printable>

The authors attempted to determine if the positive impacts of music experience in young adults also occurred in an older cohort and potentially offset the age-related decline in speech in noise perceptual abilities and associated cognitive function. (OPEN ACCESS)

### **Dysarthria and Quality of Life in Neurologically Healthy Elderly and Patients with Parkinson's Disease**

<http://www.scielo.br/pdf/codas/v27n3/2317-1782-codas-27-03-00248.pdf>

This article describes the findings of a cross-sectional study investigating whether speech and voice features are related to Parkinson's Disease (PD) or a normal part of the aging process and any differences in the impact of dysarthria on quality of life between the PD group and the control group. (OPEN ACCESS)

### **Non-Invasive Brain Stimulation in Early Rehabilitation After Stroke**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4564042/pdf/JMedLife-08-52.pdf>

This paper analyzed the results of non-invasive brain stimulation (NIBS) trials and highlighted different aspects related to the repetitive transcranial magnetic stimulation frequency, transcranial direct current stimulation polarity, the period of stimulation places in acute and subacute ischemic strokes. (OPEN ACCESS)

### **Non-Invasive Brain Stimulation in the Treatment of Post-Stroke and Neurodegenerative Aphasia: Parallels, Differences, and Lessons Learned**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5253356/pdf/fnhum-10-00675.pdf>

This review surveyed differences in the mechanisms of language representation between the two etiologies of aphasia and evaluated properties that may define and limit the success of different neuromodulation approaches for primary progressive aphasia and post-stroke aphasia. (OPEN ACCESS)

### **Transcranial Direct Current Stimulation in Poststroke Aphasia Recovery**

<https://www.ahajournals.org/doi/pdf/10.1161/STROKEAHA.116.015626>

This review provides a provide overview of transcranial direct current stimulation (tDCS) and aphasia research. The authors suggest filling the gaps in understanding of the physiological changes induced by tCDS on language networks. (OPEN ACCESS)

## Speech, Language & Hearing in Older Age

### Palliative Treatment of Dysphonia and Dysarthria

[https://www.researchgate.net/publication/23769217\\_Palliative\\_Treatment\\_of\\_Dysphonia\\_and\\_Dysarthria](https://www.researchgate.net/publication/23769217_Palliative_Treatment_of_Dysphonia_and_Dysarthria)

This publication provides an overview of therapeutic options for specific diseases such as ALS, Parkinson's Disease, Multiple Sclerosis, CVA or stroke, head and neck cancer, vocal paralysis and presbyphonia. **(OPEN ACCESS)**

### Treatment of Dysphonia in Older People: The Role of the Speech Therapist

[https://docksci.com/treatment-of-dysphonia-in-older-people-the-role-of-the-speech-therapist\\_5a8f4aaed64ab22f1bb56e29.html](https://docksci.com/treatment-of-dysphonia-in-older-people-the-role-of-the-speech-therapist_5a8f4aaed64ab22f1bb56e29.html)

This review reviews the prevalence, impact, and nature of voice impairments in older people. **(OPEN ACCESS)**

### Dysphonia: The Voice of Change

<https://www.gmjournals.co.uk/media/21375/nov06p63.pdf>

This information sheet discusses the causes of dysphonia, the physiological changes that can precipitate the condition and the care of the elderly patient suffering from it. **(OPEN ACCESS)**

### Voice Disorders in the Elderly: A National Database Study

[https://www.researchgate.net/publication/281059538\\_Voice\\_Disorders\\_in\\_the\\_Elderly\\_A\\_National\\_Database\\_Study](https://www.researchgate.net/publication/281059538_Voice_Disorders_in_the_Elderly_A_National_Database_Study)

This article describes a retrospective analysis of data from a large national administrative US claims database investigating the type, frequency and factors associated with voice disorders in the elderly. **(OPEN ACCESS)**

### Voice Changes in Elderly Adults: Prevalence and the Effect of Social, Behavioral, and Health Status on Voice Quality

<https://onlinelibrary.wiley.com/doi/pdf/10.1111/jgs.13559>

The study described in this article investigated the prevalence of dysphonia and risk factors that contribute to vocal quality in older adults. The authors concluded that these factors were mostly associated with social, behavioural and underlying health status variables. **(OPEN ACCESS)**

### Voice Disorders in the Elderly

[https://www.geriatric.theclinics.com/article/S0749-0690\(18\)30010-7/pdf](https://www.geriatric.theclinics.com/article/S0749-0690(18)30010-7/pdf)

This publication discusses the prevalence of common voice disorders in geriatric patients, their etiology and impact. Vocal therapy and exercises as well as surgical interventions are described. **(OPEN ACCESS)**

### Presbyphonia: The Aging Voice

<https://www.uofazcenteronaging.com/care-sheet/providers/presbyphonia-aging-voice>

This information sheet is intended for interprofessional providers and overviews contributing factors, tips and treatment considerations. **(OPEN ACCESS)**

### A Systematic Review of Voice Therapy: What “Effectiveness” Really Implies

<https://www.sciencedirect.com/science/article/abs/pii/S0892199716302995?via%3Dihub>

This review aims to provide clinicians with a list of evidence-based voice therapy techniques. **(OPEN ACCESS)**

### The Aging Voice and Differentiating Disease

<https://msu.edu/course/asc/823c/2003%20Powerpoint%20Presentations/Differentiating%20the%20Aging%20Voice%20from%20Disease.ppt>

This PowerPoint presentation introduces normal effects of aging on the voice, pathological conditions, diagnostic clues and treatment options. **(OPEN ACCESS)**