Dossier thématique : Audition et vieillissement

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Audition et vieillissement

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ENVIRONNEMENT SOCIAL

Fu, Z., X. Jiang et al. (2025). "Association Between Hearing Loss and Social Integration Among Middle-Aged and Older Adults: A Systematic Review and Meta-Analysis." Journal of speech, language, and hearing research : JSLHR 68(9): 4550-4566. https://dx.doi.org/10.1044/2025_JSLHR-25-00022

PURPOSE: This meta-analysis aimed to examine the association between hearing loss and social integration as well as the effectiveness of audiologic rehabilitation interventions., METHOD: Academic databases were comprehensively searched up to December 2023 to identify relevant cross-sectional cohort studies and randomized controlled trials (RCTs) with participants aged 45 years and older. Outcome effects were reported as odds ratios (ORs) for observational studies and standardized mean differences (SMDs) for intervention studies, and pooled analyses were conducted using the random-effects model., RESULTS: A total of 36 articles published in either Chinese or English were included in this meta-analysis: 11 cohort studies involving 52,037 participants, 23 cross-sectional studies involving 142,067 participants, and two RCTs involving 141 participants. Overall, hearing loss was associated with significantly greater odds of social isolation (OR = 1.19, 95% confidence interval [CI] [1.09, 1.31]) and social inactivity (low level of social participation: OR = 1.32, 95% CI [1.13, 1.54]; high level of social participation: OR = 0.85, 95% CI [0.79, 0.91]) among middle-aged and older adults. No significant effects of audiologic rehabilitation interventions on social integration were found (SMD = 0.22, 95% CI [-0.46, 0.89])., CONCLUSIONS: This systematic review and meta-analysis provides evidence that hearing loss increases the risk of social isolation and reduces social participation among middle-aged and older adults. These findings highlight the importance of providing hearing-related services to enhance social integration in the aging population., SUPPLEMENTAL MATERIAL: https://doi.org/10.23641/asha.29941460.

Hajek, A., R. M. Gyasi et al. (2024). "Vision and hearing problems and psychosocial outcomes: longitudinal evidence from the German Ageing Survey." Social psychiatry and psychiatric epidemiology 59(5): 879-886. https://dx.doi.org/10.1007/s00127-023-02588-9

PURPOSE: To examine whether changes in vision and hearing problems are associated with changes in psychosocial outcomes (in terms of depressive symptoms, loneliness, and perceived social isolation)., METHODS: We used longitudinal data from the nationally representative German Ageing Survey, which covers individuals aged 43 years and over (wave 6 and wave 7, with 7108 observations and mean age of 67.5 years, SD 10.2 years). The 6-item De Jong Gierveld tool was used to quantify loneliness, the Bude and Lantermann tool was used to quantify perceived social isolation, and the Center for Epidemiologic Studies Depression Scale (15-item version) was used to quantify depressive symptoms. Self-rated problems reading the newspaper due to vision problems and self-rated difficulties recognizing known people on the street due to vision problems were used to quantify vision problems. In addition, self-rated hearing problems on the telephone and self-rated hearing problems in groups of more than four people were used to quantify hearing problems., RESULTS: Adjusting for various confounders, longitudinal regressions showed that the onset of major vision problems referring to difficulties recognizing people one knows on the street was associated with increases in loneliness (beta = 0.17, $p < .01$) and depressive symptoms (beta = 1.90, $p < 0.05$). Moreover, the onset of some vision problems referring to difficulties reading the newspaper was associated with increases in perceived social isolation (beta = 0.06, $p < 0.01$). Additionally, the onset of some hearing problems in groups of more than four people was associated with increases in depressive symptoms (beta = 0.43, $p < 0.05$)., CONCLUSION: Our longitudinal study showed that vision and hearing problems can contribute differently to psychosocial factors. Delaying sensory impairment may result in favorable psychosocial factors in later life.

Prieur Chaintre, A., Y. Couturier et al. (2024). "Influence of Hearing Loss on Social Participation in Older Adults: Results From a Scoping Review." Research on aging 46(1): 72-90.
https://dx.doi.org/10.1177/01640275231174561

This study aimed to provide a comprehensive understanding of the influence of hearing loss on social participation in older adults and including its facilitators and barriers. Following the rigorous methodological framework of scoping studies, nine multidisciplinary databases were searched with 44 keywords. Published mainly in the last decade, 41 studies using primarily a quantitative cross-sectional design were selected. Older adults with hearing loss have been found to have difficulty maintaining relationships and social activities. While social support and engaged-coping strategies were major facilitators of social participation, barriers included greater hearing loss, communication difficulties, comorbidities and reduced mental health. To better promote the social participation of older adults, early detection of hearing loss, holistic assessment, and interprofessional collaboration must be considered. Future research is necessary to better address the stigma related to hearing loss in older adults and challenges of early detection, and to propose innovative solutions to develop interprofessional collaboration.

da Silva, J. C., C. M. de Araujo et al. (2023). "The Self-Stigma of Hearing Loss in Adults and Older Adults: A Systematic Review." Ear and hearing 44(6): 1301-1310.
https://dx.doi.org/10.1097/AUD.0000000000001398

OBJECTIVES: Previous studies have demonstrated that individuals with hearing loss can internalize social stigmas, resulting in several self-perceived negative connotations, such as incompetence, cognitive impairment, and social disability. This systematic review aimed to investigate the impact of the social stigma associated with hearing loss on the self-stigma experienced by adults and older adults., DESIGN: Combinations of words and appropriate truncations were selected and adjusted specifically for each electronic database. The Population, Exposure, Comparator, Outcomes, and Study Characteristics strategy was used to delimit the scope of the review, bearing in mind the importance of a well-formulated research question., RESULTS: A total of 953 articles were retrieved from the final search of each database. Thirty-four studies were selected for full-text reading. Thirteen were excluded, and 21 studies were ultimately included in this review. The results of this review were divided into three themes: (1) impact of social stigmas on self-stigma, (2) effect of emotions on self-stigma, and (3) other factors that impact self-stigma. The themes were related to the relationship between the individual and social perceptions reported by the participants with respect to their hearing experiences., CONCLUSIONS: Our results suggest that the impact of social stigma associated with hearing loss on the self-stigma of adults and older adults is strongly associated with the effects of aging and hearing loss, which may lead to withdrawal, social segregation, and negative self-perception.

Wang, Z., D. Chen et al. (2022). "Hearing loss, depression and social participation of older adults: Evidence from the China health and retirement longitudinal study." Geriatrics & gerontology international 22(7): 529-535. https://dx.doi.org/10.1111/ggi.14413

AIM: Hearing loss and depression in older adults are associated with a lower social participation rate. However, few studies have thoroughly analyzed the relationship between them., METHODS: The data were obtained from the China Health and Retirement Longitudinal Study carried out in 2011, 2013 and 2015, and data from 24 306 participants ranging in age from 50 to 80 years were used in this study. Hearing loss, depression and social participation were assessed by self-reported hearing status, the 10-item Center for the Epidemiological Studies of Depression Short Form, and

self-reported social participation activity types and frequency. The fixed effects logistic regression and random effects logistic regression were used to examine the relationship between hearing loss and social participation. The Sobel method was used to explore the relationship between hearing loss, depression and social participation., RESULTS: Compared with older adults without hearing loss, persons with hearing loss engaged in significantly fewer types of activities (beta = -0.070, 95% CI -0.109, -0.031, P < 0.001) and at a lower frequency (beta = -0.176, 95% CI -0.260, -0.093, P < 0.001). Depression significantly existed in the relationship between hearing loss and social participation as a mediating variable, and the percentage of indirect effects in this relationship were 16.5% and 20.8%., CONCLUSIONS: The findings of this study suggest that when facing an aging society, improving the hearing status of older adults should be considered by policymakers. More efforts should be made to help older adults cope with depression. Geriatr Gerontol Int 2022; 22: 529-535. Copyright © 2022 Japan Geriatrics Society.

Tian, R., O. P. Almeida et al. (2021). "Association between hearing loss and frailty: a systematic review and meta-analysis." BMC geriatrics 21(1): 333. https://dx.doi.org/10.1186/s12877-021-02274-y

BACKGROUND: Frailty is associated with poor health outcomes in later life. Recent studies suggested that hearing loss may be a potentially modifiable risk factor associated with frailty., METHODS: This systematic review and meta-analysis aimed to investigate the association between hearing loss and frailty in observational studies of adults aged 50 years or over. We included observational studies with participants >= 50 years old that have clear descriptions of hearing and frailty measurement methods. Meta-analyses were conducted using measurement of risk and 95 % confidence interval of each individual study. Quality assessment, risk of bias, heterogeneity and sensitivity analyses were also conducted. Our study followed PRISMA guidelines., RESULTS: Our search identified 4508 manuscripts published in English between 1 and 2000 and 9 February 2021. Sixteen articles reported acceptable measurements of both hearing loss and frailty. Two papers were not suitable for meta-analysis. Twelve sets of cross-sectional data involving 12,313 participants, and three sets of longitudinal data involving 3042 participants were used in the meta-analysis. Hearing loss was associated with an 87 % increase in the risk of frailty among cross-sectional studies (risk ratio [RR] 1.87; 95 %CI 1.63-2.13) and 56 % among longitudinal studies (RR 1.56; 95 %CI 1.29-1.88). There was considerable heterogeneity among studies, but their quality rating, sample size or approach used to assess hearing loss did not change the results substantially., CONCLUSIONS: The findings of this systematic review and meta-analysis of observational studies suggest that hearing loss increases the risk of frailty in later life. Whether this relationship is causal remains to be determined.

Shukla, A., M. Harper et al. (2020). "Hearing Loss, Loneliness, and Social Isolation: A Systematic Review." Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery 162(5): 622-633.
https://dx.doi.org/10.1177/0194599820910377

OBJECTIVE: Social isolation and loneliness are associated with increased mortality and higher health care spending in older adults. Hearing loss is a common condition in older adults and impairs communication and social interactions. The objective of this review is to summarize the current state of the literature exploring the association between hearing loss and social isolation and/or loneliness., DATA SOURCES: PubMed, Embase, CINAHL Plus, PsycINFO, and the Cochrane Library., REVIEW METHODS: Articles were screened for inclusion by 2 independent reviewers, with a third reviewer for adjudication. English-language studies of older adults with hearing loss that used a validated measure of social isolation or loneliness were included. A modified Newcastle-Ottawa Scale was used to assess the quality of the studies included in the review., RESULTS: Of the 2495

identified studies, 14 were included in the review. Most of the studies (12/14) were cross-sectional. Despite the heterogeneity of assessment methods for hearing status (self-report or objective audiometry), loneliness, and social isolation, most multivariable-adjusted studies found that hearing loss was associated with higher risk of loneliness and social isolation. Several studies found an effect modification of gender such that among women, hearing loss was more strongly associated with loneliness and social isolation than among men., CONCLUSIONS: Our findings that hearing loss is associated with loneliness and social isolation have important implications for the cognitive and psychosocial health of older adults. Future studies should investigate whether treating hearing loss can decrease loneliness and social isolation in older adults.

Smith, S., M. A. B. Nordin et al. (2020). "Impact of hearing loss on clinical interactions between older adults and health professionals: a systematic review." European geriatric medicine 11(6): 919-928. https://dx.doi.org/10.1007/s41999-020-00358-3

PURPOSE: Age-related hearing loss increases significantly in people aged 60 years and older. An ageing population with impaired hearing presents an additional burden to the multiple comorbidities found among older patients, who are high users of medical services. We sought to quantify the extent to which hearing loss is cited and/or accounted for in studies of older adult interactions with health professionals., METHOD: We conducted a systematic review focusing on clinical communication with older adults, based on a literature search within two databases, PubMed and SCOPUS. Thematic analysis was used to classify studies based on type of health communication., RESULTS: The following health communication categories were identified: quality of clinical communication; enhancement of patient-centred care; information exchange between patient and health professionals; informed consent and shared decision-making. The health profession category 'Physician'/'Doctor' contributed most of the articles (N = 81), and the remaining articles (N = 28) belonged to the other health professions. Twenty-eight papers of 109 (25.7%) mentioned hearing loss; 18 only referred to hearing loss within the context of the text, five referred to hearing loss as an exclusion criterion, three were associational findings, and only two studies included an intervention., CONCLUSIONS: Despite the high prevalence of age-related hearing loss, we demonstrate that across the health professions, very few studies on health professional-older patient communication have incorporated hearing loss as a variable in their study design or analyses. Additionally, there is a lack of research focusing specifically on interventions designed to mitigate the effects of hearing loss on clinical communication.

Tan, B. K. J., R. E. K. Man et al. (2020). "Is Sensory Loss an Understudied Risk Factor for Frailty? A Systematic Review and Meta-analysis." The journals of gerontology. Series A, Biological sciences and medical sciences 75(12): 2461-2470. https://dx.doi.org/10.1093/gerona/glaa171

BACKGROUND: Age-related sensory loss and frailty are common conditions among older adults, but epidemiologic research on their possible links has been inconclusive. Clarifying this relationship is important because sensory loss may be a clinically relevant risk factor for frailty., METHODS: In this systematic review and meta-analysis, we searched 3 databases for observational studies investigating 4 sensory impairments-vision (VI), hearing (HI), smell (SI), and taste (TI)-and their relationships with frailty. We meta-analyzed the cross-sectional associations of VI/HI each with pre-frailty and frailty, investigated sources of heterogeneity using meta-regression and subgroup analyses, and assessed publication bias using Egger's test., RESULTS: We included 17 cross-sectional and 7 longitudinal studies in our review (N = 34,085) from 766 records. Our cross-sectional meta-analyses found that HI and VI were, respectively, associated with 1.5- to 2-fold greater odds of pre-frailty and 2.5- to 3-fold greater odds of frailty. Our results remained largely unchanged after subgroup analyses and meta-regression, though the association between HI and pre-frailty was no

longer significant in 2 subgroups which lacked sufficient studies. We did not detect publication bias. Longitudinal studies largely found positive associations between VI/HI and frailty progression from baseline robustness, though they were inconclusive about frailty progression from baseline pre-frailty. Sparse literature and heterogenous methods precluded meta-analyses and conclusions on the SI/TI-frailty relationships., CONCLUSIONS: Our meta-analyses demonstrate significant cross-sectional associations between VI/HI with pre-frailty and frailty. Our review also highlights knowledge gaps on the directionality and modifiability of these relationships and the impact of SI/TI and multiple sensory impairments on frailty.

SOINS ET PREVENTION

Hughes, S. E., C. R. Brenner et al. (2025). "Age-Related Hearing Loss: Evidence-Based Strategies for Early Detection and Management." ORL-head and neck nursing : official journal of the Society of Otorhinolaryngology and Head-Neck Nurses 43(2): 26-39
https://pmc.ncbi.nlm.nih.gov/articles/PMC12123699/

Age-related hearing loss (ARHL) is common in older adults and has been linked to significant health and social challenges. These challenges include cognitive decline, depression, falls, and overall decreased quality of life. Despite its high prevalence, ARHL remains underdiagnosed and undertreated, partly due to its gradual onset, stigma, and lack of standardized screening and management protocols. This article provides a comprehensive overview of evidence-based strategies for the early detection and management of ARHL, with an emphasis on recent clinical practice guidelines where nurses are instrumental in leading quality improvement efforts. The multifactorial etiology of ARHL, encompassing genetic predispositions, environmental exposures, and physiological aging, is discussed alongside the health and socioeconomic impacts of untreated hearing loss, including cognitive decline and increased healthcare utilization. Routine screening and hearing assessments can be integrated into patient care visits for individuals aged 50 and above to improve early detection and opportunities for hearing loss management. Effective patient education involves individualized, culturally sensitive counseling that addresses the implications of untreated hearing loss and the benefits of early intervention, which can mitigate stigma and encourage proactive management. Assistive technologies such as consumer devices, hearing aids, and cochlear implants play a vital role in promoting hearing health in personalized care plans developed in collaboration with audiologists. Regular monitoring and follow-up are essential to assess adherence, address challenges, and adjust interventions. By adopting these evidence-based strategies, healthcare professionals can improve identification and management of age-related hearing loss, enhancing the overall health and quality of life for the aging population.

Jiang, W., Q. Zhou et al. (2025). "Effects of Auditory Training on Cognition in Hearing Loss: A Systematic Review and Meta-analyses." Journal of the American Academy of Audiology 36(1): 53-63.
https://dx.doi.org/10.3766/jaaa.240049

Purpose: The aim of this study was to examine the efficacy of auditory training to improve cognitive function in patients with age-related hearing loss (ARHL). Research Design: This is a systematic review and meta-analysis. Study Sample: Seven studies involving 443 participants met the inclusion criteria. Participants were typically older adults (mean age = 67.23 years, standard deviation = 7.14) with mild to severe hearing loss. Intervention: Auditory training includes speech perception

training, phoneme discrimination training, and so on. Data Collection and Analysis: A literature search of academic databases (Cochrane Library, PubMed, Web of Science, Embase, Wanfang, Weipu, and China National Knowledge Infrastructure) identified relevant articles published up to December 2023. This review includes only randomized controlled trials. The primary outcome is cognition function, measured by Montreal Cognitive Assessment, Mini-Mental State Examination, and other cognition-related subtest indicators. Results: The overall effect of auditory training on overall cognition and executive function in ARHL is statistically significant (overall cognition: g = 0.79, 95 percent confidence interval [CI]: 0.57, 1.01; executive function: g = 3.84, 95 percent CI: 1.49, 6.19), but executive function domain has high heterogeneity (I2 = 100 percent). The effect of auditory training on attention/processing speed and working memory is small and not significant (attention/processing speed: g = 1.47, 95 percent CI: -0.48, 3.42; working memory: g = 0.68, 95 percent CI: -2.22, 3.58), but both attention/processing speed (I2 = 96 percent) and working memory domain (I2 = 98 percent) have high heterogeneity. Conclusions: The overall impact of auditory training on overall cognition and executive function seems to be significant, but because of the low quality of the literature and certain biases, it is impossible to conclude that auditory training can improve the cognitive function of ARHL; therefore, more high-quality evidence is needed.

Maher, A., I. Lyons et al. (2025). "Identifying educational interventions aimed at improving communication with older adults with age-related hearing loss: a scoping review and thematic analysis." International journal of audiology: 1-12. https://dx.doi.org/10.1080/14992027.2025.2487259

OBJECTIVE: This scoping review summarises existing interventions aimed at educating individuals without hearing loss to enhance their communication with older adults experiencing age-related hearing loss (ARHL)., DESIGN: Data collection employed a systematic search approach as per the guidelines of Arksey & O'Malley, and followed the PRISMA-ScR guidelines., STUDY SELECTION: A structured search was conducted involving four research databases from 2000 to 2023, with additional grey literature searching. Original papers written in English, reporting the design and implementation of educational interventions targeting communication with older adults with ARHL, were included. Reflexive thematic analysis was used to identify themes related to intervention type and methodology, and key findings., RESULTS: 13 eligible intervention studies were identified and summarised. Four main themes were described: (1) education and communication skills training; (2) mode of intervention delivery; (3) appropriateness of the intervention and satisfaction among participants; (4) transforming attitudes on hearing loss for better relationships and emotional well-being., CONCLUSIONS: The link between hearing loss and diminished quality of life in older adults with ARHL highlights the importance of ongoing development of innovative educational programmes targeting effective communication in diverse settings, including clinical environments.

Frisby, C., I. Oosthuizen et al. (2024). "Hearing help-seeking, hearing device uptake and hearing health outcomes in individuals with subclinical hearing loss: a systematic review." International journal of audiology 63(12): 925-935. https://dx.doi.org/10.1080/14992027.2024.2311660

OBJECTIVE: This systematic review aims to examine the current literature on help-seeking, hearing device uptake, and hearing health outcomes in individuals with subclinical hearing loss., DESIGN: Systematic review., STUDY SAMPLE: Searches of three databases (CINAHL, MEDLINE (PubMed), and Scopus) yielded nine studies meeting the inclusion criteria. The quality of the included studies was determined using the National Institute of Health quality assessment tool. The studies' level of evidence was determined according to the Centre for Evidence-Based Medicine., RESULTS: All included studies involved adult participants. Three studies examined help-seeking. Self-reported difficulty, poor speech-in-noise performance, and emotional responses to the hearing difficulty were identified as factors influencing help-seeking. Six studies examined the use of hearing devices

as an intervention, including hearing aids (n = 4), hearables (n = 1), and FM systems (n = 1). Using hearing devices improved self-perceived hearing difficulty, speech-in-noise understanding, and motivation to address hearing difficulties. No studies focused on hearing device uptake. The quality assessment indicated limited methodological rigour across the studies, with varying levels of evidence., CONCLUSIONS: Current evidence supports the use of hearing devices as an intervention for individuals with subclinical hearing loss. However, more research is essential, particularly focusing on help-seeking, diagnosis, treatment, and long-term outcomes using well-controlled study designs.

Tsai Do, B. S., M. L. Bush et al. (2024). "Clinical Practice Guideline: Age-Related Hearing Loss." Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery 170 Suppl 2: S1-S54. https://dx.doi.org/10.1002/ohn.750

OBJECTIVE: Age-related hearing loss (ARHL) is a prevalent but often underdiagnosed and undertreated condition among individuals aged 50 and above. It is associated with various sociodemographic factors and health risks including dementia, depression, cardiovascular disease, and falls. While the causes of ARHL and its downstream effects are well defined, there is a lack of priority placed by clinicians as well as guidance regarding the identification, education, and management of this condition., PURPOSE: The purpose of this clinical practice guideline is to identify quality improvement opportunities and provide clinicians trustworthy, evidence-based recommendations regarding the identification and management of ARHL. These opportunities are communicated through clear actionable statements with explanation of the support in the literature, evaluation of the quality of the evidence, and recommendations on implementation. The target patients for the guideline are any individuals aged 50 years and older. The target audience is all clinicians in all care settings. This guideline is intended to focus on evidence-based quality improvement opportunities judged most important by the guideline development group (GDG). It is not intended to be a comprehensive, general guide regarding the management of ARHL. The statements in this guideline are not intended to limit or restrict care provided by clinicians based on their experience and assessment of individual patients., ACTION STATEMENTS: The GDG made strong recommendations for the following key action statements (KASs): (KAS 4) If screening suggests hearing loss, clinicians should obtain or refer to a clinician who can obtain an audiogram. (KAS 8) Clinicians should offer, or refer to a clinician who can offer, appropriately fit amplification to patients with ARHL. (KAS 9) Clinicians should refer patients for an evaluation of cochlear implantation candidacy when patients have appropriately fit amplification and persistent hearing difficulty with poor speech understanding. The GDG made recommendations for the following KASs: (KAS 1) Clinicians should screen patients aged 50 years and older for hearing loss at the time of a health care encounter. (KAS 2) If screening suggests hearing loss, clinicians should examine the ear canal and tympanic membrane with otoscopy or refer to a clinician who can examine the ears for cerumen impaction, infection, or other abnormalities. (KAS 3) If screening suggests hearing loss, clinicians should identify sociodemographic factors and patient preferences that influence access to and utilization of hearing health care. (KAS 5) Clinicians should evaluate and treat or refer to a clinician who can evaluate and treat patients with significant asymmetric hearing loss, conductive or mixed hearing loss, or poor word recognition on diagnostic testing. (KAS 6) Clinicians should educate and counsel patients with hearing loss and their family/care partner(s) about the impact of hearing loss on their communication, safety, function, cognition, and quality of life (QOL). (KAS 7) Clinicians should counsel patients with hearing loss on communication strategies and assistive listening devices. (KAS 10) For patients with hearing loss, clinicians should assess if communication goals have been met and if there has been improvement in hearing-related QOL at a subsequent health care encounter or within 1 year. The GDG offered the following KAS as an option: (KAS 11)

Clinicians should assess hearing at least every 3 years in patients with known hearing loss or with reported concern for changes in hearing. Copyright © 2024 American Academy of Otolaryngology-Head and Neck Surgery Foundation.

Jaiswal, A., S. Gupta et al. (2023). "Continuum of Care for Older Adults With Concurrent Hearing and Vision Impairment: A Systematic Review." Innovation in aging 7(1): igac076.
https://dx.doi.org/10.1093/geroni/igac076

Background and Objectives: A global report estimates up to 2% of the world population experience concurrent hearing and vision impairment (dual sensory impairment [DSI]). Older adults with DSI are often frequent users of health care, yet the evidence is limited to inform care delivery for this population. This systematic review aimed to synthesize evidence on tools and strategies for screening, assessment, and interventions that promote a continuum of care for older adults with DSI., Research Design and Methods: The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews. Electronic databases (CINAHL, Embase, MEDLINE, PsycINFO, Cochrane Library, Global Health, and Web of Science) and clinical trial registries (ISRCTN Registry, WHO ICTRP, and ClinicalTrials.gov) were searched. The quality appraisal was performed using the Mixed Methods Appraisal Tool., Results: Of 4,775 identified references, 28 records were selected. The review identified 7 tools and 7 strategies for DSI-specific screening, assessments, and/or interventions. Some of the most promising tools were the interRAI Community Health Assessment with deafblind supplement, adapted Montreal Cognitive Assessment, and the Severe Dual Sensory Loss screening tool. Useful strategies included the use of alternative forms of communication, assistive devices or technology, education and training for service providers, and training of older adults on the use and maintenance of assistive aids/technology. However, quality appraisal indicated a need for more robust evidence to inform clinical practice., Discussion and Implications: Reviewed evidence pinpointed the need for training for health care providers on DSI-specific challenges and supports and the use of integrated multidisciplinary care for older adults. Future studies need to explore the development and evaluation of tools and interventions to improve the continuum of care for this group. Systematic Review Registration: PROSPERO registration # CRD42020180545. Copyright © The Author(s) 2022. Published by Oxford University Press on behalf of The Gerontological Society of America.

Reisinger, L., F. Schmidt et al. (2023). "Ageing as risk factor for tinnitus and its complex interplay with hearing loss-evidence from online and NHANES data." BMC medicine 21(1): 283.
https://dx.doi.org/10.1186/s12916-023-02998-1

BACKGROUND: Tinnitus affects 10 to 15% of the population, but its underlying causes are not yet fully understood. Hearing loss has been established as the most important risk factor. Ageing is also known to accompany increased prevalence; however, the risk is normally seen in context with (age-related) hearing loss. Whether ageing per se is a risk factor has not yet been established. We specifically focused on the effect of ageing and the relationship between age, hearing loss, and tinnitus., METHODS: We used two samples for our analyses. The first, exploratory analyses comprised 2249 Austrian individuals. The second included data from 16,008 people, drawn from a publicly available dataset (NHANES). We used logistic regressions to investigate the effect of age on tinnitus., RESULTS: In both samples, ageing per se was found to be a significant predictor of tinnitus. In the more decisive NHANES sample, there was an additional interaction effect between age and hearing loss. Odds ratio analyses show that per unit increase of hearing loss, the odds of reporting tinnitus is higher in older people (1.06 vs 1.03)., CONCLUSIONS: Expanding previous findings of hearing loss as the main risk factor for tinnitus, we established ageing as a risk factor in its own right. Underlying mechanisms remain unclear, and this work calls for urgent research efforts to link

biological ageing processes, hearing loss, and tinnitus. We therefore suggest a novel working hypothesis that integrates these aspects from an ageing brain viewpoint. Copyright © 2023. The Author(s).

Reynard, P., I. Mosnier et al. (2023). "Recommandations de la Société française d'otorhinolaryngologie et de chirurgie de la face et du cou, la Société française d'audiologie et la Société française de gériatrie et gérontologie pour la prise en charge précoce de la presbyacousie." Gériatrie et psychologie neuropsychiatrie du vieillissement 21(1): 9-20. https://dx.doi.org/10.1684/pnv.2023.1090

Introduction. La presbyacousie correspond à la diminution physiologique de l'audition due à l'avancée en âge et commence bien avant la sixième décennie. Ces recommandations rappellent les principes du diagnostic précoce de la presbyacousie et les moyens de réhabilitation optimale dès l'apparition des premiers symptômes. Matériel et méthodes. Les recommandations sont basées sur une analyse systématique de la littérature réalisée par un groupe multidisciplinaire réunissant des médecins, des audiologistes et des audioprothésistes provenant de toute la France. Elles sont classées en grade A, B, C ou accord professionnel selon un niveau de preuve scientifique décroissant. Résultats. Le diagnostic de presbyacousie est plus difficile en début d'évolution, mais un certain nombre d'outils sont disponibles pour son diagnostic précoce et sa prise en charge en présentiel, voire à distance. Conclusion. En cas de profil clinique évocateur de presbyacousie chez un sujet jeune, surtout s'il y a plusieurs cas familiaux, il est recommandé de proposer une enquête génétique. Il est recommandé de réaliser l'audiométrie vocale dans le bruit en champ libre pour mesurer l'intelligibilité dans un environnement au plus proche de la réalité. Les questionnaires en supplément de l'audiométrie permettraient d'évaluer au mieux le handicap du patient. Il est recommandé de considérer que la réhabilitation auditive par prothèse auditive ou implant cochléaire peut ralentir ou prévenir le déclin cognitif. Une rééducation combinée auditive et cognitive devrait être proposée, quel que soit le temps écoulé depuis l'appareillage. Il est recommandé d'intégrer des programmes accessibles par smartphones, tablettes ou Internet intégrant différents domaines d'entraînement en complément des séances en présentiel.

Cross, H., P. Dawes et al. (2022). "Effectiveness of Hearing Rehabilitation for Care Home Residents With Dementia: A Systematic Review." Journal of the American Medical Directors Association 23(3): 450-460.e454. https://dx.doi.org/10.1016/j.jamda.2021.11.011

OBJECTIVES: To report the effectiveness of, and barriers and facilitators to, hearing rehabilitation for care home residents with dementia., DESIGN: Systematic review., SETTING AND PARTICIPANTS: Care home residents with dementia and hearing loss., METHODS: No restrictions on publication date or language were set and gray literature was considered. Eligible studies were critically appraised and presented via a narrative review., RESULTS: Sixteen studies, most of low to moderate quality, were identified. Hearing rehabilitation, including hearing devices, communication techniques, and visual aids (eg, flashcards), was reported to improve residents' communication and quality of life and reduce agitation, with improvements in staff knowledge of hearing loss and job satisfaction. Residents' symptoms of dementia presented barriers, for example, losing or not tolerating hearing aids. Low staff prioritization of hearing loss due to time pressures and lack of hearing-related training for staff were further barriers, particularly for residents who required assistance with hearing devices. Adopting a person-centered approach based on residents' capabilities and preferences and involving family members facilitated hearing device use., CONCLUSIONS AND IMPLICATIONS: Residents with dementia can benefit from hearing rehabilitation. Identifying and implementing efficient, individualized hearing rehabilitation is necessary for those with complex cognitive needs. Increased funding and support for the social care sector is required to address systemic issues that pose barriers to hearing rehabilitation, including

time pressures, lack of training for staff and access to audiology services for residents. Copyright © 2021 AMDA - The Society for Post-Acute and Long-Term Care Medicine. Published by Elsevier Inc. All rights reserved.

Littlejohn, J., M. Bowen et al. (2022). "International Practice Recommendations for the Recognition and Management of Hearing and Vision Impairment in People with Dementia." Gerontology 68(2): 121-135. https://dx.doi.org/10.1159/000515892

INTRODUCTION: Hearing, vision, and cognitive impairment commonly co-occur in older people. However, the rate of recognition and appropriate management of combined hearing and vision impairment in people with dementia impairment is low. The aim of this work was to codevelop internationally relevant, multidisciplinary practice recommendations for professionals involved in the diagnosis, care, and management of older people with these concurrent conditions., METHODS: We applied consensus methods with professional and lay expert stakeholders, using an adapted version of the World Health Organization Handbook for Guideline Development. The development involved 4 phases and included: (1) collating existing evidence, (2) filling the gaps in evidence, (3) prioritising evidence, and (4) refining the final list of recommendations. Each phase encompassed various methodologies including a review of existing guidelines within the 3 clinical domains, systematic reviews, qualitative studies, a clinical professional consortium, surveys, and consensus meetings with interdisciplinary domain experts., RESULTS: The task force evaluated an initial list of 26 recommendations, ranking them in the order of priority. A consensus was reached on 15 recommendations, which are classified into 6 domains of "awareness and knowledge," "recognition and detection," "evaluation," "management," "support," and "services and policies." Pragmatic options for implementation for each domain were then developed., CONCLUSION: This is the first set of international, interdisciplinary practice recommendations that will guide the development of multidisciplinary services and policy to improve the lives of people with dementia and hearing and vision impairment. Copyright © 2021 The Author(s) Published by S. Karger AG, Basel.

Jilla, A. M., N. S. Reed et al. (2021). "A Geriatrician's Guide to Hearing Loss." Journal of the American Geriatrics Society 69(5): 1190-1198. https://dx.doi.org/10.1111/jgs.17073

The high prevalence of hearing loss among older adults creates a perception that it is simply a benign consequence of aging, which leads to unaddressed communication needs. Strategies to address hearing loss as part of routine clinical care are pertinent to the geriatric care setting where hearing loss is prevalent in two out of every three patients 70 years and older. Our objectives are to briefly discuss the pathophysiology of hearing loss, describe the epidemiologic prevalence and impact, identify statutory barriers facing older adults in accessing hearing care, discuss current progress on legislation to address accessibility issues, and provide actionable strategies for addressing hearing loss as a barrier to effective communication. Simple steps can be taken to improve hearing care accessibility for older adults with hearing loss and can optimize understanding in daily communication, re-engage patients in being actively involved in their care, and promote patient autonomy in informed decision- making. Copyright © 2021 The American Geriatrics Society.

Yueh, B. et J. F. Piccirillo (2021). "Screening for Hearing Loss in Older Adults: Insufficient Evidence Does Not Mean Insufficient Benefit." JAMA 325(12): 1162-1163. https://dx.doi.org/10.1001/jama.2021.2020

In this issue of JAMA, in the updated Recommendation Statement on screening for hearing loss, the US Preventive Services Task Force (USPSTF) “concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for hearing loss in older adults (I statement)”1; this recommendation is unchanged from the 2012 USPSTF review.2 The recommendations have important implications for the US population because the incidence of

hearing loss increases substantially with age and the number of people 65 years or older is 54.2 million, which has increased by more than one-third (34%, or nearly 14 million) during the past decade. By 2034, there will be 77.0 million people 65 or older.3 Furthermore, the passage of the Over-the-Counter Hearing Aid Act of 2017, which enables adults with self-described mild-to-moderate hearing loss to access over-the-counter hearing aids without being seen by a hearing health care professional, adds importance to strategies for screening and identification of those with hearing loss who would benefit from seeing a hearing professional.

Leroi, I., F. Constantinidou et al. (2020). "Hearing and Vision Impairment in People With Dementia: A Guide for Clinicians." Archives of physical medicine and rehabilitation 101(9): 1667-1670. https://dx.doi.org/10.1016/j.apmr.2020.04.012

Age-related hearing and vision problems are common in people living with dementia, but these problems are often not detected or properly managed. Untreated hearing or vision impairment worsens a person's ability to function and live independently and interferes with their ability to remember things and engage in social activities. It can also impact their quality of life by increasing isolation. Health care professionnals working with people with dementia should be aware of hearing and vision problems and should include hearing and vision in their evaluation and management of care plans. Good hearing and vision care can improve the lives of people with dementia.

SANTÉ COGNITIVE ET SANTÉ MENTALE

Hreha, K., R. Samper-Ternent et al. (2025). "The Association of Vision and Hearing Impairment on Cognitive Function and Loneliness: Evidence From the Mexican Health and Aging Study." Journal of aging and health 37(5-6): 337-346. https://dx.doi.org/10.1177/08982643241247583

Objectives: We investigated whether self-reported vision and hearing were associated with cognitive function and loneliness among Mexican adults aged 50 and older. Methods: Mexican Health and Aging Study data. Vision/hearing status was self-reported (excellent-very good, good, fair-poor). Cognition was measured using nine tasks. Loneliness was measured using the UCLA Loneliness Scale. Analyses controlled for demographic and health characteristics. Results: Among 12,353 participants (mean age = 67, 58% female), poor vision, but not hearing, was associated with lower global cognition (beta = -0.03, $p < .05$). Poor vision (OR = 1.57, 95% CI = 1.30-1.91) and hearing (OR = 1.35, 95% CI = 1.14-1.61) were associated with higher odds of being lonely after adjusting for demographics and comorbidities, but not when adjusting for limitations in daily activities and depressive symptoms. Discussion: Poor vision is a potentially modifiable risk factor for lower cognition and loneliness among Mexican adults. These associations are partly due to functional characteristics of older adults with poor vision.

Lodeiro-Fernandez, L., A. Maseda et al. (2025). "Is there a relationship between hearing loss and language impairment in patients with dementia? A systematic review." Archives of gerontology and geriatrics 137: 105948. https://dx.doi.org/10.1016/j.archger.2025.105948

BACKGROUND: Hearing loss (HL) and language impairment occur in the context of various types of cognitive impairment. There is extensive scientific literature on the relationship between HL and cognitive impairment or the risk of dementia, but its impact on language impairment is not well understood. This systematic review investigates the potential relationship between HL and language impairment in dementia patients., METHOD: We conducted literature searches in the Scopus, Web of Science, and Medline databases from inception to May 2024 in accordance with

PRISMA guidelines. Data extraction and methodological quality assessment, including risk of bias, were carried out., RESULTS: The search returned 767 articles for evaluation, which resulted in 14 that met the inclusion criteria. Overall, the results included 3676 older individuals, of whom 677 had dementia. Significant associations were observed between HL and language impairment, with a stronger association observed in comprehension than in production, although there was no evidence of causality., CONCLUSION: Addressing hearing loss may play a role in managing language deficits in patients with dementia. Central auditory processing (CAP) and cognitive load are as critical as, if not more vital than, peripheral HL in language impairment in dementia patients. The quantification and directionality of the possible effects of language and hearing impairment on the genesis of dementia require longitudinal studies.

McIlhiney, P., O. P. Almeida et al. (2025). "Severe-to-Profound Hearing Loss and Mental Health: Initial Evidence That Cochlear Implantation Helps Alleviate Symptoms of Anxiety and Stress." Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery 50(5): 848-855. https://dx.doi.org/10.1111/coa.14326

OBJECTIVES: Mental-health issues accounted for 418 million disability-adjusted life years in 2019, costing the world economy approximately $5 trillion. Untreated hearing loss is a well-known modifiable risk factor for mental-health issues, with severe-to-profound hearing loss having the largest impact. Therefore, treatment of severe-to-profound hearing loss, namely with cochlear implantation, could help to alleviate psychological distress. However, previous studies have failed to include comprehensive measures of mental health or adequate controls. The current study thus aimed to conduct a controlled, longitudinal investigation of how cochlear implantation affects depression, anxiety and stress levels., PARTICIPANTS: Participants were 87 adults assigned to conditions based on hearing status: normal hearing (n = 44), received cochlear implant (n = 26) or untreated hearing loss (n = 17)., MAIN OUTCOME MEASURES: The short-form Depression Anxiety Stress Scale was given at four timepoints (baseline, 3 months, 6 months, 12 months). Data were analysed using linear mixed-effects modelling., RESULTS: Results showed that cochlear implants helped to stabilise anxiety and stress symptoms, while depression symptoms were observed to worsen over time despite treatment., CONCLUSION: Our findings suggest that treatment of severe-to-profound hearing loss with cochlear implantation was associated with a lessening of anxiety and stress scores, although the clinical significance of such changes remains uncertain. Due to the current study's non-randomised treatment allocation, future randomised controlled trials are required for confirmation. The present findings help inform clinical and societal interventions for mental-health issues associated with hearing loss.

Zhang, X., R. Zeng et al. (2025). "Association between sensory impairment and cognitive frailty among older people: Evidence from four nationwide cohort studies." The journal of nutrition, health & aging 29(8): 100590. https://dx.doi.org/10.1016/j.jnha.2025.100590

BACKGROUND: Sensory impairment, including hearing and vision impairment, are prevalent in older adults and may significantly contribute to cognitive frailty. However, the longitudinal association between sensory impairment and cognitive frailty has not been fully explored. The aim of our study was to examine such associations in four nationally representative cohorts to inform strategies for preventing cognitive frailty and promoting healthy aging., METHODS: Data were pooled from four large, longitudinal cohorts: the Health and Retirement Study (HRS), the Chinese Longitudinal Healthy Longevity Survey (CLHLS), the Survey of Health, Ageing and Retirement in Europe (SHARE), and the English Longitudinal Study of Ageing (ELSA). The analysis included 37,076

older adults from these cohorts, with comparable measures of sensory impairment and cognitive frailty across studies. Sensory impairments were assessed via self-reported hearing impairment and vision impairment. The outcome was the incidence of cognitive frailty, assessed using self-reported cognitive function and frailty indicators. Cox regression models were used to evaluate the association between hearing impairments, vision impairments and dual sensory impairment with cognitive frailty risk, adjusting for potential confounders., RESULTS: The cohort had a mean (SD) age of 74.60 (6.61) years for HRS (41.41% male), 81.87 (10.50) years for CLHLS (48.10% male), 72.99 (6.12) years for SHARE (44.27% male), and 73.03 (6.22) years for ELSA (46.59%% male). The prevalence of cognitive frailty was 10.58% for HRS, 6.26% for CLHLS, 12.16% for SHARE, and 5.81% for ELSA. The prevalence of dual sensory impairment was 8.05% for HRS, 3.06% for CLHLS, 10.94% for SHARE, and 4.06% for ELSA. Cox regression revealed a significant synergistic effect between hearing impairment and vision impairment on cognitive frailty risk. Compared to no sensory impairments individuals, those with hearing impairments or vision impairments had a higher risk of cognitive frailty across all cohorts, with individuals with dual sensory impairment exhibiting the highest risk: HRS (Hazard Ratio [HR] = 2.10, 95% CI, 1.71-2.56), CLHLS (HR = 2.08, 95% CI, 1.37-3.15), SHARE (HR = 1.52, 95% CI, 1.35-1.71), and ELSA (HR = 2.77, 95% CI, 1.78-4.31)., CONCLUSIONS: This study identifies an association between combined hearing and vision impairments and an increased risk of cognitive frailty. These findings suggest that assessing sensory impairments, particularly dual sensory impairment, in older adults may help identify individuals at higher risk of cognitive frailty. Further research, including longitudinal studies and randomized controlled trials, is needed to explore the potential benefits of early sensory interventions for supporting healthy aging.

Zhang, Z., T. Wang et al. (2025). "How to Break Stubborn Association Between Hearing Loss and Cognitive Impairment: A Systematic Review and Meta-Analysis of Moderators and Mediators." Journal of geriatric psychiatry and neurology 38(5): 339-352. https://dx.doi.org/10.1177/08919887251328880

BackgroundHearing loss has been related to impaired cognition among older adults. The cost effectiveness of existing hearing support tools is controversial. Other potential modifying strategies that could effectively intervene in this prevalent and far-reaching association between hearing loss and cognitive decline remain unclear. This study aimed to narratively and quantitatively synthesize the mediators and moderators involved in the link between hearing loss and cognitive impairment from a psycho-social and physical point of view. MethodWe searched 6 databases for articles exploring mediating or moderating associations of hearing loss-cognition association from inception to March, 2024. Data were synthesized narratively and quantitatively by meta-analytic approaches. Results The search yielded 63 included studies. Social (social engagement, social support, age, sex, ethnicity, cognitive reserve)-psycho (depression, anxiety, loneliness, resilience)-physical (cardiovascular diseases and risk factors, perceived health, disability, APOE carrier, vision impairment, gait speed) variables mediated or moderated the relationship between hearing loss and cognitive impairment to varying degrees. Subgroup analyses identified susceptible populations at greater risk for cognitive decline, including women, younger elders with hearing loss, and older adults with dual sensory loss. Conclusion Combined interventions targeting these modifiable variables across psycho-social and physical dimensions may be more cost-effective for intervening in the ensemble of hearing loss-cognitive impairment in older adults.

Zumbrunn, N. M., K. Beckett et al. (2025). "The association between dual sensory impairment and dementia: a meta-analysis and systematic review of the literature." Age and ageing 54(9). https://dx.doi.org/10.1093/ageing/afaf267

BACKGROUND: Recent evidence suggests an association between dual sensory impairment (DSI)-that is, both visual and hearing impairments-and dementia. The aim of this systematic review was to synthesise the literature evaluating the dementia risk of adults >18 years with DSI compared to those without sensory impairment and/or those with a single sensory impairment (SSI)., METHODS: PubMed, Web of Science and PsycINFO were systematically searched in February 2024 and August 2024 for studies that considered the association between DSI and dementia, and compared individuals with DSI to those with either no sensory impairment or a SSI. A meta-analysis was conducted on studies reporting hazard ratios. The review followed Preferred Reporting Items for Systematic Reviews and Meta-Analysis guidelines and was registered on the Prospective Register of Systematic Reviews (PROSPERO)., RESULTS: A total of 22 papers were included in the narrative review, and 13 were included in the meta-analysis. Overall, findings from the narrative synthesis highlighted a consistent link between dementia prevalence and incidence with DSI. The meta-analysis revealed that individuals with DSI are at an ~50% greater risk of developing dementia compared to those without sensory impairments. Moreover, we identified DSI as a potentially greater risk factor for dementia than isolated hearing and visual impairment, with the risk for dementia in the DSI group exceeding the combined risk of the individual sensory impairments., CONCLUSIONS: This review highlights that there is substantial evidence linking DSI to an increased risk of dementia, emphasising the importance of considering the interplay between multiple senses in dementia research. Future research should focus on exploring whether interventions targeting DSI could also improve cognitive outcomes. Copyright © The Author(s) 2025. Published by Oxford University Press on behalf of the British Geriatrics Society.

Jiang, F., Q. Dong et al. (2024). "A comprehensive evaluation on the associations between hearing and vision impairments and risk of all-cause and cause-specific dementia: results from cohort study, meta-analysis and Mendelian randomization study." BMC medicine 22(1): 518.
https://dx.doi.org/10.1186/s12916-024-03748-7

BACKGROUND: Epidemiological studies show inconsistent links between hearing/vision impairment and dementia risk. Using multisource data, we investigated how single or combined sensory impairments relate to risks of all-cause and specific types of dementia., METHODS: We employed a triangulation approach combining three methodologies. We analyzed 90,893 UK Biobank (UKB) adults to explore single and joint effects of hearing and vision impairments on all-cause and Alzheimer's disease (AD), vascular dementia (VD) and non-AD non-VD (NAVD). A meta-analysis of prospective studies involving 937,908 participants provided stronger evidence. Finally, we conducted Mendelian randomization (MR) analysis using genome-wide association studies from UKB (361,194 participants) and FinnGen (412,181 participants) to validate relationships between sensory impairments and dementia occurrence., RESULTS: In the UKB cohort study, compared to participants with normal hearing, those in the mild and severe hearing impairment groups had progressively and significantly higher risk of all-cause dementia (mild: HR1.52, 95%CI 1.31-1.77; severe: HR1.80, 95%CI 1.36-2.38), AD (mild: HR1.63, 95%CI 1.30-2.04; severe: HR2.18, 95%CI 1.45-3.27), VD (mild: HR1.68, 95%CI 1.19-2.37; severe: HR1.47, 95%CI 1.22-1.78), and NAVD (mild: HR1.47, 95%CI 1.22-1.78; severe: HR1.98, 95%CI 1.43-2.75). Besides, vision impairment was associated with an increased risk of all-cause dementia (HR1.55, 95%CI 1.18-2.04) and NAVD (HR1.51, 95%CI 1.07-2.13). Furthermore, dual sensory impairment was associated with stepwise increased risks of all-cause and cause-specific dementia than single hearing or vision impairment. In the meta-analysis of 31 prospective cohort studies, risks of all-cause dementia and AD were elevated in participants with single hearing impairment (all-cause dementia: HR1.30, 95%CI 1.21-1.40; AD: HR1.30, 95%CI 1.21-1.40) and dual sensory impairment (all-cause dementia: HR1.63, 95%CI1.14-2.12; AD: HR 2.55, 95%CI 1.19-3.91), while single vision impairment only associated with

higher risk of all-cause dementia (HR1.43, 95%CI 1.16-1.71) but not AD. Finally, the MR analysis revealed a significant association between hearing impairment and all-cause dementia (OR1.74, 95%CI 1.01-2.99), AD (OR1.56, 95%CI 1.09-2.23), and NAVD (OR1.14, 1.02-1.26), as well as vision impairment and NAVD (OR1.62, 95%CI 1.13-2.33)., CONCLUSIONS: Our findings showed significant associations between hearing and vision impairments and increased risks of all-cause and cause-specific dementia. Standardized hearing and vision assessment and intervention should be emphasized in dementia prevention strategies. Copyright © 2024. The Author(s).

Wu, C., W. Wang et al. (2024). "Risk factors for mild cognitive impairment in patients with age-related hearing loss: a meta-analysis." Brazilian journal of otorhinolaryngology 90(6): 101467. https://dx.doi.org/10.1016/j.bjorl.2024.101467

OBJECTIVES: One of the most common sensory impairments in the elderly is age-related hearing loss, and individuals with this condition have a higher risk of mild cognitive impairment than the overall aged population. The purpose of this study was to conduct a systematic review of the literature in order to evaluate the evidence supporting the hypothesis that mild cognitive impairment may be developed in patients with age-related hearing loss., METHODS: The PRISMA principles were followed when searching the databases of the China Knowledge Network, Wanfang, China Biomedical Literature Database, Pub Med, Cochrane Library, Embase, and Web of Science. Two investigators independently carried out the quality assessment, data extraction, and literature review of the eligible studies. Stata 17.0 was used to finish the statistical analysis and descriptive results., RESULTS: A total of 13 articles containing 2,222,036 individuals who were evaluated for demographic traits, factors associated with age-related hearing loss, vascular neurologic factors, and psychological factors were included after 2166 search records were found in the database. In patients with age-related hearing loss, eleven factors were found to be risk factors for the development of mild cognitive impairment: age (OR=1.63; 95% CI 1.09-2.43), male (OR=1.29; 95% CI 1.14-1.47), degree of hearing loss (OR=1.35; 95% CI 1.03-1.75), not wearing hearing aids (OR=1.56; 95% CI 1.37-1.79), cerebrovascular disease (OR=1.41; 95% CI 1.17-1.69), cardiovascular disease (OR=1.29; 95% CI 1.07-1.55), diabetes mellitus (OR=1.28; 95% CI 1.20-1.35), head injury (OR=1.22; 95% CI 1.13-1.33), alcohol consumption (OR=1.28; 95% CI 1.14-1.43), and tobacco use (OR=1.19; 95% CI 1.14-1.25), and depression (OR=1.63; 95% CI 1.47-1.81)., CONCLUSION: Caregivers can customize care strategies to decrease the occurrence of mild cognitive impairment in elderly deaf patients by considering demographic traits, factors associated with age-related hearing loss, vascular-neurologic factors, and psychological factors.

Yu, R.-C., D. Proctor et al. (2024). "Adult-onset hearing loss and incident cognitive impairment and dementia - A systematic review and meta-analysis of cohort studies." Ageing research reviews 98: 102346. https://dx.doi.org/10.1016/j.arr.2024.102346

BACKGROUND: We comprehensively summarized the cohort evidence to date on adult-onset hearing loss as risk factor for incident cognitive impairment and dementia, and examined the evidence for dose-response, risk for various dementia subtypes, and other moderators. Previous meta-analyses were less comprehensive., METHODS: We included cohort studies with participants without dementia and with hearing assessments at baseline, minimum 2 years follow-up and incident cognitive outcomes. We used random-effect models and subgroup and meta-regression on moderator analyses., RESULTS: We identified fifty studies (N=1,548,754). Hearing loss (yes/no) was associated with incident dementia risk (HR=1.35 [95% CI = 1.26 - 1.45), mild cognitive impairment (MCI HR=1.29 [95% CI = 1.11 - 1.50]), cognitive decline not specified as MCI or dementia

(HR=1.29 [95% CI = 1.17 - 1.42]), and Alzheimer's disease dementia (ADD, HR=1.56 [95% CI = 1.30 - 1.87]), but not with vascular dementia (HR, 1.30 [95% CI = 0.83 - 2.05]). Each 10-decibel worsening of hearing was associated with a 16% increase in dementia risk (95% CI = 1.07 - 1.27). The effect of hearing loss did not vary across potential moderators., CONCLUSIONS: Cohort studies consistently support that adult-onset hearing loss increases the risk of incident cognitive decline, dementia, MCI, and ADD.

Conceicao Santos de Oliveira, D., I. S. Gomes-Filho et al. (2023). "Association between hearing loss and cognitive decline in the elderly: A systematic review with meta-analysis study." PloS one 18(11): e0288099. https://dx.doi.org/10.1371/journal.pone.0288099

OBJECTIVE: Hearing loss has been pointed out as a potential predictor for cognitive decline. This study conducted a systematic review to evaluate the scientific evidence on the association between hearing loss in the elderly and cognitive decline, as well as whether race/color influences this relationship., METHOD: The search for studies was performed in the following electronic databases: MedLine/PubMed Web of Science, Scopus and Virtual Health Library, and MedRkiv up to August 2022. Studies with epidemiological designs that assess the association between hearing loss and cognitive decline in the elderly were eligible for inclusion. Three independent reviewers performed the selection, data extraction and evaluation of the quality of the studies using the Newcastle-Ottawa Scale. A meta-analysis using a random effects model estimated the global association measurements (Beta coefficient: beta) and their 95% confidence intervals (95%CI), and the Higgins and Thompson indicator (I2) was also estimated to assess statistical heterogeneity among the studies., RESULTS: 5,207 records were identified in the database surveys, of which only 18 were eligible studies, totaling 19,551 individuals. Hearing loss was associated with cognitive decline in the elderly, with statistical significance: beta = -0.13; 95%CI = -0.23 to -0.04; I2 = 98.70%). For black individuals, the magnitude of the association increased: beta = -0.64; 95%CI = -3.36 to 2.07; I2 = 95.65%, but it was not statistically significant., CONCLUSION: The findings of this systematic review showed the existence of a significant relationship between hearing loss and cognitive decline in the elderly, as well as signaling that among black individuals the magnitude of the association can be increased.

Liu, C.-J., P.-S. Chang et al. (2022). "The Nexus of Sensory Loss, Cognitive Impairment, and Functional Decline in Older Adults: A Scoping Review." The Gerontologist 62(8): e457-e467.
https://dx.doi.org/10.1093/geront/gnab082

BACKGROUND AND OBJECTIVES: The prevalence of cognitive impairment and sensory loss in hearing or vision increases with age. Based on the Information Processing Model, cognitive impairment coupled with sensory loss may exacerbate disability in late life. Yet this issue has not been systematically studied. The purpose of this scoping review was to examine the literature that studied the relationship between cognitive impairment, sensory loss, and activities of daily living in older adults., RESEARCH DESIGN AND METHODS: Two reviewers independently screened 1,410 studies identified from 5 electronic databases (Medline, EMBASE, PsycINFO, CINHAL, and Web of Science). The search was completed in June 2020. A study was eligible if it included measurements of cognitive function, vision or hearing, and activities of daily living. Additionally, the data analyses must address how cognitive impairment and sensory loss are related to the performance of activities of daily living., RESULTS: The final review included 15 studies. Findings show an additive effect of cognitive impairment and sensory loss on the activities of daily living. Cognitive impairment

or vision loss independently relates to the decline in activities of daily living. Hearing loss relates to the decline only when the loss is severe, or if the daily task is hearing - specific., DISCUSSION AND IMPLICATIONS: Older adults with coexisting sensory loss and cognitive impairment have the highest risk or prevalence of disability, comparing to cognitive impairment or sensory loss alone. This finding highlights the importance of developing interventions to reduce the risk of disability for older adults experiencing multiple impairments.

Strutt, P. A., A. J. Barnier et al. (2022). "Hearing loss, cognition, and risk of neurocognitive disorder: evidence from a longitudinal cohort study of older adult Australians." Neuropsychology, development, and cognition. Section B, Aging, neuropsychology and cognition 29(1): 121-138. https://dx.doi.org/10.1080/13825585.2020.1857328

Addressing midlife hearing loss could prevent up to 9% of new cases of dementia, the highest of any potentially modifiable risk factor identified in the 2017 commissioned report in The Lancet. In Australia, hearing loss is the second-most common chronic health condition in older people, affecting 74% of people aged over 70. Estimates indicate that people with severe hearing loss are up to 5-times more likely to develop dementia, but these estimates vary between studies due to methodological limitations. Using data from the Sydney Memory and Aging Study, in which 1,037 Australian men and women aged between 70 and 90 years were enrolled and completed biennial assessments from 2005-2017, investigations between hearing loss and baseline cognitive performance as well as longitudinal risk of neurocognitive disorder were undertaken. Individuals who reported moderate-to-severe hearing difficulties had poorer cognitive performances in the domains of Attention/Processing Speed and Visuospatial Ability, and on an overall index of Global Cognition, and had a 1.5-times greater risk for the neurocognitive disorder during 6-years' follow-up. Hearing loss independently predicted risk for MCI but not dementia. The presence of hearing loss is an important consideration for neuropsychological case formulation in older adults with cognitive impairment. Hearing loss may increase cognitive load, resulting in observable cognitive impairment on neuropsychological testing. Individuals with hearing loss who demonstrate impairment in non-amnestic domains may experience benefits from the provision of hearing devices; This study provides support for a randomized control trial of hearing devices for improvement of cognitive function in this group.

Bosmans, J., C. Jorissen et al. (2020). "Impact of hearing loss and vestibular decline on cognition in Alzheimer's disease: a prospective longitudinal study protocol (Gehoor, Evenwicht en Cognitie, GECkO)." BMJ open 10(9): e039601. https://dx.doi.org/10.1136/bmjopen-2020-039601

INTRODUCTION: Dementia is a prevalent disease affecting a growing number of the ageing population. Alzheimer's disease (AD) is the most common cause of dementia. Previous research investigated the link between hearing loss and cognition, and the effect of vestibular dysfunction on cognition. Hearing loss and, to a lesser extent, vestibular decline both result in a decreasing cognitive function. However, their interaction should not be underestimated. The aim of this study is to assess the effect of hearing loss, vestibular decline and their interaction on cognition in people suffering from mild cognitive impairment (MCI) and dementia due to AD (ADD)., METHODS AND ANALYSIS: We designed a prospective longitudinal study to assess the effect of hearing loss and vestibular decline on cognition. A total of 100 cognitively impaired elderly (between 55 and 84 years of age), consisting of 60 patients with MCI due to AD and 40 patients with ADD will be included. The control group will consist of individuals with preserved cognition group-matched based on age, hearing level and vestibular function. A comprehensive assessment is performed at baseline, 12-

month and 24-month follow-ups. The primary outcome measure is the change in the Repeatable Battery for the Assessment of Neuropsychological Status adjusted for Hearing-impaired individuals total score, a cognitive test battery assessing different cognitive domains. Secondary outcome measures include additional neuropsychological assessments, cortical auditory-evoked potentials, and evaluation of general and disease-specific health-related quality of life. Variables include cognitive, audiological and vestibular evaluation. Variance analyses will assess the effect of hearing loss and vestibular decline on cognition. More precisely, the link between hearing loss and non-spatial cognitive functioning, the effect of vestibular decline on spatial cognition and the impact of both factors on the rate of conversion from MCI due to AD to ADD will be investigated., ETHICS AND DISSEMINATION: The study protocol was approved by the ethical committee of the Antwerp University Hospital on 4 February 2019 with protocol number B300201938949. The findings will be disseminated through peer-reviewed publications and conference presentations., TRIAL REGISTRATION NUMBER: ClinicalTrials.gov Registry (NCT04385225). Copyright © Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

Cutler, S. J. et C. Ilinca (2020). "On the Relationship between Hearing and Cognitive Limitations: Evidence from 51 Countries." Journal of aging and health 32(10): 1309-1315.
https://dx.doi.org/10.1177/0898264320923909

Objective: This study extends prior findings by looking at the relationship between hearing acuity and cognitive difficulties in 51 nations. Methods: We draw on data from the Integrated Public Use Microdata International Series available at the Institute for Social Research and Data Innovation at the University of Minnesota. For all countries where data are available, bivariate relationships between hearing and cognitive problems are examined using correlation coefficients (Rs) and multivariate relationships using linear regression techniques (betas), controlling for age, gender, marital status, and education. Results: For all 51 countries, the R between hearing problems and cognitive problems is 0.334 ($p < .001$); the multivariate beta is 0.316 ($p < .001$). Regional results are also statistically significant. Discussion: The relationship between hearing and memory appears to be universal, and practitioners must carefully assess and treat their client's hearing disabilities before they can expect them to remember any information.

Lawrence, B. J., D. M. P. Jayakody et al. (2020). "Hearing Loss and Depression in Older Adults: A Systematic Review and Meta-analysis." The Gerontologist 60(3): e137-e154.
https://dx.doi.org/10.1093/geront/gnz009

BACKGROUND AND OBJECTIVES: Studies reporting an association between hearing loss and depression in older adults are conflicting and warrant a systematic review and meta-analysis of the evidence., RESEARCH DESIGN AND METHODS: A search of academic databases (e.g., MEDLINE) and gray literature (e.g., OpenGrey) identified relevant articles published up to July 17, 2018. Cross-sectional or cohort designs were included. Outcome effects were computed as odds ratios (ORs) and pooled using random-effects meta-analysis (PROSPERO: CRD42018084494)., RESULTS: A total of 147,148 participants from 35 studies met inclusion criteria. Twenty-four studies were cross-sectional and 11 were cohort designs. Overall, hearing loss was associated with statistically significantly greater odds of depression in older adults (OR = 1.47, 95% confidence interval [CI] = 1.31-1.65). When studies were stratified by design, hearing loss was associated with greater odds of depression in cross-sectional studies (OR = 1.54, 95% CI = 1.31-1.80) and cohort studies (OR = 1.39, 95% CI = 1.16 - 1.67), and there was no difference between cross-sectional or cohort effect estimates ($Q = 0.64$, $p = .42$). There was no effect of moderator variables (i.e., hearing aid use) on the association between hearing loss and depression, but these findings must be interpreted with

caution. There was no presence of publication bias but certainty in the estimation of the overall effect was classified as "low.", DISCUSSION AND IMPLICATIONS: Older adults may experience increased odds of depression associated with hearing loss, and this association may not be influenced by study or participant characteristics. Copyright © The Author(s) 2019. Published by Oxford University Press on behalf of The Gerontological Society of America. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com.

TECHNOLOGIES

Mothemela, B., V. Manchaiah et al. (2024). "Factors influencing hearing aid use, benefit and satisfaction in adults: a systematic review of the past decade." International journal of audiology 63(9): 661-674. https://dx.doi.org/10.1080/14992027.2023.2272562

OBJECTIVE: This systematic review examined the audiological and non-audiological factors that influence hearing aid use, benefit and satisfaction in adults based on studies published during the last decade (2010 and 2023)., DESIGN: Studies were identified by using PRISMA guidelines for systematic searches on five platforms (Web of Science, Scopus, PubMed, EBSCOhost including CINAHL and Academic Search Complete). The National Institute of Health Quality assessment tool and the Oxford Centre for Evidence Based Medicine tool were used for quality assessment and grading of level of evidence., RESULTS: Forty-six articles were included in the review. A total of 101 significant factors influencing hearing aid use (n = 47), benefit (n = 17) and satisfaction (n = 37) were identified. Clear determinants of hearing aid use, benefit and satisfaction included hearing sensitivity, self-reported hearing difficulty, speech perception, attitude and beliefs. 34 cross-sectional studies in this review were graded level 4, 9 cohort studies rated level 3, and 3 randomised control trials rated level 2., CONCLUSION: Factors associated with hearing aid outcomes identified in the past decade support previous evidence. New factors like social networks and service-delivery models, have also been identified. These factors require further investigations through high quality studies to further strengthen existing evidence.

Andries, E., A. Gilles et al. (2021). "Systematic Review of Quality of Life Assessments after Cochlear Implantation in Older Adults." Audiology & neuro-otology 26(2): 61-75.
https://dx.doi.org/10.1159/000508433

Cochlear implants (CI) have increasingly been adopted in older adults with severe to profound sensorineural hearing loss as a result of the growing and aging world population. Consequently, researchers have recently shown great interest in the cost-effectiveness of cochlear implantation and its effect on quality of life (QoL) in older CI users. Therefore, a systematic review and critical evaluation of the available literature on QoL in older adult CI users was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies were selected by searching MEDLINE (PubMed) and the Cochrane Library and by checking the reference lists of relevant articles. Inclusion criteria were as follows: (1) the study sample were adults aged 50 years and older with postlingual onset of bilateral severe to profound hearing loss, (2) all subjects received a multi-electrode CI, and (3) QoL was assessed before and after implantation. Out of 1,093 records, 18 articles were accepted for review. Several studies demonstrated significant positive effects of cochlear implantation on QoL in older adults, but high-level evidence-based medicine is lacking. An improvement of QoL was generally reported when using disease-specific instruments, which are designed to detect treatment-specific changes, whereas the outcomes of generic QoL questionnaires, assessing general health states, were rather

ambiguous. However, only generic questionnaires would be able to provide calculations of the cost-effectiveness of CI and comparisons across patient populations, diseases, or interventions. Hence, generic and disease-specific QoL instruments are complementary rather than contradictory. In general, older CI users' QoL was assessed using a variety of methods and instruments, which complicated comparisons between studies. There is a need for a standardized, multidimensional, and comprehensive QoL study protocol including all relevant generic and disease-specific instruments to measure and compare QoL, utility, and/or daily life performance in CI users.

Yuen, E., C. Ma et al. (2021). "The Effect of Cochlear Implantation on Tinnitus and Quality of Life: A Systematic Review and Meta-analysis." Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology 42(8): 1113-1122. https://dx.doi.org/10.1097/MAO.0000000000003172

OBJECTIVE: To ascertain the effect of cochlear implantation (CI) on tinnitus and quality of life., DATABASES SOURCES: PubMed, Scopus, Web of Science, and Cochrane Library were searched through August 21, 2020. Search strategies used a combination of subject headings (e.g., MeSH in PubMed) and keywords for the following two concepts: cochlear implantation and tinnitus., STUDY SELECTION: English articles reporting on pre-intervention tinnitus-related patient-reported outcome measures (e.g., Tinnitus Handicap Inventory [THI], Tinnitus Questionnaire [TQ], Visual Analogue Scale [VAS] for loudness) and quality of life measures (e.g., Nijmegen Cochlear Implantation Questionnaire [NCIQ] and Hospital Anxiety and Depression Scale [HADS]) for CI recipients were included., DATA EXTRACTION: Demographics, baseline, and follow-up data., DATA SYNTHESIS: Total of 27 articles reporting on 1,285 patients (mean age 54.5 years, range 14-81) were included. Meta-analysis of all tinnitus-related measures demonstrated improvement following implantation, with a mean difference of -23.2 [95% CI: -28.8 to -17.7], -12.6 [95% CI: -17.5 to -7.8], and -4.5 [95% CI: -5.5 to -3.4] ($p < 0.05$ for all) for THI, TQ, and VAS, respectively. NCIQ increased by 12.2 points [95% CI: 8.2-16.2] ($p < 0.05$), indicating improved quality of life among CI recipients. Psychological comorbidities were also ameliorated, as evidenced by reductions in HADS depression (-1.7 [95% CI: -2.4 to -0.9]) and anxiety (-1.3 [95% CI: -2.1 to -0.5]) ($p < 0.05$ for both) scores., CONCLUSION: Following CI, patients reported significant improvement in tinnitus via several validated questionnaires. Additional benefits include improved quality of life and reduction in psychological comorbidities.

Bao, J., Y. Yu et al. (2020). "Evidence for independent peripheral and central age-related hearing impairment." Journal of neuroscience research 98(9): 1800-1814. https://dx.doi.org/10.1002/jnr.24639

Deleterious age-related changes in the central auditory nervous system have been referred to as central age-related hearing impairment (ARHI) or central presbycusis. Central ARHI is often assumed to be the consequence of peripheral ARHI. However, it is possible that certain aspects of central ARHI are independent from peripheral ARHI. A confirmation of this possibility could lead to significant improvements in current rehabilitation practices. The major difficulty in addressing this issue arises from confounding factors, such as other age-related changes in both the cochlea and central non-auditory brain structures. Because gap detection is a common measure of central auditory temporal processing, and gap detection thresholds are less influenced by changes in other brain functions such as learning and memory, we investigated the potential relationship between age-related peripheral hearing loss (i.e., audiograms) and age-related changes in gap detection. Consistent with previous studies, a significant difference was found for gap detection thresholds between young and older adults. However, among older adults, no significant associations were observed between gap detection ability and several other independent variables including the pure tone audiogram average, the Wechsler Adult Intelligence Scale-Vocabulary score, gender, and age.

Statistical analyses showed little or no contributions from these independent variables to gap detection thresholds. Thus, our data indicate that age-related decline in central temporal processing is largely independent of peripheral ARHI.

Berardino, F. D., G. Conte et al. (2020). "Cochlear implantation in Meniere's disease: a systematic review of literature and pooled analysis." International journal of audiology 59(6): 406-415. https://dx.doi.org/10.1080/14992027.2020.1720922

Objective: The aim of this study was to evaluate the effect of cochlear implantation (CI) in advanced Meniere's disease (MD). Design: The initial search on PubMed, EMBASE, and Cochrane databases yielded 171 articles; no language restriction was applied. Study sample: A total of 11 articles met the inclusion criteria and were included in this systematic review. Six articles provided patient-level data on improvement in speech recognition testing after CI. Results: The methodological quality of included studies was assessed by examining the study design, level of evidence, method of measurement and adequacy of outcome reporting. A random-effect model was fitted for calculating weighted means. Post-operative improvement in word recognition score (WCS) was 50.8% (95% confidence interval: 34.6-67.1%); general improvement of vestibular symptoms after CI was found in 67% of the pooled patients; when reported in the studies, quality of life (QoL) and tinnitus were also generally improved after CI. Conclusions: CI in advanced MD is a valid option providing good outcomes in terms of speech performances, regardless of the disease duration, uni- or bilaterality, age at implantation, previous therapeutic procedures and stage of activity of MD.

Li, L. Y. J., S.-Y. Wang et al. (2020). "Screening for Hearing Impairment in Older Adults by Smartphone-Based Audiometry, Self-Perception, HHIE Screening Questionnaire, and Free-Field Voice Test: Comparative Evaluation of the Screening Accuracy With Standard Pure-Tone Audiometry." JMIR mHealth and uHealth 8(10): e17213. https://dx.doi.org/10.2196/17213

BACKGROUND: Hearing impairment is the most frequent sensory deficit in humans, affecting more than 360 million people worldwide. In fact, hearing impairment is not merely a health problem, but it also has a great impact on the educational performance, economic income, and quality of life. Hearing impairment is therefore an important social concern., OBJECTIVE: We aimed to evaluate and compare the accuracy of self-perception, Hearing Handicap Inventory for the Elderly-Screening (HHIE-S) questionnaire, free-field voice test, and smartphone-based audiometry as tests for screening moderate hearing impairment in older adults in China., METHODS: In this study, 41 patients were recruited through a single otology practice. All patients were older than 65 years. Patients with otorrhea and cognitive impairment were excluded. Moderate hearing impairment was defined as mean hearing thresholds at 500, 1000, 2000, and 4000 Hz >40 dB hearing loss (pure-tone average > 40 dB hearing loss). All patients completed 5 hearing tests, namely, the self-perception test, HHIE-S questionnaire test, free-field voice test, smartphone-based audiometry test, and standard pure-tone audiometry by the same audiologist. We compared the results of these tests to the standard audiogram in the better-hearing ear., RESULTS: The sensitivity and the specificity of the self-perception test were 0.58 (95% CI 0.29-0.84) and 0.34 (95% CI 0.19-0.54), respectively. The sensitivity and the specificity of the HHIE-S questionnaire test were 0.67 (95% CI 0.35-0.89) and 0.31 (95% CI 0.316-0.51), respectively. The sensitivity and the specificity of the free-field voice test were 0.83 (95% CI 0.51-0.97) and 0.41 (95% CI 0.24-0.61), respectively. The sensitivity and the specificity of the smartphone-based audiometry test were 0.92 (95% CI 0.60-0.99) and 0.76 (95% CI 0.56-0.89), respectively. Smartphone-based audiometry correctly diagnosed the presence of hearing loss with high sensitivity and high specificity., CONCLUSIONS: Smartphone-based audiometry may be a dependable screening test to rule out moderate hearing impairment in the older population.

Moffa, A., L. Giorgi et al. (2020). "Non-implantable bone conduction device for hearing loss: a systematic review." Journal of biological regulators and homeostatic agents 34(5 Suppl. 3): 97-Medicine https://pubmed.ncbi.nlm.nih.gov/33386039/

There are different treatment options that employ a bone conduction transmission of the sound, for different types of hearing loss, as well as hearing aids, medical intervention via prostheses and surgically implanted medical devices. A middle ear disease causes a decline in the conductive mechanism of hearing. The current possibilities of compensating Conductive Hearing Loss (CHL) solutions include both surgical and no surgical Bone Conduction Devices (BCDs). Due to the invasiveness of the implantable devices and their specific requirements in terms of the temporal bone anatomy, non-implantable BCDs are in some cases preferred in the clinical routine. The goal of this review is to investigate the beneficial effects and safety of non-implantable BC devices, analysing the different type of solutions found so far. A systematic review was performed to identify all the clinical studies evaluating the use of non-invasive BCDs. A qualitative analysis based on data extracted was conducted. From 37 articles, 11 prospective studies and 1 retrospective study were selected for a full analysis, for a total of 173 patients from 4- to 77-years-old. Eight of these studies included adult patients, while the other four are paediatric studies. All the studies analyse non-implantable BCDs commonly used in case of CHL, sensorineural HL and single side deafness. Three of them analyse an adhesive device, six compare the adhesive device with a sound processor mounted on a support fitted on the head, one compare it also with an implant, one analyse the sound processor mounted on different type of support, and one compare different type of sound processor. All the studies showed advantages from the use of non-invasive BCDs, both on adults and children. The non-invasive BCDs analysed in this review show good results both from the audiological and subjective point of view and could be considered a safe and effective solution for patients suffering from conductive hearing loss, sensorineural hearing loss or single-side deafness. More studies are required to confirm these promising results.