

Audiology Update



06 May 2021

Welcome to the latest copy of the Audiology Update. The aim of this publication is to bring together a range of recently-published research and guidance that will help you make evidence based decisions.

Accessing Articles

The following abstracts are taken from a selection of recently published articles.

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Please contact Holly if you would like more information, or further evidence searches: holly.cook3@nhs.net.

Papers – selected from Medline and CINHAL between Feb 2020 – May 2021

(most recent first)

1. Operationalization of the Brief ICF Core Set for Hearing Loss: An ICF-Based e-Intake Tool in Clinical Otology and Audiology Practice.
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14. Association Between Central and Peripheral Age-Related Hearing Loss and Different Frailty Phenotypes in an Older Population in Southern Italy.
15. The Feasibility and Reliability of a Digits-in-Noise Test in the Clinical Follow-Up of Children With Mild to Profound Hearing Loss.
16. A systematic review and meta-analysis of digital noise reduction hearing aids in adults.
17. An audit of UK audiological practice in specialist paediatric oncology centres regarding hearing assessment of children at risk of ototoxicity due to chemotherapy.
18. Identifying factors associated with spontaneous restoration of hearing in children with otitis media with effusion.
19. Feasibility of Personal Sound Amplification Products in Patients with Moderate Hearing Loss: A Pilot Study.
20. The impact of tinnitus distress on cognition.
21. Self-reported hearing handicap in adults aged 55 to 81 years is modulated by hearing abilities, frailty, mental health, and willingness to use hearing aids.



22. Cochlear Implantation in Children With Single-Sided Deafness: A Systematic Review and Meta-analysis.
23. Cochlear Implants in Patients with Fluctuant or Progressive Hearing Loss on the Better Ear.
24. Methodological quality of clinical guidelines for universal newborn hearing screening.
25. Protocol for a multi-centre randomised controlled stand-alone feasibility trial to assess potential effectiveness and cost-effectiveness of digital hearing aids in patients with tinnitus and hearing loss (the HUSH trial).
26. Evaluation of the possible effect of magnetic resonance imaging noise on peripheral hearing organ with the otoacoustic emission.
27. Drainage of a petrous apex cholesterol granuloma through an infracochlear approach.
28. Regional patterns and trends of hearing loss in England: evidence from the English longitudinal study of ageing (ELSA) and implications for health policy.
29. A Systematic Review on the Association of Acquired Human Cytomegalovirus Infection with Hearing Loss.
30. The GoAudio Quantitative Mobile Audiology Test Enhances Access to Clinical Hearing Assessments.
31. Noise Damage Accelerates Auditory Aging and Tinnitus: A Canadian Population-Based Study.
32. The TinMan study: feasibility trial of a psychologically informed, audiologist-delivered, manualised intervention for tinnitus.
33. Outcomes of a multidisciplinary Ear, Nose and Throat Allied Health Primary Contact outpatient assessment service.
34. How Do Audiologists Respond to Emotional and Psychological Concerns Raised in the Audiology Setting? Three Case Vignettes.
35. Telemedicine in Audiology. Best practice recommendations from the French Society of Audiology (SFA) and the French Society of Otorhinolaryngology-Head and Neck Surgery (SFORL).
36. Pure-tone audiometry without bone-conduction thresholds: using the digits-in-noise test to detect conductive hearing loss.
37. Prognostic factors for outcomes of idiopathic sudden sensorineural hearing loss: protocol for the SeaSHEL national prospective cohort study.
38. Sudden onset hearing loss following intra-abdominal surgery: an unusual association.
39. Impact of hearing loss and vestibular decline on cognition in Alzheimer's disease: a prospective longitudinal study protocol (Gehoor, Evenwicht en Cognitie, GECKO).
40. "What's Going on With My Ears?": Some Reflections on Managing Uncertainty in the Audiology Consultation.
41. Discovering the Unmet Needs of People With Difficulties Understanding Speech in Noise and a Normal or Near-Normal Audiogram.
42. Ten years of experience with the Ponto bone-anchored hearing system-A systematic literature review.
43. Behavioral Audiology Procedures in Children With Down Syndrome.



44. Quantifying tinnitus suppression in cochlear implantation using tinnitus interval-limited tracking.
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49. Health-Related Quality of Life Changes Associated With Hearing Loss.
50. Schoolchildren with unilateral or mild to moderate bilateral sensorineural hearing loss should be screened for neurodevelopmental problems.
51. Audiology Saved My Life: "Yes," "Sometimes," or "No"? A Commencement Address for the Class of 2020.
52. Improving Pediatric Hearing Testing for Children with Developmental Delays: The Effects of Video Modeling on Child Compliance and Caregiver Stress.
53. Total endoscopic stapes surgery: Systematic review and pooled analysis of audiological outcomes.
54. Inner-Ear Disorders Presenting with Air-Bone Gaps: A Review.
55. Audiometric Predictors of Bothersome Tinnitus in a Large Clinical Cohort of Adults With Sensorineural Hearing Loss.
56. Usefulness of cochlear implantation in children with single sided deafness.
57. An evaluation of paediatric tinnitus services in UK National Health Service audiology departments.
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Full strategy



1. Operationalization of the Brief ICF Core Set for Hearing Loss: An ICF-Based e-Intake Tool in Clinical Otolaryngology and Audiology Practice.

Author(s): van Leeuwen, Lisette M; Pronk, Marieke; Merkus, Paul; Goverts, S Theo; Terwee, Caroline B; Kramer, Sophia E

Source: Ear and hearing; ; vol. 41 (no. 6); p. 1533-1544

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 33136629

Available at [Ear and hearing](#) - from Unpaywall

Abstract:

OBJECTIVES: According to the International Classification of Functioning, Disability and Health (ICF), functioning reflects the interplay between an individual's body structures and functions, activities, participation, environmental, and personal factors. To be useful in clinical practice, these concepts need to be operationalized into a practical and integral instrument. The Brief ICF Core Set for Hearing Loss (CSHL) provides a minimum standard for the assessment of functioning in adults with hearing loss. The objective of the present study was to operationalize the Brief CSHL into a digital intake tool that could be used in the otology-audiology practice for adults with ear and hearing problems as part of their intake assessment.

DESIGN: A three-step approach was followed: (1) Selecting and formulating questionnaire items and response formats, using the 27 categories of the Brief CSHL as a basis. Additional categories were selected based on relevant literature and clinical expertise. Items were selected from existing, commonly used disease-specific questionnaires, generic questionnaires, or the WHO's official descriptions of ICF categories. The response format was based on the existing item's response categories or on the ICF qualifiers. (2) Carrying out an expert survey and a pilot study (using the three-step test interview. Relevant stakeholders and patients were asked to comment on the relevance, comprehensiveness, and comprehensibility of the items. Results were discussed in the project group, and items were modified based on consensus. (3) Integration of the intake tool into a computer-based system for use in clinical routine.

RESULTS: The Brief CSHL was operationalized into 62 items, clustered into six domains: (1) general information, including reason for visit, sociodemographic, and medical background; (2) general body functions; (3) ear and hearing structures and functions; (4) activities and participation (A&P); (5) environmental factors (EF); and (6) personal factors (mastery and coping). Based on stakeholders' responses, the instructions of the items on A&P and EF were adapted. The three-step test interview showed that the tool had sufficient content validity but that some items on EF were redundant. Overall, the stakeholders and patients indicated that the intake tool was relevant and had a logical and clear structure. The tool was integrated in an online portal.

CONCLUSIONS: In the current study, an ICF-based e-intake tool was developed that aims to screen self-reported functioning problems in adults with an ear/hearing problem. The relevance, comprehensiveness, and comprehensibility of the originally proposed item list was supported, although the stakeholder and patient feedback resulted into some changes of the tool on item-level. Ultimately, the functioning information obtained with the tool could be used to promote patient-centered ear and hearing care taking a biopsychosocial perspective into account.

Database: Medline

2. Effectiveness and Safety of Advanced Audiology-Led Triage in Pediatric Otolaryngology Services.

Author(s): Pokorny, Michelle A; Wilson, Wayne J; Whitfield, Bernard C S; Thorne, Peter R

Source: Ear and hearing; ; vol. 41 (no. 5); p. 1103-1110

Publication Type(s): Journal Article

PubMedID: 32044804

Abstract:

OBJECTIVES: Expansion of the scopes of practice of allied health practitioners has the potential to improve the efficiency and cost-effectiveness of healthcare, given the identified shortages in medical personnel. Despite numerous examples in other allied health disciplines, this has yet to be applied to pediatric Audiology. This study



aimed to investigate the effectiveness and safety of using audiologists with advanced training to independently triage children referred to otolaryngology (ORL) services, and compare the subsequent use of specialist resources, and postoperative grommet care to a standard medical ORL service.

DESIGN: One hundred twenty children consecutively referred to a large ORL outpatient service in Queensland, Australia, for middle ear and hearing concerns were prospectively allocated to either the ORL service or Advanced Audiology-led service. Demographic and clinical data were extracted from electronic medical records and compared between the two services. Clinical incidents and adverse events were recorded for the Advanced Audiology-led service.

RESULTS: Approximately half of all children referred to ORL for middle ear or hearing concerns were discharged without requiring any treatment, with the remaining half offered surgical treatment. The Advanced Audiology-led model increased the proportion of children assessed by ORL that proceeded to surgery from 57% to 82% compared with the standard medical ORL model. Children followed up by the audiologists after grommet insertion were more likely to be discharged independently and at the first postoperative review appointment compared with the standard medical ORL service. There were no reports of adverse events or long-term bilateral hearing loss after discharge by the Advanced Audiology-led service.

CONCLUSIONS: These findings indicate that an Advanced Audiology-led service provides a safe and effective triaging model for the independent management of children not requiring treatment, and children requiring routine postoperative grommet review, and improves the effective use of specialist resource compared with the standard medical ORL service.

Database: Medline

3. Hearing loss in patients with systemic lupus erythematosus: A systematic review and meta-analysis.

Author(s): Yuen, Erick; Fried, Jacob; Nguyen, Shaun A; Rizk, Habib G; Ward, Celine; Meyer, Ted A

Source: Lupus; May 2021; vol. 30 (no. 6); p. 937-945

Publication Date: May 2021

Publication Type(s): Journal Article

PubMedID: 33645314

Available at [Lupus](#) - from EBSCO (MEDLINE Complete)

Available at [Lupus](#) - from EBSCO (Biomedical Reference Collection - Comprehensive)

Abstract:

OBJECTIVE: To determine the prevalence of hearing loss (HL) in patients with systemic lupus erythematosus (SLE), describe frequency-specific hearing threshold changes in this patient population as compared to age-matched control, and compare the clinical and serological profiles of patients with SLE with and without HL.

METHODS: A systematic review querying four databases (PubMed, Web of Science, Scopus, and Cochrane) was performed. Meta-analysis of available data was performed to determine the overall prevalence and odds ratio (OR) of HL, and compare mean differences in frequency-specific hearing thresholds between patients with SLE and control. Additionally, meta-analysis of proportions allowed for comparison of disease features present in patients with SLE with and without sensorineural HL.

RESULTS: This review included 17 studies reporting on 1326 patients (635 with SLE and 691 control). The pooled prevalence of HL in patients with SLE was 27%. In comparison to control, patients with SLE had a significantly higher odds of HL (OR 14.6, 95% CI: 8.5 to 25.0). Mean air-conduction hearing thresholds in patients with SLE were significantly elevated relative to control at 125 and 250 Hz. Mean bone-conduction hearing thresholds were significantly elevated in patients with SLE across all measured frequencies except at 3000 and 6000 Hz compared to control. Disease features did not significantly differ between patients with SLE with and without HL.

CONCLUSION: Compared to age-matched control, patients with SLE have increased odds of HL, which primarily manifests at low frequencies. Therefore, this patient population requires greater audiologic attention.

Database: Medline



4. Hearing Loss in Children: Clinical-Epidemiological Data from Two Different Provinces of the Same Region.

Author(s): Palma, Silvia; Ciorba, Andrea; Nascimbeni, Laura; Pecovela, Mariachiara; Negossi, Laura; Pelucchi, Stefano; Stagi, Paolo; Genovese, Elisabetta

Source: Audiology research; Apr 2021; vol. 11 (no. 2); p. 192-199

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33922429

Available at [Audiology Research](#) - from Europe PubMed Central - Open Access

Abstract:

BACKGROUND: In many countries, neonatal hearing screening programs (NHS) have been available for many years; however, because of the presence of hearing loss at late onset, early hearing detection programs (EHDP) have been implemented. The aim of this study was to evaluate all cases of infantile hearing loss under the care of two different provinces of a regional health service since the introduction of NHS.

METHODS: Clinical data (the presence of audiological risk factors, age at which children are placed under the care of health service, entity of hearing loss, treatment, and exposure to bilingualism) were retrospectively collected during the period from 1 January 2012 to 31 December 2018, starting from the IT management system used in all of the regional neuropsychiatric services.

RESULTS: In total, 124 children were included-116 cases failed the screening, 1 case had an untraceable result, and 7 cases (5.6%) had hearing screening that passed. Most of the children were placed under the care of a neuropsychiatric infantile and adolescence (NPIA) service within the first year of life. The main differences across the two provinces concerned the percentages of audiological risk factors and the number of unilateral hearing loss cases.

CONCLUSION: In order to plan and manage hearing rehabilitation programs for children in the best way, it is very important to know the local clinical-epidemiological features of the population.

Database: Medline

5. Frailty and Quality of Life After Cochlear Implantation in Older Adults.

Author(s): Aylward, Alana; Murphy-Meyers, Morganne; Allen, Chelsea McCarty; Patel, Neil S; Gurgel, Richard K

Source: Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery; Apr 2021 ; p. 1945998211004589

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33874790

Abstract:

OBJECTIVE: To examine the relationship among frailty index, hearing measures, and hearing-related quality of life (QOL) in older recipients of cochlear implants.

STUDY DESIGN: Cross-sectional survey.

SETTING: Academic medical center.

METHODS: Adults aged ≥ 65 years at the time of receiving cochlear implants between July 13, 2000, and April 3, 2019, were asked to complete a questionnaire on hearing-related QOL. Chart review was performed to identify patients' characteristics. Correlations were calculated between frailty index and audiologic outcome measures as well as between speech recognition scores and QOL scores. Linear regression models were developed to examine the impact of clinical characteristics, frailty index, and hearing measures on hearing-related QOL.

RESULTS: Data for 143 respondents were included. The mean age was 80.7 years (SD, 7.1), with a mean 27.8 years of hearing loss (SD, 17.4) before implantation. The mean frailty index was 11.1 (SD, 10.6), indicating that patients had 1



or 2 of the measured comorbidities on average. No correlation was found between lower frailty index (better health) and hearing scores, including pure tone averages (PTAs) and speech recognition scores. Lower frailty index and larger improvement in PTA after cochlear implantation predicted better QOL scores on univariate analysis (respectively, $P = .002$, $\beta = -0.42$ [95% CI, -0.68 to -0.16]; $P = .008$, $\beta = -0.15$ [95% CI, -0.26 to -0.04]) and multivariate analysis ($P = .047$, $\beta = -0.28$ [95% CI, -0.55 to -0.01]; $P = .006$, $\beta = -0.16$ [95% CI, -0.28 to -0.05]). No speech recognition scores correlated with QOL after cochlear implantation.

CONCLUSIONS: Frailty index does not correlate with hearing scores after cochlear implantation in older adults. Lower frailty index and more improvement in PTA predict better QOL scores after cochlear implantation in older adults.

Database: Medline

6. Quality of Life in Older Adults with Cochlear Implantation: Can It Be Equal to That of Healthy Older Adults?

Author(s): Tokat, Taskin; Müderris, Togay; Bozkurt, Ergul Basaran; Ergun, Uğurtan; Aysel, Abdulhalim; Catli, Tolgahan

Source: Journal of audiology & otology; Apr 2021

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33853267

Available at [Journal of audiology & otology](#) - from Europe PubMed Central - Open Access

Available at [Journal of audiology & otology](#) - from Unpaywall

Abstract:

Background and Objectives: This study aimed to evaluate the audiologic results after cochlear implantation (CI) in older patients and the degree of improvement in their quality of life (QoL). Subjects and

Methods: Patients over 65 years old who underwent CI at implant center in Bozyaka Training and Research Hospital were included in this study ($n=54$; 34 males and 20 females). The control group was patient over 65 years old with normal hearing ($n=54$; 34 males and 20 females). We administered three questionnaires [World Health Organization Quality of Life-BREF (WHOQOL-BREF), World Health Organization Quality of Life-OLD (WHOQOL-OLD)], and Geriatric Depression Scale (GDS) to evaluate the QoL, CI-related effects on activities of daily life, and social activities in all the subjects. Moreover, correlations between speech recognition and the QoL scores were evaluated. The duration of implant use and comorbidities were also examined as potential factors affecting QoL.

Results: The patients had remarkable improvements (the mean score of postoperative speech perception 75.7%) in speech perception after CI. The scores for the WHOQOL-OLD and WHOQOL-BREF questionnaire responses were similar in both the study and control groups, except those for a two subdomains (social relations and social participation). The patients with longer-term CI had higher scores than those with short-term CI use. In general, the changes in GDS scores were not significant ($p<0.05$).

Conclusions: The treatment of hearing loss with CI conferred significant improvement in patient's QoL ($p<0.01$). The evaluation of QoL can provide multidimensional insights into a geriatric patient's progress and, therefore, should be considered by audiologists.

Database: Medline

7. Prevalence and risk factors for cisplatin-induced hearing loss in children, adolescents, and young adults: a multi-institutional North American cohort study.

Author(s): Moke, Diana J; Luo, Chunqiao; Millstein, Joshua; Knight, Kristin R; Rassekh, Shahrar R; Brooks, Beth; Ross, Colin J D; Wright, Michael; Mena, Victoria; Rushing, Teresa; Esbenschade, Adam J; Carleton, Bruce C; Orgel, Etan

Source: The Lancet. Child & adolescent health; Apr 2021; vol. 5 (no. 4); p. 274-283

Publication Date: Apr 2021

Publication Type(s): Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Multicenter Study
Journal Article



PubMedID: 33581749

Abstract:

BACKGROUND: Cisplatin is used to treat a wide range of childhood cancers and cisplatin-induced hearing loss (CIHL) is a common and debilitating toxicity. We aimed to address persistent knowledge gaps in CIHL by establishing benchmarks for the prevalence of and risk factors for CIHL.

METHODS: In this multi-institutional cohort study, children (age 0-14 years), adolescents, and young adults (age 15-39 years) diagnosed with a cisplatin-treated tumour from paediatric cancer centres, who had available cisplatin dosing information, and primary audiology data for central review from consortia located in Canada and the USA were eligible for inclusion. Audiology was centrally reviewed and CIHL graded using the consensus International Society of Pediatric Oncology (SIOP) Boston Ototoxicity Scale. We assessed the prevalence of moderate or severe CIHL (SIOP grade ≥ 2) at latest follow-up and end of therapy, in each demographic, diagnosis, and treatment group and their relative contributions to risk for CIHL. Secondary endpoints explored associations of cisplatin dose reductions and CIHL with survival. We also examined whether cisplatin dose reductions and CIHL were associated with survival outcomes.

FINDINGS: We included 1481 patients who received cisplatin. Of the 1414 (95.5%) participants who had audiometry at latest follow-up (mean 3.9 years [SD 4.2] since diagnosis), 620 (43.8%) patients developed moderate or severe CIHL. The highest prevalence of CIHL was seen in the youngest patients (aged <5 years; 360 [59.4%] of 606 patients) and those with a CNS tumour (221 [50.9%] of 434 patients), hepatoblastoma (110 [65.9%] of 167 patients), or neuroblastoma (154 [62.1%] of 248 patients). After accounting for cumulative cisplatin dose, higher fractionated doses were associated with risk for CIHL (for each 10mg/m² increase per day, adjusted odds ratio [aOR] 1.15 [95% CI 1.07-1.25]; for each 50 mg/m² increase per cycle aOR 2.16 [1.37-3.51]). Vincristine exposure was newly identified as a risk factor for CIHL (aOR 3.55 [2.19-5.84]). Dose reductions and moderate or severe CIHL were not significantly associated with survival differences.

INTERPRETATION: Using this large, multicentre cohort, benchmarks were established for the prevalence of CIHL in patients treated with cisplatin. Variations in cisplatin dosing confer additive risk for developing CIHL and warrant investigation as a potential approach to decrease the burden of therapy.

FUNDING: US National Institutes of Health and National Institute on Deafness and Other Communication Disorders, US National Institutes of Health and National Cancer Institute, St Baldrick's Foundation, Genome Canada, Genome British Columbia, Canadian Institutes of Health Research, the Canada Foundation for Innovation, University of British Columbia, British Columbia Children's Hospital Research Institute, British Columbia Provincial Health Services Authority, Health Canada, and C17 Research Network.

Database: Medline

8. Prevalence of Depression and Anxiety in Adolescents With Hearing Loss.

Author(s): Cejas, Ivette; Coto, Jennifer; Sanchez, Chrisanda; Holcomb, Meredith; Lorenzo, Nicole E

Source: Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology; Apr 2021; vol. 42 (no. 4); p. e470

Publication Date: Apr 2021

Publication Type(s): Journal Article

PubMedID: 33347049

Abstract:

OBJECTIVE: To develop and implement a universal screening protocol for depression and anxiety in adolescents serviced in an otology and audiology practice and to estimate the prevalence of depression and anxiety in adolescents with hearing loss, while also comparing rates by degree of hearing loss and type of hearing device used.

STUDY DESIGN: Cross-sectional.

SETTING: University tertiary medical center.

PATIENTS: One hundred four adolescents 12- to 18-years-old who attended an otology clinic in a large metropolitan hospital in the southeastern United States.



MAIN OUTCOME MEASURE(s): Depression (PHQ-8), anxiety (GAD-7), degree of hearing loss, type of hearing loss, and type of hearing device utilized.

RESULTS: Twenty-five percent of adolescents scored above the clinical cutoff on at least one of the depression and/or anxiety measures, with 10% scoring in the elevated range on both measures. Specifically, 17% scored above the cutoff on the PHQ-8 and 16% scored in the clinically significant range for the GAD-7. An additional 30 and 21% scored in the at-risk range for depression and anxiety, respectively. Older adolescents were more likely to score within the elevated range for depression ($r=0.232$, $p=0.026$). Also, adolescents with severe to profound hearing loss had higher rates of depression and anxiety.

CONCLUSIONS: Integration of mental health screening is needed in otology and audiology practices both to identify those who require psychological support and to provide appropriate treatment to reduce long-term impact of hearing loss on quality of life and mental health functioning in adolescents.

Database: Medline

9. Association between Sudden Sensorineural Hearing Loss and Lyme Disease.

Author(s): Sowula, Klaudia; Szaleniec, Joanna; Stolcman, Kamila; Ceranowicz, Piotr; Kocoń, Sebastian; Tomik, Jerzy

Source: Journal of clinical medicine; Mar 2021; vol. 10 (no. 5)

Publication Date: Mar 2021

Publication Type(s): Journal Article

PubMedID: 33800352

Available at [Journal of clinical medicine](#) - from Europe PubMed Central - Open Access

Available at [Journal of clinical medicine](#) - from Unpaywall

Abstract:

OBJECTIVES: Sudden sensorineural hearing loss (SSNHL) is defined as sensorineural hearing loss of 30 dB or more over at least three adjacent audiometric frequencies occurring within a 72-h period of time. One of the causes of SSNHL could be the progressive inflammatory state caused by an infection. The aim of this study was to assess the prevalence of SSNHL caused by various factors, most importantly those potentially related to Lyme disease.

MATERIAL AND METHODS: The study includes a group of 86 patients between the ages of 20 and 70 who were hospitalized due to SSNHL between 2017 and 2018. All of these patients underwent a detailed medical interview and an otolaryngological examination, including audiological and diagnostic tests. Additionally, ELISA and Western blot tests were performed to confirm the diagnosis of Lyme disease.

RESULTS: In this group of 86 patients, nine patients presented with positive antibodies toward *Borrelia burgdorferi* sensu lato. This group was treated with antibiotics and experienced partial or complete regression of their deafness. This may suggest a relationship between SSNHL and Lyme disease.

CONCLUSION: Infections caused by *Borrelia burgdorferi* may contribute to the development of inflammatory and angiopathic lesions, which are a possible cause of SSNHL. The longer the duration of the infection, the greater the likelihood of permanent and irreversible changes in the vessels of the cochlea or auditory nerve. Therefore, serological tests for *Borrelia burgdorferi* should be performed during the diagnosis of SSNHL as a possible cause of this illness.

Database: Medline

10. Clinical and functional results after implantation of the bonebridge, a semi-implantable, active transcutaneous bone conduction device, in children and adults.

Author(s): Seiwerth, Ingmar; Fröhlich, Laura; Schilde, Sebastian; Götze, Gerrit; Plontke, Stefan K; Rahne, Torsten

Source: European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery; Mar 2021



Publication Date: Mar 2021

Publication Type(s): Journal Article

PubMedID: 33674927

Available at [European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies \(EUFOS\) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery](#) - from Unpaywall

Abstract:

PURPOSE: Aim of the study was to evaluate the surgical, clinical and audiological outcome of 32 implantations of the Bonebridge, a semi-implantable transcutaneous active bone conduction implant.

METHODS: In a retrospective cohort study, we analyzed data for 32 implantations in 31 patients (one bilateral case; seven age 11 postoperative months ($p < 0.0001$). The speech reception threshold in noise improved from - 1.01 dB unaided to - 2.69 dB best-aided ($p = 0.0018$).

CONCLUSION: We found a clinically relevant audiological benefit with Bonebridge. To overcome anatomical challenges, we recommend preoperative 3D planning in small and hypoplastic mastoids, children, ear malformation, and simultaneous implantation of ear prosthesis anchors and after multiple ear surgery.

Database: Medline

11. Exploring how parents of children with unilateral hearing loss make habilitation decisions: a qualitative study.

Author(s): Hussain, Saira; Pryce, Helen; Neary, Amy; Hall, Amanda

Source: International journal of audiology; Mar 2021; vol. 60 (no. 3); p. 183-190

Publication Date: Mar 2021

Publication Type(s): Journal Article

PubMedID: 32787641

Available at [International journal of audiology](#) - from Unpaywall

Abstract:

OBJECTIVE: This study sought to explore the decision making needs of parents managing the hearing and communication needs of children with unilateral hearing loss.

DESIGN: An inductive, qualitative method was used. The data were analysed using a constant comparative approach, consistent with Grounded Theory method.

STUDY SAMPLE: Twenty one families participated in interviews yielding data on twenty two children. Each of these families had at least one child with unilateral hearing loss. The age range of the children varied from four months to sixteen years old. All parents were English speaking and received care from National Health Service Audiology departments across the United Kingdom.

RESULTS: Parents valued professionals' opinions, but information provision was inconsistent. As their children mature, parents increasingly valued their child's input. Parent-child discussions focussed on how different management strategies fit their child's preferences. Parents were proactive in obtaining professional advice, and integrating this with their own iterative assessment of their child's performance.

CONCLUSIONS: Decision making is an iterative process. Parents make nuanced decisions which aim to preserve a sense of what is normal for them. Clinicians need to recognise the parental view, including where it may contrast with a medicalised or clinical view.

Database: Medline

12. Survey of Audiology Graduate Programs: Training Students in Tinnitus Management.

Author(s): Henry ; Sonstroem, Anneka; Smith, Brandon; Grush, Leslie

Source: American Journal of Audiology; Mar 2021; vol. 30 (no. 1); p. 22-27



Publication Date: Mar 2021

Publication Type(s): Academic Journal

Available at [American Journal of Audiology](#) - from EBSCO (Biomedical Reference Collection - Comprehensive)

Available at [American Journal of Audiology](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract:

Purpose: Although tinnitus is highly prevalent among patients receiving audiology services, the extent to which most audiologists are trained in tinnitus management is not well documented. The extent and type of instruction in tinnitus clinical care provided by audiology graduate (AuD) programs is not clear, nor is it known whether training programs are consistent in their recommendations. It is certainly true that widely accepted standards do not exist to ensure that all tinnitus clinical services are supported by adequate scientific evidence, which may result in unsatisfactory outcomes and unnecessary expense for patients. The purpose of this clinical focus article is to describe the results of an informal survey of AuD programs to determine their level of training for tinnitus management.

Method: A short survey was sent to all 75 American Speech-Language-Hearing Association--accredited AuD programs to assess the extent and type of tinnitus training their students receive.

Conclusions: The 32 AuD programs that responded to our survey provide tinnitus training using a variety of settings and methods. Further research could explore in more detail the extent of training in specific methods provided by these programs, and aim to elicit responses from a greater number of programs and from the students themselves.

Database: CINAHL

13. The experience of speech–language therapists and audiologists when delivering bad news: A qualitative analysis.

Author(s): Gold ; Gold, Azgad

Source: International Journal of Language & Communication Disorders; Mar 2021; vol. 56 (no. 2); p. 402-414

Publication Date: Mar 2021

Publication Type(s): Academic Journal

Available at [International Journal of Language & Communication Disorders](#) - from Wiley Online Library

Abstract:

Background: As part of their professional responsibilities, speech–language therapists and audiologists are required to deliver bad news.

Aims: The aim of this qualitative study is to describe and characterize the subjective experience of speech–language therapists and audiologists when delivering bad news to clients or their family members.

Methods & Procedures: A group of 156 speech–language therapists and audiologists replied in writing to an open question asking them to describe a clinical encounter in which they delivered bad news. The texts that were generated in response to this question served as a data base. Qualitative content analysis was used to analyse data and generate themes.

Outcomes & Results: Thematic analysis of participants' texts revealed the challenges inherent to the delivery of bad news. Four main themes emerged from text analysis: difficulty in phrasing the news; the deliverer's emotional experience; the receiver's reaction; and being alone or in companion with another healthcare provider during the delivery of the bad news.

Conclusions & Implications: Speech–language therapists and audiologists experience difficulties similar to those experienced by other healthcare professionals when delivering bad news. Nevertheless, speech–language therapists and audiologists seem to perceive the delivery of bad news situation in a broader sense than the conventional definition given to this term in the medical arena. What this paper adds What is already known on the subject The task of delivering bad news is stressful to healthcare professionals. Most of the literature on the topic pertains to physicians. Little is known regarding the delivery of bad news in speech–language therapy and audiology. What this paper adds to existing knowledge This study highlights the challenges that speech–language therapists and



audiologists encounter when delivering bad news. Furthermore, it illuminates the implicit perceptions of these professionals regarding what is considered 'bad news'. What are the potential or actual clinical implications of this work? The emotional challenges associated with the delivery of bad news underscore the importance of support and training regarding the delivery of bad news. It is especially important to prepare for a client's difficult questions, and to prefer a collaborative approach to the delivery of bad news.

Database: CINAHL

14. Association Between Central and Peripheral Age-Related Hearing Loss and Different Frailty Phenotypes in an Older Population in Southern Italy.

Author(s): Sardone, Rodolfo; Castellana, Fabio; Bortone, Ilaria; Lampignano, Luisa; Zupo, Roberta; Lozupone, Madia; Griseta, Chiara; Dibello, Vittorio; Seripa, Davide; Guerra, Vito; Donghia, Rossella; Logroscino, Giancarlo; Solfrizzi, Vincenzo; Quaranta, Nicola; Ferrucci, Luigi; Giannelli, Gianluigi; Panza, Francesco

Source: JAMA otolaryngology-- head & neck surgery; Feb 2021

Publication Date: Feb 2021

Publication Type(s): Journal Article

PubMedID: 33570584

Available at [JAMA otolaryngology-- head & neck surgery](#) - from EBSCO (MEDLINE Complete)

Abstract:

Importance: The association between age-related hearing loss (ARHL) and physical or cognitive frailty has been poorly explored. These associations could define new perspectives for delaying frailty-related processes in older age.

Objective: To examine whether peripheral ARHL and age-related central auditory processing disorder (CAPD) are independently associated with physical or cognitive frailty.

Design, Setting, and Participants: This cross-sectional study analyzed registry data from December 31, 2014, on 1929 older (≥ 65 years) participants of the Salus in Apulia Study (Southern Italy) who underwent audiologic, physical, and neuropsychological assessment. Data analysis was performed from December 12, 2019, to January 4, 2020.

Main Outcomes and Measures: Prevalence of peripheral ARHL in older individuals with physical and/or cognitive frailty and those without frailty assessed using the Fried criteria (physical) and the Mini-Mental State Examination (cognitive). Multivariable logistic regression models were used to assess associations of audiologic variables with frailty phenotype.

Results: Data from 1929 participants (mean [SD] age, 73.6 [6.3] years; 974 male [50.5%]) were eligible for the analyses. The prevalence of peripheral ARHL was higher in the physical frailty group (96 [26.6%]) than in the nonfrail group (329 [21.0%]) (difference, 5.61 percentage points; 95% CI, 0.63-10.59 percentage points) and in the cognitive frailty group (40 [38.8%]) than in the nonfrail group (385 [21.1%]) (difference, 17.75 percentage points; 95% CI, 8.2-27.3 percentage points). Age-related CAPD was more prevalent in the physical frailty group (62 [17.2%]) than in the nonfrail group (219 [14.0%]) (difference, 3.21 percentage points; 95% CI, -1.04 to 7.46 percentage points) and in the cognitive frailty group (28 [27.2%]) than in the nonfrail group (253 [13.9%]) (difference, 13.33 percentage points; 95% CI, 4.10-22.21 percentage points). In the multivariable models, age-related CAPD was associated with cognitive frailty in the fully adjusted model (odds ratio [OR], 1.889; 95% CI, 1.094-3.311). There was also an inverse association between the unitary increase in Synthetic Sentence Identification With the Ipsilateral Competitive Message scores, indicating a lower likelihood of this disorder, and cognitive frailty (OR, 0.989; 95% CI, 0.988-0.999). Peripheral ARHL was associated with cognitive frailty only in the partially adjusted model (OR, 1.725; 95% CI, 1.008-2.937).

Conclusions and Relevance: In this cross-sectional study of 1929 participants, age-related CAPD was independently associated with cognitive frailty. Whether the management of ARHL may help prevent the development of different frailty phenotypes or improve their clinical consequences should be addressed in longitudinal studies and, eventually, well-designed randomized clinical trials.

Database: Medline



15. The Feasibility and Reliability of a Digits-in-Noise Test in the Clinical Follow-Up of Children With Mild to Profound Hearing Loss.

Author(s): Vroegop, Jantien; Rodenburg-Vlot, Marian; Goedegebure, André; Doorduyn, Agnes; Homans, Nienke; van der Schroeff, Marc

Source: Ear and hearing; Feb 2021

Publication Date: Feb 2021

Publication Type(s): Journal Article

PubMedID: 33577216

Abstract:

OBJECTIVES: Speech perception in noise is an important aspect of the rehabilitation of children with hearing loss. We aimed to evaluate the feasibility and reliability of the Dutch digits-in-noise (DIN) test in the clinical follow-up of children with hearing aids (HAs) and/or cochlear implants (CIs). A second aim of the study was to gain insight in the speech perception in noise performance of children with different degrees of hearing loss.

DESIGN: We retrospectively analyzed DIN test data of Dutch-speaking children with hearing loss (N = 188; 5 to 18 years old). A free-field version of the DIN-test was used. Children with open-set phoneme recognition in quiet of >70% at 65 dB SPL (best aided condition) were included. Ages ranged from 5 to 18 years old. All were experienced HA or CI users and had used their device(s) for at least 1 year before the measurement in the study. The DIN-test was performed in the framework of a clinical rehabilitation program. During testing, children wore their own devices with normal daily programs.

RESULTS: The average speech reception threshold (SRT) was -3.6 dB (SD 3.6) for the first list and significantly improved to -4.0 dB (SD 3.1) for the second list. HA users had a 4-dB better SRT compared with CI users. The larger the child's hearing loss, the worse the SRT is. However, 15% of the children who completed a first list of 24 trials were unable to complete a second list. Mean adaptive staircase trajectories across trials suggested that learning occurred throughout the first list, and that loss of sustained attention contributed to response variability during the second list.

CONCLUSION: The DIN test can be used to assess speech perception in noise abilities for children with different degrees of hearing loss and using HAs or CIs. The children with hearing loss required a higher signal-to-noise ratio (SNR) than did normal-hearing children and the required SNR is larger as the hearing loss increases. However, the current measurement procedure should be optimized for use in standard pediatric audiological care, as 15% of the children were unable to conduct a second list after the first list to reach a more stable SNR.

Database: Medline

16. A systematic review and meta-analysis of digital noise reduction hearing aids in adults.

Author(s): Lakshmi ; Rout, Ayasakanta; O'Donoghue, Cynthia R.

Source: Disability & Rehabilitation: Assistive Technology; Feb 2021; vol. 16 (no. 2); p. 120-129

Publication Date: Feb 2021

Publication Type(s): Academic Journal

Abstract: Systematic evaluation and meta-analysis of the effects of digital noise reduction (DNR) algorithms on speech intelligibility, sound quality and listening effort in adult populations. Systematic review and meta-analysis. Six databases were searched for experimental studies published from 2000 to 2017 in English using the following search terms: "hearing aid" and "noise reduction". A total of 264 unique hits were obtained; out of which, 16 studies were included. The population effect was estimated for speech intelligibility and other subjective measures. From six studies, the population effect estimated for speech intelligibility measures was small ($r = 0.28$) with zero population variance. Sample size variance accounted for all the effect size variations found across studies. The population effect for subjective measures was medium ($r = 0.46 \pm 0.10$) as calculated from seven studies. Based on a criterion of moderate evidence, this meta-analysis did not reveal a consistent improvement in speech intelligibility with DNR in adult population. The subjective outcome measures (e.g., acceptable noise level and sound quality judgment) showed a moderate positive effect of DNR. The findings of the study will provide useful clinical information in follow



up visits in audiological rehabilitation. The meta-analysis of DNR informs clinicians to create realistic expectations in hearing aid users. This paper summarizes the available data on different outcome measures such as speech intelligibility, listening effort and sound quality. The results of this meta-analysis will help clinical audiologists in devising hearing aid orientation and counseling.

Database: CINAHL

17. An audit of UK audiological practice in specialist paediatric oncology centres regarding hearing assessment of children at risk of ototoxicity due to chemotherapy.

Author(s): Brown, E C M; Caimino, C; Benton, C L; Baguley, D M

Source: The Journal of laryngology and otology; Jan 2021; vol. 135 (no. 1); p. 14-20

Publication Date: Jan 2021

Publication Type(s): Journal Article

PubMedID: 33487183

Abstract:

OBJECTIVE: Platinum-based chemotherapy drugs are associated with substantial ototoxicity. The hearing of children treated with these drugs should be closely monitored.

METHOD: A questionnaire was sent out to the 19 audiology departments associated with national paediatric cancer specialist centres in the UK looking at current practice in ototoxicity monitoring.

RESULTS: Responses were received from 17 of 19 centres (89 per cent). All offered some form of audiometric monitoring service. Extended high-frequency testing (9-20 kHz) was only utilised by 7 services (29 per cent). A majority of respondents were reluctant to consider self-test devices in paediatric ototoxicity monitoring (n = 9; 53 per cent). Provision of long-term audiological follow up is sporadic with only 4 (23 per cent) respondents keeping all children with normal hearing under review once treatment is completed.

CONCLUSION: While some good practice in paediatric ototoxicity was identified, opportunities exist to improve clinical practice and protocols, promote multidisciplinary team working and to utilise technologies such as extended high frequency and self-test audiometry.

Database: Medline

18. Identifying factors associated with spontaneous restoration of hearing in children with otitis media with effusion.

Author(s): Edwards, Lowri; Cannings-John, Rebecca; Butler, Christopher; Francis, Nick

Source: Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery; Jan 2021; vol. 46 (no. 1); p. 243-248

Publication Date: Jan 2021

Publication Type(s): Journal Article

PubMedID: 33012126

Available at [Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery](#) - from Wiley Online Library

Abstract:

OBJECTIVES: To identify predictors of acceptable hearing at 5 weeks, 6 and 12 months in children with bilateral otitis media with effusion (OME).

DESIGN AND SETTING: Secondary analysis of OSTRICH data, conducted in hospital ear, nose and throat (ENT) and paediatric audiology and audiovestibular medicine departments across Wales and England.

PARTICIPANTS: The OSTRICH study included 389 children aged 2-8 years with bilateral hearing loss attributable to OME for at least 3 months.



MAIN OUTCOME MEASURES: Baseline, 5-week, 6- and 12-month audiology measurements were collected and logistic regression models used to identify pre-randomisation baseline variables that predicted return of acceptable hearing, which was defined as less than or equal to 20 dB hearing loss averaged within the frequencies of 0.5, 1, 2 and 4 kHz in at least one ear in children assessed by pure tone audiometry, ear-specific insert visual reinforcement audiometry or ear-specific play audiometry less than or equal to 25 dB hearing loss averaged within the frequencies of 0.5, 1, 2 and 4 kHz in children assessed by sound-field visual reinforcement audiometry or sound-field performance/play audiometry, based on national guidelines.

RESULTS: Less severe baseline hearing loss across both ears most consistently predicted acceptable hearing at 5 weeks (adjusted odds ratio [aOR] 0.91, 95% CI 0.87-0.95), 6 months (0.94 [0.90-0.98]) and 12 months (0.93 [0.89-0.97]). Negative history of atopy (2.05 [1.16-3.61]), never using hearing aids (aOR 2.16 [1.04-4.48]), and being male (1.75 [1.02-2.99]) were significant at 6 months, but not at 12 months. Symptom duration was a predictor at 5 weeks, but not at 6 or 12 months.

CONCLUSIONS: Milder baseline hearing loss most consistently predicts acceptable hearing at 5 weeks, 6 and 12 months in children with chronic OME. Negative history of atopy, never using hearing aids, and male gender are associated with better prognosis. These predictors can be used to identify children that may not require treatment.

Database: Medline

19. Feasibility of Personal Sound Amplification Products in Patients with Moderate Hearing Loss: A Pilot Study.

Author(s): Kim, Ga-Young; Kim, Jong Sei; Jo, Mini; Seol, Hye Yoon; Cho, Young Sang; Moon, Il Joon

Source: Clinical and experimental otorhinolaryngology; Jan 2021

Publication Date: Jan 2021

Publication Type(s): Journal Article

PubMedID: 33541032

Available at [Clinical and experimental otorhinolaryngology](#) - from Europe PubMed Central - Open Access

Available at [Clinical and experimental otorhinolaryngology](#) - from Unpaywall

Abstract:

Objectives: To confirm the feasibility of personal sound amplification products (PSAPs), the study was conducted for three purposes: 1) to investigate electroacoustic characteristics of PSAPs, 2) to identify whether PSAPs provide adequate gain and output for three common hearing loss configurations, and 3) to compare the benefit of one representative PSAP (RPSAP) to a conventional hearing aid (HA) based on clinical hearing outcomes as a pilot study.

Methods: The study consisted of three phases: electroacoustic analysis, simulated real-ear measurements (REMs), and clinical hearing experiments. Electroacoustic analysis and simulated REMs were performed in three basic (BeethoSOL, EarJJang, and Geniesori2) and three high-end PSAPs (Hearing Able, Olive Smart Ear, and Soriln) using the Aurical Hearing Instrument Test box with a 2cc coupler. With regards to electroacoustic analysis, four electroacoustic characteristics (maximum output sound pressure level at 90 dB SPL, frequency range, equivalent input noise, and total harmonic distortion) were investigated. By simulated REMs, the appropriate level of the six PSAPs for three common hearing loss configurations (mild-to-moderate high-frequency hearing loss, moderate to moderately severe sloping hearing loss, and moderate flat hearing loss) was determined. Clinical experiments were carried out for the purpose of comparing the performance of RPSAP to HA. Before conducting clinical experiments, both RPSAP and HA were fitted by audiologists using REMs. Clinical experiments were administered using functional gain, a word recognition test, and the Korean version of the Hearing in Noise Test in six participants with bilateral moderate sensorineural hearing loss.

Results: With regards to electroacoustic analysis, two high-end devices met all tolerances. In the case of simulated REMs, one basic and two high-end PSAPs showed appropriate level for three common hearing loss configurations. As for the clinical experiments, the RPSAP showed better performances than unaided, but slightly worse than HA under all test conditions.

Conclusion: Our results demonstrated that certain PSAPs met all specified tolerances for electroacoustic analysis and had ability to approximate prescriptive targets in a well-controlled laboratory condition. The pilot clinical



experiments explored the possibility that RPSAP could be served as a hearing assistive device for patients with moderate hearing loss.

Database: Medline

20. The impact of tinnitus distress on cognition.

Author(s): Neff, P; Simões, J; Psatha, S; Nyamaa, A; Boecking, B; Rausch, L; Dettling-Papargyris, J; Funk, C; Brueggemann, P; Mazurek, B

Source: Scientific reports; Jan 2021; vol. 11 (no. 1); p. 2243

Publication Date: Jan 2021

Publication Type(s): Journal Article

PubMedID: 33500489

Available at [Scientific reports](#) - from Europe PubMed Central - Open Access

Available at [Scientific reports](#) - from Nature (Open Access)

Available at [Scientific reports](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Scientific reports](#) - from Unpaywall

Abstract: Tinnitus is the chronic perception of a phantom sound with different levels of related distress. Past research has elucidated interactions of tinnitus distress with audiological, affective and further clinical variables. The influence of tinnitus distress on cognition is underinvestigated. Our study aims at investigating specific influences of tinnitus distress and further associated predictors on cognition in a cohort of n = 146 out-ward clinical tinnitus patients. Age, educational level, hearing loss, Tinnitus Questionnaire (TQ) score, tinnitus duration, speech in noise (SIN), stress, anxiety and depression, and psychological well-being were included as predictors of a machine learning regression approach (elastic net) in three models with scores of a multiple choice vocabulary test (MWT-B), or two trail-making tests (TMT-A and TMT-B), as dependent variables. TQ scores predicted lower MWT-B scores and higher TMT-B test completion time. Stress, emotional, and psychological variables were not found to be relevant predictors in all models with the exception of small positive influences of SIN and depression on TMT-B. Effect sizes were small to medium for all models and predictors. Results are indicative of specific influence of tinnitus distress on cognitive performance, especially on general or crystallized intelligence and executive functions. More research is needed at the delicate intersection of tinnitus distress and cognitive skills needed in daily functioning.

Database: Medline

21. Self-reported hearing handicap in adults aged 55 to 81 years is modulated by hearing abilities, frailty, mental health, and willingness to use hearing aids.

Author(s): Nuesse, Theresa; Schlueter, Anne; Lemke, Ulrike; Holube, Inga

Source: International journal of audiology; Jan 2021 ; p. 1-9

Publication Date: Jan 2021

Publication Type(s): Journal Article

PubMedID: 33459099

Available at [International journal of audiology](#) - from Unpaywall

Abstract:

OBJECTIVE: The aim of this study was to predict outcomes of the HHI questionnaire (Hearing Handicap Inventory) using individual variables beyond pure-tone hearing thresholds.

DESIGN: An extensive health-related test battery was applied including a general anamnesis, questionnaires, audiological measures, examination of visual acuity, balance, and cognition, as well as tactile- and motor skills. Based on the self-assessment of health variables and different sensory and cognitive performance measures, a frailty index



was calculated to describe the health status of the participants. A stepwise linear regression analysis was conducted to predict HHI scores.

STUDY SAMPLE: A mixed sample (N = 212) of 55- to 81-year-old, participants with different hearing and aiding status completed the test battery.

RESULTS: The regression analysis showed statistically significant contributions of pure-tone hearing thresholds, speech recognition in noise, age, frailty, mental health, and the willingness to use hearing aids on HHIE outcomes.

CONCLUSIONS: Self-reported hearing handicap assessed with the HHI questionnaire reflects various individual variables additionally to pure-tone hearing loss and speech recognition in noise. It is necessary to be aware of the influences of age and health-related variables on HHI scores when using it in research as well as in clinical settings.

Database: Medline

22. Cochlear Implantation in Children With Single-Sided Deafness: A Systematic Review and Meta-analysis.

Author(s): Benchetrit, Liliya; Ronner, Evette A; Anne, Samantha; Cohen, Michael S

Source: JAMA otolaryngology-- head & neck surgery; Jan 2021; vol. 147 (no. 1); p. 58-69

Publication Date: Jan 2021

Publication Type(s): Meta-analysis Journal Article Systematic Review

PubMedID: 33151295

Available at [JAMA otolaryngology-- head & neck surgery](#) - from EBSCO (MEDLINE Complete)

Abstract:

Importance: In 2019, the US Food and Drug Administration approved cochlear implantation for children with single-sided deafness (SSD). The absence of robust clinical data specific to pediatric patients to guide shared decision-making and to identify potential advantages is a challenge in family counseling.

Objective: To evaluate the audiological and patient-reported outcomes in children who underwent cochlear implantation for SSD and to assess the association between time of implantation, subjective outcomes, and cochlear implant device use rates.

Data Source: MEDLINE, Embase, Scopus, Cochrane, and PubMed were searched for English-language articles that were published in a peer-reviewed journal from database inception to February 18, 2020.

Study Selection: Inclusion criteria were designed to capture studies that evaluated pediatric patients (1) younger than 18 years, (2) with a diagnosis of SSD for which they underwent a cochlear implantation, and (3) with at least 1 outcome of interest measured numerically: speech perception, sound localization, device use, and patient-reported outcomes. Of the 526 articles reviewed, 12 (2.3%) met the selection criteria.

Data Extraction and Synthesis: The Meta-analyses Of Observational Studies in Epidemiology (MOOSE) reporting guidelines were followed. Data were pooled using fixed-effect and random-effect models. The following information was obtained from each article: study characteristics, patient characteristics, hearing loss and intervention characteristics, and outcomes.

Main Outcomes and Measures: Outcomes were (1) postoperative changes in speech perception (in quiet was measured as a proportion of correct responses, and in noise was measured as decibel signal to noise ratio for speech reception threshold) and sound localization (measured in degree of localization error), (2) patient-reported audiological outcomes (measured by the speech, spatial, and qualities of hearing scale), and (3) device use rates among children who received cochlear implantation for SSD.

Results: Twelve observational studies that evaluated 119 children (mean [SD] age, 6.6 [4.0] years) with SSD who received a cochlear implant were included. Most children showed clinically meaningful improvement in speech perception in noise (39 of 49 children [79.6%]) and in quiet (34 of 42 children [81.0%]). Long duration of deafness (>4 years in congenital SSD and >7 years in perilingual SSD) was the most commonly proposed reason for lack of improvement. Sound localization as measured by degrees of error from true location (mean difference [MD], -24.78°; 95% CI, -34.16° to -15.40°; I² = 10%) improved statistically significantly after cochlear implantation. Patients with acquired SSD and shorter duration of deafness compared with those with congenital SSD reported greater



improvements in speech (MD, 2.27; 95% CI, 1.89-2.65 vs 1.58; 95% CI, 1.00-2.16) and spatial (MD, 2.95; 95% CI, 2.66-3.24 vs 1.68; 95% CI, 0.96-2.39) hearing qualities. The duration of deafness among device nonusers was statistically significantly longer than the duration of deafness among regular device users (median difference, 6.84; 95% CI, 4.02-9.58).

Conclusions and Relevance: This systematic review and meta-analysis found that cochlear implantation for children with SSD was associated with clinically meaningful improvements in audiological and patient-reported outcomes; shorter duration of deafness may lead to better outcomes. These findings can guide future research efforts, refine cochlear implantation candidacy criteria, and aid in family counseling and shared decision-making.

Database: Medline

23. Cochlear Implants in Patients with Fluctuant or Progressive Hearing Loss on the Better Ear.

Author(s): Mangabeira-Albernaz, Pedro Luiz; Malerbi, Andrea Felice Dos Santos

Source: International archives of otorhinolaryngology; Jan 2021; vol. 25 (no. 1); p. e129

Publication Date: Jan 2021

Publication Type(s): Journal Article

PubMedID: 33542763

Available at [International archives of otorhinolaryngology](#) - from Europe PubMed Central - Open Access

Available at [International archives of otorhinolaryngology](#) - from Unpaywall

Abstract:

Introduction: Cochlear implants have been proposed for cases of unilateral hearing loss, especially in patients with tinnitus impairment. Several studies have shown that they result in definite improvement of sound localization and speech understanding, both in quiet and noisy environments. On the other hand, there are few references regarding cochlear implants in patients whose better ears present hearing loss.

Objective: To report the audiological outcomes of three patients with unilateral deafness, in whom the better ears presented hearing losses, submitted to cochlear implants.

Methods: Three patients with unilateral profound hearing loss underwent a cochlear implant performed by the same surgeon.

Results: The patients' data are presented in detail.

Conclusion: The indications for cochlear implants are becoming more diverse with the expansion of clinical experience and the observation that they definitely help patients with special hearing problems.

Database: Medline

24. Methodological quality of clinical guidelines for universal newborn hearing screening.

Author(s): Kamenov, Kaloyan; Chadha, Shelly

Source: Developmental medicine and child neurology; Jan 2021; vol. 63 (no. 1); p. 16-21

Publication Date: Jan 2021

Publication Type(s): Journal Article Review

PubMedID: 32981050

Available at [Developmental medicine and child neurology](#) - from Wiley Online Library

Abstract:

AIM: To review existing guidelines for universal newborn hearing screening (UNHS), identify those that provide comprehensive and clear recommendations on the subject, and provide a brief overview.

METHOD: A scoping literature review was performed in PubMed, the Guidelines International Network library, and national guideline databases to identify guidelines on newborn hearing screening developed or updated between



2004 and 2019. The quality of the guidelines was checked with the Checklist for the Quality Assessment of Guidelines (AGREE II).

RESULTS: Six guidelines met all the inclusion criteria. All six were based on the 1-3-6 benchmark (screening completed by 1mo, audiological diagnosis by 3mo, enrolment in early intervention by 6mo). However, the guidelines varied in terms of their recommendations for the application of screening methods, role of health professionals in the screening process, and quality. Based on the AGREE II score, flexibility, adaptability, and foundation role for all other guidelines, the 2019 guidelines of the Joint Committee on Infant Hearing position statement were identified as the most appropriate to be recommended for adaptation by countries or programmes.

INTERPRETATION: The diversity in the existing guidance can be confusing for countries and institutions that are planning to develop universal hearing screening programmes. As more countries and organizations develop their newborn hearing screening programmes, they will need examples to emulate. This review provides an evaluation of the quality, comprehensiveness, and applicability of existing clinical guidelines that can serve as a facilitator for countries, institutions, or organizations in their planning and implementation of a UNHS programme.

Database: Medline

25. Protocol for a multi-centre randomised controlled stand-alone feasibility trial to assess potential effectiveness and cost-effectiveness of digital hearing aids in patients with tinnitus and hearing loss (the HUSH trial).

Author(s): Haines, Rachel H; White, Jennifer; Meakin, Garry; Tan, Wei; Hepburn, Trish; Leighton, Paul; Theriou, Chloi; Stockdale, David; Almey, Christine; Nicholson, Richard; Hall, Deborah A; Sereda, Magdalena

Source: Pilot and feasibility studies; 2020; vol. 6 ; p. 41

Publication Date: 2020

Publication Type(s): Journal Article

PubMedID: 32231789

Available at [Pilot and feasibility studies](#) - from BioMed Central

Available at [Pilot and feasibility studies](#) - from Europe PubMed Central - Open Access

Available at [Pilot and feasibility studies](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Pilot and feasibility studies](#) - from Unpaywall

Abstract:

Background: The most common management strategy for tinnitus provided in the UK audiology clinics is education and advice. This may also be combined with some form of sound therapy (e.g. digital hearing aids). While education and advice is generally provided by all clinics, there is a marked variability in provision of hearing aids that depends very much on clinical decisions. A recent Cochrane review concluded a lack of evidence to support or refute hearing aid use as a routine intervention for people with tinnitus and hearing loss. This lack of evidence is reflected in the inconsistency of tinnitus management in the UK. The aim of the HUSH trial is to determine the feasibility of conducting a definitive randomised controlled trial (RCT) of the effectiveness and cost-effectiveness of hearing aids for adults with tinnitus and hearing loss.

Methods: This is a multicentre randomised controlled feasibility trial. Up to 100 adults, aged 18 and over, presenting to 5 UK audiology clinics with a complaint of tinnitus and measurable hearing loss are being randomised to receive either (i) education and advice (treatment as usual) or (ii) education and advice with digital hearing aids. Feasibility outcomes are being collected around recruitment, retention, patient and healthcare professional acceptability and clinical outcome assessment. Outcomes are being collected via postal questionnaire at 12 weeks post baseline. A nested interview study will supplement clinical and other outcome data, providing a detailed understanding of participants' and audiologists' experience of both tinnitus management and the research processes.

Discussion: This feasibility trial will help us to (i) determine if it is feasible to conduct a multicentre RCT comparing treatment as usual and treatment as usual plus digital hearing aids; (ii) optimise the design of a future definitive, multicentre RCT; and (iii) inform which outcome(s) is/are relevant for patients. This work presents an important first step in determining the effectiveness of hearing aids as a tinnitus management strategy. Trial registration|SRCTN, ISRCTN14218416. Registered on 30 July 2018.



Database: Medline

26. Evaluation of the possible effect of magnetic resonance imaging noise on peripheral hearing organ with the otoacoustic emission.

Author(s): Turay, Cevahir Bulut; Ozer, Fulya; Yildirim, Tulin; Erbek, Seyra

Source: American journal of otolaryngology; 2020; vol. 41 (no. 6); p. 102586

Publication Date: 2020

Publication Type(s): Journal Article

PubMedID: 32629148

Available at [American journal of otolaryngology](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract:

PURPOSE: The aim of this study is to evaluate the effect of noise produced by magnetic resonance imaging (MRI) device on hearing by using objective and subjective audiological assessments.

METHODS: A total of 38 patients between the ages of 18 and 50 without hearing loss, and had performed MRI for brain, head, neck or cervical imaging were included in this prospective clinical study. Pure tone audiometry, speech audiometry, high frequency audiometry, transient evoked otoacoustic emissions (TEOAE) and distortion product otoacoustic emission (DPOAE) were performed before and after MRI.

RESULTS: There was no statistically significant difference in TEOAE, pure tone audiogram, high frequency audiogram and speech audiogram thresholds. In DPOAE, the median value before and after MRI at the frequency of the left ear at 4.0 kHz was 13.6 (8.5-19.9) and 15.7 (8.9-20.7) SNR respectively ($p > .05$). The median value before MRI at the right ear 4.0 kHz frequency was 14.1 (9.1-20.5) SNR, whereas the median value after MRI was 13.2 (8.8-19.8 SNR ($p = 0,03$). There was no statistically significant difference in other frequencies in DPOAE.

CONCLUSIONS: This is the first objective study that examines the MRI noise on speech audiometry and otoacoustic emission together. However, the effect of MRI noise on hearing pathway is still doubt. Based on the difference at 4 kHz frequency on DPOAE; on-earphones may not sufficiently protect the patients from the MRI noise and this issue should deserve further research.

Database: Medline

27. Drainage of a petrous apex cholesterol granuloma through an infracochlear approach.

Author(s): Falcioni, Maurizio; Pepe, Giovanni

Source: American journal of otolaryngology; 2020; vol. 41 (no. 6); p. 102456

Publication Date: 2020

Publication Type(s): Case Reports Journal Article

PubMedID: 32199711

Available at [American journal of otolaryngology](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract: The current video presents the surgical management of a cholesterol granuloma of the anterior petrous apex, through the infracochlear approach. The video contains patient's medical history, pre-operative radiological evaluation, surgical approach to the lesion and radiological follow up. Surgery was conducted by an otology and skull base team in a tertiary referral center. The patient is a 49-years-old male, who was referred to our center for a four months history of right tinnitus and fullness. The clinical evaluation was unremarkable and the audiometric testing showed a right sensorineural hearing loss with normal contralateral hearing. A high-resolution CT-scan of the temporal bone was performed showing a lesion occupying the right petrous apex and eroding the cochlea. In a subsequent MRI scan, the lesion appeared hyperintense in both T1- and T2-weighted images. Those radiological features prompted us to the diagnosis of a cholesterol granuloma, and the selected treatment was a drainage via infracochlear approach. The infracochlear approach, firstly described by Giddings et al. [1] in 1991, represents a direct route to the petrous apex, that can be chosen in selected cases with favorable anatomical conditions and that



allows respecting of the hearing mechanism. After surgical drainage of the granuloma, no worsening of the pure tone threshold was confirmed by the audiological evaluation. The hospital stay was uneventful and the patient was discharge one day postoperatively. One-year postoperative MRI scan showed signal reduction of the cholesterol granuloma.

Database: Medline

28. Regional patterns and trends of hearing loss in England: evidence from the English longitudinal study of ageing (ELSA) and implications for health policy.

Author(s): Tsimpida, Dialehti; Kontopantelis, Evangelos; Ashcroft, Darren M; Panagioti, Maria

Source: BMC geriatrics; Dec 2020; vol. 20 (no. 1); p. 536

Publication Date: Dec 2020

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 33319704

Available at [BMC geriatrics](#) - from BioMed Central

Available at [BMC geriatrics](#) - from Europe PubMed Central - Open Access

Available at [BMC geriatrics](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMC geriatrics](#) - from EBSCO (MEDLINE Complete)

Available at [BMC geriatrics](#) - from Unpaywall

Abstract:

BACKGROUND: Hearing loss (HL) is a significant public health concern globally and is estimated to affect over nine million people in England. The aim of this research was to explore the regional patterns and trends of HL in a representative longitudinal prospective cohort study of the English population aged 50 and over.

METHODS: We used the full dataset (74,699 person-years) of self-reported hearing data from all eight Waves of the English Longitudinal Study of Ageing (ELSA) (2002-2017). We examined the geographical identifiers of the participants at the Government Office Region (GOR) level and the geographically based Index of Multiple Deprivation (IMD). The primary outcome measure was self-reported HL; it consisted of a merged category of people who rated their hearing as fair or poor on a five-point Likert scale (excellent, very good, good, fair or poor) or responded positively when asked whether they find it difficult to follow a conversation if there is background noise (e.g. noise from a TV, a radio or children playing).

RESULTS: A marked elevation in HL prevalence (10.2%) independent of the age of the participants was observed in England in 2002-2017. The mean HL prevalence increased from 38.50 (95%CI 37.37-39.14) in Wave 1 to 48.66 (95%CI 47.11-49.54) in Wave 8. We identified three critical patterns of findings concerning regional trends: the highest HL prevalence among samples with equal means of age was observed in GORs with the highest prevalence of participants in the most deprived (IMD) quintile, in routine or manual occupations and misusing alcohol. The adjusted HL predictions at the means (APMs) showed marked regional variability and hearing health inequalities between Northern and Southern England that were previously unknown.

CONCLUSIONS: A sociospatial approach is crucial for planning sustainable models of hearing care based on actual needs and reducing hearing health inequalities. The Clinical Commissioning Groups (CCGs) currently responsible for the NHS audiology services in England should not consider HL an inevitable accompaniment of older age; instead, they should incorporate socio-economic factors and modifiable lifestyle behaviours for HL within their spatial patterning in England.

Database: Medline

29. A Systematic Review on the Association of Acquired Human Cytomegalovirus Infection with Hearing Loss.

Author(s): Martinez-Gomez, Estrella; Perez-Carpena, Patricia; Flook, Marisa; Lopez-Escamez, José A

Source: Journal of clinical medicine; Dec 2020; vol. 9 (no. 12)



Publication Date: Dec 2020

Publication Type(s): Journal Article Review

PubMedID: 33322509

Available at [Journal of clinical medicine](#) - from Europe PubMed Central - Open Access

Available at [Journal of clinical medicine](#) - from Unpaywall

Abstract: Congenital cytomegalovirus (CMV) infection induces a clinical syndrome usually associated with hearing loss. However, the effect of acquired CVM infection in adults and children has not been clearly defined. The objective of this review is to critically appraise scientific evidence regarding the association of acquired CMV infection with postnatal hearing loss or tinnitus. A systematic review of records reporting sensorineural hearing loss (SNHL) or tinnitus and acquired CMV infection including articles published in English was performed. Search strategy was limited to human studies with acquired CMV infection. After screening and quality assessment, nine studies involving 1528 individuals fulfilled the inclusion criteria. A total of 14% of patients with SNHL showed evidence of previous exposure to CMV, while in individuals without SNHL (controls) the percentage rose up to 19.3%. SNHL was reported as unilateral or bilateral in 15.3%, and not specified in 84.7% of cases. The degree of SNHL ranged from mild to profound for both children and adults. None of the records reported tinnitus. The prevalence of children or adults with acquired SNHL with a confirmed acquired CMV infection by Polymerase Chain Reaction (PCR) or IgM anti-CMV antibodies is low. Phenotyping of patients with acquired CMV infection was limited to hearing loss by pure tone audiometry and no additional audiological testing was performed in most of the studies. Additional symptoms deserve more attention, including episodic vertigo or tinnitus, since some patients with the clinical spectrum of Meniere Disease could result from a CMV latent infection.

Database: Medline

30. The GoAudio Quantitative Mobile Audiology Test Enhances Access to Clinical Hearing Assessments.

Author(s): Koleilat, Alaa; Argue, David P; Schimmenti, Lisa A; Ekker, Stephen C; Poling, Gayla L

Source: American journal of audiology; Dec 2020; vol. 29 (no. 4); p. 887-897

Publication Date: Dec 2020

Publication Type(s): Journal Article

PubMedID: 33079580

Available at [American journal of audiology](#) - from EBSCO (MEDLINE Complete)

Available at [American journal of audiology](#) - from EBSCO (Biomedical Reference Collection - Comprehensive)

Available at [American journal of audiology](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract:

Purpose: Hearing loss is a common impairment of the human senses with an estimated 48 million American adults reporting some trouble hearing; however, access to hearing health care is limited. Detection of hearing loss through a mobile, handheld tool can provide an important access point and potentially expedited access to the continuum of hearing health care. Here, we determined that GoAudio, a portable, automated hearing assessment tool, can be used to identify individuals who require additional hearing evaluation in a clinical workflow.

Method: This initial study included 24 adults, ages 18-65 years (M = 50, SD = 12), tested with GoAudio versus "gold-standard" clinical audiometry for eight frequencies to evaluate "real-world" applications. Participants utilized noise-canceling headphones combined with a tablet-based application for the GoAudio assessment.

Results: The primary study outcome measurements were the comparison of hearing thresholds (dB HL) from clinical audiometry and GoAudio. Results suggest that GoAudio is comparable to clinical audiometry for the identification of hearing loss at most frequencies (except 1 kHz for both ears and 2 kHz in the right ear). Upon stratifying data based on age, we identified that GoAudio is capable of identifying suspected age-related hearing loss or hearing thresholds greater than 30 dB HL at higher frequencies in both ears.

Conclusion: The study results support that GoAudio can be used effectively in clinical practice workflows as a reliable hearing assessment tool for the identification of hearing loss at the majority of frequencies outside a sound-treated



booth and can detect characteristics of age-related hearing loss. Supplemental Material
<https://doi.org/10.23641/asha.13087682>.

Database: Medline

31. Noise Damage Accelerates Auditory Aging and Tinnitus: A Canadian Population-Based Study.

Author(s): Jafari, Zahra; Copps, Thomas; Hole, Glenn; Kolb, Bryan E; Mohajerani, Majid H

Source: Otolology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otolology and Neurotology; Dec 2020; vol. 41 (no. 10); p. 1316-1326

Publication Date: Dec 2020

Publication Type(s): Journal Article

PubMedID: 32810017

Abstract:

OBJECTIVE: Age-related hearing loss (ARHL) is the third most challenging disability in older adults. Noise is a known modifiable risk factor of ARHL, which can drive adverse health effects. Few large-scale studies, however, have shown how chronic noise exposure (CNE) impacts the progression of ARHL and tinnitus.

STUDY DESIGN: Retrospective large-scale study.

SETTING: Audiology clinical practice.

PATIENTS: In this study, 928 individuals aged 30-100 years without (n=497) or with the experience of CNE (n=431) were compared in their hearing assessments and tinnitus. In order to only investigate the impact of CNE on ARHL and tinnitus, people with other risk factors of hearing loss were excluded from the study.

INTERVENTION: Diagnostic.

MAIN OUTCOME MEASURES: Noise damage was associated with a greater ARHL per age decades (pure-tone average(PTA)0.5-4kHz alterations 19.6-70.8 dB vs. 8.0-63.2 dB, ≤ 0.001), an acceleration of developing a significant ARHL at least by two decades (PTA0.5-4kHz 33.4 dB at 50-59yr vs. 28.2 dB at 30-39yr, ≤ 0.001), and an increased loss of word recognition scores (total average 84.7% vs. 80.0%, ≤ 0.001). Significant noise-associated growth in the prevalence of tinnitus also was shown, including more than a triple prevalence for constant tinnitus (28.10% vs. 8.85%, ≤ 0.001) and near to a double prevalence for intermittent tinnitus (19.10% vs. 11.10%, ≤ 0.001). Noise also resulted in the elevation of the static compliance of the tympanic membrane throughout age (total average 0.61 vs. 0.85 mmho, ≤ 0.001).

CONCLUSIONS: Our findings emphasize the significant contribution of CNE in auditory aging and the precipitation of both ARHL and tinnitus.

Database: Medline

32. The TinMan study: feasibility trial of a psychologically informed, audiologist-delivered, manualised intervention for tinnitus.

Author(s): Taylor ; Thompson, Dean M.; Hall, Deborah A.; Walker, Dawn-Marie; McMurrans, Mary; Casey, Amanda; Featherstone, Debbie; MacDonald, Carol; Stockdale, David; Hoare, Derek J.

Source: International Journal of Audiology; Dec 2020; vol. 59 (no. 12); p. 905-914

Publication Date: Dec 2020

Publication Type(s): Academic Journal

Available at [International journal of audiology](#) - from Unpaywall

Abstract: To develop a manualised psychological treatment for tinnitus that could enhance audiologist usual care, and to test feasibility of evaluating it in a randomised controlled trial. Feasibility trial, random allocation of patients to manualised treatment or treatment as usual, and mixed-methods evaluation. Study sample: Senior audiologists, and adults with chronic tinnitus. Recruitment reached 63% after 6 months (feasibility pre-defined as 65%). Only nine



patients (47%) were retained for the duration of the trial. Patients reported that the treatment was acceptable and helped reassure them about their tinnitus. Audiologists reported mixed feelings about the kinds of techniques that are presented to them as 'psychologically informed'. Audiologists also reported lacking confidence because the training they had was brief, and stated that more formal supervision would have been helpful to check adherence to the treatment manual. The study indicate potential barriers to audiologist use of the manual, and that a clinical trial of the intervention is not yet feasible. However, positive indications from outcome measures suggest that further development work would be worthwhile. Refinements to the manual are indicated, and training and supervision arrangements to better support audiologists to use the intervention in the clinic are required. Trial Registration: ISRCTN13059163.

Database: CINAHL

33. Outcomes of a multidisciplinary Ear, Nose and Throat Allied Health Primary Contact outpatient assessment service.

Author(s): Payten, Christopher L; Eakin, Jennifer; Smith, Tamsin; Stewart, Vicky; Madill, Catherine J; Weir, Kelly A

Source: Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery; Nov 2020; vol. 45 (no. 6); p. 904-913

Publication Date: Nov 2020

Publication Type(s): Journal Article

PubMedID: 32780943

Available at [Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery](#) - from Wiley Online Library

Available at [Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery](#) - from Unpaywall

Abstract:

BACKGROUND: Traditionally, patients are seen by an ear, nose and throat (ENT) surgeon prior to allied health referral for treatment of swallowing, voice, hearing and dizziness. Wait-times for ENT consultations often exceed those clinically recommended. We evaluated the service impact of five allied health primary contact clinics (AHPC-ENT) on wait-times and access to treatment.

SETTING: A metropolitan Australian University Hospital Outpatient ENT Department.

PARTICIPANTS: We created five AHPC-ENT pathways (dysphonia, dysphagia, vestibular, adult and paediatric audiology) for low-acuity patients referred to ENT with symptoms of dysphonia, dysphagia, dizziness and hearing loss.

MAIN OUTCOME MEASURES: Using multiple regression analysis, we compared waiting times in the 24-month pre- and 12-month post-implementation of the AHPC-ENT service. In addition, we measured the number of patients requiring specialist ENT intervention after assessment in the AHPC-ENT, adverse events and evaluation of service delivery costs.

RESULTS: Seven hundred and thirty-eight patients were seen in the AHPC-ENT over the first 12 months of implementation (dysphagia, 66; dysphonia, 153; vestibular, 151; retro-cochlear, 60; and paediatric glue ear, 308). All pathways significantly reduced the waiting times for patients by an average of 277 days, compared with usual care. The majority of patients were able to be discharged without ongoing ENT intervention (72% dysphagia; 81% dysphonia; 74% vestibular; 53% retro-cochlear; and 32% paediatric glue ear). No adverse events were recorded.

CONCLUSIONS: The AHPC-ENT improved waiting times for assessment and access to treatment. Future research on cost-effectiveness and diagnostic agreement between AHPs and ENT clinicians would provide further confidence in the model.

Database: Medline



34. How Do Audiologists Respond to Emotional and Psychological Concerns Raised in the Audiology Setting? Three Case Vignettes.

Author(s): Bennett ; Meyer, Carly J.; Ryan, Brooke J.; Eikelboom, Robert H.

Source: Ear & Hearing (01960202); Nov 2020; vol. 41 (no. 6); p. 1675-1683

Publication Date: Nov 2020

Publication Type(s): Academic Journal

PubMedID: NLM32826507

Abstract:

Objectives: Emotional and psychological well-being are essential to overall health, but there is little research showing how to approach emotional and psychological concerns in the audiological setting. This study investigated audiologists' self-reported clinical behaviors in response to emotional and psychological concerns and/or symptoms raised by audiology clients.

Design: A sample of 83 Australia-based audiologists completed a survey including vignettes presenting older adults with hearing loss and experiencing symptoms consistent with either depression or grief. Content analysis was used to explore: (1) audiologists' self-reported usual response when clients present with emotional and psychological concerns and/or symptoms in the audiological setting; (2) audiologists' ability to identify and describe psychological symptoms; and (3) audiologists' self-reported clinical behaviors relating to client referral for psychological support.

Results: When asked to describe their usual clinical course of action in response to the vignettes, over one half the audiologists described actions that address the clients concerns related to psychological well-being. Where audiologists described how they would provide psychological support, they described modifications to the audiological rehabilitation program including involving significant others in the rehabilitation process, recommending additional support outside of the audiology setting (such as General Practitioner or psychologists), and providing emotional support and counseling. When prompted, the majority of participants recognized the two cases with depression as having a mental health condition; however, 48% of participants indicated the control case as also having a mental health condition. When asked directly, the majority of audiologists indicated that they would refer the three vignettes for specialist support; however, less than one third described referral to a General Practitioner and less than 5% described referral to a mental health professional as their normal course of action in the open response item. Twenty-five different professions/people were reported as potential sources for referral.

Conclusion: These findings support the need for further training and/or resources for audiologists to enable them to appropriately detect, describe and refer for emotional and psychological concerns and/or symptoms raised by clients' in the audiology setting.

Database: CINAHL

35. Telemedicine in Audiology. Best practice recommendations from the French Society of Audiology (SFA) and the French Society of Otorhinolaryngology-Head and Neck Surgery (SFORL).

Author(s): Thai-Van, H; Bakhos, D; Bouccara, D; Loundon, N; Marx, M; Mom, T; Mosnier, I; Roman, S; Villerabel, C; Vincent, C; Venail, F

Source: European annals of otorhinolaryngology, head and neck diseases; Oct 2020

Publication Date: Oct 2020

Publication Type(s): Practice Guideline

PubMedID: 33097467

Available at [European annals of otorhinolaryngology, head and neck diseases](#) - from Unpaywall

Abstract:

OBJECTIVES: Access to diagnosis and treatments for auditory disorders and related pathologies has regressed in France during the COVID-19 pandemic, posing a risk to the patient's chance of recovery. This best practice recommendations guide aims to list the existing technological solutions for the remote examination of a patient with hearing complaint, and to outline their benefits and, where applicable, their limitations.



METHODS: The recommendations were developed both from the clinical experience of the medical experts who drafted the guide, and from an extensive review of the literature dealing with clinical practice recommendations for tele-audiology. Tele-audiometry solutions were identified on the basis of a search engine query carried out in April 2020, prior to verification of their availability on the European market.

RESULTS: Video otoscopy solutions allow for the teletransmission of images compatible with a high-quality diagnosis, either by connecting via internet to a tele-health platform or using a smartphone or a tablet with an iOS or Android operating system. Using the same telecommunication methods, it is possible to remotely conduct a pure-tone audiometry test in accordance with standard practice, a speech-in-quiet or a speech-in-noise audiometry test, as well as objective measures of hearing. Clinical and paraclinical examinations can be accessed by the physician to be interpreted on a deferred basis (asynchronous tele-audiology). Examinations can also be conducted in real time in a patient, at any age of life, as long as a caregiver can be present during the installation of the transducers or the acoumetry. Tele-audiology solutions also find application in the remote training of future healthcare professionals involved in the management of deafness and hearing impairment.

CONCLUSION: Under French law, tele-otoscopy is a medical procedure that is either a tele-expertise (asynchronous advice) or a teleconsultation act (synchronous advice). Subjective and objective evaluation of the patient's hearing functions can be done remotely provided that the listed precautions are respected.

Database: Medline

36. Pure-tone audiometry without bone-conduction thresholds: using the digits-in-noise test to detect conductive hearing loss.

Author(s): De Sousa, Karina C; Smits, Cas; Moore, David R; Myburgh, Hermanus Carel; Swanepoel, De Wet

Source: International journal of audiology; Oct 2020; vol. 59 (no. 10); p. 801-808

Publication Date: Oct 2020

Publication Type(s): Research Support, N.i.h., Extramural Journal Article

PubMedID: 32609044

Available at [International journal of audiology](#) - from Unpaywall

Abstract:

Objective: COVID-19 has been prohibitive to traditional audiological services. No- or low-touch audiological assessment outside a sound-booth precludes test batteries including bone conduction audiometry. This study investigated whether conductive hearing loss (CHL) can be differentiated from sensorineural hearing loss (SNHL) using pure-tone air conduction audiometry and a digits-in-noise (DIN) test.

Design: A retrospective sample was analysed using binomial logistic regressions, which determined the effects of pure tone thresholds or averages, speech recognition threshold (SRT), and age on the likelihood that participants had CHL or bilateral SNHL.

Study sample: Data of 158 adults with bilateral SNHL (n = 122; PTA0.5-4 kHz > 25 dB HL bilaterally) or CHL (n = 36; air conduction PTA0.5-4 kHz > 25 dB HL and ≥20 dB air bone gap in the affected ears) were included.

Results: The model which best discriminated between CHL and bilateral SNHL used low-frequency pure-tone average (PTA), diotic DIN SRT, and age with an area under the ROC curve of 0.98 and sensitivity and specificity of 97.2 and 93.4%, respectively.

Conclusion: CHL can be accurately distinguished from SNHL using pure-tone air conduction audiometry and a diotic DIN. Restrictions on traditional audiological assessment due to COVID-19 require lower touch audiological care which reduces infection risk.

Database: Medline

37. Prognostic factors for outcomes of idiopathic sudden sensorineural hearing loss: protocol for the SeaSHel national prospective cohort study.



Author(s): Mandavia, Rishi; Hannink, Gerjon; Ahmed, Muhammad Nayeem; Premakumar, Yaami; Chu, Timothy Shun Man; Blackshaw, Helen; Ferdous, Tanjinah; Mehta, Nishchay; Manjaly, Joseph; Khan, Maha; Schilder, Anne Gm; SeaSHEL Collaborative

Source: BMJ open; Sep 2020; vol. 10 (no. 9); p. e038552

Publication Date: Sep 2020

Publication Type(s): Journal Article

PubMedID: 32988948

Available at [BMJ open](#) - from BMJ Journals

Available at [BMJ open](#) - from Europe PubMed Central - Open Access

Available at [BMJ open](#) - from HighWire - Free Full Text

Available at [BMJ open](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMJ open](#) - from Unpaywall

Abstract:

INTRODUCTION: The mainstay of treatment for idiopathic sudden sensorineural hearing loss (SSNHL) includes oral steroids, intratympanic steroid injections or a combination of both. The National Institute for Health and Care Excellence, in their recent hearing loss guidelines, highlighted the paucity of evidence assessing the comparative effectiveness of these treatments; and the National Institute for Health Research (NIHR) Health Technology Assessment Programme has since released a commissioned call for a trial to identify the most effective route of administration of steroids as a first-line treatment for idiopathic SSNHL. For such trials to be run effectively, reliable information is needed on patients with SSNHL: where they present, numbers, demographics, treatment pathways, as well as outcomes. This study will collect these data in a nationwide cohort study of patients presenting with SSNHL across 97 National Health Service (NHS) trusts. The study will be delivered through ear, nose and throat (ENT) trainee networks, the NIHR Clinical Research Network (CRN) Audiology Champions and the NIHR CRN. Importantly, this study will also provide a dataset to develop a prognostic model to predict recovery for patients with idiopathic SSNHL. The study objectives are to: (1) map the patient pathway and identify the characteristics of adult patients presenting to NHS ENT and hearing services with SSNHL, (2) develop a prognostic model to predict recovery for patients with idiopathic SSNHL and (3) establish the impact of idiopathic SSNHL on patients' quality of life (QoL).

METHODS AND ANALYSIS: Study design: national multicentre prospective cohort study across 97 NHS trusts.

INCLUSION CRITERIA: adult patients presenting to NHS ENT and hearing services with SSNHL.

OUTCOMES: change in auditory function; change in QoL score.

ANALYSIS: multivariable prognostic model, using prespecified candidate predictors. Mean change in QoL scores will be calculated from initial presentation to follow-up.

ETHICS AND DISSEMINATION: Health Research Authority and NHS Research Ethics Committee approved the study. Publication will be on behalf of study sites and collaborators.

TRIAL REGISTRATION NUMBER: ClinicalTrials.gov Registry (NCT04108598).

Database: Medline

38. Sudden onset hearing loss following intra-abdominal surgery: an unusual association.

Author(s): Thompson, Christopher Sg; Gohil, Rohit; Montague, Mary-Louise

Source: BMJ case reports; Sep 2020; vol. 13 (no. 9)

Publication Date: Sep 2020

Publication Type(s): Case Reports Journal Article

PubMedID: 32994265

Available at [BMJ case reports](#) - from BMJ Journals

Available at [BMJ case reports](#) - from ProQuest (Health Research Premium) - NHS Version



Abstract: We describe the case of a 12-year-old boy who reported unilateral hearing loss following laparoscopic appendectomy for acute appendicitis under general anaesthesia. He was otherwise fit and well with no previous otological history. Formal audiological assessment by pure tone audiogram demonstrated a unilateral high-frequency sensorineural hearing loss (SNHL). In addition to describing his clinical course, a literature review of SNHL following non-otological surgery was performed. We recommend an awareness of this phenomenon, necessitating its prompt recognition, early audiological assessment and management as per sudden onset SNHL guidelines.

Database: Medline

39. Impact of hearing loss and vestibular decline on cognition in Alzheimer's disease: a prospective longitudinal study protocol (Gehoor, Evenwicht en Cognitie, GECKO).

Author(s): Bosmans, Joyce; Jorissen, Cathérine; Cras, Patrick; Van Ombergen, Angelique; Engelborghs, Sebastiaan; Gilles, Annick; Princen, Eline; Moyaert, Julie; Mertens, Griet; Van Rompaey, Vincent

Source: BMJ open; Sep 2020; vol. 10 (no. 9); p. e039601

Publication Date: Sep 2020

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 32948575

Available at [BMJ open](#) - from BMJ Journals

Available at [BMJ open](#) - from Europe PubMed Central - Open Access

Available at [BMJ open](#) - from HighWire - Free Full Text

Available at [BMJ open](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMJ open](#) - from Unpaywall

Abstract:

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).

Database: Medline



40. "What's Going on With My Ears?": Some Reflections on Managing Uncertainty in the Audiology Consultation.

Author(s): Watermeyer, Jennifer; Kanji, Amisha; Brom, Liora

Source: American journal of audiology; Sep 2020; vol. 29 (no. 3); p. 504-512

Publication Date: Sep 2020

Publication Type(s): Journal Article

PubMedID: 32569482

Available at [American journal of audiology](#) - from EBSCO (MEDLINE Complete)

Available at [American journal of audiology](#) - from EBSCO (Biomedical Reference Collection - Comprehensive)

Available at [American journal of audiology](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract:

Purpose: Feedback sessions after audiology consultations predominantly involve information counseling or patient education, where the patient is informed about their hearing status and possible management options. Effective communication is vital to ensure that information about the hearing impairment, recommendations, and/or management options is appropriately provided and understood by patients and that patient needs and expectations from the session are met. This research note reports on an exploratory study that sought to describe communication in follow-up audiological consultations within a context where ototoxicity monitoring is routine practice.

Method: Six interactions between patients and audiologists were video-recorded at an in-patient treatment facility for drug-resistant tuberculosis in Johannesburg and analyzed using a sociolinguistic approach. Semistructured interviews were also conducted with participants and analyzed using content analysis.

Results: These interactions differed considerably to other audiology consultations we have analyzed in terms of aspects such as the length of the interaction and the type of information given to patients. We observed a substantial amount of mitigative, vague, and exaggerated language in these interactions.

Conclusions: In this research note, we offer some reflections on this data set using a lens of uncertainty management theory and explore factors within the broader context that may contribute to the interactional features observed in the current study. Overall findings suggest the need for clinicians to be trained to embrace and address uncertainty rather than avoid it within challenging clinical encounters.

Database: Medline

41. Discovering the Unmet Needs of People With Difficulties Understanding Speech in Noise and a Normal or Near-Normal Audiogram.

Author(s): Mealings, Kiri; Yeend, Ingrid; Valderrama, Joaquin T; Gilliver, Megan; Pang, Jermy; Heeris, Jason; Jackson, Pamela

Source: American journal of audiology; Sep 2020; vol. 29 (no. 3); p. 329-355

Publication Date: Sep 2020

Publication Type(s): Journal Article

PubMedID: 32463705

Available at [American journal of audiology](#) - from EBSCO (MEDLINE Complete)

Available at [American journal of audiology](#) - from EBSCO (Biomedical Reference Collection - Comprehensive)

Available at [American journal of audiology](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract:

Purpose: A proportion of people with a normal audiogram or mild hearing loss (NA-MHL) experience greater-than-expected difficulty hearing speech in noise. This preliminary exploratory study employed a design thinking approach to better understand the clinical pathway and treatment options experienced by this population.

Method: Exploratory survey data were analyzed from 233 people with NA-MHL who had consulted a clinician and 47 clinicians. Qualitative analysis was performed on interview data from 21 people with NA-MHL and seven clinicians.



Results: Results revealed that noisy environments, such as restaurants, were where many people experienced listening difficulties. Most people with NA-MHL were not offered a treatment option at their audiology appointment, and their satisfaction with the appointment was diverse. Many clients reported frustration at being told that their hearing was "normal." Data from clinicians showed that there is no standard test protocol for this population, and most felt that they did not have adequate training or resources to help NA-MHL clients.

Conclusion: This study discusses the research needs regarding the experience of those with NA-MHL, their help-seeking behaviors, and treatment options. Understanding these needs is the first step to designing projects to improve the quality of life of this population.

Database: Medline

42. Ten years of experience with the Ponto bone-anchored hearing system-A systematic literature review.

Author(s): Lagerkvist, Helén; Carvalho, Karin; Holmberg, Marcus; Petersson, Ulrika; Cremers, Cor; Hultcrantz, Malou

Source: *Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery*; Sep 2020; vol. 45 (no. 5); p. 667-680

Publication Date: Sep 2020

Publication Type(s): Journal Article

PubMedID: 32386454

Available at [Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery](#) - from Wiley Online Library

Available at [Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery](#) - from Unpaywall

Abstract:

BACKGROUND: Bone-anchored hearing systems (BAHSs) are widely used for hearing rehabilitation and are indicated in cases of conductive and mixed hearing loss and in single-sided deafness. The Ponto system, that is one available option, has been on the market since 2009.

OBJECTIVE OF REVIEW: The aim of this study is to systematically review the literature reporting on the Ponto system, with regard to audiological and surgical outcomes and patient's quality-of-life scores.

TYPE OF REVIEW: A systematic literature search was performed in the PubMed database 2009-July 2019.

SEARCH STRATEGY: Search term: ((osseointegrated hearing aid) OR (bone conduction implant) OR (bone anchored hearing) OR BAHA OR BAHS OR BAHl). Pre-defined inclusion and exclusion criteria were applied.

EVALUATION METHOD: English-language articles reporting original clinical data (audiological, surgical or quality-of-life outcomes) on the Ponto system were included. Articles reporting on Ponto and another BAHS system where the results on Ponto constituted less than 50% of the patient population or including only results on testband or softband devices were excluded.

RESULTS: Audiological outcomes were discussed in 20 publications. Improvement against the unaided thresholds was demonstrated. The functional improvement was on average 33.9 dB. The effective gain or remaining air-bone gap was on average 6.7 dB. All evaluated data showed aided speech reception thresholds significantly below normal speech level. Twenty-seven publications reported surgical and follow-up data for the Ponto system. Implant survival was 97.7%, adverse skin reactions (Hogers \geq 2) were 5% across visits and 15% across patients. No complications were life-threatening, causing permanent disability/damage or requiring a hospitalisation. Five studies reported quality of life using the Glasgow benefit inventory, 98% reported an improvement when analysing the score on an individual level.

CONCLUSIONS: The outcomes of this systematic review confirm that percutaneous systems provide consistent audiological benefits and improved quality of life for patients. Further, the review demonstrates that the percutaneous systems are safe, with relatively low complication rates. Skin-related complications are the most common complication type and are experienced by approximately one patient out of seven, or in less than one of 20 follow-up visits.



Database: Medline

43. Behavioral Audiology Procedures in Children With Down Syndrome.

Author(s): Nightengale ; Wolter-Warmerdam, Kristine; Yoon, Patricia J.; Daniels, Dee; Hickey, Fran

Source: American Journal of Audiology; Sep 2020; vol. 29 (no. 3); p. 356-364

Publication Date: Sep 2020

Publication Type(s): Academic Journal

Available at [American Journal of Audiology](#) - from EBSCO (MEDLINE Complete)

Available at [American Journal of Audiology](#) - from EBSCO (Biomedical Reference Collection - Comprehensive)

Available at [American Journal of Audiology](#) - from ProQuest (Health Research Premium) - NHS Version

Abstract:

Purpose: Normative data regarding behavioral audiologic testing procedures are based upon the general population and often do not apply to children with Down syndrome (DS). Testing children with DS can be challenging, and outcomes may be unreliable due to their different cognitive demands and delays. The aim of this study was to assess optimal audiologic testing procedures for specific age groups of children with DS.

Method: This study used a retrospective investigation of 273 children with DS (145 boys, 128 girls; average age at evaluation = 5.92 ± 4.74 years) who received an audiologic evaluation during 2013 as part of their medical care at a large pediatric hospital (satellite facilities included).

Results: Age ranges for the completion of audiometry procedures in children with DS are provided. Average age to reliably complete behavioral testing in children with DS was delayed by up to 30 months compared to typically developing children. The majority of children with DS achieved at least good-to-fair reliability for audiologic results starting at 16 months (85.7%) and two ear results at 6-10 years (76.1%). Though not statistically significant, the use of a two-tester assistant compared to a single tester appeared to be helpful in obtaining reliable results.

Conclusion: The results provide a guide to optimal audiologic test procedures for children with DS, as the standard audiologic guidelines for typically developing infants and children do not apply.

Database: CINAHL

44. Quantifying tinnitus suppression in cochlear implantation using tinnitus interval-limited tracking.

Author(s): Mallen, Jonathan R; Chiu, Jerlon; Marquis, Hillary; Ottochian, Amanda; Perez, Erin; Kuo, Chia-Ling; Otto, Steve; Ryan, Tessa; Roberts, Daniel S

Source: The Laryngoscope; Aug 2020; vol. 130 (no. 8); p. 2047-2052

Publication Date: Aug 2020

Publication Type(s): Journal Article

PubMedID: 31800110

Available at [The Laryngoscope](#) - from Wiley Online Library

Abstract:

OBJECTIVES: Quantify the effects of cochlear implants (CI) on tinnitus suppression in patients with previous cochlear implantation using a novel audiologic sequence: Tinnitus Interval Limited Tracking (TILT).

STUDY DESIGN: Prospective cohort study.

METHODS: Consecutive patients with tinnitus and previous cochlear implantation for profound hearing loss underwent an audiologic testing sequence called TILT. Patients rated tinnitus severity using the validated Tinnitus Handicap Inventory (THI) as well as a visual analog scale at baseline and in a variety of audiologic scenarios. Changes in tinnitus severity between scenarios allow for the isolation of the effects of masking and electrical stimulation on the reduction of tinnitus.



RESULTS: Twenty patients were enrolled, 10 of whom have tinnitus with average THI 30.2 (standard deviation 22.6). Patients had an acute decrease in tinnitus severity when their CIs were turned on, even in the absence of noise in a soundproof booth. This effect reversed once the CIs were turned off. This effect was greater in magnitude than with masking that occurred with the presentation of soft speech. Acute tinnitus severity trended toward improvement with increased level of presented speech. Degree of improvement was not correlated with THI.

CONCLUSION: Acute tinnitus suppression in patients using CIs is multifactorial. Masking plays a role; however, it cannot sufficiently account for the totality of symptom improvement experienced by CI patients. Quantifiable tinnitus suppression observed when a CI is turned on, even in the absence of audiologic stimulation, suggests that electrical stimulation is involved in the mechanism of symptom improvement in these patients. **LEVEL OF EVIDENCE** 4
Laryngoscope, 130: 2047-2052, 2020.

Database: Medline

45. Vitamin D Deficiency, Hypocalcemia, and Hearing Loss in Children.

Author(s): Mehta, Charmee H; Close, Michaela F; Dornhoffer, James R; Liu, Yuan F; Nguyen, Shaun A; McRackan, Theodore R; Meyer, Ted A

Source: Otolaryngology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otolaryngology and Neurotology; Aug 2020; vol. 41 (no. 7); p. 940-947

Publication Date: Aug 2020

Publication Type(s): Journal Article

PubMedID: 32658400

Abstract:

OBJECTIVE: Characterize relations between vitamin D deficiency (VDD), hypocalcemia, and hearing loss (HL) in children.

STUDY DESIGN: Retrospective review.

SETTING: Tertiary referral hospital.

PATIENTS: Children in the Audiological and Genetic Database with a diagnosis of VDD, rickets, or osteomalacia.

INTERVENTION: None.

MAIN OUTCOME MEASURES: Prevalence, type, severity (4-tone pure-tone average, PTA), and progression of HL. HL was defined as greater than 15 dB HL at any threshold by pure tone, greater than 20 dB HL by sound field audiometry, or greater than 25 dB in infants less than 1 year of age.

RESULTS: Of 888 children with VDD, 474 (53.4%) had HL, with 17% having moderate-profound HL. Compared with an age-matched cohort of 13,320 children drawn from the same database, children with VDD were significantly more likely to have sensorineural HL (SNHL) (adjusted odds ratios [aOR] 1.26 [95% confidence interval [CI] 1.01-1.58]). Among children with VDD, children with femur fracture had a significantly higher rate of HL (81% versus 53%, $p=0.008$) and children with hypocalcemia had a significantly higher rate of moderate-profound HL (36% versus 18%, $p=0.016$). Additionally, hypocalcemia with and without VDD was associated with SNHL (aOR 2.30 [1.07-4.56]).

CONCLUSIONS: Both vitamin D deficiency and hypocalcemia were found to be independently associated with SNHL, a type of HL that is less likely to improve over time. Recognition of VDD and hypocalcemia as independent risk factors for the development of SNHL could allow for better evaluation and treatment of this patient population. Routine audiological evaluation should be considered in this population.

Database: Medline

46. Pediatric sudden sensorineural hearing loss: Experience in a pediatric ENT emergency care center.

Author(s): Carré, Fabienne; Blanchard, Marion; Achard, Sophie; Parodi, Marine; Denoyelle, Françoise; Loundon, Natalie

Source: International journal of pediatric otorhinolaryngology; Aug 2020; vol. 135 ; p. 110067



Publication Date: Aug 2020

Publication Type(s): Journal Article

PubMedID: 32408010

Abstract:

OBJECTIVES: Sudden sensorineural hearing loss (SSNHL) is relatively rare and its physiopathology remains unclear, particularly in children. Our goal was to evaluate clinical characteristics, etiologies, management, treatment outcomes and prognostic factors in the pediatric population.

METHODS: We performed a retrospective chart review of all children registered for SSNHL between August 2004 and September 2017 in a tertiary care pediatric hospital. We analysed data regarding clinical symptoms, audiological characteristics, diagnostic investigations and treatment outcomes.

RESULTS: Thirty-five patients were included. Mean age was 12 years (range 4-18 years). Male:female ratio was 15:20. Hearing loss was left-sided for 18 patients, right-sided for 12 patients and bilateral for 5 patients. Degree of hearing loss varied from mild to profound across frequencies in the 40 ears studied. Thirty-four patients had associated otologic symptoms: the most frequent was tinnitus (28 ears), followed by vertigo (23 ears), otalgia (5 ears) and sensation of blocked ear (5 ears). Twenty-nine patients received systemic steroids and 3 intra-tympanic steroids. In the treated group, 69% had improvement on the audiograms (14% total, 55% partial). Vestibular tests were performed in 16 patients and were abnormal in 10 patients. Radiological examination included computed tomography scan (n = 16) and/or magnetic resonance imaging (n = 33). They revealed 2 bilateral enlarged vestibular aqueducts, 1 labyrinthitis, 1 intra-cochlear haemorrhage.

CONCLUSION: SSNHL can affect speech and language development in children. There are differences among the pediatric population, including inner ear malformation and immune disease. Specific work up is proposed. Appropriate diagnosis and therapeutic management are discussed.

Database: Medline

47. Use of consensus methods to determine the early clinical signs of cerebral palsy.

Author(s): Boychuck ; Andersen, John; Bussi eres, Andr e; Fehlings, Darcy; Kirton, Adam; Li, Patricia; Oskoui, Maryam; Rodriguez, Charo; Shevell, Michael; Snider, Laurie; Majnemer, Annette; Group, PROMPT

Source: Paediatrics & Child Health (1205-7088); Aug 2020; vol. 25 (no. 5); p. 300-307

Publication Date: Aug 2020

Publication Type(s): Academic Journal

Available at [Paediatrics & Child Health](#) - from Europe PubMed Central - Open Access

Available at [Paediatrics & Child Health](#) - from Unpaywall

Abstract:

Objectives: To develop expert-informed content regarding the early motor attributes of cerebral palsy (CP) that should prompt physician referral for diagnostic assessment of CP, as well as concurrent referral recommendations. This content will be used in the creation of knowledge translation (KT) tools for primary care practitioners and parents.

Methods: Two nominal group processes were conducted with relevant stakeholders, representing Canadian ' content experts ' and ' knowledge-users ' , using an integrated KT approach.

Results: Six attributes were identified that should prompt referral for diagnosis. If the child demonstrates: Early handedness 4 months; persistent head-lag >4 months; inability to sit without support >9 months; any asymmetry in posture or movement. Five referral recommendations were agreed upon: Motor intervention specialist (physical therapy and/or occupational therapy) for ALL; speech-language pathology IF there is a communication delay; audiology IF there is parental or healthcare professional concern regarding a communication delay; functional vision specialist (e.g. optometrist or occupational therapist) IF there is a vision concern (e.g. not fixating, following, or tracking); feeding specialist (e.g. occupational therapist, speech-language pathologist) IF there are feeding difficulties (e.g. poor sucking, poor swallowing, choking, and/or not gaining weight).



Conclusion: Rigorous consensus methods provided the initial evidence necessary to inform the content of tools to assist primary care providers in the early detection of CP. Results will be validated through a Delphi process with international experts, and user-friendly formats of this KT tool will be developed collaboratively with stakeholders.

Database: CINAHL

48. Progressive Dominant Hearing Loss (Autosomal Dominant Deafness-41) and P2RX2 Gene Mutations: A Phenotype-Genotype Study.

Author(s): Liu, Xue Zhong; Yan, Denise; Mittal, Rahul; Ballard, Megan E; Feng, Yong

Source: The Laryngoscope; Jul 2020; vol. 130 (no. 7); p. 1657-1663

Publication Date: Jul 2020

Publication Type(s): Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Journal Article Systematic Review

PubMedID: 31593348

Available at [The Laryngoscope](#) - from Wiley Online Library

Abstract:

OBJECTIVES/HYPOTHESIS: P2RX2 encoding P2X purinoreceptor 2 has been identified as the gene responsible for autosomal dominant deafness-41 (DFNA41) as well as mediating vulnerability to noise-induced hearing loss (NIHL). The objective of this study was to investigate the audiological and molecular characteristics of P2RX2-related deafness, with emphasis on its role in NIHL by determining the audiological characteristics of a previously reported six-generation DFNA41 family with a 10-year follow-up. We have also summarized phenotype-genotype correlations of P2RX2-related deafness in human and mouse models.

STUDY DESIGN: We describe clinical longitudinal follow-up in the DFNA41 family with P2RX2 (p.Val60Leu) mutation and perform a systematic literature search in PubMed and poster presentations on meeting/conference websites to identify current insights into P2RX2-mediated NIHL.

METHODS: Clinical and physical examinations of the family members were performed, and audiograms were obtained to assess the hearing thresholds. Clinical follow-up features in this DFNA41 family are presented along with correlation analyses of phenotype-genotype in all reported families with P2RX2-related deafness.

RESULTS: Progressive hearing impairment was confirmed by history and by audiological follow-up testing in all the patients. The onset of hearing loss was between age 25 and 35 years. All affected subjects had bilateral sensorineural hearing loss involving all frequencies with some significant gender differences.

CONCLUSIONS: Our study and the review of the literature suggest that P2RX2 plays a crucial role in predisposition to noise-induced and age-related hearing loss. A better knowledge about the P2RX2-associated genetic variants can help in developing novel therapeutic strategies. LEVEL OF EVIDENCE 2b Laryngoscope, 130:1657-1663, 2020.

Database: Medline

49. Health-Related Quality of Life Changes Associated With Hearing Loss.

Author(s): Dixon, Peter R; Feeny, David; Tomlinson, George; Cushing, Sharon; Chen, Joseph M; Krahn, Murray D

Source: JAMA otolaryngology-- head & neck surgery; Jul 2020; vol. 146 (no. 7); p. 630-638

Publication Date: Jul 2020

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article Systematic Review

PubMedID: 32407468

Available at [JAMA otolaryngology-- head & neck surgery](#) - from EBSCO (MEDLINE Complete)

Abstract:

Importance: Utility is a single-value, preference-based measure of health-related quality of life that represents the desirability of a health state relative to being dead or in perfect health. Clinical, funding, and policy decisions rely on



measured changes in utility. The benefit of hearing loss treatments may be underestimated because existing utility measures fail to capture important changes in quality of life associated with hearing loss.

Objective: To develop a comprehensive profile of items that describe how quality of life is associated with hearing loss and its treatments that can be used to generate hearing-related quality of life measures, including a novel utility measure.

Design, Setting, and Participants: This qualitative study, performed from August 1, 2018, to August 1, 2019, in tertiary referral centers, comprised a systematic literature review, focus groups, and semistructured interviews. The systematic review evaluated studies published from 1982 to August 1, 2018. Focus groups included 8 clinical experts experienced in the measurement, diagnosis, treatment, and rehabilitation of hearing loss. Semistructured interviews included 26 adults with hearing loss recruited from an institutional data set and outpatient hearing aid and otology clinics using stratified convenience sampling to include individuals of diverse ages, urban and rural residency, causes of hearing loss, severity of hearing loss, and treatment experience.

Main Outcomes and Measures: A set of items and subdomains that collectively describe the association of hearing loss with health-related quality of life.

Results: The literature search yielded 2779 articles from the MEDLINE, Embase, Cochrane, PsycINFO, and CINAHL databases. Forty-five studies including 1036 individuals (age range, 18-84 years) were included. The focus group included 4 audiologists and 4 otologists. Hour-long semistructured interviews were conducted with 26 individuals (13 women; median age, 54 years; range, 25-83 years) with a broad range of hearing loss causes, configurations, and severities. From all 3 sources, a total of 125 items were generated and organized into 29 subdomains derived from the World Health Organization's International Classification of Functioning, Disability and Health.

Conclusions and Relevance: The association of hearing loss with quality of life is multidimensional and includes subdomains that are not considered in the estimation of health utility by existing utility measures. The presented comprehensive profile of items can be used to generate or evaluate measures of hearing-related quality of life, including utility measures.

Database: Medline

50. Schoolchildren with unilateral or mild to moderate bilateral sensorineural hearing loss should be screened for neurodevelopmental problems.

Author(s): Stübner, Charlotte; Flynn, Traci; Gillberg, Christopher; Fernell, Elisabeth; Miniscalco, Carmela

Source: *Acta paediatrica* (Oslo, Norway : 1992); Jul 2020; vol. 109 (no. 7); p. 1430-1438

Publication Date: Jul 2020

Publication Type(s): Journal Article

PubMedID: 31769539

Available at [Acta paediatrica \(Oslo, Norway : 1992\)](#) - from Wiley Online Library

Abstract:

AIM: The aim was to assess the rate and overlap of language and other neurodevelopmental problems in children aged 9-12 years with unilateral or mild to moderate bilateral sensorineural hearing loss.

METHODS: Caregivers of 24 of the 58 eligible children, born 2004-2007, registered at the regional audiology department in Gothenburg, Sweden, with these types of hearing loss completed the Five-to-Fifteen questionnaire, a comprehensive screening instrument for neurodevelopmental problems. Of these 24 children, 21 were assessed with the Clinical Evaluation of Language Fundamentals-Fourth Edition (CELF-4). Children with scores indicating definite problem on the Five-to-Fifteen questionnaire and their parents were invited to a clinical neuropaediatric assessment.

RESULTS: Of the 24 children, 13 (54%) screened positive for definite neurodevelopmental problems. Clinical assessments confirmed the presence of at least one neurodevelopmental disorder in eight of these 24, corresponding to 33%. Seven (33%) of the 21 children participating in the CELF-4 had scores indicating a language disorder, of whom four children had a neurodevelopmental disorder according to the neuropaediatric assessment.



CONCLUSION: The results support that schoolchildren with unilateral or mild to moderate bilateral sensorineural hearing loss should undergo neurodevelopmental screening to identify possible coexisting neurodevelopmental problems or disorders.

Database: Medline

51. Audiology Saved My Life: "Yes," "Sometimes," or "No"? A Commencement Address for the Class of 2020.

Author(s): Jacobson

Source: Journal of the American Academy of Audiology; Jul 2020; vol. 31 (no. 6); p. 369-370

Publication Date: Jul 2020

Publication Type(s): Academic Journal

Available at [Journal of the American Academy of Audiology](#) - from Unpaywall

Abstract: An editorial is presented on commencement address for the graduates of every college and university and beginning of the professional career. Topics include the areas of tinnitus assessment and treatment, the development of clinical outcome measures; and good test-taker and a decent writer and that those skills will not be permanent.

Database: CINAHL

52. Improving Pediatric Hearing Testing for Children with Developmental Delays: The Effects of Video Modeling on Child Compliance and Caregiver Stress.

Author(s): Roberts, Megan Y; Rosenwasser, Jennifer; Phelan, Jennifer; Hampton, Lauren H

Source: Journal of the American Academy of Audiology; May 2020; vol. 31 (no. 5); p. 310-316

Publication Date: May 2020

Publication Type(s): Journal Article

PubMedID: 32516820

Available at [Journal of the American Academy of Audiology](#) - from Unpaywall

Abstract:

BACKGROUND: For children with developmental delays (DDs) of any kind (e.g., global DDs, autism spectrum disorder, and Down syndrome), it is essential to understand if a hearing loss may be contributing to these delays. However, toddlers with DDs may have difficulty understanding directions, may be uncomfortable with a new situation, or may simply not want to complete the hearing testing tasks. Regardless of the reasons, noncompliant behaviors have a negative impact on hearing testing, which requires reliable behavioral responses from the child.

PURPOSE: The purpose of this study was to test a video intervention to improve hearing testing compliance in toddlers with developmental disabilities.

RESEARCH DESIGN: Double-blind randomized clinical trial.

STUDY SAMPLE: Twenty-four children with DDs between 24 and 36 months of age.

INTERVENTION: Video model of the hearing testing procedures.

DATA COLLECTION AND ANALYSIS: The primary child outcome measure was the number of hearing tests completed by the audiologist. Caregiver outcome included a parent survey of perceived stress level before and after the evaluation.

RESULTS: There was no significant difference between treatment and control groups regarding the number of hearing tests that were completed. Parents in the treatment group reported less stress following the evaluation as compared with parents of children in the control group.

CONCLUSIONS: Pre-exposure to the hearing testing procedures did not significantly improve patient compliance but may reduce caregiver stress. Given the high rates of noncompliance in toddlers with DDs, audiologists may benefit from multiple strategies to help improve testing compliance.



Database: Medline

53. Total endoscopic stapes surgery: Systematic review and pooled analysis of audiological outcomes.

Author(s): Hall ; Mandavia, Rishi; Selvadurai, David

Source: Laryngoscope; May 2020; vol. 130 (no. 5); p. 1282-1286

Publication Date: May 2020

Publication Type(s): Academic Journal

PubMedID: NLM31566754

Available at [The Laryngoscope](#) - from Wiley Online Library

Abstract:

Objective: This study evaluates the current evidence base for total endoscopic stapes surgery, specifically to establish current efficacy and safety of the technique within clinical practice.

Data Sources: A systematic review of the literature on endoscopic stapes surgery was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis checklist. A comprehensive search of PubMed, Embase, and the Cochrane Central Register of Controlled Trials database for relevant publications for all available dates with appropriate Medical Subject Headings search criteria in January 2018. **Study Selection:** Out of the 160 articles identified in the search, 14 met the inclusion criteria for further analysis. Four of these were level III and 10 level IV evidence.

Data Extraction: A pooled patient population of 314 individuals was analyzed.

Data Synthesis: Documented postoperative air bone gap closure to within 20 dB was found in 95.3% of individuals (285 patients). Facial nerve palsy (temporary) occurred in three patients (0.6%), with all recovering. No total sensorineural hearing losses were recorded, but two moderate sensorineural hearing losses occurred (0.6%). Perilymph fistula was noted on four occasions (1.3%). Chorda tympani trauma was documented in 3.5% of cases, with taste disturbance documented in 13 patients (5%).

Conclusions: Our pooled analysis uses the current published evidence to establish the complication rate and audiological outcome for the endoscopic approach to stapes surgery. These outcomes are comparable to those documented in traditional use of the microscope for stapedectomy. Laryngoscope, 130:1282-1286, 2020.

Database: CINAHL

54. Inner-Ear Disorders Presenting with Air-Bone Gaps: A Review.

Author(s): Scarpa, Alfonso; Ralli, Massimo; Cassandro, Claudia; Gioacchini, Federico Maria; Greco, Antonio; Di Stadio, Arianna; Cavaliere, Matteo; Troisi, Donato; de Vincentiis, Marco; Cassandro, Ettore

Source: The journal of international advanced otology; Apr 2020; vol. 16 (no. 1); p. 111-116

Publication Date: Apr 2020

Publication Type(s): Journal Article Review

PubMedID: 32401207

Available at [The journal of international advanced otology](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [The journal of international advanced otology](#) - from Unpaywall

Abstract:

Air-bone gaps (ABGs) are commonly found in patients with conductive or mixed hearing loss generally due to outer- and/or middle-ear diseases such as otitis externa, tympanic membrane perforation, interruption or fixation of the ossicular chain, and chronic suppurative otitis media. ABGs can also be found in correlation with inner-ear disorders, such as endolymphatic hydrops, enlarged vestibular aqueduct syndrome, semicircular canal dehiscence, gusher syndrome, cochlear dehiscence, and Paget disease's as well cerebral vascular anomalies including dural



arteriovenous fistula. The typical clinical presentation of inner-ear conditions or cerebral vascular anomalies causing ABGs includes audiological and vestibular symptoms like vertigo, oscillopsia, dizziness, imbalance, spinning sensation, pulsatile or continuous tinnitus, hyperacusis, autophony, auricular fullness, Tullio's phenomenon, and Hennebert's sign. Establishing a definitive diagnosis of the underlying condition in patients presenting with an ABG is often challenging to do and, in many patients, the condition may remain undefined. Results from an accurate clinical, audiological, and vestibular evaluation can be suggestive for the underlying condition; however, radiological assessment by computed tomography and/or magnetic resonance imaging is mandatory to confirm any diagnostic suspicion. In this review, we describe and discuss the most recent updates available regarding the clinical presentation and diagnostic workup of inner-ear conditions that may present together with ABGs.

Database: Medline

55. Audiometric Predictors of Bothersome Tinnitus in a Large Clinical Cohort of Adults With Sensorineural Hearing Loss.

Author(s): Lewis, Rebecca M; Jahn, Kelly N; Parthasarathy, Aravindakshan; Goedicke, William B; Polley, Daniel B

Source: *Otology & neurotology* : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology; Apr 2020; vol. 41 (no. 4); p. e414

Publication Date: Apr 2020

Publication Type(s): Research Support, N.i.h., Extramural Journal Article

PubMedID: 32176119

Available at [Otology & neurotology : official publication of the American Otological Society, American Neurotology Society \[and\] European Academy of Otology and Neurotology](#) - from Unpaywall

Abstract:

OBJECTIVE: To identify demographic and audiometric predictors of bothersome tinnitus within a large clinical cohort.

STUDY DESIGN: Retrospective chart review.

SETTING: Tertiary care hospital.

PATIENTS: 51,989 English-speaking patients between 18 and 80 years of age that received initial audiometric evaluations at the Massachusetts Eye and Ear Infirmary between the years 2000 and 2016.

MAIN OUTCOME MEASURES: Patients were categorized according to whether or not tinnitus was the primary reason for their visit. The likelihood of tinnitus as a primary complaint (TPC) was evaluated as a function of age, sex, and audiometric configuration. Patient-reported tinnitus percepts were qualitatively assessed in relation to audiometric configuration.

RESULTS: Approximately 20% of adults who presented for an initial hearing evaluation reported TPC. The prevalence of TPC increased with advancing age until approximately 50 to 54 years, and then declined thereafter. In general, men were significantly more likely to report TPC than women. TPC was statistically associated with specific audiogram configurations. In particular, TPC was most prevalent for notched and steeply sloping hearing losses, but was relatively uncommon in adults with flat losses. Patients with frequency-restricted threshold shifts often reported tonal tinnitus percepts, while patients with asymmetric configurations tended to report broadband percepts.

CONCLUSIONS: The probability of seeking audiological evaluation for bothersome tinnitus is highest for males, middle-aged patients, and those with notched or high-frequency hearing losses. These findings support the theory that tinnitus arises from sharp discontinuities in peripheral afferent innervation and cochlear amplification, which may induce topographically restricted changes in the central auditory pathway.

Database: Medline

56. Usefulness of cochlear implantation in children with single sided deafness.

Author(s): Ehrmann-Mueller, Désirée; Kurz, Anja; Kuehn, Heike; Rak, Kristen; Mlynski, Robert; Hagen, Rudolf; Shehata-Dieler, Wafaa



Source: International journal of pediatric otorhinolaryngology; Mar 2020; vol. 130 ; p. 109808

Publication Date: Mar 2020

Publication Type(s): Journal Article

PubMedID: 31809969

Abstract:

OBJECTIVES: Children with single sided deafness (SSD) show a poorer performance at school, which is attributable to reduced speech discrimination in noise, to reduced localization ability, and to a decreased power of concentration due to faster hearing exhaustion. Therefore, it is important to provide children with SSD with adequate hearing amplification to restore binaural hearing. This can only be achieved by provision with a cochlear implant (CI). But these treatment option in children with SSD is still under discussion. The aim of the present study is to evaluate audiological and clinical results in children with SSD following cochlear implantation. A special focus was placed on the duration of deafness before implantation and on the frequency of CI-use in everyday life.

METHODS: Seven children with SSD of different etiologies who were provided with a CI between 3 and 16 years of age were evaluated. Every child underwent multiple audiological tests before and after cochlear implantation. After cochlear implantation speech recognition tests in noise using the HSM (Hochmair, Schulz and Moser 1997) test and localization tests were performed. Furthermore, the frequency of implant use was evaluated.

RESULTS: Speech recognition in noise with CI compared to the unaided condition significantly improved in all children in different settings. Improvement of the localization ability measured by the root mean square error (RMSE) was shown in all children. All children are very satisfied with the decision to have undergone cochlear implantation and are all full-time users.

CONCLUSIONS: Cochlear implantation benefits speech recognition in noise and sound localization ability in children with SSD at different ages. All implanted children are full-time users regardless of age or duration of deafness before implantation.

Database: Medline

57. An evaluation of paediatric tinnitus services in UK National Health Service audiology departments.

Author(s): Smith ; Fackrell, Kathryn; Kennedy, Veronica; Barry, Johanna G; Broomhead, Emily; Hoare, Derek J

Source: BMC Health Services Research; Mar 2020; vol. 20 (no. 1); p. 214-214

Publication Date: Mar 2020

Publication Type(s): Academic Journal

PubMedID: NLM32171314

Available at [BMC health services research](#) - from BioMed Central

Available at [BMC health services research](#) - from Europe PubMed Central - Open Access

Available at [BMC health services research](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMC health services research](#) - from EBSCO (MEDLINE Complete)

Available at [BMC health services research](#) - from Unpaywall

Abstract:

Background: Whilst evidence indicates many children experience troublesome tinnitus, specialist services for children are far less established than those available for adults. To date, there is limited understanding of how paediatric tinnitus is managed in the UK, and to what extent current practice reflects what is recommended. This service evaluation aimed to 1) profile how tinnitus in children is managed in UK clinical practice, and assess to what extent care provided by services reflects advice included in the British Society of Audiology (BSA) Tinnitus in Children Practice Guidance, 2) collate clinician opinions on how services may be optimised, and 3) identify common problems experienced by children who present with bothersome tinnitus in clinic.



Methods: As part of a larger survey, eight questions regarding services for paediatric tinnitus were distributed to UK NHS audiology services via email and social media. Representatives from eighty-seven services responded between July and September 2017.

Results: Fifty-three percent of respondents reported that their department provided a paediatric tinnitus service. Among these services, there was widespread use of most BSA recommended assessments and treatments. Less widely used practices were the assessment of mental health (42%), and the use of psychological treatment approaches; cognitive behavioural therapy (CBT) (28%), mindfulness (28%), and narrative therapy (14%). There was varied use of measurement tools to assess tinnitus in children, and a minority of respondents reported using adult tinnitus questionnaires with children. Frequently reported tinnitus-related problems presented by children were sleep difficulties, concentration difficulties at school, situation-specific concentration difficulties, and emotional distress.

Conclusions: Approaches used to manage children with troublesome tinnitus in UK NHS services are largely consistent and reflective of the current practice guidance. However, findings from this study indicate specialist staff training, access to child-specific tools, and the treatment and referral of children with tinnitus-related psychological problems represent key areas in need of optimisation.

Database: CINAHL

58. Quantifying the Range of Signal Modification in Clinically Fit Hearing Aids.

Author(s): Rallapalli ; Anderson, Melinda; Kates, James; Balmert, Lauren; Sirow, Lynn; Arehart, Kathryn; Souza, Pamela

Source: Ear & Hearing (01960202); Mar 2020; vol. 41 (no. 2); p. 433-441

Publication Date: Mar 2020

Publication Type(s): Academic Journal

PubMedID: NLM31408045

Available at [Ear and hearing](#) - from Unpaywall

Abstract:

Objectives: Hearing aids provide various signal processing techniques with a range of parameters to improve the listening experience for a hearing-impaired individual. In previous studies, we reported significant differences in signal modification for mild versus strong signal processing in commercially available hearing aids. In this study, the authors extend this work to clinically prescribed hearing aid fittings based on best-practice guidelines. The goals of this project are to determine the range of cumulative signal modification in clinically fit hearing aids across manufacturers and technology levels and the effects of listening conditions including signal to noise ratio (SNR) and presentation level on these signal modifications.

Design: We identified a subset of hearing aids that were representative of a typical clinical setting. Deidentified hearing aid fitting data were obtained from three audiology clinics for adult hearing aid users with sensorineural hearing loss for a range of hearing sensitivities. Matching laboratory hearing aids were programmed with the deidentified fitting data. Output from these hearing aids was recorded at four SNRs and three presentation levels. The resulting signal modification was quantified using the cepstral correlation component of the Hearing Aid Speech Quality Index which measures the speech envelope changes in the context of a model of the listener's hearing loss. These metric values represent the hearing aid processed signal as it is heard by the hearing aid user. Audiometric information was used to determine the nature of any possible association with the distribution of signal modification in these clinically fit hearing aids.

Results: In general, signal modification increased as SNR decreased and presentation level increased. Differences across manufacturers were significant such that the effect of presentation level varied differently at each SNR, for each manufacturer. This result suggests that there may be variations across manufacturers in processing various listening conditions. There was no significant effect of technology level. There was a small effect of pure-tone average on signal modification for one manufacturer, but no effect of audiogram slope. Finally, there was a broad range of measured signal modification for a given hearing loss, for the same manufacturer and listening condition.



Conclusions: The signal modification values in this study are representative of commonly fit hearing aids in clinics today. The results of this study provide insights into how the range of signal modifications obtained in real clinical fittings compares with a previous study. Future studies will focus on the behavioral implications of signal modifications in clinically fit hearing aids.

Database: CINAHL

59. Audiology Practices in the Preoperative Evaluation and Management of Adult Cochlear Implant Candidates.

Author(s): Prentiss, Sandra; Snapp, Hillary; Zwolan, Teresa

Source: JAMA otolaryngology-- head & neck surgery; Feb 2020; vol. 146 (no. 2); p. 136-142

Publication Date: Feb 2020

Publication Type(s): Journal Article

PubMedID: 31830215

Available at [JAMA otolaryngology-- head & neck surgery](#) - from EBSCO (MEDLINE Complete)

Available at [JAMA otolaryngology-- head & neck surgery](#) - from Unpaywall

Abstract:

Importance: Currently, no clear guidelines exist regarding clinical testing methods for identifying adult cochlear implant (CI) candidates. Indications provided by the US Food and Drug Administration, Medicare, and private insurers are ambiguous concerning test materials and the level and mode of test presentation. This could lead to wide variability in clinical assessment and, potentially, unequal access to CIs for individuals with clinically significant hearing loss.

Objective: To examine the preoperative testing methods used by audiologists in evaluating adult CI candidates across the United States.

Design, Setting, and Participants: A survey assessing audiology practice patterns was created using a Research Electronic Data Capture system hosted at the University of Miami. A link to a survey (65 questions in multiple-choice or rank-order format) was distributed electronically along with a request for completion to members of the American Cochlear Implant Alliance and to the Institute for Cochlear Implant Training forum. Responses were collected from January 17 to June 4, 2018. Participation was limited to audiologists who evaluate adult CI candidates, and respondents who do not provide adult CI care were excluded. Collected demographic information included work setting, years of experience, and highest level of education attained.

Main Outcomes and Measures: Percentages, medians, and interquartile ranges were from aggregated responses concerning hearing aid verification methods; testing methods, materials, and practices; nonauditory factors that might affect CI candidacy; audiology practice patterns; and expanded indications for CIs.

Results: Anonymized surveys were returned by 99 respondents; because surveys were available electronically, the number of audiologists who viewed the survey but did not respond was not available. Seven respondents identified themselves as pediatric specialists and were excluded, resulting in a total of 92 surveys available for analysis (denominators vary because respondents could complete the survey without answering all questions). Seventy percent of respondents (51 of 72) were doctors of audiology, and nearly 50% (33 of 74) were employed at universities and academic centers performing more than 50 CIs per year. When assessing adult candidacy for implant, most respondents reported using test materials from the Minimum Speech Test Battery: 96% (51 of 53), using AzBio sentences in quiet; 89% (47 of 53), AzBio sentences in noise; and 100% (53 of 53), the consonant-vowel nucleus-consonant, monosyllabic words test. However, these tests were applied inconsistently, with 39 of 53 respondents (74%) reporting use of a sound pressure level scale and the other 14 (26%) a hearing level scale at various decibel levels, and with some using a single signal-to-noise ratio and others using multiple ratios for sound-in-noise tests. Respondents' definitions of the best aided listening condition for assessing implant candidates also varied widely. Among the nonauditory factors ranked most important for assessing CI candidacy were patient's level of cognition and expectations of CI; yet, few respondents reported including cognitive or psychological tests in the assessment protocol.



Conclusions and Relevance: Findings of this study reveal considerable variability in preoperative testing methods and practices across health care professionals assessing adult candidates for CI. This lack of standardization in the delivery of care may increase the risk for health care inequities, specifically in access to care for adults with clinically significant hearing loss.

Database: Medline

NICE Updates:

Round up of guidance and advice (Jan 2020 – May 2021)

For the full range of Guidance please see: <https://www.nice.org.uk/guidance/conditions-and-diseases/ear--nose-and-throat-conditions>

Omalizumab for treating chronic rhinosinusitis with nasal polyps (terminated appraisal)

Technology appraisal [TA678]

Published: 24 February 2021

<https://www.nice.org.uk/guidance/ta678>

PROPEL sinus implants for maintaining sinus patency after surgery

Medtech innovation briefing [MIB253]

Published: 09 February 2021

<https://www.nice.org.uk/advice/mib253>

