Welcome to the latest copy of this Update. The aims of this publication are:

❖ To bring together a range of recently-published research reports, articles and electronic resources to help all staff keep up-to-date with research and practice.

❖ To remind readers of the services available from the Library and Knowledge Service – we can supply you with 1:1 or small group training in evidence searching skills; obtain full-text articles for you; or provide you with an evidence search service to help you with your evidence based practice, patient care, decision making and research.

❖ To respond to your information needs – if you have any suggestions on the type of information sources you would find helpful in future editions of the Update, then please let us know.

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Articles

Healthcare Database – Selection of articles found in Medline (published: July 2017 – March 2018)

*Items ordered with the most recent first*

**Titles List**

1. Inconsistent device use in pediatric cochlear implant users: Prevalence and risk factors.
3. Quality of questionnaires for the assessment of otitis media with effusion in children.
4. Rare case of bilateral aural atresia and cochlear dysplasia: when cochlear implantation is not the answer.
5. Cochlear implant revision surgeries in children.
6. Drug-Induced Ototoxicity: Diagnosis and Monitoring.
7. A National Survey of Simulation Use in University Programs in Communication Sciences and Disorders.
8. Otitis Media: Beyond the Examining Room.
10. The CAPOS mutation in ATP1A3 alters Na/K-ATPase function and results in auditory neuropathy which has implications for management.
11. [Speech audiometry and data logging in CI patients: Implications for adequate test levels, German version].
12. Integrated Decentralized Training for Health Professions Education at the University of KwaZulu-Natal, South Africa: Protocol for the I-DecT Project.
15. Defining and evaluating novel procedures for involving patients in Core Outcome Set research: creating a meaningful long list of candidate outcome domains.

17. Speech audiometry and data logging in CI patients: Implications for adequate test levels.

18. Clinical trials, ototoxicity grading scales and the audiologist's role in therapeutic decision making.

19. The effect of tinnitus specific intracochlear stimulation on speech perception in patients with unilateral or asymmetric hearing loss accompanied with tinnitus and the effect of formal auditory training.

20. Performance of the Tinnitus Functional Index as a diagnostic instrument in a UK clinical population.


22. Clinical educators' experiences of facilitating learning when speaking a different language from both the student and client.


24. Rehabilitation and Psychosocial Determinants of Cochlear Implant Outcomes in Older Adults.


29. Frequency of auditory involvement and of associated factors in patients with juvenile idiopathic arthritis.

30. Sudden sensorineural hearing loss in children and adolescents: Clinical characteristics and age-related prognosis.


33. Outcome of Cochlear Implantation in Prelingually Deafened Children According to Molecular Genetic Etiology.

34. Cochlear Implantation in Siblings With Refsum's Disease.


38. Practical guidelines to minimise language and cognitive confounds in the diagnosis of CAPD: a brief tutorial.


41. Management and outcomes of cochlear implantation in patients with congenital cytomegalovirus (cCMV)-related deafness.

42. Computer-assisted CI fitting: Is the learning capacity of the intelligent agent FOX beneficial for speech understanding?

43. Considerations for Pediatric Cochlear Implant Recipients With Unilateral or Asymmetric Hearing Loss: Assessment, Device Fitting, and Habilitation.

44. [Prevalence, Risk Factors and Diagnostics of Hearing Impairment in Preterm Infants].


46. Research about suppression effect and auditory processing in individuals who stutter.

Full strategy
1. Inconsistent device use in pediatric cochlear implant users: Prevalence and risk factors.

**Author(s):** Wiseman, Kathryn B; Warner-Czyz, Andrea D

**Source:** Cochlear implants international; May 2018; vol. 19 (no. 3); p. 131-141

**Publication Date:** May 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29299970

**Abstract:** OBJECTIVES Cochlear implants (CIs) afford an opportunity for children with a significant hearing loss to access spoken language through auditory input, but challenges post-implantation could impede success. Inconsistent device use occurs when a child wears their device less than full-time (ongoing)

**Database:** Medline


**Author(s):** Kulasegarah, Jeyanthi; Burgess, Helen; Neeff, Michel; Brown, Colin R S

**Source:** International journal of pediatric otorhinolaryngology; Apr 2018; vol. 107; p. 176-182

**Publication Date:** Apr 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29501302

**Abstract:** INTRODUCTION To compare the audiological results of Bone Conduction Hearing Aid (BCHA) on hard test band and Bonebridge (BB) implant among children with microtia and atresia. METHODSThis is a retrospective review of patients with microtia and atresia who underwent BB implant insertion from September 2014 to February 2017 in Starship Children's Hospital. Preoperative audiological testing using a powered BCHA (Oticon Medical Ponto Pro Power) on a hard test band was used to compare post-operative hearing assessments with the BB. RESULTS Ten microtia and atresia patients were treated with a BB of whom three were treated bilaterally. The children were aged between 5 and 15 and all had moderate to moderately severe conductive hearing loss. For each ear tested and subsequently implanted, BB aided speech scores were equivalent to that obtained by a BCHA. The mean improvement of speech reception threshold level between unaided and BB was statistically significant (p > 0.0001). Subjective questionnaire data indicated that BB implanted patients were performing within the norms of overall listening, both in quiet and in noise. Aided Speech In Noise (SIN) testing values were found to range from 0.8-6.5 for BCHA and 0.2-1.2 for BB and the difference was not statistically significant with a p value of 0.143. CONCLUSION In audiologic assessments BB performs comparably to BCHA among children with microtia and atresia.

**Database:** Medline

3. Quality of questionnaires for the assessment of otitis media with effusion in children.
Author(s): Gan, R W C; Daniel, M; Ridley, M; Barry, J G
Source: Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery; Apr 2018; vol. 43 (no. 2); p. 572-583
Publication Date: Apr 2018
Publication Type(s): Journal Article
PubMedID: 29106777
Available at Clinical Otolaryngology - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS
Available at Clinical Otolaryngology - from Wiley Online Library All Journals
Abstract:OBJECTIVES Audiometric tests provide information about hearing in otitis media with effusion (OME). Questionnaires can supplement this information by supporting clinical history-taking as well as potentially providing a standardized and comprehensive assessment of the impact of the disease on a child. There are many possible candidate questionnaires. This study aimed to assess the quality and usability of parent / child questionnaires in OME assessment. DESIGN AND MAIN OUTCOME MEASURES Fifteen, published questionnaires, commonly used in audiological departments (Auditory Behaviour in Everyday Life (ABEL), Children's Auditory Performance Scale (CHAPS), Children's Home Inventory for Listening Difficulties (CHILD), Children's Outcome Worksheets (COW), Evaluation of Children's Listening and Processing Skills (ECLiPS), Early Listening Function (ELF), Fisher's Auditory Problem Checklist (FAPC), Hearing Loss 7 (HL-7), Listening Inventory for Education- Revised (LIFE-R Student), Listening Inventory for Education UK Individual Hearing Profile (LIFE-UK IHP), LittlEARS Auditory Questionnaire (LittlEARS), Listening Situations Questionnaire (LSQ), Otitis Media 6 (OM-6), Quality of Life in Children's Ear Problems (OMQ-14), Parents' Evaluation of Aural/Oral Performance of Children (PEACH) were assessed according to the following 8 criteria: conceptual clarity, respondent burden, reliability, validity, normative data, item bias, ceiling/ floor effects, and administrative burden. RESULTS ECLiPS, LittlEARS and PEACH scored highest overall based on the assessment criteria established for this study. None of the questionnaires fully satisfied all 8 criteria. Although all questionnaires assessed issues considered to be of at least adequate relevance to OME, the majority had weaknesses with respect to the assessment of psychometric properties, such as item bias, floor/ceiling effects or measurement reliability and validity. Publications reporting on the evaluation of reliability, validity, normative data, item bias and ceiling/floor effects were not available for most of the questionnaires. CONCLUSION This formal evaluation of questionnaires, currently available to clinicians, highlights three questionnaires as potentially offering a useful adjunct in the assessment of OME in clinical or research settings. These were the ECLiPS, which is suitable for children aged 6 years and older, and either the LittlEARS or the PEACH for younger children. The latter two are narrowly focused on hearing, whereas ECLiPS has a broader focus on listening, language and social difficulties.
Database: Medline

4. Rare case of bilateral aural atresia and cochlear dysplasia: when cochlear implantation is not the answer.
Author(s): Svrakic, Maja
Source: Cochlear implants international; Feb 2018; p. 1-5
Publication Date: Feb 2018
Publication Type(s): Journal Article
OBJECTIVE AND IMPORTANCE:

Reports of patients with concurrent middle and inner ear anomalies are rare. These patients present a surgical challenge for cochlear implantation. The surgical risk must be weighed against the predicted benefit of the patient’s hearing outcome and subsequent development of speech and language as well as their quality of life. CLINICAL PRESENTATION:

Thirteen-year-old boy presented to the Otology clinic for auditory rehabilitation options. He has mild developmental delay, is non-verbal and communicates via American Sign Language. He was born with bilateral aural atresia and never wore amplification. On exam he has grade 1 microtia and complete ear canal atresia bilaterally. His behavioural hearing test shows profound sensorineural hearing loss of both ears. The computed tomography scan shows bilateral underdeveloped and completely opacified mastoid and middle ear, complete bony atresia of the ear canals, and an under-partitioned cochlea with poorly defined modiolus, among other abnormalities. The patient and his family were counselled on the available options as well as the need for any further studies.

INTERVENTION:

Counselling of patient and family.

CONCLUSION:

While there have been reports in the literature of performing cochlear implantations in patients with a concurrent atresia and cochlear dysplasia, these were patients whose degree of inner ear anomalies was relatively minor and their prognosis of a good audiological outcome was favourable. The presented case is that of a patient for whom the surgical approach to the cochlea alone would be difficult. More importantly, his quality of life would not significantly improve in light of the predicted limited hearing and language development outcomes, given the severity of his inner ear abnormalities, limited communication abilities, prolonged period of deafness and developmental delays.

Database: Medline

5. Cochlear implant revision surgeries in children.

Author(s): Amaral, Maria Stella Arantes do; Reis, Ana Cláudia Mirândola B; Massuda, Eduardo T; Hyppolito, Miguel Angelo

Source: Brazilian journal of otorhinolaryngology; Feb 2018

Publication Date: Feb 2018

Publication Type(s): Journal Article

PubMedID: 29496369

Abstract:

INTRODUCTION:

The surgery during which the cochlear implant internal device is implanted is not entirely free of risks and may produce problems that will require revision surgeries. OBJECTIVE:

To verify the indications for cochlear implantation revision surgery for the cochlear implant internal device, its effectiveness and its correlation with certain variables related to language and hearing. METHOD:

A retrospective study of patients under 18 years submitted to cochlear implant Surgery from 2004 to 2015 in a public hospital in Brazil. Data collected were: age at the time of implantation, gender, etiology of the hearing loss, audiological and oral language characteristics of each patient before and after Cochlear Implant surgery and any need for surgical revision and the reason for it. RESULT:

Two hundred and sixty-five surgeries were performed in 236 patients. Eight patients received a bilateral cochlear implant and 10 patients required revision surgery. Thirty-two surgeries were necessary for these 10 children (1 bilateral cochlear implant), of which 21 were revision surgeries. In 2 children, cochlear implant removal was necessary, without reimplantation, one with cochlear malformation due to incomplete partition type I and another due to trauma. With respect to the cause for revision surgery, of the 8 children who were successfully reimplanted, four had cochlear calcification following meningitis, one followed trauma, one
exhibited a facial nerve malformation, one experienced a failure of the cochlear implant internal device and one revision surgery was necessary because the electrode was twisted. CONCLUSION The incidence of the cochlear implant revision surgery was 4.23%. The period following the revision surgeries revealed an improvement in the subject’s hearing and language performance, indicating that these surgeries are valid in most cases.

**Database:** Medline

6. **Drug-Induced Ototoxicity: Diagnosis and Monitoring.**

**Author(s):** Campbell, Kathleen C M; Le Prell, Colleen G

**Source:** Drug safety; Feb 2018

**Publication Date:** Feb 2018

**Publication Type(s):** Journal Article Review

**PubMedID:** 29404977

**Abstract:** Ototoxicity diagnosis and management has historically been approached using a variety of methods. However, in recent years a consensus on useful and practical approaches has been developed through clinical guidelines of the American Speech Language Hearing Association, the American Academy of Audiology, and multiple clinical trials published in peer-reviewed literature. Some of the guidelines and approaches are used to detect and monitor ototoxicity, while others are used to grade adverse events. Some of the audiologic measures are primary, while others are adjunct measures and may be tailored to the specific needs of the patient or clinical trial. For some types of monitoring, such as drug-induced tinnitus or dizziness, validated paper survey instruments can be both sensitive and easy for fragile patients. This review addresses the characteristics of some of the most common clinical ototoxins and the most common methods for detecting and monitoring ototoxicity in clinical practice and clinical trials.

**Database:** Medline

7. **A National Survey of Simulation Use in University Programs in Communication Sciences and Disorders.**

**Author(s):** Dudding, Carol C; Nottingham, Elizabeth E

**Source:** American journal of speech-language pathology; Feb 2018; vol. 27 (no. 1); p. 71-81

**Publication Date:** Feb 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29121195

Available at [American journal of speech-language pathology](https://academic.oup.com/ajslp/article-lookup/doi/10.1044/2018-ajslp-pr-0526) - from ProQuest (Hospital Premium Collection) - NHS Version

Available at [American journal of speech-language pathology](https://academic.oup.com/ajslp/article/27/1/71/29121195) - from EBSCO (CINAHL with Full Text)

**Abstract:** Purpose This study provides a framework for understanding the range and diversity of simulation use, along with the benefits and challenges to the growth of simulation in university programs in communication sciences and disorders (CSD) across the United States. Method A web-based questionnaire was developed and deployed to educators in undergraduate and graduate speech-language pathology and audiology programs in the American Speech-Language-Hearing...
Association EdFind database (N = 309). Responses from 44% (n = 136) of the American Speech-Language-Hearing Association-accredited CSD programs were analyzed. Results Overall, 51% (n = 69) of respondents reported using simulations in clinical education. Of the 5 categories of health care simulation, programs most often employed standardized patients and/or computer-based simulations. Barriers to using simulations included a lack of knowledge, limited financial resources, undertrained faculty, and little guidance from accrediting bodies. A significant number of respondents (n = 66) agreed with the statement that simulated experiences could account for up to 25% of required direct clinical hours in speech-language pathology and audiology. Conclusions Results of this study suggest an emerging acceptance of simulations as a method of augmenting clinical education within CSD programs. Expanding educational efforts and increasing opportunities for faculty training are essential in realizing the full potential of future professionals using simulations in CSD.

Supplemental Material https://doi.org/10.23641/asha.5576296.

Database: Medline

8. Otitis Media: Beyond the Examining Room.
Author(s): Welling, Deborah R; Ukstins, Carol A
Source: Pediatric clinics of North America; Feb 2018; vol. 65 (no. 1); p. 105-123
Publication Date: Feb 2018
Publication Type(s): Journal Article Review
PubMedID: 29173711
Abstract: The management of hearing loss associated with otitis media is multifaceted. Clinical practice guidelines set the collaborative prescriptive standards for the medical management of otitis media in children. Treatment of this condition does not end with the medical practitioner. There are far-reaching effects of otitis media and its sequelae that permeate every aspect of patients’ lives including physiological, educational, and psychosocial. Therefore, a comprehensive interprofessional treatment plan must be designed taking into consideration best practices from a range of professions to maximize clinical outcomes, including the treating physician, speech-language pathologist, clinical audiologist, educational audiologist, and professionals in the educational setting.
Database: Medline

Author(s): Rajasekaran, Aravind Kumar; Savardekar, Amey Rajan; Shivashankar, Nagaraja Rao
Source: Journal of the American Academy of Audiology; Feb 2018; vol. 29 (no. 2); p. 187-191
Publication Date: Feb 2018
Publication Type(s): Journal Article
PubMedID: 29401065
Abstract: BACKGROUND Schwannoma of the hypoglossal nerve is rare. This case report documents an atypical abnormality of the cervical vestibular evoked myogenic potential (cVEMP) in a patient with schwannoma of the hypoglossal nerve. The observed abnormality was attributed to the proximity of the hypoglossal nerve to the spinal accessory nerve in the medullary cistern and base of the skull. PURPOSE To report cVEMP abnormality in a patient with hypoglossal nerve schwannoma and
provide an anatomical correlation for this abnormality.

**RESEARCH DESIGN**

**CASE REPORT**

**STUDY SAMPLE**

A 44-yr-old woman.

**DATA COLLECTION**

Pure-tone and speech audiometry, tympanometry, acoustic stapedial reflex, auditory brainstem response, and cVEMP testing were performed.

**RESULTS**

The audiological test results were normal except for the absence of cVEMP on the lesion side (right).

**CONCLUSION**

A cVEMP abnormality indicating a compromised spinal accessory nerve was observed in a patient with hypoglossal nerve schwannoma. This case report highlights the importance of recording cVEMP in relevant neurological conditions and provides clinical proof for the involvement of the spinal accessory nerve in the vestibulocollic reflex pathway.

**Database:** Medline

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**10. The CAPOS mutation in ATP1A3 alters Na/K-ATPase function and results in auditory neuropathy which has implications for management.**

**Author(s):** Tranebjærg, Lisbeth; Strenzke, Nicola; Lindholm, Sture; Rendtorff, Nanna D; Poulsen, Hanne; Khandelia, Himanshu; Kopec, Wojciech; Lyngbye, Troels J Brünnich; Hamel, Christian; Delettre, Cecile; Bocquet, Beatrice; Bille, Michael; Owen, Hanne H; Bek, Toke; Jensen, Hanne; Østergaard, Karen; Möller, Claes; Luxon, Linda; Carr, Lucinda; Wilson, Louise; Rajput, Kaukab; Sirimanna, Tony; Harrop-Griffiths, Katherine; Rahman, Shamima; Vona, Barbara; Doll, Julia; Haaf, Thomas; Bartsch, Oliver; Rosewich, Hendrik; Moser, Tobias; Bitner-Glindzicz, Maria

**Source:** Human genetics; Feb 2018; vol. 137 (no. 2); p. 111-127

**Publication Date:** Feb 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29305691

**Abstract:** Cerebellar ataxia, areflexia, pes cavus, optic atrophy and sensorineural hearing impairment (CAPOS) is a rare clinically distinct syndrome caused by a single dominant missense mutation, c.2452G>A, p.Glu818Lys, in ATP1A3, encoding the neuron-specific alpha subunit of the Na+/K+/ATPase α3. Allelic mutations cause the neurological diseases rapid dystonia Parkinsonism and alternating hemiplegia of childhood, disorders which do not encompass hearing or visual impairment. We present detailed clinical phenotypic information in 18 genetically confirmed patients from 11 families (10 previously unreported) from Denmark, Sweden, UK and Germany indicating a specific type of hearing impairment-auditory neuropathy (AN). All patients were clinically suspected of CAPOS and had hearing problems. In this retrospective analysis of audiological data, we show for the first time that cochlear outer hair cell activity was preserved as shown by the presence of otoacoustic emissions and cochlear microphonic potentials, but the auditory brainstem responses were grossly abnormal, likely reflecting neural dyssynchrony. Poor speech perception was observed, especially in noise, which was beyond the hearing level obtained in the pure tone audiograms in several of the patients presented here. Molecular modelling and in vitro electrophysiological studies of the specific CAPOS mutation were performed. Heterologous expression studies of α3 with the p.Glu818Lys mutation affects sodium binding to, and release from, the sodium-specific site in the pump, the third ion-binding site. Molecular dynamics simulations confirm that the structure of the C-terminal region is affected. In conclusion, we demonstrate for the first time evidence for auditory neuropathy in CAPOS syndrome, which may reflect impaired propagation of electrical impulses along the spiral ganglion neurons. This has implications for diagnosis and patient management. Auditory neuropathy is difficult to treat with conventional hearing aids, but preliminary improvement in speech perception in some patients suggests that cochlear implantation may be effective in CAPOS patients.
11. [Speech audiometry and data logging in CI patients: Implications for adequate test levels. German version].

**Author(s):** Hey, M; Hocke, T; Ambrosch, P

**Source:** HNO; Feb 2018; vol. 66 (no. 2); p. 128-134

**Publication Date:** Feb 2018

**Publication Type(s):** English Abstract Journal Article

**PubMedID:** 28986605

**Abstract:** BACKGROUND As part of postoperative cochlear implant (CI) diagnostics, speech comprehension tests are performed to monitor audiological outcome. In recent years, a trend toward improved suprathreshold speech intelligibility in quiet and an extension of intelligibility to softer sounds has been observed. Parallel to audiometric data, analysis of the patients’ acoustic environment can take place by means of data logging in modern CI systems. OBJECTIVES Which test levels reflect the individual listening environment in a relevant manner and how can these be reflected in a clinical audiometric setting? PATIENTS AND METHODS In a retrospective analysis, data logs of 263 adult CI patients were evaluated for sound level and the listening situation (quiet, speech in quiet, noise, speech in noise, music, and wind). Additionally, monosyllabic word comprehension in quiet was analyzed in experienced CI users at presentation levels of 40–80 dB. RESULTS For the sound level in the acoustic environment of postlingually deafened adult CI users, data logging shows a maximum occurrence of speech signals in the range 50–59 dB. This demonstrates the relevance of everyday speech comprehension at levels below 60 dB. CONCLUSIONS Individual optimization of speech intelligibility with a CI speech processor should not be performed in the range of 65–70 dB only, but also at lower levels. Measurements at 50 dB currently seem to be a useful addition.

**Database:** Medline

12. Integrated Decentralized Training for Health Professions Education at the University of KwaZulu-Natal, South Africa: Protocol for the I-DecT Project.

**Author(s):** Govender, Pragashnie; Chetty, Verusia; Naidoo, Deshini; Pefile, Ntsikelelo

**Source:** JMIR research protocols; Jan 2018; vol. 7 (no. 1); p. e19

**Publication Date:** Jan 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29371175

Available at [JMIR Research Protocols](https://www.jmir.org/2018/1/e19) - from Europe PubMed Central - Open Access

Available at [JMIR Research Protocols](https://www.jmir.org/2018/1/e19) - from PubMed Central

**Abstract:** BACKGROUND The Integrated Decentralized Training (i-DecT) project was created to address the current need for health care in South Africa among resource poor climates in rural and periurban settings. The University of KwaZulu-Natal (UKZN) in South Africa has embarked on a program within the School of Health Sciences (SHS) to decentralize the clinical learning platform in order to address this disparity. Framed in a pragmatic stance, this proposal is geared towards informing the roll out of decentralized clinical training (DCT) within the province of KwaZulu-Natal. There currently remains uncertainty as to how the implementation of this program will unfold,
especially for the diverse SHS, which includes specialities like audiology, dentistry, occupational therapy, optometry, pharmacy, physiotherapy, speech-language pathology, and sport science. Consequently, there is a need to carefully monitor and manage this DCT in order to ensure that the participating students have a positive learning experience and achieve expected academic outcomes, and that the needs of the communities are addressed adequately.

**OBJECTIVE**
The study aims to explore the factors that will influence the roll-out of the DCT by developing an inclusive and context-specific model that will adhere to the standards set by the SHS for the DCT program at UKZN.

**METHODS**
Key role players, including but not limited to, the South African Ministry of Health policy makers, clinicians, policy makers at UKZN, clinical educators, academicians, and students of UKZN within the SHS will participate in this project. Once the infrastructural, staffing and pedagogical enablers and challenges are identified, together with a review of existing models of decentralized training, a context-specific model for DCT will be proposed based on initial pilot data that will be tested within iterative cycles in an Action Learning Action Research (ALAR) process.

**RESULTS**
The study was designed to fit within the existing structures, and emerging framework and memorandum of understanding between the partners of this initiative, namely, the Ministry of Health and UKZN in order to develop health care professionals that are competent and prepared for the changing dynamics of healthcare in a developing world.

**CONCLUSIONS**
It is envisioned that this study, the first to include a combination of health professionals in a DCT platform at UKZN, will not only contribute to effective service delivery, but may also serve to promote an interprofessional cooperation within the SHS and tertiary institutions in similar settings.

**Database:** Medline

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13. **Risk factors of sensorineural hearing loss in patients with unilateral safe chronic suppurative otitis media.**

**Author(s):** Singer, Abd Elrheem Ahmed; Abdel-Naby Awad, Osama G; El-Kader, Rafeek Mohamed Abd; Mohamed, Ahmed Rabeh

**Source:** American journal of otolaryngology; Jan 2018

**Publication Date:** Jan 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29331307

**Abstract:** PURPOSE Chronic suppurative otitis media (CSOM) is the major cause of hearing impairment, especially conductive hearing loss. Few patients also had sensorineural component, the sensorineural hearing loss (SNHL) in CSOM is controversial, especially for safe mucosal type. This study aims to assess the relationship between the frequency of SNHL development in patients with safe mucosal CSOM and its relation to patient’s age, sex, duration of disease, size of perforation and different audiological findings.

**MATERIAL AND METHODS**
This is a prospective study conducted from June 2016 to June 2017 in a tertiary referral hospital. 200 patients with unilateral mucosal type of CSOM with normal contralateral ear were included in the study. The diseased ears were taken as study ears and normal ears as control ears in all patients. Detailed otologic history, clinical and audiometric findings were recorded and analyzed. Results were statistically compared in all patients for both study and control ears using different parameters.

**RESULTS**
Twenty patients had an average bone conduction threshold of all frequencies above 25dB, which implies SNHL (10%). The incidence of SNHL was statistically significant at higher speech frequencies. The incidence increased with the presence of Diabetes Mellitus, smoking, duration of disease, presence of active discharge and the increase in size of perforation. However, it is not age dependent and there was no difference.
between males and females.

**CONCLUSION** Safe mucosal CSOM can cause SNHL with multiple predisposing factors.

**Database:** Medline

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**14. Hearing Loss after Cardiac Surgery in Infancy: An Unintended Consequence of Life-Saving Care.**

**Author(s):** Grasty, Madison A; Ittenbach, Richard F; Knightly, Carol; Solot, Cynthia B; Gerdes, Marsha; Bernbaum, Judy C; Wernovsly, Gil; Spray, Thomas L; Nicolson, Susan C; Clancy, Robert R; Licht, Daniel J; Zackai, Elaine; Gaynor, J William; Burnham, Nancy B

**Source:** The Journal of pediatrics; Jan 2018; vol. 192; p. 144

**Publication Date:** Jan 2018

**Publication Type(s):** Journal Article Observational Study

**PubMedID:** 29246336

**Abstract:**

**OBJECTIVES** To investigate the prevalence of hearing loss after cardiac surgery in infancy, patient and operative factors associated with hearing loss, and the relationship of hearing loss to neurodevelopmental outcomes. **STUDY DESIGN** Audiologic and neurodevelopmental evaluations were conducted on 348 children who underwent repair of congenital heart disease at the Children's Hospital of Philadelphia as part of a prospective study evaluating neurodevelopmental outcomes at 4 years of age. A prevalence estimate was calculated based on presence and type of hearing loss. Potential risk factors and the impact of hearing loss on neurodevelopmental outcomes were evaluated. **RESULT** The prevalence of hearing loss was 21.6% (95% CI, 17.2-25.9). The prevalence of conductive hearing loss, sensorineural hearing loss, and indeterminate hearing loss were 12.4% (95% CI, 8.8-16.0), 6.9% (95% CI, 4.1-9.7), and 2.3% (95% CI, 0.6-4.0), respectively. Only 18 of 348 subjects (5.2%) had screened positive for hearing loss before this study and 10 used a hearing aid. After adjusting for patient and operative covariates, younger gestational age, longer postoperative duration of stay, and a confirmed genetic anomaly were associated with hearing loss (all P

**Database:** Medline

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**15. Defining and evaluating novel procedures for involving patients in Core Outcome Set research: creating a meaningful long list of candidate outcome domains.**

**Author(s):** Smith, Harriet; Horobin, Adele; Fackrell, Kathryn; Colley, Veronica; Thacker, Brian; Hall, Deborah A; Core Outcome Measures in Tinnitus (COMiT) initiative

**Source:** Research involvement and engagement; 2018; vol. 4; p. 8

**Publication Date:** 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29507772

Available at [Research Involvement and Engagement](https://www.researchinvolvement.co.uk) - from BioMed Central

Available at [Research Involvement and Engagement](https://www.researchinvolvement.co.uk) - from PubMed Central

**Abstract:** Plain English summary Outcome domains are aspects of a condition that matter to patients and clinicians and can be measured to assess treatment effects. For tinnitus, examples include 'tinnitus loudness' and 'ability to concentrate'. This study focuses on the first stage of agreeing which outcome domains should be measured in all clinical trials of tinnitus. Crucially, it involves identifying
outcome domains, prior to a voting process. This article describes how we effectively involved patients in that study design process, and reflects on the impact of their input. The study first compiled a long list of all possible outcome domains before asking interested parties, including patients, to vote which ones to include. Ensuring patients fully participate in this process holds unique challenges as it can be long, repetitive and its purpose far removed from their needs. These challenges may be addressed by involving patients in designing the research. There is evidence that other research teams are doing this, but its reporting is not detailed enough to guide others. Our paper seeks to address this. We describe how we involved patients (people living with tinnitus) in creating a long list of outcome domains that we included in our study. We also reflect on the benefits this brought. Two patients partnered with us in designing the survey. We also consulted an independent patient review panel. Involving patients reduced the list of domains included in the survey and made domain names and associated descriptions clearer. Our resulting survey performed well in recruiting and retaining patients as participants.

Abstract

Background Tinnitus is a complex audiological condition affecting many different domains of everyday life. Clinical trials of tinnitus interventions measure and report those outcome domains inconsistently and this hinders direct comparison between study findings. To address this problem, an ongoing project is developing a Core Outcome Set; an agreed list of outcome domains to be measured and reported in all future trials. Part of this project uses a consensus methodology ('Delphi' survey), whereby all relevant stakeholders identify important and critical outcome domains from a long list of candidates. This article addresses a gap in the patient involvement literature by describing and reflecting on our involvement of patients to create a meaningful long list of candidate outcome domains.

Methods

Two Public Research Partners with lived experience of tinnitus reviewed an initial list of 124 outcome domains over two face-to-face workshops. With the Study Management Team, they interpreted each candidate outcome domain and generated a plain language description. Following this, the domain names and descriptions underwent an additional lay review by 14 patients and 5 clinical experts, via an online survey platform.

Results

Insights gained from the workshops and survey feedback prompted substantial, unforeseen modifications to the long list. These included the reduction of the number of outcome domains (from 124 to 66) via the exclusion of broad concepts and consolidation of equivalent domains or domains outside the scope of the study. Reviewers also applied their lived experience of tinnitus to bring clarity and relevance to domain names and plain language descriptions. Four impacts on the Delphi survey were observed: recruitment exceeded the target by 171%, there were equivalent numbers of patient and professional participants (n = 358 and n = 312, respectively), feedback was mostly positive, and retention was high (87%).

Conclusions

Patient involvement was an integral and transformative step of the study design process. Patient involvement was impactful because the online Delphi survey was successful in recruiting and retaining participants, and there were many comments about a positive participatory experience. Seven general methodological features are highlighted which fit with general principles of good patient involvement. These can benefit other Core Outcome Set developers.

Database: Medline


Author(s): Lucas, Laura; Katiri, Roulla; Kitterick, Pádraig Thomas

Source: International journal of audiology; Jan 2018; vol. 57 (no. 1); p. 21-30

Publication Date: Jan 2018

Publication Type(s): Journal Article

PubMedID: 29132260
Abstract:OBJECTIVESThis study examined the subjective psychological and social effects of highly asymmetric hearing loss (single-sided deafness [SSD]) in adults.DESIGNThree group interviews were conducted using the critical incident technique and analysed using an inductive thematic analysis.STUDY SAMPLEEight adults with a clinical diagnosis of a moderately severe hearing loss or greater in one ear and normal or near-normal hearing in the other ear.RESULTSA range of functional hearing difficulties associated with SSD including impaired speech in background noise and reduced spatial awareness were reported to affect social and psychological well-being. Social consequences of SSD resulted from activity limitations and participation restrictions including withdrawal from and within situations. Participants reported psychological effects including worrying about losing the hearing in their other ear, embarrassment related to the social stigma attached to hearing loss and reduced confidence and belief in their abilities to participate.CONCLUSIONSSingle-sided deafness can be associated with many negative consequences. Counselling may help overcome the psychological consequences of hearing loss regardless of whether technological support such as a hearing aid is prescribed. The audiological management of these individuals should support the development of listening strategies and set appropriate expectations for participation in everyday listening situations.

Database: Medline

17. Speech audiometry and data logging in CI patients: Implications for adequate test levels.
Author(s): Hey, M; Hocke, T; Ambrosch, P
Source: HNO; Jan 2018; vol. 66 ; p. 22-27
Publication Date: Jan 2018
Publication Type(s): Journal Article
PubMedID: 29119199
Abstract:BACKGROUNDAs part of postoperative cochlear implant (CI) diagnostics, speech comprehension tests are performed to monitor audiological outcome. In recent years, a trend toward improved suprathreshold speech intelligibility in quiet and an extension of intelligibility to softer sounds has been observed. Parallel to audiometric data, analysis of the patients’ acoustic environment can take place by means of data logging in modern CI systems.OBJECTIVESWhich speech test levels reflect the individual listening environment in a relevant manner and how can these be reflected in a clinical audiometric setting?PATIENTS AND METHODSin a retrospective analysis, data logs of 263 adult CI patients were evaluated for sound level and the listening situation (quiet, speech in quiet, noise, speech in noise, music, and wind). Additionally, monosyllabic word comprehension in quiet was analyzed in experienced CI users at presentation levels of 40-80 dB.RESULTSFor the sound level in the acoustic environment of postlingually deafened adult CI users, data logging shows a maximum occurrence of speech signals in the range of 50-59 dB. This demonstrates the relevance of everyday speech comprehension at levels below 60 dB.CONCLUSIONIndividual optimization of speech intelligibility with a CI speech processor should not be performed in the range of 65-70 dB only, but also at lower levels. Measurements at 50 dB currently seem to be a useful addition.

Database: Medline

18. Clinical trials, ototoxicity grading scales and the audiologist’s role in therapeutic decision making.
OBJECTIVES Define clinical trials and adverse event (AE) monitoring from the perspective of the audiologist. Rationalise the importance of audiology's involvement before, during and after monitoring. Identify strengths and weaknesses in toxicity grading scales, and discuss factors that may influence these. DESIGN Literature involving commonly cited grading scales used to capture ototoxicity is reviewed. Current regulations and language associated with clinical trial implementation and AE monitoring are described. Personal observations based on a variety of clinical populations are drawn from years of experience developing and employing ototoxicity monitoring protocols in a complex medical setting. RESULT Six commonly used grading scales for ototoxicity are systematically reviewed for strengths and weaknesses. Necessary considerations that inform selection of grading scales are presented. A review of and historical context for clinical trial development and AE monitoring is provided. CONCLUSION The audiologist's role in therapeutic decision making goes beyond collection of the audiogram. Clear communication to stakeholders in ototoxicity monitoring is paramount, and toxicity grading scales are one tool to facilitate this exchange. Various factors should be considered in advance of selecting the most appropriate scale to capture hearing loss, and no scale is without limitation.

Database: Medline

19. The effect of tinnitus specific intracochlear stimulation on speech perception in patients with unilateral or asymmetric hearing loss accompanied with tinnitus and the effect of formal auditory training.

Author(s): Arts, Remo A G J; George, Erwin L J; Janssen, Miranda A M L; Griessner, Andreas; Zierhofer, Clemens; Stokroos, Robert J

Source: International journal of audiology; Nov 2017; p. 1-14

Publication Date: Nov 2017

Publication Type(s): Journal Article

PubMedID: 29188740

OBJECTIVES Previous studies show that intracochlear electrical stimulation independent of environmental sounds appears to suppress tinnitus, even long-term. In order to assess the viability of this potential treatment option it is essential to study the effects of this tinnitus specific electrical stimulation on speech perception. DESIGN A randomised, prospective crossover design. STUDY SAMPLE Ten patients with unilateral or asymmetric hearing loss and severe tinnitus complaints. RESULT The audiological effects of standard clinical CI, formal auditory training and tinnitus specific electrical stimulation were investigated. Results show that standard clinical CI in unilateral or asymmetric hearing loss is shown to be beneficial for speech perception in quiet, speech perception in noise and subjective hearing ability. Formal auditory training does not appear to improve speech perception performance. However, CI-related discomfort reduces significantly more rapidly during CI rehabilitation in subjects receiving formal auditory training. Furthermore, tinnitus specific electrical stimulation has neither positive nor negative effects on speech perception. CONCLUSION In combination with the findings from previous studies on tinnitus
suppression using intracochlear electrical stimulation independent of environmental sounds, the results of this study contribute to the viability of cochlear implantation based on tinnitus complaints.

Database: Medline

20. Performance of the Tinnitus Functional Index as a diagnostic instrument in a UK clinical population.

Author(s): Fackrell, Kathryn; Hall, Deborah A; Barry, Johanna G; Hoare, Derek J

Source: Hearing research; Nov 2017

Publication Date: Nov 2017

Publication Type(s): Journal Article

PubMedID: 29129348

Abstract: OBJECTIVE The Tinnitus Functional Index (TFI) has been optimised as a diagnostic tool for quantifying the functional impact of tinnitus in US veteran and civilian groups. However, the TFI has not been fully evaluated for use in other English-speaking clinical populations despite its increasingly popular uptake. Here, a prospective multi-site longitudinal validation study was conducted to evaluate psychometric properties relevant to the UK clinical population. Guided by quality criteria for the measurement properties of health-related questionnaires, we specifically evaluated three diagnostic properties relating to the degree to which the TFI (i) covers the eight dimensions proposed to be important for diagnosis, (ii) reliably distinguishes individual differences in severity of tinnitus, and (iii) reliably measures the functional impact of tinnitus. We also examine whether clinically meaningful interpretations of the scores can be produced for the UK population.

METHOD Twelve National Health Service audiology clinics across the UK recruited 255 tinnitus patients to complete questionnaires at four time-intervals, from initial clinical assessment and then over a nine-month period. Patients completed the TFI, the Tinnitus Handicap Inventory (THI), tinnitus case history questions, a Global rating of Perceived Problem with tinnitus and a Clinical Global Impression of perceived change in tinnitus. Baseline TFI data were used to examine the factor structure, construct validity and interpretability of the TFI. Follow-up TFI data were used to examine reliability.

RESULTS Confirmatory factor analysis suggested that of the eight subscales (factors) initially established for the TFI, the 'Auditory' subscale did not contribute to the overall construct 'functional impact of tinnitus', and a modified seven-factor model (TFI-22) better fit the variance in the patient scores. Both the global 25-item TFI and the global TFI-22 scores showed exceptionally high internal consistency (α ≥ 0.95), high construct validity with the THI (r = 0.80) and high test-retest reliability (ICC = 0.87). Test-retest agreement however was only deemed to be borderline acceptable (89%). Receiver Operator Characteristic analysis indicated the 25-item TFI and TFI-22 has excellent ability to distinguish between different levels of impact (Area under the curve > 0.7).

CONCLUSION The TFI was confirmed to cover multiple symptom domains, measuring a multi-domain construct of tinnitus, and satisfies a range of psychometric requirements for a good clinical measure, including having excellent reliability, stability over time and sensitivity to individual differences in tinnitus severity. However, a modified seven-factor structure without the Auditory subscale (TFI-22) is recommended for calculating a global composite score for UK patients. Using patients' experience and Receiver Operator Characteristic analysis, a grading system was presented which identifies the distinct grades of tinnitus impact in the UK clinical population that is broadly comparable to the US-based system.

Database: Medline

**Author(s):** Zhan, Yi; Fellows, Abigail M; Qi, Tangkai; Clavier, Odile H; Soli, Sigfrid D; Shi, Xiudong; Gui, Jiang; Shi, Yuxin; Buckey, Jay C

**Source:** Ear and hearing; Nov 2017

**Publication Date:** Nov 2017

**Publication Type(s):** Journal Article

**PubMedID:** 29112532

**Abstract:**

OBJECTIVES: Human immunodeficiency virus positive (HIV+) individuals report hearing difficulties, but standard audiological tests show no, or small, changes in peripheral hearing ability. The hearing complaints may reflect central nervous system (CNS) auditory processing deficits, rather than middle or inner ear problems, and may result from CNS damage due to HIV infection or treatment. If central auditory task performance and cognitive deficits in HIV+ individuals are shown to be related, then central auditory tests might serve as a "window" into CNS function in these patients.

DESIGN: We measured cognitive performance (Mandarin Montreal Cognitive Assessment [MoCA]) and speech in noise perception (Mandarin hearing-in-noise test [HINT]) in 166 normal-hearing HIV+ individuals (158 men, 8 women, average age 36 years) at the Shanghai Public Health Clinical Center in Shanghai, China. Data collection included audiometry, tympanometry, and the Amsterdam Inventory of Auditory Handicap (AIAH), which assesses the subjective ability to understand speech and localize sound.

RESULT: Subjects had no middle ear disease and met criteria for normal-hearing sensitivity (all thresholds 20 dB HL or less). A significant negative relationship between speech reception thresholds (SRT) and MoCA scores ($r = 0.15, F = 28.2, p$)

**Database:** Medline

22. Clinical educators' experiences of facilitating learning when speaking a different language from both the student and client.

**Author(s):** Keeton, Nicola; Kathard, Harsha; Singh, Shajila

**Source:** BMC research notes; Nov 2017; vol. 10 (no. 1); p. 546

**Publication Date:** Nov 2017

**Publication Type(s):** Journal Article

**PubMedID:** 29096696

**Abstract:**

BACKGROUND: Worldwide there is an increasing responsibility for clinical educators to help students from different language backgrounds to develop the necessary skills to provide health care services to a linguistically diverse client base. This study describes the experiences of clinical educators who facilitate learning in contexts where they are not familiar with the language spoken between students and their clients. A part of the qualitative component of a larger mixed methods study is the focus of this paper. Semi-structured interviews were conducted with eight participants recruited from all audiology university programmes in South Africa. Thematic analysis allowed for an in depth exploration of the research question. Member checking was used to enhance credibility. It
is hoped that the findings will inform training programmes and in so doing, optimize the learning of diverse students who may better be able to provide appropriate services to the linguistically diverse population they serve.

**RESULTS**

Participants experienced challenges with fair assessment of students and with ensuring appropriate client care when they were unable to speak the language shared between the client and the student. In the absence of formal guidelines, clinical educators developed unique coping strategies that they used on a case-by-case basis to assess students and ensure adequate client management when they experienced such language barriers while supervising. Coping strategies included engaging other students as interpreters, having students role-play parts of a session in English in advance and requesting real-time translations from the student during the session. They expressed concern about the fairness and efficacy of the coping strategies used.

**CONCLUSIONS**

While clinical educators use unique strategies to assess students and to ensure suitable client care, dilemmas remain regarding the fairness of assessment and the ability to ensure the quality of client care.

**Database:** Medline

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### 23. Audiology and speech-language pathology practice in Saudi Arabia.

**Author(s):** Alanazi, Ahmad A

**Source:** International journal of health sciences; 2017; vol. 11 (no. 5); p. 43-55

**Publication Date:** 2017

**Publication Type(s):** Journal Article

**PubMedID:** 29114194

Available at [International journal of health sciences](https://pubmed.ncbi.nlm.nih.gov/29114194) - from PubMed Central

**Abstract:**

**Objectives**

Audiology and speech-language pathology (SLP) are relatively new professions in Saudi Arabia. The idea of establishing new audiology and SLP programs in some education facilities has become popular across Saudi Arabia; yet, only four undergraduate and graduate programs are currently available. This study aimed to explore the fields of audiology and SLP in Saudi Arabia, obtain demography of audiologists and Speech-language pathologists (SLPs), understand their current practices, and identify their perspective on what both professions need to improve.

**Methods**

A cross-sectional mixed methods study design was used to address the aim of this study. Two online surveys were prepared and distributed to reach a large number of audiologists and SLPs. Both surveys consisted of close- and open-ended questions and primarily focused on three categories demography, audiology or SLP practices, and audiologists' or SLPs' perspective on their professions in Saudi Arabia. Results A total of 23 audiologists and 37 SLPs completed the surveys (age range = 21-50 years). The majority of respondents were from Riyadh with different academic qualifications and working experiences. Various practices were noticed among audiologists and SLPs who mainly worked in hospitals. Several suggestions regarding the development of audiology and SLP education and practice in Saudi Arabia are discussed.

**Conclusion**

This study provides useful information about audiology and SLP education and practices in Saudi Arabia. Collaborative work between stakeholders to achieve high-quality educational and practical standards is critical. National database, clinical guidelines and policies should be developed, employed, and supervised. Further research is needed to improve education and practice of both professions in Saudi Arabia.

**Database:** Medline
24. Rehabilitation and Psychosocial Determinants of Cochlear Implant Outcomes in Older Adults.

**Author(s):** Tang, Liyang; Thompson, Carol B; Clark, James H; Ceh, Kristin M; Yeagle, Jennifer D; Francis, Howard W

**Source:** Ear and Hearing; vol. 38 (no. 6); p. 663-671

**Publication Type(s):** Research Support, N.I.H., Extramural Journal Article

**PubMedID:** 28542018

**Abstract:** OBJECTIVE The cochlear implant (CI) has been shown to be associated with better hearing, cognitive abilities, and functional independence. There is variability however in how much benefit each recipient derives from his or her CI. This study's primary objective is to determine the effects of individual and environmental characteristics on CI outcomes. DESIGN Seventy-six adults who developed postlingual severe to profound hearing loss and received their first unilateral CI at 65 years and older were eligible for the study. Fifty-five patients were asked to participate and the 33 (60%) with complete data were classified as "group 1." The remaining patients were placed in "group 2." Primary outcomes included changes in quality of life and open-set speech perception scores. Independent variables included age, health status, trait emotional intelligence (EI), comfort with technology, and living arrangements. Survey outcomes and audiological measurements were collected prospectively at 12 months after surgery, whereas preoperative data were collected retrospectively. Comparisons between groups 1 and 2 were made. Wilcoxon signed rank test, Spearman correlations, Mann-Whitney tests, Chi-square tests, and linear regressions were performed only on group 1 data. RESULTS Having a CI was associated with improved quality of life and speech perception. Familiarity with electronic tablets was associated with increased 12-month postoperative AzBio gains when adjusted for preoperative AzBio scores (adjusted p = 0.019), but only marginally significant when a family-wise error correction was applied (p = 0.057). Furthermore, patients who lived with other people scored at least 20 points higher on the AzBio sentences than those who lived alone (adjusted p = 0.046). Finally, consultation with an auditory rehabilitation therapist was associated with higher self-reported quality of life (p = 0.035). CONCLUSION This study suggests that in a cohort of older patients cochlear implantation is associated with a meaningful increase in both quality of life and speech perception. Furthermore, it suggests the potential importance of adjunct support and services, including the tailoring of CI rehabilitation sessions depending on the patient's familiarity with technology and living situation. Investment in rehabilitation and other services is associated with improvements in quality of life and may mitigate clinical, individual and social risk factors for poor communication outcome.

**Database:** Medline


**Author(s):** Younes, Elias; Montava, Marion; Bachelard-Serra, Mathilde; Jaloux, Laurent; Salburgo, Florent; Lavieille, Jean Pierre

**Source:** Otology & Neurotology: Official Publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology; Oct 2017; vol. 38 (no. 9); p. 1345-1350

**Publication Date:** Oct 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28796095
Abstract: INTRODUCTION There is no consensus about the use of observation as a therapeutic modality for intracanalicular vestibular schwannoma (ICVS). The objective of this study was to describe tumor evolution, its correlation with initial size, stage of vestibular schwannoma, clinical presentation and to propose a risk classification for tumor growth with a therapeutic decision algorithm. METHODS Fifty-three patients with ICVS were followed prospectively from 2010 to 2015. The mean follow-up was 32 months. Patients underwent clinical examination, audiogram, magnetic resonance imaging at 6, 12, and then 12 months intervals within the first 5 years of initial diagnosis. We analyzed the patient’s clinical course, audiologic changes, initial tumor location, and correlation of different parameters with ICVS growth. RESULTS Fourteen patients (26%) deteriorated their hearing level and 17 patients (27%) showed tumor growth during the follow-up period. Growth was noted during the first year of observation in 13 patients (76.5%). Considering initial presentation: tumor size, intracanalicular staging, and hearing level, patients with larger vestibular schwannoma, extension to the fundus regardless of tumor size, higher initial pure-tone average, and speech recognition test showed a significantly higher rate of tumor growth. ICVS evolution was not correlated with hearing deterioration with time. DISCUSSION We should consider observation a therapeutic modality. We validate the intrameatal staging as prognostic factor and propose a stratification of patients into low, moderate, or high risk for potential tumor growth to guide the initial management of ICVS.

Database: Medline

Author(s): Dobbie, Allison M  
Source: Current opinion in otolaryngology & head and neck surgery; Oct 2017; vol. 25 (no. 5); p. 390-395  
Publication Date: Oct 2017  
Publication Type(s): Journal Article Review  
PubMedID: 28857892  
Abstract: PURPOSE OF REVIEW The current article reviews the current literature related to congenital cytomegalovirus (CMV)-related hearing loss. The discussion will focus on the epidemiology, pathogenesis, and clinical presentation of human CMV infection as it pertains to hearing loss. Current methods of CMV diagnosis with a focus on the evolving trend toward broader neonatal screening protocols will also be explored. Discussion of medical, surgical, and audiologic management of the condition will also be addressed. RECENT FINDINGS Much of the current research on this topic is focused on improving detection of CMV through screening programs. Some advances in understanding cochlear pathogenesis have also been made. SUMMARY Congenital CMV infection remains an important cause of hearing loss in infants and children. Early detection of CMV infection can broaden treatment options and allow for improved hearing and language outcome for patients with CMV-associated sensorineural hearing loss.  
Database: Medline

Author(s): Profant, Oliver; Roth, Jan; Bureš, Zbyněk; Balogová, Zuzana; Lišková, Irena; Betka, Jan; Syka, Josef
OBJECTIVE Huntington's disease (HD) is an autosomal, dominantly inherited, neurodegenerative disease. The main clinical features are motor impairment, progressive cognitive deterioration and behavioral changes. The aim of our study was to find out whether patients with HD suffer from disorders of the auditory system.

METHODS A group of 17 genetically verified patients (11 males, 6 females) with various stages of HD (examined by UHDRS - motor part and total functional capacity, MMSE for cognitive functions) underwent an audiological examination (high frequency pure tone audiometry, otoacoustic emissions, speech audiometry, speech audiometry in babble noise, auditory brainstem responses). Additionally, 5 patients underwent a more extensive audiological examination, focused on central auditory processing. The results were compared with a group of age-matched healthy volunteers.

RESULTS Our results show that HD patients have physiologic hearing thresholds, otoacoustic emissions and auditory brainstem responses; however, they display a significant decrease in speech understanding, especially under demanding conditions (speech in noise) compared to age-matched controls. Additional auditory tests also show deficits in sound source localization, based on temporal and intensity cues. We also observed a statistically significant correlation between the perception of speech in noise, and motoric and cognitive functions. However, a correlation between genetic predisposition (number of triplets) and function of inner ear was not found.

CONCLUSIONS We conclude that HD negatively influences the function of the central part of the auditory system at cortical and subcortical levels, altering predominantly speech processing and sound source lateralization.

SIGNIFICANCE We have thoroughly characterized auditory pathology in patients with HD that suggests involvement of central auditory and cognitive areas.


Author(s): Oliveira, Ana Carolina Martins de; Friche, Amélia Augusta de Lima; Salomão, Marina Silva; Bougo, Graziela Chamarelli; Vicente, Laélia Cristina Caseiro

Source: Brazilian journal of otorhinolaryngology; Sep 2017

Publication Date: Sep 2017

Publication Type(s): Journal Article

PubMedID: 28951127

Abstract: INTRODUCTION Lesions in the oral cavity, pharynx and larynx due to endotracheal intubation can cause reduction in the local motility and sensitivity, impairing the swallowing process, resulting in oropharyngeal dysphagia. OBJECTIVE To verify the predictive factors for the development of oropharyngeal dysphagia and the risk of aspiration in patients with prolonged orotracheal intubation admitted to an intensive care unit. METHODS This is an observational, analytical, cross-sectional and retrospective data collection study of 181 electronic medical records of patients submitted to prolonged orotracheal intubation. Data on age; gender; underlying disease; associated comorbidities; time and reason for orotracheal intubation; Glasgow scale on the day of the Speech Therapist assessment; comprehension; vocal quality; presence and severity of dysphagia; risk of
bronchoaspiration; and the suggested oral route were collected. The data were analyzed through logistic regression. The level of significance was set at 5%, with a 95% Confidence Interval.

**RESULTS**
The prevalence of dysphagia in this study was 35.9% and the risk of aspiration was 24.9%. As the age increased, the altered vocal quality and the degree of voice impairment increased the risk of the presence of dysphagia by 5-; 45.4- and 6.7-fold, respectively, and of aspiration by 6-; 36.4- and 4.8-fold. The increase in the time of orotracheal intubation increased the risk of aspiration by 5.5-fold.

**CONCLUSION**
Patients submitted to prolonged intubation who have risk factors associated with dysphagia and aspiration should be submitted to an early speech-language/audiology assessment and receive appropriate and timely treatment. The recognition of these predictive factors by the entire multidisciplinary team can minimize the possibility of clinical complications inherent to the risk of dysphagia and aspiration in extubated patients.

**Database:** Medline

**29. Frequency of auditory involvement and of associated factors in patients with juvenile idiopathic arthritis.**

**Author(s):** Céspedes Cruz, Adriana Ivonne; Méndez Núñez, Myriam; Solís Vallejo, Eunice; Zeferino Cruz, Maritza; Torres Jiménez, Alfonso Ragnar; Ocampo Sánchez, Verónica; Flores Meza, Beatriz; Quintana Ruiz, Norma

**Source:** Reumatologia clinica; Sep 2017

**Publication Date:** Sep 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28923429

Available at [Reumatologia clinica](http://www.ebscohost.com/ehost/ipref?sid=86173f30-3a3c-40bd-b79d-0f4a00b9d28a%40sessionmgr4000&videoid=medline) - from EBSCO (MEDLINE Complete)

**Abstract:**

**INTRODUCTION**

Juvenile idiopathic arthritis (JIA) is a chronic autoimmune disease characterized by the presence of arthritis in children under 16 years of age for more than 6 weeks in the absence of any other known cause. The extra-articular manifestations, especially in the audiovestibular system, are related to the involvement of the joints of the ossicular chain as a result of the inflammatory process in the synovium. Previous clinical studies in pediatric patients have shown conductive or sensorineural hearing loss.

**OBJECTIVE**

The aim of this study was to assess the frequency of hearing impairment and of associated factors in patients with JIA.

**METHODOLOGY**

A prospective, analytical study was conducted from January 2013 to August 2014 in 62 patients with JIA aged between 5 and 15 years. The study was approved by the local ethics committee and parents signed their informed consent. All subjects underwent audiological examination involving otomicroscopy, audiometry, tympanometry, stapedius reflex and test for transient otoacoustic emissions (TOAE); rheumatologic evaluation included joint examination and the application of a measure of functional ability (disability) using the Childhood Health Assessment Questionnaire (CHAQ). Measures of central tendency and of dispersion were used (chi-square for associations and

**Database:** Medline

**30. Sudden sensorineural hearing loss in children and adolescents: Clinical characteristics and age-related prognosis.**
OBJECTIVE Although many studies have investigated sudden sensorineural hearing loss (SSNHL) in adults, there were few studies on SSNHL in the pediatric population; especially research on treatment and prognosis of pediatric SSNHL was limited. The aim of this study was to evaluate clinical characteristics, treatment outcomes and prognostic factors in children and adolescents with SSNHL.

METHODS A retrospective review of medical records of 67 pediatric patients (67 ears) who had diagnosed with SSNHL at our hospitals was performed to analyze patients' clinical manifestations and audiograms. All patients were treated with high-dose systemic prednisolone (1mg/kg), and 17 of them underwent intratympanic steroid injection therapy. Audiological evaluation was carried out before and after treatment, and hearing recovery was defined as complete recovery and partial recovery according to Siegel's criteria. Audiological assessment revealed that a low initial hearing threshold, high speech discrimination score, and descending type of audiogram were positively associated with hearing recovery (p=0.002, p=0.003, and p=0.029, respectively).

RESULTS The recovery rate in total 67 patients was 55.2%. The recovery rate of the childhood group was significantly lower than that of the adolescence group (p=0.038). While the presence of vertigo did not significantly correlate with prognosis (p=0.219), the presence of tinnitus was significantly associated with hearing recovery (p=0.005). Audiological assessment revealed that a low initial hearing threshold, high speech discrimination score, and descending type of audiogram were positively associated with hearing recovery (p=0.002, p=0.003, and p=0.029, respectively).

CONCLUSION The childhood group had worse treatment outcomes than the adolescence group. High initial hearing threshold and absence of tinnitus were poor prognostic factors of hearing recovery. Active treatment is required for patients with these poor prognostic factors and childhood patients with SSNHL.

Database: Medline


Author(s): Timmer, Barbra H B; Hickson, Louise; Launer, Stefan
Source: Journal of the American Academy of Audiology; Sep 2017; vol. 28 (no. 8); p. 731-741
Publication Date: Sep 2017
Publication Type(s): Journal Article
PubMedID: 28906244

Abstract: BACKGROUND Previous research, mostly reliant on self-reports, has indicated that hearing aid (HA) use is related to the degree of hearing impairment (HI). No large-scale investigation of the relationship between data-logged HA use and HI has been conducted to date. PURPOSE This study aimed to investigate if objective measures of overall daily HA use and HA use in various listening environments are different for adults with mild HI compared to adults with moderate HI. RESEARCH DESIGN This retrospective study used data extracted from a database of fitting appointments from an international group of HA providers. Only data from the participants' most recent fitting
appointment were included in the final dataset.

**STUDY SAMPLE**
A total of 8,489 bilateral HA fittings of adults over the age of 18 yr, conducted between January 2013 and June 2014, were included. Participants were subsequently allocated to HI groups, based on British Society of Audiology and American Speech-Language-Hearing Association audiometric descriptors.

**DATA COLLECTION AND ANALYSIS**
Fitting data from participating HA providers were regularly transferred to a central server. The data, with all personal information except age and gender removed, contained participants' four-frequency average (at 500, 1000, 2000, and 4000 Hz) as well as information on HA characteristics and usage. Following data cleaning, bivariate and post hoc statistical analyses were conducted.

**RESULTS**
The total sample of adults' average daily HA use was 8.52 hr (interquartile range [IQR] = 5.49-11.77) in the left ear and 8.51 hr (IQR = 5.49-11.72) in the right ear. With a few exceptions, there were no statistical differences between hours of HA use for participants with mild HI compared to those with moderate impairment. Across all mild and moderate HI groups, the most common overall HA usage was between 8 and 12 hr per day. Other factors such as age, gender, and HA style also showed no relationship to hours of use. HAs were used, on average, for 7 hr (IQR = 4.27-9.96) per day in quiet and 1 hr (IQR = 0.33-1.41) per day in noisy listening situations.

**CONCLUSIONS**
Clinical populations with mild HI use HAs as frequently as those with a moderate HI. These findings support the recommendation of HAs for adults with milder degrees of HI.

**Database:** Medline

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**32. Exploring reasons for late identification of children with early-onset hearing loss.**

**Author(s):** Fitzpatrick, Elizabeth M; Dos Santos, Johnny Cesconetto; Grandpierre, Viviane; Whittingham, JoAnne

**Source:** International journal of pediatric otorhinolaryngology; Sep 2017; vol. 100 ; p. 160-167

**Publication Date:** Sep 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28802365

**Abstract:** INTRODUCTION Several studies have shown that early identification of childhood hearing loss leads to better language outcomes. However, delays in the confirmation of hearing loss persist even in the presence of well-established universal newborn hearing screening programs (UNHS). The objective of this population-based study was to document the proportion of children who experienced delayed confirmation of congenital and early onset hearing loss in a UNHS program in one region of Canada. The study also sought to determine the reasons for delayed confirmation of hearing loss in children. METHODS Population level data related to age of first assessment, age of identification and clinical characteristics were collected prospectively for all children identified through the UNHS program. We documented the number of children who experienced delay (defined as more than 3 months) from initial audiologic assessment to confirmation of hearing loss. A detailed chart review was subsequently performed to examine the reasons for delay to confirmation. RESULTS Of 418 children identified from 2003 to 2013, 182 (43.5%) presented with congenital or early onset hearing loss, of whom 30 (16.5%) experienced more than 3 months delay from initial audiologic assessment to confirmation of their hearing disorder. The median age of first assessment and confirmation of hearing loss for these 30 children was 3.7 months (IQR: 2.0, 7.6) and 13.8 months (IQR: 9.7, 26.1) respectively. Close examination of the factors related to delay to confirmation revealed that for the overwhelming majority of children, a constellation of factors contributed to late diagnosis. Several children (n = 22; 73.3%) presented with
Developmental/medical issues, 15 of whom also had middle ear dysfunction at assessment, and 9 of whom had documented family follow-up concerns. For the remaining eight children, additional reasons included ongoing middle ear dysfunction for five children, complicated by family follow-up concerns (n = 3) and mild hearing loss (n = 1) and the remaining three children had isolated reasons related to family follow-up (n = 1) or mild hearing loss (n = 2). CONCLUSION Despite the progress made in the early detection of pediatric hearing loss since UNHS, a substantial number of children referred for early assessment can experience late confirmation and intervention. In particular, infants with developmental and/or medical issues including middle ear disorders are at particular risk for longer time to confirmation of hearing loss.

Database: Medline

33. Outcome of Cochlear Implantation in Prelingually Deafened Children According to Molecular Genetic Etiology.

Author(s): Park, Joohyun; Kim, Ah Reum; Han, Jin Hee; Kim, Seong Dong; Kim, Shin Hye; Koo, Ja-Won; Oh, Seung Ha; Choi, Byung Yoon

Source: Ear and hearing; vol. 38 (no. 5); p. e316

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

PubMedID: 28841141

Abstract: OBJECTIVES About 60% of Korean pediatric cochlear implantees could be genetically diagnosed (GD) and we previously reported that a substantial portion of undiagnosed cases by deafness gene panel sequencing were predicted to have a nongenetic or complex etiology. We aimed to compare the outcomes of cochlear implantation (CI) in GD and genetically undiagnosed (GUD) patients and attempted to determine CI outcomes according to etiology. DESIGN Ninety-three pediatric cochlear implantees underwent molecular genetic testing. Fifty-seven patients carried pathogenic variants and 36 patients remained GUD after panel sequencing of 204 known or potential deafness genes (TRS-204). Among them, 55 cochlear implantees with reliable speech evaluation results with a follow-up of longer than 24 months were recruited. Longitudinal changes in the audiologic performance were compared between the GD (n = 31) and GUD (n = 24) groups. The GD group was subdivided into cochlear implantee with SLC26A4 mutations (group 1) and cochlear implantee with other genetic etiology (group 2), and the GUD group was subdivided into groups 3 and 4, that is, patients with or without inner ear anomaly, respectively. RESULTS Group 1 related to SLC26A4 mutations had the highest categories of auditory perception scores among all groups pre- and postoperatively. Group 4 with inner ear anomaly had the lowest categories of auditory perception scores. At 24 months post-CI, the group 2 with another genetic etiology had significantly better outcomes than molecularly undiagnosed group 3, which had with the same condition as group 2 except that the candidate gene was not detected. This finding was recapitulated when we limited cases to those that underwent CI before 24 months of age to minimize age-related bias at implantation. Furthermore, on extending the follow-up to 36 months postoperatively, this tendency became more prominent. Additionally, our preliminary clinical data suggest a narrower sensitive window period for good CI outcomes for implantees with OTOF mutation rather than the GJB2 and other genes. CONCLUSION Current molecular genetic testing including deafness panel sequencing helps to predict the 2-year follow-up outcomes after CI in prelingually deafened children. GD cochlear implantees show better functional outcomes after CI than undiagnosed cochlear implantees as determined by deafness panel sequencing, suggesting a genotype-functional outcome correlation. The genetic testing may provide a customized optimal window period in terms of CI timing for favorable outcome according to genetic etiology.
34. Cochlear Implantation in Siblings With Refsum’s Disease.

**Author(s):** Stähr, Kerstin; Kuechler, Alma; Gencik, Martin; Arnolds, Judith; Dendy, Meaghan; Lang, Stephan; Arweiler-Harbeck, Diana

**Source:** The Annals of otology, rhinology, and laryngology; Aug 2017; vol. 126 (no. 8); p. 611-614

**Publication Date:** Aug 2017

**Publication Type(s):** Case Reports Journal Article

**PubMedID:** 28681609

**Abstract:**

**OBJECTIVES** Whether the origin of severe hearing loss in Refsum’s syndrome is caused by cochlear impairment or retrocochlear degeneration remains unclear. This case report aims to investigate hearing performance before and after cochlear implantation to shed light on this question. Also, identification of new mutations causing Refsum’s syndrome would be helpful in generating additional means of diagnosis.

**METHODS** A family of 4 individuals was subjected to genetic testing. Two siblings (56 and 61 years old) suffered from severe hearing and vision loss and received bilateral cochlear implants. Genetic analysis, audiological outcome, and clinical examinations were performed.

**RESULTS** One new mutation in the PHYH gene (c.768del63bp) causing Refsum’s disease was found. Preoperative distortion product otoacoustic emissions (DPOAEs) were absent. Postoperative speech perception in Freiburger speech test was 100% for bisyllabic words and 85% (patient No. 1) and 65% (patient No. 2), respectively, for monosyllabic words. Five years after implantation, speech perception remained stable for bisyllabic words but showed decreasing capabilities for monosyllabic words.

**DISCUSSION** A new mutation causing Refsum’s disease is presented. Cochlear implantation in case of severe hearing loss leads to an improvement in speech perception and should be recommended for patients with Refsum’s disease, especially when the hearing loss is combined with a severe loss of vision. Decrease of speech perception in the long-term follow-up could indicate an additional retrocochlear degeneration.

**Database:** Medline


**Author(s):** Deep, Nicholas L; Besch-Stokes, Jake G; Lane, John I; Driscoll, Colin L W; Carlson, Matthew L

**Source:** Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology; Jul 2017; vol. 38 (no. 6); p. 907-915

**Publication Date:** Jul 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28498272

**Abstract:**

**OBJECTIVES** To report a contemporary review from a single-institution series on Paget's disease of the temporal bone (PDTB).

**STUDY DESIGN** Retrospective chart review of patients evaluated from 1998 to 2016.

**SETTING** Quaternary referral center.

**PATIENTS** Patients with radiographically confirmed PDTB.

**MAIN OUTCOME MEASURES** Clinical, audiological, and radiological features and
management strategies of PDTB. RESULTS A total of 50 temporal bones in 27 patients (15 men) were diagnosed with PDTB. Symptoms at presentation included hearing loss (n = 23, 85%), headache (n = 18, 67%), dizziness (n = 14, 52%), tinnitus (n = 5, 19%), chronic otitis media (n = 2, 7%), hemifacial spasm without facial paralysis (n = 1, 4%), multiple cranial neuropathies (n = 1, 4%), and neoplastic transformation (n = 1, 4%). Of the 23 ears with audiometric data available for review, 65% exhibited sensorineural hearing loss, and 35% mixed hearing loss. Long-term audiometric follow-up was available on two patients, both of whom demonstrated hearing loss at a rate greater than would be expected for normal aging. Two patients underwent successful cochlear implantation, achieving open-set speech recognition. Radiographic features of temporal bone involvement are reviewed and illustrated. CONCLUSION This is the largest single-institution clinical series examining patients with PDTB in the English literature. Variable patterns of temporal bone involvement by Paget’s disease are observed leading to a diverse set of clinical symptoms, including slowly progressive hearing loss, tinnitus, compressive cranial neuropathies, and benign or malignant tumorigenesis. Involvement typically begins in the petrous apex and progresses laterally. Otic capsule bone demineralization occurs late in the disease process. Cochlear implantation appears to be an effective management strategy for patients with severe-to-profound hearing loss.

Database: Medline


Author(s): Nair, Erika L; Sousa, Rhonda; Wannagot, Shannon

Source: Journal of the American Academy of Audiology; ; vol. 28 (no. 7); p. 625-635

Publication Type(s): Journal Article

PubMedID: 28722645

Abstract: BACKGROUND Guidelines established by the AAA currently recommend behavioral testing when fitting frequency modulated (FM) systems to individuals with cochlear implants (CIs). A protocol for completing electroacoustic measures has not yet been validated for personal FM systems or digital modulation (DM) systems coupled to CI sound processors. In response, some professionals have used or altered the AAA electroacoustic verification steps for fitting FM systems to hearing aids when fitting FM systems to CI sound processors. More recently steps were outlined in a proposed protocol. PURPOSE The purpose of this research is to review and compare the electroacoustic test measures outlined in a 2013 article by Schafer and colleagues in the Journal of the American Academy of Audiology titled "A Proposed Electroacoustic Test Protocol for Personal FM Receivers Coupled to Cochlear Implant Sound Processors" to the AAA electroacoustic verification steps for fitting FM systems to hearing aids when fitting DM systems to CI users. RESEARCH DESIGN Electroacoustic measures were conducted on 71 CI sound processors and Phonak Roger DM systems using a proposed protocol and an adapted AAA protocol. Phonak's recommended default receiver gain setting was used for each CI sound processor manufacturer and adjusted if necessary to achieve transparency. STUDY SAMPLE Electroacoustic measures were conducted on Cochlear and Advanced Bionics (AB) sound processors. In this study, 28 Cochlear Nucleus 5/CP810 sound processors, 26 Cochlear Nucleus 6/CP910 sound processors, and 17 AB Naida CI Q70 sound processors were coupled in various combinations to Phonak Roger DM dedicated receivers (25 Phonak Roger 14 receivers-Cochlear dedicated receiver-and 9 Phonak Roger 17 receivers-AB dedicated receiver) and 20 Phonak Roger Inspiro transmitters. DATA COLLECTION AND ANALYSIS Employing both the AAA and the Schafer et al protocols, electroacoustic measurements were conducted with the Audioscan Verifit in a clinical setting on 71 CI sound processors and Phonak
Roger DM systems to determine transparency and verify FM advantage, comparing speech inputs (65 dB SPL) in an effort to achieve equal outputs. If transparency was not achieved at Phonak’s recommended default receiver gain, adjustments were made to the receiver gain. The integrity of the signal was monitored with the appropriate manufacturer’s monitor earphones.

RESULTS Using the AAA hearing aid protocol, 50 of the 71 CI sound processors achieved transparency, and 59 of the 71 CI sound processors achieved transparency when using the proposed protocol at Phonak’s recommended default receiver gain. After the receiver gain was adjusted, 3 of 21 CI sound processors still did not meet transparency using the AAA protocol, and 2 of 12 CI sound processors still did not meet transparency using the Schafer et al proposed protocol.

CONCLUSIONS Both protocols were shown to be effective in taking reliable electroacoustic measurements and demonstrate transparency. Both protocols are felt to be clinically feasible and to address the needs of populations that are unable to reliably report regarding the integrity of their personal DM systems.

Database: Medline

Author(s): Ingo, Elisabeth; Brännström, K Jonas; Andersson, Gerhard; Lunner, Thomas; Laplante-Lévesque, Ariane
Source: International journal of audiology; Jul 2017; vol. 56 (no. 7); p. 516-520
Publication Date: Jul 2017
Publication Type(s): Journal Article
PubMedID: 28420270
Abstract: OBJECTIVE In a clinical setting, theories of health behaviour change could help audiologists and other hearing health care professionals understand the barriers that prevent people with hearing problems to seek audiological help. The transtheoretical (stages of change) model of health behaviour change is one of these theories. It describes a person’s journey towards health behaviour change (e.g. seeking help or taking up rehabilitation) in separate stages: precontemplation, contemplation, preparation, action, and, finally, maintenance. A short self-assessment measure of stages of change may guide the clinician and facilitate first appointments. This article describes correlations between three stages of change measures of different lengths, one 24-item and two one-item.

DESIGN Participants were recruited through an online hearing screening study. Adults who failed the speech-in-noise recognition screening test and who had never undergone a hearing aid fitting were invited to complete further questionnaires online, including the three stages of change measures.

STUDY SAMPLE In total, 224 adults completed the three measures.

RESULTSA majority of the participants were categorised as being in one of the information- and help-seeking stage of change (contemplation or preparation). The three stages of change measures were significantly correlated. Conclusions Our results support further investigating the use of a one-item measure to determine stages of change in people with hearing impairment.

Database: Medline

38. Practical guidelines to minimise language and cognitive confounds in the diagnosis of CAPD: a brief tutorial.
Author(s): Chermak, Gail D; Bamiou, Doris-Eva; Vivian Iliadou, Vasiliki; Musiek, Frank E
OBJECTIVE To provide audiologists with strategies to minimise confounding cognitive and language processing variables and accurately diagnose central auditory processing disorder (CAPD).

DESIGN Tutorial.

STUDY SAMPLE None.

RESULTS Strategies are reviewed to minimise confounding cognitive and language processing variables and accurately diagnose CAPD.

CONCLUSIONS Differential diagnosis is exceedingly important and can be quite challenging. Distinguishing between two or more conditions presenting with similar symptoms or attributes requires multidisciplinary, comprehensive assessment. To ensure appropriate interventions, the audiologist is a member of the multidisciplinary team responsible for determining whether there is an auditory component to other presenting deficits or whether one condition is responsible for the symptoms seen in another. Choice of tests should be guided both by the symptoms of the affected individual, as established in an in-depth interview and case history, the individual’s age and primary language, and by the specific deficits reported to be associated with specific clinical presentations. Knowing which tests are available, their strengths and limitations, the processes assessed, task and response requirements, and the areas of the central auditory nervous system (CANS) to which each test is most sensitive provides the audiologist with critical information to assist in the differential diagnostic process.

Database: Medline

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Author(s): Micarelli, Alessandro; Chiaravalloti, Agostino; Viziano, Andrea; Danieli, Roberta; Schillaci, Orazio; Alessandrini, Marco

Source: Hearing research; Jul 2017; vol. 350; p. 91-99

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28460253

Abstract: Results in studies concerning cortical changes in idiopathic sudden sensorineural hearing loss (ISSNHL) are not homogeneous, in particular due to the different neuroimaging techniques implemented and the diverse stages of ISSNHL studied. Considering the recent advances in state-of-the-art positron emission tomography (PET) cameras, the aim of this study was to gain more insight into the neuroanatomical differences associated with the earliest stages of unilateral ISSNHL and clinical-perceptual performance changes. After an audiological examination including the mean auditory threshold (mean AT), mean speech discrimination score (mean SDS) and Tinnitus Handicap Inventory (THI), 14 right-handed ISSNHL patients underwent brain [18F]fluorodeoxyglucose (FDG)-PET within 72 h of the onset of symptoms. When compared to an homogeneous group of 35 healthy subjects by means of statistical parametric mapping, a relative increase in FDG uptake was found in the right superior and medial frontal gyrus as well as in the right anterior cingulate cortex in ISSNHL patients. Conversely, the same group showed a significant relative decrease in FDG uptake in the right middle temporal, precentral and postcentral gyrus as well as in the left posterior cingulate cortex, left lingual, superior, middle temporal and middle frontal gyrus and in the left insula.
Regression analysis showed a positive correlation between mean THI and glucose consumption in the right anterior cingulate cortex and a positive correlation between mean SDS and glucose consumption in the left precentral gyrus. The relative changes in FDG uptake found in these brain regions and the positive correlation with mean SDS and THI scores in ISSNHL could possibly highlight new aspects of cerebral rearrangement, contributing to further explain changes in those functions that support speech recognition during the sudden impairment of unilateral auditory input.

**Database:** Medline


**Author(s):** Vander Werff, Kathy R; Rieger, Brian

**Source:** Ear and hearing; ; vol. 38 (no. 4); p. e200

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

**PubMedID:** 28319479

**Abstract:** OBJECTIVITY: The primary aim of this study was to assess subcortical auditory processing in individuals with chronic symptoms after mild traumatic brain injury (mTBI) by measuring auditory brainstem responses (ABRs) to standard click and complex speech stimuli. Consistent with reports in the literature of auditory problems after mTBI (despite normal-hearing thresholds), it was hypothesized that individuals with mTBI would have evidence of impaired neural encoding in the auditory brainstem compared to noninjured controls, as evidenced by delayed latencies and reduced amplitudes of ABR components. We further hypothesized that the speech-evoked ABR would be more sensitive than the click-evoked ABR to group differences because of its complex nature, particularly when recorded in a background noise condition.

**DESIGN:** Click- and speech-ABRs were collected in 32 individuals diagnosed with mTBI in the past 3 to 18 months. All mTBI participants were experiencing ongoing injury symptoms for which they were seeking rehabilitation through a brain injury rehabilitation management program. The same data were collected in a group of 32 age- and gender-matched controls with no history of head injury. ABRs were recorded in both left and right ears for all participants in all conditions. Speech-ABRs were collected in both quiet and in a background of continuous 20-talker babble ipsilateral noise. Peak latencies and amplitudes were compared between groups and across subgroups of mTBI participants categorized by their behavioral auditory test performance.

**RESULTS:** Click-ABR results were not significantly different between the mTBI and control groups. However, when comparing the control group to only those mTBI subjects with measurably decreased performance on auditory behavioral tests, small differences emerged, including delayed latencies for waves I, III, and V. Similarly, few significant group differences were observed for peak amplitudes and latencies of the speech-ABR when comparing at the whole group level but were again observed between controls and those mTBI subjects with abnormal behavioral auditory test performance. These differences were seen for the onset portions of the speech-ABR waveforms in quiet and were close to significant for the onset wave. Across groups, quiet versus noise comparisons were significant for most speech-ABR measures but the noise condition did not reveal more group differences than speech-ABR in quiet, likely because of variability and overall small amplitudes in this condition for both groups.

**CONCLUSION:** The outcomes of this study indicate that subcortical neural encoding of auditory information is affected in a significant portion of individuals with long-term problems after mTBI. These subcortical differences appear to relate to performance on tests of auditory processing and perception, even in the absence of significant hearing loss on the audiogram. While confounds of age and slight differences in audiometric thresholds cannot be ruled out, these preliminary results
are consistent with the idea that mTBI can result in neuronal changes within the subcortical auditory pathway that appear to relate to functional auditory outcomes. Although further research is needed, clinical audiological evaluation of individuals with ongoing post-mTBI symptoms is warranted for identification of individuals who may benefit from auditory rehabilitation as part of their overall treatment plan.

**Database:** Medline

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### 41. Management and outcomes of cochlear implantation in patients with congenital cytomegalovirus (cCMV)-related deafness.

**Author(s):** Hoey, Andrew Wesley; Pai, Irumee; Driver, Sandra; Connor, Steve; Wraige, Elizabeth; Jiang, Dan

**Source:** Cochlear implants international; Jul 2017; vol. 18 (no. 4); p. 216-225

**Publication Date:** Jul 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28485697

**Abstract:** Objective: Congenital Cytomegalovirus (cCMV) is a well-defined cause for neonatal mortality and morbidity, particularly sensorineural hearing loss and other neurodevelopmental disruption. We present a retrospective study which provides an overview of the assessment and preoperative work-up for patients diagnosed with cCMV and their cochlear implant (CI) outcomes.

**METHOD**

This was a retrospective case series study of all children with a confirmed diagnosis of cCMV who underwent cochlear implantation at St Thomas' Hospital from 2003 to 2015. Data were collected on the preoperative audiology, imaging findings, and neurological assessment. CI outcomes were measured using the Speech Intelligibility Rating (SIR), Category of Auditory Performance (CAP), and Infant-Toddler Meaningful Auditory Integration Scale (IT-MAIS).

**RESULT**

Eleven patients underwent cochlear implantation, 45% had severe-to-profound hearing loss, and 55% had bilateral profound hearing loss. The mean age at initial assessment was 2.1 years (median 1.7, range 0.6-7.5) and the mean age of implantation was 4.0 years (median 2.5, range 0.9-11.8). The mean length of follow-up was 4.8 years (median 2.3, range 1.5-14). Six patients had bilateral simultaneous implantation (55%), four bilateral sequential (36%), and one unilateral (9%). Nine patients had white matter changes on magnetic resonance imaging, largely in the periventricular and cortical regions. Of the 11 patients, 4 (36%) had associated neurological comorbidities and 3 (27%) had additional neurocognitive developmental delay of varying severity. The majority of patients showed improvement in auditory outcomes. No statistically significant correlation was found between age of implantation, neurocognitive, and neurological comorbidities or length of follow-up and hearing outcomes.

**CONCLUSION**

While the overall outcomes were mixed, most children in our cohort were found to benefit from cochlear implantation. Our data also highlight the significant neurodevelopmental comorbidities associated with cCMV and their negative impact on CI outcomes. With the recent advances in medical treatment, this underlines the importance of multidisciplinary management of these patients.

**Database:** Medline

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### 42. Computer-assisted CI fitting: Is the learning capacity of the intelligent agent FOX beneficial for speech understanding?

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OBJECTIVE: The software application FOX ('Fitting to Outcome eXpert') is an intelligent agent to assist in the programming of cochlear implant (CI) processors. The current version utilizes a mixture of deterministic and probabilistic logic which is able to improve over time through a learning effect. This study aimed at assessing whether this learning capacity yields measurable improvements in speech understanding.

METHODS: A retrospective study was performed on 25 consecutive CI recipients with a median CI use experience of 10 years who came for their annual CI follow-up fitting session. All subjects were assessed by means of speech audiometry with open set monosyllables at 40, 55, 70, and 85 dB SPL in quiet with their home MAP. Other psychoacoustic tests were executed depending on the audiologist's clinical judgment. The home MAP and the corresponding test results were entered into FOX. If FOX suggested to make MAP changes, they were implemented and another speech audiometry was performed with the new MAP.

RESULTS: FOX suggested MAP changes in 21 subjects (84%). The within-subject comparison showed a significant median improvement of 10, 3, 1, and 7% at 40, 55, 70, and 85 dB SPL, respectively. All but two subjects showed an instantaneous improvement in their mean speech audiometric score.

DISCUSSION: Persons with long-term CI use, who received a FOX-assisted CI fitting at least 6 months ago, display improved speech understanding after MAP modifications, as recommended by the current version of FOX. This can be explained only by intrinsic improvements in FOX's algorithms, as they have resulted from learning. This learning is an inherent feature of artificial intelligence and it may yield measurable benefit in speech understanding even in long-term CI recipients.

43. Considerations for Pediatric Cochlear Implant Recipients With Unilateral or Asymmetric Hearing Loss: Assessment, Device Fitting, and Habilitation.

Purpose: The purpose of this clinical report is to present case studies of children who are nontraditional candidates for cochlear implantation because they have significant residual hearing in 1 ear and to describe outcomes and considerations for their audiological management and
Method

Case information is presented for 5 children with profound hearing loss in 1 ear and normal or mild-to-moderate hearing loss in the opposite ear and who have undergone unilateral cochlear implantation. Pre- and postoperative assessments were performed per typical clinic routines with modifications described. Postimplant habilitation was customized for each recipient using a combination of traditional methods, newer technologies, and commercial materials.

Results

The 5 children included in this report are consistent users of their cochlear implants and demonstrate speech recognition in the implanted ear when isolated from the better hearing ear.

Conclusions

Candidacy criteria for cochlear implantation are evolving. Children with single-sided deafness or asymmetric hearing loss who have traditionally not been considered candidates for cochlear implantation should be evaluated on a case-by-case basis. Audiological management of these recipients is not vastly different compared with children who are traditional cochlear implant recipients. Assessment and habilitation techniques must be modified to isolate the implanted ear to obtain accurate results and to provide meaningful therapeutic intervention.

Database: Medline

44. [Prevalence, Risk Factors and Diagnostics of Hearing Impairment in Preterm Infants].

Author(s): Franck, C; Vorwerk, W; Köhn, A; Rißmann, A; Vorwerk, U

Source: Laryngo-rhino-otologie; Jun 2017; vol. 96 (no. 6); p. 354-360

Publication Date: Jun 2017

Publication Type(s): English Abstract Journal Article

PubMedID: 28697513

Abstract: Introduction: The preterm birth is clearly associated with increased risk of developing congenital hearing impairment. Therefore, special attention must be paid to the postnatal control of auditory function in all preterm infants. The present work investigates if the latest scientific findings regarding prevalence, clinical diagnostics, therapy and risk factors of hearing impairment in premature infants are regularly implemented in daily practice. Methods: At the department of phoniatrics and pediatric audiology of the University Hospital of Magdeburg, the treatment data of 126 preterm children born between 2006 and 2011 were evaluated retrospectively. The additional analysis of all records available at the screening center (n=67 640) covering this period enables drawing conclusions on the total number and prevalence of hearing impairment in preterm infants in Saxony-Anhalt. Results: Almost all premature babies, like mature newborns, underwent postnatal hearing screening of both ears. The data analysis shows that the practical implementation often does not comply with the guideline of the G-BA (Gemeinsamer Bundesausschuss) in all details. For example, the recommended screening method for preterm infants (AABR) or the screening and treatment timing are not always applied in accordance with the guidelines of the G-BA. Discussion: Assessment of the practical implementation of universal newborn hearing screening was planned at the time of the introduction of the hearing screening program by the G-BA. As a part of this investigation, the practical care of vulnerable groups such as preterm infants must be given special attention. Based on the collected data, the diagnostics and therapy should be unified. Regardless of the maternity clinic where the infants were born, there should be the same opportunity for early diagnosis and thus for prognostically better treatment of congenital hearing impairment. Rapid postnatal fitting with hearing aid can stimulate the maturation of the central auditory system and potentially help to avoid problems of hearing and speech development.

Database: Medline

**Author(s):** Serra, A; Spinato, G; Cocuzza, S; Licciardello, L; Pavone, P; Maiolino, L

**Source:** Acta otorhinolaryngologica Italica : organo ufficiale della Societa italiana di otorinolaringologia e chirurgia cervico-facciale; Jun 2017; vol. 37 (no. 3); p. 175-179

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28516959

Available at Acta Otorhinolaryngologica Italica - from Europe PubMed Central - Open Access

**Abstract:** The present research deals with the clinical and social problems present during linguistic and cognitive development of deaf children. Currently, the development of Theory of Mind represents an important research field in deafness studies. These international studies highlighted a significant alteration in the development of Theory of Mind in deaf children compared to normal hearing children, especially in cases of congenital or preverbal hearing loss. In particular, the research focuses on the skills of deaf children in recognising emotions and desires, through both perceptive and cognitive methods, by evaluation of psycho-cognitive skills of children with severe hearing loss using a set of questions to be administered to hearing loss patients. The experiment was performed on a group composed of 10 children (5 males and 5 females) aged 4 to 9 years and 54 to 108 months, affected by bilateral congenital hearing loss (severe to total), or hearing loss that developed in preverbal children the year before entering elementary school, or during the fourth year of elementary school. The selection criteria were based on: audiologic evaluation, neuro-psychological tests administered to assess general, cognitive as well as praxis and perceptive abilities, and clinical observations performed to assess psychopathology using tests that assess development of both visual perceptive (Coloured Progressive Matrices) and graphic representational abilities (Test of Human Figure Drawings and the Family Drawing Test). The instrument "cognitive" was the "Deaf Children Series", arranged by us, that consists of a mental status examination (MSE) that evaluates: level of cognitive (knowledge-related) ability, emotional mood, and speech and thought patterns at the time of evaluation. Deaf children show a reduced responsiveness to the expressions of sadness on the perceptive side. Through the test, we observed a psychodynamic defense mechanism considering perceptive understanding performance. On the contrary, in normal hearing children, the emotion ‘fear’ is the most difficult to identify. Deaf children seem to be more susceptible to recognition of visual emotions. Furthermore, deaf children present significant problem-solving skills and emotional recognition skills, possibly as a result of their hearing impairment.

**Database:** Medline

46. Research about suppression effect and auditory processing in individuals who stutter.

**Author(s):** Arcuri, Cláudia Fassin; Schiefer, Ana Maria; Azevedo, Marisa Frasson de

**Source:** CoDAS; May 2017; vol. 29 (no. 3); p. e20160230

**Publication Date:** May 2017

**Publication Type(s):** Journal Article Observational Study

**PubMedID:** 28538833

Available at CoDAS - from EBSCO (MEDLINE Complete)
Abstract: Purpose To verify the auditory processing abilities and occurrence of the suppression effect of Otoacoustic Emissions (OAE) in individuals who stutter. Methods The study sample comprised 15 adult individuals who stutter, aged 18-40 years, with stuttering severity ranging from mild to severe, paired according to gender, age, and schooling with individuals without speech complaint or disorder. All participants underwent conventional clinical evaluation, specific stuttering assessment, and basic (audiometry, imitanciometry, and measurement of acoustic reflexes) and specific (auditory processing evaluation and measurement of suppression effect of OAEs) audiological assessments. Data were statistically analyzed with application of the Fisher's Exact Test and the Mann-Whitney Test. Results The group of individuals who stutter (Study Group - SG) presented higher incidence of auditory processing disorders. The auditory processing assessments used to differentiate the groups of stutters and non-stutters (Control Group - CG) were the Nonverbal Dichotic Test and the Frequency Pattern Test. The SG presented higher incidence of absence of suppression effect of OAEs, indicating abnormal functioning of the efferent medial olivocochlear system. Conclusion The auditory processing abilities investigated in this study differentiate individuals who stutter from non-stutters, with greater changes in the first. Functioning of the efferent medial olivocochlear system showed a deficit in stutterers, indicating difficulties in auditory discrimination, especially in the presence of noise.

Database: Medline
Feasibility and effectiveness of Ida Telecare tools for audiology patients

Summary
Background and study aims
The Ida Institute has developed a range of easy-to-use online tools designed to help people with hearing loss prepare for audiology appointments, make important decisions related to their hearing healthcare, and successfully manage everyday communication. Thinking about these things ahead of time can help patients feel better prepared when deciding with the clinician how best to manage their hearing loss. Patients who make choices that are right for them (such as obtaining a hearing aid, or not), are more likely to live well with their hearing loss. This study will assess how adults attending an NHS audiology clinic use the Ida telecare tools and when (feasibility) and how effective the ‘Why Improve My Hearing?’ tool is at improving their outcomes (effectiveness). The feasibility part of the study will look at how often the tools are used by patients by also identifying what the ‘active ingredients’ of the tools are to change health behaviour, and anything that helps or hinders patients’ use of the tools. The effectiveness part of the study is interested to see if patients who complete the ‘Why Improve My Hearing?’ tool before they visit the audiology clinic have better outcomes compared to people who do not. We will also have in-depth discussions with patients and audiologists about what they think of the Tool.

Who can participate?
Adults aged 18 and older who have hearing loss.

What does the study involve?
The Ida Telecare Platform use unique telecare tools that help improve communication, improving hearing, effective tips and tricks for successful communications and common difficulties and solutions. Participants are randomly allocated to one of the two sub-studies (feasibility or effectiveness). Those in the feasibility study select whether or not they wish to use any (or all) of the Ida telephone tolls prior to the hearing assessment, hearing air fitting and follow-up appointments. Those in the effectiveness complete the ‘Why Improve My Hearing’ telecare tool prior to their hearing assessment appointment. This is discussed with the audiologist. The feasibility study assesses if the tools are usable and the participants and audiologists perceptions and experiences of using the telecare tools. The effectiveness of the study is assessed by looking at the benefits of the hearing aids, quality of life, social participation, patient activation, readiness to take up hearing aids and the consequences of hearing aids.

What are the possible benefits and risks of participating?
Participants may benefit from improvements in their communication. It is not expected that this research will pose any risk to participants. None of the tools, quantitative outcome measures or qualitative data collection methods are likely to cause any harm, distress or adverse reaction to adults with hearing loss. There are no likely ethical, legal or management issues arising from this research. Study participants will have ample time to complete tools and outcomes, including breaks where required.

Where is the study run from?
Queens Medical Centre (UK)

When is the study starting and how long is it expected to run for?
June 2017 to August 2018

Who is funding the study?
Ida Institute (UK)
Who is the main contact?
Dr Helen Henshaw (Scientific)
helen.henshaw@nottingham.ac.uk

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Please note that information provided in this update is collated from a variety of sources but coverage of the topic is not comprehensive.

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