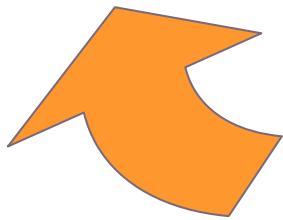


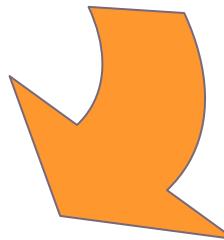
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SPEECH & LANGUAGE THERAPY UPDATE 7: WINTER 2017



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Articles (JULY 2017 – DECEMBER 2017)

APHASIA

Cerebellar induced differential polyglot aphasia: A neurolinguistic and fMRI study.

Author(s): Mariën, Peter; van Dun, Kim; Vanormaele, Johanna; Vandenborre, Dorien; Keulen, Stefanie; Manto, Mario; Verhoeven, Jo; Abutalebi, Jubin

Source: Brain & Language; Dec 2017; vol. 175 ; p. 18-28

Publication Date: Dec 2017

Publication Type(s): Academic Journal

PubMedID: 28917165

Abstract: Research has shown that linguistic functions in the bilingual brain are subserved by similar neural circuits as in monolinguals, but with extra-activity associated with cognitive and attentional control. Although a role for the right cerebellum in multilingual language processing has recently been acknowledged, a potential role of the left cerebellum remains largely unexplored. This paper reports the clinical and fMRI findings in a strongly right-handed (late) multilingual patient who developed differential polyglot aphasia, ataxic dysarthria and a selective decrease in executive function due to an ischemic stroke in the left cerebellum. fMRI revealed that lexical-semantic retrieval in the unaffected L1 was predominantly associated with activations in the left cortical areas (left prefrontal area and left postcentral gyrus), while naming in two affected non-native languages recruited a significantly larger bilateral functional network, including the cerebellum. It is hypothesized that the left cerebellar insult resulted in decreased right prefrontal hemisphere functioning due to a loss of cerebellar impulses through the cerebello-cerebral pathways.

Database: CINAHL

Predicting clinical decline in progressive agrammatic aphasia and apraxia of speech.

Author(s): Whitwell, Jennifer L.; Weigand, Stephen D.; Duffy, Joseph R.; Clark, Heather M.; Strand, Edythe A.; Machulda, Mary M.; Spychalla, Anthony J.; Senjem, Matthew L.; Jack, Jr., Clifford R.; Josephs, Keith A.; Jack, Clifford R Jr

Source: Neurology; Nov 2017; vol. 89 (no. 22); p. 2271-2279

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 29093069

Available at [Neurology](#) - from Ovid (Journals @ Ovid)

Abstract: Objective: To determine whether baseline clinical and MRI features predict rate of clinical decline in patients with progressive apraxia of speech (AOS). Methods: Thirty-four patients with progressive AOS, with AOS either in isolation or in the presence of agrammatic aphasia, were followed up longitudinally for up to 4 visits, with clinical testing and MRI at each visit. Linear mixed-effects regression models including all visits ($n = 94$) were used to assess baseline clinical and MRI variables that predict rate of worsening of aphasia, motor speech, parkinsonism, and behavior. Clinical predictors included baseline severity and AOS type. MRI predictors included baseline frontal, premotor, motor, and striatal gray matter volumes. Results: More severe parkinsonism at baseline was associated with faster rate of decline in parkinsonism. Patients with predominant sound distortions (AOS type 1) showed faster rates of decline in aphasia and motor speech, while patients

with segmented speech (AOS type 2) showed faster rates of decline in parkinsonism. On MRI, we observed trends for fastest rates of decline in aphasia in patients with relatively small left, but preserved right, Broca area and precentral cortex. Bilateral reductions in lateral premotor cortex were associated with faster rates of decline of behavior. No associations were observed between volumes and decline in motor speech or parkinsonism. Conclusions: Rate of decline of each of the 4 clinical features assessed was associated with different baseline clinical and regional MRI predictors. Our findings could help improve prognostic estimates for these patients.

Database: CINAHL

Cantonese Tone Perception for Children Who Use a Hearing Aid and a Cochlear Implant in Opposite Ears.

Author(s): Mok, Mansze; Holt, Colleen M.; Lee, Kathy Y. S.; Dowell, Richard C.; Vogel, Adam P.

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6)

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28678079

Abstract: Objectives: The ability to recognize tones is vital for speech perception in tonal languages. Cantonese has six tones, which are differentiated almost exclusively by pitch cues (tones 1 to 6). The differences in pitch contours among the tones are subtle, making Cantonese a challenging language for cochlear implant users. The addition of a hearing aid has been shown to improve speech perception in nontonal languages and in Mandarin Chinese. This study (1) investigates the Cantonese tone perception ability of children who use a cochlear implant and a hearing aid in opposite ears; (2) evaluates the effect of varying pitch height and pitch contour cues on Cantonese tone perception for these children; and (3) compares the Cantonese tone perception ability for using a hearing aid and a cochlear implant together versus an implant alone. Design: Eight native Cantonese speaking children using a cochlear implant and a hearing aid in opposite ears were assessed for tone perception and word identification. The tone perception test involved discriminating and ranking tone pairs from natural and artificially manipulated Cantonese tones with various pitch heights and/or pitch contours. The word identification test involved identifying Cantonese words in a four-alternative forced-choice task. All tests were performed in two device conditions: (1) cochlear implant and hearing aid together and (2) implant alone. Results: Seven of the 8 subjects performed significantly above chance in both tests using the cochlear implant alone. Results showed that both pitch height and/or pitch direction were important perceptual cues for implant users. Perception for some tones was improved by increasing the pitch height differences between the tones. The ability to discriminate and rank the tone 2/tone 5 contrast and the tone 4/tone 6 contrast was poor, as the tones in these contrasts are similar in pitch contours and onset frequencies. No significant improvement was observed after artificially increasing the pitch offset differences between the tones in the tone 2/tone 5 and the tone 4/tone 6 contrasts. Tone perception results were significantly better with the addition of the hearing aid in the nonimplanted ear compared with using the implant alone; however, word identification results were not significantly different between using the implant alone and using both the hearing aid and the implant together. None of the subjects performed worse in tone perception or in word identification when the hearing aid was added. Conclusions: Reduced ability to perceive pitch contour cues, even when artificially exaggerated, may explain some of the difficulties in Cantonese word recognition for implant users. The addition of a contralateral hearing aid could be beneficial for Cantonese tone perception for some individuals with a unilateral implant. The results encouraged Cantonese speakers to trial a hearing aid in the nonimplanted ear when using a cochlear implant.

Database: CINAHL

Age-Related Differences in the Processing of Temporal Envelope and Spectral Cues in a Speech Segment.

Author(s): Goupell, Matthew J.; Gaskins, Casey R.; Shader, Maureen J.; Walter, Erin P.; Anderson, Samira; Gordon-Salant, Sandra

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6)

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28562426

Abstract: Objectives: As people age, they experience reduced temporal processing abilities. This results in poorer ability to understand speech, particularly for degraded input signals. Cochlear implants (CIs) convey speech information via the temporal envelopes of a spectrally degraded input signal. Because there is an increasing number of older CI users, there is a need to understand how temporal processing changes with age. Therefore, the goal of this study was to quantify age-related reduction in temporal processing abilities when attempting to discriminate words based on temporal envelope information from spectrally degraded signals. Design: Younger normal-hearing (YNH) and older normal-hearing (ONH) participants were presented a continuum of speech tokens that varied in silence duration between phonemes (0 to 60 ms in 10-ms steps), and were asked to identify whether the stimulus was perceived more as the word "dish" or "ditch." Stimuli were vocoded using tonal carriers. The number of channels (1, 2, 4, 8, 16, and unprocessed) and temporal envelope low-pass filter cutoff frequency (50 and 400 Hz) were systematically varied. Results: For the unprocessed conditions, the YNH participants perceived the word ditch for smaller silence durations than the ONH participants, indicating that aging affects temporal processing abilities. There was no difference in performance between the unprocessed and 16-channel, 400-Hz vocoded stimuli. Decreasing the number of spectral channels caused decreased ability to distinguish dish and ditch. Decreasing the envelope cutoff frequency also caused decreased ability to distinguish dish and ditch. The overall pattern of results revealed that reductions in spectral and temporal information had a relatively larger effect on the ONH participants compared with the YNH participants. Conclusions: Aging reduces the ability to utilize brief temporal cues in speech segments. Reducing spectral information-as occurs in a channel vocoder and in CI speech processing strategies-forces participants to use temporal envelope information; however, older participants are less capable of utilizing this information. These results suggest that providing as much spectral and temporal speech information as possible would benefit older CI users relatively more than younger CI users. In addition, the present findings help set expectations of clinical outcomes for speech understanding performance by adult CI users as a function of age.

Database: CINAHL

Impact of Noise and Noise Reduction on Processing Effort: A Pupillometry Study.

Author(s): Wendt, Dorothea; Hietkamp, Renskje K.; Lunner, Thomas

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6); p. 690-700

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28640038

Abstract: Objectives: Speech perception in adverse listening situations can be exhausting. Hearing loss particularly affects processing demands, as it requires increased effort for successful speech

perception in background noise. Signal processing in hearing aids and noise reduction (NR) schemes aim to counteract the effect of noise and reduce the effort required for speech recognition in adverse listening situations. The present study examined the benefit of NR schemes, applying a combination of a digital NR and directional microphones, for reducing the processing effort during speech recognition.Design: The effect of noise (intelligibility level) and different NR schemes on effort were evaluated by measuring the pupil dilation of listeners. In 2 different experiments, performance accuracy and peak pupil dilation (PPD) were measured in 24 listeners with hearing impairment while they performed a speech recognition task. The listeners were tested at 2 different signal to noise ratios corresponding to either the individual 50% correct (L50) or the 95% correct (L95) performance level in a 4-talker babble condition with and without the use of a NR scheme.Results: In experiment 1, the PPD differed in response to both changes in the speech intelligibility level (L50 versus L95) and NR scheme. The PPD increased with decreasing intelligibility, indicating higher processing effort under the L50 condition compared with the L95 condition. Moreover, the PPD decreased when the NR scheme was applied, suggesting that the processing effort was reduced. In experiment 2, 2 hearing aids using different NR schemes (fast-acting and slow-acting) were compared. Processing effort changed as indicated by the PPD depending on the hearing aids and therefore on the NR scheme. Larger PPDs were measured for the slow-acting NR scheme.Conclusions: The benefit of applying an NR scheme was demonstrated for both L50 and L95, that is, a situation at which the performance level was at a ceiling. This opens the opportunity for new means of evaluating hearing aids in situations in which traditional speech reception measures are shown not to be sensitive.

Database: CINAHL

Data-driven classification of patients with primary progressive aphasia.

Author(s): Hoffman, Paul; Sajjadi, Seyed Ahmad; Patterson, Karalyn; Nestor, Peter J.

Source: Brain & Language; Nov 2017; vol. 174 ; p. 86-93

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28803212

Abstract: Current diagnostic criteria classify primary progressive aphasia into three variants-semantic (sv), nonfluent (nfv) and logopenic (lv) PPA-though the adequacy of this scheme is debated. This study took a data-driven approach, applying k-means clustering to data from 43 PPA patients. The algorithm grouped patients based on similarities in language, semantic and non-linguistic cognitive scores. The optimum solution consisted of three groups. One group, almost exclusively those diagnosed as svPPA, displayed a selective semantic impairment. A second cluster, with impairments to speech production, repetition and syntactic processing, contained a majority of patients with nfvPPA but also some lvPPA patients. The final group exhibited more severe deficits to speech, repetition and syntax as well as semantic and other cognitive deficits. These results suggest that, amongst cases of non-semantic PPA, differentiation mainly reflects overall degree of language/cognitive impairment. The observed patterns were scarcely affected by inclusion/exclusion of non-linguistic cognitive scores.

Database: CINAHL

Comparison of the Spectral-Temporally Modulated Ripple Test With the Arizona Biomedical Institute Sentence Test in Cochlear Implant Users.

Author(s): Lawler, Marshall; Jeffrey Yu; Aronoff, Justin M.; Yu, Jeffrey

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6); p. 760-766

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28957975

Abstract: Objectives: Although speech perception is the gold standard for measuring cochlear implant (CI) users' performance, speech perception tests often require extensive adaptation to obtain accurate results, particularly after large changes in maps. Spectral ripple tests, which measure spectral resolution, are an alternate measure that has been shown to correlate with speech perception. A modified spectral ripple test, the spectral-temporally modulated ripple test (SMRT) has recently been developed, and the objective of this study was to compare speech perception and performance on the SMRT for a heterogeneous population of unilateral CI users, bilateral CI users, and bimodal users. Design: Twenty-five CI users (eight using unilateral CIs, nine using bilateral CIs, and eight using a CI and a hearing aid) were tested on the Arizona Biomedical Institute Sentence Test (AzBio) with a +8 dB signal to noise ratio, and on the SMRT. All participants were tested with their clinical programs. Results: There was a significant correlation between SMRT and AzBio performance. After a practice block, an improvement of one ripple per octave for SMRT corresponded to an improvement of 12.1% for AzBio. Additionally, there was no significant difference in slope or intercept between any of the CI populations. Conclusion: The results indicate that performance on the SMRT correlates with speech recognition in noise when measured across unilateral, bilateral, and bimodal CI populations. These results suggest that SMRT scores are strongly associated with speech recognition in noise ability in experienced CI users. Further studies should focus on increasing both the size and diversity of the tested participants, and on determining whether the SMRT technique can be used for early predictions of long-term speech scores, or for evaluating differences among different stimulation strategies or parameter settings.

Database: CINAHL

Aphasia in vascular lesions of the basal ganglia: A comprehensive review.

Author(s): Radanovic, Marcia; Mansur, Leticia Lessa

Source: Brain & Language; Oct 2017; vol. 173 ; p. 20-32

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28570947

Abstract: Between 1970 and 1990, the study of aphasia secondary to subcortical lesions (including the basal ganglia - BG) was largely driven by the advent of modern neuroimaging techniques such as MRI and PET. However, attempts to characterize a pattern of language abnormalities in patients with basal ganglia lesions proved unfruitful. We conducted a comprehensive review of language disturbances after vascular lesions in the BG. Literature search in Medline and LILACS (1966-2016) and PsychINFO (last 25 years) was conducted, and returned 145 articles, with 57 eligible for the review yielding data on 303 patients. We report the clinical and neuroimaging features of these cases. Results showed that aphasias caused by BG lesions are heterogeneous with weak clinicopathological correlations. Data derived from follow-up and flow/metabolism studies suggest that subcortical aphasia caused by BG lesions involves hypoperfusion in the cortical territories of the middle cerebral/internal carotid arteries (MCA/ICA) and their branches.

Database: CINAHL

Insertion depth impacts speech perception and hearing preservation for lateral wall electrodes.

Author(s): O'connell, Brendan P.; Hunter, Jacob B.; Haynes, David S.; Holder, Jourdan T.; Dedmon, Matt M.; Noble, Jack H.; Dawant, Benoit M.; Wanna, George B.

Source: Laryngoscope; Oct 2017; vol. 127 (no. 10); p. 2352-2357

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28304096

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

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Abstract: Objectives: 1) Examine angular insertion depths (AID) and scalar location of Med-El (GmbH Innsbruck, Austria) electrodes; and 2) determine the relationship between AID and audiologic outcomes controlling for scalar position. Study Design: Retrospective review. Methods: Postlingually deafened adults undergoing cochlear implantation with Flex 24, Flex 28, and Standard electrode arrays (Med-El) were identified. Patients with preoperative and postoperative computed tomography scans were included so that electrode location and AID could be determined. Outcome measures were 1) speech perception in the cochlear implant (CI)-only condition, and 2) short-term hearing preservation. Results: Forty-eight implants were included; all electrodes (48 of 48) were positioned entirely within the scala tympani. The median AID was 408° (interquartile [IQ] range 373°-449°) for Flex 24, 575° (IQ range 465°-584°) for Flex 28, and 584° (IQ range 368°-643°) for Standard electrodes (Med-El). The mean postoperative CNC score was 43.7% ± 21.9. A positive correlation was observed between greater AID and better CNC performance ($r = 0.48$, $P < 0.001$). Excluding patients with postoperative residual hearing, a strong correlation between AID and CNC persisted ($r = 0.57$, $P < 0.001$). In patients with preoperative residual hearing, mean low-frequency pure-tone average (PTA) shift was 27 dB ± 14. A correlation between AID and low-frequency PTA shift at activation was noted ($r = 0.41$, $P = 0.04$). Conclusion: Favorable rates of scala tympani insertion (100%) were observed. In the CI-only condition, a direct correlation between greater AID and CNC score was noted regardless of postoperative hearing status. Deeper insertions were, however, associated with worse short-term hearing preservation. When patients without postoperative residual hearing were analyzed independently, the relationship between greater insertion depth and better performance was strengthened. Level Of Evidence: 4. Laryngoscope, 127:2352-2357, 2017.

Database: CINAHL

Distinct spatiotemporal patterns of neuronal functional connectivity in primary progressive aphasia variants.

Author(s): Ranasinghe, Kamalini G.; Hinkley, Leighton B.; Beagle, Alexander J.; Mizuiri, Danielle; Honma, Susanne M.; Welch, Ariane E.; Hubbard, Isabel; Mandelli, Maria Luisa; Miller, Zachary A.; Garrett, Coleman; La, Alice; Boxer, Adam L.; Houde, John F.; Miller, Bruce L.; Vossel, Keith A.; Gorno-Tempini, Maria Luisa; Nagarajan, Srikanth S.

Source: Brain: A Journal of Neurology; Oct 2017; vol. 140 (no. 10); p. 2737-2751

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28969381

Abstract: Primary progressive aphasia is a syndrome characterized by progressive loss of language abilities with three main phenotypic clinical presentations, including logopenic, non-fluent/agrammatic, and semantic variants. Previous imaging studies have shown unique anatomic impacts within language networks in each variant. However, direct measures of spontaneous

neuronal activity and functional integrity of these impacted neural networks in primary progressive aphasia are lacking. The aim of this study was to characterize the spatial and temporal patterns of resting state neuronal synchronizations in primary progressive aphasia syndromes. We hypothesized that resting state brain oscillations will show unique deficits within language network in each variant of primary progressive aphasia. We examined 39 patients with primary progressive aphasia including logopenic variant ($n = 14$, age = 61 ± 9 years), non-fluent/agrammatic variant ($n = 12$, age = 71 ± 8 years) and semantic variant ($n = 13$, age = 65 ± 7 years) using magnetoencephalographic imaging, compared to a control group that was matched in age and gender to each primary progressive aphasia subgroup ($n = 20$, age = 65 ± 5 years). Each patient underwent a complete clinical evaluation including a comprehensive battery of language tests. We examined the whole-brain resting state functional connectivity as measured by imaginary coherence in each patient group compared to the control cohort, in three frequency oscillation bands-delta-theta (2-8 Hz); alpha (8-12 Hz); beta (12-30 Hz). Each variant showed a distinct spatiotemporal pattern of altered functional connectivity compared to age-matched controls. Specifically, we found significant hyposynchrony of alpha and beta frequency within the left posterior temporal and occipital cortices in patients with the logopenic variant, within the left inferior frontal cortex in patients with the non-fluent/agrammatic variant, and within the left temporo-parietal junction in patients with the semantic variant. Patients with logopenic variant primary progressive aphasia also showed significant hypersynchrony of delta-theta frequency within bilateral medial frontal and posterior parietal cortices. Furthermore, region of interest-based analyses comparing the spatiotemporal patterns of variant-specific regions of interest identified in comparison to age-matched controls showed significant differences between primary progressive aphasia variants themselves. We also found distinct patterns of regional spectral power changes in each primary progressive aphasia variant, compared to age-matched controls. Our results demonstrate neurophysiological signatures of network-specific neuronal dysfunction in primary progressive aphasia variants. The unique spatiotemporal patterns of neuronal synchrony signify diverse neurophysiological disruptions and pathological underpinnings of the language network in each variant.

Database: CINAHL

Communication behaviors associated with successful conversation in semantic variant primary progressive aphasia.

Author(s): Taylor-Rubin, Cathleen; Croot, Karen; Power, Emma; Savage, Sharon A.; Hodges, John R.; Togher, Leanne

Source: International Psychogeriatrics; Oct 2017; vol. 29 (no. 10); p. 1619-1632

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28593829

Abstract: Background: Primary progressive aphasia (PPA) affects a range of language and cognitive domains that impact on conversation. Little is known about conversation breakdown in the semantic variant of PPA (svPPA, also known as semantic dementia). This study investigates conversation of people with svPPA. Methods: Dyadic conversations about everyday activities between seven individuals with svPPA and their partners, and seven control pairs were video recorded and transcribed. Number of words, turns, and length of turns were measured. Trouble-indicating behaviors (TIBs) and repair behaviors were categorized and identified as successful or not for each participant in each dyad. Results: In general, individuals with svPPA were active participants in conversation, taking an equal proportion of turns, but indicating a great deal of more trouble in conversation, shown by the significantly higher number of TIBs than evidenced by partners or control participants. TIBs were interactive (asking for confirmation with a shorter repetition of the

original utterance or a repetition which included a request for specific information) and non-interactive (such as failing to take up or continue the topic or a minimal response) and unlike those previously reported for people with other PPA variants and dementia of the Alzheimer type. Communication behaviors of the partner were critical to conversational success. Conclusions: Examination of trouble and repair in 10-min conversations of individuals with svPPA and their important communication partners has potential to inform speech pathology interventions to enhance successful conversation, in svPPA and should be an integral part of the comprehensive care plan.

Database: CINAHL

Pre- and Postoperative Binaural Unmasking for Bimodal Cochlear Implant Listeners.

Author(s): Sheffield, Benjamin M.; Schuchman, Gerald; Bernstein, Joshua G. W.

Source: Ear & Hearing (01960202); Sep 2017; vol. 38 (no. 5); p. 554-567

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28301390

Abstract: Objectives: Cochlear implants (CIs) are increasingly recommended to individuals with residual bilateral acoustic hearing. Although new hearing-preserving electrode designs and surgical approaches show great promise, CI recipients are still at risk to lose acoustic hearing in the implanted ear, which could prevent the ability to take advantage of binaural unmasking to aid speech recognition in noise. This study examined the tradeoff between the benefits of a CI for speech understanding in noise and the potential loss of binaural unmasking for CI recipients with some bilateral preoperative acoustic hearing. Design: Binaural unmasking is difficult to evaluate in CI candidates because speech perception in noise is generally too poor to measure reliably in the range of signal to noise ratios (SNRs) where binaural intelligibility level differences (BILDs) are typically observed (<5 dB). Thus, a test of audiovisual speech perception in noise was employed to increase performance to measurable levels. BILDs were measured preoperatively for 11 CI candidates and at least 5 months post-activation for 10 of these individuals (1 individual elected not to receive a CI). Audiovisual sentences were presented in speech-shaped masking noise between -10 and +15 dB SNR. The noise was always correlated between the ears, while the speech signal was either correlated (NOSO) or inversely correlated (NOS π). Stimuli were delivered via headphones to the unaided ear(s) and, where applicable, via auxiliary input to the CI speech processor. A z test evaluated performance differences between the NOSO and NOS π conditions for each listener pre- and postoperatively. For listeners showing a significant difference, the magnitude of the BILD was characterized as the difference in SNRs required to achieve 50% correct performance. One listener who underwent hearing-preservation surgery received additional postoperative tests, which presented sound directly to both ears and to the CI speech processor. Results: Five of 11 listeners showed a significant preoperative BILD (range: 2.0 to 7.3 dB). Only 2 of these 5 showed a significant postoperative BILD, but the mean BILD was smaller (1.3 dB) than that observed preoperatively (3.1 dB). Despite the fact that some listeners lost the preoperative binaural benefit, 9 out of 10 listeners tested postoperatively had performance equal to or better than their best pre-CI performance. The listener who retained functional acoustic hearing in the implanted ear also demonstrated a preserved acoustic BILD postoperatively. Conclusions: Approximately half of the CI candidates in this study demonstrated preoperative binaural hearing benefits for audiovisual speech perception in noise. Most of these listeners lost their acoustic hearing in the implanted ear after surgery (using nonhearing-preservation techniques), and therefore lost access to this binaural benefit. In all but one case, any loss of binaural benefit was compensated for or exceeded by an improvement in speech perception with the CI. Evidence of a preoperative BILD suggests that certain CI candidates

might further benefit from hearing-preservation surgery to retain acoustic binaural unmasking, as demonstrated for the listener who underwent hearing-preservation surgery. This test of binaural audiovisual speech perception in noise could serve as a diagnostic tool to identify CI candidates who are most likely to receive functional benefits from their bilateral acoustic hearing.

Database: CINAHL

Combined Electric and Acoustic Stimulation With Hearing Preservation: Effect of Cochlear Implant Low-Frequency Cutoff on Speech Understanding and Perceived Listening Difficulty.

Author(s): Gifford, René H.; Davis, Timothy J.; Sunderhaus, Linsey W.; Menapace, Christine; Buck, Barbara; Crosson, Jillian; O'Neill, Lori; Beiter, Anne; Segel, Phil

Source: Ear & Hearing (01960202); Sep 2017; vol. 38 (no. 5); p. 539-553

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28301392

Abstract: Objective: The primary objective of this study was to assess the effect of electric and acoustic overlap for speech understanding in typical listening conditions using semidiffuse noise. Design: This study used a within-subjects, repeated measures design including 11 experienced adult implant recipients (13 ears) with functional residual hearing in the implanted and nonimplanted ear. The aided acoustic bandwidth was fixed and the low-frequency cutoff for the cochlear implant (CI) was varied systematically. Assessments were completed in the R-SPACE sound-simulation system which includes a semidiffuse restaurant noise originating from eight loudspeakers placed circumferentially about the subject's head. AzBio sentences were presented at 67 dBA with signal to noise ratio varying between +10 and 0 dB determined individually to yield approximately 50 to 60% correct for the CI-alone condition with full CI bandwidth. Listening conditions for all subjects included CI alone, bimodal (CI + contralateral hearing aid), and bilateral-aided electric and acoustic stimulation (EAS; CI + bilateral hearing aid). Low-frequency cutoffs both below and above the original "clinical software recommendation" frequency were tested for all patients, in all conditions. Subjects estimated listening difficulty for all conditions using listener ratings based on a visual analog scale. Results: Three primary findings were that (1) there was statistically significant benefit of preserved acoustic hearing in the implanted ear for most overlap conditions, (2) the default clinical software recommendation rarely yielded the highest level of speech recognition (1 of 13 ears), and (3) greater EAS overlap than that provided by the clinical recommendation yielded significant improvements in speech understanding. Conclusions: For standard-electrode CI recipients with preserved hearing, spectral overlap of acoustic and electric stimuli yielded significantly better speech understanding and less listening effort in a laboratory-based, restaurant-noise simulation. In conclusion, EAS patients may derive more benefit from greater acoustic and electric overlap than given in current software fitting recommendations, which are based solely on audiometric threshold. These data have larger scientific implications, as previous studies may not have assessed outcomes with optimized EAS parameters, thereby underestimating the benefit afforded by hearing preservation.

Database: CINAHL

Motor speech signature of behavioral variant frontotemporal dementia: Refining the phenotype.

Author(s): Vogel, Adam P.; Poole, Matthew L.; Pemberton, Hugh; Caverl  , Marja W. J.; Boonstra, Frederique M. C.; Low, Essie; Darby, David; Brodtmann, Amy

Source: Neurology; Aug 2017; vol. 89 (no. 8); p. 837-844

Publication Date: Aug 2017

Publication Type(s): Academic Journal

PubMedID: 28733335

Available at [Neurology](#) - from Ovid (Journals @ Ovid)

Abstract: Objective: To provide a comprehensive description of motor speech function in behavioral variant frontotemporal dementia (bvFTD). Methods: Forty-eight individuals (24 bvFTD and 24 age- and sex-matched healthy controls) provided speech samples. These varied in complexity and thus cognitive demand. Their language was assessed using the Progressive Aphasia Language Scale and verbal fluency tasks. Speech was analyzed perceptually to describe the nature of deficits and acoustically to quantify differences between patients with bvFTD and healthy controls. Cortical thickness and subcortical volume derived from MRI scans were correlated with speech outcomes in patients with bvFTD. Results: Speech of affected individuals was significantly different from that of healthy controls. The speech signature of patients with bvFTD is characterized by a reduced rate (75%) and accuracy (65%) on alternating syllable production tasks, and prosodic deficits including reduced speech rate (45%), prolonged intervals (54%), and use of short phrases (41%). Groups differed on acoustic measures derived from the reading, unprepared monologue, and diadochokinetic tasks but not the days of the week or sustained vowel tasks. Variability of silence length was associated with cortical thickness of the inferior frontal gyrus and insula and speech rate with the precentral gyrus. Conclusions: One in 8 patients presented with moderate speech timing deficits with a further two-thirds rated as mild or subclinical. Subtle but measurable deficits in prosody are common in bvFTD and should be considered during disease management. Language function correlated with speech timing measures derived from the unprepared monologue only.

Database: CINAHL

Comprehensibility and neural substrate of communicative gestures in severe aphasia.

Author(s): Hogrefe, Katharina; Ziegler, Wolfram; Weidinger, Nicole; Goldenberg, Georg

Source: Brain & Language; Aug 2017; vol. 171 ; p. 62-71

Publication Date: Aug 2017

Publication Type(s): Academic Journal

PubMedID: 28535366

Abstract: Communicative gestures can compensate incomprehensibility of oral speech in severe aphasia, but the brain damage that causes aphasia may also have an impact on the production of gestures. We compared the comprehensibility of gestural communication of persons with severe aphasia and non-aphasic persons and used voxel based lesion symptom mapping (VLSM) to determine lesion sites that are responsible for poor gestural expression in aphasia. On group level, persons with aphasia conveyed more information via gestures than controls indicating a compensatory use of gestures in persons with severe aphasia. However, individual analysis showed a broad range of gestural comprehensibility. VLSM suggested that poor gestural expression was associated with lesions in anterior temporal and inferior frontal regions. We hypothesize that likely functional correlates of these localizations are selection of and flexible changes between communication channels as well as between different types of gestures and between features of actions and objects that are expressed by gestures.

Database: CINAHL

Structural plasticity of the ventral stream and aphasia recovery.

Author(s): McKinnon, Emilie T.; Fridriksson, Julius; Glenn, G. Russell; Jensen, Jens H.; Helpern, Joseph A.; Basilakos, Alexandra; Rorden, Chris; Shih, Andy Y.; Spampinato, M. Vittoria; Bonilha, Leonardo

Source: Annals of Neurology; Jul 2017; vol. 82 (no. 1); p. 147-151

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28628946

Available at [Annals of Neurology](#) - from Wiley Online Library All Journals

Available at [Annals of Neurology](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Restrengthening of the residual language network is likely to be crucial for speech recovery in poststroke aphasia. Eight participants with chronic aphasia received intensive speech therapy for 3 weeks, with standardized naming tests and brain magnetic resonance imaging before and after therapy. Kurtosis-based diffusion tensor tractography was used to measure mean kurtosis (MK) along a segment of the inferior longitudinal fasciculus (ILF). Therapy-related reduction in the number of semantic but not phonemic errors was associated with strengthening (renormalization) of ILF MK ($r = -0.90$, $p < 0.05$ corrected), suggesting that speech recovery is related to structural plasticity of language-specific components of the residual language network. Ann Neurol 2017;82:147-151.

Database: CINAHL

Tracking reorganization of large-scale effective connectivity in aphasia following right hemisphere stroke.

Author(s): Jr.Gow, David W.; Ahlfors, Seppo P.; Gow, David W Jr

Source: Brain & Language; Jul 2017; vol. 170 ; p. 12-17

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28364641

Abstract: In this paper we demonstrate the application of new effective connectivity analyses to characterize changing patterns of task-related directed interaction in large (25-55 node) cortical networks following the onset of aphasia. The subject was a left-handed woman who became aphasic following a right-hemisphere stroke. She was tested on an auditory word-picture verification task administered one and seven months after the onset of aphasia. MEG/EEG and anatomical MRI data were used to create high spatiotemporal resolution estimates of task-related cortical activity. Effective connectivity analyses of those data showed a reduction of bilateral network influences on preserved right-hemisphere structures, and an increase in intra-hemispheric left-hemisphere influences. She developed a connectivity pattern that was more left lateralized than that of right-handed control subjects. Her emergent left hemisphere network showed a combination of increased functional subdivision of perisylvian language areas and recruitment of medial structures.

Database: CINAHL

Evaluation of the language profile in children with rolandic epilepsy and developmental dysphasia: Evidence for distinct strengths and weaknesses.

Author(s): Verly, M.; Gerrits, R.; Lagae, L.; Sunaert, S.; Rommel, N.; Zink, I.

Source: Brain & Language; Jul 2017; vol. 170 ; p. 18-28

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28391031

Abstract: Although benign, rolandic epilepsy (RE) or benign childhood epilepsy with centro-temporal spikes is often associated with language impairment. Recently, fronto-rolandic EEG abnormalities have been described in children with developmental dysphasia (DD), suggesting an interaction between language impairment and interictal epileptiform discharges. To investigate if a behavioral-linguistic continuum between RE and DD exists, a clinical prospective study was carried out to evaluate the language profile of 15 children with RE and 22 children with DD. Language skills were assessed using an extensive, standardized test battery. Language was found to be impaired in both study groups, however RE and DD were associated with distinct language impairment profiles. Children with RE had difficulties with sentence comprehension, semantic verbal fluency and auditory short-term memory, which are unrelated to age of epilepsy onset and laterality of epileptic focus. In children with DD, sentence comprehension and verbal fluency were among their relative strengths, whereas sentence and lexical production constituted relative weaknesses.

Database: CINAHL

BRAIN INJURY/TRAUMA

Differences in interregional brain connectivity in children with unilateral hearing loss.

Author(s): Jung, Matthew E.; Colletta, Miranda; Coalson, Rebecca; Schlaggar, Bradley L.; Lieu, Judith E. C.

Source: Laryngoscope; Nov 2017; vol. 127 (no. 11); p. 2636-2645

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28425563

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Objectives: To identify functional network architecture differences in the brains of children with unilateral hearing loss (UHL) using resting-state functional-connectivity magnetic resonance imaging (rs-fcMRI). Study Design: Prospective observational study. Methods: Children (7 to 17 years of age) with severe to profound hearing loss in one ear, along with their normal hearing (NH) siblings, were recruited and imaged using rs-fcMRI. Eleven children had right UHL; nine had left UHL; and 13 had normal hearing. Forty-one brain regions of interest culled from established brain networks such as the default mode (DMN); cingulo-opercular (CON); and frontoparietal networks (FPN); as well as regions for language, phonological, and visual processing, were analyzed using regionwise correlations and conjunction analysis to determine differences in functional connectivity between the UHL and normal hearing children. Results: When compared to the NH group, children with UHL showed increased connectivity patterns between multiple networks, such as between the CON and visual processing centers. However, there were decreased, as well as aberrant connectivity patterns with the coactivation of the DMN and FPN, a relationship that usually is negatively correlated. Conclusion: Children with UHL demonstrate multiple functional connectivity differences between brain networks involved with executive function, cognition, and language comprehension that may represent adaptive as well as maladaptive changes. These findings suggest that possible interventions or habilitation, beyond amplification, might be able to affect some children's requirement for additional help at school. Level Of Evidence: 3b. Laryngoscope, 127:2636-2645, 2017.

Database: CINAHL

The management of pediatric hearing loss caused by auditory neuropathy spectrum disorder.

Author(s): Pham, Nguyen S.

Source: Current Opinion in Otolaryngology & Head & Neck Surgery; Oct 2017; vol. 25 (no. 5); p. 396-399

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28708635

Abstract: Purpose Of Review: Auditory neuropathy spectrum disorder (ANS) is a condition in which auditory testing reveals normal otoacoustic emissions, but auditory brainstem testing is abnormal or absent and speech discrimination is poor. This constellation of findings ostensibly suggests that the cochlea is healthy and an abnormality of conduction or processing of sound occurs along the nerve fibers. As more is learned about this condition, it is becoming clear that ANSD describes heterogeneous, distinct clinical entities that must be taken into account when devising treatment modalities. Recent Findings: Modern auditory testing, genetic testing, and neuroimaging can allow for an accurate understanding of the location of the lesion causing ANSD in the auditory pathway. Contributing causes can include genetic mutations, absent or deficient cochlear nerve, hypoxia and jaundice among others. Hearing aids can be successful in the management of ANSD. Several studies suggest that cochlear implantation can lead to successful hearing outcomes in a subset of this patient population. Summary: Auditory neuropathy spectrum disorder represents a relatively rare but important diagnosis for clinicians. Treatment for this condition includes hearing aids and FM systems in more mild cases, and cochlear implants in severe cases. Cochlear implantation for many patients can lead to a good hearing outcomes but the outcome can vary greatly depending on the underlying etiology of ANSD.

Database: CINAHL

Auditory Outcomes with Hearing Rehabilitation in Children with Unilateral Hearing Loss: A Systematic Review.

Author(s): Appachi, Swathi; Specht, Jessica. L.; Raol, Nikhila; Lieu, Judith E. C.; Cohen, Michael S.; Dedhia, Kavita; Anne, Samantha

Source: Otolaryngology-Head & Neck Surgery; Oct 2017; vol. 157 (no. 4); p. 565-571

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28849705

Abstract: Objective Options for management of unilateral hearing loss (UHL) in children include conventional hearing aids, bone-conduction hearing devices, contralateral routing of signal (CROS) aids, and frequency-modulating (FM) systems. The objective of this study was to systematically review the current literature to characterize auditory outcomes of hearing rehabilitation options in UHL. Data Sources PubMed, EMBASE, Medline, CINAHL, and Cochrane Library were searched from inception to January 2016. Manual searches of bibliographies were also performed. Review Methods Studies analyzing auditory outcomes of hearing amplification in children with UHL were included. Outcome measures included functional and objective auditory results. Two independent reviewers evaluated each abstract and article. Results Of the 249 articles identified, 12 met inclusion criteria. Seven articles solely focused on outcomes with bone-conduction hearing devices. Outcomes favored

improved pure-tone averages, speech recognition thresholds, and sound localization in implanted patients. Five studies focused on FM systems, conventional hearing aids, or CROS hearing aids. Limited data are available but suggest a trend toward improvement in speech perception with hearing aids. FM systems were shown to have the most benefit for speech recognition in noise. Studies evaluating CROS hearing aids demonstrated variable outcomes. Conclusions Data evaluating functional and objective auditory measures following hearing amplification in children with UHL are limited. Most studies do suggest improvement in speech perception, speech recognition in noise, and sound localization with a hearing rehabilitation device.

Database: CINAHL

CANCER

Evaluating the Use of Plain Language in a Cancer Clinical Trial Website/App.

Author(s): Schultz, Paula; Carlisle, Regina; Cheatham, Chesley; O'Grady, Melissa; Schultz, Paula L

Source: Journal of Cancer Education; Dec 2017; vol. 32 (no. 4); p. 707-713

Publication Date: Dec 2017

Publication Type(s): Academic Journal

PubMedID: 26854082

Available at [Journal of Cancer Education](#) - from EBSCO (MEDLINE Complete)

Available at [Journal of Cancer Education](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract: Medically complex titles and descriptions found on clinical trial websites and online applications present a barrier to comprehension for users from the general public. In this study, we examine the effectiveness of plain language trial descriptions for user comprehension of basic trial details. Two hundred seventeen volunteers recruited from patient waiting areas completed 441 user tests of ten plain language trial descriptions. The majority of volunteers adequately comprehended the cancer type and basic inclusion/exclusion criteria from plain language trial descriptions. Difficulty comprehending the treatment being studied was seen in seven of ten descriptions tested. Revision and retesting of the seven trial descriptions showed continued user challenges in comprehending the treatment being studied. Plain language clinical trial descriptions integrated into a website/app allowed users to understand basic inclusion/exclusion criteria. Despite plain language used, discerning the treatment being studied may be difficult for some users. Integration of plain language descriptions into clinical trial online applications can help users understand trial basics. Further research regarding effective use of plain language to communicate the treatment being studied is needed.

Database: CINAHL

Survivorship Challenges and Information Needs after Radiotherapy for Oral Cancer.

Author(s): Badr, Hoda; Lipnick, Daniella; Gupta, Vishal; Miles, Brett

Source: Journal of Cancer Education; Dec 2017; vol. 32 (no. 4); p. 799-807

Publication Date: Dec 2017

Publication Type(s): Academic Journal

PubMedID: 27193414

Available at [Journal of Cancer Education](#) - from EBSCO (MEDLINE Complete)

Available at [Journal of Cancer Education](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract: Oral cancer (OC) treatment can lead to considerable functional impairment, psychological distress, and decrements in quality of life. Given that limited information and support services are available for cancer survivors, many are turning to the Internet. However, little is known about the specific information and service needs of OC survivors. We conducted a descriptive study to (1) characterize the associations between OC survivor functional problems and distress and (2) describe the Internet use of OC survivors, their satisfaction with existing sources of information/support, and their unmet information and service needs. Ninety-three oral cancer survivors completed cross-sectional surveys within 1-year of completing radiotherapy. Clinical levels of distress were 10 % for depression and 16 % for anxiety. Dental health, smell, and range of motion problems were significant ($p < .05$) determinants of both depression and anxiety symptoms. Eighty-three percent of survivors used the Internet; most used it to obtain health-related information or support. Unmet information needs included how to live a healthy lifestyle after treatment (87 %), strategies for dealing with eating and speaking problems (81 %), and information about what to expect in terms of side effects after treatment (76 %). Findings suggest that interventions that teach survivors coping and problem-solving skills to manage and cope with functional impairments may help to alleviate distress. Results of this study support the need for psychoeducational interventions for this population and showcase the potential of the Internet as a feasible mode for future dissemination.

Database: CINAHL

Development of a survivorship needs assessment planning tool for head and neck cancer survivors and their caregivers: a preliminary study.

Author(s): Sterba, K.; Zapka, J.; LaPelle, N.; Garris, T.; Buchanan, A.; Scallion, M.; Day, T.; Sterba, K R; Garris, T K

Source: Journal of Cancer Survivorship; Dec 2017; vol. 11 (no. 6); p. 822-832

Publication Date: Dec 2017

Publication Type(s): Academic Journal

PubMedID: 28639158

Abstract: Purpose: The purpose of this study was to characterize primary end-of-treatment challenges in head and neck cancer (HNC) to drive the development of a survivorship needs assessment planning (SNAP) tool and evaluate its acceptability and feasibility. Methods: Using qualitative methods (focus groups, interviews), we identified physical, emotional, and social post-treatment challenges from the perspectives of survivors ($N = 17$), caregivers ($N = 14$), and healthcare providers ($N = 14$) and pretested the SNAP tool. After Advisory Board ratings and consensus, the tool was finalized. Results: Survivors, caregivers and clinicians consistently highlighted the importance of assessing symptoms and functional abilities (e.g., dry mouth, speech/swallowing difficulties, weight loss), health behaviors (e.g., smoking, alcohol), emotional concerns (e.g., depression, isolation, nutritional distress), and social challenges (e.g., support, finances). Caregivers were overwhelmed and intensely focused on survivors' nutrition and trach/feeding tube care while clinicians emphasized financial and access concerns. Most participants were enthusiastic about the tool and directed a flexible care plan design due to variability in dyad needs. Over 75% reported high comfort using and navigating questions on a tablet and were in strong agreement that the care plan would help families practically and emotionally. Coordination of survivorship visits with follow-up care was critical to address travel and time barriers. While survivors and clinicians recommended waiting 1-6 months after treatment, caregivers preferred earlier survivorship visits. Conclusions: Results pinpointed optimal end-of-treatment domains for routine assessment and support the feasibility of

implementing a SNAP tool in the clinic. Implications For Cancer Survivors: Capitalizing on technology to direct HNC survivorship care is promising.

Database: CINAHL

The impact of developing a speech and swallow rehab program: Improving patient satisfaction and multidisciplinary care.

Author(s): Starmer, Heather M.; Ayoub, Noel; Byward, Cynthia; Kizner, Jennifer; Le, Quynh; Hara, Wendy; Holsinger, F. Christopher

Source: Laryngoscope; Nov 2017; vol. 127 (no. 11); p. 2578-2581

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28561453

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Objectives/hypothesis: The objective of this study was to evaluate the impact of developing an integrated head and neck cancer speech and swallowing rehabilitation program on physician/team focus on functional outcomes. Study Design: Prospective cross-sectional design. Methods: Surveys regarding physician behavior and patient satisfaction with speech and swallowing were administered in an academic oncology practice prior to and 1 year following establishment of a dedicated head and neck speech and swallowing rehabilitation program. Participants included new and established head and neck cancer patients recruited consecutively. The primary outcome was physician behavior regarding speech and swallowing outcomes (as measured by discussion of function, providing suggestions regarding function, and referral to speech-language pathology services). Results: A total of 199 surveys were returned at the first time point and 271 at the second. Demographic variables were comparable between the two groups. The later cohort was more likely to report team discussion and suggestions regarding speech and swallowing function than the former ($P < .001$, 95% confidence interval [CI]: -0.775 to -0.265; $P < .001$, 95% CI: -0.928 to -0.035, respectively). Although there was no significant difference between the groups in regard to satisfaction with speech ($P = .07$), more favorable satisfaction with swallowing was reported by the later cohort ($P = .028$, 95% CI: -0.531 to -0.029). Conclusions: Integration of speech and swallowing rehabilitation into head and neck cancer programs is associated with increased physician focus on functional outcomes and greater patient satisfaction in regard to swallowing function. We advocate for standard integration of such services into the multidisciplinary head and neck cancer care team. Level Of Evidence: 4. Laryngoscope, 127:2578-2581, 2017.

Database: CINAHL

Obstructive sleep apnea in the irradiated head and neck cancer patient.

Author(s): Huyett, Phillip; Kim, Seungwon; Johnson, Jonas T.; Soose, Ryan J.

Source: Laryngoscope; Nov 2017; vol. 127 (no. 11); p. 2673-2677

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28543072

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Objectives/hypothesis: To assess the prevalence of obstructive sleep apnea (OSA) in head and neck cancer (HNSCC) patients treated with radiation therapy. Study Design: Prospective case series without comparison group. Methods: Patients who underwent radiation therapy for oropharyngeal or laryngeal squamous cell carcinoma completed a 3-night home sleep test (HST), Epworth Sleepiness Scale, Functional Outcomes of Sleep Questionnaire, and University of Washington Quality of Life questionnaire. Exclusion criteria included oncologic surgical procedures, active disease, history of tracheotomy, history of OSA, or completion of radiation therapy within the last 3 months. Results: Sixteen HNSCC patients completed the HST, with 50% (8) demonstrating objective evidence of OSA ranging from mild to severe (range 5.6-38.8, median 13.9). Median age was 61.6 years, with a median body mass index (BMI) of 29.8, and 13 of the subjects were male. There were no differences in age, BMI, median radiation dose, tumor primary site or stage, human papilloma virus status, or comorbidity status between the OSA and non-OSA groups. Self-reported questionnaire scores were no different between the two groups. OSA patients had a nonsignificant shorter time interval between the completion of radiation and the HST date (1.8 vs. 3.4 years, P = 0.065) and higher rate of gastrostomy tube placement during radiation (62.5% vs. 12.5%, P = 0.059). Conclusion: The results of this preliminary study suggest that the prevalence of OSA is increased in the head and neck irradiated patient when compared to the general population. Self-report of sleep symptoms alone may be unreliable to determine risk of OSA in the HNSCC population. Level Of Evidence: 4. *Laryngoscope*, 127:2673-2677, 2017.

Database: CINAHL

Preoperative Counseling in Salvage Total Laryngectomy: Content Analysis of Electronic Medical Records.

Author(s): Raol, Nikhila; Lilley, Elizabeth; Cooper, Zara; Dowdall, Jayme; Morris, Megan A.

Source: *Otolaryngology-Head & Neck Surgery*; Oct 2017; vol. 157 (no. 4); p. 641-647

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28828922

Abstract: Objective To study preoperative counseling in patients undergoing salvage total laryngectomy (STL). Study Design Case series with chart review. Setting Tertiary care academic hospital. Subjects and Methods We reviewed charts of patients ≥18 years undergoing STL between 2005 and 2015. Fifty-eight patients were identified. Notes written within 2 months prior to surgery by head and neck surgical oncologists, radiation oncologists, medical oncologists, speech-language pathologists, social workers, and nurse practitioners were extracted and coded into 4 categories. Coded content was then analyzed using a simple tally within content areas. Results Nonphysicians documented patient values and priorities, exclusive of treatment desires, more frequently. These topics included apprehension about family obligations, fear about communication, questions regarding quality of life, and anxiety regarding job continuation. Physician notes documented priorities regarding preferences for surgical treatment. No patients were seen by palliative care preoperatively, and only 14% (n = 8) patients had documentation of an end-of-life discussion. Conclusions Preoperative counseling for STL patients that included nonphysicians had a higher frequency of discussion of patients' priorities. This suggests including these types of providers may lead to more patient-centered care. A prospective study evaluating patient and physician perceptions of preoperative counseling can better identify where discrepancies exist and help

conceptualize a framework for preoperative counseling in STL patients and other patients undergoing high-risk surgery.

Database: CINAHL

Prophylactic Swallow Therapy for Patients with Head and Neck Cancer Undergoing Chemoradiotherapy: A Randomized Trial.

Author(s): Messing, Barbara; Ward, Elizabeth; Lazarus, Cathy; Kim, Melissa; Zhou, Xian; Silinonte, Jessica; Gold, Dorothy; Harrer, Karen; Ulmer, Karen; Merritt, Samantha; Neuner, Geoffrey; Levine, Marshall; Blanco, Ray; Saunders, John; Califano, Joseph; Messing, Barbara Pisano; Ward, Elizabeth C; Lazarus, Cathy L

Source: Dysphagia (0179051X); Aug 2017; vol. 32 (no. 4); p. 487-500

Publication Date: Aug 2017

Publication Type(s): Academic Journal

PubMedID: 28444488

Abstract: Evidence supporting prophylactic swallow exercises for patients with head and neck cancer (HNC) has not been universally demonstrated. This RCT examined diet level, feeding tube use, swallow function, and quality of life (QOL) of patients undergoing chemoradiotherapy who performed prophylactic swallowing exercises. Sixty HNC patients were randomized into exercise versus control groups. Swallowing, oromotor, toxicity, and QOL data were recorded (baseline, 3, 6, 12, 24 months). Physiological swallow function was examined at baseline and 3 months. Swallow exercises were completed twice daily. Oral intake at 3 months was 10% better in the exercise group, which was not statistically significant ($p = 0.49$). Significant ($p < 0.05$) differences in secondary outcomes including oromotor function, pharyngeal impairment, oral pharyngeal swallow efficiency, and incisal opening were noted at early time points (3-6 months) in the exercise group. Possible positive early improvements in swallow function are associated with swallowing exercises, although these improvements are not significant longer term.

Database: CINAHL

Phonologic and Acoustic Analysis of Speech Following Glossectomy and the Effect of Rehabilitation on Speech Outcomes.

Author(s): Takatsu, Jun; Hanai, Nobuhiro; Suzuki, Hidenori; Yoshida, Masahiro; Tanaka, Yasuhiro; Tanaka, Seiya; Hasegawa, Yasuhisa; Yamamoto, Masahiko

Source: Journal of Oral & Maxillofacial Surgery (02782391); Jul 2017; vol. 75 (no. 7); p. 1530-1541

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28039737

Abstract: Purpose: Changes in acoustic features in the perioperative phase for elucidating the mechanisms of articulation disorder and the effect of perioperative rehabilitation were studied prospectively. Materials and Methods: Sixty-two patients with 62 tongue cancer were divided into a partial glossectomy group ($n = 40$) and a reconstruction group ($n = 22$). Acoustic characteristics were analyzed during the preoperative and postoperative periods and after rehabilitation using the first and second formants of the vowels /a/, /i/, and /u/; the triangular vowel space area (tVSA); and the slopes of formant transitions. Results: In the 2 groups, decreases in the tVSA and formant slopes were found from the preoperative to the postoperative period, and the acoustic characteristics of the reconstruction group especially improved to preoperative values after rehabilitation. Analysis of

the postoperative period showed that acoustic characteristics were altered at the site of surgical resection. Conclusion: Changes of acoustic variables are related to excision size and site, suggesting the distinctive tongue portion for the articulation of each speech sound. Perioperative rehabilitation could activate the articulators and increase the range of movement of the remaining tongue, especially the preserved anterior tongue.

Database: CINAHL

Phonologic and Acoustic Analysis of Speech Following Glossectomy and the Effect of Rehabilitation on Speech Outcomes.

Author(s): Takatsu, Jun; Hanai, Nobuhiro; Suzuki, Hidenori; Yoshida, Masahiro; Tanaka, Yasuhiro; Tanaka, Seiya; Hasegawa, Yasuhisa; Yamamoto, Masahiko

Source: Journal of Oral & Maxillofacial Surgery (02782391); Jul 2017; vol. 75 (no. 7); p. 1530-1541

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Abstract: Purpose: Changes in acoustic features in the perioperative phase for elucidating the mechanisms of articulation disorder and the effect of perioperative rehabilitation were studied prospectively. Materials and Methods: Sixty-two patients with 62 tongue cancer were divided into a partial glossectomy group ($n = 40$) and a reconstruction group ($n = 22$). Acoustic characteristics were analyzed during the preoperative and postoperative periods and after rehabilitation using the first and second formants of the vowels /a/, /i/, and /u/; the triangular vowel space area (tVSA); and the slopes of formant transitions. Results: In the 2 groups, decreases in the tVSA and formant slopes were found from the preoperative to the postoperative period, and the acoustic characteristics of the reconstruction group especially improved to preoperative values after rehabilitation. Analysis of the postoperative period showed that acoustic characteristics were altered at the site of surgical resection. Conclusion: Changes of acoustic variables are related to excision size and site, suggesting the distinctive tongue portion for the articulation of each speech sound. Perioperative rehabilitation could activate the articulators and increase the range of movement of the remaining tongue, especially the preserved anterior tongue.

Database: CINAHL

DYSPHONIA

Voice Outcomes of Adults Diagnosed with Pediatric Vocal Fold Nodules and Impact of Speech Therapy.

Author(s): Song, Brian H.; Merchant, Maqdooda; Schloegel, Luke

Source: Otolaryngology-Head & Neck Surgery; Nov 2017; vol. 157 (no. 5); p. 824-829

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28828909

Abstract: Objective To evaluate the voice outcomes of adults diagnosed with vocal fold nodules (VFNs) as children and to assess the impact of speech therapy on long-term voice outcomes. Study Design Prospective cohort study. Setting Large health care system. Subjects and Methods Subjects diagnosed with VFNs as children between the years 1996 and 2008 were identified within a medical record database of a large health care system. Included subjects were 3 to 12 years old at the time

of diagnosis, had a documented laryngeal examination within 90 days of diagnosis, and were ≥18 years as of December 31, 2014. Qualified subjects were contacted by telephone and administered the Vocal Handicap Index-10 (VHI-10) and a 15-item questionnaire inquiring for confounding factors. Results A total of 155 subjects were included, with a mean age of 21.4 years (range, 18-29). The male:female ratio was 2.3:1. Mean VHI-10 score for the entire cohort was 5.4. Mean VHI-10 scores did not differ between those who received speech therapy (6.1) and those who did not (4.5; P = .08). Both groups were similar with respect to confounding risk factors that can contribute to dysphonia, although the no-therapy group had a disproportionately higher number of subjects who consumed >10 alcoholic drinks per week (P = .01). Conclusion The majority of adults with VFNs as children will achieve a close-to-normal voice quality when they reach adulthood. In our cohort, speech therapy did not appear to have an impact on the long-term voice outcomes.

Database: CINAHL

Spasmodic Dysphonia: A Review. Part 1: Pathogenic Factors.

Author(s): Hintze, Justin M.; Ludlow, Christy L.; Bansberg, Stephen F.; Adler, Charles H.; Lott, David G.

Source: Otolaryngology-Head & Neck Surgery; Oct 2017; vol. 157 (no. 4); p. 551-557

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28850801

Abstract: Objective The purpose of this review is to describe the recent advances in identifying possible factors involved in the pathogenesis of spasmodic dysphonia. Spasmodic dysphonia is a task-specific focal laryngeal dystonia characterized by irregular and uncontrolled voice breaks. Pathogenesis of the disorder is poorly understood. Data Sources PubMed, Google Scholar, and Cochrane Library. Review Methods The data sources were searched using the following search terms: (spasmodic dysphonia or laryngeal dystonia) and (etiology, aetiology, diagnosis, pathogenesis, or pathophysiology). Conclusions Several potential etiological factors have been proposed by epidemiological, genetic, and neuropathological studies. Spasmodic dysphonia is a rare disorder primarily affecting females beginning in their 40s. Vocal tremor co-occurs in 30% to 60%. Large cohort studies identified risk factors such as a family history of neurological disorders including dystonia and tremor, recent viral illness, and heavy voice use. As none are rare events, a complex interactive process may contribute to pathogenesis in a small proportion of those at risk. Consequences to pathogenesis are neurological processes found in spasmodic dysphonia: loss of cortical inhibition, sensory processing disturbances, and neuroanatomical and physiological differences in the laryngeal motor control system. Implications for Practice Diagnosis of spasmodic dysphonia usually includes speech and laryngoscopic assessment. However, as diagnosis is sometimes problematic, measurement of neurophysiological abnormalities may contribute useful adjuncts for the diagnosis of spasmodic dysphonia in the future.

Database: CINAHL

Spasmodic Dysphonia: A Review. Part 2: Characterization of Pathophysiology.

Author(s): Hintze, Justin M.; Ludlow, Christy L.; Bansberg, Stephen F.; Adler, Charles H.; Lott, David G.

Source: Otolaryngology-Head & Neck Surgery; Oct 2017; vol. 157 (no. 4); p. 558-564

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28850796

Abstract: Objective The purpose of this review is to describe the recent advances in characterizing spasmodic dysphonia. Spasmodic dysphonia is a task-specific focal laryngeal dystonia characterized by irregular and uncontrolled voice breaks. The pathophysiology is poorly understood, and there are diagnostic difficulties. Data Sources PubMed, Google Scholar, and Cochrane Library. Review Methods The data sources were searched using the following search terms: (spasmodic dysphonia or laryngeal dystonia) and (etiology, aetiology, diagnosis, pathogenesis, or pathophysiology). Conclusion The diagnosis of spasmodic dysphonia can be difficult due to the lack of a scientific consensus on diagnostic criteria and the fact that other voice disorders may present similarly. Confusion can arise between spasmodic dysphonia and muscle tension dysphonia. Spasmodic dysphonia symptoms are tied to particular speech sounds, whereas muscle tension dysphonia is not. With the advent of more widespread use of high-speed laryngoscopy and videokymography, measures of the disruptions in phonation and delays in the onset of vocal fold vibration after vocal fold closure can be quantified. Recent technological developments have expanded our understanding of the pathophysiology of spasmodic dysphonia. Implications for Practice A 3-tiered approach, involving a questionnaire, followed by speech assessment and nasolaryngoscopy is the most widely accepted method for making the diagnosis in most cases. More experimental and invasive techniques such as electromyography and neuroimaging have been explored to further characterize spasmodic dysphonia and aid in diagnosing difficult cases.

Database: CINAHL

Identifying Occupations at Risk for Laryngeal Disorders Requiring Specialty Voice Care.

Author(s): Mori, Matthew C.; Francis, David O.; Song, Phillip C.

Source: Otolaryngology-Head & Neck Surgery; Oct 2017; vol. 157 (no. 4); p. 670-675

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28895450

Abstract: Objective To identify occupational groups' use of specialty voice clinic evaluation. Study Design Retrospective cohort study. Setting Tertiary subspecialty clinic. Subjects and Methods We analyzed data collected on patients presenting to the Massachusetts Eye and Ear Infirmary Voice and Speech Laboratory over a 20-year period (1993-2013). The relative risk (RR) and 99% confidence interval (CI) of presentation were calculated for each occupational category in the greater Boston population using year-matched data from the Bureau of Labor Statistics (BLS). Results The records of 12,120 new patients were reviewed. Using year- and occupation-matched BLS data from 2005 to 2013, 2726 patients were included in the cohort analysis. Several occupations had significantly higher risk of presentation. These included arts and entertainment (RR 4.98, CI 4.18-5.95), law (RR 3.24, CI 2.48-4.23), education (RR 3.08, CI 2.70-3.52), and social services (RR 2.07, CI 1.57-2.73). In contrast, many occupations had significantly reduced risk of presentation for laryngological disorders, for example, maintenance (RR 0.25, CI 0.15-0.42), food preparation (RR 0.35, CI 0.26-0.48), and administrative support (RR 0.49, CI 0.41-0.57). Conclusion Certain occupations are associated with higher use of laryngological services presumably because of their vocational voice needs. In addition to confirming findings from other studies, we identified several new occupation groups with increased or decreased risk for laryngologic disorders. Understanding what factors predispose to requiring specialty voice evaluation may help in targeting preventative efforts.

Database: CINAHL

Effects of voice-sparing cricotracheal resection on phonation in women.

Author(s): Tanner, Kristine; Dromey, Christopher; Berardi, Mark L.; Mattei, Lisa M.; Pierce, Jenny L.; Wisco, Jonathan J.; Hunter, Eric J.; Smith, Marshall E.

Source: Laryngoscope; Sep 2017; vol. 127 (no. 9); p. 2085-2092

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 27882558

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Introduction: Individuals with idiopathic subglottic stenosis (SGS) are at risk for voice disorders prior to and following surgical management. This study examined the nature and severity of voice disorders in patients with SGS before and after a revised cricotracheal resection (CTR) procedure designed to minimize adverse effects on voice function. Method: Eleven women with idiopathic SGS provided presurgical and postsurgical audio recordings. Voice Handicap Index (VHI) scores were also collected. Cepstral, signal-to-noise, periodicity, and fundamental frequency (F0) analyses were undertaken for connected speech and sustained vowel samples. Listeners made auditory-perceptual ratings of overall quality and monotonicity. Results: Paired samples statistical analyses revealed that mean F0 decreased from 215 Hz (standard deviation [SD] = 40 Hz) to 201 Hz (SD = 65 Hz) following surgery. In general, VHI scores decreased after surgery. Voice disorder severity based on the Cepstral Spectral Index of Dysphonia (KayPentax, Montvale, NJ) for sustained vowels decreased (improved) from 41 (SD = 41) to 25 (SD = 21) points; no change was observed for connected speech. Semitone SD (2.2 semitones) did not change from pre- to posttreatment. Auditory-perceptual ratings demonstrated similar results. Conclusion: These preliminary results indicate that this revised CTR procedure is promising in minimizing adverse voice effects while offering a longer-term surgical outcome for SGS. Further research is needed to determine causal factors for pretreatment voice disorders, as well as to optimize treatments in this population. Level Of Evidence: 4. Laryngoscope, 127:2085-2092, 2017.

Database: CINAHL

Neuromuscular compensation mechanisms in vocal fold paralysis and paresis.

Author(s): Dewan, Karuna; Vahabzadeh-Hagh, Andrew; Soofer, Donna; Chhetri, Dinesh K.

Source: Laryngoscope; Jul 2017; vol. 127 (no. 7); p. 1633-1638

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28059441

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Objectives/hypothesis: Vocal fold paresis and paralysis are common conditions. Treatment options include augmentation laryngoplasty and voice therapy. The optimal management for this condition is unclear. The objective of this study was to assess possible neuromuscular compensation mechanisms that could potentially be used in the treatment of vocal fold paresis and paralysis. Study Design: In vivo canine model. Methods: In an in vivo canine model, we examined three conditions: 1) unilateral right recurrent laryngeal nerve (RLN) paresis and paralysis, 2) unilateral superior laryngeal nerve (SLN) paralysis, and 3) unilateral vagal nerve paresis and paralysis. Phonatory acoustics and

aerodynamics were measured in each of these conditions. Effective compensation was defined as improved acoustic and aerodynamic profile. Results: The most effective compensation for all conditions was increasing RLN activation and decreasing glottal gap. Increasing RLN activation increased the percentage of possible phonatory conditions that achieved phonation onset. SLN activation generally led to decreased number of total phonation onset conditions within each category. Differential effects of SLN (cricothyroid [CT] muscle) activation were seen. Ipsilateral SLN activation could compensate for RLN paralysis; normal CT compensated well in unilateral SLN paralysis; and in vagal paresis/paralysis, contralateral SLN and RLN displayed antagonistic relationships. Conclusions: Methods to improve glottal closure should be the primary treatment for large glottal gaps. Neuromuscular compensation is possible for paresis. This study provides insights into possible compensatory mechanisms in vocal fold paresis and paralysis. Level Of Evidence: NA Laryngoscope, 127:1633-1638, 2017.

Database: CINAHL

HYPOPLASIA

Bone-anchored maxillary protraction therapy in patients with unilateral complete cleft lip and palate: 3-dimensional assessment of maxillary effects.

Author(s): Yatabe, Marília; Garib, Daniela Gamba; Faco, Renato André de Souza; de Clerck, Hugo; Janson, Guilherme; Nguyen, Tung; Cevidanes, Lucia Helena Soares; Ruellas, Antonio Carlos

Source: American Journal of Orthodontics & Dentofacial Orthopedics; Sep 2017; vol. 152 (no. 3); p. 327-335

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28863913

Abstract: Introduction: The aim of this study was to 3-dimensionally assess the treatment outcomes of bone-anchored maxillary protraction (BAMP) in patients with unilateral cleft lip and palate. Methods: The cleft group comprised 24 patients with unilateral cleft lip and palate and Class III malocclusion with mean initial and final ages of 11.8 and 13.2 years, respectively. The noncleft group comprised 24 noncleft patients with Class III malocclusion with mean initial and final ages of 11.9 and 12.9 years, respectively. Cone-beam computed tomography examinations were performed before and after BAMP therapy in both groups and superimposed at the cranial base. Three-dimensional displacements of maxillary landmarks were quantified and visualized with color-coded maps and semitransparent superimpositions. The t test corrected for multiple testing (Holm-Bonferroni method), and the paired t test was used for statistical comparison between groups and sides, respectively ($P < 0.05$). Results: BAMP produced anterior (1.66 mm) and inferior (1.21 mm) maxillary displacements in the cleft group with no significant differences compared with the noncleft group. The maxillary first molars of the cleft group showed significantly greater medial displacement than did those in the noncleft group. The zygoma showed significantly greater lateral displacement at the cleft side compared with the noncleft side. Conclusions: BAMP caused similar amounts of maxillary protraction in patients with and without unilateral cleft lip and palate with discrete differences between the cleft side and the noncleft side.

Database: CINAHL

The Impact of Tympanostomy Tubes on Speech and Language Development in Children with Cleft Palate.

Author(s): Shaffer, Amber D.; Ford, Matthew D.; Choi, Sukgi S.; Jabbour, Noel

Source: Otolaryngology-Head & Neck Surgery; Sep 2017; vol. 157 (no. 3); p. 504-514

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28462671

Abstract: Objective Describe the impact of hearing loss, tympanostomy tube placement before palatoplasty, and number of tubes received on speech outcomes in children with cleft palate. Study Design Case series with chart review. Setting Tertiary care children's hospital. Subjects and Methods Records from 737 children born between April 2005 and April 2015 who underwent palatoplasty at a tertiary children's hospital were reviewed. Exclusion criteria were cleft repair at an outside hospital, intact secondary palate, absence of postpalatoplasty speech evaluation, sensorineural or mixed hearing loss, no tubes, first tubes after palatoplasty, or first clinic after 12 months of age. Data from 152 patients with isolated cleft palate and 166 patients with cleft lip and palate were analyzed using Wilcoxon rank-sum, χ^2 , and Fisher exact test and logistic regression. Results Most patients (242, 76.1%) received tubes before palatoplasty. Hearing loss after tubes, but not before, was associated with speech/language delays at 24 months ($P = .005$) and language delays ($P = .048$) and speech sound production disorders (SSPDs, $P = .040$) at 5 years. Receiving tubes before palatoplasty was associated with failed newborn hearing screen ($P = .001$) and younger age at first posttubes type B tympanogram with normal canal volume ($P = .015$). Hearing loss after tubes ($P = .021$), language delays ($P = .025$), SSPDs ($P = .003$), and velopharyngeal insufficiency ($P = .032$) at 5 years and speech surgery ($P = .022$) were associated with more tubes. Conclusion Continued middle ear disease, reflected by hearing loss and multiple tubes, may impair speech and language development. Inserting tubes before palatoplasty did not mitigate these impairments better than later tube placement.

Database: CINAHL

Cochlear Nerve Aplasia and Hypoplasia: Predictors of Cochlear Implant Success.

Author(s): Peng, Kevin A.; Kuan, Edward C.; Hagan, Suzannah; Wilkinson, Eric P; Miller, Mia E.

Source: Otolaryngology-Head & Neck Surgery; Sep 2017; vol. 157 (no. 3); p. 392-400

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28675079

Abstract: Objective To identify factors predicting performance outcomes following cochlear implantation in patients with cochlear nerve aplasia or hypoplasia. Data Sources Individual patient data extracted from published case series and reports. Review Methods The MEDLINE database, Cochrane Library, Embase, Web of Science, and Google Scholar were queried for "cochlear implant" in conjunction with "aplasia" or "hypoplasia" between 1985 and 2015. Eighteen studies were included describing 97 subjects with individual postimplant auditory data. Postimplant performance was categorized as follows: level 1, nonstimulation/minimal detection; level 2, improved detection; level 3, closed-set speech perception; or level 4, open-set speech perception. The subjects achieving speech perception (levels 3 and 4) were descriptively compared with those who did not. Results Subjects with a hypoplastic cochlear nerve on magnetic resonance imaging had higher reported rates of achieving speech perception than those with an aplastic nerve. Subjects with syndromic medical comorbidities had higher reported rates of nonstimulation than nonsyndromic subjects. The data showed that some children with an aplastic cochlear nerve or those with partial electrode insertion could obtain levels of speech discrimination. Reporting of patient characteristics and auditory outcomes was extremely variable across studies. Conclusion As previously shown, cochlear

implant in patients with cochlear nerve aplasia or hypoplasia can provide meaningful hearing for select patients. The current study suggests that presence of a cochlear nerve on magnetic resonance imaging and lack of comorbid medical syndrome are associated with better auditory outcomes in such patients. Future efforts to report individual data in a consistent manner may allow better determination of predictive factors.

Database: CINAHL

PHONOLOGY

Phonological experience modulates voice discrimination: Evidence from functional brain networks analysis.

Author(s): Hu, Xueping; Wang, Xiangpeng; Gu, Yan; Luo, Pei; Yin, Shouhang; Wang, Lijun; Fu, Chao; Qiao, Lei; Du, Yi; Chen, Antao

Source: Brain & Language; Oct 2017; vol. 173 ; p. 67-75

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28662482

Abstract: Numerous behavioral studies have found a modulation effect of phonological experience on voice discrimination. However, the neural substrates underpinning this phenomenon are poorly understood. Here we manipulated language familiarity to test the hypothesis that phonological experience affects voice discrimination via mediating the engagement of multiple perceptual and cognitive resources. The results showed that during voice discrimination, the activation of several prefrontal regions was modulated by language familiarity. More importantly, the same effect was observed concerning the functional connectivity from the fronto-parietal network to the voice-identity network (VIN), and from the default mode network to the VIN. Our findings indicate that phonological experience could bias the recruitment of cognitive control and information retrieval/comparison processes during voice discrimination. Therefore, the study unravels the neural substrates subserving the modulation effect of phonological experience on voice discrimination, and provides new insights into studying voice discrimination from the perspective of network interactions.

Database: CINAHL

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

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

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6); p. 663-671

Publication Date: Nov 2017

Publication Type(s): Academic Journal

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: CINAHL

The Effect of Aging and Priming on Same/Different Judgments Between Text and Partially Masked Speech.

Author(s): Freyman, Richard L.; Terpening, Jenna; Costanzi, Angela C.; Helfer, Karen S.

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6); p. 672-680

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28650352

Abstract: Objectives: It is well known from previous research that when listeners are told what they are about to hear before a degraded or partially masked auditory signal is presented, the speech signal "pops out" of the background and becomes considerably more intelligible. The goal of this research was to explore whether this priming effect is as strong in older adults as in younger adults. Design: Fifty-six adults-28 older and 28 younger-listened to "nonsense" sentences spoken by a female talker in the presence of a 2-talker speech masker (also female) or a fluctuating speech-like noise masker at 5 signal-to-noise ratios. Just before, or just after, the auditory signal was presented, a typed caption was displayed on a computer screen. The caption sentence was either identical to the auditory sentence or differed by one key word. The subjects' task was to decide whether the caption and auditory messages were the same or different. Discrimination performance was reported in d' . The strength of the pop-out perception was inferred from the improvement in performance that was expected from the caption-before order of presentation. A subset of 12 subjects from each group made confidence judgments as they gave their responses, and also completed several cognitive tests. Results: Data showed a clear order effect for both subject groups and both maskers, with better same-different discrimination performance for the caption-before condition than the caption-after condition. However, for the two-talker masker, the younger adults obtained a larger and more consistent benefit from the caption-before order than the older adults across signal-to-noise ratios. Especially at the poorer signal-to-noise ratios, older subjects showed

little evidence that they experienced the pop-out effect that is presumed to make the discrimination task easier. On average, older subjects also appeared to approach the task differently, being more reluctant than younger subjects to report that the captions and auditory sentences were the same. Correlation analyses indicated a significant negative association between age and priming benefit in the two-talker masker and nonsignificant associations between priming benefit in this masker and either high-frequency hearing loss or performance on the cognitive tasks. Conclusions: Previous studies have shown that older adults are at least as good, if not better, at exploiting context in speech recognition, as compared with younger adults. The current results are not in disagreement with those findings but suggest that, under some conditions, the automatic priming process that may contribute to benefits from context is not as strong in older as in younger adults.

Database: CINAHL

Children With Single-Sided Deafness Use Their Cochlear Implant.

Author(s): Jane Polonenko, Melissa; Croll Papsin, Blake; Ann Gordon, Karen; Polonenko, Melissa Jane; Papsin, Blake Croll; Gordon, Karen Ann

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6); p. 681-689

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28542017

Abstract: Objectives: To assess acceptance of a cochlear implant (CI) by children with single-sided deafness (SSD) as measured by duration of CI use across daily listening environments. Design: Datalogs for 7 children aged 1.1 to 14.5 years (mean \pm SD: 5.9 \pm 5.9 years old), who had SSD and were implanted in their deaf ear, were anonymized and extracted from their CI processors. Data for all available follow-up clinical appointments were included, ranging from two to six visits. Measures calculated from each datalog included frequency and duration of time the coil disconnected from the internal device, average daily CI use, and both duration (hr/day) and percentage of CI use (% daily use) in different intensity ranges and environment types. Linear mixed effects regression analyses were used to evaluate the relationships between CI experience, daily CI use, frequency of coil-offs, and duration of coil-off time. Nonlinear regression analyses were used to evaluate CI use with age in different acoustic environments. Results: Children with SSD used their CI on average 7.4 hr/day. Older children used their CI for longer periods of the day than younger children. Longitudinal data indicated consistent CI use from the date of CI activation. Frequency of coil-offs reduced with CI experience, but did not significantly contribute to hours of coil-off time. Children used their CI longest in environments that were moderately loud (50 to 70 dB A) and classified as containing speech-in-noise. Preschoolers tended to spend less time in quiet but more time in music than infants/toddlers and adolescents. Conclusions: Children with SSD consistently use their CI upon activation in a variety of environments commonly experienced by children. CI use in children with SSD resembles reported bilateral hearing aid use in children but is longer than reported hearing aid use in children with less severe unilateral hearing loss, suggesting that (1) the normal-hearing ear did not detract from consistent CI use; and (2) a greater asymmetry between ears presents a significant impairment that may facilitate device use to access bilateral sound.

Database: CINAHL

The Effect of Hearing Loss on Novel Word Learning in Infant- and Adult-Directed Speech.

Author(s): Robertson, V. Susie; von Hapsburg, Deborah; Hay, Jessica S.

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6); p. 701-713

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28650353

Abstract: Objectives: Relatively little is known about how young children with hearing impairment (HI) learn novel words in infant- and adult-directed speech (ADS). Infant-directed speech (IDS) supports word learning in typically developing infants relative to ADS. This study examined how children with normal hearing (NH) and children with HI learn novel words in IDS and ADS. It was predicted that IDS would support novel word learning in both groups of children. In addition, children with HI were expected to be less proficient word learners as compared with their NH peers. Design: A looking-while-listening paradigm was used to measure novel word learning in 16 children with sensorineural HI (age range 23.2 to 42.1 months) who wore either bilateral hearing aids ($n = 10$) or bilateral cochlear implants ($n = 6$) and 16 children with NH (age range 23.1 to 42.1 months) who were matched for gender, chronological age, and maternal education level. Two measures of word learning were assessed (accuracy and reaction time). Each child participated in two experiments approximately 1 week apart, one in IDS and one in ADS. Results: Both groups successfully learned the novel words in both speech type conditions, as evidenced by children looking at the correct picture significantly above chance. As a group, children with NH outperformed children with HI in the novel word learning task; however, there were no significant differences between performance on IDS versus ADS. More fine-grained time course analyses revealed that children with HI, and particularly children who use hearing aids, had more difficulty learning novel words in ADS, compared with children with NH. Conclusions: The pattern of results observed in the children with HI suggests that they may need extended support from clinicians and caregivers, through the use of IDS, during novel word learning. Future research should continue to focus on understanding the factors (e.g., device type and use, age of intervention, audibility, acoustic characteristics of input, etc.) that may influence word learning in children with HI in both IDS and ADS.

Database: CINAHL

Hearing loss and speech perception in noise difficulties in Fanconi anemia.

Author(s): Verheij, Emmy; Oomen, Karin P. Q.; Smetsers, Stephanie E.; Zanten, Gijsbert A.; Speleman, Lucienne; van Zanten, Gijsbert A

Source: Laryngoscope; Oct 2017; vol. 127 (no. 10); p. 2358-2361

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28349534

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Objectives/hypothesis: Fanconi anemia is a hereditary chromosomal instability disorder. Hearing loss and ear abnormalities are among the many manifestations reported in this disorder. In addition, Fanconi anemia patients often complain about hearing difficulties in situations with background noise (speech perception in noise difficulties). Our study aimed to describe the prevalence of hearing loss and speech perception in noise difficulties in Dutch Fanconi anemia patients. Study Design: Retrospective chart review. Methods: A retrospective chart review was conducted at a Dutch tertiary care center. All patients with Fanconi anemia at clinical follow-up in our hospital were included. Medical files were reviewed to collect data on hearing loss and speech perception in noise difficulties. Results: In total, 49 Fanconi anemia patients were included.

Audiograms were available in 29 patients and showed hearing loss in 16 patients (55%). Conductive hearing loss was present in 24.1%, sensorineural in 20.7%, and mixed in 10.3%. A speech in noise test was performed in 17 patients; speech perception in noise was subnormal in nine patients (52.9%) and abnormal in two patients (11.7%). Conclusions: Hearing loss and speech perception in noise abnormalities are common in Fanconi anemia. Therefore, pure tone audiograms and speech in noise tests should be performed, preferably already at a young age, because hearing aids or assistive listening devices could be very valuable in developing language and communication skills. Level Of Evidence: 4. Laryngoscope, 127:2358-2361, 2017.

Database: CINAHL

Evaluation of a revised indication for determining adult cochlear implant candidacy.

Author(s): Sladen, Douglas P.; Gifford, René H.; Haynes, David; Kelsall, David; Benson, Aaron; Lewis, Kristen; Zwolan, Teresa; Fu, Qian-Jie; Gantz, Bruce; Gilden, Jan; Westerberg, Brian; Gustin, Cindy; O'Neil, Lori; Driscoll, Colin L.

Source: Laryngoscope; Oct 2017; vol. 127 (no. 10); p. 2368-2374

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28233910

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Objective: To evaluate the use of monosyllabic word recognition versus sentence recognition to determine candidacy and long-term benefit for cochlear implantation. Study Design: Prospective multi-center single-subject design. Methods: A total of 21 adults aged 18 years and older with bilateral moderate to profound sensorineural hearing loss and low monosyllabic word scores received unilateral cochlear implantation. The consonant-nucleus-consonant (CNC) word test was the central measure of pre- and postoperative performance. Additional speech understanding tests included the Hearing in Noise Test sentences in quiet and AzBio sentences in +5 dB signal-to-noise ratio (SNR). Quality of life (QoL) was measured using the Abbreviated Profile of Hearing Aid Benefit and Health Utilities Index. Results: Performance on sentence recognition reached the ceiling of the test after only 3 months of implant use. In contrast, none of the participants in this study reached a score of 80% on CNC word recognition, even at the 12-month postoperative test interval. Measures of QoL related to hearing were also significantly improved following implantation. Conclusion: Results of this study demonstrate that monosyllabic words are appropriate for determining preoperative candidate and measuring long-term postoperative speech recognition performance. Level Of Evidence: 2c. Laryngoscope, 127:2368-2374, 2017.

Database: CINAHL

Multisensory Integration in Cochlear Implant Recipients.

Author(s): Stevenson, Ryan A.; Sheffield, Sterling W.; Butera, Iliza M.; Gifford, René H.; Wallace, Mark T.

Source: Ear & Hearing (01960202); Sep 2017; vol. 38 (no. 5); p. 521-538

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28399064

Abstract: Speech perception is inherently a multisensory process involving integration of auditory and visual cues. Multisensory integration in cochlear implant (CI) recipients is a unique circumstance in that the integration occurs after auditory deprivation and the provision of hearing via the CI. Despite the clear importance of multisensory cues for perception, in general, and for speech intelligibility, specifically, the topic of multisensory perceptual benefits in CI users has only recently begun to emerge as an area of inquiry. We review the research that has been conducted on multisensory integration in CI users to date and suggest a number of areas needing further research. The overall pattern of results indicates that many CI recipients show at least some perceptual gain that can be attributable to multisensory integration. The extent of this gain, however, varies based on a number of factors, including age of implantation and specific task being assessed (e.g., stimulus detection, phoneme perception, word recognition). Although both children and adults with CIs obtain audiovisual benefits for phoneme, word, and sentence stimuli, neither group shows demonstrable gain for suprasegmental feature perception. Additionally, only early-implanted children and the highest performing adults obtain audiovisual integration benefits similar to individuals with normal hearing. Increasing age of implantation in children is associated with poorer gains resultant from audiovisual integration, suggesting a sensitive period in development for the brain networks that subserve these integrative functions, as well as length of auditory experience. This finding highlights the need for early detection of and intervention for hearing loss, not only in terms of auditory perception, but also in terms of the behavioral and perceptual benefits of audiovisual processing. Importantly, patterns of auditory, visual, and audiovisual responses suggest that underlying integrative processes may be fundamentally different between CI users and typical-hearing listeners. Future research, particularly in low-level processing tasks such as signal detection will help to further assess mechanisms of multisensory integration for individuals with hearing loss, both with and without CIs.

Database: CINAHL

Effects of Simulated Hearing Loss on Bilingual Children's Consonant Recognition in Noise.

Author(s): Nishi, Kanae; Trevino, Andrea C.; Rogers, Lydia Rosado; García, Paula; Neely, Stephen T.; Rosado Rogers, Lydia

Source: Ear & Hearing (01960202); Sep 2017; vol. 38 (no. 5)

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28353522

Abstract: Objective: This study investigated the possible impact of simulated hearing loss on speech perception in Spanish-English bilingual children. To avoid confound between individual differences in hearing-loss configuration and linguistic experience, threshold-elevating noise simulating a mild-to-moderate sloping hearing loss was used with normal-hearing listeners. The hypotheses were that: (1) bilingual children can perform similarly to English-speaking monolingual peers in quiet; (2) for both bilingual and monolingual children, noise and simulated hearing loss would have detrimental impacts consistent with their acoustic characteristics (i.e., consonants with high-frequency cues remain highly intelligible in speech-shaped noise, but suffer from simulated hearing loss more than other consonants); (3) differences in phonology and acquisition order between Spanish and English would have additional negative influence on bilingual children's recognition of some English consonants. Design: Listeners were 11 English-dominant, Spanish-English bilingual children (6 to 12 years old) and 12 English-speaking, monolingual age peers. All had normal hearing and age-appropriate nonverbal intelligence and expressive English vocabulary. Listeners performed a listen-and-repeat speech perception task. Targets were 13 American English consonants embedded in vowel-consonant-vowel (VCV) syllables. VCVs were presented in quiet and in speech-shaped noise at

signal-to-noise ratios (SNRs) of -5, 0, 5 dB (normal-hearing condition). For the simulated hearing-loss condition, threshold-elevating noise modeling a mild-to-moderate sloping sensorineural hearing loss profile was added to the normal-hearing stimuli for 0, 5 dB SNR, and quiet. Responses were scored for consonant correct. Individual listeners' performance was summarized for average across 13 consonants (overall) and for individual consonants. Results: Groups were compared for the effects of background noise and simulated hearing loss. As predicted, group performed similarly in quiet. The simulated hearing loss had a considerable detrimental impact on both groups, even in the absence of speech-shaped noise. Contrary to our prediction, no group difference was observed at any SNR in either condition. However, although nonsignificant, the greater within-group variance for the bilingual children in the normal-hearing condition indicated a wider "normal" range than for the monolingual children. Interestingly, although it did not contribute to the group difference, bilingual children's overall consonant recognition in both conditions improved with age, whereas such a developmental trend for monolingual children was observed only in the simulated hearing-loss condition, suggesting possible effects of experience. As for the recognition of individual consonants, the influence of background noise or simulated hearing loss was similar between groups and was consistent with the prediction based on their acoustic characteristics. Conclusions: The results demonstrated that school-age, English-dominant, Spanish-English bilingual children can recognize English consonants in a background of speech-shaped noise with similar average accuracy as English-speaking monolingual age peers. The general impact of simulated hearing loss was also similar between bilingual and monolingual children. Thus, our hypothesis that bilingual children's English consonant recognition would suffer from background noise or simulated hearing loss more than the monolingual peers was rejected. However, the present results raise several issues that warrant further investigation, including the possible difference in the "normal" range for bilingual and monolingual children, influence of experience, impact of actual hearing loss on bilingual children, and stimulus quality.

Database: CINAHL

Objective and Subjective Measures of Simultaneous vs Sequential Bilateral Cochlear Implants in Adults: A Randomized Clinical Trial.

Author(s): Kraaijenga, Véronique J C; Ramakers, Geerte G J; Smulders, Yvette E; van Zon, Alice; Stegeman, Inge; Smit, Adriana L; Stokroos, Robert J; Hendrice, Nadia; Free, Rolien H; Maat, Bert; Frijns, Johan H M; Braire, Jeroen J; Mylanus, E A M; Huinck, Wendy J; Van Zanten, Gijsbert A; Grolman, Wilko

Source: JAMA Otolaryngology-Head & Neck Surgery; Sep 2017; vol. 143 (no. 9); p. 960-960

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28655036

Available at [JAMA Otolaryngology—Head & Neck Surgery](#) - from EBSCO (MEDLINE Complete)

Abstract: Importance: To date, no randomized clinical trial on the comparison between simultaneous and sequential bilateral cochlear implants (BiCIs) has been performed. Objective: To investigate the hearing capabilities and the self-reported benefits of simultaneous BiCIs compared with those of sequential BiCIs. Design, Setting, and Participants: A multicenter randomized clinical trial was conducted between January 12, 2010, and September 2, 2012, at 5 tertiary referral centers among 40 participants eligible for BiCIs. Main inclusion criteria were postlingual severe to profound hearing loss, age 18 to 70 years, and a maximum duration of 10 years without hearing aid use in both ears. Data analysis was conducted from May 24 to June 12, 2016. Interventions: The simultaneous BiCI group received 2 cochlear implants during 1 surgical procedure. The sequential BiCI group received 2

cochlear implants with an interval of 2 years between implants. Main Outcomes and Measures: First, the results 1 year after receiving simultaneous BiCIs were compared with the results 1 year after receiving sequential BiCIs. Second, the results of 3 years of follow-up for both groups were compared separately. The primary outcome measure was speech intelligibility in noise from straight ahead. Secondary outcome measures were speech intelligibility in noise from spatially separated sources, speech intelligibility in silence, localization capabilities, and self-reported benefits assessed with various hearing and quality of life questionnaires. Results: Nineteen participants were randomized to receive simultaneous BiCIs (11 women and 8 men; median age, 52 years [interquartile range, 36–63 years]), and another 19 participants were randomized to undergo sequential BiCIs (8 women and 11 men; median age, 54 years [interquartile range, 43–64 years]). Three patients did not receive a second cochlear implant and were unavailable for follow-up. Comparable results were found 1 year after simultaneous or sequential BiCIs for speech intelligibility in noise from straight ahead (difference, 0.9 dB [95% CI, -3.1 to 4.4 dB]) and all secondary outcome measures except for localization with a 30° angle between loudspeakers (difference, -10% [95% CI, -20.1% to 0.0%]). In the sequential BiCI group, all participants performed significantly better after the BiCIs on speech intelligibility in noise from spatially separated sources and on all localization tests, which was consistent with most of the participants' self-reported hearing capabilities. Speech intelligibility-in-noise results improved in the simultaneous BiCI group up to 3 years following the BiCIs. Conclusions and Relevance: This study shows comparable objective and subjective hearing results 1 year after receiving simultaneous BiCIs and sequential BiCIs with an interval of 2 years between implants. It also shows a significant benefit of sequential BiCIs over a unilateral cochlear implant. Until 3 years after receiving simultaneous BiCIs, speech intelligibility in noise significantly improved compared with previous years. Trial Registration: trialregister.nl Identifier: NTR1722.

Database: CINAHL

Expansion of Prosodic Abilities at the Transition From Babble to Words: A Comparison Between Children With Cochlear Implants and Normally Hearing Children.

Author(s): Pettinato, Michèle; De Clerck, Ilke; Verhoeven, Jo; Gillis, Steven; Clerck, Ilke De

Source: Ear & Hearing (01960202); Jul 2017; vol. 38 (no. 4); p. 475-486

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28207579

Abstract: Objectives: This longitudinal study examined the effect of emerging vocabulary production on the ability to produce the phonetic cues to prosodic prominence in babbled and lexical disyllables of infants with cochlear implants (CI) and normally hearing (NH) infants. Current research on typical language acquisition emphasizes the importance of vocabulary development for phonological and phonetic acquisition. Children with CI experience significant difficulties with the perception and production of prosody, and the role of possible top-down effects is, therefore, particularly relevant for this population. Design: Isolated disyllabic babble and first words were identified and segmented in longitudinal audio-video recordings and transcriptions for nine NH infants and nine infants with CI interacting with their parents. Monthly recordings were included from the onset of babbling until children had reached a cumulative vocabulary of 200 words. Three cues to prosodic prominence, fundamental frequency (f0), intensity, and duration, were measured in the vocalic portions of stand-alone disyllables. To represent the degree of prosodic differentiation between two syllables in an utterance, the raw values for intensity and duration were transformed to ratios, and for f0, a measure of the perceptual distance in semitones was derived. The degree of prosodic differentiation for disyllabic babble and words for each cue was compared between groups. In addition, group and individual tendencies on the types of stress patterns for babble and words were also

examined. Results: The CI group had overall smaller pitch and intensity distances than the NH group. For the NH group, words had greater pitch and intensity distances than babbled disyllables. Especially for pitch distance, this was accompanied by a shift toward a more clearly expressed stress pattern that reflected the influence of the ambient language. For the CI group, the same expansion in words did not take place for pitch. For intensity, the CI group gave evidence of some increase of prosodic differentiation. The results for the duration measure showed evidence of utterance final lengthening in both groups. In words, the CI group significantly reduced durational differences between syllables so that a more even-timed, less differentiated pattern emerged. Conclusions: The onset of vocabulary production did not have the same facilitatory effect for the CI infants on the production of phonetic cues for prosody, especially for pitch. It was argued that the results for duration may reflect greater articulatory difficulties in words for the CI group than the NH group. It was suggested that the lack of clear top-down effects of the vocabulary in the CI group may be because of a lag in development caused by an initial lack of auditory stimulation, possibly compounded by the absence of auditory feedback during the babble phase.

Database: CINAHL

Infants' and Adults' Use of Temporal Cues in Consonant Discrimination.

Author(s): Cabrera, Laurianne; Werner, Lynne

Source: Ear & Hearing (01960202); Jul 2017; vol. 38 (no. 4); p. 497-506

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28338496

Abstract: Objectives: Adults can use slow temporal envelope cues, or amplitude modulation (AM), to identify speech sounds in quiet. Faster AM cues and the temporal fine structure, or frequency modulation (FM), play a more important role in noise. This study assessed whether fast and slow temporal modulation cues play a similar role in infants' speech perception by comparing the ability of normal-hearing 3-month-olds and adults to use slow temporal envelope cues in discriminating consonants contrasts. Design: English consonant-vowel syllables differing in voicing or place of articulation were processed by 2 tone-excited vocoders to replace the original FM cues with pure tones in 32 frequency bands. AM cues were extracted in each frequency band with 2 different cutoff frequencies, 256 or 8 Hz. Discrimination was assessed for infants and adults using an observer-based testing method, in quiet or in a speech-shaped noise. Results: For infants, the effect of eliminating fast AM cues was the same in quiet and in noise: a high proportion of infants discriminated when both fast and slow AM cues were available, but less than half of the infants also discriminated when only slow AM cues were preserved. For adults, the effect of eliminating fast AM cues was greater in noise than in quiet: All adults discriminated in quiet whether or not fast AM cues were available, but in noise eliminating fast AM cues reduced the percentage of adults reaching criterion from 71 to 21%. Conclusions: In quiet, infants seem to depend on fast AM cues more than adults do. In noise, adults seem to depend on FM cues to a greater extent than infants do. However, infants and adults are similarly affected by a loss of fast AM cues in noise. Experience with the native language seems to change the relative importance of different acoustic cues for speech perception.

Database: CINAHL

Phonologic and Acoustic Analysis of Speech Following Glossectomy and the Effect of Rehabilitation on Speech Outcomes.

Author(s): Takatsu, Jun; Hanai, Nobuhiro; Suzuki, Hidenori; Yoshida, Masahiro; Tanaka, Yasuhiro; Tanaka, Seiya; Hasegawa, Yasuhisa; Yamamoto, Masahiko

Source: Journal of Oral & Maxillofacial Surgery (02782391); Jul 2017; vol. 75 (no. 7); p. 1530-1541

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28039737

Abstract: Purpose: Changes in acoustic features in the perioperative phase for elucidating the mechanisms of articulation disorder and the effect of perioperative rehabilitation were studied prospectively. Materials and Methods: Sixty-two patients with 62 tongue cancer were divided into a partial glossectomy group ($n = 40$) and a reconstruction group ($n = 22$). Acoustic characteristics were analyzed during the preoperative and postoperative periods and after rehabilitation using the first and second formants of the vowels /a/, /i/, and /u/; the triangular vowel space area (tVSA); and the slopes of formant transitions. Results: In the 2 groups, decreases in the tVSA and formant slopes were found from the preoperative to the postoperative period, and the acoustic characteristics of the reconstruction group especially improved to preoperative values after rehabilitation. Analysis of the postoperative period showed that acoustic characteristics were altered at the site of surgical resection. Conclusion: Changes of acoustic variables are related to excision size and site, suggesting the distinctive tongue portion for the articulation of each speech sound. Perioperative rehabilitation could activate the articulators and increase the range of movement of the remaining tongue, especially the preserved anterior tongue.

Database: CINAHL

Infant word segmentation recruits the cerebral network of phonological short-term memory.

Author(s): Minagawa, Yasuyo; Hakuno, Yoko; Kobayashi, Ai; Naoi, Nozomi; Kojima, Shozo

Source: Brain & Language; Jul 2017; vol. 170 ; p. 39-49

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28407509

Abstract: Segmenting word units from running speech is a fundamental skill infants must develop in order to acquire language. Despite ample behavioral evidence of this skill, its neurocognitive basis remains unclear. Using behavioral testing and functional near-infrared spectroscopy, we aimed to uncover the neurocognitive substrates of word segmentation and its development. Of three age-groups of Japanese infants (5-6, 7-8, and 9-10months of age), the two older age-groups showed significantly larger temporo-parietal (particularly supramarginal gyrus) responses to target words repeatedly presented for training, than to control words. After the training, they also exhibited stronger inferior frontal responses to target words embedded in sentences. These findings suggest that word segmentation largely involves a cerebral circuit of phonological (phonetic) short-term memory. The dorsal pathway involved in encoding and decoding phonological representation may start to function stably at around 7months of age to facilitate the growth of the infant's vocabulary.

Database: CINAHL

SWALLOWING

Does a multidisciplinary approach to voice and swallowing disorders improve therapy adherence and outcomes?

Author(s): Litts, Juliana K.; Abaza, Mona M.

Source: Laryngoscope; Nov 2017; vol. 127 (no. 11); p. 2446-2446

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 28699270

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: The article offers information on voice and swallowing disorders and the improvement in treatment adherence and effectiveness by using a multidisciplinary approach. Topics discussed include the challenges faced by otolaryngologists and speech language pathologists (SLPs) due to poor treatment adherence, poor adherence in laryngology, and the increased adherence in patients when using interdisciplinary approach.

Database: CINAHL

OTHER

Benign vocal fold lesions: update on nomenclature, cause, diagnosis, and treatment.

Author(s): Naunheim, Matthew R.; Carroll, Thomas L.

Source: Current Opinion in Otolaryngology & Head & Neck Surgery; Dec 2017; vol. 25 (no. 6); p. 453-458

Publication Date: Dec 2017

Publication Type(s): Academic Journal

PubMedID: 29099730

Abstract: Purpose Of Review: The management of benign vocal fold lesions (BVFLs) continues to evolve. This article will review the recent literature surrounding the nomenclature, cause, diagnosis, and treatment of BVFLs, including polyps, nodules, cysts, and reactive lesions. Recent Findings: The taxonomy of vocal fold lesions has been refined, and it serves as a common descriptive language for diagnosis, treatment algorithms, and reporting of outcomes. Though these lesions are known to be the result of phonotrauma, investigation into inflammatory mediators, apoptosis, and laryngopharyngeal reflux provide further elucidation of their underlying pathophysiology. The future of diagnosis, for which direct fiberoptic visualization and stroboscopy are the current gold standard, may utilize narrow-band imaging and videokymography; the clinical utility of ultrasound and optical coherence tomography is more remote. Angiolytic laser therapy and intralesional steroid injection are acceptable options for treatment of BVFLs. Voice therapy and microsurgical excision are mainstays of treatment. Summary: Recent clinical and basic science research has expanded upon an extensive literature surrounding the nomenclature, cause, diagnosis, and treatment of benign subepithelial vocal fold lesions. There remains a strong need for the advancement of rigorous diagnostic principles, evaluation of therapeutic interventions, and development of best practices guidelines.

Database: CINAHL

Therapy access among children with autism spectrum disorder, cerebral palsy, and attention-deficit-hyperactivity disorder: a population-based study.

Author(s): Benevides, Teal W; Carretta, Henry J; Ivey, Carole K; Lane, Shelly J

Source: Developmental Medicine & Child Neurology; Dec 2017; vol. 59 (no. 12); p. 1291-1298

Publication Date: Dec 2017

Publication Type(s): Academic Journal

PubMedID: 28940224

Available at [Developmental Medicine and Child Neurology](#) - from Wiley Online Library All Journals

Abstract: Aim: This study examined cross-sectional population-based rates in reported need and unmet need for occupational, physical, and speech therapy services in children with autism spectrum disorder (ASD) compared with children with attention-deficit-hyperactivity disorder (ADHD) and cerebral palsy (CP). Method: The 2005-2006 and 2009-2010 (USA) National Survey of Children with Special Health Care data sets were used to compare therapy need and unmet need among children younger than 18 years with ASD (n=5178), ADHD (n=20 566), and CP (n=1183). Bivariate approaches and multivariate logistic regression using imputed data were used to identify associations between child and family characteristics, and access to therapy services. Results: After adjusting for other variables, children with ASD had a significantly greater likelihood of having an unmet therapy need compared with children with ADHD (odds ratio [OR] 1.66, 95% confidence interval [CI] 1.36-2.03), but a similar unmet need as children with CP (OR 1.30, 95% CI 0.97-1.74). Factors associated with unmet need included survey year, younger child age, no health insurance, and increased functional and behavioral difficulties. Interpretation: Children in our sample had greater unmet therapy needs in 2009 than in 2005. Caregiver-reported reasons for unmet need included cost and school resources. Research examining future trends in therapy access are warranted for children with ASD and CP. What This Paper Adds: Children with complex diagnoses of autism spectrum disorder and cerebral palsy had reported unmet need for therapy services. High costs of therapy were the primary reported reason contributing to reduced access among children.

Database: CINAHL

Audiologist-Guided Internet-Based Cognitive Behavior Therapy for Adults With Tinnitus in the United Kingdom: A Randomized Controlled Trial.

Author(s): Beukes, Eldré W; Baguley, David M; Allen, Peter M; Manchaiah, Vinaya; Andersson, Gerhard

Source: Ear & Hearing (01960202); Nov 2017; vol. 38 (no. 6)

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 29095725

Abstract: Objectives: Specialist tinnitus services are in high demand as a result of the negative effect tinnitus may have on quality of life. Additional clinically and cost-effective tinnitus management routes are needed. One potential route is providing Cognitive Behavioural Therapy for tinnitus via the Internet (iCBT). This study aimed to determine the efficacy of guided iCBT, using audiological support, on tinnitus distress and tinnitus-related comorbidities, in the United Kingdom. A further aim was to establish the stability of intervention effects 2-months postintervention. The hypothesis was that iCBT for tinnitus would be more effective at reducing tinnitus distress than weekly monitoring. Design: A randomized, delayed intervention efficacy trial, with a 2-month follow-up was implemented to evaluate the efficacy of iCBT in the United Kingdom. Participants were randomly assigned to the experimental (n = 73) or weekly monitoring control group (n = 73) after being stratified for tinnitus severity and age. After the experimental group completed the 8-week long iCBT intervention, the control group undertook the same intervention. Intervention effects were, therefore, evaluated in two independent groups at two time points. The primary outcome was a change in tinnitus distress between the groups as assessed by the Tinnitus Functional Index.

Secondary assessment measures were included for insomnia, anxiety, depression, hearing disability, hyperacusis, cognitive failures, and satisfaction with life. These were completed at baseline, postintervention, and at a 2-month postintervention follow-up. Results: After undertaking the iCBT intervention, the experimental group had a greater reduction in tinnitus distress when compared with the control group. This reduction was statistically significant (Cohen's $d = 0.7$) and was clinically significant for 51% of the experimental group and 5% of the control group. This reduction was evident 4 weeks after commencing the iCBT intervention. Furthermore, the experimental group had a greater reduction in insomnia, depression, hyperacusis, cognitive failures, and a greater improvement in quality of life, as evidenced by the significant differences in these assessment measures postintervention. Results were maintained 2 months postintervention. Conclusions: Guided (using audiological support) iCBT for tinnitus resulted in statistically significant reductions in tinnitus distress and comorbidities (insomnia, depression, hyperacusis, cognitive failures) and a significant increase in quality of life. These effects remained stable at 2-months postintervention. Further trials to determine the longer term efficacy of iCBT to investigate predictors of outcome and to compare iCBT with standard clinical care in the United Kingdom are required. Registered at clinicaltrials.gov: NCT02370810 on 5/03/2015.

Database: CINAHL

Adult normative data for phonatory aerodynamics in connected speech.

Author(s): Lewandowski, Ali; Gillespie, Amanda; Kridgen, Samantha; Jeong, Kwonho; Yu, Lan; Gartner-Schmidt, Jackie

Source: Laryngoscope; Nov 2017; vol. 127

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 29094368

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

Available at [The Laryngoscope](#) - from Wiley Online Library Medicine and Nursing Collection 2018 - NHS

Abstract: Objectives/hypothesis: To establish normative values for phonatory aerodynamic measurements in connected speech across adult ages and gender. Study Design: Prospective data collection across group design. Methods: One hundred fifty adults aged >18 years without voice complaints were stratified into three equal-age groups (group 1 [ages 18-39 years]; group 2 [ages 40-59 years], and group 3 [ages 60+ years]) and two equal-gender groups (male and female) resulting in 25 participants in each category. Participants read the first four sentences of the Rainbow Passage at comfortable pitch and loudness to obtain a connected speech sample. The following dependent variables were analyzed: breath number, reading passage duration, mean phonatory airflow, inspiratory airflow duration, and expiratory airflow duration. Results: A gender effect was found for mean phonatory airflow, with males showing significantly greater phonatory airflow than females during connected speech ($P < .001$). Number of breaths was significantly greater for group 3 than group 2 ($P < .001$) and group 1 ($P < .001$). Duration, and inspiratory and expiratory airflow durations were all significantly greater for group 3 ($P < .001$) than group 2 ($P < .001$) than group 1 ($P < .001$). Conclusions: This study provides normative data for phonatory aerodynamics in adult connected speech. Significant age and gender effects were observed. Laryngoscope, 2017.

Database: CINAHL

Cochlear implantation in children under 12 months of age.

Author(s): McKinney, Samantha

Source: Current Opinion in Otolaryngology & Head & Neck Surgery; Oct 2017; vol. 25 (no. 5); p. 400-404

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28719394

Abstract: Purpose Of Review: Children with congenital hearing loss are being identified earlier, leading to earlier intervention. Current US Food and Drug Administration (FDA) criteria states a child must be 12 months or older for cochlear implantation. The purpose of this article is to review recent publications regarding the benefits of implanting infants under 12 months of age. Topics include: safety and efficacy of surgery, speech and language acquisition outcomes, audiologic components, and limitations. Recent Findings: Since the early 1990s, the candidacy criteria evolved drastically. However, the FDA criteria for cochlear implantation in children has remained at 12 months of age or older since 2000. Recent research indicates implanting below 12 months of age a safe and effective procedure. Speech and language outcomes showed better speech and language advantages. In addition, infants implanted earlier showed normal auditory skills as early as 3 months post cochlear implant activation. This article will also address recent findings on the limitations of earlier implantation. Summary: Recent research demonstrates positive outcomes in children implanted under 12 months of age. Developing research on earlier implantation could lead to a change in the current FDA criteria allowing infants to reach their speech and hearing potential faster.

Database: CINAHL

Speech and Language Consequences of Unilateral Hearing Loss: A Systematic Review.

Author(s): Anne, Samantha; Lieu, Judith E. C.; Cohen, Michael S.

Source: Otolaryngology-Head & Neck Surgery; Oct 2017; vol. 157 (no. 4); p. 572-579

Publication Date: Oct 2017

Publication Type(s): Academic Journal

PubMedID: 28828919

Abstract: Objective Unilateral hearing loss has been shown to have negative consequences for speech and language development in children. The objective of this study was to systematically review the current literature to quantify the impact of unilateral hearing loss on children, with the use of objective measures of speech and language. Data Sources PubMed, EMBASE, Medline, CINAHL, and Cochrane Library were searched from inception to March 2015. Manual searches of references were also completed. Review Methods All studies that described speech and language outcomes for children with unilateral hearing loss were included. Outcome measures included results from any test of speech and language that evaluated or had age-standardized norms. Due to heterogeneity of the data, quantitative analysis could not be completed. Qualitative analysis was performed on the included studies. Two independent evaluators reviewed each abstract and article. Results A total of 429 studies were identified; 13 met inclusion criteria and were reviewed. Overall, 7 studies showed poorer scores on various speech and language tests, with effects more pronounced for children with severe to profound hearing loss. Four studies did not demonstrate any difference in testing results between patients with unilateral hearing loss and those with normal hearing. Two studies that evaluated effects on speech and language longitudinally showed initial speech problems, with improvement in scores over time. Conclusions There are inconsistent data regarding effects of unilateral hearing loss on speech and language outcomes for children. The majority of recent studies suggest poorer speech and language testing results, especially for patients with severe to profound unilateral hearing loss.

Database: CINAHL

Long-Term Outcomes, Education, and Occupational Level in Cochlear Implant Recipients Who Were Implanted in Childhood.

Author(s): Illg, Angelika; Haack, Marius; Lesinski-Schiedat, Anke; Büchner, Andreas; Lenarz, Thomas

Source: Ear & Hearing (01960202); Sep 2017; vol. 38 (no. 5); p. 577-587

Publication Date: Sep 2017

Publication Type(s): Academic Journal

PubMedID: 28369009

Abstract: Objectives: To document the long-term outcomes of auditory performance, educational status, vocational training, and occupational situation in users of cochlear implants (CIs) who were implanted in childhood. Design: This retrospective cross-sectional study of 933 recipients of CIs examined auditory performance, education and vocational training, and occupational outcomes. All participants received their first CI during their childhood between 1986 and 2000. Speech comprehension results were categorized using the categories of auditory performance (CAP) arranged in order of increasing difficulty ranging from 0 to 8. 174 of the 933 pediatric recipients of CIs completed a self-assessment questionnaire regarding their education and occupational outcomes. To measure and compare school education, qualifications were converted into International Standard Classification of Education levels (ISCED-97). Occupations were converted into International Standard Classification of Occupation-88 skill levels. Data from the German General Social Survey (Allgemeine Bevölkerungsumfrage der Sozialwissenschaften/ALLBUS) for 2012 were used as a basis for comparing some of the collected data with the general population in Germany. Results: The results showed that 86.8% of the 174 participants who completed the survey used their devices more than 11 hr per day. Only 2% of the surveyed individuals were nonusers. Median CAP was 4.00 (0 to 8). Age at implantation was significantly correlated with CAP level ($r = -0.472$; $p < 0.001$). The mean ISCED level of the 174 surveyed recipients was 2.24 ($SD = 0.59$; range: 1 to 3). A significant difference ($p = 0.001$) between users' ISCED levels and those of respondents was found. Participants' ISCED levels and maternal educational levels were significantly correlated ($r = 0.271$; $p = 0.008$). The International Standard Classification of Occupation-88 skill levels were as follows: 5% achieved skill level 1; 77% skill level 2; 16% skill level 3; and 5% skill level 4. The average skill level achieved was 2.24 (range 1 to 4; $SD = 0.57$) which was significantly poorer ($t(127) = 4.886$; $p = 0.001$) than the mean skill level of the respondents (mean = 2.54; $SD = 0.85$). Conclusions: Data collection up to 17.75 ($SD = 3.08$; range 13 to 28) years post implant demonstrated that the majority of participants who underwent implantation at an early age achieved discrimination of speech sounds without lipreading (CAP category 4.00). Educational, vocational, and occupational level achieved by this cohort were significantly poorer compared with the German and worldwide population average. Children implanted today who are younger at implantation, and with whom more advanced up-to-date CIs are used, are expected to exhibit better auditory performance and have enhanced educational and occupational opportunities. Compared with the circumstances immediately after World War II in the 20th century, children with hearing impairment who use these implants have improved prospects in this regard.

Database: CINAHL

Beyond Phonosurgery: Considerations for Patient-Reported Outcomes and Speech Therapy in Transgender Vocal Feminization.

Author(s): Morrison, Shane D.; Crowe, Christopher S.; Rashidi, Vania; Massie, Jonathan P.; Chaiet, Scott R.; Francis, David O.

Source: Otolaryngology-Head & Neck Surgery; Aug 2017; vol. 157 (no. 2); p. 349-349

Publication Date: Aug 2017

Publication Type(s): Academic Journal

PubMedID: 28762303

Database: CINAHL