

Title: Specialty Certification: Benefits for you and your patients

Presenter: Susan Lloyd, Au.D., CCC/A, FAAA

Abstract: While the concept of support personnel at the entry level of service provision is common to the VA and DoD, special interests and in-depth specialties have arisen at the other end of the spectrum, along with the desire to recognize those individuals and the need to quantify their skills.

ASHA has accommodated specialties with Special Interest Groups in both hearing and speech. Both AAA and ASHA have established specialty certification. This presentation will compare terminology and entry and renewal requirements between the organizations and their six recognized specialties.

Outcomes: After viewing this poster session, participants will be able to:

1. research specialty recognition appropriate to their practice.
2. determine whether specialty recognition has value in their current or future practice and if so know how to apply for it.
3. recognize achievements attained by those who have specialty recognition or certification and use them as a resource for patient care.

Title and affiliation of presenter: Audiologist, VA Southern Nevada Healthcare (Las Vegas), formerly Audiologist, Nellis AFB

Title: *The relationship of locus of control, self-control, and acceptable noise levels for young listeners with normal hearing*

Presenters: Amy C. Hornea & Susan Gordon-Hickeyb

Abstract:

Background noise acceptance while listening to speech, assessed via the Acceptable Noise Level (ANL) measure, has been shown to be an accurate predictor of hearing aid success. No specific listener characteristics have been identified as being related to a listener's ability to accept background noise. The purpose of this study was to determine whether or not locus of control and self-control are related to ANL. Participants were seventy young adults (19 to 39 years) with normal hearing (21 male, 49 female). Participants completed psychological profiles that evaluated locus of control and self-control and had their ANLs measured. Results revealed correlations between ANL and self-control. Listeners with higher levels of self-control accepted more background noise than listeners with lower levels of self-control. A correlation was found between most comfortable listening levels and ANL. This research suggests that exercises aimed at strengthening a listener's auditory self-control may lead to improved background noise

Learning Objectives:

1. Define and describe the ANL measure
2. Measure and interpret the ANL measure
3. Counsel patients regarding their self-control and ANL

Short Biographies:

Amy Horne is a clinical Audiologist at the Pensacola VA Outpatient Clinic. She received an Au.D. and Ph.D. from the University of South Alabama in May 2010. Current lines of research include psychological and electrophysiologic differences in listeners with varying degrees of background noise acceptance.

Susan Gordon-Hickey is an Assistant Professor at the University of South Alabama. She received an Au.D. and Ph.D from the University of South Alabama in 2007. Current lines of research include background noise acceptance and acoustic desensitization therapy to improve ANL.

Title: *St. Cloud Veterans Administration Medical Center Mobile Audiology*

Presenters: Alan Sias, AuD; Gina Oleen, MBA, RD

Abstract:

Mobile medical units are being used today to bring needed medical services to people in rural and under-served areas of our country however; there has not been a mobile audiology unit. St. Cloud VAMC has three Community Based Outpatient Clinics (CBOC's) located in Brainerd, Alexandria and Montevideo Minnesota. These clinics were established to supply medical services to Veterans from many surrounding rural communities. A new clinical initiative described in the St. Cloud VAMC 2011 Strategic Plan stated a goal to bring audiology services to these rural CBOC's. Upon inspection, it was found that space was limited at these CBOC's. With this limitation in mind, other options needed to be considered. The idea of mobilizing audiology services then led to the systems redesign innovation of the current mobile audiology unit. A grant was written and submitted. An award of \$250,000 was secured. Results are yet to be determined but speculation is:

- Improved Veteran satisfaction
- A reduction in travel reimbursement
- Decreased demand on limited space in the clinic
- Increased efficiency in use of audiology equipment and booth by servicing the three CBOC's and St. Cloud VAMC clinic.

Learning Objectives:

1. Observers will gain an understanding the processes that the St. Cloud VAMC went through to obtain the mobile clinic.
2. Observers will be gain an understanding on some of the issues involved in obtaining a mobile clinic.
3. Observers will gain an understanding of features of the mobile audiology clinic and inherent issued involved with those choices.

Short Biographies:

Alan Sias, AuD, is a member of the audiology clinic team at the St. Cloud VA Health Care System, St. Cloud, MN. He has worked at the VA since 2008. He previously worked for a hearing instrument manufacturer in the technical support and training area as well as sales to the government agencies. He has also worked in rural Montana, had positions in hospital, clinic, ENT practice, and owned his own practice.

Gina Oleen, MBA, RD, is the Administrative Officer for the Surgical/Specialty Care Service Line at the St. Cloud VA Health Care System (HCS), St. Cloud, MN. She has worked at the St. Cloud VA HCS since 2004, working in the position of Administrative Officer for 2 ½ years. Her previous experience includes working as a Clinical Dietitian and Clinical Dietitian Manager.

Title: *Skydiving Noise Levels*

Presenter: Tina Penman, Au.D.; Michael Epstein, Ph.D.

Abstract:

Introduction: Noise levels have been researched across different areas, including construction, aircraft, and industry, but not in skydiving. This study recorded the noise levels for 68 tandem skydives and 10 solo freefalls and determined whether or not a skydiver could be at risk for a noise-induced hearing loss.

Methodology: A United States Parachute Association (USPA) licensed skydiver performed all skydives at the same dropzone from June – September 2010. A Howard Leight QuietDose™ dosimeter with the use of Matrix™ ET medium eartips recorded noise levels.

Results: Results showed an average noise dosage of 9.73% for each skydive using a permissible exposure limit (PEL) of 90 dBA and 5 dB exchange rate. 57 trials exceeded a noise level of 115 dBA, ranging from 1-52 seconds in duration.

Conclusion: With an average noise dose of 9.73%, a skydiver wearing Matrix™ ET medium eartips may exceed a noise dosage of 100% if skydiving 11 times or more within an 8 hour time frame. A skydiver that does not wear hearing protection is more likely to receive a noise dosage higher than 9.73% per skydive and may exceed a noise dosage of 100% if skydiving 10 times or less within an 8 hour time frame.

Learning Objectives:

1. To know skydiving noise levels of tandem skydives and solo freefalls
2. To determine whether a skydiver might be at risk for a noise-induced hearing loss
3. To assess areas for further research involving skydiving noise levels

Short Biography:

Tina Penman, Au.D. completed her 4th year externship at the Portland OR VA Medical Center and recently graduated from Northeastern University with her clinical doctorate in audiology. She has been interested in skydiving noise levels since her first skydive in August 2007 and has enjoyed the ability to incorporate skydiving into her research.

Title: *Preliminary TeleAudiology Pilot Data: Patient Outcomes Among First-time Hearing aid Users*

Presenter: Maria Hemenway, William S. Middleton Memorial VA Hospital

Abstract:

Introduction: The Madison VA implemented teleaudiology services at Beaver Dam, WI, a community-based outpatient clinic (CBOC); over 127 visits have been made. The data presented is limited to satisfaction among first-time hearing aid users. Outcomes include efficacy of clinical outcomes, satisfaction, quality of care, cost, and cost effectiveness of telehealth applications.

Methods: Twenty-five (25) first-time hearing aid users of the CBOC were asked to complete a telehealth questionnaire and the *International Outcome Inventory-Hearing Aids (IOI-HA)*. Responses of twenty-four completed questionnaires and twenty-five *IOI-HA* outcome measurements were received. Data were collected between September 27 and December 27, 2010. All respondents were 57-94 year old males.

The telehealth questionnaire measures patient comfort with equipment, ability to see/hear the clinician, adequacy of technical assistance, convenience, satisfaction, congruence between experience and expectations, and preference for future care. The *IOI-HA* measures hearing aid benefit.

Results: The patient responses to the questionnaire were highly positive with ratings of 4.42 to 4.83 on a 5-point Likert scale. Travel miles saved averaged 31.10 miles. When pilot data were compared to both 2003 and 2009 *IOI-HA* normative groups, patient's ratings were as favorable or more in 6/7 categories. The small population size is a limitation of findings.

Learning Objectives:

1. Stimulate discussion of critical outcome measures needed in evaluating teleaudiology services.
2. Present preliminary evaluation of patient data of the Madison VA Teleaudiology Pilot Program in the areas of overall patient satisfaction, perceived quality and effectiveness of service, and convenience.
3. Share a comparative analysis of data from two evaluation tools: locally-used telehealth feedback instrument and the International Outcome Inventory for Hearing Aids (*IOI-HA*).

Short Biography:

Maria Hemenway is currently a 4th year Au.D. extern at the William S. Middleton Memorial VA Hospital in Madison, WI. Maria completed her undergraduate degree in Communication Sciences and Disorders from the University of Wisconsin-Whitewater and currently attends the University of Wisconsin-Madison. Maria will graduate with her Au.D. in May 2011. Maria's interests include vestibular testing and telehealth. She is currently tracking teleaudiology outcomes for Madison VA and soon hopes to participate in teleaudiology appointments.

Title: *Setting up a Telehealth Clinic: The Salt Lake City VAMC Model*

Presenter: Shane D. Walker Au.D., CCC-A

Abstract:

Introduction: The need for Audiology Telehealth services will be shown and how the Salt Lake City (SLC) VA has implemented their new Audiology Telehealth clinic. This poster will offer an outline and an example for facilitating future Telehealth clinics, along with recommendations and trouble-shooting. Future possibilities for Audiology Telehealth will be presented.

Methodology: The poster will include information on: how to begin a Telehealth program in evaluating the need for Telehealth services; equipment used to provide services; where to find help in establishing the program; determining what services a clinic can provide; and methods for remote access to adjust hearing aids. The poster will also provide information on challenges that face Telehealth clinic implementation, such as: where to provide services, scheduling, funding, note writing, choosing hearing aids that facilitate a Telehealth program, and remote software installation.

Results: The poster will show the SLC VA's Audiology Telehealth services, protocols and their implementation through several Community Based Outpatient Clinics. Future possibilities for Audiology Telehealth services at the SLC VA will be provided. The poster will also include information regarding current limitations and suggestions for overcoming them.

Learning objectives

1. Describe three potential challenges facing implementation of a Telehealth Clinic.
2. Describe different services that may be offered through Audiology Telehealth.
3. Identify the two different software programs mentioned on the Poster for remote access to adjust hearing aids.

Short Biography:

Shane D. Walker, Au.D. is a clinical audiologist and is responsible for the development and implementation of Audiology Telehealth Clinic at the Salt Lake City VAMC.

Title: *Tinnitus Management with Live9™TS*

Presenters: Robin Donham AuD, FAAA, CCC-A; Michael Piskosz, M.S.

Abstract:

Tinnitus is the most prevalent physical disability reported by service members who participated in military conflict as well as those who served during peace time. Tinnitus management programs and devices need to have enough flexibility to treat tinnitus with or without hearing loss. Tinnitus sound enrichment devices from manufacturers have increased significantly in the last five years, suggesting some manufacturers are adapting and developing technology according to the ever-changing needs of service-members and veterans beyond just amplification. ReSound's Live9™ TS combination device treats both hearing loss and tinnitus in one system and encompasses premium hearing technology. The purpose of this paper is to present the data from surveyed VA Audiologists using the Live9™ TS devices. Key topics include: How is Live9™TS being used in VA clinics? Are the Live TS features both beneficial and easy to use in VA clinics? According to the Progressive Tinnitus Management protocol commonly used in the VA Nation-wide, how should the Live9™TS device be used? Providing evidence-based tinnitus tools for use in VA clinics when managing veterans with tinnitus is critical. Live9™TS should be used as part of an ongoing, patient-focused tinnitus program for those suffering from tinnitus with or without hearing.

Learning Objectives:

1. Upon completing this session participants will be able to identify core technology in the Live9™TS.
2. Upon completing this course participants will be able to identify the tinnitus tools or features in Live9™TS.
3. Upon completing this course participants will be able to determine candidacy for Live9™TS.

Short Biographies:

Robin Donham, Au.D, FAAA, CCC-A is graduate of Texas Tech University Health Sciences Center. She has worked with Great Nordic (GN INTERTON & ReSound) for the last four years in various positions. For the last three years, she has been working as a National Training Manager designing educational programs for products developed by Resound. Dr. Donham has fit and dispensed hearing aids, developed balance and pediatric programs for independent clinics such as the West Texas Rehab Center in Abilene, X. She has also been a national presenter for Audiologyonline.com, HealthNet.com, and was a presenter and charter member of the Abilene Chapter of the Hearing Loss Association of America (HLAA) formerly Self-Help for the Hard of Hearing (SHHH). She has also been a presenter and public speaker on audiology related issues with organizations such as the HLAA, the Lion's Club, Texas Health Fairs, Universities and Industrial settings. She has publications and/or poster presentations in Single-Sided Deafness, Balance disorder, electroacoustic testing, hearing aid technology, and Leadership and Team building.

Michael Piskosz is a board certified audiologist who is a member of the Global Audiology team for ReSound, based in Copenhagen, Denmark. Michael's clinical experience includes the University of Miami, in Miami, FL, as well as a private ENT practice in Hollywood, FL. Michael started with ReSound as an Audiologist/Regional Manager in New Zealand, and has been with the organization over 5 years. In addition to many of Michael's responsibilities, is a focus on tinnitus and helping to deliver innovative tinnitus solutions from ReSound.

Title: Audiologist's Attitude toward New Hearing Aid Technology & Accessories

Presenters: Brian Taylor, Ph.D.

Abstract:

Over the past several years a wide range of new technology has been incorporated into modern hearing aids. Technology such as wireless gateway devices using Bluetooth, remote controls and other integrated assistive listening devices (ALDs) are thought to improve overall patient benefit and satisfaction in situations where conventional amplification may fall short of expectations.

Given the relatively low penetration rate of such devices (MarkeTrak VIII, 2010) relative to their potential patient benefit, it is important to explore reasons audiologists don't recommend it to their patients. By comparing results from VA audiologists where retail price is not a factor to audiologists in the commercial section, this poster will illustrate some of the reasons this technology remains under-utilized.

Results suggest that VA and non-VA audiologists must become better educated on the selection process for these types of hearing aid accessories and to begin to use clinical tools that help identify patient need for this technology during the pre-fitting selection process. It also suggests that manufacturers must strive to reduce the complexity of these devices for both audiologists and patients.

Learning Objectives:

1. Examine qualitative differences between VA and non-VA audiologists in how they position and dispense hearing aids
2. Use data to determine opportunities to become educated on emerging hearing aid technology and how to position it with patients
3. Better understand how audiologists make critical hearing aid selection decisions and how these decisions may affect patient outcomes with hearing aids

Short Biography:

Brian Taylor is the Director of Practice Development & Clinical Affairs for Unitron. Brian is responsible for Unitron Hearing US initiatives related to enhancing our customer's expertise, professionalism, and effectiveness related to hearing aid technology, clinical procedures and practice development. Dr. Taylor manages Unitron's Unite customer service program. In addition to his duties with Unitron, Brian is the Editor of *Audiology Practices*, the quarterly publication of the Academy of Doctors of Audiology.

Title: *Dynamic Hearing Protection for People with Hearing Loss*

Presenters: Felix Goldbeck; Evert Dijkstra; Dr. Hans E. Mülder

Abstract:

Fitting a moderate to severe hearing loss with passive protection adds an additional conductive loss and thus isolates this person from oral communication, even in less noisy environments.

It is of utmost importance that persons with hearing loss wear protection at all times. This can be achieved by offering: protection with high comfort which does not need to be removed to communicate.

Passive protection does not satisfy the requirements.

Level dependent hearing protection devices are designed to be transparent in environments <82 dB SPL, and to limit noise exposure above that level for static as well as impulse noise. The Serenity DP is a level dependent hearing protection with customized shells, designed for optimized wearing comfort. Customized shells allow microphone placement inside the Concha. This helps providing natural sounds and localization. Attenuation of the customized shells can easily be verified. Verification is of particular importance for persons with hearing loss.

The results of a study carried out with the Serenity DP are presented. Results clearly show that people with hearing loss who need hearing protection and who need to communicate are better served with dynamic hearing protection.

Learning Objectives

1. Why level dependant HPD are needed
2. Benefits of level dependant HPD
3. Current trends in electronic HPD technology

Short Biographies:

Felix Goldbeck is a German Master Hearing Aid Acoustician. He began training as a Hearing Aid Acoustician in 1997, successfully completing the Associate Level test in 2000 and achieving the Master level in 2004. In April 2005 he joined Phonak in Germany as Hearing System and FM Acoustics specialist. In this position, he was responsible for training and counseling audiology departments at several university clinics. He moved to Switzerland in 2008 where he is currently the Validation Manager at Phonak Communications in Murten.

Evert Dijkstra was born Jan. 1st, 1960 in the Netherlands. After earning a MSEE (cum laude) from the Technical University of Twente (NL), he started in 1983 working for CSEM, Neuchâtel, Switzerland, developing low power and low voltage Integrated Circuits (IC). He occupied various engineering and management positions in this company. In his last position (1996-1998), he was heading a team of about 100 IC design engineers. In 1998 he joined Phonak Communications, Murten, Switzerland, where he is currently CEO. Phonak Communications employs 140 people, most of them entirely dedicated to R&D, Marketing and Sales and Production of (a) miniaturized wireless communication equipment for hearing impaired individuals and (b) customized hearing protection devices.

Drs. Hans E. Mülder studied experimental physics (major in experimental nuclear physics) at the Vrije Universiteit of Amsterdam and subsequently Medical Physics and Audiology at the University Hospital Utrecht, The Netherlands. He worked as clinical audiologist at different audiological centers for over 10

years, covering the full range of modern audiology, including screening for hearing loss, diagnostics and rehabilitation (hearing instruments, ALDs, cochlear implants). At the same time he served as educational audiologist at several schools for hearing impaired children and children with severe speech and language problems, and he taught courses in audiology. In 1998 he was elected council member for Slotervaart/Overtoomseveld in Amsterdam, where he chaired his party faction for 4 years. In 1999 he joined Phonak in the Netherlands as Manager Audiological services. He moved to Switzerland in 2004 where he is currently marketing director at Phonak Communications. He has published on different audiological topics, as well as on Dutch politics. He is happily married to Veronika Haller.

Title: *Progressive Tinnitus Management Program: One Year Later*

Presenters: Cynthia Kirby, Au.D.; Amy Ferrall-Pack, Au.D.;

Abstract:

Naval Medical Center, San Diego implemented the Progressive Tinnitus Management Program in January 2010. This program is closely modeled after the program developed by James Henry, et al. The purpose of the poster is to present preliminary data on the number of patients seen, outcomes, and lessons learned during the first year.

Level 3 PTM consists of two, two hour group education sessions which focuses on understanding tinnitus and using sound to manage the patient's reaction to the tinnitus. To date, Naval Medical Center audiologists have seen 134 patients for Level 3 PTM.

In order to determine the benefit of Level 3 PTM, it was determined that some type of follow up needed to be completed. Over the past year, the follow up procedures have been initiated and modified to increase objectivity of responses and to capture more data. Follow up procedures have also been changed to improve efficiency.

To date, the department has attempted to contact 30 patients to determine perceived benefit of Level 3 PTM. Of the thirty, only 14 could be contacted or returned calls. Eight of these patients felt as if they were "doing well and benefited" from the Level 3 PTM. Six patients that were contacted required Level 4/5 PTM.

LEARNING OBJECTIVES

1. Will demonstrate a basic understanding of Level 3 Progressive Tinnitus Management (PTM).
2. Will evaluate the effectiveness of Level 3 PTM at Naval Medical Center San Diego
3. Will assess the best outcome procedures for obtaining feedback from Level 3 PTM patients.

Short Biographies:

Cynthia Kirby, Au.D., has been Head of the Audiology Division at Naval Medical Center San Diego since 1999. She received her Au.D. from Arizona School of Health Sciences in 2006. Her areas of interest include Auditory Processing Disorders with traumatic brain injury populations, Tinnitus Treatment and Cochlear Implants. Dr. Kirby has been active in the education of Otolaryngology and Audiology residents. She serves as one of two preceptors for the Navy's Audiology Residency Program. She is a member of the steering committee and the primary investigator for an upcoming research project on the effectiveness of Tinnitus Retraining Therapy.

Amy Ferrall-Pack, Au.D., is a clinical audiologist who recently returned to Naval Medical Center San Diego following a four year absence. During that absence, she was the Baha coordinator and clinical audiologist at Cincinnati Children's Hospital Medical Center, Cincinnati, OH. Dr. Ferrall-Pack received her Au.D. from Arizona School of Health Sciences in 2010. She currently functions as a clinical audiologist and primary point of contact for patients with tinnitus. Dr. Ferrall-Pack will also be involved in an upcoming study investigating the effectiveness of Tinnitus Retraining Therapy.

Title: *Characterizing the Benefit of Residual Acoustic Hearing to Auditory and Auditory-Visual Cochlear Implant Consonant Perception*

Presenters: Gerald Schuchman, Ph.D.; Joshua Bernstein, Ph.D.; Benjamin Sheffield

Abstract:

Cochlear-implants (CIs) are increasingly being recommended for patients with less than profound hearing loss. As a result, many CI patients also retain some residual hearing in the non-implanted ear (i.e., bimodal hearing), which has proven useful for everyday listening. However, guidelines for clinical decisions pertaining to cochlear implantation are largely based on expectations for post-surgical performance with the CI alone in auditory-alone conditions. A more comprehensive prediction of post-implant performance would include the expected effects of residual acoustic hearing and visual cues on speech reception performance. An evaluation of auditory-visual performance might be particularly important due to the complementary interaction between the speech information relayed by visual cues and that contained in the low frequency auditory signal. The goal of this study was to refine expectations for post-surgical speech reception performance of bimodal CI listeners by characterizing the benefit provided by residual acoustic hearing to consonant identification under auditory and auditory-visual conditions. Consonant identification was measured for combinations of electric hearing (via the CI), acoustic hearing (via the non-implanted ear) and lipreading (visual cues). The identification data are expressed in the form of stimulus/response confusion matrices and analyzed to determine how consonant features are relayed and combined across stimulus modalities.

Learning Objectives

1. CI consonant identification performance is significantly improved by the addition of acoustic information in the non-implanted ear.
2. The benefit to CI consonant identification performance provided by residual acoustic hearing is further increased when visual cues are also present.
3. Analysis of consonant confusions suggests that these observations can be attributed to voicing cues provided by the residual acoustic hearing which are highly complementary to the mainly place-of-articulation cues provided by the visual stimulus.

Short Biographies:

Gerald Schuchman (presenter) received his PhD in Audiology from the University of Pittsburgh (1976) and has served on active duty as a military audiologist (1968-1972). He was director of a regional speech and hearing clinic in Israel from 1976-1984 and a clinical/research audiologist at the Washington, VAMC, from 1985-2000. Since Oct. 2000, Dr. Schuchman has been a staff audiologist and coordinator of the cochlear implant program at WRAMC.

Joshua Bernstein, Ph.D., is a Research Audiologist at Walter Reed Army Medical Center. His main research interests include speech intelligibility and psychophysics for hearing-impaired and cochlear-implant listeners.

Benjamin Sheffield is a Research Audiologist at Walter Reed Army Medical Center. He is interested in the encoding of sensory information in normal and impaired auditory systems, particularly in cochlear implant recipients.

Title: *Vestibular Function is Diminished in Blast Exposed Service Members with Post Traumatic Exercise Induced Dizziness*

Presenters: Matthew R Scherer PT PhD NCS; Michael C Schubert PT PhD

Abstract:

Introduction: Blasts are the most common mechanism of injury in modern warfare. Traumatic brain injury (TBI) and dizziness are common sequelae of blast-exposure. Many Service Members (SMs) report dizziness that worsens with running, which has recently been shown to improve after a gaze stability exercise program. This suggests excessive retinal slip from reduced vestibular afference as a potential cause.

Methods: Twenty-Four SMs recovering from blast-related TBI sustained in Iraq or Afghanistan were assigned to a dizzy or non-dizzy group based on presence of dizziness at rest. Active and passive pitch plane head and eye rotation (aVOR gain (eye velocity/head velocity)) was measured using wireless monocular scleral search coil and rate sensor. Separately, visual analog scale (VAS) quantified the symptom severity of vertigo, oscillopsia, motion intolerance, and disequilibrium in a subset of sixteen SM's during fast walking/running on a treadmill (coils removed).

Results: The dizzy group (n=12) had active (0.915 ± 0.24) and passive (0.878 ± 0.22) pitch aVOR gains lower than the non-dizzy group (n= 12, active 1.03 ± 0.27 , passive 0.97 ± 0.23) ($p = 0.004$). VAS symptom severity scores were significantly higher *during* exertion relative to the pre or post exertional conditions. Lower aVOR gains and greater symptom severity during treadmill testing were correlated, strongest for dysequilibrium ($r = -0.60$, $p < 0.05$).

Discussion/ Conclusion: Our combined result of reduced pitch VOR and negative correlation between pitch aVOR and symptom intensity in dizzy SMs implicates vestibular hypofunction as a cause for post traumatic exercise induced dizziness.

Learning Objectives:

1. Identify the proposed mechanism of "dizziness" proposed by the authors among blast-exposed Service Members who experience an increase in their symptoms during locomotion
2. Objective: Identify evidence suggestive that vestibular pathology is causative for symptoms of dizziness in the blast exposed population with TBI during locomotion?
3. Objective: Identify the findings in this report strengthen and advance earlier clinical findings in the population of SMs who experience dizziness during running

Short Biographies:

Matthew R Scherer PT PhD NCS received his PhD from the University of Maryland, Baltimore, his scientific training in the Laboratory of Vestibular Neurophysiology at Johns Hopkins University, and his professional physical therapy education from the U.S. Army-Baylor University Graduate Program in Physical Therapy. He is an Active Duty Major in the United States Army and a Researcher at the U.S. Army Research Institute of Environmental Medicine in Natick Massachusetts. In his seven years as a credentialed provider at Walter Reed Army Medical Center he has worked primarily with wounded warriors injured in Iraq and Afghanistan with an emphasis on the management of personnel with limb loss, traumatic brain injury and vestibular pathology. His research attempts to identify the neurophysiologic mechanisms responsible for recovery of gaze stability and in blast exposed Service Members with TBI. MAJ Scherer has authored 10 peer-reviewed articles and a book chapter.

Michael C Schubert PT PhD received his PhD from the University of Miami and his professional physical therapy education from Old Dominion University in Norfolk VA. He is an associate professor in the Department of Otolaryngology Head and Neck Surgery in the School of Medicine at Johns Hopkins in Baltimore MD. He is the Program Director for the Vestibular Rehabilitation service at Johns Hopkins. Dr. Schubert has been funded continually for seven years and has current NIH grant support. His research attempts to identify the neurophysiologic mechanisms responsible for recovery of gaze stability in vestibular hypofunction and novel methods to improve vestibular ocular reflex function during rapid head rotations. Dr Schubert has authored over 30 peer-reviewed articles in addition to numerous book chapters. His recent work was recognized by the Faculty of 1000 as an important contribution to medicine.

Title: *A Word-by-Word Evaluation of the Speech Reception in Noise Test (SPRINT)*

Presenters: Douglas S. Brungart, Ph.D.; Kenneth W. Grant, Ph. D.; Mary Cord, Au.D.; Jennie K. Canan, Au.D.; Sandeep Phatak, Ph.D.

Abstract:

Current US Army regulations require listeners with relatively poor audiometric thresholds to be tested with the Speech Reception in Noise Test (SPRINT), an open-set speech perception test that requires listeners to identify 200 monosyllabic NU6 words in a mixture with a six-talker babble masker. The words are presented at a relatively low level (50 dB HL) with a constant SNR value of +9 dB. The SPRINT is relatively easy to administer, but can be time consuming (taking roughly 20 minutes to complete). In this study, we examine the individual SPRINT word scores for more than 300 hearing impaired listeners in order to determine whether a reliable estimate of the overall SPRINT score can be obtained with a subset of the 200 words currently included in the test. Preliminary results suggest that it might be possible to substantially reduce the length of the SPRINT test without substantially reducing its reliability. However, there is little evidence to suggest that the SPRINT scores of individual listeners can be accurately predicted from their audiometric thresholds. Thus, while it may be possible to shorten the SPRINT, it cannot be eliminated entirely without a significant loss of information about the hearing performance of the listener.

Learning Objectives:

1. Describe the SPRINT and how it is currently used for Army hearing profiles.
2. Explain the rationale for a proposed shortened SPRINT.
3. Describe the relationship between SPRINT scores and audiometric thresholds.

Short Biographies:

Douglas S. Brungart, Ph.D., is Director of Research at the Army Audiology & Speech Center, Walter Reed Army Medical Center, Washington, DC.

Kenneth W. Grant, Ph. D., is the Senior Research Audiologist at the Army Audiology & Speech Center, Walter Reed Army Medical Center, Washington, DC.

Mary Cord, Au.D., is a Research Audiologist at the Army Audiology & Speech Center, Walter Reed Army Medical Center, in Washington, DC.

Jennie K. Canan, Au.D., is a Research Audiologist at the Army Audiology & Speech Center, Walter Reed Army Medical Center, in Washington, DC.

Sandeep Phatak, Ph.D., is a Research Audiologist at the Army Audiology & Speech Center, Walter Reed Army Medical Center, in Washington, DC.

Title: *Reducing the Risk of Noise Induced Hearing Loss through Earplug Fit-Testing*

Presenters: Theresa Schulz, Ph.D.; Jillian Curry-Mathis, Au.D.; Kara Cave, Ph.D.

Abstract:

Objective: Hearing loss compensation has been escalating for the VA over the past several years. Efforts continue to reduce the risk of noise induced hearing loss. Hearing Conservation Program Managers are using every tool to reduce the risk of NIHL. One of those tools is fit-testing earplugs to determine the real-world protection that soldiers and civilians get from their hearing protection and then train them to get proper attenuation.

Methods: Fit-test results will be analyzed to determine the initial levels of protection and compare them to levels of protection after training. The percentage of users that change earplugs to obtain adequate attenuation will be calculated and the distribution of types of earplugs will be analyzed. Published attenuation will be compared to the initial and final attenuation levels obtained via fit-testing.

Results: Data from two Army hearing conservation clinics is being analyzed to determine the difference between initial attenuation and final attenuation of soldiers who were referred to the military audiologist at two installations where fit-testing is performed.

Conclusion: To Be Determined

Learning Objectives:

1. Describe the value of hearing protection fit-testing.
2. Define Personal Attenuation Rating
3. List uses for individual fit-testing in a hearing conservation program

Short Biographies:

Poster Presenter: Dr Theresa Schulz is Hearing Conservation Manager for Sperian Protection. Theresa received her BS (1981) and MA (1983) degrees from the University of Texas at Austin and her PhD (1994) from Ohio State University. Theresa was recognized as the US Air Force Outstanding Audiologist of the Year in 1989 and 1998, and received the Elizabeth Guild Award for Contributions to Military Hearing Conservation in 1996. She was nominated by the Air Force for the 2003 National Public Service Award and received the military's Outstanding Volunteer Medal in 2004 for her extensive work to prevent noise-induced hearing loss both in the military and in the public sector. Dr Schulz provides consultation in hearing loss prevention issues and hearing conservation programs and is a frequently requested, enthusiastic speaker on hearing conservation.

MAJ Curry-Mathis completed her Au.D. at the University of Florida and went active duty in the US Army in 2003 with an assignment to Fort Stewart, GA. She has presented on the development of an effective Army Hearing Program at multiple leadership levels and professional conferences, to include the MEDCOM Chief of Staff. MAJ Mathis had the opportunity to deploy with 3rd Infantry Division in 2008 for an "insider's perspective" on the challenges faced by soldiers in a combat environment. She has gained a reputation as an expert in the tactical fielding of hearing protection systems and recently authored TRADOC doctrine to establish several training standards. MAJ Mathis is currently spearheading an Army-wide program to educate basic training soldiers and their cadre for combat arms earplug use and the preservation of "operational" hearing

CPT Kara Cave is assigned as the Army Hearing Program Manager for Fort Campbell, KY. CPT Cave received her B.A. from Boston College and her Ph.D. from James Madison University. She completed her

fourth year clinical training at Walter Reed Army Medical Center. She served as a researcher for the Army Research Laboratory's Visual and Auditory Processes Branch from 2005-2007. She also served as the Fort Bliss Hearing Program Manager from 2007-2010. During her time at Fort Bliss, she deployed as the Theater Audiology Consultant for Operation Iraqi Freedom.

Title: *Research Results Comparing Currently Deployed Passive and Electronic Military Hearing Protectors and New Electronic Blast Protection Earplugs*

Presenters: Mead Killion, Ph.D.; John G. Casali, PhD.

Abstract: Laboratory and open-field research has been completed on task intended to compare a new electronic earplug with currently available devices. Experiments included:

- Detection of recorded rifle cocking noise, recorded non-English speaker, and live gunshots, along a half-mile clearing surrounded by a deep woods (Casali and Keady, 2011)
- Detection threshold for recorded spondees and rifle cocking noise in an audiometric sound booth (Menon and Killion)
- Localization of gunshots in a deep woods (Casali and Keady, 2010)
- Localization of back-up alarm (Casali and Alali, 2010)
- Recognition of words in high level noise using Sprint and QuickSin tests presented at 93 dB SPL
- Earplug attenuation of blasts produced by various firearms fired near an ear simulator, providing a range of peak SPLs from 140 to 178 dB (Killion, Smith and Killion)
- Real ear attenuation at threshold and microphone in real ear attenuation of the electronic blast earplugs turned off (Menon and Monroe) The same data (excluding high-level gunshots) were also obtained on: Combat Arms Earplugs, the Com Tac II electronic earmuffs, and the Open Ear.

Learning Objectives:

1. Understand the relationship among inner hair cell/synapse loss, word recognition in noise, and localization performance.
2. Understand the importance of the performance characteristics of hearing protection devices: a) Protection from blasts b) Protection from continuous high level noise c) Detection and localization of rifle cocking, voices and distant gunshots, and d) Recognition of speech in high-level noise
3. Understand the time typically required to accommodate to novel auditory inputs.

Short Biographies:

Mead Killion, PhD., is the founder and chief technology officer of Etymotic Research, Inc., and an adjunct professor of Audiology at Northwestern University.

John G. Casali, PhD., is the John Grado Professor in the Grado Dept. of Industrial and Systems Engineering, and Director of the Auditory Systems Laboratory at Virginia Tech University. He is past-president of the National Hearing Conservation Association.

Joseph P. Keady is CEO of Innovation R&D Labs LLC, Boca Raton, FL.

Tim Monroe and Anjali Menon are engineers with Etymotic Research, Inc.

Title: *Characterizing the Benefits of Residual Acoustic hearing to Auditory and Auditory-Visual Cochlear Implant Consonant Perception.*

Presenters: Gerald Schuchman, Ph.D; Joshua Bernstein, Ph.D; Benjamin Sheffield

Abstract: cochlear-implants (CIs) are increasingly being recommended for patients with less than profound hearing loss. As a result, many CI patients also retain some residual hearing in the non-implanted ear (i.e., bimodal hearing), which has proven useful for every day listening. However, guidelines for clinical decisions pertaining to cochlear implantation are largely based on expectations for post-surgical performance with the CI alone in auditory-alone conditions. A more comprehensive prediction of post-implant performance would include the expected effects of residual acoustic hearing and visual cues on speech reception performance. An evaluation of auditory-visual performance might be particularly important due to the complementary interaction between the speech information relayed by visual cues and that contained in the low frequency auditory signal. The goal of this study was to refine expectations for post-surgical speech reception performance of bimodal CI listeners by characterizing the benefit provided by residual acoustic hearing to consonant identification under auditory and auditory-visual conditions. Consonant identification was measured for combinations of electric hearing (via the CI), acoustic hearing (via the non-implanted ear) and lipreading (visual cues). The identification data are expressed in the form of stimulus/response confusion matrices and analyzed to determine how consonant features are relayed and combined across stimulus modalities.

Learning Objectives:

1. CI consonant identification performance is significantly improved by the addition of acoustic information in the non-implanted ear.
2. The benefit to CI consonant identification performance provided by residual acoustic hearing is further increase when visual cues are also present.
3. Analysis of consonant confusions suggests that these observations can be attributed to voicing cues provided by the residual acoustic hearing which are highly complementary to the mainly place-of articulation cues provided by the visual stimulus.

Short Biographies:

Gerald Schuchman, PH.D, received his Ph.D in Audiology from the University of Pittsburgh (1976) and has served on active duty as military audiologist (1968 – 1972). He was director of a regional speech and hearing clinic in Israel from 1976-1984 and a clinical/research audiologist at the Washington VAMC from 1985 – 2000. Since October 2000, Dr. Schuchman has been a staff audiologist and coordinator of the cochlear implant program at WRAMC.

Joshua Bernstein., Ph.D, is a research Audiologist at Walter Reed Army Medical Center. His main research interests include speech intelligibility and psychophysics for hearing-impaired and cochlear-implant listeners.

Benjamin Sheffield is a research Audiologist at Walter Reed Army Medical Center. He is interested in the encoding of sensory information in normal and impaired auditory systems particularly in cochlear implant recipients.

Title: *Specialty Certification: Benefits for you and your Patient.*

Presenter: Susan Lloyd, Au.D

Abstract: While the concept of support personnel at the entry level of service provision is common to the VA and DoD, special interests and in-depth specialties have arisen at the other end of the spectrum, along with the desire to recognize those individual and the need to quantify their skills. ASHA has accommodated specialties with Special Interest Groups in both hearing and speech. Both AAA and ASHA have established specialty certification. This presentation will compare terminology and entry and renewal requirements between the organizations and their six recognized specialties.

Learning Objectives:

1. Research specialty recognition appropriate to their practice.
2. Determine whether specialty recognition has value in their current or future practice and if so know how to apply for it.
3. Recognize achievements attained by those who have specialty recognition or certification and use them as a resource for patient care.

Short Biography:

Susan Lloyd, Au.D., CCC/A, FAAA is an Audiologist at VA Southern Nevada Healthcare (Las Vegas). She was formerly an Audiologist at Nellis AFB.