



# SOUND ADVICE

AN AC ASSOCIATES NEWSLETTER

INTRODUCTORY ISSUE

## CONVENTIONAL HEARING EVALUATIONS

**Conventional hearing evaluations** consist of pure tone air and bone conduction testing, speech reception thresholds and word recognition ability. **Pure tone testing** includes finding the softest level or decibel (dBHL) that can be detected at each frequency (Hz) or pitch, typically from 250-8000 Hz, and out to 20,000 Hz when following ototoxic monitoring protocol. **Speech Reception Thresholds (SRT)** is the softest familiar word a patient can repeat back 50% of the time. **Word recognition** is the ability to understand speech at a comfortable listening level. **Uncomfortable loudness levels** are obtained at different frequencies to determine if a patient is more sensitive to certain sounds. This proves useful in counseling, as well as hearing aid fitting, if warranted. **Speech in noise testing** is performed to determine a patient's ability to understand speech in the presence of background noise. This also is useful for patients for which amplification is warranted. **Acceptable noise level testing** is a noise test performed to determine



the patient's comfort in background noise. **Client oriented scale of improvement (COSI)** is used to establish the subjective goals for hearing aid fittings. The use of these tests together will provide the Audiologist with the information to make the best recommendation for amplification. Once fit with hearing aids, the use of **VERIFIT Real Ear Testing** is performed to ensure that the hearing aid is meeting targets set based on the hearing loss and other test results. Real ear testing involves measuring the sound pressure level at the tympanic membrane of the hearing aid with a speech stimulus. This allows the Audiologist to see at which frequency changes are necessary to enhance the hearing aid fitting. Real ear testing is critical for a pediatric hearing aid fitting, as children have smaller ear canal volumes which results in greater sound pressure levels with less input gain. These measures must be obtained to ensure that the levels are not exceeding targets, as our younger patients may not be able to express that sounds are exceeding a comfort level.

## RINGING IN THE EARS/ SENSITIVITY TO SOUNDS

The evaluation of Tinnitus, Hyperacusis and Misophonia is an area we have introduced to the area by providing new capabilities. **Tinnitus** is the perception of sound that has no external source. It affects 17% of the general population, or about 44 million Americans. With our advanced testing procedures, **Tinnitus Retraining Therapy (TRT)** can help the majority of those afflicted with tinnitus. With a success rate of over 80%, TRT uses a combination of directive counseling and sound therapy to target specific systems to decrease the perception of tinnitus. This reduces the annoyance of the sounds and the negative emotions that often accompany them. Another option for helping to break the cycle of tinnitus is **Neuromonics tinnitus treatment**. This revolutionary treatment has been shown to result in a significant reduction in tinnitus symptoms. It involves listening to an acoustical signal that is customized for each person's unique hearing and tinnitus profile. The acoustical signal is imbedded in music, making it pleasant and relaxing to listen to. This signal targets the neural pathways of the patient's brain and reprograms them to filter out the tinnitus sound while reducing the disturbance and impact of tin-

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nitus on the quality of life. Sound therapy is an important part of TRT and is used to reduce the contrast between the tinnitus signal and background neuronal activity. Varying sources of sound, including typical environmental sounds, ear-level sound generators, hearing aids and hybrid hearing aid/sound generator instruments can all play an important role in the therapy. **Hyperacusis**, or decreased sound tolerance, reflects an abnormally strong response to sound within the auditory pathways. As a result, sufferers experience strong discomfort, and even physical pain, in the presence of sound. Recommendations for sound therapy depend on a number of factors, including the severity of tinnitus, degree of hearing loss and presence or absence of decreased sound tolerance. **Misophonia** is an extremely strong dislike of normal sounds and many times is misdiagnosed as hyperacusis. The degree of reaction is not based on the properties of the sound, such as loudness and pitch, but by past experiences with certain sounds and overall state of mind. Tinnitus Retraining Therapy (TRT) recognizes the specific involvement of various components of the auditory pathways of the nervous system in occurrences of tinnitus, hyperacusis and misophonia. For treatment of misophonia, TRT uses a method based on the active removal of conditioned reflexive responses to sound, allowing you to feel like yourself again.

AC Hearing, Tinnitus and Balance Associates, LLC is a full service Audiology practice providing routine to advanced diagnostic testing and related rehabilitation. Areas of specialization mirror our

name. Our professional staff offer evaluation of hearing, all vestibular testing and tinnitus for ages of 24 hours old to centenarians. Although the name may be new to many of you the staff is well

known. We have been providing many of the more routine evaluations and treatments in central Pennsylvania since 1984; what is entirely new is the advanced capabilities in the evaluation and treat-

ment of balance disorders, including **computerized platform evaluation** for postural difficulties that may contribute to falling, **Dynamic visual acuity testing** of the ability that is critical for daily movement;

**tinnitus evaluation** and treatment utilizing tinnitus retraining therapy or Neuromonics treatment methods, **advanced** selection, fitting and auditory habilitation method for hearing aid patients.



**James L. Shafer, Au.D., CCC-A, FAAA** was the former owner of Audiologic Consultants, Inc until October of 2005. At that time AC Tinnitus, Hyperacusis and Balance Center, Inc. was being developed to provide tinnitus and routine balance evaluations and related Tinnitus therapies. Dr. Shafer received his Bachelor of Science degree from Penn State University, Master of Arts degree from Temple University and Doctor of Audiology degree from Arizona School of Health Sciences, a division of AT Still University of health sciences, the oldest Osteopathic University in the nation. Dr. Shafer has advanced training in all aspects of vestibular evaluation and Tinnitus rehabilitation and serves as the director of Audiology.



**Rachel Sharnetzka, M.S., CCC-A, FAAA**, received her Bachelor of Science degree from Penn State University, Master of Science degree from Vanderbilt University, currently ranked as the number one Audiology program in the United States and is currently pursuing her Doctor of Audiology degree. Prior to joining AC Associates, Mrs. Sharnetzka was a clinical audiologist with Audiologic Consultants Inc. and served as the Clinical director of the Vestibular Laboratory at the University of Maryland Medical Center in Baltimore. She is an Adjunct Professor at Towson University teaching Vestibular Assessment and Rehabilitation and provides audiologic services to the Lancaster Cleft Palate Clinic. Rachel serves as the clinical director of neuro-diagnostic services for AC Associates.



**Cynthia Silverman, M.A., FAAA** received her Bachelor of Science degree from Penn State University and her Master of Arts degree from Temple University. She worked with Audiologic Consultants Inc. since 1990 and has served as the Director of the Tinnitus rehabilitation program since 2005 for AC Tinnitus, Hyperacusis and Balance Center in York and currently holds that position for AC Associates as well. She formerly served as the director of Speech and Hearing Department of St. Christopher's Hospital for Children in Philadelphia.



**Kimberly E. Stremmel, Au.D., CCC-A, FAAA** received her Bachelor of Science degree from West Virginia University and her Doctor of Audiology degree from Towson University. Prior to joining AC Associates, Dr. Stremmel was a clinical Audiologist with Audiologic Consultants, Inc. She brings a wealth of knowledge to the evaluation for all ages, as well as related auditory habituation utilizing the most advanced capabilities available for determination of candidacy for hearing aids. Dr. Stremmel has extensive knowledge of pediatric to adult hearing aid fittings. Dr. Stremmel serves as the clinical director of rehabilitation.



**Catherine Swenson, Au.D., CCC-A, FAAA** received her Bachelor of Education degree from the University of Toledo, her Master of Science degree from the University of North Carolina and her Doctor of Audiology degree from Salus University (formerly PCO), George Osborne School of Audiology. Dr. Swenson has worked in a variety of medical settings as a diagnostic audiologist for routine evaluations and vestibular function testing. Dr. Swenson serves as a clinical audiologist for AC Associates.

## DIZZY/UNSTEADINESS

Evaluation for dizziness will be performed utilizing **VNG, or Videonystagmography**, to obtain information on the inner ear vestibular function. This test will be combined with state-of-the-art **Computerized Platform Posturography**, which evaluates the patient's ability to maintain their balance as the visual and proprioceptive fields are altered. This test can give information related to loss of stability and the risk of falling. This testing can be utilized to ensure that necessary steps are taken in the home to prevent danger of falling, and can be used in conjunction with vestibular rehabilitation exercises to monitor progress. **Dynamic Visual Acuity Testing** measures the patient's ability to maintain a visual image during physical movement. Without this ability, stability is compromised during movement and unsteadiness occurs. This test is designed to evaluate angular rotation in a controlled and recordable format.



## AUDIOMETRY IN DIFFICULT-TO-TEST POPULATIONS

Our new **Auditory Brainstem Response (ABR)** testing allows us to obtain accurate threshold test results faster, even during movement and with fussy babies, eliminating the need for sedation. This non-invasive test is used with infants as a part of the newborn screening program to screen for hearing loss at birth, evaluation of children for acquired or progressive hearing loss, all with a goal of preventing a late diagnosis of hearing loss. This testing can also be used with adults, and is helpful in ruling out Acoustic Neuroma and Auditory Neuropathy. **Otoacoustic emissions (OAE) testing** is another non-invasive procedure to evaluate hearing sensitivity objectively at the inner ear level. This test can be used with all ages, in conjunction with other test procedures. It is quite helpful to use high frequency OAEs when monitoring hearing sensitivity during ototoxic medication trials. **Tympanometry** is most often performed to check middle ear status, and can be used with all ages. Test results can be helpful in indicating tympanic membrane perforation, cerumen impaction, effusion and Eustachian tube dysfunction.



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## HEARING AIDS

AC Associates works with many health insurances, as well as 3 different programs to allow hearing aid pricing appropriate for all income levels. **HEAR Now** helps patients with very limited income or extreme expenses compared to income. If they qualify, they will be provided with hearing aids, and AC Associates' time, both for the initial fitting and the first month's adjustments, will be donated. The **AUDIENT** program is funded by the Lions Club International and supplies hearing aids and assistive devices at a reduced rate to those who qualify based on income and expenses. Income requirements are consistent with lower middle-class levels, but expenses are taken into account as well. AC Associate's own resource, the **Robert Shafer Hearing Program**, was founded in memory of the father of our founder, James Shafer. Robert Shafer was someone who always fought for the underdog. The program named in his honor evaluates the needs of individuals regarding the experience, skill and support needed for successful communication and audibility in their unique environment. Based on this evaluation we will design a program for each person's needs and develop a related cost for the individual services needed to ensure a positive outcome – priced at the lowest achievable cost while retaining the highest level of service. This allows each person to focus on purchasing high-level digital products rather than paying for services that might not be needed.

To obtain any further information about services or our staff, please contact us at [info@acassociatesllc.org](mailto:info@acassociatesllc.org) or contact us at 877-750-0101 for the office closest to you.

In addition to all of the conventional testing we performed in the past, our new offices will offer advanced diagnostic services which have never been available in the region.

### **Advanced testing capabilities include:**

- Computerized Platform Posturography
- Dynamic Visual Acuity Testing
- Videonystagmography
- Auditory Brainstem Response Testing
- Otoacoustic Emissions Testing
- Tinnitus, Hyperacusis & Misophonia Evaluation and Management
- Vestibular Rehabilitation Therapy
- Conventional Audiometric Evaluations
- Client Oriented Scale of Improvement
- Speech in Noise Testing
- Verifit-Real ear Testing

### **Our staff include:**

- James L. Shafer, Au.D., CCC-A, FAAA
- Rachel Sharnetzka, M.S., CCC-A, FAAA
- Cindy L. Silverman, M.A., FAAA
- Kimberly Stremmel, Au.D., CCC-A, FAAA
- Cathy Swenson, Au.D., CCC-A, FAAA

### **Our Hearing Aid Programs provide affordability for all income levels**

- HEAR Now
- AUDIENT
- Robert Shafer Hearing Program