HEARING AID SIG – SECOND MEETING

May 4, 2009 3 PM

Jim Wooll called the meeting to order. Prior to hearing from our speaker Jim, went over the comparative data that we have on hearing aids. The first guide comes from http://www.aidright.com Hearing Aids. Check out this site – there is much good information there.

Presenter of Meeting Program - Margaret Hutchinson, PhD. CCC/A from Austin Hearing Services

Below is information shared this date:

HEARING LOSS – First, Some Numbers

Hearing loss is second only to arthritis as the most common complaint of older adults. Only about 10% of hearing losses are helped by surgery or other medical treatment. 90% can be treated with the use of hearing instruments.

Only 16% of physicians routinely screen for hearing loss. Noise above 80-90 decibels on average over an 8-hour workday is considered hazardous. Firearms, music, airplanes, lawn mowers, power tools, and many appliances are louder than 80 decibels and are potentially hazardous to hearing with prolonged exposure.

So, This Isn't Me -

Many people suffer from hearing loss. In fact, the latest available statistics show that over 10% of the U.S. population report difficulty in hearing! That's over **31.5 million people**! As the Baby Boomer generation continues to age, that number promises to increase dramatically!

Are you one of those millions of people who do not hear as well as they once did? If so, you are certainly not alone. Consider these statistics reported by Sergei Kochkin, Ph.D., Executive Director of the Better Hearing Institute:

3 in 10 People over age 60 have hearing loss;

1 in 6 Baby Boomers (age 41-59), or 14.6% have a hearing problem;

1 in 14 Generation Xers (ages 29-40) or 7.4% already have a hearing loss;

At least 1.4 million Children (18 or younger) have hearing problems;

It is estimated that 3 in 1,000 infants are born with serious to profound hearing loss.

OK, So How Do I Navigate? First, "Who"

AUDIOLOGISTS:

Have a masters or doctoral degree in audiology. Audiology is the science of hearing. In addition, the audiologist must be licensed or registered by their state (in 47 states) to practice audiology. In the field of audiology, the master's degree has been the accepted "clinical" degree for almost 50 years. However, the profession is undergoing a transition to a doctorate level degree as the entry-level requirement to practice. The Au.D. (Doctor of Audiology) is the clinical doctorate degree and is issued exclusively by regionally accredited universities and colleges. There are other doctoral degrees that have been earned and utilized by audiologists to date, such as the Ph.D. (still highly sought today by researchers and academicians), the Sc.D. and the Ed.D.

PHYSICIANS:

Otolaryngologists (also called ear-nose-and-throat, or ENT, doctors) are physicians who have advanced training in disorders of the ear, nose, throat and head and neck. Otolaryngologists, neurotologists and otologists are physicians who typically treat disorders of the ear (or hearing mechanisms) requiring medical or surgical solutions.

HEARING AID SPECIALISTS:

The hearing aid specialist has training in the assessment of patients who specifically seek rehabilitation for hearing loss. The hearing aid specialist is licensed or registered to perform basic hearing tests and can sell and service hearing aids and related products.

" **HOW" Diagnostic Hearing Evaluations for Amplification and Consultation:**

Includes a medical history to determine if a medical referral is appropriate. Also includes otoscopy, or the visual examination of outer ear structures. A diagnostic hearing evaluation is the first step in determining the type, degree, configuration and symmetry of your hearing loss. The evaluation includes a variety of measurements to rule out any medically treatable causes of hearing loss. Speech testing in quiet and noisy situations may also be completed to determine your ability to process speech sounds. The audiologist will then explain your test results and speak with you to determine the best hearing aid style for your hearing loss and personal listening needs.

Tympanometry to establish Middle Ear Function

Sound include a survey to profile communication needs

Should include a discussion of various types of instruments and manufacturers

May include the fitting of an appropriate instrument

Producers – Hearing Aids are produced by a number of Companies. Some are:

Oticon www.Oticonus.com

Phonak www.Phonak.com

ReSound www.gnresound.com

Rexton www.Rexton.com

Siemens www.Siemenshearing.com

Unitron www.Unitron.com

Widex www.Widexusa.com

Some of These Companies are "Related"

Siemens and Rexton, Miracle Ear

Sonova, Phonak and Unitron

Starkey and Micro-Tech, Omni

ReSound and Bernafon, Beltone

Shared R&D Resources…

May use the same microprocessing chip and have similar ways of approaching hearing loss

Some Basics –

A digital hearing device consists of a microprocessor (computer), a microphone or dual microphones, and a high performance speaker (receiver) that is also housed in a case that either fits in the ear, on the ear or behind the ear and is much smaller than the older style conventional or analog hearing aids.

The microprocessor can be very basic or very complex. The more complex microprocessors provide the hearing professional with the capability of infinite adjustability of the hearing device to more precisely satisfy the needs of the user.

Comparisons -

Premier Solution

	Phonak				Resound		Siemens			Sonic		Unitron
Features	**Exelia Art**	**Audeo IX Yes**	**microPower IX**	**Savia Art**	**Azure**	**dot30**	**Pure 700**	**Centra**	**Nitro 16**	**Velocity**	**Ion 400**	**Yuu**
Audibility												
Channels/Bands	20	20	20	20	17/9	17/9	16	16	16	24	24	20
Memories	up to 6	up to 5	up to 5	up to 5	up to 4	1	Up to 5	Up to 4	Up to 3	up to 4	up to 4	up to 4
Frequency Transposition	yes	yes	no	no	no	no	no	no	no	no	no	no
Feedback Phase Cancellation	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Comfort in Noise												
Digital Noise Reduction	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Wind Noise Reduction	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes
Transient Impulse Control	yes	yes	yes	yes	no	no	yes	yes	yes	no	no	yes
Intelligibility in Noise												
Directional Microphone	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes
Automatic	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes
Adaptive	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes
Multi-channel adaptive	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes
Convenience												
Learning Capabilities	yes	yes	yes	yes	yes	no	yes	yes	no	no	no	yes
Wireless Coupling	yes	yes	no	no	no	no	yes	yes	yes	no	no	no
Data Logging	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Auto switching between destinations	yes	yes	yes	yes	no	no	no	no	no	yes	yes	yes
In situ audiometry	yes	yes	yes	yes	no	no	no	no	no	no	no	yes
Rechargeable Battery	no	no	no	no	no	no	yes	yes	no	no	no	no
Wireless Programming	yes	no	no	no	no	no	yes	no	no	no	no	no
Remote Control	yes	yes	yes	yes	no	no	yes	yes	no	no	no	yes
Bluetooth Connectivity	yes	yes	no	no	no	no	yes	no	no	no	no	no
Available Models												
Custom	yes	no	no	yes	yes	no	CIC only	yes	yes	yes	no	yes
Standard BTE	yes	no	no	yes	yes	no	no	yes	no	yes	no	yes
Open Canal RITA option	yes	no	no	yes	yes	no	no	Life	no	yes	yes	Moda II
Open Canal RIC option	no	yes	no	yes	no	yes	yes	Active	no	no	no	Moxi
Closed Canal RIC option	no	no	yes	no	no	no	no	no	no	no	no	Moxi

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Conclusions –

Different people have different needs when it comes to amplification, based upon lifestyle. People with very similar audiograms actually have different patterns of hearing loss, and perform differently with different processing strategies (roughly hearing aid brands). Different brands, or family groups, of hearing aid brands have different sets of feature attributes and methods of processing. Often the same person may be fit with different body styles of hearing aids; sometimes the choices are limited by the instrumentation.

Followup:

After the presentation, Ms. Hutchinson asked for questions, since the information from the guide mentioned bands and channels, a definition was requested. Her response was that some manufacturers use the terms interchangeably, however often channels are grouped into bands. Some of the channels are used to fit the audiogram, and others may be used for noise reduction or to provide directionality. Memories are the different situations that a wearer is in (calm, restaurant etc.) Originally it was thought that only two were necessary (under 55 decibels background and over 65), but now it has been decided that two are insufficient and most hearing aids have 3 to 5. Some hearing aids navigate automatically between the memories and others are adaptive (respond to user input). Those aids that have remotes will let you change the volume in two decibel increments and switch between programs.

Also two people with similar audiograms may have very different hearing losses. A lot depends on the hair cells in the inner ear, called the inner and outer hair cells. Sometimes high frequency loss is due to just the loss of the outer hair cells (noise) and often these people will have a better response than someone who has lost both the inner and outer hair cells. In the latter case, the high frequency loss can be compensated for only by frequency compression. (all phones compress all frequencies to 300-3000 Hertz).

Ms. Hutchinson mentioned that different brands have different reputations and handed out a guide to the high level hearing aids, with the various features. She has a list of websites with guides, as well as various manufacturers' sites.

The meeting adjourned at 4:00 pm