

SEPTEMBER 2012 HEARING SOLUTIONS MEETING

ANNOUNCEMENTS

ANNEX LOOPED BY COMPUTER CLUB:

1. Today is the first Hearing Solutions meetings to benefit from inductive looping.
2. What makes a looped facility important to the hearing impaired is sound going directly from the speakers mouth into your t-coil activated hearing aids with the t-coil program switched on. This eliminates acoustical issues and other competing noises such as coughing, chair movement and side conversations.
3. Looping has a learning curve just like anything new. You will probably want to switch between your default (automatic) program, your t-coil program and your t-coil + microphone program to experience and evaluate the differences. Minor mistakes, misjudgments and misinterpretation are things that need to be worked though. Occasionally hearing aid program adjustments are necessary. Your location within the loop is sometimes an issue. Habits you can now break are being compelled to (1) get a front row seat to be near the sound source or (2) finding a loud speaker you can “park” in front of. This is because the sound at your ear should not vary based your location within the loop.
4. Looped facilities commonly have “dead spots” or “60 cycle” humming within the loop. Installation testing In the Annex revealed no “dead spots” and detected a hum along the center isle believed to be the result of imbedded electrical lines in the floor. It was suggested that the best reception would be along the exterior walls close to where the loop had been placed behind the base board. Post installation live testing conducted by several members using their hearing aid t-coil settings detected no dead spots and no humming.
5. Two professional grade t-coil headsets specially designed for use in looped facilities are owned by the Computer Club and available through the SIG leaders for use in Annex meetings by members with hearing loss that do not have hearing aids or aids with t-coils. Members are urged to purchase their own

personal headsets which are readily available on-line.
Remember that these must be specially designed for use with
looping. Check the Forum for more information.

FREE ASSISTIVE LISTENING DEVICE CATALOGS:

These 110 page catalogs were distributed to all attendees at the meeting complements of Hearing Systems Inc., a Texas authorized STAP approved vendor. The catalogs are full of a large assortment of assistive hearing devices featuring popular Bluetooth accessories, PockeTalker, which has been demonstrated and reviewed in prior meetings (see Hearing Solutions Meeting Notes and Forum), and numerous Individual Loop System accessories.

MEETING

A Presentation by Dr. Gerard Kupperman, Ph.D.

A former Wisconsin University Professor, Chairman of the Wisconsin licensing board, retired 40 year practicing Audiologist and now a new Sun City resident and member of Hearing Solutions.

At the August Meeting (Part I) the topic was a Real Ear Measure (REM) technique described by Dr. Kupperman as Probe Microphone Measure used extensively in his 40 year career as a practicing Audiologist. Speech Mapping is another more evolutionary name used to describe the techniques used in Probe Microphone measure.

Both are scientific measurement techniques used to measure how you hear speech utilizing your individual personal and unique “hearing blueprint” (no two are the same).

“HOW YOUR HEARING AIDS SHOULD HAVE BEEN FIT TO YOU BUT PROBABLY WERE NOT PART II”

The Right Way to Fit Hearing Aids:

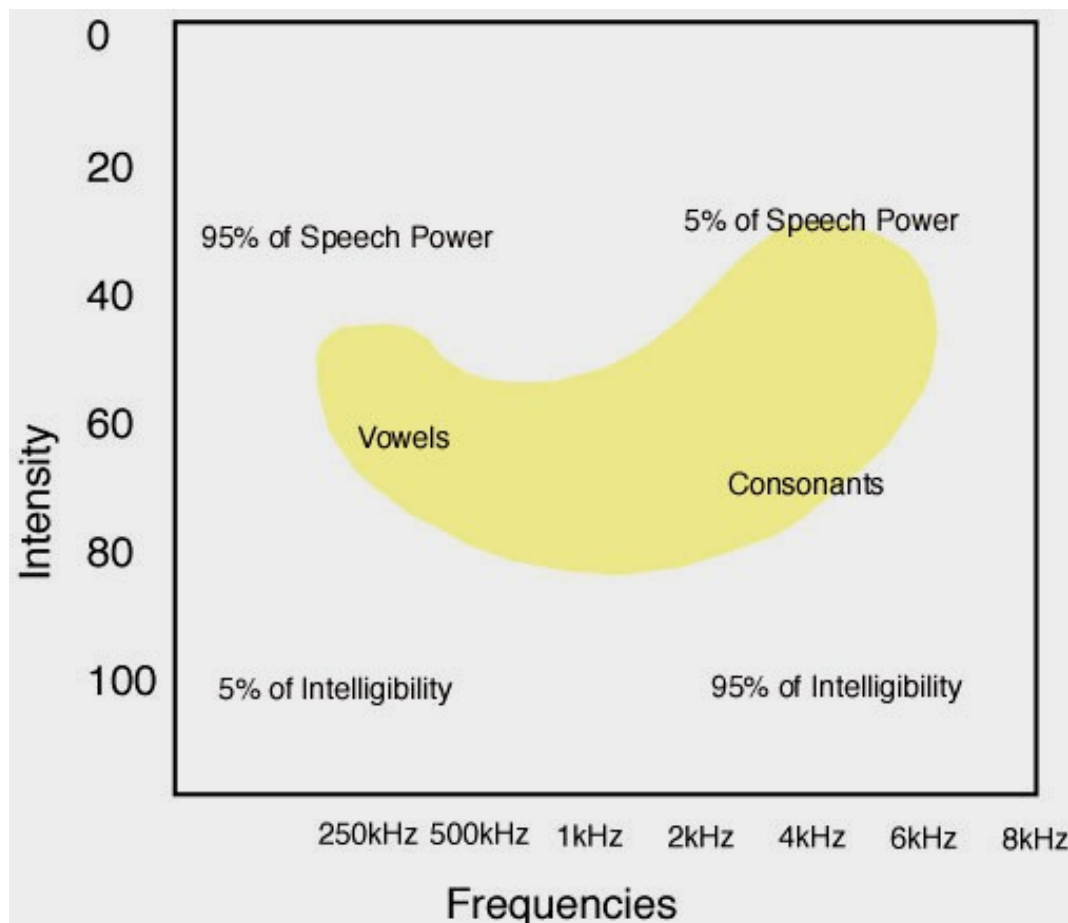
- It is unlikely that your hearing aids were fit to you using the technique that Dr. Kupperman recommends.
- The technique is called “Probe Microphone Measure”, or “Real Ear Measure”.

The Goal in Fitting Hearing Aids is to Achieve the Optimum Outcome (Not Just Adequate):

- Without a scientific approach, the hearing aid fitter can only ask you, “How does that sound?”
- Since you have not heard normally for at least 10 years-Sure it sounds better.
- There is NO way for you to know if it sounds the way it should-AS GOOD AS IT CAN POSSIBLY BE.

Using a REM technique in dealing with a hearing challenge contrasts with a much more commonly used fitting system that Dr. Kupperman likes to describe as “WAG” where you employ guesswork. He further states if you do not use the REM technique there is no way to actually know if you are getting sound to your ear that is as good as possible.

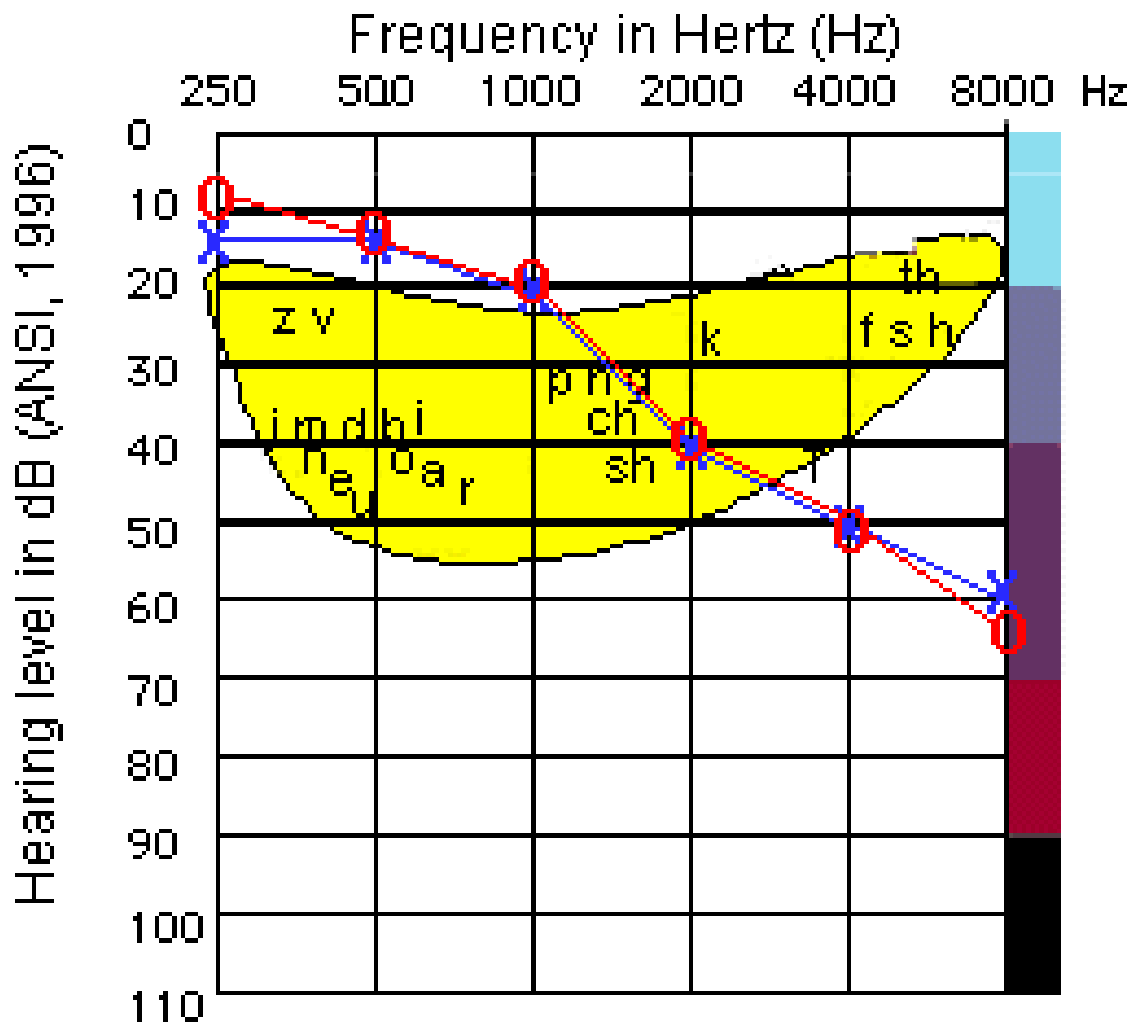
In using REM techniques the term Visible Speech is used where you actually utilize a computer to work with a “**Speech Banana**”, named for its shape and individually unique to each person. The Banana is the area where speech sounds are located with 95% of all understandable speech in the high frequency range. This is the key to the analysis and proper fitting of hearing aids



The Speech Banana

- Differs from person to person, from male to female, from child to adult
- It changes as you get older and your vocal cords shrink
- It has low pitch and high pitch components and loud and quiet components
- All four components exist in everything we say and is said to us and they all exist simultaneously
- YOU MUST HEAR THEM ALL TO ACHIEVE MAXIMUM SPEECH UNDERSTANDING

AUDIOGRAM



The above Audiogram shows the Speech Banana with consonant and vowel sounds and where the hearing loss falls in the banana where speech is located
X (Blue) is left ear - O (Red) is right ear



Above is a computer screen showing three solid lines (upper-high frequencies; middle-medium frequencies, lower-low frequencies)
(Notice the dB's (on the left) are reversed (soft at bottom/loud at top) to make you crazy)

The solid lines are the "First Fit" frequency band settings

The dotted lines are the Audiogram test targets for each of the frequency levels
The task of the Fitter is to align the solid lines to match the dotted line targets for a better fit

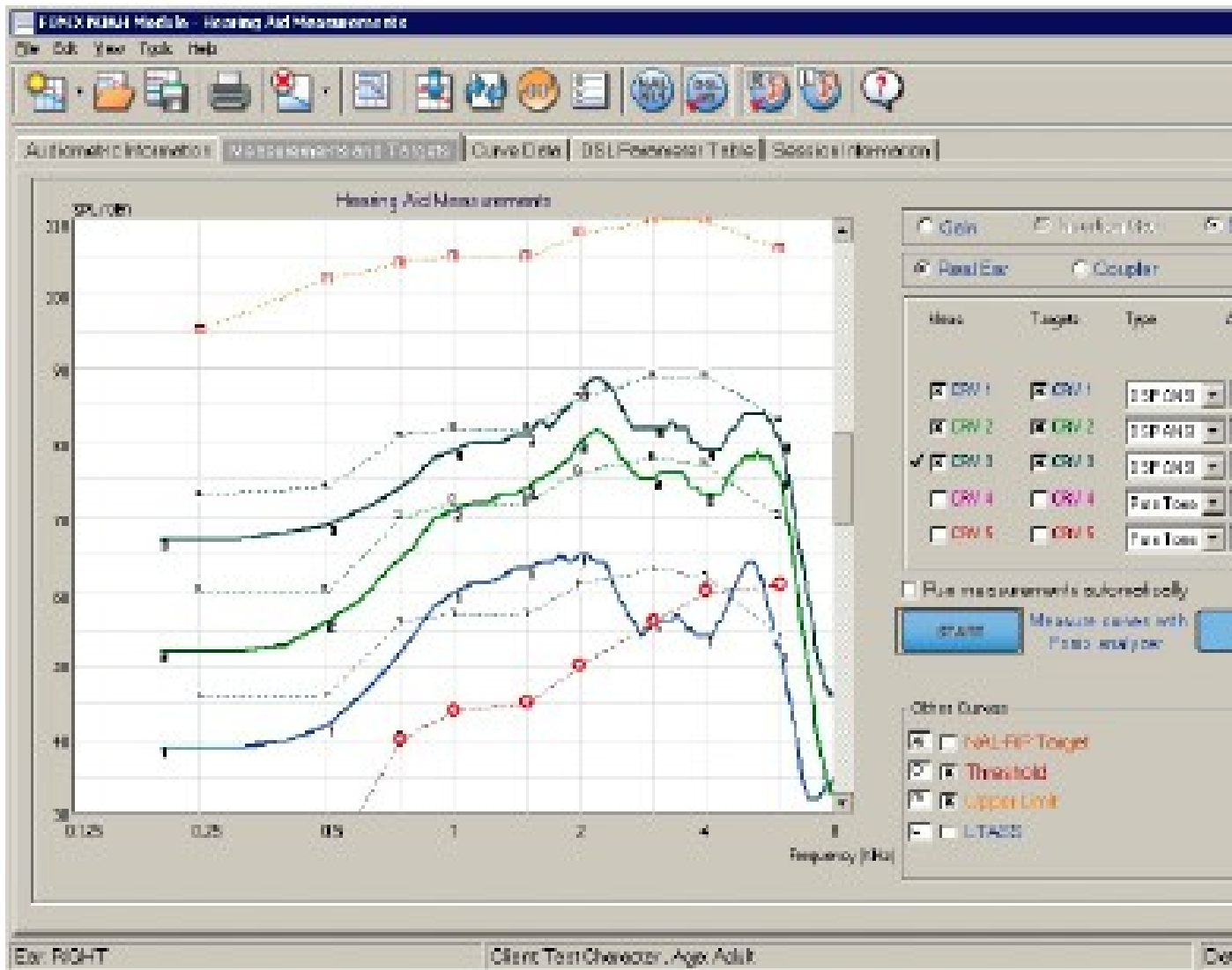
After the adjustment comes the question: How does this sound?

If the response is "I don't like it" the reply will usually be: "See you in a week and we will adjust if you feel the same way then"

If the response is "too loud" the natural reply is "It has been years since you have heard normal sounds-you will get used to it"

These are not good answers! Force the issue!

Visible Speech



- A form of REM
- REM uses multiple measures of speech noise at different levels-50, 65, 80 dB
- Visible speech uses a human speech sample. It is recorded and played over and over again in a loop.
- All the speech sounds are presented simultaneously.
- The human speech can be the voice of your spouse, friend or a relative.

Assume you are a Manufacturer of programmable hearing aids. You have to start somewhere so you assume everyone has the average ear canal size and shape and average hearing loss. You make your initial hearing aid settings based on mathematical averages. What else can you do? Since no one person's ear canal or hearing loss is the same what are the chances these aids will be a good fit? The answer is 3% based on a personal study (see below)

made by Dr. Kupperman that found 97% of all manufacturer setting based on averages were understandably off target.

Personal Study by Dr. Kupperman

- Used a representative sample of 4 different top selling digital hearing aids.
- Compared the manufacturer's quick fit (first fit) and to the final fit after adjustment using probe microphone measure.
- Standard was REIG variance within **plus or minus 10 dB** of NA-NL1 target (10dB is substantial variance and often thought of a doubling the volume)
- Results: 97% of the preset manufacturer's setting did not meet the standard which means only 3% of the manufacturer presets is a good fit for a patient.

Assume you are the Provider/Fitter

By using the manufacturer's preset fit and/or "WAG (see above) technique you (Provider) are likely to see your patient back complaining:

- "These aids don't sound good" (meaning they don't sound normal to the patient or what the patient expected which is not much to go on)
- "The sound is not clear" "I can't understand the words" (meaning the patient does not hear enough high pitches where 95% of all understandable speech resides)
- "I don't know why but I don't like these aids. Do you have something else I can try? These aids don't work. "I would like to return these for a refund" (meaning the aids have probably not been properly fit to the patient and the patient has lost confidence in the aids and/or the Provider)

What do you do? You have to go into Damage Control defense of yourself (Provider) and the manufacturer. Your choices are limited:

1. You employ your WAG system where you guess at a program adjustment and ask "How does that sound". If the response is "much better" you conclude that since your patient is not complaining you have made a good fit and your job is done. Actually, you might not even be close and don't know it.
2. You take 15 minutes to use your Probe Microphone machine that set you back \$15,000 and you see on your computer screen exactly why they said what they said and the correct programming adjustment(s) needed to fix the problem).

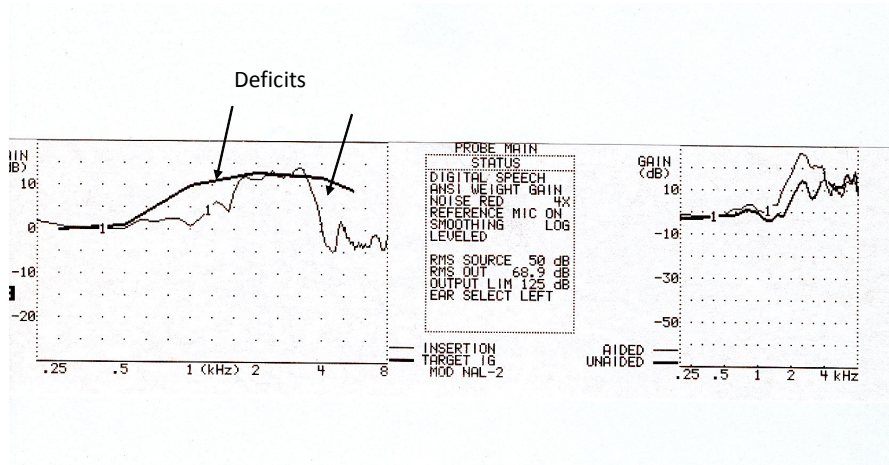
EXAMPLE: Solid lines represent existing fit for high/mid/low frequency ranges. Dotted lines represent patient tested hearing loss targets.



Dr. Kupperman spoke of a presentation he made to Audiologists at a State Convention on why Audiologists Don't Do Probe Microphone Measure:

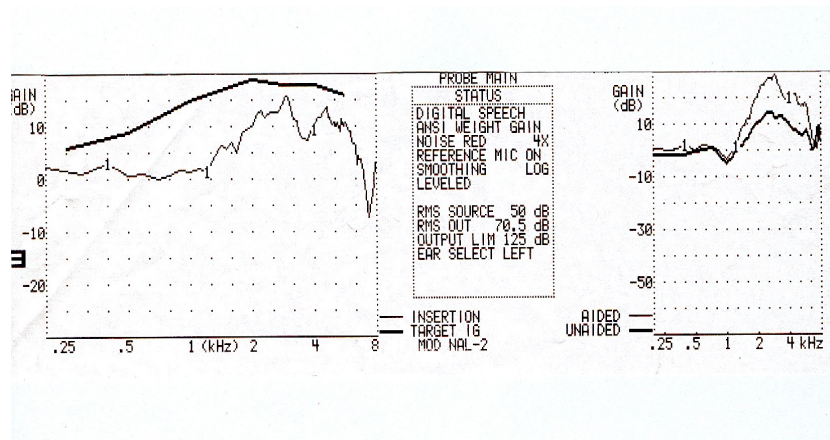
- Takes too much time! Not true! 7-12 minutes. Actually saves enormous amounts of time by reducing follow-up visits.
- Costs too much! Not true! With a pair of aids costing \$5,000, a \$15,000 investment in Probe-Microphone can be recouped by avoiding three returned aids. The machine has an 8-12 year life span.
- Fear of accountability! Yes! It proves the WAG fix wasn't done correctly before.
- Lack of professionalism! Yes! Same as above.
- Lazy! Could be!
- Dr. Kupperman noted that the majority of Hearing Instrument Specialists do not have the technical skills to do Probe Microphone Measure.

ON TARGET BETWEEN 1800 AND 3500 HZ A RAMDON PATIENT WALK-IN



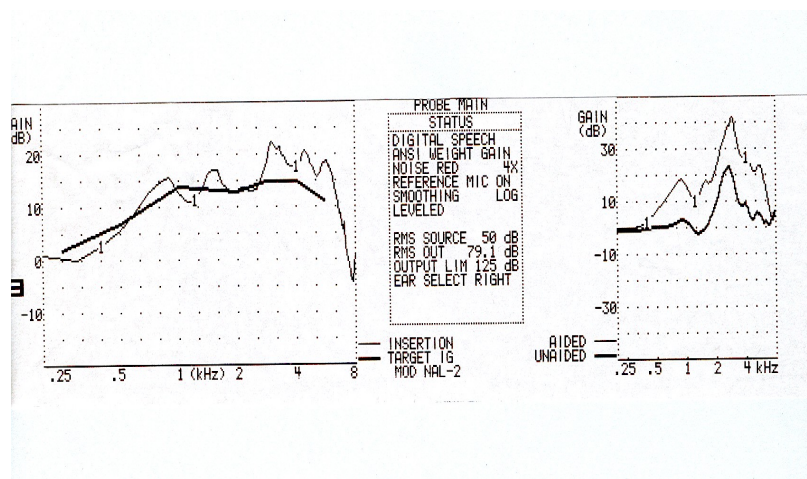
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TOO SOFT



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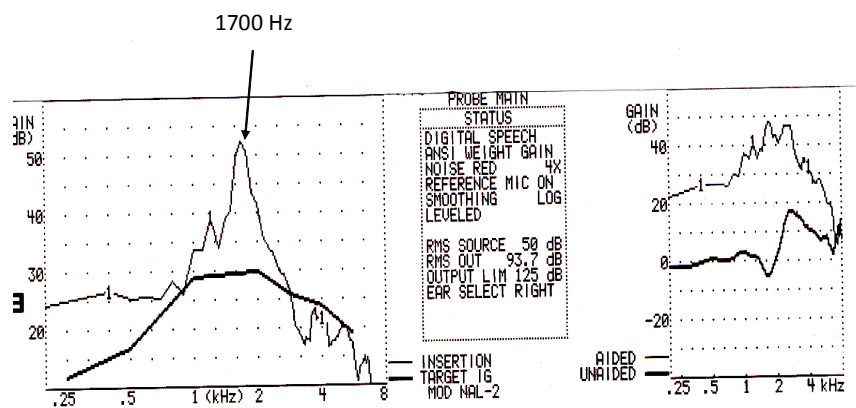
TOO STRONG IN HIGHS



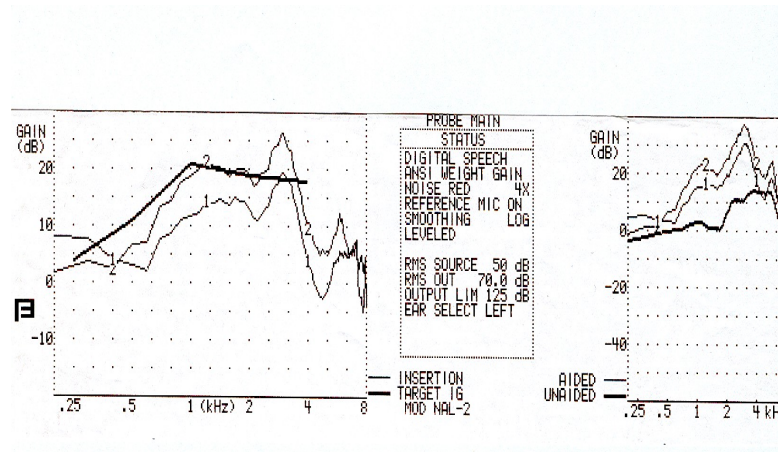
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FEEDBACK

NOT ALWAYS A HIGH FREQUENCY TONE



Referred Patient Showing the Previous Fit and My Adjusted Fit



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The Homework Assignment made at the end of the Part I presentation was begun by asking attendees to offer explanations of “Why vision aids work so much better than hearing aids?”. Several answers were provided and the one best answer was that hearing loss was nerve damage from loss of hearing hair cells and not a physically correctable issue. A chart of the ear was introduced and a “how hearing works” explanation followed. The short answer Dr. Kupperman was seeking is that vision aids (eyeglasses) work better because the fix is a mechanical one and hearing aids don’t work nearly so well is because they must cope with a neural (non-mechanical) issue in which the fix is relegated to merely making hearing better. (Note: **See Forum topic “Comparing Hearing Aids to Glasses”** for a comprehensive explanation).

Questions and Answers:

Q What do you think about Inexpensive Hearing Aids advertised that will make sound loud and clear?

Response: Your first question should be can they be adjusted? If the answer is no go no further. Programmable aids can be adjusted to control feedback and suppress undesired sounds. Over-Counter aids can’t do this. Whatever setting they come with, if any, is permanently preset to something, but it is certainly not your individual loss.

Q How do you match the right and left volume with the remote volume control?

Response: You don’t. That is the Providers job.

Comment: Attendee stated he had 3 programs and a remote with 3 volume settings.

Response: All good hearing aids have multi-programs. A remote is a toy. Some like them some don't.

Q Can hearing aids be too loud?

Response: Hearing aids can be over amplified or under amplified. Either can be quickly and accurately corrected. One dB is the minimum change-10 dB is considered doubling the volume-15-25dB is a whisper-65-70dB is a normal speaking voice-80dB is loud-130dB is the pain threshold.

Q How can we find out what is the best hearing aid?

Response: Asking manufacturers is a bad option because they will always say their product is better than any other. Although there appears to be a tremendous number of hearing aids on the market there are still only six major manufacturers that gobble up promising newcomer manufacturers to control market share. Where the hearing aid numbers come from is each manufacturer offering an array of models reminiscent of the auto industry, where the base product is offered with many different packages of selected features and a different shell style at a different price to appeal to a different pocketbook. A BAD OPTION.

SIG Leader Insert:: Some additional options:

- Consumer's Report, Consumer's Guide To Hearing Aids, and other similar reports compare or rate hearing aids based on information obtained from manufacturers and sort for models, prices ranges, specifications and features then offer the sorted manufacture generated material usually without specific recommendations. GOOD FOR PRODUCT INFORMATION BUT THE DATA COMES FROM MANUFACTURERS AND DOESN'T TELL YOU WHAT YOU ARE SEEKING.
- Individual Research: combined with individual product testing might be a good way except who has the time, education and technical skills to analyze and properly evaluate techy specifications, charts and graphs put out by manufacturers and one must not forget that the best information is understandably proprietary. A starting point for aids would be a minimum of:
 - Four memories (programs-too many is awkward, difficult to use and confusing)
 - Eight bands (gain handles-ranges) of channels (the more the better up to 16-a larger number is conducive to over manipulation)
 - Two microphones (for directionality-a 10 microphone necklace as Dr. Kupperman pointed out would definitely be overkill and proven to be a non seller) A VERY UPHILL TASK.
- Word of Mouth: Seeking the opinions of friends and relatives is dangerous because of so many individual variables can be misunderstood or not applicable due to a variance of hearing loss characteristics. What is helpful to a degree is the Hearing Profile Group

that shares information about and ranks their Hearing Aids, Providers/Fitters and sorts into sub-groups with similar hearing loss ranges. The Profile is sub grouped by similar hearing loss to provide a base for meaningful information for like thinking individuals on not only hearing aids but Providers/Fitters. To participate or get information on the Hearing Solutions Profile Group email hearing@sctxcompclub.org
SOME VALUE HERE.

- Providers: They should, probably better than anyone else, know which hearing aid products are good performers based on patient acceptance, complaints, hearing aid returns and they should know your hearing loss needs, which is probably more important than any other single factor in choosing the right hearing aid. Providers have been known to discontinue manufacturers that make bad products or provide service. The dark side is (1) the vast majority of Providers are dependent on hearing aid sales for their very survival. Can you imagine a Provider recommending a competitor's product? (2) Providers come with all levels of knowledge, training and experience so your challenge may be sorting out the right Providers with which to consult. Not an easy task given Provider/Fitter questionable transparency involved in their bundling of product and servicing, turnover for a host of reasons, turning patients who have purchased aids over to interns in training or beginning hearing instrument specialists.

ARGUABLY THE BEST OPTION.

(See Forum topic titled "Manufacturers-Dispensers")}}.