

Meeting Notes, May 12, 2011-Cros/BiCros, Jill Mendez, Jones Hearing

The meeting was promptly called to order at 3pm and Gary Shepard made several announcements to the 23 attendees of which 5 were new members bringing total membership to 140:

- **Palace Theater Survey:** A show of hands was requested as to members taking the survey to encourage the Theater to install Inductive Looping to facilitate hearing aid users in enjoying performances. Contact Gary for more information.
- **Looping in the News:** Article published in the Focus of Georgetown May Issue about the partnership of Estes Audiology and Sertoma Club looping public rooms in the Georgetown City Council chambers and the Public Library's Hewlett and Friends of the Library rooms. Churches and other private buildings are starting to buy in. The Williamson County Sun published two separate substantial articles in their May 11, 2011 issue.
- **VA Aids:** Several Veterans that have VA dispensed aids were present and provided information and comments on the Cedar Park Outpatient Clinic. VA information along many other interesting and valuable topics can be found in the Hearing SIG Web Forum. Every member should consult this valuable informational tool and subscribe to all topics to receive email reminders when new posts are made.
- **Daily newspaper and mail ads for free evaluations, testing and demos:** Opportunity to get an updated audiogram and experience new technology at little or no cost. Members should get tested annually when possible as hearing changes and not for the better. The "better" part is ever changing technology and professional evaluation and fitting. Always obtain and keep a copy of tests for historical purposes.
- **Profile Group:** Currently consists of 27 participants willing to share aids information and test results. Grouped by loss severity. Contact Gary if you are interested in joining this special group.
- **Door Prize:** Boom Box Alarm Clock contributed by Jones Audiology was awarded to Carol Lehmkuhl as a result of a

drawing held at the end of the program and made by Jill Mendez.

Mike Martin introduced the featured speaker, Dr. Jill Mendez who received her Bachelors in Communication Sciences and Disorders and Doctorate of Audiology from the University of Cincinnati in Ohio. She spent her 4th year residency in Phoenix, Arizona specializing in cochlear implants, BAHA, and balance disorders. After graduation she was the Director of Audiology at Arizona Ear Center for 2 years before moving to Texas in 2008. She has been fitting hearing aids in Georgetown for 3 years and currently works for Jones Hearing Centers. Dr. Mendez successfully fitted Mike with BiCros aids and he won't quit talking about how pleased he is with Dr. Mendez and his new aids. His latest story is how he continually has to tell his wife to turn down the TV volume.

CROS AND BICROS

Jill Mendez, AuD
Doctor of Audiology
Jones Hearing

WHAT IS A CROS?

Contralateral Routing of Signal (CROS)

- ▶ Hearing aid technology designed for people with unilateral hearing (UHL) or Single Sided Deafness (SSD)
- ▶ UHL or SSD is defined as normal hearing in one ear and no hearing in the other ear
- ▶ Unaidable/ "bad" ear needs to have less than 50% speech discrimination to be considered for CROS/BiCROS.
- ▶ The technology allows two implementations:
 - ▶ CROS
 - ▶ BiCROS

HOW DOES IT WORK?

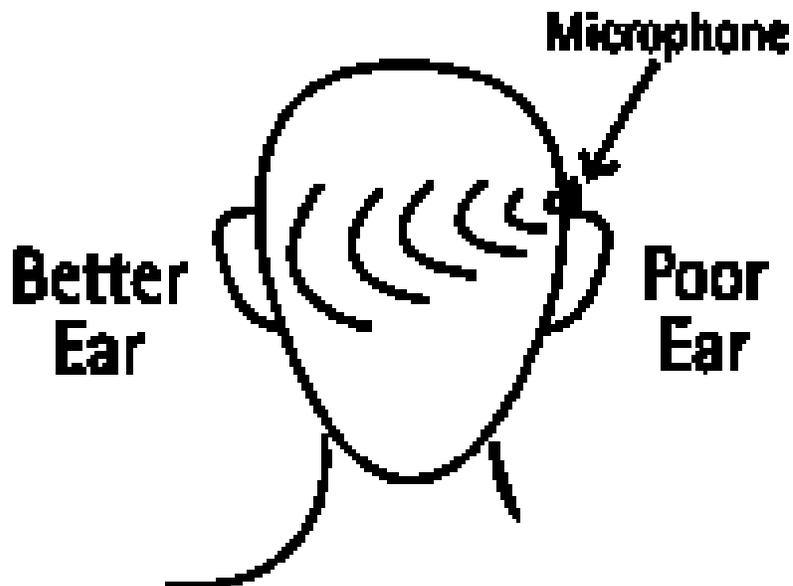
- ▶ The transmitter (hearing aid-like device) is placed on the "bad" ear, picks up sound and transmits it to the normal hearing ear
- ▶ The hearing in your good ear will remain natural and completely unaffected



WHAT IS BICROS?

- ▶ BiCROS is for a user with no hearing in one ear and some hearing loss in the good ear.
- ▶ It works just like the CROS, except the device on the good side is actually a full functioning hearing aid

HOW SOUND IS TRANSMITTED



WIRED CROS

While effective, the wire connecting one ear to the other can be annoying



WIRELESS CROS

Most convenient and popular device. Some reports of static interference



WIRELESS CROS: CROSLINK

- ▶ CROSLink is a universal wireless link for patients with one unaidable ear.
- ▶ **CROSLink features**
 - ▶ Universal – Compatible with almost all BTE hearing instruments.
 - ▶ Wireless – Reliable performance without an annoying cable.

- ▶ Aesthetically appealing – Compact design of receiver and transmitter.
- ▶ Versatile – Ideal for CROS or BiCROS fittings.
- ▶ Functional – Volume control and detachable receiver.



TRANSCRANIAL CROS

- ▶ Transcranial or internal CROS bypasses the two-piece system by using one hearing aid
 - ▶ Makes efficient use of good ear without hampering the hearing
 - ▶ Makes direct use of the “bad” ear
 - ▶ Uses an air conducted signal in “bad” ear that is loud enough to cross over via bone conduction to the “good” ear

Only possible in people with one entirely dead ear

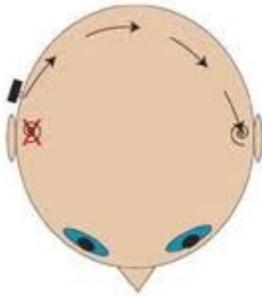


*Trans***EAR**
For Single-Sided Deafness

BONE CONDUCTION CROS:

BAHA

- ▶ Bone Anchored Hearing Aid (BAHA)
- ▶ Bone conduction transmits sound directly through the bones in the jaw and skull, bypassing the outer and middle ear.
- ▶ The BAHA system, which is based on bone conduction, utilizes a titanium implant, which is placed in the skull bone behind the ear. An abutment connects the sound processor with the implant in the bone. This creates direct bone conduction.
- ▶ The BAHA procedure is reversible and does not damage or harm residual hearing



WHO IS A CANDIDATE FOR CROS?

Limitations to hearing in only one ear:

- Experience embarrassment due to missed conversations
- Risk offending people by not answering when their name is called
- Lack awareness of warning signals originating from poor ear side
- Avoid social functions because they are overwhelming
- Feel stress over where to sit at an event to ensure that you can hear what key people are saying
- Turn head frequently to put better ear toward sound sources of interest

WHAT ARE THE BENEFITS OF CROS?

Benefits of hearing from both sides:

- Enhanced ability to participate more fully in conversations

- Greater awareness of your name being called with the opportunity to respond
- Improved perception of warning signals originating from your poor ear side
- Increased confidence when attending social functions
- Freedom to go where you'd like with the knowledge that you will not miss out
- Hear sounds originating on your poor ear side without turning your head

EXPECTATIONS

- ▶ The one common goal is to provide audibility and awareness of signals from the unaidable side of the head
- ▶ Wearer will not have better localization of sound immediately. Over time the "good" ear will differentiate between natural sound of "good" ear and electronic signal from "bad" side
- ▶ Wearer can have better understanding of speech in presence of background noise
- ▶ QuickSIN testing

QuickSin: PRE/POST

Name: _____
 Examiner: JJ

Unaided

Test Date: 12.11.07

List 1 - Track 3

1. A <u>white silk jacket</u> goes with <u>any shoes</u> .	S/N 25	<u>5</u>
2. The <u>child crawled into</u> the <u>dense grass</u> .	S/N 20	<u>5</u>
3. <u>Footprints showed</u> the <u>path</u> he <u>took</u> up to the <u>beach</u> .	S/N 15	<u>4</u>
4. A <u>vent near</u> the <u>edge</u> brought in <u>fresh air</u> .	S/N 10	<u>2</u>
5. It is a <u>band of steel</u> <u>three inches wide</u> .	S/N 5	<u>0</u>
6. The <u>weight</u> of the <u>package</u> was <u>seen</u> on the <u>high</u> scale.	S/N 0	<u>0</u>
25.5-Total <u>9.5</u> SNR Loss	TOTAL:	<u>16</u>

List 2 - Track 4

1. <u>Tear a thin sheet</u> from a <u>yellow pad</u> .	S/N 25	<u>3</u>
2. A <u>cruise</u> in warm <u>waters</u> in a <u>sleek yacht</u> is <u>fun</u> .	S/N 20	<u>2</u>
3. A <u>streak of color</u> ran <u>down</u> the <u>left edge</u> .	S/N 15	<u>4</u>
4. It was <u>done before</u> the <u>boy</u> could <u>see it</u> .	S/N 10	<u>5</u>
5. <u>Crouch before</u> you <u>jump</u> or <u>miss</u> the <u>mark</u> .	S/N 5	<u>5</u>
6. The <u>square peg</u> will <u>settle</u> in a <u>round hole</u> .	S/N 0	<u>0</u>
25.5-Total <u>6.5</u> SNR Loss	TOTAL:	<u>19</u>

List 3 - Track 5

1. <u>Pitch the straw through</u> the <u>door</u> of the <u>stable</u> .	S/N 25	<u>2</u>
2. The <u>sink</u> is the <u>thing</u> in <u>which</u> we <u>pile dishes</u> .	S/N 20	<u>0</u>
3. <u>Post no bills</u> on this <u>office wall</u> .	S/N 15	<u>5</u>
4. <u>Dimes showered down</u> from <u>all sides</u> .	S/N 10	<u>2</u>
5. <u>Pick a card</u> and <u>slip it</u> <u>under</u> the <u>pack</u> .	S/N 5	<u>2</u>
6. The <u>store</u> was <u>jammed before</u> the <u>sale</u> could <u>start</u> .	S/N 0	<u>0</u>
25.5-Total <u>14.5</u> SNR Loss	TOTAL:	<u>11</u>

Average Score: 10.7 dB SNR

AIDED

Test Date: 1.2.08

List 4 - Track 6

1. The <u>sense of smell</u> is <u>better than</u> that of <u>touch</u> .	S/N 25	<u>5</u>
2. He <u>picked up</u> the <u>disc</u> for a <u>second roll</u> .	S/N 20	<u>4</u>
3. <u>Drop the ashes</u> on the <u>worn old rug</u> .	S/N 15	<u>5</u>
4. The <u>couch cover</u> and <u>hall drapes</u> were <u>blue</u> .	S/N 10	<u>5</u>
5. The <u>stems</u> of the <u>tall glasses</u> <u>cracked</u> and <u>broke</u> .	S/N 5	<u>3</u>
6. The <u>cleat</u> <u>sank deeply</u> into the <u>soft turf</u> .	S/N 0	<u>0</u>
25.5-Total= <u>3.5</u> SNR Loss	TOTAL:	<u>22</u>

List 5 - Track 7

1. To <u>have</u> is <u>better than</u> to <u>wait</u> and <u>hope</u> .	S/N 25	<u>5</u>
2. The <u>screen before</u> the <u>fire</u> <u>kept</u> in the <u>sparks</u> .	S/N 20	<u>5</u>
3. <u>Thick glasses</u> <u>helped</u> him <u>read</u> the <u>print</u> .	S/N 15	<u>6</u>
4. The <u>chair looked strong</u> but had <u>no bottom</u> .	S/N 10	<u>5</u>
5. They <u>told wild tales</u> to <u>frighten him</u> .	S/N 5	<u>4</u>
6. A <u>force equal</u> to that <u>would move</u> the <u>earth</u> .	S/N 0	<u>0</u>
25.5-Total <u>1.5</u> SNR Loss	TOTAL:	<u>24</u>

List 6 - Track 8

1. The <u>leaf drifts along</u> with a <u>slow spin</u> .	S/N 25	<u>5</u>
2. The <u>pencil</u> was <u>cut</u> to be <u>sharp</u> at <u>both ends</u> .	S/N 20	<u>5</u>
3. <u>Down the road</u> is the <u>way</u> to the <u>grain farmer</u> .	S/N 15	<u>5</u>
4. The <u>best method</u> is to <u>fix</u> it in <u>place</u> with <u>clips</u> .	S/N 10	<u>2</u>
5. If you <u>mumble your speech</u> it will be <u>lost</u> .	S/N 5	<u>5</u>
6. A <u>toad</u> and a <u>frog</u> are <u>hard</u> to <u>tell apart</u> .	S/N 0	<u>1</u>
25.5-Total <u>2.5</u> SNR Loss	TOTAL:	<u>23</u>

Average Score: 2.5 dB SNR

Optional List

List 7	Score
1. <u>Take shelter</u> in this <u>tent</u> , but <u>keep still</u> .	S/N 25 _____
2. The <u>little tales</u> they <u>tell</u> are <u>false</u> .	S/N 20 _____
3. <u>Press the pedal</u> with your <u>left foot</u> .	S/N 15 _____
4. The <u>black trunk</u> fell from the <u>landing</u> .	S/N 10 _____
5. <u>Cheap clothes</u> are <u>flashy</u> but <u>don't last</u> .	S/N 5 _____
6. At <u>night</u> the <u>alarm</u> roused him from a <u>deep sleep</u> .	S/N 0 _____
25.5-Total _____ SNR Loss	TOTAL: _____

Optional List

List 8	Score
1. <u>Dots of light</u> betrayed the <u>black cat</u> .	S/N 25 _____
2. <u>Put the chart</u> on the <u>mantel</u> and <u>tack it down</u> .	S/N 20 _____
3. The <u>steady drip</u> is <u>worse</u> than a <u>drenching rain</u> .	S/N 15 _____
4. A <u>flat pack</u> takes <u>less</u> <u>luggage space</u> .	S/N 10 _____
5. The <u>gloss</u> on <u>top</u> made it <u>unfit</u> to <u>read</u> .	S/N 5 _____
6. <u>Seven seals</u> were <u>stamped</u> on <u>great sheets</u> .	S/N 0 _____
25.5-Total _____ SNR Loss	TOTAL: _____

Instructions;

- Set for binaural presentation on Tape A and calibrate with VU meter on Track 1.
- Instruct patient to repeat the sentences as best they can, even if just a few words.
- Circle presentation level: 70-75-80db. (Remember we want loud but "ok")
- Count up the correct underscored words, subtract 25.5, and average the these three scores for final SNR score.
- Use optional list for poor performance to improve average-best of three lists.

(60)

CONCLUSION

- ▶ CROS/BiCROS is the solution for patients with UHL or SSD to increase awareness of sound on the "bad" side
- ▶ Audiologists see 2-4 people per **year** with UHL or SSD
- ▶ Any difference in hearing between the two ears should always be examined by an Ear Specialist (ENT or Otologist)

REFERENCES AND RELATED LINKS

- ▶ Donald Hayes, Ph.D.. (7/24/2006). A Practical Guide to CROS/BiCROS Fittings. In AudiologyOnline. Retrieved 5/9/2011, from www.audiologyonline.com/articles/article_detail.asp?article_id=1632.
- ▶ Max S. Chartrand, Ph.D.. (2010). Evaluation and Validation Protocol: Transcranial or Internal CROS Fittings. In DigiCare. Retrieved 5/9/2011, from www.digicarehearing.com/im-here-to-learn-more/our-library/for-hearing-health-professionals.
- ▶ Unitron Hearing Aids
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