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Best Practices for Adult SSD CI Candidates and Recipients, in partnership with American Cochlear Implant Alliance

Allison M. Biever, AuD, CCC-A

Moderator:
Christy Huynh, AuD,
Managing Editor, AudiologyOnline

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AMERICAN COCHLEAR IMPLANT ALLIANCE

Cochlear Implant Best Practices for Adults and Children with Single-Sided Deafness: A Two-Part Series

Donna L. Sorkin, MA

Why another organization in hearing health?

- Membership organization focused on cochlear implantation and access to care
- Members are audiologists, physicians, speech pathologists, educators and others on CI teams + consumers/parents, advocates, hearing aid specialists
- Website designed for those in and out of CI
- Highly collaborative with other organizations

Welcome your involvement!

www.acialliance.org

https://www.facebook.com/ACIALLIANCE.ORG/

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American Cochlear Implant Alliance

- Mission: Advance access to the gift of hearing provided by cochlear implantation through research, advocacy and awareness
- Address factors contributing to underutilization of cochlear implants
- Improve awareness regarding candidacy and outcomes

Why this topic is critical now

- **Perspectives about Unilateral Deafness have changed**
  - Measurable impacts on access to sound and quality of life
  - Many hearing health professionals are unaware of when and whether to refer
- **Insurance coverage for CI in SSD expanding**
- **Greater knowledge on outcomes**

American Cochlear Implant Alliance Task Force Guidelines for Clinical Assessment and Management of Cochlear Implantation in Adults With Single-Sided Deafness (SSD)

- *CI for SSD offers significant benefit for sound localization, tinnitus mitigation, and quality of life*
- *With sudden hearing loss, CI should not occur earlier than 3-6 month to allow time for medical workup*
- *Discuss and trial non-surgical options*
- *Long duration of deafness not a contraindication but may impact outcomes*
- *Advanced age not a contraindication*
- *Wear time associated with better outcomes (at least 8 hours a day)*
- *Auditory training during initial months*

www.acialliance.org/page/DeterminingCICandidacy

AMERICAN COCHLEAR IMPLANT ALLIANCE

ACI Alliance Task Force Guidelines for Clinical Assessment of Cochlear Implants (CI) in Children with Single-Sided Deafness (SSD)

- *At risk for hearing loss progression in better ear*
- *Dx bacterial meningitis*
- *Advantage of younger CI*
- *Developmental disadvantages of SSD due to difficulties with localization, hearing in noise, listening fatigue*
- *Auditory therapy strongly recommended*

www.acialliance.org/page/DeterminingCICandidacy

AMERICAN COCHLEAR IMPLANT ALLIANCE

AMERICAN COCHLEAR IMPLANT ALLIANCE

Best Practices for Adult SSD CI Candidates and Recipients, in partnership with American Cochlear Implant Alliance

Allison Biever, AuD, CCC-A
Rocky Mountain Ear Center

Allison M. Biever, AuD, CCC-A

Dr. Biever has worked in the field of cochlear implants since 1992 and sees both pediatric and adult cochlear implant candidates and recipients. She participates in cochlear implant research studies and has published numerous articles. Dr. Biever teaches for the Institute for Cochlear Implant Training and the University of Colorado. She has also served as President and currently serves as secretary for the LISTEN Foundation.

Disclosures

- **Presenter Disclosure:** Financial: Allison M. Biever is employed by the Institute for Cochlear Implant Training and the University of Colorado. She serves as a consultant for Cochlear. Non-financial: Allison M. Biever serves on the board of directors for the LISTEN Foundation.
  - A donation was made to the American Cochlear Implant Alliance on behalf of the presenter.
- **Content Disclosure**: This learning event does not focus exclusively on any specific product or service.
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Learning Outcomes

After this course, participants will be able to:

- List the candidacy requirements given FDA guidelines for adult SSD CI candidates.
- Describe at least two speech perception tests that can be used to assess post-operative improvement.
- List additional measures that can be used to quantify improvement post-activation.

Who is a Candidate?

- Severe-to-profound sensorineural hearing loss in one ear and normal hearing to mild hearing loss in the contralateral ear
- Word recognition score of 5% or poorer
- 5 years of age or older

Who is a Candidate?

- First rec'd FDA approval: (Med El – July 2019)
  - Profound hearing loss in poorer ear – normal hearing to mild hearing loss in better ear
- Since rec'd FDA approval: (Cochlear – Jan 2022)
  - Severe-to-profound hearing loss in poorer ear – normal hearing in better ear
- Different labeling for 2 of 3 manufacturers
- Medicare does not currently cover CI surgeries for adults with SSD

Counseling:

- Localization
- Elimination of Head Shadow
- Squelch
- Tinnitus
- Duration of Deafness
  - Congenital vs acquired

Assessment:

- Comprehensive audiometry*
- CNC recorded words (with normal ear masked)*
- AzBios (0 dB SNR): Speech front – noise front, speech front - noise to better ear (requires 3 speaker system), speech front – noise to poorer ear (requires 3 speaker system)
- Adaptive Test: BKB-SIN: Same Conditions

Other Assessment Tools

- Tinnitus Questionnaire
- SSQ-12 Survey
- Vanderbilt – Fatigue Scale
- Anxiety Scale
- Quality of Life Survey

Tinnitus Questionnaire

Mini-Tinnitus Self-Assessment Scale

Patient ID#		**Date** (Day) (Mon) (Year)	
This form was completed by:	❒Patient	❒Parent/Carer	

Instructions:

- Tinnitus – Definition: Ringing in the ears.
- The purpose of this questionnaire is to find out whether the noises in your ears/head have had any effect on your mood, habits or attitudes.

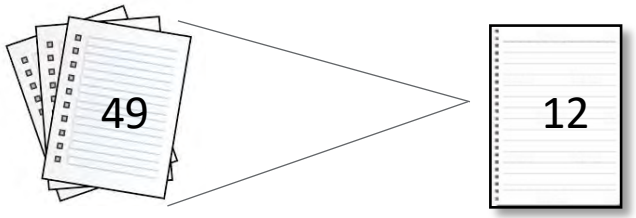
	Question	True	Partly True	Not True
1.	I am aware of the noises from the moment I get up to the moment I sleep.	❒	❒	❒
2.	Because of the noises, I worry that there is something seriously wrong with my body.	❒	❒	❒
3.	If the noises continue, my life will not be worth living.	❒	❒	❒
4.	I am more irritable with my family and friends because of the noises.	❒	❒	❒
5.	I worry that the noises might damage my physical health.	❒	❒	❒
6.	I find it harder to relax because of the noises.	❒	❒	❒
7.	My noises are often so bad that I cannot ignore them.	❒	❒	❒
8.	I takes me longer to get to sleep because of the noises.	❒	❒	❒
9.	I am more liable to feel low because of the noises.	❒	❒	❒
10.	I often think about whether the noises will ever go away.	❒	❒	❒
11.	I am a victim of my noises.	❒	❒	❒
12.	The noises have affected my concentration.	❒	❒	❒

***Reference**: Hiller W, Goebel G. Rapid assessment of tinnitus-related psychological distress using the Mini-TQ. Int J Audiol 2004; 43: 600-4.*

What is SSQ-12?

- A self-assessment questionnaire designed to give an impression of perceived disability

Based on the questions of the SSQ (49)

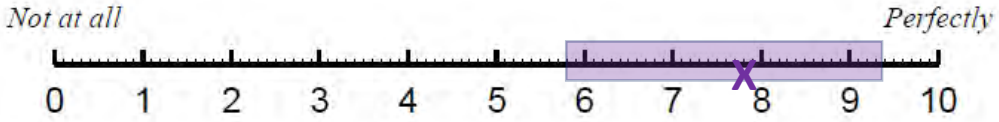


Close agreement between original SSQ and SSQ12

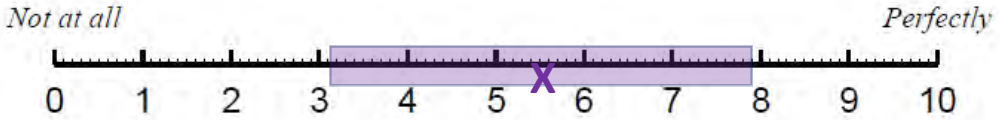
- 12 items that continue to measure across the same domains (Speech, Spatial, Quality)
- Items were avoided that attracted a significant number of “not applicable” responses
- Items with wider rather than narrow ranges of responses.

SSQ12 Questions 1-3

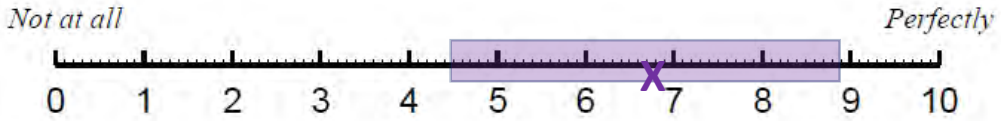
1: You are talking with one person and there is a TV on in the same room. Without turning the TV down, can you follow what the person you're talking to says



2: You are listening to someone talking to you, while at the same time trying to follow the news on TV. Can you follow what both people are saying?



3: You are in conversation with one person in a room where there are many other people talking. Can you follow what the person you are talking to is saying?



Banh, Singh & Pichora-Fuller (2012)
Mean Age 70 years NH

NH Range: Older Adults

MSTB-3: ICIT

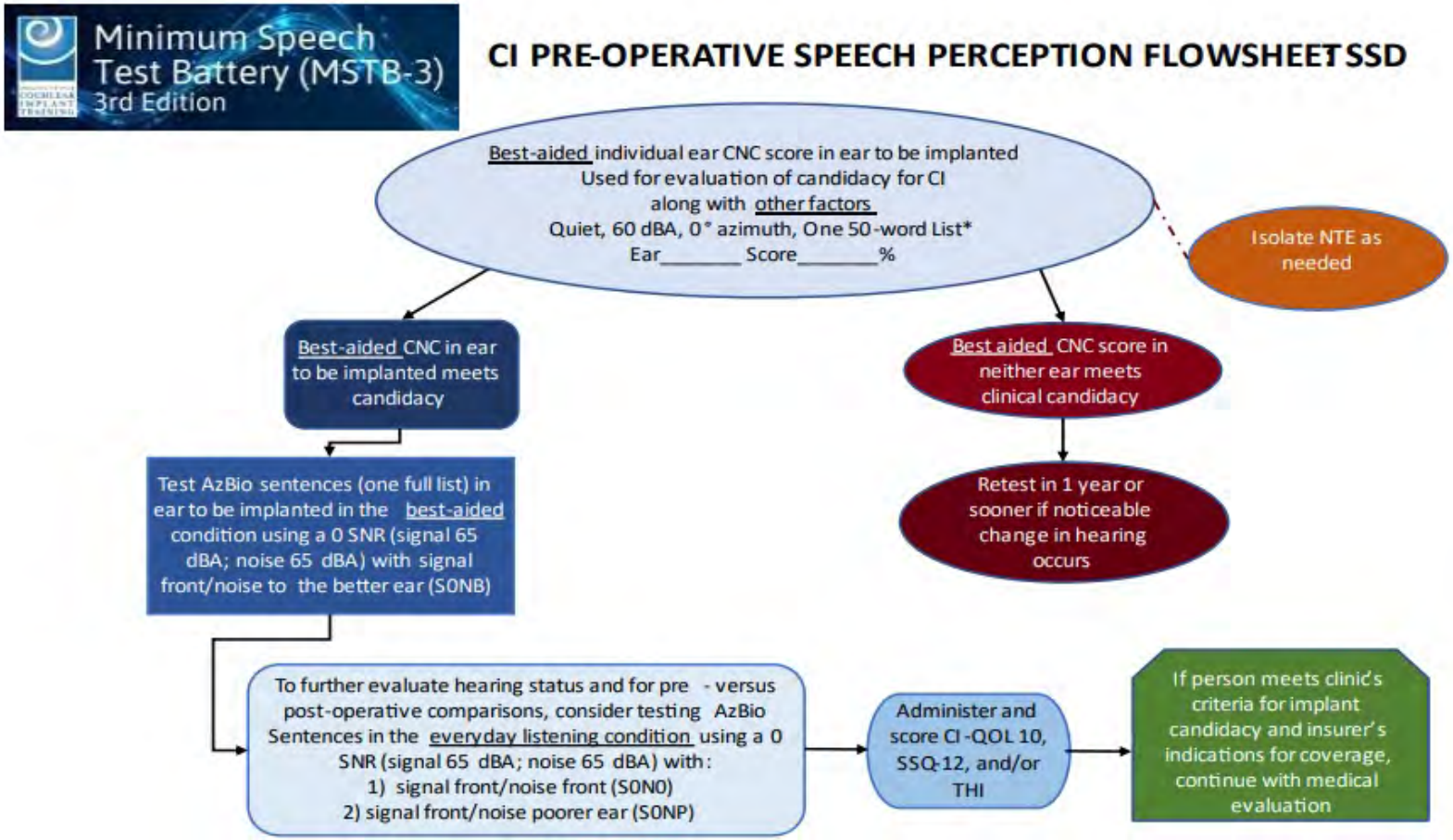
- “The ICIT MSTB-3 Test Suite is an updated and streamlined test battery for pre-operative determination of candidacy and post-operative assessment of cochlear implant performance in adults. It contains important practice guidance for clinicians working with cochlear implant (CI) candidates and recipients including testing protocols, digitally downloadable test materials, report templates, and a manual detailing testing considerations for working with the variety of patient types followed by CI centers.”

MSTB-3

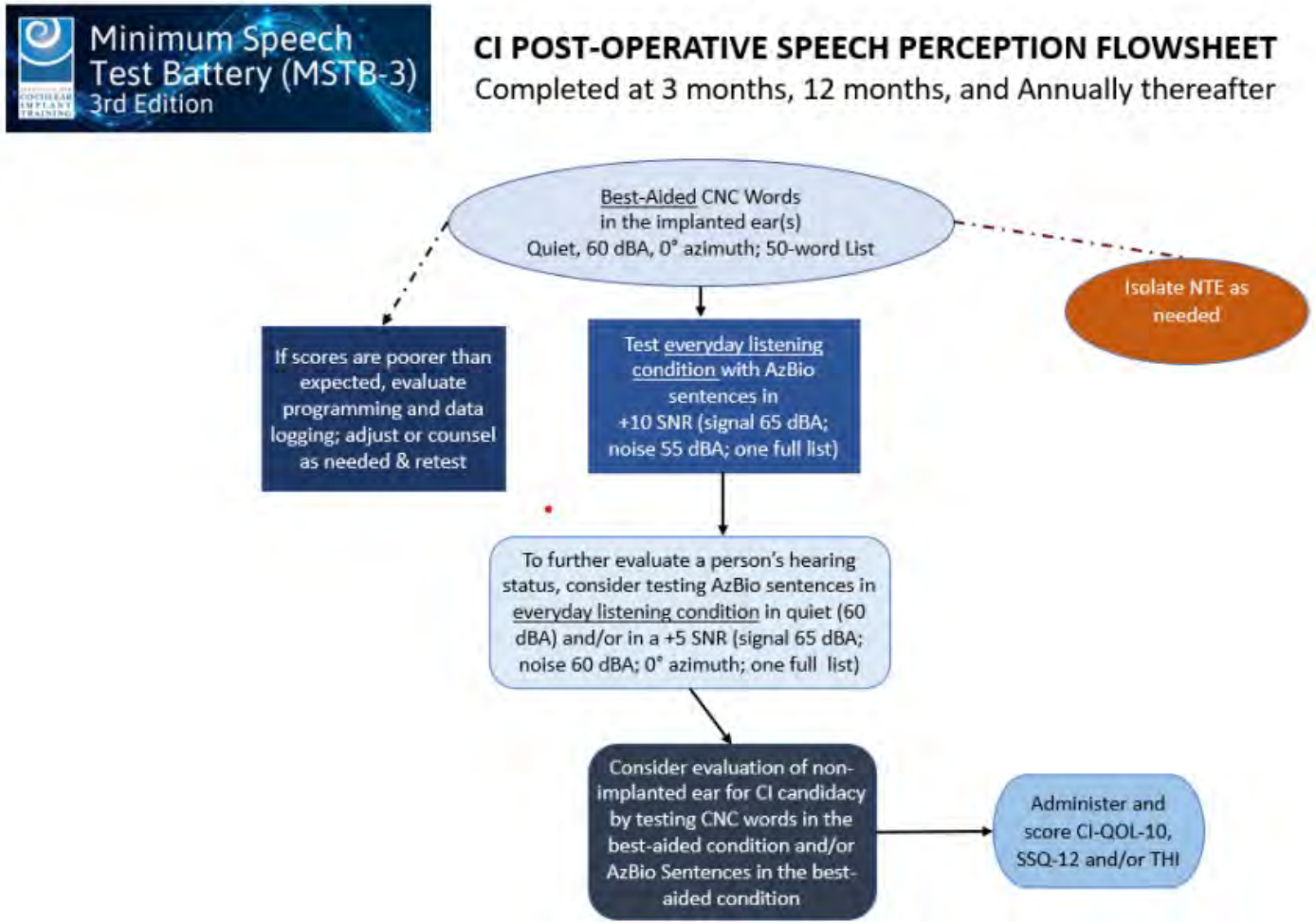
- Content Experts:
  - Allison Biever AuD, René Gifford PhD, Melissa Hall AuD, Heidi Hill AuD, Meredith Holcomb AuD, English King AuD, Jan Larky AuD, Regina Presley AuD, Meaghan Reed AuD, William Shapiro AuD, Sarah Sydlowski AuD, PhD, MBA and Jace Wolfe, PhD

- Stakeholders:
  - AAA, AAO-HNS, ADA, ACIA, ASHA, Hearing Health Collaborative, Veterans Association, Advanced Bionics, Cochlear, MED-EL

MSTB-3: SSD Adult Candidates



MSTB-3: SSD Adult Recipients



Insurance Caveats

- PTA
- Word recognition
- Hearing aid trial
- Insurance benefits limited by policy

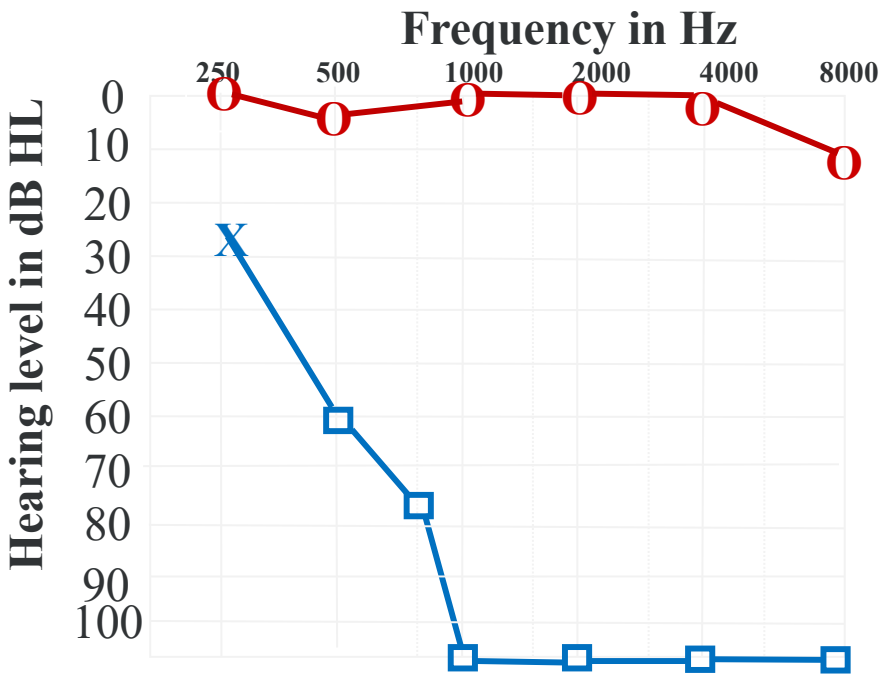
Post-operative Testing

- Recorded CNC words
  - Direct streaming?
  - Masking better ear?
- Speech in noise:
  - Adaptive Test: BKB-SIN
  - AzBio +0 (fixed)
- Re-administering surveys
  - Tinnitus Survey
  - SSQ
  - Vanderbilt Fatigue

Case Study #1

- 28-year-old female dx with mild hearing loss at age 21. Had sudden loss at age 28
- Etiology: EVA
- Tried CROS aid – no benefit
- Pt is a nurse: difficulty localizing and hearing in noisy environments
- Pt struggles with tinnitus AS

Case Study #1 Audiogram



WRS:
R: 100%
L: 8%

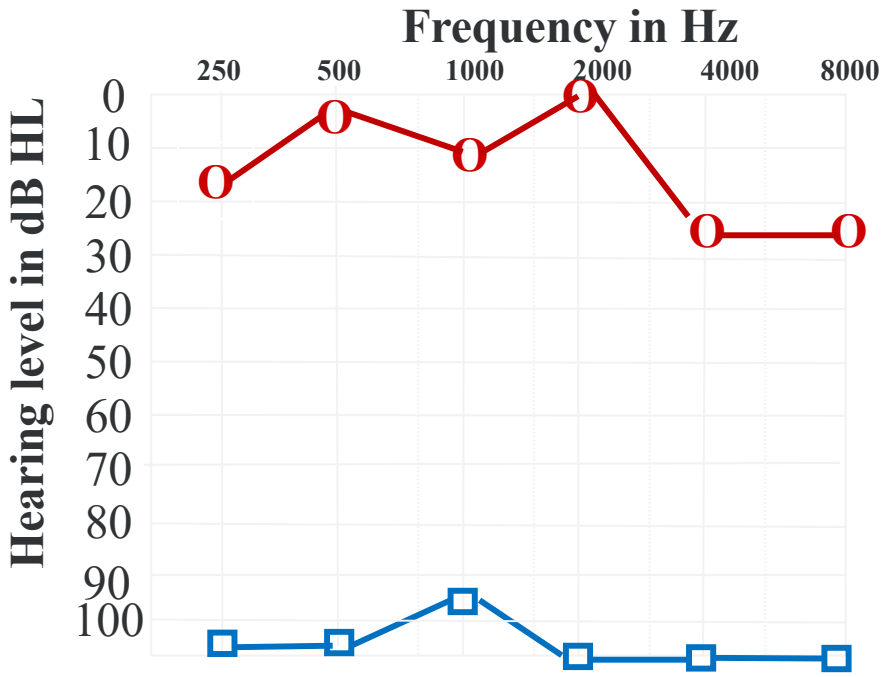
Outcome Case Study #1

- CNC masked words: (pre-op 8%)
  - 60% 3 months
  - 86% 6 months
- BKB-SIN SF/NBE: (pre-op 8.5 dB)
  - 4.5 dB 3 months
  - 4.0 dB 6 months
- Data Logging: 15 hours/day

Case Study #2

- 49-year-old male idiopathic sudden hearing loss 7 months ago
- Tried CROS: no benefit
- Pt very frustrated with localization abilities and performance in noise
- Works with noisy machinery
- Reports significant tinnitus

Case Study #2 Audiogram



WRS:
R: 100%
L: 0%

Outcome Case Study #2

- CNC masked words: (pre-op 0%)
  - 34% 3 months
  - 32% 6 months
  - 60% 12 months
- BKB-SIN SF/NBE: (pre-op 11.5 dB)
  - 8.5 dB 3 months
  - 7.5 dB 6 months
  - 3.5 dB 12 months
- Data Logging: 15 hours/day

Data Logging Case Study #2

- CNC masked words: (pre-op 0%)
  - 34% 3 months – 4.8 hours/day
  - 32% 6 months – 3.0 hours/day
  - 60% 12 months – 8 hours/day
- BKB-SIN SF/NBE: (pre-op 11.5 dB)
  - 8.5 dB 3 months
  - 7.5 dB 6 months
  - 3.5 dB 12 months
- Data Logging: 15 hours/day

Considerations

- Frequency-to-place mismatch
- Anatomy based fittings
- Med El & Cochlear:
  - Changing FAT to improve sound quality

Thank You!

Allison Biever, AuD, CCC-A

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