



(Re)Habilitation Resources from Cochlear

Helping Families Achieve the Best Outcome for their Child with a Cochlear Implant

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Cochlear Americas

Hear now. And always



Topics:

1. Maximally Using the Sound Processor
2. Empowering Parents to Promote Auditory Learning
3. Addressing Listening Needs in Group Settings



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1 Collaborate with Child's Mapping Audiologist

- Parents: Provide regular input regarding what child is consistently hearing or not hearing
- Educators/Therapists: Let parents or CI audiologist know what sounds or words child misses
- Does your child respond well to sounds in his/her environment? Can he/she consistently hear the 6 Ling sounds?
- CI Audiologist: Explain mapping changes



Other Information to Share

- Which program does child use most often?
- Has this changed over time?
- What settings does he/she use?
 - Are there times you think child needs more volume?
 - Are there times the program seems too loud?
- Does child ever use the other programs?
 - If yes, how often and in what situations?

Resources on Mapping

- HOPE Online: Audiologists and Therapists (or Teachers) Working Together (Brooks, Aaron)
- HOPE Online: Partnering with Your CI Audiologist: How to Get the Best Map Possible for Your Child (Zwolan)
- HOPE Online: How to Read a Child's Map (Popp, Clark)
- Team Tracking Form (Moog Center)

Make Full Use of Sound Processor Options

- Depending on age of child and ability to determine benefit, explore use of program options in sound processor
- **ADRO™** especially helpful in dynamic environments typical of what children experience
 - Makes automatic adjustments as sound environment changes
 - Divides sound spectrum into 22 channels and adjusts gain of each channel independently
 - Maximizes sounds recipient wants to hear and softens unwanted noise

ADRO™ for Changing Environments



Resources

- HOPE Online “FM and Nucleus Freedom”
(includes explanation of ADRO)
- HOPE Online “Maximizing Outcomes with SmartSound™: How, When, Why”
- SmartSound™ materials on the Cochlear Americas website:

www.cochlearamericas.com/products/22.asp

Determine Best Telephone Options

- Telecoil or not?
- Telephone setting louder?
- Help child determine best place to hold the telephone headset
- Mixing level
- Speaker phone?
- Phone preference or not? Identify which telephone works best (including mobile) in combination with above options



Resources

- “Using the telephone” support materials on the Cochlear Americas website:
- <http://www.cochlearamericas.com/Support/347.asp>
- HOPE Online “Talk to me! Telephone Tips for Cochlear Implant Users”

Increasing Confidence on Phone

- Purpose: Increase confidence with understanding on the phone
- Call **(800) 458-4999**
- Acoustic · Visual · Acoustic
- <http://www.cochlearcommunity.com/rehab> to check listening
- Listening available in English and Spanish

4 Practice Proactive Maintenance

- Perform daily equipment checks (look for breakage, loose connections)
- Know how to troubleshoot the sound processor (parents, daycare, other professionals)
- Have replacement parts on hand (not just batteries) at home, daycare, wherever the child is
- Parents: Use Dry and Store daily. Change “bricks” at appropriate time (especially important during humid summer months)

Resources

- HOPE Online seminar: “Troubleshooting the Cochlear Implant System”
- Troubleshooting Guide:
www.cochlearamericas.com/support/44.asp
- Educator Guide: Chapter 6 (Troubleshooting)
www.cochlearamericas.com/Support/2156.asp

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5 Acoustic Highlighting

- Bring child's attention to spoken message
- After spoken message, ask child "What did you hear?" instead of "What did I say"?
- Auditory Sandwich Technique: Acoustic · Visual · Acoustic
- Active Listening

Break Routine

- Children have predictable routines
- Break Routine to facilitate spoken speech and language
 - Ex. Snack Time, Getting Dressed, Washing Hands
- Children with more Advanced Listening and Language Skills use sequencing lessons
 - Making Peanut Butter and Jelly Sandwich

Active Participation of Family

- Practice, Practice, Practice
- Model Language Lesson to set Parent Up for Success: Everyone Learns through Models
- Ask Parent to give examples of implementing similar lesson in home environment
- Give Parent or Sibling turn to practice
- Encouraging waiting for response
- Give feedback (sandwich with positive, negative, positive)

Create Thematic Lessons

- Big picture teaching: language in everyday activities
- Carry over is stronger
- Increased participation of child
- Incorporate Strategies:
 - Increase wait time for response
 - Present information as Acoustic · Visual · Acoustic
 - Acoustic Highlighting
 - Note Taking to summarize session for carryover in home environment

HOPE Resources on Auditory Learning

- Variety of resources for parents in the HOPE area of the web site: www.cochlear.com/HOPE
- HOPE Online Learning Module: “Parent Friendly” contains many one-hour seminars for parents on auditory learning
- *Speech Sounds*: guidance on everyday activities, games, song, books to promote a strong auditory foundation
- *Listen Learn & Talk*: 3 CDs and book covering birth-48 months
- *Start Listening - Parents* (free DVD and related brochure)

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9 Assess and Address the Listening Environment

- Children with hearing loss need a higher signal to noise ratio (SNR) than normally hearing children (at least 15 dB)
- Acoustics and FM are not either/or
- Pre-K and daycare spaces are often noisy & reverberant
- Even older children will not necessarily complain
- Spaces should be evaluated for acoustical improvements

ANSI S12 Noise

- Covers background noise and reverberation:
 - Classrooms of Moderate Size
 - Core Learning Spaces
- Covers background noise but not reverberation:
 - Ancillary Space (hallways, locker rooms, cafeteria, gym)
- Specific guidance on the ideal → strive for this but any space can be improved
- Online (free) <http://asastore.aip.org>

10 Evaluate for FM Use

- It is recommended that children using personal FM systems be capable of providing feedback about sound quality.
- The child should have the ability to perform some type of listening task so that optimal performance can be confirmed.

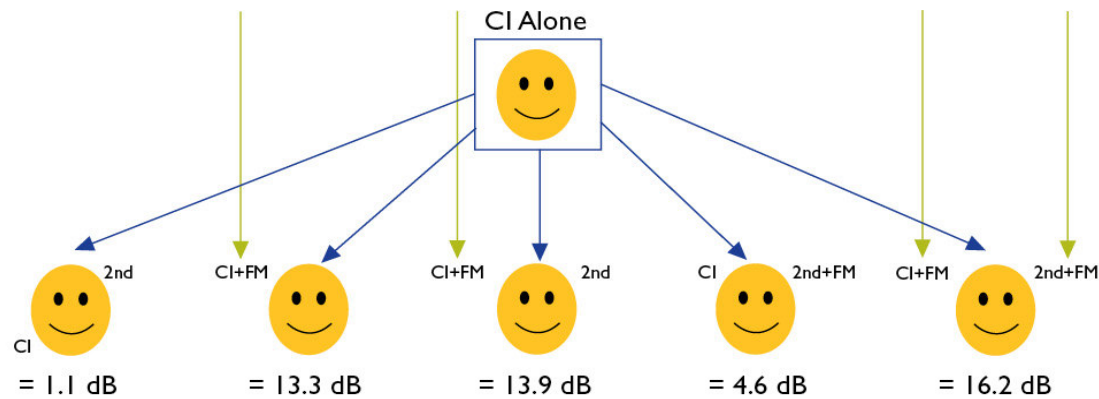
Benefits of Personal FM

- Using FM on the CI side provides 13.3 dB additional SNR
- Using FM on 2nd side (hearing aid or 2nd CI), adds 16.2 dB additional SNR (highest)
- Personal FM provides greatest benefit
- Soundfield improves listening but SNR benefit is not as great as personal FM

Relative Benefits of FM

Bilateral/Bimodal Study
 Schafer and Thibodeau (2005)

FM input to first or both sides allowed for best speech recognition in noise performance!



Improvements in speech recognition relative to CI Alone!

Schafer EC, Thibodeau LM. Speech recognition in noise in children with cochlear implants. Am J Aud. Dec:15(2):114-26.

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Resources

- Educator Guide: Chapter 7 (ALDs)
www.cochlearamericas.com/Support/2156.asp
- HOPE Online seminars:
 - FM and Nucleus Freedom
 - Back to School with Cochlear Implants
- www.access-board.gov/acoustic/index.htm

To Access HOPE Resources

- Go to: www.cochlear.com/HOPE
- There are many resources that can be downloaded
- Sign-up for HOPE Online seminars
- HOPE Online seminars are free, offer CEUs, can captioning (for live events) or scripts (for recorded events)
- There are over 70 recorded HOPE seminars and live seminars are offered 2-3x/month