



(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)

Access at www.CochlearAmericas.com/HOPE

Make Full Use of Sound Processor Options

- Depending on age of child and ability to determine benefit, explore use of the four different 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
- HOPE Online at: www.cochlearamericas.com/HOPE

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://products.cochlearamericas.com/support/cochlear-implants/accessories-alds>
- HOPE Online “Talk to me! Telephone Tips for Cochlear Implant Users”

Increasing Confidence on the Telephone

- Free service from Cochlear to help recipients develop listening skills and confidence in ability to make calls
- Call in to free 800 number with word lists and reading accessible on website
- Also great for learning how to set processor to work best with different phones (i.e., cell phones, landline)
- Good practice for any child with language in place
- Two parts to the program
 - Listening (1-800-458-4999)
 - Reading (Access from the HOPE website)
www.CochlearAmericas.com/HOPE

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

- Troubleshooting Guide:
<http://products.cochlearamericas.com/support/cochlear-implant/ci-troubleshooting>
- Educator Guide: Chapter 6 (Troubleshooting)
www.cochlearamericas.com/Support/2156.asp

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Children, Music and Auditory Learning

- Helps develop brain areas involved in language and reasoning
- Can facilitate language fluency while making learning fun
- Benefits oral communication by expanding vocabulary, storytelling, and rhyming
- Songs can complement stories
- Encourages children to practice new words and adds interest to the learning activities
- Encouraged parents to build on what they have always done with their typically hearing children



Parent Guidance

- Notice and encourage musical behaviors in child such as bouncing to the beat, keeping rhythm with an instrument, dancing, singing a melody
- Lullaby time is a precious tradition, connecting emotionally through music. Parents' voices are always beautiful to their child
- Inclusion of family and friends in the musical life of children will strengthen familial bonds



Obtain Words to Songs

- Obtain lyrics and help the child to know “where they go” in the melody
- Listening to music with a strong beat—and having the lyrics—will help the brain “fill in” what is missed in the melody
- Listening repeatedly (which children love) will help them appreciate music

HOPE Music Resources

HOPE Online

- Beyond Melody: Music and Auditory Skill Development in Young Children
- Music with a Cochlear Implant: Finding Your Groove

Written Resources available in Reading Room area of HOPE website

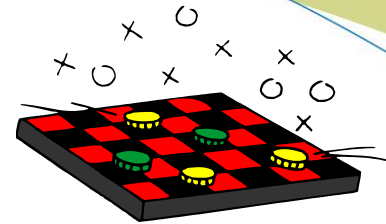
- Great for sharing with parents
 - Tips for Improving Music Listening Skills
 - What the Experts Say

www.CochlearAmericas.com/HOPE



6 Use Games and Toys

- Select toys free of sound effects
- Limit time with electronic toys
- Choose games that have pieces or game boards with colorful pictures that can be used for story-telling
- Collect orphaned household items (single socks, keys without locks, etc.) and objects with interesting shapes and textures for a “feel it” box
- Create your own experience book with cut-outs from magazines and a story dictated by your child about a special trip or outing



HOPE Resources

HOPE Online

- Using Experience Books to Promote Early Literacy
- Keeping Skills Sharp Over Summer
- Kids will be Kids: Tips and Tricks for All Seasons
- Let's Take it Outside: Fun for All Ages

Sound Speech for Speech Sounds

Getting Started: Practical Tips for Parents

HOPE Tips: Fun and Games (new—coming soon)

All available at www.CochlearAmericas.com/HOPE



Active Participation of Family

- Include every family member in the language learning process to set the child up for success
- Involve siblings, grandparents, aunts and uncles, caretakers in therapy
- Encourage waiting for the child's response
- Turn off the TV and electronic games to provide a good listening environment and stimulate talking and active interaction among family members

HOPE Resources

HOPE Online

- Hear for the Holidays
- Incorporating Siblings in Therapy Sessions with Babies Before Cochlear Implantation

Sound Speech for Speech Sounds

Excerpt from the "T" Unit

Child-Friendly "T" Words

Initial	Medial	Final
table	after	about
taco	bathtub	ant
teddy	butterfly	hat
turtle	party	wet

Daily Routines

Moving through the day

- Tiptoe, turn and tap dance around the house.
- Tickle your family members.

Getting dressed

- Look in your closet. What will you put on? Maybe a t-shirt, hat, belt, underpants, and pants. What did you put on first? Last? You look so cute!

Activities

- Find lots of things that turn, "T-T-T-turn."
- Listen for the clock t-t-ticking.
- Cut fruits and vegetables.

Games and Toys

- Tic Tac Toe Game
- Hot Potato Game
- Tag Game
- Teddy Bear Says – a variation of Simon Says



Book: Where's My Teddy?

Follow a little boy named Eddie who lost his teddy and is searching in the woods for it.

Building communication with this book

- **Emotions** scared, surprised, sad, happy
- **Rhyming** Eddie/teddy/Freddie/already; somewhere/there; until/still; surprise/size
- **Past tense verbs lost**, said, made, thought, did, came, was ran, scared, tiptoed, gasped

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Incorporate Auditory Learning Throughout the Day

- 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
 - Make it fun and provide praise
 - Read to your child and her siblings every single day

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 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 available for on the website
- Many other print resources and tips for parents

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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

S12.60 Acoustical Performance Criteria, Design Requirements and Guidelines for Schools

- Part 1 covers permanent structures, Part 2 covers relocatable classrooms
- Covers background noise and reverberation:
 - Classrooms of Moderate Size
 - Core Learning Space (library, conference room, small instructional room)
- Covers background noise but not reverberation:
 - Ancillary Space (hallways, locker rooms, cafeteria, gym)
- Still voluntary in most areas of the country
- Had hoped it would be adopted by the International Code Council— it was rejected
- Being considered for adoption under the ADA
- 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

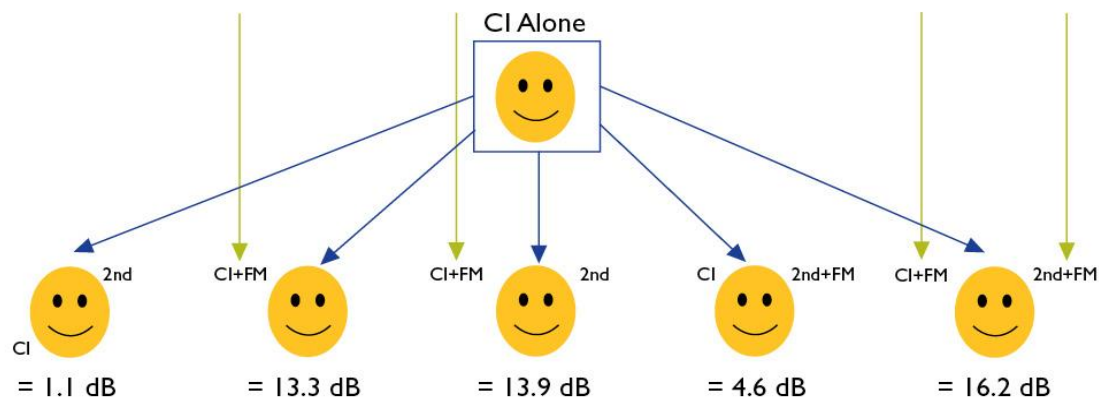
- Using FM on the CI side provides 13.3 dB additional SNR
- Using FM on 2nd side (hearing aid or 2nd CI), adds 16.2 dB additional SNR (highest)
- Personal FM provides greatest benefit
- Soundfield improves listening but SNR benefit is not as great as personal FM

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

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

HOPE Online

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

To Access HOPE Resources

- Go to: www.CochlearAmericas.com/HOPE
- Many electronic resources to download
- Sign-up for HOPE Online seminars
- HOPE Online seminars are free, offer CEUs and/or certificate of participation, captioning
- There are over 120 recorded HOPE seminars and live seminars are offered 2-3x/month
- Spanish language materials