

**HOPE** Cochlear™  
(Re)habilitation Resources

**Using Listening Tools to Help Adult Recipients Reach Their Personal Best**

Donna L. Sorkin, M.A., Vice President,  
Consumer Affairs, Cochlear Americas

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**Introduction**  
Cochlear America's Commitment  
to Educational Outreach

**HOPE** Cochlear™  
(Re)habilitation Resources

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**Today's HOPE Instructor: Donna Sorkin**

- Advocate for parents and adults with hearing loss
- Develop resources for professionals, consumers and parents
- Cochlear Americas HOPE program (habilitation and education) and Public Affairs activities
- Formerly executive director of HLAA and AG Bell
- Served on US Access Board
- Conduct applied research on needs of children, parents and adults
- N-22 recipient since 1992 (18 years yesterday!)



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## Agenda

- Overview of Adult Rehabilitation
- Benefits, Use and Demonstration of Home Practice Tools
- Additional Resources for Adults
- Discussion

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## Rehabilitation for Adults After a Cochlear Implant

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## Who might benefit from using listening tools?

- Adults of all ages benefit from a period of rehabilitation post cochlear implantation
- Amount and type of therapy will vary according to the person's hearing history
- Tools reviewed here are used at home though it's a good idea to have oversight by your CI audiologist or a hearing rehabilitation specialist if just to ensure you're practicing correctly

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### Is it too late to start?

- Starting immediately following activation will speed up your progress
- Never too late to start
- Even “old-timers” may have weak areas which can be addressed by specific exercises or tools
- Telephone practice is a classic example: “I can’t talk on the phone”

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### Why do adults need listening tools?

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### Comprehension: It’s not just about the ears

- Often assumed that better technology = better hearing
- Matching the right technology to a person’s hearing loss is critical but comprehension is not just about technology
- People rely on many skills when listening with a cochlear implant
- Most skills can be improved with training and practice




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## Benefits of Rehabilitation



- With progressive loss, adult may have been without full access to sound for years
- May need assistance learning to recognize speech and environmental sounds again (if progressive loss)
- Break old habits and integrate new sound
- With prelingual deafness, CI may provide greater access to sound than the recipient ever had
- If binaural hearing, maximize outcomes and integrate sound on both sides
- Regardless of hearing history, rehab should be considered



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## What is auditory therapy for adults?



- Utilizing listening activities to help recipient adjust to the new signal
- May involve working on parts of speech or typical words or phrases that the recipient encounters
- Integrating new hearing into a previously established communication system
- Breaking old habits to encourage full use of the auditory signal and less dependence on visual information



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## What are some tools I can use?




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## Skill Building Areas and Tools

- Listening exercises with a friend or family member
- Use of Interactive Computer Software
- Music Rehabilitation
- Audio Books (or Tapes)
- Telephone Training



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## Repetition and Redundancy

- Practice makes perfect—just as it does with golf, tennis, skiing, dancing
- Repetition and redundancy provide the opportunity for the brain to learn new sounds
- Working with a rehabilitation professional can help ensure you are practicing correctly and not reinforcing bad habits
- All of the suggested tools should be used repeatedly and if possible, every day over a designated period of time



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## Tracking





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Tracking

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- Great for newly activated recipients
- Involve family and friends who are supportive
- Start out easy and work up
- Have the person assisting, sit beside you on the side of the implanted ear
- Use regular volume (do not use a raised voice)
- Minimize background noise
- Use speech that is full of expression and natural rhythm

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Tracking Tips

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- Start out slow and add speed to provide challenge
- Initially stop in a natural breaking point (end of sentence or paragraph)
- Rotate back and forth between recipient and assistant, reading and stopping
- To add difficulty, stop mid-sentence AND add speed

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Hearing Rehabilitation Resources

Tracking Demo



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Listening Exercises

hope Achieving Personal Excellence  
(Re)habilitation Resources from Cochlear

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Analytic Training

- Speech is understood by recognizing the smallest distinguishing linguistic features and applying these to higher-level units of speech
- Analytic training alone is of limited value
- Typically administered as part of a treatment plan that incorporates analytic with other training

Source: Pedlez K et al. 2006. *Adult Aural Rehabilitation: A Guide for CI Professionals*. Cochlear, Ltd., page 11.

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## Examples of Analytic Training



- Syllable counting
- Word stress
- Vowel and consonant phonemes
- High-and low frequency identification
- Over-learned speech tasks
- Text following




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## Phonemes: Common Consonant Confusions



I will say two words, pointing to each word as I say it, then randomly repeat one word. Please identify the repeated word.

### F and Sh

fail      shale  
fought      short  
few      shoe  
frill      shrill  
fell      shell

### F and P

fat      pat  
fill      pill  
fry      pry




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## Synthetic Training



- Provides an approximation of the speech perception tasks found in everyday communication
- For example, clarification strategies would be considered one type of synthetic training




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## Examples of synthetic exercises

- Continuous discourse tracking for speech and in noise
- Topic of conversation using word, phrase, related sentence and unrelated sentence clues
- Context cues
- Information transfer activities
- Variations on open-set tasks
- Sentence predictability
- Seeking information
- Open-set sentences
- Comprehension tasks
- Scripted conversation
- Games and interactive activities



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## Topic of conversation – unrelated sentences with clue

- A clue word will be introduced that is intended to help the person repeat the sentence though the clue word does not appear in the sentence. Say the clue word to the recipient with visual cues, or provide the recipient with a written list.
- Say the sentence slowly, but with normal intonation and expression.
- Ask the recipient to repeat the sentence.
- Encourage the recipient to guess, and give feedback about any correct words.
- If the recipient is having difficulty, give one or two key words from the sentence with visual cues, and try again.

**Clue word Sentence**

<b>Music</b>	She plays the piano and the violin.
<b>Weather</b>	There was a thunderstorm last week.
<b>Bird</b>	There was a nest in the tree.
<b>Food</b>	You should eat a big breakfast.
<b>Scenery</b>	Tall buildings often ruin beautiful places.



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## Sound and WAY Beyond

(De)Habitat Resources from Cochlear



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## Interactive Computer Software

- Tool to build listening skills in your own home and at your own pace
- Research has shown that moderate training on targeted phonemes can improve speech perception by as much as 15-20%\*
- Great for the new CI recipient as well as someone who wants to improve

\*Fu QJ et al ARLO (Acoustical Research Letters Online, ASA, 4/22/2005; Fu QJ Maximizing cochlear implant patients' performance, Hearing Research 2008 doi:10.1016/j.heares.2007.11.010.



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## Sound and WAY Beyond

- Self directed, interactive software program that allows user to move at his/her own pace
- Adjustable levels of difficulty
- Comprehensive: pure tones, vowels, consonants, environmental sounds, monosyllabic words, sentences, musical instruments, and familiar tunes
- Advanced modules: melodic contour (music) and telephone training, listening in noise, open set
- Printable reports to share with professionals



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## Sound and WAY Beyond Demo





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Hearing Optimization Program

HOPE Notes Creator,  
Richard Reed

HOPE Cochlear  
Hearing Optimization Program

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### Music Appreciation

- A relatively new interest area
- CI's are designed for *speech* perception
- Speech and music share some acoustic characteristics but there are differences also
- Pitch and tone quality are harder to convey
- Research suggests practice helps

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### Music and Cochlear Implants

- Variability in CI users music perception abilities—just as there is in the general population of people with normal hearing
- Pitch perception is the hardest for CI users
- CI users perceive rhythm and tone duration as well as normally hearing people 75-90% of the time\*
- Having the lyrics helps
- Using the special program for music (or a noise program) may help make melody “less noisy”

\*Drennan WR, Rubinstein JT. Music Perception in cochlear implant users and its relationship with psychophysical capabilities. J Rehab Res Dev. 2008;5:779-790.



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## What helps us enjoy music?

- Listen in quiet environments with good acoustics
- Use direct-connect to your sound processor
- Keep the volume of the music down
- Start with music that is “simple” and build complexity
- Download the words to songs so you can track lyrics
- Some types of music may seem better than others
- Acknowledge that music may not ever be perfect but you can still enjoy it
- Practice, practice, practice—train your brain!



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## HOPE Notes

- New music (re)habilitation resource from Cochlear™
- First of its kind – a program developed for cochlear implant and hearing aid users. Designed to help improve music perception and appreciation using original songs, traditional Folk, Blues & Country styles and some familiar tunes played in unexpected ways
- Includes a CD, DVD, and a detailed User Guide including lyrics to assist and enrich use of the program



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## HOPE Notes

The Thing with Scales

Bayou Boys

Waltzing Miranda

The Man Upstairs

Someone Else's Heartache

Songs Without Vocals

**Little Star Blues**

Surfer Elise

Canciones en Español

Guitar String Theory

Blues Downtown

**Little Star Blues**

Middle C Melody

The Low Notes


Both Hands Now


Stereo Melody on Right

Stereo Melody on Left

Swing Both Hands

Full Song

 **Back to Main Menu**



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**Demonstration of HOPE Notes**

HOPE Cochlear  
Hearing Rehabilitation Resources

HOPE Notes  
User Guide



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**Audio Books**



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**Audio Books**

HOPE Cochlear  
Hearing Rehabilitation Resources

- An accessible and enjoyable form of rehab
- Some people like to begin with familiar children's books while others prefer adult books
- Pick books that are interesting to the recipient
- Start out easy with speakers that are comfortable for you (pick your gender preference), slow pace, clear speaker, no background music/noise
- May begin with tape + book initially (depending upon how hard it is for you) and work up
- Use unabridged tapes if you want to follow along with the book

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## Audio Books continued

- Graduate to more difficult readings, speakers that are more difficult for you, faster pace
- Repeat phrases or words out loud, especially those that are difficult to understand for you → practice active listening (also called auditory feedback loop)
- Some people like using transit time to listen to tapes
- Easy to understand radio voices are also good
- Key: Dedicated time every day until the task becomes easy for you



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## Audio Books





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## Telephone with Confidence





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## Telephone with Confidence

- Many recipients are uneasy about using the telephone. They wonder...
  - Will I understand what the other person is saying?
  - Will I respond correctly?
  - Which phones will I hear best on?
- It is important to practice in order to (1) gain self confidence and (2) determine which settings, connections, and telephones work best for you

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## Phone Variables

- **Volume**
  - Sound processor
  - Telephone receiver
- **Type of phone:** LOTS OF VARIABILITY!
  - Landline
  - Wireless (How compatible is it with hearing technology?)
  - Phones designed for texting may not provide the best clarity
- **Sound Processor Setting**
  - Acoustic coupling or Telecoil
  - If Telecoil, how much mixing is right?
- **Phone placement** in relation to your “ear”
- **Other factors**
  - Quality of the signal
  - Clarity of the speaker
  - Environmental noise

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## Cell Phones and Cochlear Implants

- Wireless phones can be a CI user's best phone but there are differences—try before buying in a phone store  
[www.cochlearamericas.com/support/354.asp](http://www.cochlearamericas.com/support/354.asp)
- Phones designed for texting may not provide the best audio quality
- Wireless phones are rated for hearing aid (and CI) compatibility (M4 is best) and for T-coil usage (T-4 is best)
- [www.accesswireless.org/hearingaid/brochures.cfm](http://www.accesswireless.org/hearingaid/brochures.cfm) (The Wireless Association)
- Accessories are available and may help:  
[www.cochlearamericas.com/support/355.asp](http://www.cochlearamericas.com/support/355.asp)
- More information on FCC regulations on the HLAA website at:  
[www.hearingloss.org](http://www.hearingloss.org)

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## Phone with Confidence

- Free service from Cochlear to help recipients develop listening skills and confidence in ability to make calls
- Call in to free 800 number (800.458.4999) with word lists and reading accessible on website
- Great for young children with language in place post 2<sup>nd</sup> cochlear implant or any kid learning to use the phone
- Accessible via HOPE website

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## Word List for December 2

**Word List**  
**Voice: Male 1**  
 Welcome to today's word list.  
 NAMES  
 Richard  
 Donald  
 Dan  
 Traci  
 Marcie

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## Short Passage for December 2

Short Passage

Voice: Male 1

Puss in Boots: Chapter 4 of 5

Written by Charles Perrault

They drove on the cat always running before and saying the same thing to everybody he met, that they were to declare that the whole country belonged to his master; so that even the King was astonished at the vast estate of my lord the Marquis of Carabas.

But now the cat arrived at a great castle where dwelt an Ogre, to whom belonged all the land through which the royal carriage had been driving. This Ogre was a cruel tyrant, and his tenants and servants were terribly afraid of him, which accounted for their being so ready to say whatever they were told to say by the cat, who had taken pains to inform himself all about the Ogre. So, putting on the boldest face he could assume, Puss marched up to the castle with his boots on, and asked to see the owner of it, saying that he was on his travels, but did not wish to pass so near the castle of such a noble gentleman without paying his respects to him.




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## What resources are available to help?



(Re)habilitation Resources from Cochlear




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## HOPE website:

### Recorded HOPE Online

[www.CochlearAmericas.com/HOPE](http://www.CochlearAmericas.com/HOPE)



- [Improving Understanding with Communication Strategies Part 1](#)
- [Improving Understanding with Communication Strategies Part 2](#)
- [Improving Adult CI Outcomes with Sound and WAY Beyond](#)
- [Adult Cochlear Implant Rehabilitation: What and Why](#)
- [Adult CI Rehabilitation Part II: Working with a Rehabilitation Professional](#)
- [Working with Adults: Who, Me? \(for professionals\)](#)
- [Music with a Cochlear Implant: Finding Your Groove](#)
- [Talk to Me! Telephone Tips for Cochlear Implant Users](#)
- [Show Me the Money: Therapy Reimbursement](#)




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Resources on HOPE Website  
[www.CochlearAmericas.com/HOPE](http://www.CochlearAmericas.com/HOPE)

**• Reading Room**

- CI Rehabilitation: It's Not Just for Kids
- Cochlear Implant Rehabilitation for Adults (web resource with links)

**• Listening Tools** (for purchase)

- Sound and WAY Beyond
- HOPE Notes
- Hear we go!
- Adult Aural Rehabilitation: A Guide for CI Professionals

Hear now. And always. 

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Upcoming HOPE Online

**Monday, December 13, 8:00 pm ET**

***Partnering with Your CI Audiologist: Tips for Getting the Most from your Programming Sessions (Professionals, Adults)***

Teresa Zwolan, PhD., CCC-A  
 University of Michigan CI Program

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Helping Adults and Children with Cochlear Implants Enjoy Music  
 Workshop 2010-2011

**• One day workshops for professionals; evening (or half) workshops for adults and parents**

**• Four sites scheduled so far (watch for more)**

**• Salt Lake City (Nov 19/20), Chicago (Jan 13/14), Toronto (Feb 11/12), Houston (April 26/27)**

**• For more information, go to:**  
[www.regonline.com/hopeworkshops](http://www.regonline.com/hopeworkshops) or call Sarah Gard at 303.524.6848, [sgard@cochlear.com](mailto:sgard@cochlear.com)

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## Contact Cochlear

- For questions about this seminar, contact: [dsorkin@cochlear.com](mailto:dsorkin@cochlear.com)
- For inquiries and comments regarding HOPE programming, please contact: [dsorkin@cochlear.com](mailto:dsorkin@cochlear.com)
- For a Certificate of Participation, please send your completed Feedback Form to: [hopefeedback@cochlear.com](mailto:hopefeedback@cochlear.com)

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## Thank you...Any questions?

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