



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


**Auditory Building Blocks:
Auditory Identification**


Ashley S. Garber, M.S. CCC-SLP, LSLS Cert. AVT

Hear now. And always. 

Introduction

Cochlear America's Commitment
to Educational Outreach

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

Hear now. And always. 

Our Presenter

Ashley S. Garber, MS CCC-SLP, LSLS Cert. AVT



—Private practitioner
specializing in auditory verbal
therapy and consultation
services

—Fifteen years of experience
working in a variety of
settings with children and
adults with hearing loss who
use cochlear implants

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

Hear now. And always. 

Agenda

- Reviewing one auditory skills model
- Defining auditory identification
- Assessing
 - how do we know when a child demonstrates this skill?
- Teaching
 - across input and contexts
 - strategies
- Discussion and Questions

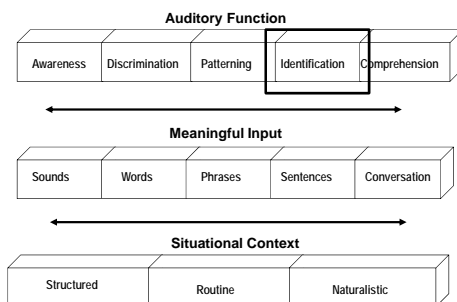


Parameters of Auditory Skill Development

- **Auditory Function**
 - The tasks of listening
 - Hierarchical in nature
- **Meaningful Input**
 - The auditory stimuli presented to a listener from which meaning can be derived
 - Building from environmental and speech sounds to conversation, but not hierarchical
- **Situational Context**
 - The environment and circumstances in which input occurs



Building the Model



HOPE Cochlear
Hearing Optimization Program

Identification - By Definition

- Specifically indicating *what* has been heard
- The ability to label a sound, word or other input through a motor or speech response
 - Repeating, imitating
 - Pointing
 - Writing

Hear now. Act always. Cochlear

HOPE Cochlear
Hearing Optimization Program

Subskills

- Imitating speech sounds
 - Vowels and diphthongs
 - Consonants differing by manner, place, or voice cues
- Identifying Learning to Listen Sounds
 - Sound/word associations e.g. "moooo" for cow
- Identifying words varying by syllable number
- Identifying one-syllable words that vary by vowel and consonant content


(Estabrooks, 2000, Walker, 1995) Hear now. Act always. Cochlear

HOPE Cochlear
Hearing Optimization Program

Subskills cont.

- Identifying a phrase based on inclusion of learning to listen sounds
 - e.g. "The airplane goes up, up, up" ... "The cow says moo" ...
"Brush, brush, brush your hair"
- Identifying simple sentences containing a key words with varying vowel content and syllable number
 - at the end of a phrase or sentence
 - at the beginning of a phrase or sentence
 - in the middle of a phrase or sentence
- Recognizing and responding to stereotypical phrases (e.g. "sit down", "time to go")


(Estabrooks, 2000, Walker, 1995) Hear now. Act always. Cochlear




Subskills, cont.

- Identifying words
 - In which only the vowels differ (e.g. cap/cape, bit/bite)
 - In which the vowels match but the consonants differ by manner, place and voicing features
 - In which only initial consonants vary
 - By manner – e.g. bat/mat/fat/rat
 - By voicing – e.g. pad/bad, fan/van
 - by place – e.g. bad/dad, tool/cool
 - In which only final consonants vary
 - Moving hierarchically as above


(Estabrooks, 2000, Walker, 1995)







Assessing

- How do we know when a child demonstrates identification skill?
 - When he repeats a sound or word
 - When she points to a corresponding picture
 - When he takes a corresponding toy





As often as possible think of these as skills to be *developed* and *observed* rather than as skills to be *tested* or activities to *do*



HOPE Cochlear
Hear now. Act always.

Food for Thought

- Consider that “mantra” as we move into discussion of teaching auditory skills and related activities
- Particularly with identification level tasks, it is easy to tend toward “state and respond” activities where the parent or therapist presents a stimulus and looks for the child to repeat or point

HOPE Cochlear
Hear now. Act always.

HOPE Cochlear
Hear now. Act always.

- To combat this, consider a focus on 2 areas:
 - Teaching strategies for listening success along with the targeted auditory hierarchy goal
 - Moving listeners toward comprehension by working across situational contexts and by overlaying all identification activities with meaningful language
- Of course, for the child who is not simultaneously learning listening and spoken language skills (i.e. one who is refining skills with a new cochlear implant) identification skills might be specifically targeted in a more regimented fashion

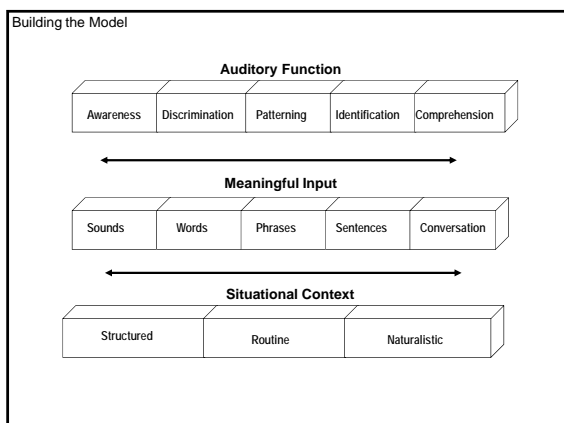
HOPE Cochlear
Hear now. Act always.

HOPE Cochlear
Hear now. Act always.

Situational Context

- Structured Listening Tasks – specific activities designed to practice auditory skills
 - Closed set – all choices are available
 - Bridge set – topics or categories create a larger, cognitive set
 - Open set – possibilities for stimuli are endless
- Routine Activities – recurring events are associated with predictable language
- Naturalistic Exchanges – goal oriented, real world conversations where ability to listen transcends environment or activity

HOPE Cochlear
Hear now. Act always.



For Example

- The Classic "4 Items on a Table"
 - A small closed set of 4 items lays on the table, the therapist names one and the child is to pick it up and then replace it
 - Because it's devoid of meaning, and as items are repeated in order to achieve a percentage of correct responses, the child begins to wonder whether he is choosing correctly and begins to guess

HOPE Cochlear
Hear now. Feel things. Cochlear

Better


- Create a reason for the child to be grabbing the items – in order to categorize them for example – e.g. putting food either in a refrigerator or in a cabinet


Best

- Embed the listening targets into a pretend play scenario, making the identification goal part of a larger activity
- For example: Grocery shopping
 - At each counter, the child finds 4 items and must listen to the teacher read one from "the grocery list" and put it into the cart


HOPE Cochlear
Hear now. Feel things. Cochlear

Teaching Identification


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

Hear now. Act always. 


Basic Tenants

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


- The "Listen Cue"
 - Once "listening attention" has been established through work at the awareness level, the "listen cue" can be easily used to bring attention to key words or phrases
- Pausing and Wait-time are critical
 - Pausing before auditory input is given allows the child to attend more closely
 - Especially in the early stages of listening, children may need time to process; to process what they have heard
- Resisting the urge to repeat
 - While repetitions are sometimes necessary, wait time provides an opportunity to find out

Hear now. Act always. 

Other Strategies: Acoustic Highlighting

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

- Using your voice to emphasize key words or features of words
 - Pausing before and after
 - Using additional intonation
 - Whispering or saying it louder
- Along with the Listen Cue, Highlighting helps children to develop "listening attention" in that it brings sounds and words into prominence, telling them: "this is important"

Hear now. Act always. 

Expectant Look



- After presenting a sound, word or phrase, try giving the child a look that says "it's your turn now" to comment, answer or otherwise participate
- Leaning forward slightly, cocking your head and/or raising your eyebrows will all send your message
- At this prompt a child's attempt to imitate the stimulus will give insight into his identification skill



Manipulating Variables



- Changing variables related to the setting, materials used, and/or to the spoken stimulus presented can affect change in a child's performance
 - When a child is not successful, modifying the task can assist the child in achieving the goal
 - When a child moves through tasks too easily, making them more difficult will move the child to a new level
 - To be best prepared, consider ways to modify an activity *before* beginning



Manipulating Variables: Materials



- Modifying materials
 - Increase or decrease the size of a set
 - Small closed set
 - Large closed set
 - Bridge set
 - Open set
 - Create sets that include foils or require extra consideration
 - Use only objects that are familiar to the child or introduce new toys for known vocabulary



For Example

Changing set size



For Example

Changing set makeup



Manipulating Variables: Stimulus

HOPE Cochlear
Early Identification Technique

- Modifying the Stimulus
 - Increase or decrease acoustic highlighting
 - Rate of speech
 - Use of pauses
 - Changes in intensity of voice
 - Repetition
 - Begin by alerting child to listen or jump right in

(Koch, 1998)

Use new Aud. Stimuli
Cochlear

The Ling 6 Sound Check



- With new cochlear implant listeners, the Ling 6 Sounds are presented to check *detection* of the phonemes /a/, /i/, /u/, /s/, "sh" and /m/
- Once detection of all of these sounds is determined parents and therapists can begin to work toward identification of these sounds
- A child's ability to identify these sounds provides a means of monitoring device function
 - The sounds provide auditory information across the speech frequency range such that from their identification, we can assume access to all other phonemes



One Possibility



- Incorporate into Conditioned Play tasks
 - Include the parent, a sibling or another professional to provide opportunities to model
- Once a sound has been presented, look for behaviors that indicate awareness
- Reinforce the conditioned response (e.g. dropping the block, etc.) and then add "Yes! I heard /aaaaa/"
- Coach the parents/other participants to imitate your sound as they drop their block and then praise their efforts
- Some children may require prompts to vocalize initially



Another



- Begin by introducing Learning to Listen toys and pictures to correspond with the Ling Sounds
 - /aaaa/ - airplane
 - /iii/ - a doll and a toy slide
 - /uuu/ - a ghost
 - /mmm/ - an ice cream cone or a small doll to feed
 - /sss/ - a snake
 - "sh" - a picture of a person sleeping or a doll to put to sleep
- During the Ling Check, have children point to, reach for, or activate the corresponding toy or picture



HOPE Cochlear
Hearing Optimization Program

Structured Games

- For Specific Phonemes
 - Speech Babble practice – use any reinforcing toy to take turns imitating alternating syllables using targeted sounds
 - much like a conditioned play activity: listen, repeat, reinforce
 - For hierarchies see: Simser, J.I. (1993). Auditory-verbal intervention: Infants and toddlers. *The Volta Review*, 95, (217-229).

Hear now. Act always. Cochlear

HOPE Cochlear
Hearing Optimization Program

Structured Games

- For identifying key words
 - Lotto
 - Bingo
 - Matching/Concentration
 - Puzzles
 - Playdough
 - ViewMaster
- Most toys offer possibilities; the key is selecting those pictured objects or toys that fit your goal with respect to segmental and supra-segmental features

Hear now. Act always. Cochlear

HOPE Cochlear
Hearing Optimization Program

In Routines

- Getting dressed for recess:
 - "Put on your *scarves*" "Put on your *boots*", "Put on your *mitten*s", "Put on your *coat*s"
- Changing diapers
 - "I'm gonna tickle your ... *nose*", "I'm gonna tickle your ... *eyes*", "I'm gonna tickle your ... *ear*", "I'm gonna tickle your ... *belly*"
- Consider for a moment the differences intrinsic in the developmental expectations illustrated by these examples ...

Hear now. Act always. Cochlear

HOPE Cochlear
Hear now. And always.

Out and About

- Practice any targets in a natural way
 - Learning to Listen sounds in the world
 - Stereotypic phrases in their real-world context
 - "Sit down"
 - "Give it to me"
 - "Don't touch"
 - "Time to go"
 - Key words
 - I Spy variations
 - Looking for pictured objects when reading books

HOPE Cochlear
Hear now. And always.

HOPE Cochlear
Hear now. And always.

Have you noticed ...

While you work to teach and observe
identification skills, you are laying the
foundation for development of comprehension
skills!

HOPE Cochlear
Hear now. And always.

HOPE Cochlear
Hear now. And always.

In Summary

- By taking each level of auditory function in turn we can examine its significance and consider our approaches to teaching
- While common practices follows the notion that auditory functions develop first in structured tasks and then move to naturalistic contexts, the cochlear implant allows the possibility of developing skills in naturalistic contexts sooner
- By approaching auditory goals within the context of natural language, we will be encouraging seamless progression through auditory function levels

HOPE Cochlear
Hear now. And always.


References

- Estabrooks, W. (2000). Auditory Verbal Practice. *The Listener*, Summer, 2000, 6-29.
- Nevins, ME, and Garber, A (2005) "Getting Started with Auditory Skills." HOPE Online session, www.cochlearamericas.com/HOPE
- Simser, J.I. (1993). Auditory-verbal intervention: Infants and toddlers. *The Volta Review*, 95, (217-229).
- Walker, B. (1995) *The Auditory Learning Guide*, unpublished.

Questions and Discussion


New Parent Resource


- Practical, applied guidance on specific topics
- Most recent HOPE booklet: *Fun and Games*
 - *Choosing Games and Toys*
 - *Fun Finds: Resources at Your Fingertips*
 - *Optimizing Participation in Summer or After School Activities*
 - *Maximizing Auditory Skills in Outdoor Play*
- Now in the Parent Section of HOPE
www.cochlearamericas.com/hope



Children with Cochlear Implants: The Words and the Music

- One day introductory level workshops on reading, vocabulary and music
- Two remaining sites: San Diego (CA) on January 25 and Washington (DC) on March 13
- For more information, go to www.regonline.com/hopeworkshops
- Or call Sarah Gard at 303.524.6848, sgard@cochlear.com






Upcoming Online Sessions

Next Up:

Friday, November 4th, 2 pm ET
Parent and Adult Habilitation Resources Available in Spanish (Course will be given in English - For Professionals)
 Lilian Flores-Beltran, Ph.D., LSLS Cert. AVT and Donna L. Sorkin, M.A., Cochlear Americas

Wednesday, November 30th, 3 pm ET
Understanding Single Sided Deafness: Evaluation and Treatment (Professionals)
 George Cire, Au.D., Senior Clinical/Technical Manager, Bone Anchored Solutions, Cochlear Americas





Contact Cochlear Americas

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