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**Auditory Building Blocks:
Auditory Comprehension**

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Introduction

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Our Presenter

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–Private practitioner specializing in auditory verbal therapy and consultation services
–Over fifteen years of experience working in a variety of settings with children and adults with hearing loss who use cochlear implants

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Comprehension - By Definition

- Demonstrating understanding of particular input
- A novel response or generation of new ideas – one that is “qualitatively different than the stimuli presented” (Estabrooks, 2000)
 - Answering a question
 - Continuing a thought
 - Describing an object
 - Paraphrasing


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Comprehension Skills

- Different scholars and clinicians have categorized these skills in different ways:
 - Stredler-Brown & DeConde Johnson, 2004
 - Comprehension
 - Auditory memory
 - Auditory processing of linguistic information
 - Estabrooks, 2000
 - Auditory Memory & Sequencing
 - Auditory/Cognitive Skills in a Structured Set
 - Auditory Cognitive Skills in Conversation


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Another Organizational Framework:

- Auditory Memory
 - Store and recall auditory stimuli
- Auditory Memory Span and Sequencing
 - Remember varying lengths of auditory information in exact order
- Auditory Processing
 - Make cognitive judgments about auditory information.
- Auditory Understanding
 - Comprehend auditory information in any situation

(Caleffe-Schenck, 2005)


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Auditory Memory

- No matter how the steps are categorized, we recognize that auditory memory is a critical component of overall auditory comprehension
- To take one step toward comprehension of even a single spoken word, a child must have auditory memory skills
 - to connect a spoken word with an object or concept and retrieve that connection at a later time ... auditory memory
- This area will be the subject of it's own course
 - Auditory Comprehension: Focus on Memory

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Comprehension Subskills

- Developing memory and concept for a single word
- Showing understanding of Learning to Listen Sounds (i.e.g sound/word associations e.g. "moooo" for cow)
- Responding appropriately to common expressions (e.g. "all gone", "don't touch")
- Following simple directions (e.g. "give it to me")
- Answering common questions with abundant contextual support (e.g. "what's that?", "where's mommy?")

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Subskills cont.

- Completing a known linguistic message ("auditory closure" – a nursery rhyme, song or common phrase)
- Recall/Sequence 2, 3, and 4 critical elements in a message
 - 2 critical elements ("on the table", "red hat")
 - 2 item memory (e.g. "hat and gloves")
 - 3 critical elements (e.g. "in daddy's pocket", "big white dog")
 - 4 critical elements (e.g. "daddy walks to the store", "throw the big blue ball")

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- Identify a picture related to a story presented auditorily
- Answering common questions about a familiar topic
- Answer questions about a story
- Identifying an object based on several related descriptors
- Recall/sequence multiple elements to follow auditory directions

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Subskills, cont.

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- Recall details of a story
 - With topic disclosed
 - Familiar topic
 - Open set (topic not disclosed)
- Retell a story
 - Topic disclosed
 - Undisclosed topic
- Follow a conversation
 - Paraphrase remarks of another
 - Make spontaneous, relevant remarks

(Estabrooks, 2000, Walker, 1995)

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Assessing

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- How do we know when a child demonstrates comprehension skill?
 - When he answers a question
 - When she makes a decision based on spoken information
 - When he laughs in the right places
- Of course, auditory comprehension is inextricably linked to language

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Assessing Comprehension

- Taking data becomes less and less “cut and dry”
 - You may need to record comprehension
 - of parts of a message
 - in some settings/contexts
 - with support (e.g. clarification, rephrasing)
- We will cycle through auditory goals as we address higher language skills

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Teaching Comprehension



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Keys to maximizing success

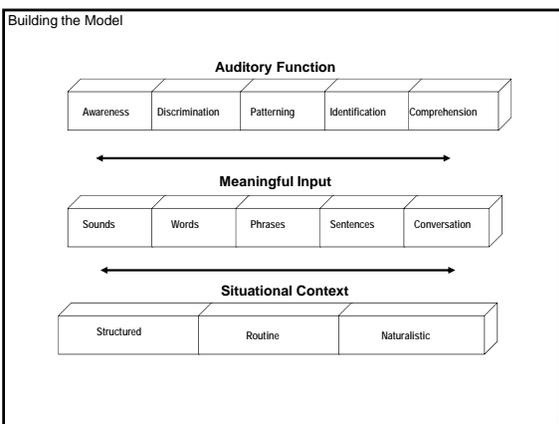
- Introducing the natural context as early as possible
- Continuing to develop language skill through these auditory subskills even as they have been achieved at a basic language level
- Using effective strategies
- Emphasizing thinking skills while targeting auditory comprehension

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Consider 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





Transition to Comprehension 

- **Classic "4 Items on a Table" identification task**
 - A small closed set of 4 items lays on the table, the teacher names one and the child is to pick it up and then replace it
 - Before the child understands these words, the teacher must first name each item while pointing to it to show the child which is which
 - With exposure, these become known words and this becomes a "comprehension" activity
 - BUT, it remains devoid of real meaning and purpose



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Add Natural Context

- 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 comprehension 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

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Moving through the subskills

- Memory for critical elements
 - “I need broccoli and peas”
- Answering questions
 - “How many onions do you have today?”
- Auditory closure
 - “Rabbits eat”
- Identifying an object from a series of descriptors
 - “I need a *fruit* that you *peel*. One that *monkey’s eat*”
- Following directions
 - “Put the beans on the counter and the tomato in the cart”

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Cycling Through Language

- Identify based on descriptors, from a closed set
 - “It lives on a farm, and says “quack quack”
 - “It has a beak, webbed feet and is smaller than a goose”
 - “It’s not a mammal, because its babies hatch from eggs”
- Follow directions containing 4 critical elements
 - “Throw the ball, wave to the girl”
 - “Toss the ball to the nearest female”
 - “After the hike, pass it to the receiver”

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**Effective Strategies:
Acoustic Highlighting**



- 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”



Wait Time



- Pausing before auditory input is given allows the child to attend more closely
- Children may need time to process what they have heard
- While repetitions are sometimes necessary, wait time provides an opportunity to find out
- While you wait ... **Expectant Look**
 - Give the child a look that says “it’s your turn now” to comment, answer or otherwise participate
 - At this prompt a child’s answer will give insight into his comprehension 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:

- Increase or decrease the size of a closed set
- Move to a bridge or open set
- Create sets that include foils or require extra consideration to challenge thinking skills
- Use only familiar objects or known language when moving to a new subskill
- Increase or decrease acoustic highlighting as necessary



Thinking Skills

- In this context “thinking and listening” is all about helping the child to make connections
 - At an early language age, these are connections between what a child is hearing and what he is doing, seeing, touching. We stimulate language and cognition concurrently
 - As language grows, these are connections between what he is hearing and how it relates to the greater world around him and his experience. We use language and listening as the bridge to higher level thinking skills



Auditory First

- In analysis of AV Therapy there is often much discussion of “Auditory Only” approaches
- More important to the “Thinking and Listening” concept; however, is ensuring that we provide “Auditory First” stimulation
- The key is to get the auditory information into the child’s brain so that they can start to process/think about it BEFORE their eyes take over



Video

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Strategy: Sabotage

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- Those little tricks designed to create teachable moments
- These sticky/silly situations keep kids thinking as well
 - Verbal sabotage is particularly suited to observing/developing comprehension
 - Example: "I'm gonna tie this ribbon *around the handle*" while gluing it to the bottom of a basket
 - Or: "A rabbit is definitely an animal that hops, has short ears and a long tail"

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Strategy: Turn Taking

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- Utilize teacher and/or parent turns to show child *how* to think and remember
- Developing meta-cognitive skills
 - Rehearsal strategies: repetition, highlighting important facts, physical cues
 - Elaboration strategies: creating mental images, paraphrasing
 - Organizational strategies: grouping, classifying, identifying main ideas

(Duncan, 2007)

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In Summary

- By taking each level of auditory function in turn we can examine its significance and consider our approaches to teaching
- By approaching all auditory goals within the context of natural language, we will be encouraging seamless progression through auditory function levels
 - The auditory comprehension level will be more quickly reached
 - Auditory comprehension and spoken language development are then inextricably linked

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- Or call Sarah Gard at 303.524.6848, sgard@cochlear.com

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Upcoming Online Sessions

Next Up:
Monday, January 23, 2:00 pm ET
Let's Play! Using Toys to Develop Listening and Language
(Professionals, Parents)
Mary Kay Therres, M.S. CCC-SLP, LSLIS Cert. AVT
Oakland Children's Hospital

Tuesday January 31, 3:00 pm ET
Cell Phones: Not Just for Texting!(Adults, Teens, Parents, Professionals)
Donna Sorkin, M.A. and Linda Day
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- 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


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