

Auditory Processing Disorders and Listening Challenges in Children

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The Problem

- My child has difficulty following directions and oral instruction in the classroom. He says “huh” and “what” often at home and at school. He needs to have directions repeated more than once. His teacher (neuropsychologist, speech language pathologist, pediatrician and great aunt) says he probably has an auditory processing disorder.
- Is this true?
- How do you REALLY know?
- If true, what are we going to do about it?

Auditory vs Language Processing

- Processing the auditory signal
- Processing the information imparted in that signal.

What is Auditory Processing?

- **ASHA definition**
- Will have difficulty in one or more of the following skills
 - localization/lateralization
 - Auditory discrimination
 - Auditory pattern recognition
 - Temporal aspects of audition (timing)
 - Temporal resolution
 - Temporal integration
 - Temporal ordering
 - Auditory performance decrements w/competing stimuli
 - Auditory performance decrements w/ degraded acoustic signals

SLP and Audiologists working together.

- Auditory processing tests require only a repetition of what is presented. The direction is to “repeat the word(s) or to repeat the sentence”. There is no requirement to analyze what is said and to answer a question. This is a higher level of processing that is not typically assessed in an auditory processing evaluation. Since today’s results do not explain why V requires visual cues to process information in the classroom, more in-depth listening/language testing is recommended. This evaluation should probe how V uses her auditory skills to receive and act upon auditory/linguistic information. Suggested tests may include the Test of Auditory Processing Skills (TAPS-) and the Auditory Processing Abilities Test (APAT).

Challenge of Our Digital World

- Technology is good!
- But - visual rather than auditory
- Focus on what you see rather than what you hear
- Decrease in auditory demands but academically increase in auditory demands

At risk behaviors

- Poor listening skills
- Difficulty learning through audition
- Difficulty following verbal instructions
- Difficulty hearing in noise
- Says “huh” or “what”
- Misunderstands what is said
- Short attention span

At risk classroom behaviors

- Difficulty with phonics
- Reading, spelling and academic problems
- Speech and language delays
- Poor auditory memory
- Gives slow or delayed responses to verbal instructions
- May exhibit behavior problems

Common indicators of (C)APD

- Behaves as if there is a hearing loss
- Significant scatter across subtests
- Verbal IQ often lower than performance IQ
- History of chronic otitis media
- May have
 - Difficulty following multistep directions
 - poor reading and spelling skills
 - Poor music skills

Initial Indications

- Poor listening skills can affect behavior
 - Frustration
- The choices available:
- Acting out
 - Withdrawing
 - Anxiety

First Grade Expectations

- Phonics: consonants, short vowels, blends, vowel combinations, word endings
- Sound –Symbol: initial, medial and final sounds in words
- Literature Comprehension: Why? How?
- Discussion, sharing, dramatics, retell
- Memorization

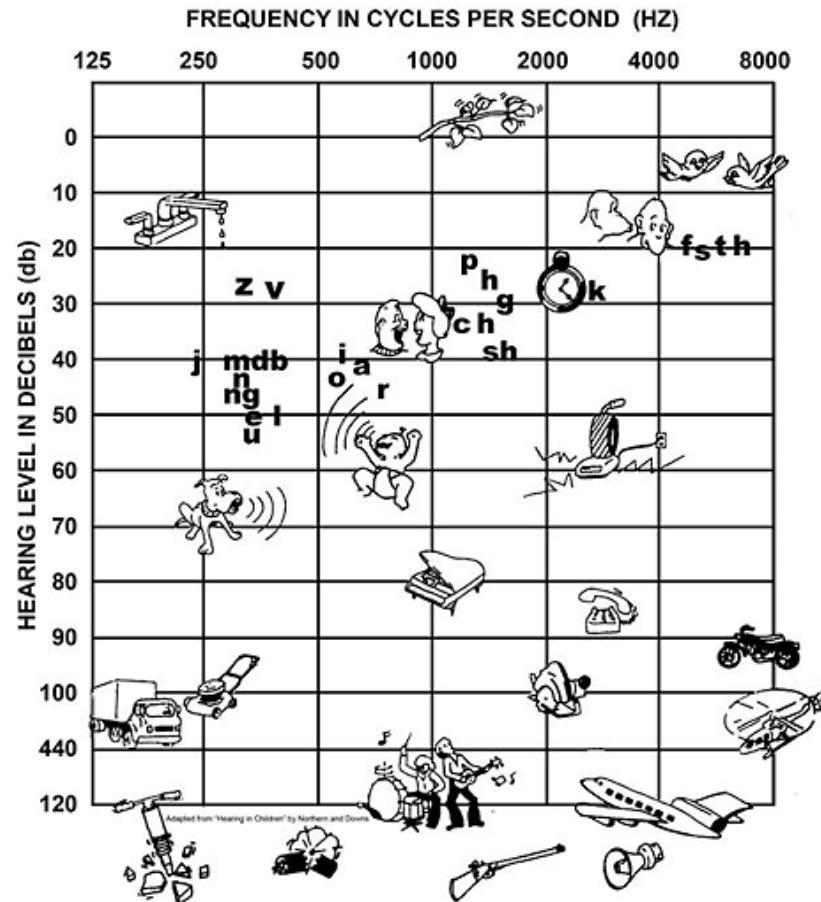
The 3rd Grade Wall

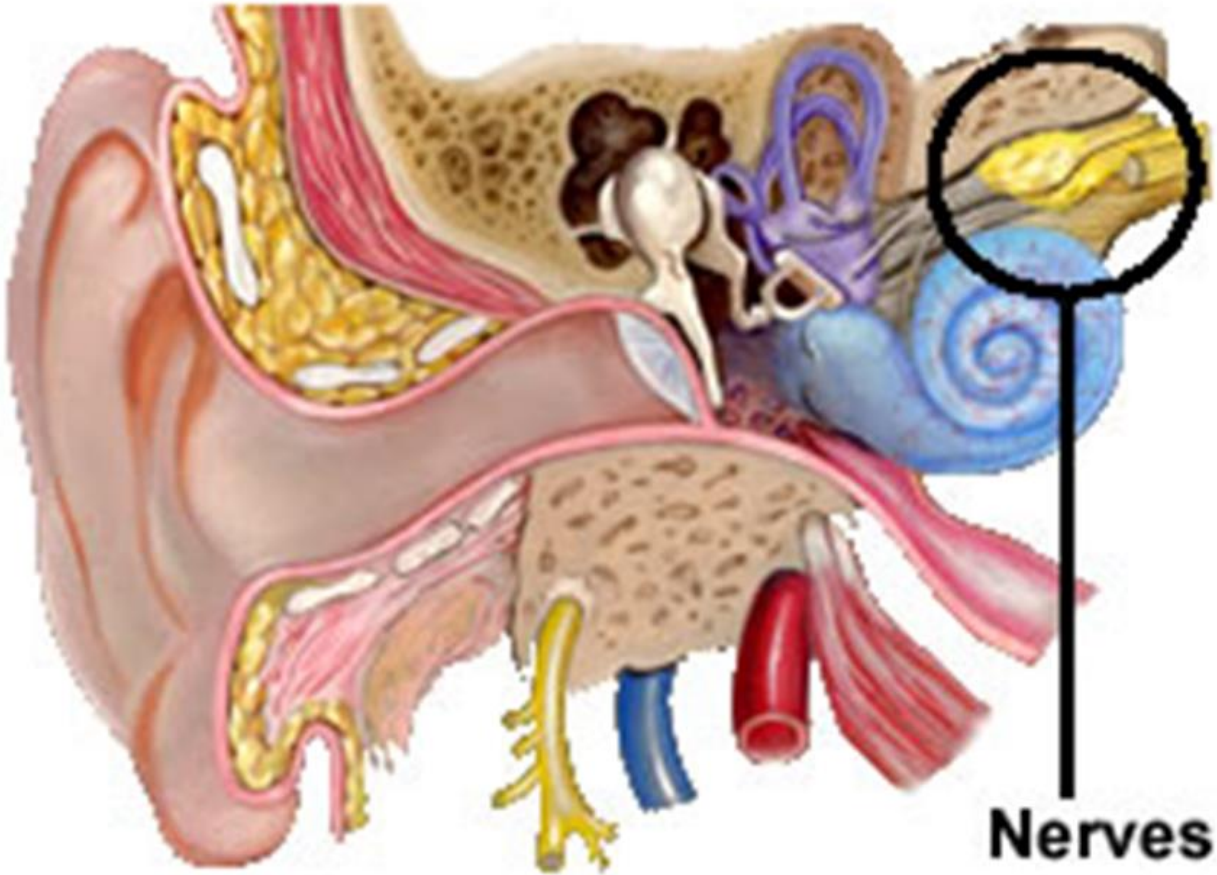
- What happens as the child transitions to third grade?
 - Less visual paired with auditory information
 - Reading expectations
 - Focus and attention
 - Moving from concrete information to more abstract
 - Literal to nonliteral
 - Use of similes, metaphors, more idiomatic expressions
 - Subject matter
 - More information for retention

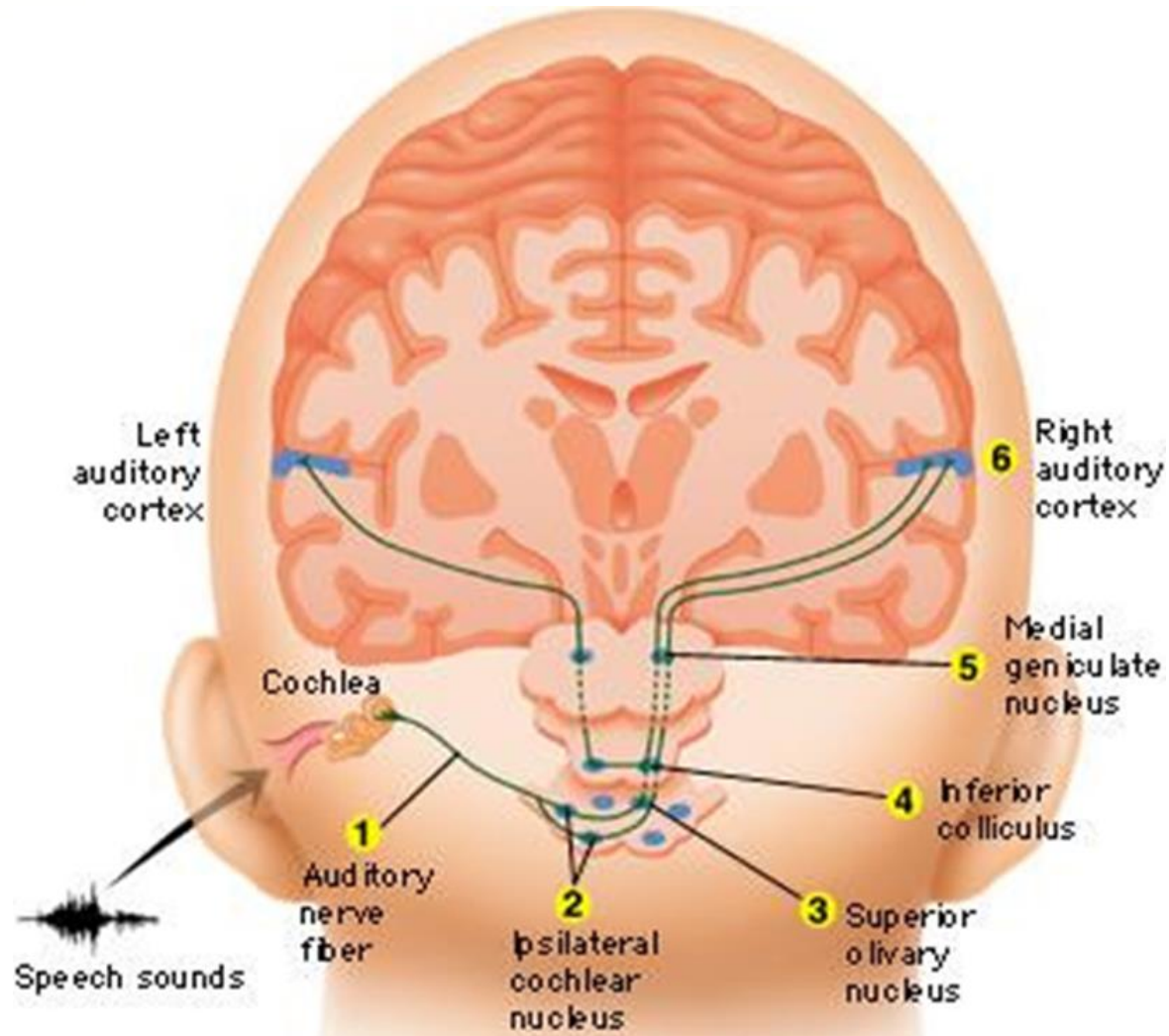
School Transitions

- Elementary to Middle School
 - Inferencing
 - Sarcasm
 - Increase in the rate of speech-academic and with peers
 - More information to retain
- Middle School to High School
 - Social pressure
 - Increase in informational load

Hearing Loss







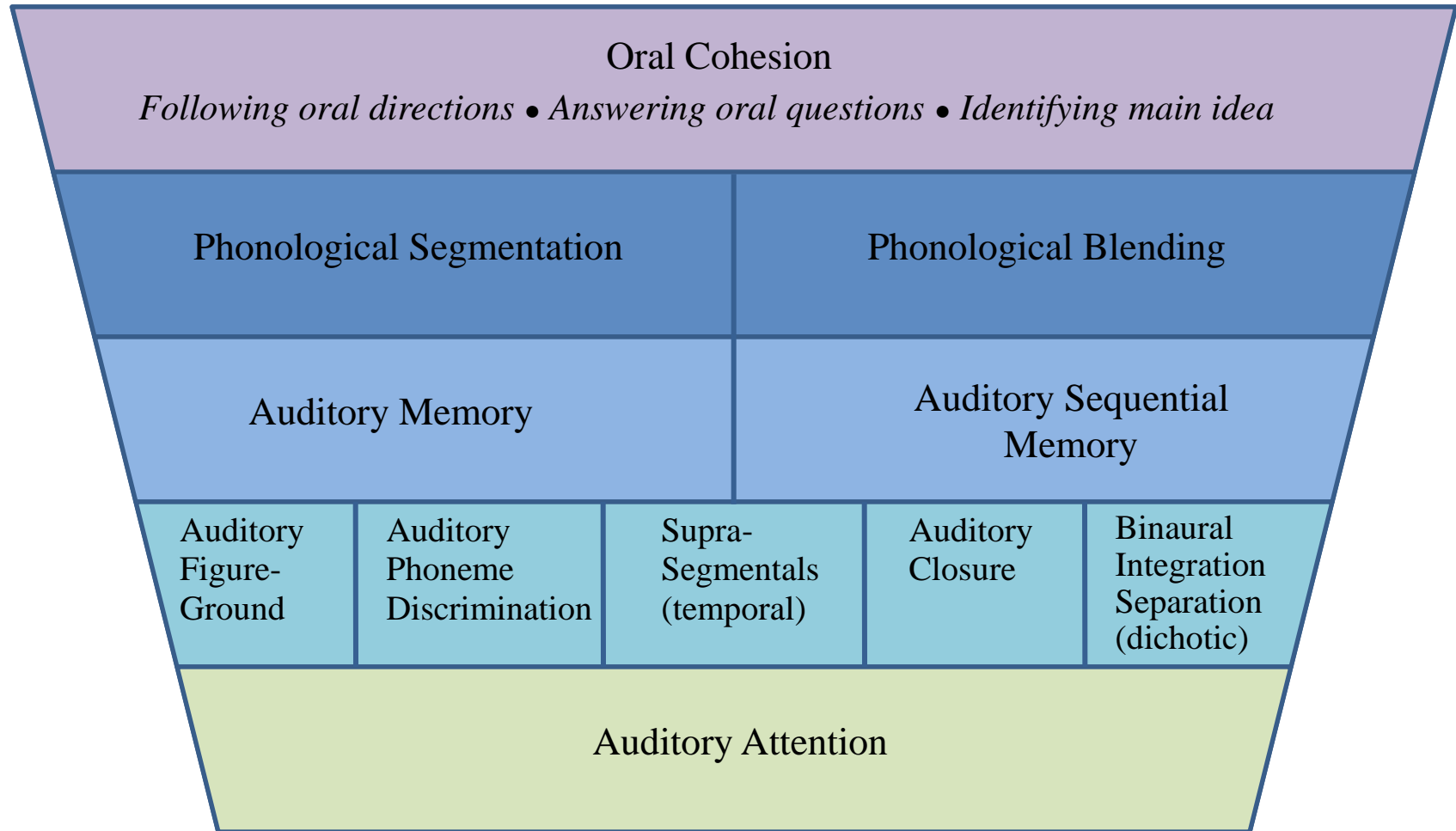
Who is a candidate?

- Usually at least 7 years of age
 - For those 5 to 7 years of age, consider screening for APD
- English as primary language
- Symptoms
- Those without significant other disabilities ie autism
- Those with IQ generally > 80
- Those with hearing within normal limits
- Attention issues- should be ruled out or treated.

A Differential Diagnosis of APD and Listening Challenges

- Audiological Evaluation (AE)
- Auditory-Language Processing Evaluation (ALPE)
- Central Auditory Processing Evaluation (CAP)
- Why is it important to have all three

Elements of Listening



SLP Perspective

- Language problems
 - Academic
 - Social
- Are they language based or auditory based?
- Are their phonological problems
 - Visually
 - Auditorily
 - Language based?

5+ years of age

- Vocabulary- Receptive and expressive
- AB nonsense word list vs auditory discrimination of the TAPS/Wepman
 - Quiet
 - Noise
- APAT- selected subtests
 - Semantic relationships
 - Cued recall
 - Content memory- immediate and delayed
 - Following directions
 - Auditory comprehension

5/6+

- TAPS
 - Entire test
- Test of Narrative language
- **To probe further**
 - CELF-4 selected subtests
 - Automatic naming
 - Familiar sequences
 - Word association
 - Other lang subtests, as needed
 - CASL
 - Abstract lang skills
 - CTOPPs
 - Phonological skills
 - Listening Comprehension test

SLP Under 5

- Based on language tests and observations
- In depth parent interview and participation
 - Vocabulary
 - CELF- Preschool
 - AB list nonsense
 - Informal following directions
 - Coloring/Body
 - Auditory memory
 - Auditory sequential memory

Important factors to consider

- Checklists
 - Teacher
 - Parent
- Child's behavior during evaluation
 - Sensory issues (as demands increase, behaviors increase)
 - Attention

????????????

- What is language based and what is auditory based problem?
- How will that impact intervention?

Planning Intervention

- Auditory skills are built “bottom up”
- Language skills are built “top down”
 - Reception problems are often related to expression problems
 - APD may directly or indirectly affect other aspects of language functioning
 - Phonological development
 - Receptive and expressive vocabulary
 - Syntax and morphology
 - Receptive language comprehension

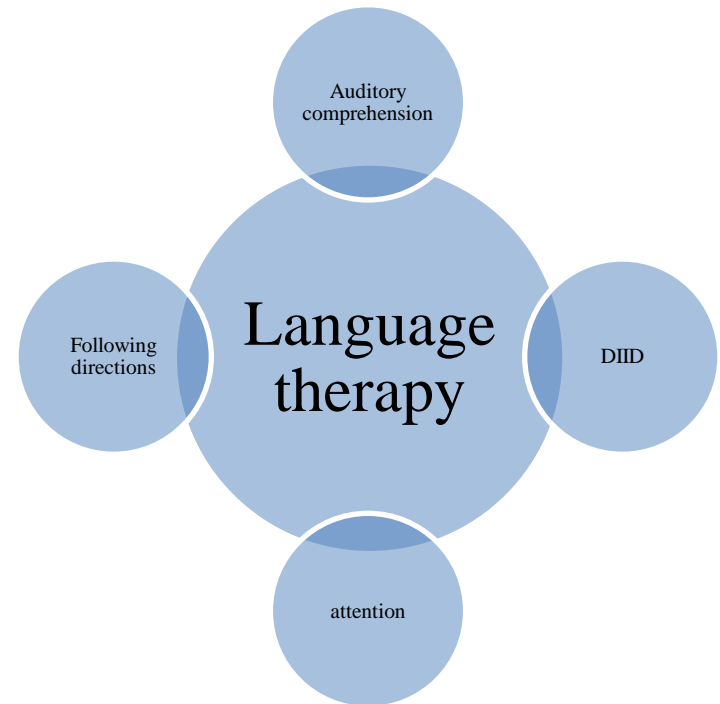
APD may be primary or secondary condition

Varies in type and severity- individuals will differ

Auditory Strategies

- Gain child's attention
- Brief moment of quiet
- Motor Cues (Sounds in Motion)
- Tapping out
- Chunking
- Adding visual cues → fading visual cues
- Visualization- drawing

An example of an integrated lesson plan



Therapy

- Intervention on the weak areas
- Targeted therapy
- Integration of skills
- Fun!
- My equation: $\frac{\text{Consistency} + \text{Fun}}{\text{Time}} = \text{Progress}$

Accommodations for School

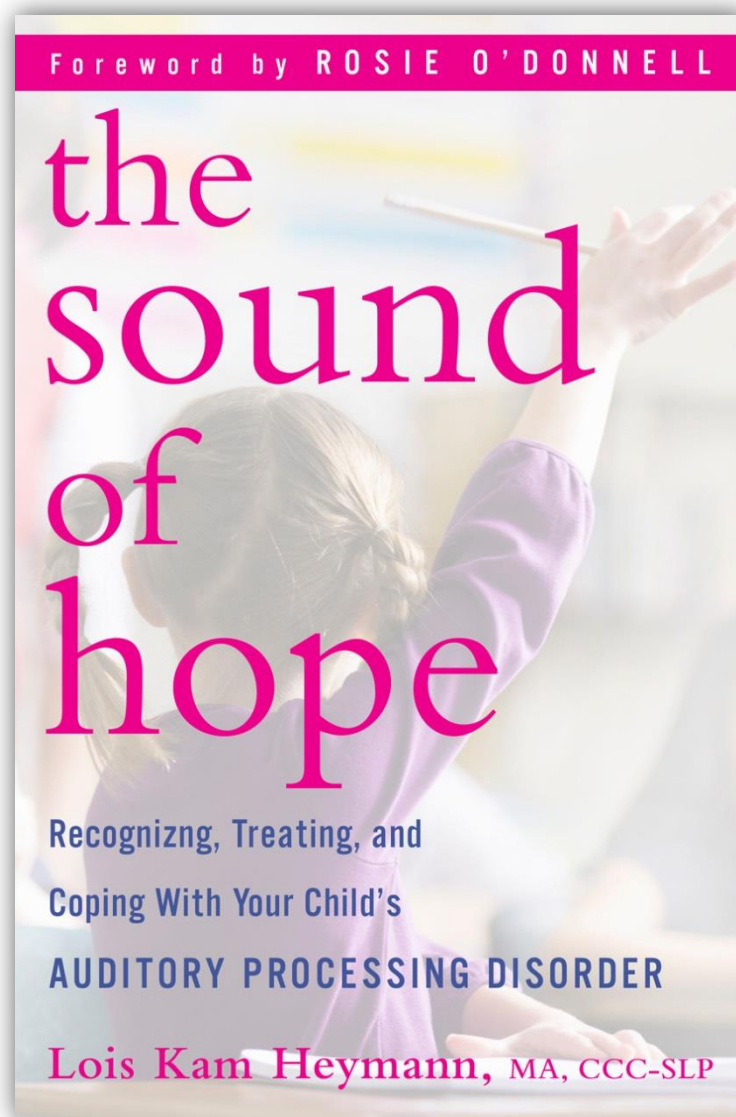
- Preferential seating
- Noise reduction (FM)
- Repeat and rephrase information
- Separate location for testing
- Additional time for tests
- Preview /Review of information

Home Strategies

- Noise in the house
- Time of day
- Correction of your child in public
- Role playing activities
- Open discussion about what is difficult
- Your child knowing you will work together with them to make things easier and less confusing

The Sound of Hope

- There are interventions for each of these areas of weakness.





Materials

- New apps for the iPad and iPhone developed for listening/language skills
 1. Category Carousel - now available on iTunes
 2. One Step-Two Step (following directions)
 3. Tell Me a Story