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## What Are Central Auditory Processing Problems in Children?

By: American Speech-Language-Hearing Association (2004)

"Okay, class, before you open your science book to page 95 for the next lesson, get out your homework from yesterday, and put it in the right hand corner of your desk for me to review; then we'll be ready to start." Ron takes out his social studies book and stares into space. Why didn't Ron follow the teacher's directions? Not listening? Distracted? Not paying attention? Poor conduct? Hearing loss? Any of these explanations is possible. Or maybe Ron hears the sound, but has a problem processing or understanding what is said to him particularly when the language used is complex, spoken rapidly, or is lengthy, and when there's a lot to look at and lots of noise around him. The inability to understand spoken language in a meaningful way in the absence of what is commonly considered a hearing loss is called a central auditory processing problem. Other terms that have been used interchangeably include: auditory comprehension deficit, central deafness, word deafness and auditory perceptual processing dysfunction.

Frank Musiek, audiologist and researcher in this area, has described central auditory processing as, "How well the ear talks to the brain, and how well the brain understands what the ear tells it."

Evaluation by both an audiologist and a speech-language pathologist provides important information about the person with central auditory processing problems. An audiologist will evaluate a child's hearing and identify possible processing problems. This professional will also make recommendations about treatment strategies concerning improving the listening environment and monitoring any changes in hearing status. A speech-language pathologist can evaluate a child's perception of speech and his/her receptive (understanding) and expressive (production) language use. These professionals and a child's teacher and parents can work together to determine the scope of the problem and the most effective treatment techniques.

Two general treatment approaches have been used for central auditory processing problems. One approach focuses on training certain auditory and listening skills such as auditory discrimination (e.g., telling the difference between peas and bees), localization of sound, sequencing sounds, or identifying a target sound in a noisy background. Training these skills in isolation, however, may not help a child to understand complex language, such as a teacher's instructions. Therefore, another approach concentrates on teaching more functional language skills (e.g., vocabulary, grammar, conversational skills) and uses strategies (e.g., visual aids and repeating directions) to facilitate the processing of language.

Changes can also be encouraged at home and in the classroom to help a child with central auditory processing problems:

### **Seating**

Select seating for the child away from auditory and visual distractions to help focus and maintain attention. A seat close to the teacher and the blackboard and away from the window and the door may be helpful.

### **Setting**

Reduce external visual and auditory distractions. A large display of posters or cluttered bulletin boards can be distracting. A study carrel in the room may help. Ear plugs may be useful for distracting noise from a heater or air conditioner, the pencil sharpener, or talking in the hallways. Check with an audiologist to find out if ear plugs are appropriate and which kind to use. Placing mats and cloth poster boards on classroom walls has been shown to decrease the reverberation of noise. A structured classroom setting may be more beneficial than an open classroom situation.

To improve the listening environment, an audiologist may recommend the use of a device that transmits the teacher's voice directly to the student's ear while blocking out background noise. The audiologist can provide recommendations on the potential benefit of available options based on the child's individual needs.

## **Speaking**

- Gain the child's attention before giving directions.
- Speak slowly and clearly, but do not over exaggerate speech.
- Use simple, brief directions.
- Give directions in a logical, time-ordered sequence. Use words that make the sequence clear, such first, next, finally.
- Use visual aids and write instructions to supplement spoken information.
- Emphasize key words when speaking or writing especially when presenting new information.
- Pre-instruction with emphasis on the main ideas to be presented may also be effective.
- Use gestures that will clarify information.
- Vary loudness to increase attention.
- Check comprehension by asking the child questions or asking for a brief summary after key ideas have been presented to be sure the child understands.
- Paraphrase instructions and information in shorter and simpler sentences rather than by only repeating.
- Encourage the child to ask questions for further clarification.
- Make instructional transitions clear.
- Review previously learned material.
- Recognize periods of fatigue and give breaks as necessary.
- Avoid showing frustration when the child misunderstands a message.
- Avoid asking the child to listen and write at the same time.

For children with severe central auditory processing problems, ask a buddy to take notes, or ask the teacher to provides notes. Tape recording classes is another effective strategy.

Central auditory processing problems can affect learning particularly in areas like spelling and reading. It is important to identify problems early and help the child acquire adaptive strategies to compensate. If your child is a "poor" listener, frequently misunderstands speech, and has difficulty following directions, consult an audiologist or speech-language pathologist to determine if problems exist.

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