



Central Auditory Processing Deficit (CAPD)

How are characteristics of CAPD observed in the classroom?

Children with CAPD may have difficulty in:

- following auditory directions
- remembering auditory information
- learning information presented auditorially
- understanding speech, especially in the classroom environment
- remaining attentive and non-distracted

More fine-tuned difficulties appear in:

- auditory discrimination, such as localization and pitch
- decoding, such as blending, sequencing sounds
- phonological awareness, such as rhyming, manipulating sounds, deleting sounds, and segmenting sounds
- Sound localization and lateralization - where is the sound in space? Ex: where is the dog if I hear a barking noise?
- Auditory discrimination - distinguishing one sound from another. Ex: pat/pad; rice/rise.
- Auditory pattern recognition - similarities and differences in the patterns of sounds. Ex: apple/appeal; apple/chapel.
- Temporal aspects of audition - the sequencing of sounds into words. Ex: change the /ch/ in peach to a /s/ (peach/peace); change the /ee/ in sheep to a /i/ (sheep/ship)
- Auditory performance decrements - the ability to perceive words if other sounds are present. Ex: listening to the teacher assign homework if there is a lot of noise in the hallway
- Auditory performance with degraded acoustic signals - Ex: perceiving the word if part is missing.

The series of abilities listed above are the results of CAPD, not the cause.

Treatment

Although the above-listed abilities are critical to sound auditory processing, isolation and treatment of each ability separately is not helpful. An integrative approach, which takes into account the interrelationships among abilities, is effective. Children with CAPD seem to do best in a one-to-one situation and in an acoustically quiet environment. This can best be accomplished when remediation plans consider the following:



Modifying the listening environment when appropriate

- Classroom acoustics should be modified - Reduce reverberation within the room by adding room dividers, bookshelves, acoustic tiles, carpet, wall hangings, bulletin boards, etc.
- A self-contained, structured environment is sometimes helpful. An open, unstructured teaching environment should be avoided.
- Preferential seating, such as being closer to the teacher, can be helpful.
- Face-to-face communication should be facilitated. However seating should take into account the student's ability to follow when the teacher moves around. Children who take cues from other children may do better when seated toward the rear of the classroom. Child should be seated away from the hall and street noise.
- A quiet study area should be provided
- Provide pauses for extra processing time.
- Consult with an audiologist to ensure that the acoustic environment is appropriate. For some children, the use of an auditory trainer, which beams a teacher's voice directly into earphones that a child wears, is helpful. Some classrooms can be "wired" for better auditory processing.

Using strategies for improved communication

- Consider input vs. intake. Input refers to all the language to which a child is exposed. Intake refers to whether the child notices, hears and listens to the input and how the child interprets the information. The goal of improving communication is to adjust the input for maximum intake.
- Gain the child's attention by using alerting cues and signs, such as calling the child's name or by a gentle touch.
- Monitor the child's comprehension. Periodically ask the child questions related to the subject under discussion.
- Restate material by rephrasing what has been misunderstood rather than repeat the information.
- Use brief instructions. Reduce complexity of the message.
- Pre-tutor. Familiarize the child with new vocabulary and concepts to be covered in class. Parents can be particularly helpful in this activity.
- List key vocabulary before dealing with new material.
- Present information in several formats. The children need to interact with information in a variety of ways, such as in small groups, individually, collaboratively with others, and to have different opportunities and ways in which to express themselves.
- Multisensory approaches are helpful.
- Write instructions on the board.
- Provide visual aids. Jotting key words on the board or providing simple written/picture outlines may be useful.



- Having child listen to tapes, transcribing from tapes, and playing games such as Simon Says can enhance auditory attention.
- Provide breaks since children with auditory processing expend more effort in paying attention and in discriminating information than other children.

Teaching a child strategies to help interpret, organize and synthesize auditory information

- Using categories to organize information.
- Grouping information to be learned into meaningful chunks.
- Reading and summarizing by thinking of a title for the story.
- Learning to solve math word problems by extracting important information and determining what process to use to solve a problem.
- Solving riddles.
- Practicing with contingency problems such as: "if you like ice cream more than spinach, count to ten."

Teaching the child to be a self-advocate

- Promote self-assertiveness by teaching a child to ask the teacher to slow down, or to give directions or information in another way.
- Help a child to bypass her difficulties by giving her a list (in words or pictures) of the tasks you'd like her to accomplish or of the directions you'd like her to follow. Pair those directions with brief verbal prompts.
- Strengthen areas of where the child excels so he doesn't feel hopeless.
- Help children learn how to reflect on what they are learning, monitor their learning, and to be aware of when they are inattentive and develop strategies to stay focused.

CENTRAL AUDITORY PROCESSING DEFICIT:

1. The child has compensated for their auditory deficits by making assumptions about what they hear or what they read. Their impulsivity exacerbates this habit. For instance, they sometimes try to perform schoolwork without reading directions.

Teachers and parents must work with them to question that which they hear and read. The child must monitor their own performance, questioning what they read almost every paragraph. In a classroom setting, the child should feel comfortable to ask as many questions as possible. Possibly a prearranged signal between teacher and student could signify that needs a repetition.

2. The following teacher recommendations are known to be helpful for students with auditory processing deficits:
 - a) Make sure to establish eye contact with the child.
 - b) Slow the manner of presentation.



- c) Be direct and use simple sentences.
 - d) Reduce background noise when possible.
 - e) Place the student in the front of the room.
 - f) Communicate information by previewing it (announcing its content) then review it after it is presented (summarize the events).
3. Children with auditory processing deficits also help themselves by doing the following:
- a) Organizing their desk.
 - b) Studying out loud.
 - c) Reducing background noises.
 - d) Asking for repetition, especially when they don't understand directions.
 - e) Watch the teacher and listen to other cues.
 - f) Repeat the directions to yourself over and over again.
 - g) Healthy habits including diet, exercise, and sleep.
 - h) Take notes by key words.
4. Students with weak receptive language will need to have oral information repeated. They have difficulty following conversations and may lag in their reasoning for abstract concepts. Therefore, additional time is needed for them to process that which they hear.
5. Students with auditory processing deficits benefit from a slowed verbal presentation by teachers and parents. Given that they listen inefficiently, those around them must speak slower or be cognizant of the need for repetitions. The student, on the other hand, must begin to develop some assertiveness to ask for repetitions. Given that they are shy, it may be a helpful interim technique if the youngster uses a nonverbal message to his teacher – which means a request for repetition. The teacher and student may wish to develop a nonverbal signal, such as a raised right thumb, which means that he wants the teacher to repeat what she just said.

In the classroom environment, the child would benefit from preferential seating toward the front of the room. The teacher must understand their difficulty with auditory processing and present them with written instructions when possible. At other times, the youngster can be taught to take notes or use symbols to denote certain verbal instructions.

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