

CENTRAL AUDITORY PROCESSING DISORDER IN CHILDREN



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- Auditory processing disorder (APD) is a hearing problem that affects about 5% of school-aged children.
- Kids with this condition, also known as central auditory processing disorder (CAPD), can't process what they hear in the same way other kids do. This is because their ears and brain don't fully coordinate. Something interferes with the way the brain recognizes and interprets sounds, especially speech.
- With the right therapy, kids with APD can be successful in school and life. Early diagnosis is important. If the condition isn't caught and treated early, a child can have speech and language delays or problems learning in school.

- Kids with APD are thought to hear normally because they can usually hear sounds that are delivered one at a time in a very quiet environment (such as a sound-treated room). The problem is that they usually don't recognize slight differences between sounds in words, even when the sounds are loud and clear enough to be heard.
- These kinds of problems usually happen when there is background noise, which is often the case in social situations. So kids with APD can have trouble understanding what is being said to them when they're in noisy places like a playground, sports events, the school cafeteria, and parties.

Trouble Understanding Speech

Symptoms of APD can range from mild to severe and can take many different forms. If you think your child might have a problem processing sounds, ask yourself:

- Is the child easily distracted or unusually bothered by loud or sudden noises?
- Are noisy environments upsetting to my child?
- Does the child's behavior and performance improve in quieter settings?
- Does the child have trouble following directions, whether simple or complicated?

Signs & Symptoms of Auditory Processing Disorder

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- Does the child have reading, spelling, writing, or other speech-language difficulties?
- Are verbal (word) math problems hard for my child?
- Is the child disorganized and forgetful?
- Are conversations hard for the child to follow?
- APD is often misunderstood because many of its symptoms can happen with other problems, like learning disabilities, attention deficit hyperactivity disorder (ADHD), and even depression.



Audiologists look for five main problem areas in kids with APD:

- **Auditory figure-ground problems:** This is when a child can't pay attention if there's noise in the background. Noisy, loosely structured classrooms could be very frustrating.
- **Auditory memory problems:** This is when a child has trouble remembering information such as directions, lists, or study materials. It can be immediate ("I can't remember it now") and/or delayed ("I can't remember it when I need it for later").

- **Auditory discrimination problems:** This is when a child has trouble hearing the difference between similar words or sounds (COAT/BOAT or CH/SH). This can affect following directions and reading, spelling, and writing skills, among others.
- **Auditory attention problems:** This is when a child can't stay focused on listening long enough to complete a task (such as listening to a lecture in school). Kids with CAPD often have trouble maintaining attention, although health, motivation, and attitude also can play a role.
- **Auditory cohesion problems:** This is when higher-level listening tasks are difficult. Auditory cohesion skills — drawing inferences from conversations, understanding riddles, or comprehending verbal math problems — need heightened auditory processing and language levels. They develop best when all the other skills (levels 1 through 4 above) are intact.

- Diverse perspectives among interdisciplinary team members involved in the evaluation process may result in different diagnoses (e.g., CAPD, phonological awareness disorder, language processing disorder; McNamara, Bailey, & Harbers, 2008; Richard, 2012). Therefore, a team including both audiologists and SLPs is valuable in the diagnosis of CAPD and the identification of language disorders that occur in association with CAPD.
- Audiologists are responsible for evaluating and diagnosing problems in the reception and/or transference of auditory signals in the peripheral auditory system and the CANS.
- SLPs are responsible for evaluating and diagnosing problems in the linguistic processing of the auditory signal.
- Audiologists and SLPs share responsibility for diagnosing problems in the phonemic processing of the auditory signal (Richard, 2013).

Team Approach

- The goal of screening for a CAPD is to identify individuals who are potential candidates for a more comprehensive central auditory testing battery. Screening can be accomplished using abbreviated test protocols.
- A number of questionnaires and checklists are available to probe auditory behaviors related to academic achievement, listening skills, and communication and to allow for systematic observation of listening behavior.
- There is no universally accepted method for screening for CAPD. There remains a need for valid and efficient screening tools.

Screening