

## **Auditory Processing Disorders (APD)**

An Auditory Processing Disorder (APD) refers to a variety of conditions that affect the way the brain processes auditory information. APD is different from a hearing impairment, in that individuals with APD generally have normal hearing ability. Rather, an individual with APD cannot process the information they hear in the same way that others do. This can lead to difficulties in recognizing and interpreting sounds, especially the sounds involved in speech. Approximately 2-3% of children are affected with APD. Males are twice as likely as females to be affected by the disorder. The ultimate causes of APD are unknown.

The Committee of UK Medical Professionals Steering the UK Auditory Processing Disorder Research Program have developed the following working definition of Auditory Processing Disorders:

"APD results from impaired neural function and is characterized by poor recognition, discrimination, separation, grouping, localization, or ordering of non-speech sounds. It does not solely result from a deficit in general attention, language or other cognitive processes."

APD can be difficult to diagnose in children. Often times, children who present with symptoms of APD are misdiagnosed as having ADD/ADHD, Asperger's syndrome, or other forms of autism. Though it is different from these disorders, it shares some overlap and common characteristics with dyslexia and specific language impairment (SLI).

When individuals with APD experience an inability to process verbal information, they do not process what is being said to them. Because people with APD are used to guessing to fill in the processing gaps, they may not even be aware that they have misunderstood something.

Children with APD often:

- have trouble paying attention to and remembering information presented orally.
- have problems carrying out multi-step directions given orally.
- have poor listening skills
- need more time to process information
- have low academic performance
- have behavior problems
- have language difficulties including reading, comprehension, spelling, and vocabulary
- rely on visually-presented information

Children with APD can have problems perceiving differences between speech sounds and the sequencing of these sounds into meaningful words, and confusing similar sounds in

words (such as "mat" with "bat", "hair" with "where", etc.). Additionally, fewer words may be perceived than were actually said because a child with APD may have difficulty determining when and where the natural spaces between words occur. This can create the sense that someone is speaking unfamiliar or nonsense words. Those suffering from APD may also have problems relating what has been said with its meaning.

Accompanying background noise can make speech difficult to understand as well. Many children with APD, especially older students, may subconsciously develop visual coping strategies, such as lip reading, or reading body language to compensate for their auditory deficits.

Children with APD may also tend to be quiet or appear to be shy and even withdrawn from their peers, due to their communication problems. As a result, in addition to academic difficulties, developing social ties and interpersonal relationships can be negatively affected by the presence of APD.

Recent research has shown that practice with basic auditory processing and auditory training tasks may improve performance on auditory processing and phonemic awareness tasks (Moore, 2005). Many of these tasks are incorporated into computer based auditory training programs such as Earobics and Fast ForWord.

A speech language pathologist (SLP) conducts treatment for children with APD. An SLP is specially trained to help individuals with APD develop auditory discrimination skills, particularly for speech sounds. Treatment plans based around developing phonological awareness skills are useful for children who have difficulty blending or segmenting sounds in words, which can affect reading and word decoding skills. Additional treatment approaches can involve improving listening comprehension skills in both quiet and noisy environments, and practice in following multi-step directions of increasing length and complexity, in addition to other auditory training tasks.

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