



# Weill Cornell Medicine

## Hearing & Speech Center

### Auditory Processing Disorder: Frequently Asked Questions

#### What is Auditory Processing Disorder (APD)?

Auditory processing disorder is a term used to describe listening difficulties resulting from dysfunction in the central auditory nervous system (CANS). APD may be suspected in individuals who display such difficulties but are found to have normal hearing sensitivity.

#### Is there a difference between Auditory Processing Disorder (APD) and Central Auditory Processing Disorder (CAPD)?

The terms “Auditory Processing Disorder” and “Central Auditory Processing Disorder” are used interchangeably in the literature to describe the same entity. A third, hybrid term “(Central) Auditory Processing Disorder” ([C]APD), also exists.

#### What are potential signs/symptoms of APD?

The American Academy of Audiology (AAA) and American Speech-Language-Hearing Association (ASHA) report that common signs/symptoms of APD may include:

- Difficulty understanding speech in the presence of background noise
- Difficulty understanding rapid, muffled, or distorted speech
- Frequent requests for repetitions of what was said (saying “huh” and “what”)
- Difficulty following verbal directions or commands
- Misinterpreting sarcasm or jokes
- Distractibility
- Academic difficulties, including reading, spelling, and learning problems
- Difficulty sustaining attention
- Difficulty localizing sound

These, and other common signs of APD, are *not* unique to APD and *should not* be treated as definitive signs that an APD is present.

It is also important to note that in children, APD may coexist with other disorders, including language, reading, learning, or attention deficit

### **What are the causes of APD?**

The etiology of APD is *often unknown*, although evidence suggests that causes and risk factors for APD may include:

- Age-related changes in CANS function
- Hereditary/genetic factors
- Head trauma
- Neurological disorder, disease, or lesions
- Chronic ear infections
- Prenatal/neonatal factors
- Neuromaturational delay
- Ototoxic exposure

Additionally, there can be more than one cause of APD.

### **What is the incidence/prevalence of APD?**

There is no uniform criteria for the assessment and diagnosis of APD and therefore estimates to the prevalence of APD are variable. Common estimates regarding the prevalence of APD in the pediatric population are low (2-3%), with a higher estimated prevalence in older adults.

### **What ages can be tested for APD?**

Age is a primary consideration for the evaluation of APD in children. Individuals 7 years of age or older can be tested for APD. This is due to age-related variability in brain function, language proficiency, and cognitive status.

### **What should I do if APD is suspected?**

A comprehensive audiologic evaluation (CAE) is recommended for all individuals suspected of having APD, as even a mild hearing loss can cause difficulties similar to those commonly associated with APD. A recent CAE (within the last 6 months) is required for review before an auditory processing evaluation (APE) can be considered.

Once normal hearing sensitivity is confirmed, the individual's case history information will be reviewed to determine if they are a candidate for testing (age 7 or older, normal language skills and cognitive status, etc.).

### **What should I expect during an APE?**

Similar to a hearing test, the APE is completed in a soundproof test booth by an audiologist. A test battery assessing a variety of auditory processes (ex: tests of temporal processing, dichotic listening, monaural low-redundancy speech perception, etc.) is administered. The listener may be asked to listen to different sounds, numbers, words, or sentences throughout testing. These test stimuli may be presented to one or both ears, in quiet or in background noise. Specific instructions are given prior to each test.

APEs are scheduled as 3-hour evaluations. This timeframe allows for a case history review prior to testing, multiple breaks throughout the evaluation, and a discussion of preliminary results upon completion.

In some cases, particularly when attention-related concerns exist, testing may be broken up into more than one session. This is done in an effort to limit possible negative effects of patient fatigue on test results.

### **How is APD diagnosed?**

APD is diagnosed by an audiologist following administration of a test battery that assesses a variety of auditory processes. According to the American Academy of Audiology, a diagnosis of APD can be made when the individual scores two standard deviations or more below the mean in at least one ear on two or more tests within the battery.

### **What are the intervention options for APD?**

Intervention options for APD should be individualized and specific to the patient's case history and test results. A multi-disciplinary team management approach is often used, and may include speech-language pathologists, teachers, parents, etc. Recommendations made on a case-specific basis may include direct skills training, compensatory strategies, and environmental modifications, just to name a few.