

## Determination of Auditory Processing Disorder (APD)

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### DESCRIPTION

Audiology focuses on disorders of hearing, balance, and related disorders. Audiologists provide care for patients who have hearing loss and actively protect from related damage. Audiologists attempt to discover whether a person has a normal sensitivity to sounds by using a variety of testing techniques. If hearing loss is diagnosed, audiologists determine the parts of the hearing that are damaged (high, middle, or low frequencies), the severity of the loss, and the origin of the lesion (outer ear, middle ear, inner ear, auditory nerve, and/or central nervous system).

The neurodevelopmental illness known as Auditory processing disorder (APD), also known to as King-Kopetzky syndrome or auditory disability with normal hearing (ADN), affects how the brain interprets auditory information. Individuals with APD typically have normal outer, middle, and inner ear structure and function (peripheral hearing). However, they are unable to process the information they hear in the same way that others can communicate to them, which makes it challenging for them to identify and analyse sounds, especially the sounds that make up speech. These issues are mainly caused by central nervous system dysfunction. People with other neurodevelopmental problems, like Attention Deficit Hyperactivity Disorder, Autism Spectrum Disorders, Dyslexia, and Sensory Processing Disorder, are much more likely to have.

According to the American Academy of Audiology, difficulties in one or more auditory processes, that is known to characterize the function of the central auditory nerve system and can be used to diagnose APD. Both adults and children may be impacted. Although the exact frequency is still unknown, it has been estimated to be between 2% and 7 % among children in the populations of the US and UK. It has been reported that males are twice as likely to be affected by the disorder as females, and that prevalence is higher in the elderly and increases with age. Various tests are involved in the determination of Auditory Processing disorder. They are:

- Random Gap Detection Test (RGDT),
- Gaps in Noise Test (GIN),

- Pitch Patterns Sequence Test (PPT)

### Random Gap Detection Test (RGDT)

It evaluates a person's ability to distinguish between tones and white noise gaps. The test consists of bursts of white noise lasting 50 ms and stimuli at four distinct frequencies (500, 1000, 2000, and 4000 Hz). Because it gives a measure of auditory temporal resolution, the test is helpful. Children who fail and may have an auditory processing impairment based on abnormal perception of sound in the temporal domain have an overall gap detection threshold greater than 20 ms.

### Gaps in Noise Test (GIN)

The test measures temporal resolution, or the ability to detect modifications in the temporal envelope of auditory stimuli. The GIN test was developed as a therapeutically practical tool to compare patients with probable central auditory impairments' temporal resolution skills. It was derived from standard gap-detection methods. The GIN test has demonstrated a high degree of diagnostic consistency in individuals with central auditory abnormalities

### Pitch Patterns Sequence Test (PPT)

Auditory pattern recognition is measured by the Pitch Patterns Sequence Test (PPT) and the Duration Patterns Sequence Test (DPT). The PPS contains a series of three tones that are produced at one of two frequencies (high or low). A sequence of three tones with varying length rather than pitch is presented on the DPS.

### CONCLUSION

These tests facility will analyze person's ability to distinguish between tones and white noise gaps and they are helpful in the identifications of difficulties arise from dysfunction in the central nervous system and help to prevalent the individuals with other neurodevelopmental disorders, such as Attention Deficit Hyperactivity Disorder, Autism Spectrum Disorders, Dyslexia, and Sensory Processing Disorder.

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