

AUDITORY PROCESSING

What is it? How is APD Diagnosed? Which Interventions Actually Work?

WHAT IS AUDITORY PROCESSING?

High-level brain function is referred to as *processing or central processing*. Auditory processing simply means listening and attaching meaning to the sound. Some children have trouble making sense of what they hear. Auditory processing is needed for listening and speaking. Similarly, some children have trouble making sense of what they see. Visual processing is needed when looking at a complex shape and trying to interpret it. Reading and writing utilize both visual processing and auditory processing.

DIAGNOSING A CENTRAL AUDITORY PROCESSING DISORDER

An ordinary hearing test can't be used to diagnose an auditory processing disorder. Why do basic hearing tests fail to uncover processing deficits? A basic hearing test only measures hearing acuity. Tones of various pitches, like the notes on a piano, are presented to a listener. If listeners can hear the tones, they pass the hearing test. It is the same as a vision test that only requires the person to indicate when a light is *on* versus *off*. Acuity tests only measure low-level brain function.

It is possible to test the brain's ability to do high-level listening tasks. This is referred to as an assessment for auditory processing. Testing is always done in a quiet environment using headphones. The person is tested with real words, not just tones. The person's auditory system is put under stress, using background noise and competing messages in the two ears. People who can't do this task at the level expected for their age are diagnosed as having an auditory processing deficit, also referred to as a central auditory processing disorder (C)APD.

A speech-language assessment and psycho-educational testing should be required prior to (C)APD testing. Without this, the big picture is missing. I caution parents against having (C)APD testing done in a centre that does not collect information about language and thinking skills as part of the referral process.

Even though a child has auditory processing difficulties, using the diagnosis (C)APD may not be appropriate. Imagine if every person in a wheelchair was diagnosed as having a problem with *balance*. It is true that a person who is in a wheelchair has trouble standing upright, but the reasons for this might be global and complex.



Signs of auditory processing difficulties:

- *Trouble listening in a noisy environment.*
- *Easily distracted by background noise.*
- *Trouble understanding what people are saying.*
- *Trouble speaking clearly.*

Likewise, it is not uncommon for children with language delays, learning disabilities, attention problems, autism, developmental delays and so on to have some difficulties with auditory processing. The actual diagnosis is much broader than (C)APD. Similarly, parents should be wary of eye specialists who diagnose a visual processing disorder in a child with poor reading skills.

Getting a diagnosis of CAPD is particularly helpful if it leads to customized treatments and customized changes to the learning environment. To be honest, I have found that simply assessing phonemic awareness and reading skills gives me the same diagnostic information and it is much cheaper and faster than a complex assessment. I offer a free online assessment for clients interested in treatment for auditory processing. Go to my website at www.neuroplan.ca to get started.

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WHICH INTERVENTIONS FOR AUDITORY PROCESSING DIFFICULTIES ACTUALLY WORK?

How can parents and teaching staff make confident decisions regarding intervention for auditory processing difficulties? They can evaluate interventions using the grid below. In order to resolve auditory processing difficulties, the intervention should be intensive, and it must require a response from the child. Active processing creates new connections in the brain.

Parents should be cautious about providing children with expensive interventions that don't require a response from the child. Some examples of controversial passive therapies are 1) plugging one ear, 2) listening to music, and providing an adult to act as a scribe. Remember, the best interventions are intensive and require a response from the child.

To resolve auditory processing difficulties, I recommend software for phonics, spelling and language. Small group learning assistance at school is very helpful for many children. If basic interventions have been tried and the child still needs more help, try the more customized solutions, such as individual speech-language therapy and Fast ForWord computerized intervention. Fast ForWord has been scientifically proven to improve reading skills by up to two grade levels in just 4 to 12 weeks. It is the best treatment for dyslexia, learning disabilities and reading disorders. Fast ForWord results in improvements in memory, attention, processing speed and sequencing. It also targets the visual processing skills needed for reading.

Fast ForWord won't eradicate complex conditions and genetic disorders. Nevertheless, the child will benefit from having stronger processing abilities.

Schools can offer strategies that provide a way to cope with auditory processing difficulties. The focus is not on trying to fix the deficit; instead, the focus is on changing the environment. A well-thought out IEP will include teaching strategies and practical suggestions for reducing distractions.

When someone is having trouble listening in a noisy environment, technology can be used to improve the auditory signal. The goal is to reduce the background noise and make the teacher's voice the most salient signal. Putting a loudspeaker system into a classroom is one option. It is also possible to fit a student with a personal FM system, so the teacher's voice is transmitted to the student. This can be attached to an ear bud, headphones or hearing aids. Parents should ask about amplification equipment already available in the school, or consider purchasing FM equipment from an audiology clinic.

Keep in mind that extended health funding can offset treatments and equipment provided by healthcare providers such as speech-language pathologists and audiologists. What looks expensive may actually be very affordable because of insurance reimbursements. The bottom line is that these professionals won't waste your money by recommending treatments that don't work.

FOUR CATEGORIES OF INTERVENTIONS

	Basic Interventions	Customized Interventions
Treatments for auditory processing difficulties.	Small group learning assistance. Activities for phonics, spelling and language available via software or the Internet.	Individual learning assistance and speech-language therapy. Fast ForWord computerized intervention (www.neuroplan.ca)
Strategies for auditory processing difficulties.	Quiet, distraction-free environment. Teaching strategies.	Personal FM system or loudspeaker so that the teacher's voice is more salient than the background noise.



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Fast ForWord computerized intervention is available through Neuroplan Treatment Services.
 For more information and to book a free consult, go to www.neuroplan.ca. PH: (604) 330-4731