

AUDITORY PROCESSING DISORDER AND HOW TO HELP YOUR AUDITORY PERCEPTION

What is meant by the term “auditory processing”?

Hearing starts in the ear. The sounds will be broken down in small bits here first, and then transmitted by the hearing nerve to the bottom part of the brain, which is the brain stem. From that point on, the sound information will be further analysed, processed and organised. Sound will then be transmitted further up the brain, until it reaches the top layer, the cortex, where the sound will be recognised and meaningfully interpreted. “Auditory processing” refers to what happens to the sound after it enters the brain.

What is an auditory processing disorder (APD)?

An auditory processing disorder is a hearing disorder which results from poor brain function. An APD may affect the listener’s ability to localise a sound, tell which sound comes first, tell two sounds apart, distinguish a sound of interest from other sounds etc.

What causes APD?

Children may have an APD because they had glue ear in the past, or because they were very ill when they were born and the brain suffered as a result, because they have epilepsy, or because of a variety of other reasons, which may include some developmental disorders. Adults may have an APD because they had a head injury, a stroke, or other damage to the brain. Sometimes adults may have an APD since childhood.

What are the symptoms of APD?

Children and adults with APD may not be able to recognise subtle differences of sounds in words, and as a result they may have difficulties understanding speech in background noise, or if there are more than one speaker at a time. They may also have difficulties with rapid speech or speech that is degraded, e.g. speech from a mobile phone, speech from a loudspeaker or in an “echoey” room. They may also have difficulties following oral, multiple step instructions. They may not appreciate music, or, in the case of adults, they may not derive the same pleasure from music as in the past. Children in particular with APD may be inattentive and highly distractible and they may have reading and spelling difficulties and academic difficulties as a result of their APD.

How is APD diagnosed?

Diagnosis of APD requires multidisciplinary assessment and a battery of hearing tests. The hearing tests will assess different parts of the hearing pathway, from the ear and the nerve to the brain. The tests may be behavioural, i.e. the patient is given a sound and is expected to make a response regarding the sound, or electrophysiological, i.e. the sound is presented and the ear or brain make a response which is recorded either by tips placed in the ear or by electrodes (wires) glued with a special glue to the head. Apart from the hearing tests, patients may have psychological cognitive assessments, speech and language assessments and other assessments, as needed.

How is APD managed?

The management should start with a full explanation of the patient's symptoms and what is causing these, and explanation of the test results. After that, management falls into three main categories, which are:

- a. Environmental modifications and signal enhancement strategies. These are changes to the environment or to the sound signal which aim to improve the quality of the sound signal when it reaches the ear of the listener.
- b. Auditory training, which consists of special exercises, in order to train the brain to analyse sound better.
- c. Other compensatory strategies, which make use of other resources and strategies of the brain.

I have been diagnosed with APD. What can I do to help my auditory perception?

When you are diagnosed with APD, your medical professional will advise you on auditory training that you need to do, which you may do on your own, with the help of a CD, or with the help of another professional such as a Speech and Language Therapist or a Hearing Therapist. It is very important that you do this training consistently, as your doctor has advised. In addition, and equally important, you should understand your hearing difficulties and take some simple measures to help your hearing perception in different communication scenarios. The following advice can be helpful in this respect.

****Explain and educate***

Communication is a two-way process. Your friends and family and other people you come across may have the best intentions to try and communicate with you, but they may not understand the nature of your hearing difficulties, or how to make communication with you easier and better. You may want to discuss your hearing difficulties with them, and it may also be helpful to ask them to read this handout. They should know that it would be best to make sure that they get your attention first before they start talking to you. They should speak clearly and – a little bit- slowly. It would be helpful if they emphasize their speech in order to highlight the key points of the message. They may also repeat or rephrase the message, and use additional visual or other cues. It may also be useful to see a hearing therapist together with your partner/family to discuss all this and your doctor can advise you and organise this for you.

****Be aware of room acoustics and how they affect your hearing perception***

Rooms with hard surfaces (hard tiles on the floor, walls, ceilings, etc.) will cause the sound to be reflected on the surfaces and create “echos” of the sounds. These rooms will have poor acoustics and will make it more difficult for you to hear. Avoid meetings or conversations in rooms with poor acoustics (those that have echoey effects). Rooms with carpets, soft furniture and cushions, heavy curtains, acoustic ceiling tiles are best for your hearing. If you have an important meeting and you can choose where the meeting is taking place, try to plan ahead and choose a room with good acoustics.

****Minimise background noise***

If you need to conduct a meaningful conversation, try and minimise all noise, for example switch off the radio or the television. Move away from a window overlooking a busy road or from a fan, air conditioner or any other device emitting noise.

****Localisation***

When you are in a crowded room with many people talking and someone speaks to you, try to immediately localise as quickly as possible from where that directive is coming. The quicker that you can localise, the quicker you can orient your hearing system as well as your visual system to pick up on cues that are important to communication. Localise by focusing you listening as well as your visual cues on the individual talking to you.

****Position***

You need to position yourself so that you are directly in front of the person speaking to you. If you are talking with someone, try to position yourself so that the person you are talking to is closer to the noise source than you.

****Ask***

Ask individuals not to cover their mouths when they are speaking to you. Explain to them that you need to see their face and mouth when they are talking, because this helps you to understand their speech better. Ask individuals that are talking to you to repeat or speak up or speak slower if you don't understand what they are saying. **Do this as soon as you realise you are not following the conversation.** If you feel you are not following the conversation, stop the individual immediately and say "please speak up because I can't hear you well." Do not wait until you are into a lengthy conversation or the conversation is almost finished before you ask them to repeat. This is frustrating for both you as well as the speaker. Ask individuals to write down information that is extremely important such as directions to a given destination, telephone numbers, schedules, etc.

****Concentrate and watch very carefully***

When an individual is talking to you, it is very important that you devote all of your attention to this individual. Try not to be distracted by any visual or other auditory stimuli that may be around you. If someone else approaches you while you are talking with someone, stop the conversation and tell them to wait until you are finished talking with the person with whom you have initiated the conversation. Total attention and total concentration is needed for optimum communication. Many times this is not achieved due to the fact that individuals have other things on their mind and total attention is not devoted to the individual to whom they are speaking. Concentrate on key words in a conversation. Watch very closely all gestures and facial movements when the individual is talking to you. This will help you fill in the gaps with visual cues for some of the things that you may miss or not quite understand.

****Avoid***

Avoid going to meetings late. Try to go early so you can position yourself close to the speaker or where the speaker will be. This can be of great help. If you do go late to a meeting, ask someone to summarise what has happened so you get a good idea of what is going on at the meeting.

****Telephone***

Telephone conversations can be enhanced by holding the receiver as close to your ear as possible. This will attenuate outside interference noise. Do not hold the receiver so tight that it actually blocks your ear but rather hold it tight enough so that it covers the ear and keeps away extraneous sounds. Foam rubber around the perimeter of the receiver which can fit over your ear and next to your head can be a tremendous help in terms of attenuating background noise.

Some useful websites

<http://www.nidcd.nih.gov/health/voice/auditory.asp>

<http://www.thebsa.org.uk/apd/APDPamphletOct04.pdf>

<http://www.apduk.org/>