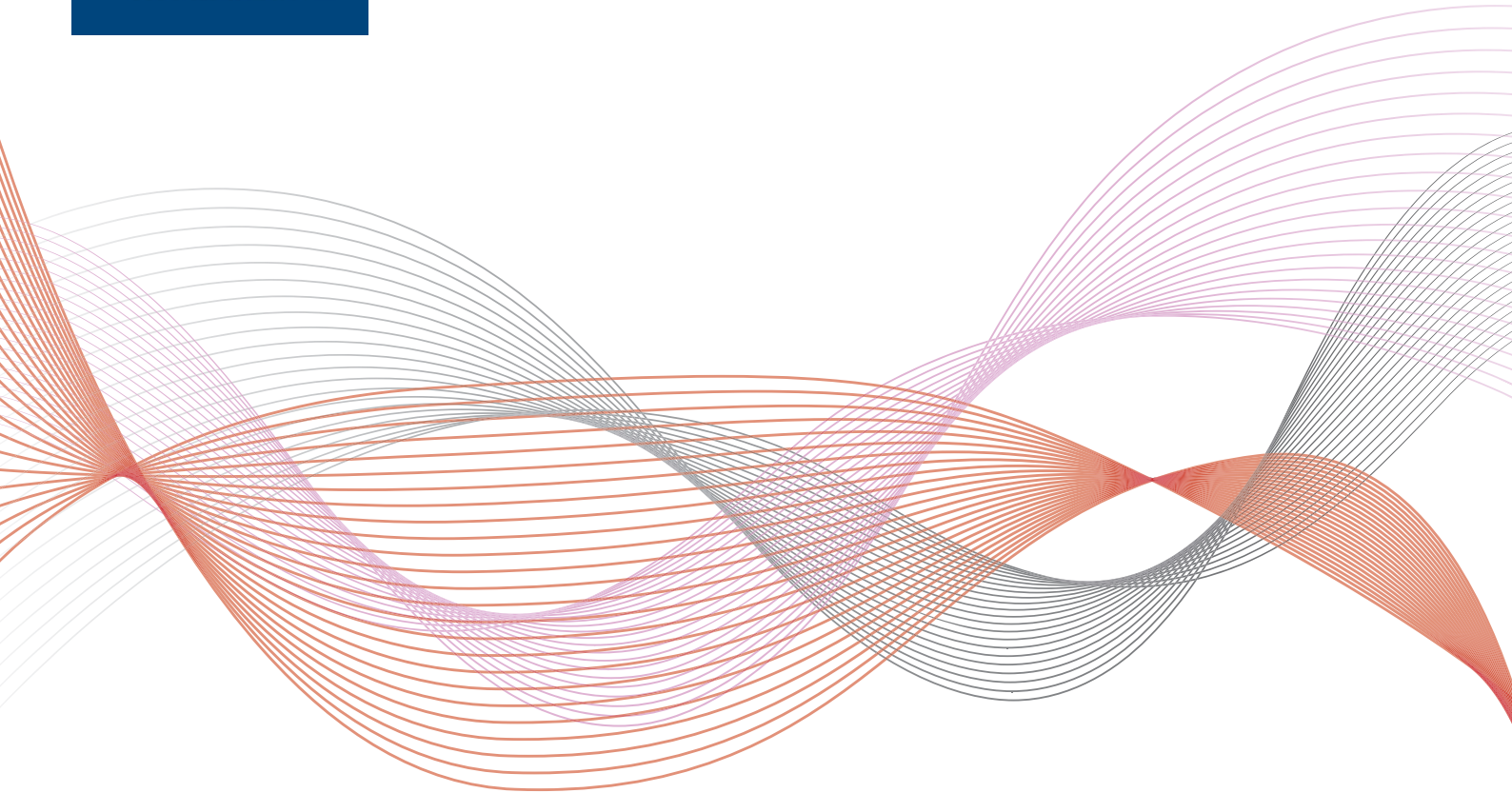




Faculty of Medicine, Dentistry & Health Sciences

Melbourne Audiology & Speech Pathology Clinic



Auditory Processing Disorder

Auditory processing disorder (APD), also known as *central* auditory processing disorder (CAPD), is an umbrella term for a variety of disorders that result in a breakdown in the hearing and listening process. It is a complex problem thought to affect more than 5% of school-aged children.

Affected children and adults cannot correctly process auditory information resulting in difficulty detecting subtle differences between sounds in words. One of the biggest problems reported by individuals with APD is difficulty listening in background noise, however it is often the presence of academic deficits that triggers a referral for APD assessment.

Symptoms often reported are:

- Difficulty following speech in noisy environments
- Literacy, or general academic development concerns
- Difficulty following instructions
- Language and/or speech delays
- Difficulty concentrating, or paying attention
- Poor memory skills

The exact cause of APD is unknown, but it involves the neural pathways of the central auditory nervous system. There is increasing evidence that for many children it is likely that this is a developmental delay; the children still need to better develop and strengthen the neural connections and pathways required for complex listening. There is also evidence that children who have experienced repeated episodes of glue ear, or middle ear fluid when young may be particularly susceptible to APD later.



Children with APD are usually found to have normal intelligence, but it is also important to determine whether a child's difficulty in listening is due to APD or whether it is caused or worsened by, another disorder altogether (such as attention, memory, anxiety or speech- language problems).

As noise levels in the classroom fluctuate, all children, at some time or another, will miss parts of the signal and will rely on higher level skills to fill in the gaps in what has been said. A child with APD may need to do this constantly and their success will be determined by their existing knowledge of language. This uses up a lot of their mental resources just to work out what is being said, and can also contribute to poor concentration and behaviours in the classroom.

It is important to remember that APD can also affect adults, following illness or trauma, but also often accompanying the effects of ageing. It can often co-occur with hearing loss, and is an important consideration of today's rehabilitation programs.

There are a number of specific skills that an Auditory processing test battery should look at. These include the ability to determine where a sound is coming from (sound localisation), the ability to detect changes in the duration and timing of auditory stimuli (temporal processing) and the ability to detect differences between sounds. Dichotic, or competing binaural signals, is also often assessed. Auditory stream segregation is a skill with which a listener is able to differentiate the various auditory signals which arrive simultaneously at the ears and form meaningful separate representations of the incoming acoustic signals. It is important that the skills of memory, attention and intelligence are also assessed.

The appropriate management program utilised to help a patient with APD will depend on the type of deficit that is diagnosed. A personal frequency modulation (FM) device or sound-field amplification system can be used to improve the signal-to-noise ratio in the classroom, or in any listening environment. Children can be trained to strengthen language and listening skills with a speech therapist. Specific auditory training that aims to adaptively strengthen the listening deficit and strengthen neural pathways using specialised software based programs are also available.

CONTACT US

Ground Floor
550 Swanston Street
Carlton, Victoria 3053
Australia

 +61 3 9035-5333

 +61 3 9347-1535

 aud-reception@unimelb.edu.au

 umac.org.au

