

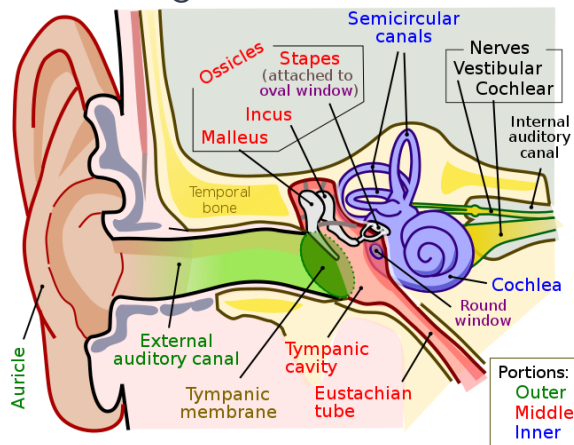
Auditory Processing Disorder: A Neurodivergent Perspective

This document explains what auditory processing disorder is, what it is like to experience APD, and outlines potential strategies and adjustments to be made.

What is auditory processing disorder?

Auditory processing disorder (APD) is a breakdown in the communication between your ears and your brain. It is sometimes also called central auditory processing disorder. When someone has APD, the processing of a sound they hear is disrupted, impacting their interpretation of that sound. APD does not specifically relate to hearing loss.

How hearing works



[Jmarchn, Anatomy of the Human Ear multilingual, CC BY-SA 3.0](#)

The sounds we hear pass through from the outer, middle, and inner ear.

1. Sound waves travel through the air, where they are funnelled through from the outer ear canal to the eardrum, causing it to vibrate.
2. These vibrations travel through the three middle ear bones which increase or amplify the sound as it travels to the fluid filled cochlea in the inner ear.
3. The vibrations cause the fluid to move within the cochlea, causing movement of very fine cilia (hair cells), creating the electrical signal which travels along the auditory nerve in each ear to the brain.

4. These signals are combined and then analysed, resulting in a sound or sounds that we recognize and understand.

APD relates to the part of this process where electrical signals are sent to the brain, and the difficulties that result when the signals are delayed, distorted, or otherwise impacted.

APD is an umbrella term for a collection of different symptoms:

1. Auditory hypersensitivity – low tolerance for background sounds
2. Phonetic decoding – issues processing language at the typical rate.
3. Auditory integration – slow to connect things heard with things seen.
4. Prosodic – processing difficulty that makes it hard to think and listen at the same time
5. Organisational - difficulty with sequencing, which impacts language and the ability to follow complex instructions

Assessing APD

Formal testing occurs with an audiologist, though a GP or Ear, Nose and Throat Specialist (ENT) may also have recommendations for you. An auditory processing disorder assessment will still include a full hearing test to eliminate peripheral hearing issues as the source of the problem. Testing may also include checking responses to different volume and sound combinations, sequencing, auditory pattern recognition and responses to distorted sounds.

Audiologists, ENTs, GPs and other health professionals are looking for what the brain is interpreting when it hears a sound.

Experiencing APD

Descriptors

- You can't keep up. Your supervisor is speaking at 100 kph, you're listening at 80kph
- Trying to listen to a phone call with poor reception
- Not "hearing" something, asking someone to repeat themselves, and then by the time they've started to say it again, your brain catches up and you complete their sentence

Co-Morbidities

Co-morbidities or (co-occurrences) can have an impact on the experience of APD a person has.

ADHD

It is harder to focus on the processing of what is being said. ADHD brains often interpret all sounds with the same level of urgency. We also receive negative feedback when we don't hear what is said because it is assumed we are not paying attention (and it is assumed we are specifically choosing not to pay attention).

Autistic sensory issues

Autistic people often experience sensory issues, including a tendency to be overly sensitive to noise. We are often capable of picking up on sounds that are at higher frequencies than neurotypical people can hear. We may experience uncomfortable noises as mildly discomfoting, painful, or excruciating.

Deaf, deaf and hard of hearing

People with varying degrees of deafness may have different preferences for adjustments. This is often influenced by the way they identify. Always respond to the preference of the person you are interacting with.

Deaf (with a capitalised D) is used to describe those who use sign language such as Auslan (Australian Sign Language) or other sign languages to communicate, and who identify as members of the signing Deaf community. These people may also identify themselves as "culturally Deaf." Deaf people are more likely to have been born deaf or may have become deaf early in life.

deaf (with a small d) is a more general term used to describe the physical condition of being unable to hear. This also describes people who are physically deaf but do not identify as members of the signing Deaf community.

Hard of hearing is used to describe those who have acquired a hearing loss in late childhood or adulthood, or who have a mild or moderate hearing loss. Hard of hearing people usually communicate using speech, lip-reading and residual hearing, and may use hearing aids, bone anchored hearing aids (BAHAs), or cochlear implants to amplify sounds.

Hearing impaired is still used by many people as their preferred term for "hard of hearing". Be careful with this term, the Deaf community finds it offensive. Hearing aids, sign language, sub-titles are all potentially helpful adjustments for those with a degree of deafness. Do not assume that every person with a degree of deafness can or wants to use any of these things by default.

Sourced from: [Aussie Deaf Kids](#)

The information in this document is not intended as a substitute for professional medical advice, diagnosis or treatment.
Compiled by Emma Sharman, June 2022



Strategies and Adjustments

How to help yourself

- Good lighting and position
- Consider the impact of other factors like pain and fatigue – ask for extra help on these days
- Flexible workspace (hot-desking) – choose your space carefully to reduce the impact of background noise
- Reduce the number of active sound inputs where possible
- Consider the different ways available to communicate

How you can help someone else

- Be willing to adjust your expectations and meet the person on their terms
- Shape a supportive environment, leading other co-workers by example
- Be open and willing to understand

Potential adjustments to make

- Provide different modes of teaching/formats of instructions
- Repeat yourself slowly and change up your inflection
- Allow time to process
- Provide subtitles and/or transcripts
- Don't interrupt another task in progress
- If you do need to raise your voice to be heard, don't yell or shout unnecessarily
- Consider the impact of the environment you are meeting in

Helping kids

- Speech pathology for training processing skills
- Classroom support, which may include assistive technology.
- Sound Storm [application](#) is recommended for kids with spatial processing disorder

Resources

Aussie Deaf Kids, 2022, "Terminology For Deafness", <https://www.aussiedeafkids.org.au/terminology-for-deafness.html>

Gemm Learning, 2022, "Types of Auditory Processing Disorder", <https://www.gemmlearning.com/can-help/central-auditory-processing-disorder/info/types-of-apd/>

Healthy Hearing, 2022, "How we hear: A step-by-step explanation", <https://www.healthyhearing.com/report/53241-How-we-hear-explainer-hearing>

Mountjoy, Alyson, 2021, *Auditory Processing Disorder (APD) Identification, Diagnosis and Strategies for Parents and Professionals*, Jessica Kingsley Publishers

Sound Storm CAPD, 2020, "What Are Auditory Processing Disorders?", <https://www.soundstorm.app/hearing-health/what-are-auditory-processing-disorders>

Sound Storm CAPD, 2020, "Sound Storm: The Game That Trains the Brain to Listen", <https://www.soundstorm.app/>

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