Auditory processing disorder

Auditory process disorder (APD) affects how the brain interprets sound rather than how sound is carried through the ear to the brain. The ear consists of three parts, the outer ear, the middle ear and the inner ear. Sound waves enter the ear canal and cause the eardrum to vibrate. The sound then passes through the middle ear via the three small bones of hearing (ossicles) on to the inner ear, which is filled with fluid. The movement of the fluid in the cochlea stimulates the hair cells inside it to trigger a nerve impulse, which is carried to the brain by the auditory nerve. The brain then interprets these nerve impulses as sound. When someone has APD, sound enters the ear canal and passes through the middle and inner ear as usual. It then travels to be brain through the auditory nerve. Once the sound has arrived in the brain, there could be problems with interpreting it, for instance, recognising where the sound is coming from or listening to someone speaking when there is background noise.

Each person is affected in a different way and to a different degree, so APD may be called a 'spectrum'. Some children have a greater range of difficulties than others. The effect of APD can be worsened by the presence of other conditions, such as dyslexia, language processing difficulties, poor attention and poor short-term memory. Doctors do not really know what causes auditory processing disorder (APD) but research is ongoing to understand more about it. There may be a genetic component to it, as parents sometimes report having had similar problems to their children when they were young. It may also be caused by the brain being 'wired' slightly differently in some children who had lots of ear infections in childhood so that message signals are passed from cell to cell less effectively than usual.

We are not sure how many children and young people are affected by APD, but estimates from around the world suggest between three and five per cent of children have APD to some degree. Although children with APD may seem to have a hearing impairment, this is not usually the case as hearing for pure tones is within the normal range when tested. Complex tests are needed to diagnose APD such as hearing speech in different levels of background noise, pitch discrimination and sound pattern recognition tests, tests to determine the ability to detect subtle changes in sound, for instance, with comparison of results with children of a similar age.

Key Characteristics:

Children with APD are most likely to:

- have difficulty in understanding speech especially in noisy environments, like a classroom or crowded shopping centre.
- have trouble concentrating and reading when background noise is present.
- have difficulty in understanding and remembering instructions, speaking clearly and in learning to read.

Strategies we Use in the Classroom:

We may need to:

- seat children near the front of the classroom.

- Check that the child is listening by asking them to repeat back oral instructions or using their name to gain attention.
- Using visual prompts to back up auditory information.
- Keep background noise to a minimum wherever possible.
- Give the child a pair of ear phones to black out background noise when completing independent work.

For many children, APD improves as they grow older, usually because they incorporate coping strategies into their everyday life. With reasonable adjustments, most children and young people have a successful school and work life.

Useful Websites:

www.apduk.org.uk