

# When the brain does not hear

When the listening part of the brain falters, hearing is affected. Called Central Auditory Processing Disorder (CAPD), the condition can cause learning delays and communication problems. It is underdiagnosed in Asia, so learn the signs here.



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A hearing disorder rooted in the brain rather than the eardrum, CAPD is an underdiagnosed and often misdiagnosed condition in this part of the world. The problem lies in a deficit in the auditory (or sound) processing part of the brain that leads to difficulties in listening or understanding spoken language. In most cases, sufferers have normal hearing but their brain has difficulty processing or interpreting the information it receives.

It is estimated that 5% of school-age children in the United Kingdom have it, rising to 40% in children with learning difficulties. No one knows how many it affects in Singapore or Asia. Part of the reason is that the disorder is complex and may be mistaken for hearing loss, cognitive impairment or other behavioural conditions such as autism or attention deficit disorder, conditions that may co-exist but are not solely responsible for poor hearing.

### A challenge to live with

Undiagnosed, CAPD can result in learning difficulties such as problems with reading, writing and spelling, as well as delays in speech and language. This can lead to poor self-esteem or frustration. Another symptom of CAPD is the habitual 'spacing out' or inability to hear or make out words in noisy environments. There may also be a tendency to confuse or be unable to differentiate similar-sounding speech sounds.

In fact, many adults with the condition struggle daily, although many learn to adapt and compensate by making adjustments to their environments and social communication modes. When

diagnosed, many are emotional, as they have spent many years with wrong diagnosis; some have even been accused of malingering.

The exact causes of CAPD are unknown. In some cases, the condition can arise due to recurrent childhood ear infections. There is evidence that CAPD is linked to genetics. In other instances, CAPD is associated with damage to the brain from a head injury, stroke, brain tumour or meningitis.

Some cases involving adults have also been linked to age-related changes in the way the brain processes sound, and progressive conditions affecting the nervous system such as multiple sclerosis.

### Detection and treatment

CAPD can only be diagnosed by a CAPD-trained audiologist; the assessment is done using various sound tests administered in a sound-treated room. A multidisciplinary team comprising teachers, speech language pathologists, ear doctors, paediatricians and psychologists works best in complex cases. Treatment is tailored to the specific area of weakness that is identified, such as changing the communication environment, using higher order skills such as problem-solving skills, memory or attention to compensate for the deficit.

For CAPD in seniors, having single hearing aids may work better compared to bilateral hearing, and treatment should be customised according to need. Whatever the cause, those who suspect they have CAPD should seek help as there are many ways to help improve hearing, communication and lives.