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HEARing CRC Researchers Develop New Tests to Accurately Diagnose Children with Listening Difficulties

Health professionals working with children with listening difficulties can now more accurately diagnose Auditory Processing Disorders using a new collection of tests supported by HEARing CRC research.

As many as one in ten children in Australia may have an **Auditory Processing Disorder (APD)**, an umbrella term that describes a variety of disorders affecting hearing and listening. A child with APD can have normal hearing thresholds but still experience listening difficulties, particularly in noisy environments such as the school classroom or playground. If left untreated, or misdiagnosed, it can impact on a child's ability to learn – particularly in the classroom.

Studies by HEARing Cooperative Research Centre (CRC) researcher Dr Dani Tomlin at The University of Melbourne have allowed a better understanding of the variety of difficulties that children with APD experience, especially with listening and learning.

APD is usually diagnosed by a hearing health professional known as an audiologist who uses a test battery of listening tasks to measure a child's listening skills. "An important outcome of our study has been the inclusion of more specific tests in the APD diagnosis test battery. These tests assess a child's attention, memory and intelligence, as well as their ability to understand and use language," Dr Tomlin explained.

"These are very important additions, as health professionals need to be careful so as not to confuse APD with other attention, behavioural, hearing and language disorders such as Attention Deficit Disorder (ADD) or Autism Spectrum Disorder (ASD) that can show similar symptoms."

The use of attention and memory tests along with more accurate data to better identify the causes of the child's listening difficulty will now be added to APD test batteries in hearing clinics throughout Australia. The addition of the new tests will result in improved diagnosis and remediation of children with listening deficits, allowing them to continue with their learning and education.

"While this is a great outcome for parents with children who have APD, the next step for us is to develop new training programs that specifically target the primary causes of listening difficulties identified by the updated APD test battery," Dr Tomlin explained.

"These programs will focus on improving a child's listening and academic ability, and determining if targeting their cognitive abilities and/or listening skills is the most effective approach to treating APD."

The use of age-specific, Australian data available to all health professionals played an important part in deciding which tests can be used to diagnose APD, particularly ones closely aligned to the real-life problems. The use of cognitive tests has also greatly improved the ability of health professionals to more accurately determine the primary cause of a child's listening difficulties.

"Listening is a very complex behaviour, involving many skills, and we still need to improve our ability to identify those at risk, and to identify why, before learning becomes affected. It is very likely there are specific skills that we have not yet identified, or are able to measure which may have a significant contribution to listening ability. The challenge for us is to work out what they are," Dr Tomlin said.

"Tomorrow's classrooms are likely to continue to be large, interactive, busy, noisy spaces that will continue to challenge the listening ability of many children, which will need to be balanced by a demand from the community to provide spaces that promote optimal learning. So there is going to be an ongoing need for the accurate diagnosis and management of APD to help achieve this balance."