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Poor rhythm 'at heart of dyslexia'



Dyslexic children experience difficulties reading and writing

The scientists say dyslexic children struggle with rhythm. A poor sense of rhythm could be to blame for dyslexia, scientists believe.

Researchers from University College London (UCL) found dyslexic children were less able to detect beats in sounds with a strong rhythm.

But children who read exceptionally well for their age were found to be much better than most at spotting rhythms.

The researchers conclude that an awareness of beats can influence the way young children assimilate speech patterns, which may in turn affect their reading and writing abilities.

Up to 100 children, 24 of whom were certified dyslexic, were tested as part of the UCL study published in the journal *Proceedings of the National Academy of Sciences*.

Winnie the Pooh

The children were played two types of tunes - one with a rhythmical, pulsating beat and one without a distinctive beat.



The children were told the rhythmical sound was Tigger and Eeyore playing on a swing, while the continuous sound was Winnie the Pooh sliding down a spiral-shaped straw. They were then played new sounds and had to decide if what they were hearing was Tigger and Eeyore on their swing or Winnie the Pooh on his slide.

The results clearly indicated dyslexic children had difficulty recognizing the rhythmic sound.

Speech has a rhythmical beat linked to the points at which sounds are perceived, called "P-centres."

Onset of vowels

Professor Ush Goswami, from the Institute of Child Health at University College London, said: "We already know that dyslexic children find it much more difficult to identify which words rhyme and which do not."

"This requires identifying the onset of the vowel, for example the difference between fit and fat," said Professor Goswami.

"We found that dyslexic children were relatively insensitive to the amplitude-based cues - P-centres - that signal the onsets of vowels in speech.

"Furthermore, we found a correlation in children without dyslexia between their ability to track these amplitude changes and their ability to read and write.

"Finally, we found that exceptionally good child readers were exceptionally good at detecting P-centres."

Professor Goswami said the findings could have significant implications for the ways in which dyslexia is detected and treated in the future.

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