Investigating ADHD in children born prematurely

July 19 2013

Families from Nottingham are being invited to take part in a pioneering project to try to understand the links between being born very prematurely and the struggle to pay attention.

Psychologists from The University of Nottingham need help from parents of 200 children who were born full term and are now aged between eight and 10 years. Based on an initial parent questionnaire, children showing good, average and poor attention skills will be selected to help with the study.

The study, led by Jennifer Tellett, a PhD student in the School of Psychology, will also recruit premature volunteers by tracing children who attended the neonatal intensive care units in local hospitals and inviting them to take part.

Children born very prematurely – more than eight weeks early – are two to three times more likely to be diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) than children born at full term. It is hoped the study, known as PATCH - Preterm Birth and Attention in Children - will lead to better diagnosis and understanding of attention problems and as a result, reduce the burden on the education system and improve outcomes for the individuals concerned.

Getting the help they need

Premature children with ADHD are more prone to displaying problems with attention such as daydreaming, being easily distracted, and losing their place in an activity, rather than the hyperactive behaviour commonly associated with ADHD. This can lead to difficulties at school and impact on academic achievement, their behaviour and social relationships. Because this form of ADHD is less disruptive, children with the primarily inattentive form of ADHD are often overlooked and may not receive the help that they need.

Jennifer said: "It is thought that these observable problems with attention may be the result of difficulty in processing information quickly, and with holding and manipulating information in memory. However, as yet it is unclear precisely what underlies attention problems and whether the difficulties and causes in premature children are the same as those that underlie attention problems in children born at term. Studying the causes of attention problems in different groups of children can help us to understand the ways in which our attention system can go wrong as we develop, which in turn can inform us about how our attention system works more generally."

The research has been funded through Jennifer's PhD studentship from the Economic and Social Research Council (ESRC) and the School of Psychology. The researchers will be assessing the children's attention skills to clarify exactly what sort of difficulties the children have. They will do this by identifying specific areas of weakness in their attention skills, such as the ability to sustain attention over a long period of time, and the ability to hold and use information in memory.

The study team will use a variety of cleverly designed games to measure these skills. During some of the games, the researchers will use a technique called electroencephalography (EEG), which measures the electrical activity that is produced by the brain. This will give the parents and children who are involved the opportunity to see their own brain

waves. It will also provide the researchers with important information about the way the children's brains are working.

First steps to boosting performance

Project supervisor, Dr Lucy Cragg, an expert in attention and brain development, said: "We are carrying out this important study to help us understand the difficulties that some children have with paying attention and what the underlying causes might be. We are particularly interested in whether these causes are the same in children who were born early and those born at full term. Our work could eventually mean parents and teachers have better information about each child's particular needs and what sort of support might suit them best."

Understanding more about this primarily inattentive form of ADHD, both in children born early and those born at full term, will be an important first step towards reducing the negative impacts it can have, with the longer-term aim of finding ways to boost their performance.

The project is being led by University of Nottingham PhD student Jenny Tellett in collaboration with Dr Lucy Cragg and Dr Maddie Groom, experts in attention and brain development, Dr Samantha Johnson, a psychologist with expertise in the long-term development of babies who are born very prematurely, Professor Chris Hollis, a specialist in child and adolescent mental health, and Dr Helen Budge, a specialist in neonatology – the branch of medicine concerned with the care, development and diseases of newborn babies.

Provided by University of Nottingham