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## The quest to unlock the mysteries of ADHD

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**Brain scanning and genetics are breaking new medical ground, writes Julie Robotham.**

FOR the children Professor Alasdair Vance sees in his clinic, there is one overwhelming reason to have their disruptive and abnormal behaviour properly diagnosed and treated. "It's about making and keeping friends," Vance, the head of academic child psychiatry at the University of Melbourne, said yesterday.

Attention deficit hyperactivity disorder (ADHD) spreads conflict wherever it goes. The fidgeting, disobedience and wild behaviour that characterise this condition are only the most obvious manifestations. ADHD can tear apart families, sabotage school achievement and form a fast track into the juvenile justice system - but for the children, it is the inability to make the most basic social connections that hurts and humiliates the most.

Vance was speaking to the International Congress of Neuropsychiatry at Darling Harbour this week, where he and others outlined how brain scanning and genetics are painting the first comprehensive portrait of ADHD.

Science is revealing that ADHD is usually not a transient condition of childhood - an extreme form of naughtiness - but a genuine brain disorder that continues to wreak havoc throughout people's lives.

Dr Caroline Stevenson, a clinical psychologist, told the conference adults with ADHD frequently seek help for the first time when their children are also diagnosed. "There is an enormous push to do something about it," Stevenson said of the desire to prevent the ADHD parent's own chaotic behaviour from worsening the child's problem.

Others come to her in their mid-30s, when their peers are consolidating careers, having families and forming successful relationships. "Their life's not on track and they're highly motivated for change," she said.

Stevenson runs eight-week courses at the NSW Institute of Psychiatry to help people develop strategies to cope with the basic demands of adulthood - getting to appointments on time, shopping, listening and responding appropriately. "There's been the mistaken belief that most people grow out of it," Stevenson said. But while ADHD adults may not jump out of first-floor windows, their thought processes may still be severely disturbed.

As many as 70 per cent of ADHD children still have difficulty concentrating as adults, and medication helps half of them at best, she said. Poor memory, lack of motivation and procrastination undermined their functioning, and they had often taken to heart childhood labels such as "lazy", "stupid" and "crazy". Stevenson found those people who stick with the course have a 33 per cent improvement in their symptoms.

At the University of NSW, Professor Florence Levy is clarifying the degree to which ADHD is inherited. Levy, the head of child psychiatry at Sydney's Prince of Wales Hospital, said ADHD that persisted into adulthood showed the strongest genetic links; the siblings of people with adult ADHD were 17 times as likely to receive an ADHD diagnosis compared to the general population, while siblings of those who outgrew their symptoms were four times as likely to develop ADHD.

At the Brain Dynamics Centre at Westmead Hospital, Associate Professor Leanne Williams is mapping the brain and body responses of children with ADHD to see how they differ from other children, and whether it is possible to predict which medication will be most suitable for individual children.

Using a series of psychological and cognitive tests, Williams measured the responses on electroencephalograms (EEG) of 175 unmedicated ADHD children, and compared these against the responses of 175 children with apparently normal development.

She found the ADHD children were more likely to over-respond to fleeting or non-existent stimuli compared to the control children, who were better able to isolate the sights or signs they needed for the task at hand. She also found in ADHD children "a delayed response to angry faces ... also for fear but most prominently for anger". And she calculated that the tests could identify 78 per cent of the children who had the disorder, as well as picking potential problems in 12 per cent of the "normal" children.

The measures give hope for the future of a reliable test for this most mysterious disorder - one that will allow children to quickly receive optimal treatment and get on with the business of forming friendships.

"It's reassuring to hear from parents," Williams said. "They are really keen [for] more objective measures of this condition."

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