



'Delay' in ADHD children's brains

The brains of children with Attention Deficit Hyperactivity Disorder (ADHD) do not mature at the same rate as their peers, a US study says.

Researchers looked at 450 children - half of whom had ADHD - and found an average delay of three years in the development of the cortex. This, the brain's outer mantle, is key for both attention and planning.

Researchers say the Proceedings of the National Academy of Sciences study may pave the way for new treatments. The team from the National Institute of Mental Health (NIMH) looked at when and where the brain reached peak "thickness", a marker of maturity.

Among the 223 youngsters with ADHD, half of 40,000 cortex sites examined reached peak thickness at 10.5, compared to age 7.5 in a matched group without the disorder. But the researchers did find that despite the delay, the brain does follow a normal pattern of development.

"Finding a normal pattern of cortex maturation, albeit delayed, in children with ADHD should be reassuring to families and could help to explain why many youth eventually seem to grow out of the disorder," said Philip Shaw, the lead researcher.

Finding out why

Future studies will now look into why the delay happens, and examine ways of boosting recovery. However UK experts warned that the findings do not indicate that children with ADHD "catch up" after the three year delay, as the brains of children without the disorder will continue to advance.

"During these later stages of development the cortex of the brain gets thinner due to a process called pruning which occurs as the brain refines its connections and becomes more organized," said Dr David Coghill of the University of Dundee. "So what will be happening is that whilst the children with ADHD's brains are still growing, the brains of the children without ADHD are starting this process of pruning." This, he added, meant "adolescents with ADHD remain behind on many of the important skills like memory, impulse control and planning".

Professor Anita Thapar of Cardiff University School of Medicine said the findings were "interesting and useful". "But it will be a long time before we see the implications of their findings for clinical practice".

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