

Pot heads small minded

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Cannabis users 'born with smaller front part of brain' affecting memory and decision-making

The difference in size means brain is not as effective

Research could identify those most at risk of becoming addicts

[Jo Macfarlane](#)

Teenagers who smoke cannabis are likely to have been born with an area of the brain that is significantly smaller than normal, according to new research.

Scientists have found that the area at the front of the brain, known as the orbitofrontal cortex, which controls memory, reward and decision-making, is six per cent smaller in children who go on to smoke cannabis compared with those who do not.

This difference in size may mean the brain is not as effective, so children with a smaller orbitofrontal cortex could be more impulsive and less capable of carefully calculated decision-making.



Popular: According to the British Crime Survey, more than a third of 16- to 24-year-olds used cannabis during 2009/10

In turn, this could make them more likely to experiment with cannabis.

Previous research has found that adults who are heavy cannabis smokers have much smaller brain volumes in this area, but it had, until now, been assumed the damage was caused by the regular drug use.

However, the new findings suggest that some people are born with the abnormality. The discovery could serve as an early-warning system to help identify those most at risk of becoming addicts.

The research, carried out in Melbourne, Australia, and published in the journal *Biological Psychiatry*, was part of a wider four-year study into the emotional development of children.

Initially, scientists took detailed scans of the brains of 121 children aged 12 – before they had begun to experiment with alcohol, cigarettes and other drugs such as cannabis.



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Once they turned 16, the teenagers were asked a series of questions, including whether they had smoked cannabis. Of the 28 who admitted to using it – 23 per cent of the group – most said they had smoked it fewer than ten times.

The researchers then studied the scans again to determine whether there was anything that linked the cannabis smokers.

They discovered that the average volume of the orbitofrontal cortex was six per cent smaller in the group who had used the drug. The results were the same even after adjustments for other factors, including psychiatric problems, alcohol consumption and cigarette smoking, had been made.

The research also appears to prove that cannabis is toxic. Other studies on long-term users have found that the drug seems to affect the size of other areas of the brain. But as the scans showed these to be normal in children who had smoked the drug, this would suggest that it is regular, heavy cannabis use that is causing the damage.

According to the British Crime Survey, more than a third of 16- to 24-year-olds used it during 2009/10.

[DailyMail](#)

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