

Pot smoking may leave mark on teen brains - CNN.com

By Amanda Gardner , Health.com

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(Health.com) -- Teenagers who frequently smoke marijuana may be setting themselves up for declines in intelligence and mental function that persist well into adulthood, new research suggests.

In a decades-long study of more than 1,000 New Zealanders, researchers found that adolescents who used marijuana at least four days per week lost an average of eight IQ points between the ages of 13 and 38 -- a pattern not seen among people who began smoking heavily only in adulthood.

Heavy pot smokers tended to show deficits in memory, concentration, and overall brainpower in relation to their peers, but these problems were more pronounced -- and seemingly more lasting -- among those who picked up the habit as teens, the study found.

Individuals who smoked heavily in adolescence had consistently lower IQs at age 38, even if they'd cut back in the previous year. By contrast, the IQ of the relative latecomers to marijuana was more closely linked with how much pot they'd smoked recently.

"The effect of persistent cannabis use on intellectual functioning is really confined to adolescents, (which) suggests that adolescents, in particular, are vulnerable to the effect of cannabis," says lead author Madeline H. Meier, a psychologist and postdoctoral researcher at Duke University in Durham, North Carolina.

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An eight-point decline in IQ isn't negligible, the authors say. Previous research suggests a drop in intelligence of that magnitude could, for instance, affect a person's long-term career prospects, job performance and income.

It's reasonable to suspect that still-growing teen brains might be especially sensitive to the cumulative effects of marijuana, says Dr. Jeffrey Brosco, a professor of pediatrics at the University of Miami's Miller School of Medicine.

"In the developing brain, neurons are growing and changing, synapses are forming," says Brosco, who was not involved in the study. "When there's a lot of change in any part of the body, particularly the brain, that usually means it's more vulnerable to environmental influences."

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The new study, which was published Monday in the Proceedings of the National Academy of Sciences, doesn't prove that marijuana use directly impairs intelligence. It does, however, provide some of the strongest evidence to date of a cause-and-effect relationship.

The study participants underwent IQ tests when they were 13 -- before they'd ever tried marijuana -- and again as adults, which provided the researchers a before-and-after snapshot of their intelligence.

Earlier studies that found a link between mental ability and pot smoking have generally looked at a single point in time, raising the possibility that low IQ increases the likelihood of marijuana use, rather than vice versa, Meier says.

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But Meier and her colleagues weren't able to entirely rule out alternative explanations for the IQ declines seen in the study. For instance, although they controlled for alcohol and drug use, they focused on full-blown dependence (as opposed to more casual use) and therefore may have underestimated the effects of teen drinking.

"It's hard to be dependent as a teenager, so you worry about (whether) you can be sure it's the cannabis," Brosco

says. "Alcohol is well known to be a neurotoxin."

Only 5% of the study participants began smoking marijuana regularly before age 18, and it's not clear from the findings whether less-frequent users might experience similar declines in IQ and mental function. More research will be needed to determine the minimum dosage of marijuana associated with these problems, the authors say.

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