

Cannabis Use in Teens Linked to Irreparable Drop in IQ

Fran Lowry | Apr 26, 2013

ORLANDO, Florida — Cannabis users who start smoking the drug as adolescents show an irreparable decline in IQ, with more persistent use linked to a greater decline, new research shows. On the other hand, adult-onset cannabis use is not linked to a decline in IQ.

"Our results suggest that adolescents are particularly vulnerable to develop cognitive impairment from cannabis and that the drug, far from being harmless, as many teens and even adults are coming to believe, can have severe neurotoxic effects on the adolescent brain," lead investigator Madeline H. Meier, PhD, from Duke University, Durham, North Carolina, told *Medscape Medical News*.

The study was presented here at the 14th International Congress on Schizophrenia Research (ICOSR).

Prospective Study

Studies on the neurocognitive effects of cannabis are particularly timely, inasmuch as 18 US states have legalized cannabis. The drug is also being used for medical indications, such as pain relief, which further creates the idea in people's minds that it is harmless, Dr. Meier said.

"Case-control studies show that light to heavy cannabis use can cause enduring neuropsychological problems, but they are retrospective and there are no tests of premorbid functioning," she said.

In the current study, Dr. Meier and colleagues used data from the Dunedin Longitudinal Study, which was conducted in Dunedin, New Zealand. This prospective study included a birth cohort of 1037 individuals born in 1972 and 1973, who were followed from birth and were seen every 2 years to age 38.

"This study has collected prospective life histories on its participants and had 95% retention," Dr. Meier said.

Participants' cannabis use was ascertained in interviews at ages 18, 21, 26, 32, and 38 years. IQ testing was done at age 8, 11, and 13 years, before the start of cannabis use, and again at age 38, after a pattern of persistent cannabis use had developed. One third of the cohort had never used cannabis.

After controlling for alcohol or drug dependence, socioeconomic status, and years of education, the researchers found that persistent cannabis use was associated with IQ decline when it was begun during the teenage years but not when begun in the adult years, after the age of 18.

Between the ages of 8 and 38 years, individuals who began using cannabis in adolescence and continued to use it for years thereafter lost an average of 8 IQ points. In contrast, IQ among individuals who never used cannabis actually rose slightly, Dr. Meier said.

Cessation of cannabis did not restore IQ among teen-onset cannabis users, she added.

"Anybody working with adolescents in particular has to be aware that adolescents are more at risk for cognitive functioning



Dr. Madeline Meier

problems," Dr. Meier said.

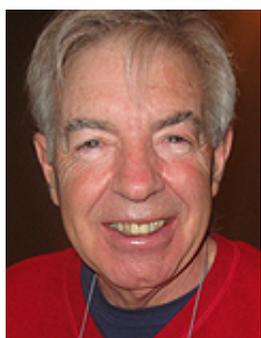
"Also, when you are working with an adult patient in therapy who has been using cannabis since adolescence, be aware that they may not be functioning at their highest cognitive level, and so therapy should take that into account," she said.

Additionally, pediatricians and others adults who come in contact with children regularly should be aware of the danger, Dr. Meier added.

"I think teachers, parents, health educators, and pediatricians should all be trying to get the message out to adolescents that drugs, especially cannabis, are not harmless. I think that data in the US especially show that adolescents seem to be getting the message that cannabis is harmless, and trying to counteract that erroneous view is really important."

Particularly Potent Pot?

"As psychiatrists, we are all interested in psychosis, but we have to remember that psychosis only affects about 2% of the population, but we all have IQ," commented Robin MacGregor Murray, MD, DSc, professor of psychiatric research at the Institute of Psychiatry, Kings College, London, United Kingdom.



Dr. Robin Murray

"If these results are borne out in other studies, and if what we have heard from Madeleine is true, because you can't immediately presume that one study is predictive of all studies, but if the effect of cannabis on IQ is replicated, then that's a really big deal," Dr. Murray told *Medscape Medical News*.

He added that the cannabis in New Zealand is very strong and has been so for years, with a THC content of approximately 9%. "That might account for these results," he said.

Dr. Murray also noted that other studies have shown that it takes a long time for the effects of cannabis to "wash out," and he would also like to see research on how long it takes adults to regain their memory and other cognitive functions once they stop using the drug.

Dr. Meier and Dr. Murray report no relevant financial relationships.

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