NIDA review summarizes research on marijuana's negative health effects

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The current state of science on the adverse health effects of marijuana use links the drug to several significant adverse effects including addiction, a review reports. The article, published today in the *New England Journal of Medicine*, is authored by scientists from the National Institute on Drug Abuse (NIDA), part of the National Institutes of Health.

The review describes the science establishing that marijuana can be addictive and that this risk for addiction increases for daily or young users. It also offers insights into research on the gateway theory

indicating that marijuana use, similar to nicotine and alcohol use, may be associated with an increased vulnerability to other drugs.

The authors review literature showing that marijuana impairs driving, increasing the risk of being involved in a car accident, and that these risks are further enhanced when combining marijuana with alcohol. The authors also discuss the implications of rising marijuana potencies and note that because older studies are based on the effects of marijuana containing lower THC – the main psychoactive chemical found in marijuana – stronger adverse health effects may occur with today's more potent marijuana.

The reviewers consider areas in which little research has been conducted. This includes possible health consequences of secondhand marijuana smoke; the long-term impact of prenatal marijuana exposure; the therapeutic potential of the individual chemicals found in the marijuana plant; and effects of marijuana legalization policies on public health.

The scientists focus on marijuana's harmful effects on teens, an age group in which the brain rapidly develops, which is one factor that could help explain increased risks from marijuana use in this population. Research suggests that marijuana impairs critical thinking and memory functions during use and that these deficits persist for days after using. In addition, a long-term study showed that regular marijuana use in the early teen years lowers IQ into adulthood, even if users stopped smoking marijuana as adults.

The NIDA-supported 2013 Monitoring the Future Survey says that 6.5 percent of 12th graders report daily or near-daily marijuana use, with 60 percent not perceiving that regular marijuana use can be harmful. "It is important to alert the public that using marijuana in the teen years brings health, social, and academic risk," said lead author and NIDA Director

Dr. Nora D. Volkow. "Physicians in particular can play a role in conveying to families that early marijuana use can interfere with crucial social and developmental milestones and can impair cognitive development."

This review emphasizes that marijuana use is likely to increase as state and local policies move toward legalizing marijuana for medical or recreational purposes. As use increases, so might the number of people likely to suffer negative health consequences, the review says.

More information: For more information on marijuana and its health consequences, go to: www.drugabuse.gov/publications/drugfacts/marijuana .

Reference: Adverse Health Effects of Marijuana Use, by Nora D. Volkow, M.D., Ruben D. Baler, Ph.D., Wilson M. Compton, M.D., and Susan R.B. Weiss, Ph.D., published online June 4, 2014 in The *New England Journal of Medicine*.

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