

# Cannabis withdrawal symptoms common among adolescents treated for substance use disorder

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Although cannabis – commonly known as marijuana – is broadly believed to be nonaddictive, a study by Massachusetts General Hospital (MGH) investigators found that 40 percent of cannabis-using adolescents receiving outpatient treatment for substance use disorder reported experiencing symptoms of withdrawal, which are considered a hallmark of drug dependence. Study participants reporting withdrawal were more likely to meet criteria for severe substance use and for mood disorders, although the presence or absence of withdrawal did not appear to change long-term treatment outcomes. The report will be published in the *Journal of Addiction Medicine* and has been released online.

"Our results are timely given the changing attitudes and perceptions of

risk related to cannabis use in the U.S.," says John Kelly, PhD, of the Center for Addiction Medicine in the MGH Department of Psychiatry, senior author of the study. "As more people are able to obtain and consume cannabis legally for medical and, in some states, recreational use, people are less likely to perceive it as addictive or harmful. But research shows that cannabis use can have significant consequences, and we know that among adolescents it is second only to alcohol in rates of misuse."

While several previous studies have looked at the incidence of cannabis withdrawal in adolescents and its relationship to treatment outcomes, few have included follow-up periods longer than 30 days or examined the relationship of withdrawal to factors such as the severity and consequence of cannabis use and the presence of other [psychiatric symptoms](#). The current study enrolled 127 adolescents between ages 14 and 19 being treated at an outpatient substance use disorder clinic, 90 of whom indicated that cannabis was the substance they used most frequently.

Upon entering the study and at follow-up visits 3, 6 and 12 months later, [participants](#) received comprehensive assessments including interviews by study staff and completion of survey instruments analyzing factors related to substance use – including whether or not they thought they might have a problem with drug use – withdrawal symptoms, consequences in their lives attributable to substance use, and other psychiatric symptoms and diagnoses. Based on their answers, participants were divided into two groups – those who reported cannabis withdrawal symptoms such as anxiety, irritability, depression and difficulty sleeping and those who did not.

Of the 90 cannabis-using participants, 76 (84 percent) met criteria for [cannabis dependence](#) – which include increased tolerance and use of cannabis, unsuccessful efforts to reduce or stop using, and persistent use

in spite of medical and psychological problems made worse by cannabis. Withdrawal symptoms were reported by 36 participants (40 percent of the overall group), all of whom also met criteria for dependence. At the study's outset, substance use was likely to be more severe and consequences – such as missing work or school, financial and relationship problems – tended to be greater in participants reporting withdrawal symptoms, who also were more likely to have [mood disorders](#).

While the presence of withdrawal symptoms is a strong indicator of cannabis dependence, the authors note, it did not significantly impact the ability of participants to reduce their use of cannabis during the 12-month follow-up period. The factor that did appear to make a difference was whether or not an individual recognized having a problem with substance use upon entering the study. Participants who both reported withdrawal symptoms and recognized having a problem had a small but steady improvement in abstinence through the entire study period. Those who reported withdrawal symptoms but did not recognize a substance use problem had a slight increase in abstinence in the first 3 months, but then had some increase in cannabis use during the subsequent 9 months, a pattern that was also seen in participants not experiencing withdrawal.

"We hypothesize that participants who experience [withdrawal symptoms](#) but do not recognize having a substance use problem may not attribute those symptoms to cannabis withdrawal," says Claire Greene, MPH, corresponding author of the report. "Those who do acknowledge a substance-use problem may correctly attribute those symptoms to cannabis withdrawal, giving them even more motivation to change their substance use behavior." Formerly with the MGH Center for Addiction Medicine, Greene is now a doctoral candidate at the Johns Hopkins Bloomberg School of Public Health.

Kelly, the Spallin Associate Professor of Psychiatry in Addiction Medicine at Harvard Medical School, adds, "The importance of understanding the addictiveness, risks and harms associated with cannabis use is a major theme of this study's findings. Recognizing those risks is known to reduce the likelihood that someone will start to use drugs, and better understanding of the role of [substances](#) in the problems experienced by patients may help them cut down on future use.

"Unfortunately, the general trend in attitudes in the U.S. is to minimize the risks and not recognize the addictiveness of cannabis," he continues. "Further research is needed determine the impact of these changing public attitudes and investigate the benefits of programs that reduce these misconceptions, which could allow us to predict whether increased education and awareness could help reduce the onset of, and harm caused by, [cannabis](#) use disorders." The study was supported by National Institute of Alcohol Abuse and Alcoholism grant R01AA015526.

Provided by Massachusetts General Hospital

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