

Editorials

Counseling Parents and Adolescents About Marijuana

Seth D. Ammerman, MD, FAAP, FSAHM, DABAM

Department of Pediatrics, Division of Adolescent Medicine, Stanford University/Stanford Children's Health, Palo Alto, California

Marijuana (cannabis) is now legal for medical use in 29 states and Washington, DC, and for recreational use for adults 21 years and older in nine states and Washington, DC.¹ It is likely that more states will legalize marijuana for medical and recreational use because many U.S. adults approve of marijuana legalization.² Although it remains illegal for those younger than 21 years, recreational marijuana use among adolescents is common, with 5.4% of 8th graders, 14.0% of 10th graders, and 22.0% of 12th graders having used it at least once in the past 30 days.³ Marijuana is the second most-used substance for adolescents after alcohol.³ About one-half of U.S. adults have used marijuana at least once in their lives,⁴ with approximately 24 million Americans 12 years and older having used marijuana within the past month.⁵

Physicians are increasingly likely to be asked by adolescents or their parents whether recreational marijuana use is safe. Although many adults view marijuana as benign, there are major concerns about its use in adolescents because all illicit drug use, including marijuana, may have negative consequences.^{6,7} With ongoing legalization, adolescent use may increase because of perceptions of low or no harm, as well as the pervasive advertising and marketing of marijuana products.

Regular, heavy, or daily use of marijuana, and younger age at first use, can lead to adverse medical, mental health, psychosocial, and cognitive outcomes, likely due to abnormal changes in brain development. Brain maturation is not complete until the early to mid-20s; therefore, the risk of developing problem use is greater in younger adolescents. Regular use (10 to 19 times per month), heavy use (20 or more times per month), and daily use (currently 6% of 12th graders are daily users⁸) are associated with an increased risk of developing problem use or addiction,⁸ with related adverse outcomes, including the following: decreased reaction time and impaired motor coordination, leading to higher rates of serious and fatal motor vehicle crashes; poor school and work performance, with higher rates of school dropout; depression and anxiety; psychotic disorders, including schizophrenia in those with a predisposition; and cognitive impairments, such as short-term memory loss and possible IQ decline.⁸

Other than a positive family history of problem use or addiction, it is difficult to predict which adolescents who

try marijuana will progress to regular, heavy, or daily use. Evidence shows that marijuana is an addictive substance.⁹ Overall, 9% of those experimenting with marijuana will continue regular use,¹⁰ based on the *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed., criteria for dependence. This percentage increases to 17% among those who first use marijuana in adolescence and to 25% to 50% among adolescents who use marijuana daily.⁸ It should be noted that most adolescents addicted to marijuana do not have lifelong addiction because of a maturing-out phenomenon that is poorly understood. However, significant effects on cognitive and psychosocial function may occur during the period of dependency, which may last up to a decade. For this reason, early intervention strategies are key to preventing the development of problem marijuana use.

One important issue related to medical marijuana is lack of regulation by the U.S. Food and Drug Administration, making it difficult to verify purity; tetrahydrocannabinol (THC), cannabidiol (CBD), and other cannabinoid content; dosage; and adverse effects of the particular product, whether smoked, vaped, eaten, drunk, or used topically. The concentration of THC, the psychoactive substance in the marijuana plant, has grown considerably, from approximately 4% in 1995 to 12% in 2014, increasing the potential for adverse effects and addiction.¹¹

There are anecdotal reports of the successful use of medical marijuana for the treatment of a variety of health conditions in children and adolescents, including attention-deficit/hyperactivity disorder, anxiety and depression, intractable seizures, autism, anorexia, chronic pain, and postchemotherapy nausea and vomiting. However, there are no published randomized controlled studies on the use of medical marijuana in these populations.

Just as efforts have been made to discourage adolescents from smoking cigarettes and educational outreach has emphasized the highly addictive properties and significant adverse health effects of tobacco use, access to marijuana should be restricted and education about its hazards should be disseminated as evidence accrues. Counseling points for parents and adolescents are provided in an accompanying handout.¹² Additional information on marijuana from the American Academy of Pediatrics' Committee on Substance Use and Prevention is available at <https://www.aap.org/en-us/about-the-aap/Committees-Councils-Sections/substance-use/Pages/marijuana.aspx>.

Address correspondence to Seth D. Ammerman, MD, at sethamm@stanford.edu. Reprints are not available from the author.

Author disclosure: No relevant financial affiliations.

EDITORIALS

Patient information: A handout on this topic is available at <https://www.aafp.org/afp/2018/0715/p80-s1.html>.

References

1. Robinson M, Berke J, Gould S. This map shows every state that has legalized marijuana. Business Insider. April 20, 2018. <http://www.businessinsider.com/legal-marijuana-states-2018-1>. Accessed May 9, 2018.
2. Geiger A. About six-in-ten Americans support marijuana legalization. Pew Research Center. January 5, 2018. <http://www.pewresearch.org/fact-tank/2018/01/05/americans-support-marijuana-legalization/>. Accessed May 9, 2018.
3. Monitoring the Future. <http://www.monitoringthefuture.org>. Accessed October 9, 2017.
4. Pappas S. More than half of American adults have tried pot. Live Science. April 17, 2017. <https://www.livescience.com/58716-most-american-adults-have-tried-pot.html>. Accessed May 9, 2018.
5. Substance Abuse and Mental Health Administration. Key substance use and mental health indicators in the United States: results from the 2016 National Survey on Drug Use and Health. HHS publication no. SMA 17-5044, NSDUH series HH-52. Rockville, Md.: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. 2017. <https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR1-2016/NSDUH-FFR1-2016.htm#illicit2>. Accessed May 9, 2018.
6. Ammerman S, Tau G. Weeding out the truth: adolescents and cannabis. *J Addict Med*. 2016;10(2):75-82.
7. Schweinsburg AD, Brown SA, Tapert SF. The influence of marijuana use on neurocognitive functioning in adolescents. *Curr Drug Abuse Rev*. 2008;1(1):99-111.
8. Banyas P, Cermak T. Epidemiology of adolescent marijuana use and its impact on cognition and education. Revised April 25, 2015. <https://www.safeandmartpolicy.org/wp-content/uploads/2015/05/Epidemiology-authored-and-submitted-by-T-Cermak-MD-and-P-Banyas-MD-MSc-in....pdf>. Accessed May 9, 2018.
9. Richter L, Pugh BS, Ball SA. Assessing the risk of marijuana use disorder among adolescents and adults who use marijuana. *Am J Drug Alcohol Abuse*. 2017;43(3):247-260.
10. Volkow ND, Baler RD, Compton WM, Weiss SR. Adverse health effects of marijuana use. *N Engl J Med*. 2014;370(23):2219-2227.
11. ElSohly MA, Mehmedic Z, Foster S, Gon C, Chandra S, Church JC. Changes in cannabis potency over the last 2 decades (1995-2014): analysis of current data in the United States. *Biol Psychiatry*. 2016;79(7):613-619.
12. Ryan SA, Ammerman SD; AAP Committee on Substance Use and Prevention. Counseling parents and teens about marijuana use in the era of legalization of marijuana. *Pediatrics*. 2017;139(3):e20164069. ■

Satisfy Your ABFM Requirements and earn 107 CME credits—all in one program

PerformanceNavigator[®]

YOUR GUIDE TO FAMILY MEDICINE CERTIFICATION

Satisfy your Family Medicine Certification's Performance Improvement and Self-Assessment activities—all in one program. Earn up to 107.75 AAFP Prescribed credits when you complete the live workshop and corresponding activities. Improve care among your patient panel with cardiometabolic conditions: diabetes, hypertension, and dyslipidemia.

STEP 1: Assess your practice (course prep).

STEP 2: Attend three-day collaborative workshop.

STEP 3: Reassess your practice.

Register now.

