

discontinue their use should be counseled regarding the potential risk associated with high THC strains of cannabis and monitored closely for the development or exacerbation of psychotic symptoms.⁷

References

1. Center for Behavioral Health Statistics and Quality. Results from the 2015 National Survey on Drug Use and Health: Detailed Tables. Rockville (MD): SAMHSA; 2016. <https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015.pdf>
2. Hasin DS, Saha TD, Kerridge BT et al. Prevalence of marijuana use disorders in the United States between 2001-2002 and 2012-2013. *JAMA Psychiatry* 2015;72(12):1235-42.
3. Gruzca RA, Agrawal A, Bierut LJ. NESARC Findings on Increased Prevalence of Marijuana Use Disorders—Reply: Consistent With Other Sources of Information. *JAMA Psychiatry* 2016;73(5):532-3.
4. Compton WM, Han B, Jones CM et al. Marijuana use and use disorders in adults in the USA, 2002–14: analysis of annual cross-sectional surveys. *The Lancet Psychiatry* 2016;3(10):954-64.
5. State Marijuana Laws in 2017 Map. *Governing* [online magazine] <http://www.governing.com/gov-data/state-marijuana-laws-map-medical-recreational.html>
6. Reinerman C, Nunberg H, Lanthier F, Heddleston T. Who are medical marijuana patients? Population characteristics from nine California assessment clinics. *Journal of Psychoactive Drugs* 2011;43(2):128-35.
7. Walsh Z, Gonzalez R, Crosby K et al. Medical cannabis and mental health: A guided systematic review. *Clinical Psychology Review* 2017;51:15-29.
8. Radhakrishnan R, Wilkinson ST, D'Souza DC. Gone to pot—a review of the association between cannabis and psychosis. *Frontiers in Psychiatry* 2014;5(54):1-24.
9. ElSohly MA, Mehmedic Z, Foster S et al. Changes in cannabis potency over the last 2 decades (1995–2014): analysis of current data in the United States. *Biological Psychiatry* 2016;79(7):613-9.
10. Pacher P, Bátkai S, Kunos G. The endocannabinoid system as an emerging target of pharmacotherapy. *Pharmacological Reviews* 2006;58(3):389-462.
11. Volkow ND, Hampson AJ, Baler RD. Don't Worry, Be Happy: Endocannabinoids and Cannabis at the Intersection of Stress and Reward. *Annual Review of Pharmacology and Toxicology* 2017;57:285-308.
12. Russo E, Guy GW. A tale of two cannabinoids: the therapeutic rationale for combining tetrahydrocannabinol and cannabidiol. *Medical Hypotheses* 2006;66(2):234-46.
13. Russo EB. Cannabidiol Claims and Misconceptions. *Trends in Pharmacological Sciences*. 2017;38(3):198-201.
14. NIDA's Role in Providing Marijuana for Research. <https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research>.
15. Marijuana Plant Material Available from the NIDA Drug Supply Program <https://www.drugabuse.gov/researchers/research-resources/nida-drug-supply-program-dsp/marijuana-plant-material-available-nida-drug-supply-program>
16. Atkinson DL. Marijuana's effects on the mind. In: Compton M, editor. *Marijuana and mental health*. Arlington (VA): American Psychiatric Association Publishing, 2016. p. 11-37.
17. Bromberg W. Marijuana: A psychiatric study. *Journal of the American Medical Association* 1939;113(1):4-12.
18. Van Winkel R, Kuepper R. Epidemiological, neurobiological, and genetic clues to the mechanisms linking cannabis use to risk for nonaffective psychosis. *Annual Review of Clinical Psychology* 2014;10:767-91.
19. Volkow ND, Swanson JM, Evins AE et al. Effects of cannabis use on human behavior, including cognition, motivation, and psychosis: a review. *JAMA Psychiatry* 2016;73(3):292-7.
20. D'Souza DC, Perry E, MacDougall L et al. The psychotomimetic effects of intravenous delta-9-tetrahydrocannabinol in healthy individuals: implications for psychosis. *Neuropsychopharmacology* 2004;29(8):1558-72.
21. Fusar-Poli P, Crippa JA, Bhattacharyya S et al. Distinct effects of Δ9-tetrahydrocannabinol and cannabidiol on neural activation during emotional processing. *Archives of General Psychiatry* 2009;66(1):95-105.
22. Bhattacharyya S, Morrison PD, Fusar-Poli P et al. Opposite effects of Δ-9-tetrahydrocannabinol and cannabidiol on human brain function and psychopathology. *Neuropsychopharmacology* 2010;35(3):764-74.
23. Englund A, Morrison PD, Nottage J et al. Cannabidiol inhibits THC-elicited paranoid symptoms and hippocampal-dependent memory impairment. *Journal of Psychopharmacology* 2013;27(1):19-27.
24. Peters BD, de Koning P, Dingemans P et al. Subjective effects of cannabis before the first psychotic episode. *Australian & New Zealand Journal of Psychiatry* 2009;43(12):1155-62.
25. Bersani G, Orlandi V, Kotzalidis GD, Pancheri P. Cannabis and schizophrenia: impact on onset, course, psychopathology and outcomes. *European Archives of Psychiatry and Clinical Neuroscience*. 2002;252(2):86-92.
26. Compton MT, Furman AC, Kaslow NJ. Lower negative symptom scores among cannabis-dependent patients with schizophrenia-spectrum disorders: preliminary evidence from an African American first-episode sample. *Schizophrenia Research* 2004;71(1):61-4.
27. Schofield D, Tennant C, Nash L et al. Reasons for cannabis use in psychosis. *Australian and New Zealand Journal of Psychiatry* 2006;40(6-7):570-4.
28. Zammit S, Moore TH, Lingford-Hughes A et al. Effects of cannabis use on outcomes of psychotic disorders: systematic review. *The British Journal of Psychiatry* 2008;193(5):357-63.
29. Green BO, Young R, Kavanagh D. Cannabis use and misuse prevalence among people with psychosis. *The British Journal of Psychiatry* 2005;187(4):306-13.
30. Ringen PA, Lagerberg TV, Birkenaes AB et al. Differences in prevalence and patterns of substance use in schizophrenia and bipolar disorder. *Psychological Medicine* 2008;38(9):1241-9.
31. Koskinen J, Löhhönen J, Koponen H et al. Rate of cannabis use disorders in clinical samples of patients with schizophrenia: a meta-analysis. *Schizophrenia Bulletin* 2009;36(6):1115-30.
32. Hasin DS, Kerridge BT, Saha TD et al. Prevalence and correlates of DSM-5 cannabis use disorder, 2012-2013: findings from the National Epidemiologic Survey on Alcohol and Related Conditions—III. *American Journal of Psychiatry* 2016;173(6):588-99.

33. Hjorthøj C, Fohlmann A, Nordentoft M. Treatment of cannabis use disorders in people with schizophrenia spectrum disorders—a systematic review. *Addictive Behaviors* 2009;34(6):520-5.

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