

# Marijuana and Opioids

May 2018



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**Recent research on opioid use in states with medical marijuana laws suggests that legal access to marijuana can lead to a decrease in prescription opioid use, as well as reductions in opioid-related harms, including opioid overdose deaths.**

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## Medical Marijuana Today

Twenty-nine states and the District of Columbia have passed laws since 1996 legalizing the use of medical marijuana for qualifying patients under state law. While state medical marijuana programs differ from one another in significant ways, most allow medical marijuana for the treatment of severe, intractable pain. Opioids remain the most commonly prescribed medicine to treat severe, chronic pain and are an important tool in the medical arsenal. However, many people do not want to take opioids given the side effects and risks associated with their use. Marijuana, effective in treating certain kinds of pain, affords new options.

## Safety and Efficacy of Medical Marijuana

Marijuana's medical safety and efficacy is well supported – particularly for the treatment of various types of severe and chronic pain.<sup>i</sup>

In its comprehensive 2017 study of recent research on the health effects of marijuana for medical and adult use, the National Academies of Sciences, Engineering and Medicine affirmed that there is conclusive evidence that cannabis is effective for the treatment for chronic pain in adults.<sup>ii</sup>

In a landmark study, the University of California's Center for Medicinal Cannabis Research released a report of its findings after a decade of randomized, double-blind, placebo-controlled clinical trials on the

medical utility of inhaled marijuana. The studies concluded that marijuana should be a "first line treatment" for patients with painful neuropathy and other serious and debilitating symptoms, who often do not respond to other available medications.<sup>iii</sup>

Another trial assessed the use of marijuana as a treatment for patients suffering from multiple sclerosis. That study determined that "smoked marijuana was superior to placebo in reducing spasticity and pain in patients with MS, and provided some benefit beyond currently prescribed treatments."<sup>iv</sup>

A literature review of 38 studies evaluating medical marijuana's efficacy for treating pain found that "71 percent concluded that cannabinoids had empirically demonstrable and statistically significant pain relieving effects, whereas 29 percent did not." The review found that marijuana may be helpful for difficult-to-treat conditions such as HIV-related neuropathy – and, that for some conditions, marijuana was the only treatment that provided relief. A 2015 meta-analysis of 79 studies found a 30 percent or greater reduction of pain with the use of cannabinoids compared to placebos.<sup>v</sup> A third authoritative review article summarizing the state of the research found that smoked marijuana reduces symptoms of chronic neuropathic pain, spasticity associated with multiple sclerosis, and other conditions – and does so with an acceptable safety profile.

Despite the growing evidence, many doctors are still wary of recommending marijuana as an alternative to prescription opioids. It is recommended that doctors be allowed to weigh the benefits against risks of medical marijuana therapy – just as they do with any other medicine.

## **Opioid Overdose in the United States**

Overdose deaths are now the leading cause of accidental death in the United States, exceeding even motor vehicle accidents. In 2016, there were 42,000 overdose deaths involving opioids in the United States – 115 people per day.<sup>vi</sup>

The United States uses a disproportionate amount of the world's opioid supply. For example, the U.S. has nearly 20% of the world's population but ingests 99% of the world's hydrocodone.<sup>vii</sup> Research has suggested that some patients are looking to marijuana as a safer alternative.<sup>viii</sup>

## **Medical Marijuana and Prescription Opioids**

Not only is medical marijuana effective for treating chronic and intractable pain, but inhaled marijuana has also been found to complement prescription opioid pain medicines, enhancing the efficacy of (and safely interacting with) these more powerful medications and easing withdrawal symptoms.

Used in combination with opioid pain medications, marijuana can lower opioid side effects, cravings and the severity of withdrawal symptoms, all while enhancing the analgesic effects of opioids, allowing for lower doses and less risk of overdose.<sup>ix,x</sup> An important study reported that their subjects' pain "was significantly decreased after the addition of vaporized marijuana," and suggested that marijuana treatment "may allow for opioid treatment at lower doses with fewer [patient] side effects." The authors concluded that their results "demonstrate that inhaled marijuana safely augments the analgesic effects of opioids."<sup>xi</sup> Research published last year found 80 percent of medical marijuana patients reported substituting marijuana for prescribed medications, particularly among patients with pain-related conditions.<sup>xii</sup>

Elected officials, including Senator Elizabeth Warren<sup>xiii</sup> and Congressman Earl Blumenauer<sup>xiv</sup>, have recently expressed their support for the use of medical marijuana to treat chronic pain as a way to help address the opioid crisis. Given medical marijuana's pain-relieving benefits, it presents a promising solution to reducing the morbidity and mortality associated with prescription opioid use in the United States.

## **The Relationship Between Marijuana Legalization and Opioid-Related Harm**

An increasing body of research suggests that legal access to marijuana can help to address a number of harms associated with opioids.<sup>xv</sup> In fact, there are signs across the country that this is already happening – access to legal marijuana has been correlated with reductions in some of the most troubling harms associated with opioids, including opioid overdose mortality and untreated opioid use disorders.

Over the past several years, studies have revealed a correlation between state marijuana laws and lower rates of opioid overdose mortality, both in states with access to medical<sup>xvi</sup> and adult use<sup>xvii</sup> marijuana. Two studies published in 2018 compared opioid prescription patterns in states which have medical marijuana laws to states which do not. They found that states with medical marijuana laws experience significant reductions in the use of prescription opioids.<sup>xviii</sup> One of the studies found that states with medical marijuana dispensaries saw 3.7 million fewer daily doses of prescription opioids and states which allowed for home cultivation of marijuana saw 1.7 million fewer daily doses.

In states with medical marijuana access, it appears that overdose mortality rates are almost 25 percent lower than in states with no legal access to marijuana, and the reductions in mortality rates strengthened over time.<sup>xix</sup> An analysis of opioid overdose mortality in Colorado including the years prior to and following the legalization of marijuana found that there was a post-legalization reduction of 0.7 deaths per month in the state and that the decades-long upward trend of overdoses trended downwards after 2014.<sup>xx</sup>

In addition, legal access to medical marijuana has been associated with a 23 percent reduction in opioid dependence or abuse-related hospitalizations<sup>xxi</sup> and 15 percent fewer opioid treatment admissions.<sup>xxii</sup> Researchers hypothesize that these trends suggest a substitution effect, meaning people with opioid use disorders or those who engage in risky opioid use may have chosen to use legally accessible marijuana in place of illicitly acquired opioids or other drugs. Several studies demonstrate that people who use medical marijuana find that it is a lower-risk alternative to opioids, has fewer harmful side effects, helps

manage pain symptoms, lowers likelihood of withdrawal, and is easier to access.<sup>xxiii</sup>

The efficacy of marijuana for treating chronic pain is becoming increasingly recognized and established.<sup>xxiv</sup> Studies are finding that some patients transition away from opioids through marijuana use, or supplement marijuana so that they can use fewer opioids.<sup>xxv</sup> A study of chronic pain patients found that using medical marijuana was ultimately associated with a 64 percent reduction in prescription opioid use among members of the sample.<sup>xxvi</sup> Another found a 44 percent reduction in prescription opioid use after using medical marijuana for chronic pain.<sup>xxvii</sup>

Given that 98 percent of Americans already live in states with some form of legal access to marijuana<sup>xxviii</sup> – 21 percent with both medical and adult use access, 41 percent with medical access only, and 35.4 percent with access to low-THC or limited CBD formulations – researchers are well-positioned to evaluate how marijuana may fit into a broader strategy for addressing rising rates of opioid overdose deaths. Since medical marijuana policies vary widely from state-to-state, (i.e. approved number of conditions, acceptable forms for use, etc.), it is likely that broader marijuana legalization may open up access for people to use marijuana as a substitute beyond the limits of their state’s medical marijuana policies.

### Policy Implications

There are several policy changes at the state and federal level that can support safe access to marijuana in conjunction with opioids. First, states with medical marijuana laws can ensure that opioid dependence is a qualifying condition for becoming a patient. This would allow doctors to recommend marijuana for patients who are or are at risk of becoming dependent on opioids. Secondly, the Schedule I status of marijuana should be lifted so that more rigorous research can be done and doctors can more freely learn about and recommend marijuana for their pain patients. Finally, marijuana should be considered as a viable treatment alternative for pain by insurance companies and should be utilized in substance dependence treatment to assist those experiencing withdrawals from opioids.

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<sup>ii</sup> “The Health Effects of Cannabis and Cannabinoids: Committee’s Conclusions,” National Academies of Sciences, Engineering and Medicine, January 12, 2017, <http://nationalacademies.org/hmd/-/media/Files/Report%20Files/2017/Cannabis-Health-Effects/Cannabis-conclusions.pdf>

<sup>iii</sup> Center for Medicinal Cannabis Research University of California, “Center for Medicinal Cannabis Research, Report to the Legislature and Governor of the State of California presenting findings pursuant to SB847 which created CMCR and provided state funding,” [https://www.cmcrc.ucsd.edu/images/PDFs/CMCR\\_REPORT\\_FEB17.pdf](https://www.cmcrc.ucsd.edu/images/PDFs/CMCR_REPORT_FEB17.pdf)

<sup>iv</sup> Jody Corey-Bloom et al., “Smoked Marijuana for Spasticity in Multiple Sclerosis: A Randomized, Placebo-Controlled Trial,” *Canadian Medical Association Journal* 184, no. 10 (2012).

<sup>v</sup> Whiting, P. F., Wolff, R. F., Deshpande, S., Di Nisio, M., Duffy, S., Hernandez, A. V., & Schmidtkofer, S. (2015). Cannabinoids for medical use: a systematic review and meta-analysis. *Jama*, 313(24), 2456-2473.

<sup>vi</sup> Centers for Disease Control and Prevention, “Opioid Overdose,” <https://www.cdc.gov/drugoverdose/index.html>

<sup>vii</sup> Centers for Disease Control and Prevention, “Injury Prevention and Control: Opioid Overdose”. Available at: <http://www.cdc.gov/drugoverdose/data/overdose.html>

<sup>viii</sup> Harm Reduction Journal, “Cannabis as a substitute for other drugs”. Available at: <https://harmreductionjournal.biomedcentral.com/articles/10.1186/1477-7517-6-35>

<sup>ix</sup> Degenhardt, L., Lintzeris, N., Campbell, G., Bruno, R., Cohen, M., Farrell, M., & Hall, W. D. (2015). Experience of adjunctive marijuana use for chronic non-cancer pain: Findings from the Pain and Opioids IN Treatment (POINT) study. *Drug and alcohol dependence*, 147, 144-150.

<sup>x</sup> Haroutounian, S., Ratz, Y., Ginosar, Y., Furmanov, K., Saifi, F., Meidan, R., & Davidson, E. (2016). The Effect of Medicinal Marijuana on Pain and Quality of Life Outcomes in Chronic Pain: A Prospective Open-label Study. *The Clinical Journal of Pain*.

<sup>xi</sup> D I Abrams, et al. "Cannabinoid-Opioid interaction in chronic pain," *Clinical Pharmacology & Therapeutics* (2011); 90 6, 844–851.

<sup>xii</sup> Lucas, P., Walsh, Z., Crosby, K., Callaway, R., Belle-Isle, L., Kay, R., & Holtzman, S. (2015). Substituting marijuana for prescription drugs, alcohol and other substances among medical marijuana patients: The impact of contextual factors. *Drug and Alcohol Review*.

<sup>xiii</sup> Warren, Elizabeth. Letter to CDC re Opioid Epidemic Research. Available at: [http://www.warren.senate.gov/files/documents/2016-2-8\\_Letter\\_to\\_CDC\\_re\\_opioid\\_epidemic%20research.pdf](http://www.warren.senate.gov/files/documents/2016-2-8_Letter_to_CDC_re_opioid_epidemic%20research.pdf); Accessed: 3/1/2016

<sup>xiv</sup> C-SPAN. (2016, February 24). Blumenauer on Opioid Abuse Epidemic. [Video File]. Retrieved from: <http://www.c-span.org/video/?c4582196/blumenauer-opioid-abuse-epidemic>

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<sup>xv</sup> Phillippe Lucas, "Rationale for cannabis-based interventions in the opioid overdose crisis," *Harm Reduction Journal*, 14, 58 (August 2017), <https://doi.org/10.1186/s12954-017-0183-9>.

<sup>xvi</sup> Marcus A. Bachhuber et al., "Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010," *JAMA Internal Medicine*, 174, 10, (2014): 1668-1673; David Powell, Rosalie Liccardo Pacula, and Mireilla Jacobson, "Do Medical Marijuana Laws Reduce Addictions and Deaths Related to Pain Killers?," National Bureau of Economic Research, November 2015, <https://doi.org/10.3386/w21345>; Rhet Smith, "The Effects of Medical Marijuana Dispensaries on Adverse Opioid Outcomes," *Social Science Research Network*, (August 3, 2017), , retrieved from <https://papers.ssrn.com/abstract=3012381>.

<sup>xvii</sup> M. D. Livingston et al., "Recreational cannabis legalization and opioid-related deaths in Colorado, 2000-2015," *American Journal of Public Health*, 107, No. 11 (November 2017): 1827-1829.

<sup>xviii</sup> Hefei Wen and Jason M. Hockenberry, "Association of Medical and Adult-Use Marijuana Laws With Opioid Prescribing for Medicaid Enrollees," *JAMA Internal Medicine*, (April 2, 2018), doi:10.1001/jamainternmed.2018.1007; Ashley C. Bradford et al., "Association Between US State Medical Cannabis Laws and Opioid Prescribing in the Medicare Part D Population," *JAMA Internal Medicine*, (April 2, 2018), doi:10.1001/jamainternmed.2018.0266

<sup>xix</sup> Marcus A. Bachhuber et al., "Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010," *JAMA Internal Medicine*, 174, 10, (2014): 1668-1673.

<sup>xx</sup> M. D. Livingston et al., "Recreational cannabis legalization and opioid-related deaths in Colorado, 2000-2015," *American Journal of Public Health*, 107, No. 11 (November 2017):

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<sup>xxiii</sup> Amanda Reiman, "Cannabis as a substitute for alcohol and other drugs," *Harm Reduction Journal*, 6, 35 (September 28, 2009): <https://doi.org/10.1186/1477-7517-6-35>; Philippe Lucas et al., "Cannabis as a substitute for alcohol and other drugs: A dispensary-based survey of substitution effect in Canadian medical cannabis patients," *Addiction Research & Theory*, 21, No.5 (November 20, 2012): 435–442, <https://doi.org/10.3109/16066359.2012.733465>.

<sup>xxiv</sup> S. K. Aggarwal, "Cannabinergic pain medicine: a concise clinical primer and survey of randomized-controlled trial results," *The Clinical Journal of Pain*, 29, 2, (February 29, 2013): 162–171; "The Health Effects of Cannabis and Cannabinoids: Current State of Evidence and

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<sup>xxviii</sup> Nathan Kasai and Sarah Trumble, "America's marijuana evolution," *Third Way*, August 24, 2017, <http://www.thirdway.org/report/americas-marijuana-evolution>