



California NORML Research Report – October, 2019

STUDIES SHOW MEDICAL CANNABIS REDUCES OPIOID HARM

A mounting body of scientific research shows that medical cannabis is an effective harm-reduction substitute for opioids for chronic pain patients. The following studies all found significant reductions in opioid use and/or fatalities in patients with access to medical cannabis.

Substitution of Marijuana for Opioids in a National Survey of US Adults:
(Julie Ishida et al, *PLOS One* Oct 4, 2019).

Survey of 486 respondents using marijuana with opioids finds 41% report decrease or cessation of opioid use.

The Effect of Cannabis Laws on Opioid Use (J. Flexner, L. Stolzenberg, S. D'Alessio, *International Journal of Drug Policy* 74: 152-9 Sep-Dec 2019)

Analysis of data from National Survey on Drug Abuse and Health finds evidence medical marijuana laws may be effective reducing opioid reliance.

Medical Cannabis: Effects on Opioid and Benzodiazepine Requirements for Pain Control (O'Connell et al, *Ann Pharmacother.* 2019 Nov 53(11):1081-6

6-month retrospective study of 77 intractable pain patients finds significant decrease in use of morphine, but not benzodiazepine, with cannabis.

Effects of Marijuana Legalization and Dispensing On Opioid Mortality
(Nathan Chan, Jesse Burkhardt, Matthew Flyr, *Economic Inquiry* 6 Aug 2019)

Econometric analysis finds state recreational marijuana laws associated with reduced annual opioid mortality of 20-35%, esp. strong in case of synthetic opioids.

Effects of Medical Marijuana Dispensaries on Adverse Opioid Outcomes
(Rhet Smith, *Economic Inquiry* 16 Jul 2019)

County-level RX opioid-related fatalities decline 11% following opening of medical marijuana dispensaries.

Use of Cannabis to Relieve Pain and Promote Sleep by Customers at an Adult Use Dispensary (Marcus Bachhuber, Julia Arnsten & Glenn Wurm, *Journal of Psychoactive Drugs* 2 Jul 2019).

In a survey of 1,000 adult-use only Colorado dispensary customers, 65% use cannabis to treat chronic pain, 80% of whom find it "extremely helpful," 88% of

whom report stopping or reducing use of opioids.

Medical Cannabis Legalization and Opioid Prescriptions: Evidence on US Medicaid Enrollees during 1993-2014 (Di Liang, Yuhua Bao, Mark Wallace, Igor Grant, Yuyan Shi, *Addiction* 10 July 2018).

Medical cannabis legalization associated with a 29.6% reduction in related Medicaid spending for Schedule III (not II) opioid prescriptions.

Association of Medical and Adult-Use Marijuana Laws With Opioid Prescribing for Medicaid Enrollees (Hafei Wen, Jason Hockenberry, *JAMA Intern Med.* May 2018)

All-capture Medicaid data for 2011-2016 show medical and adult use marijuana laws associated with 5.88% and 6.38% lower opioid RX rates.

<https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2676999>

Intractable Pain Patients in the Minnesota Medical Cannabis Program: Experience of Enrollees During the First Five Months (Minnesota Dept of Health, 2018).

63% of 2,245 intractable pain patients in the state's medical cannabis program were able to reduce or eliminate opioid usage six months after enrolling.

Cannabis Use Associated with Lower Odds of RX Opioid Use Among HIV-Infected Individuals with Chronic Pain, (Nancy Sohler et al. *Journal of Substance Use & Abuse*, 17 Jan 2018)

In multivariate analyses of 505 HIV patients, cannabis use was significantly associated with lower odds of prescribed opioid analgesic use.

Medical Marijuana Laws May Be Associated With A Decline In The Number Of Prescriptions For Medicaid Enrollees (Bradford & Bradford, *Health Affairs*, Apr 2017):

Medicaid prescription drug costs were lower in states with medical marijuana laws in five of nine clinical areas, including pain. Est. cost savings > \$1 billion.

<http://content.healthaffairs.org/content/early/2017/04/13/hlthaff.2016.1135>

Associations between medical cannabis and prescription opioid use in chronic pain patients: A preliminary cohort study (Vigil, Stith, Adams and Reeves, *Plos One* Nov 16, 2017: <https://doi.org/10.1371/journal.pone.0187795>)

37 chronic back pain patients in N.M. medical cannabis program showed higher odds of ceasing and reducing opioid use than 29 non-cannabis opioid users.

Effects of Legal Access to Cannabis on Scheduled II-V Drug Prescriptions (S. Stith et al, *JAMDA*, Society for Post-Acute and Long-Term Care Medicine 2017):

Study of 83 chronic pain patients in New Mexico medical cannabis program found 34% quit prescription pharmaceuticals after 10 months.

Substitution of medical cannabis for pharmaceutical agents for pain, anxiety,

and sleep. (Piper et al, *J. Psychopharmacol*, 1 Mar 2017):

Survey of 1,513 New England dispensary members reported 76.7% reduced use of opiates starting use of medical cannabis

<https://www.ncbi.nlm.nih.gov/pubmed/28372506>

Recreational Cannabis Legalization and Opioid-Related Deaths in Colorado 2000-2015 (Livingston et al, *Am J Public Health* Nov. 2017: 127-9):

Colorado's legalization resulted in a 0.7 deaths per month decrease in opioid deaths, reversing a prior upward trend.

Cannabis as a Substitute for Opioid-Based Pain Medication: Patient Self-Report. (Amanda Reiman et al, *Cannabis and Cannabinoid Research* Vol 2.1 2017)

A survey of 2897 medical cannabis patients found 34% used opioids, 97% of whom "strongly agreed/agreed" that cannabis reduced their opioid consumption.

<http://online.liebertpub.com/doi/pdfplus/10.1089/can.2017.0012>

Medical Marijuana Policies and Hospitalizations Related to Marijuana and Opioid Pain Reliever (Y Shi, *Drug Alcohol Depend.* Apr 2017)

Medical marijuana legalization associated with reductions of 23% in hospitalizations due to opioid dependence and 13% due to overdose.

<https://www.ncbi.nlm.nih.gov/pubmed/28259087>

Association Between US State Medical Cannabis Laws and Opioid Prescribing in the Medicare Part D Population (Ashley Bradford, W. David Bradford and Amanda Abraham, *JAMA Intern Med.* May 2018)

Medicare Part D opioid RXs decreased 2.11 million daily doses/year from average 23.08 when states institute medical cannabis laws and 3.742 million doses when dispensaries opened.

<https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2676999>

Medical Marijuana Laws Reduce Prescription Medication Use In Medicare Part D (Bradford & Bradford, *Health Affairs* Apr 2017)

National overall reductions in Medicare program and enrollee spending in states with medical marijuana laws estimated to be \$165.2 million per year in 2013.

<http://content.healthaffairs.org/content/35/7/1230.abstract>

Cannabis as a substitute for prescription drugs – a cross-sectional study (Corroon, Mischley, Sexton, *J of Pain Research*, Mar 2017)

46% of 2,774 cannabis users reported using it as a substitute for RX drugs, the most common being narcotics/opioids (35.8%).

<https://www.dovepress.com/cannabis-as-a-substitute-for-prescription-drugs-ndash-a-cross-sectiona-peer-reviewed-article-JPR>

Cannabis and intractable chronic pain: an explorative retrospective analysis of Italian cohort of 614 patients (Fanelli et al. *J of Pain Research* May 2017)

"Even with the heterogeneity of the sample size and limited data available... the treatment seems to be effective and safe in the majority of patients"

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5449133/>

Patient perceptions of the use of medical marijuana in the treatment of pain following musculoskeletal trauma. A survey of patients at two trauma centers in Massachusetts. (Heng M et al, *Journal of Orthopaedic Trauma* Aug 18, 2017)

90% of patients using marijuana to treat musculoskeletal trauma thought it reduced pain symptoms; 81% said it reduced their use of opioid pain medication.
http://journals.lww.com/jorthotrauma/Abstract/publishahead/Patient_perceptions_of_the_use_of_medical.98730.aspx

Do Medical Marijuana Laws Reduce Addictions and Deaths Related to Pain Killers? (Powell, Pacula, Jacobson, NBER Working Paper Jul 2015)

States permitting medical marijuana dispensaries experience a relative decrease in both opioid addictions and opioid overdose deaths compared to states that do not.
<http://www.nber.org/papers/w21345>

Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010 (Bachhuber et al, *JAMA Intern Med.* Oct 2014)

Conclusion: Medical cannabis laws are associated with significantly lower state-level opioid overdose mortality.
<http://archinte.jamanetwork.com/article.aspx?articleid=1898878>

Cannabis Use Is Associated With Decreased Opiate Medication Use in a Retrospective Cross-Sectional Survey of Patients With Chronic Pain (Boehnke, Litinas, Clauw, *J. Pain* Jun 2016.)

Survey of 244 chronic pain patients found medical cannabis use associated with a 64% decrease in opioid use, decreased number and side effects of medications, and an improved quality of life.
<http://www.ncbi.nlm.nih.gov/pubmed/27001005>

Splendor in the Grass? A Pilot Study Assessing the Impact of Medical Marijuana (Gruber et al, *Front Pharmacol*, Oct 2016)

Study of 24 medical cannabis patients found notable decrease in use of conventional pharmaceutical agents, with opiate use declining more than 42%
<https://www.ncbi.nlm.nih.gov/pubmed/27790138>

The Effect of Medicinal Cannabis on Pain and Quality of Life Outcomes in Chronic Pain: A Prospective Open-label Study (Haroutounian et al, *Clin J Pain*, Dec 2016)

The treatment of chronic pain with medicinal cannabis in 176 patients resulted in improved pain and functional outcomes, and a significant reduction in opioid use.
<http://www.ncbi.nlm.nih.gov/pubmed/26889611>

NIDA: “Is marijuana safe and effective as medicine?”
<https://www.drugabuse.gov/publications/marijuana/marijuana-safe-effective-medicine>

Existing studies “cumulatively suggest that medical marijuana products may

have a role in reducing the use of opioids needed to control pain.”

Among veterans, opioid prescription requests down in step with rise in medical pot (Vancouver *Globe and Mail*, Jun 7, 2016)

Fewer Canadian veterans have sought prescription opioids and tranquilizers in recent years while prescriptions for medical marijuana have skyrocketed.

<http://www.theglobeandmail.com/news/national/among-veterans-opioid-prescription-requests-down-in-step-with-rise-in-medical-pot/article30285591/>

Other reports about medical cannabis as an effective tool against opiate abuse.

The opioid crisis in America’s workforce

<http://www.castlighthealth.com/typ/the-opioid-crisis/>

Could Pot Help Solve the U.S. Opioid Epidemic?

<http://www.sciencemag.org/news/2016/11/could-pot-help-solve-us-opioid-epidemic>

Cannabidiol: Swinging the Marijuana Pendulum from ‘Weed’ to Medication to Treat the Opioid Epidemic

[http://www.cell.com/trends/neurosciences/fulltext/S0166-2236\(17\)30001-2](http://www.cell.com/trends/neurosciences/fulltext/S0166-2236(17)30001-2)

Substituting cannabis for prescription drugs, alcohol and other substances among medical cannabis patients: The impact of contextual factors

<http://onlinelibrary.wiley.com/doi/10.1111/dar.12323/abstract>

Medical Cannabis in Arizona: Patient Characteristics, Perceptions, and Impressions of Medical Cannabis Legalization

<http://www.ncbi.nlm.nih.gov/pubmed/26317379>

Profiles of medicinal cannabis patients attending compassion centers in Rhode Island

<http://www.ncbi.nlm.nih.gov/pubmed/25715068>

Who are medical marijuana patients? Population characteristics from nine California assessment clinics

<http://www.ncbi.nlm.nih.gov/pubmed/21858958>

Patients Are Ditching Opioid Pills for Weed

<https://www.theatlantic.com/health/archive/2017/02/marijuana-cannabinoids-opioids/515358/>

Compiled by: Dale Gieringer & Ellen Komp

California NORML – www.canorml.org

canorml@canorml.org

(510) 540-1066 - (415) 563-5858