

Dispelling Myths

The Facts About Cannabis Regulation

Opponents of medical and adult-use cannabis laws often make bold claims about the negative impact cannabis will have on individuals and communities. Examples of these claims include arguments that cannabis is a “gateway drug,” that legalization will double traffic fatalities, or that cannabis use results in increased levels of drug abuse and addiction.

Establishing effective cannabis laws and regulations is a complicated process, made more difficult when elected leaders and voters lack accurate information. The following paper addresses potential sources of misinformation using the growing body of research that has emerged since the passage of state-level cannabis laws. Through a review of government publications, academic articles, third party studies, and other resources, this paper examines the five most common arguments against cannabis legalization to separate **MYTH** from **FACT**.

- **MYTH:** Cannabis is a “gateway drug.”
- **FACT:** Cannabis use is not a causal factor in use of harder drugs.

- **MYTH:** Cannabis is addictive and more dangerous than cigarettes or alcohol.
- **FACT:** Cannabis is safer and less addictive than both cigarettes and alcohol.

- **MYTH:** Legalized cannabis will lead to higher youth usage.
- **FACT:** Youth usage does not increase when cannabis is legalized.

- **MYTH:** Legalizing cannabis will empower illicit market activity.
- **FACT:** Effective cannabis regulation can help eliminate illicit markets.

- **MYTH:** Legalizing cannabis will double traffic fatalities.
- **FACT:** Preliminary data on traffic fatalities is mixed at best.

While misinformation about cannabis remains widespread, an increasing number of individuals and organizations have scrutinized existing evidence and concluded that the actual impact of medical and adult-use cannabis laws deviates considerably from opponents’ bleak forecasts. As an example, the Cato Institute noted in a recent report “that state marijuana legalizations have had minimal effect on marijuana use and related outcomes.....On the basis of available data...we find little support for the stronger claims made by either opponents or advocates of legalizations. The absence of significant adverse consequences is especially striking given the sometimes dire predictions made by legalization opponents.”¹

“Our conclusion is that state marijuana legalizations have had minimal effect on marijuana use and related outcomes....The absence of significant adverse consequences is especially striking given the sometimes dire predictions made by legalization opponents.” – Cato Institute, 2016

We believe that policymakers and voters will reach similar conclusions when provided with accurate information.

Myth: Cannabis is a “Gateway Drug.”

Fact: Cannabis use is not a causal factor in use of harder drugs.

While studies have found that those who use cannabis are more likely to use other drugs, these studies demonstrate correlation not causation. In a seminal 1999 report, the Institute of Medicine found that cannabis “does not appear to be a gateway drug to the extent that it is the *cause* or even that it is the most significant predictor of serious drug abuse.”²

“While the gateway theory has enjoyed popular acceptance, scientists have always had their doubts. Our study shows that these doubts are justified.” – Andrew Morral (RAND, 2002)

More recent studies further undermine the so-called “gateway theory.”

- In a 2006 study published in the *American Journal of Psychiatry*, researchers found that drug abuse is not determined by preceding use of cannabis, but rather a user’s individual tendencies and environmental circumstances.³
- In a 2002 study, RAND’s Drug Policy Research Center concluded that “it is not marijuana use but individuals’ opportunities and unique propensities to use drugs that determine their risk of initiating hard drugs.”⁴ Upon the release of this study, Andrew Morral, Associate Director of RAND’s Public Safety and Justice division asserted, “We have shown that the marijuana gateway effect is not the best explanation for the link between marijuana use and the use of harder drugs. While the gateway theory has enjoyed popular acceptance, scientists have always had their doubts. Our study shows that these doubts are justified.”⁵

With the passage of medical and adult-use cannabis laws in several states, researchers have begun studying the impact of expanded cannabis access on hard drug use. In a May 2014 National Bureau of Economic Research paper, public health researchers at Emory University found that the implementation of medical cannabis laws had no impact on hard drug use, leading to the conclusion that “the often-voiced concerns about the potential gateway effect of marijuana is not supported by our findings.”⁶

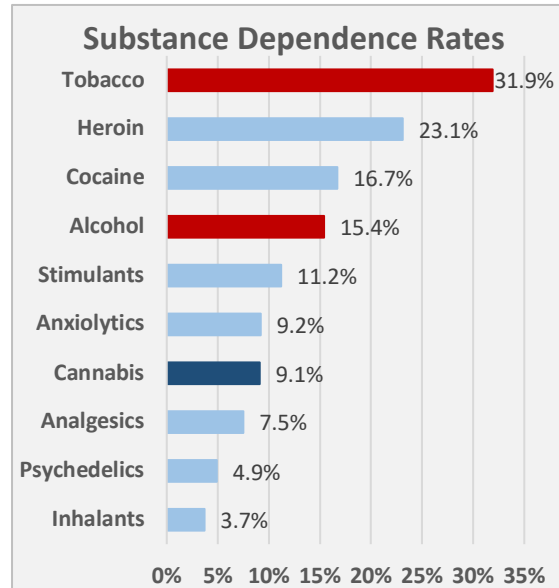
While evidence supporting the gateway theory is limited, there is a growing body of research indicating that medical cannabis has actually served as a substitute for alternative substances like alcohol, prescription drugs, and illicit drugs.⁷ In fact, researchers have even found that medical cannabis laws are associated with significant reductions in prescription medications, opioid pain reliever (OPR) overdose deaths, and OPR hospitalizations.⁸

In short, there is no evidence suggesting that cannabis use in and of itself is a gateway to harder drugs or drug abuse. On the contrary, regulated cannabis has the potential to reduce abuse of harmful drugs.

Myth: Cannabis is addictive and more dangerous than cigarettes or alcohol.

Fact: Cannabis is safer and less addictive than both cigarettes and alcohol.

While cannabis dependence is a serious issue, the addiction rate for cannabis is much lower than that of other illegal and legal substances. In a comprehensive analysis of data from the National Comorbidity Survey, researchers from Johns Hopkins University and the University of Michigan found that cannabis has one of the lowest dependency rates among ten of the most widely used substances in the US. Whereas 9.1 percent of cannabis users develop dependency on cannabis, addiction rates stand at 31.9 percent for tobacco users, 23.1 percent for heroin users, 16.7 percent for cocaine users, and 15.4 percent for alcohol users.⁹



Data from the National Comorbidity Study (Anthony et al., 1994).

The Institute of Medicine also concluded that few cannabis users develop dependence, particularly when compared to other drugs. The Institute acknowledges that, though rare, cannabis users can develop dependence, but cannabis users “appear to be less likely to do so than users of other drugs (including alcohol and nicotine), and marijuana dependence appears to be less severe than dependence on other drugs.”¹⁰

The health costs and risks associated with cannabis are also substantially lower than those associated with alcohol and nicotine. In a review of the direct health care costs associated with the use of certain substances, researchers in Canada found that the direct annual health care costs per user stood at \$20.50 for cannabis, \$165.11 for alcohol, and \$822.26 for tobacco.¹¹ In a separate study, researchers conducted a comparative risk assessment of ten substances and, based on these assessments, categorized both alcohol and tobacco as “high risk” and cannabis as “low risk.” The researchers concluded that “the risk of cannabis may have been overestimated in the past” and the low risk levels associated with cannabis “suggest a strict legal approach rather than the current prohibition approach.”¹²

While some have raised concerns that smoking cannabis may have an adverse impact on the lungs, a 20-year study on cannabis use published in *The Journal of the American Medical Association* found “no evidence that increasing exposure to marijuana adversely affects pulmonary function.”¹³ A 2006 study on the potential connection between cannabis smoking and lung and upper aerodigestive tract cancers found no such connection and concluded that “the association of these cancers with marijuana, even long-term or heavy use, is not strong and may be below practically detectable limits.”¹⁴

In 1995, the World Health Organization (WHO) published a comprehensive report on the health risks associated with cannabis and concluded that “these risks are small to moderate in size.” The report added that “In aggregate they are unlikely to produce public health problems comparable in scale to those currently produced by alcohol and tobacco....on even the most worst-case scenario, it is unlikely that the public health effect of cannabis use would approach those of alcohol or tobacco use.”¹⁵ WHO also made the following findings:

- “Tobacco smoking is associated with a wide variety of other chronic health conditions for which cannabis smoking has not so far been implicated. These include cancer of the cervix, stomach, bladder and kidney, coronary heart disease, peripheral vascular disease, and stroke, as well as cataracts and osteoporosis.”
- “There is good evidence that chronic, heavy alcohol use increases the risk of premature mortality from accidents, suicide and violence. There is no comparable evidence for chronic cannabis use.”
- “In large doses alcohol can cause death by asphyxiation, alcohol poisoning, cardiomyopathy and cardiac infarct. There are no recorded cases of overdose fatalities attributed to cannabis, and the estimated lethal dose for humans extrapolated from animal studies is so high that it cannot be achieved by recreational users.”
- “A major difference between [alcohol and cannabis] is that withdrawal symptoms are either absent or mild after dependent cannabis users abruptly stop their cannabis use, whereas the abrupt cessation of alcohol use in severely dependent drinkers produces a well-defined withdrawal syndrome which can be potentially fatal.”¹⁶

These findings led Philip M. Boffey, the former science and health editor of *The New York Times*, to conclude that there is a “vast gap between antiquated federal law enforcement policies and the clear consensus of science that marijuana is far less harmful to human health than most other banned drugs and is less dangerous than the highly addictive

“[This] neatly illustrates the vast gap between antiquated federal law enforcement policies and the clear consensus of science that marijuana is far less harmful to human health than most other banned drugs and is less dangerous than the highly addictive but perfectly legal substances known as alcohol and tobacco.” –Philip M. Boffey (The New York Times, 2014)

but perfectly legal substances known as alcohol and tobacco. Cannabis cannot lead to a fatal overdose. There is little evidence that it causes cancer. Its addictive properties, while present, are low, and the myth that it leads users to more powerful drugs has long since been disproved.”¹⁷

Myth: Legalized cannabis will lead to higher youth usage.

Fact: Youth usage does not increase when cannabis is legalized.

National and state-level data make clear that cannabis legalization does not increase youth usage of cannabis. Over the past two decades, the United States has seen a proliferation of state laws legalizing medical and adult-use cannabis, yet youth cannabis usage rates have declined throughout this period. According to data from the CDC:

- Between 1995 and 2015, the percent of high school students who had used cannabis at some point in their lifetime fell from 42.4 percent to 38.6 percent.
- Between 1995 and 2015, the percent of high school students who had used cannabis at least once in the past month fell from 25.3 percent to 21.7 percent.¹⁸

In a 2014 study published in the peer-reviewed journal, *Lancet Psychiatry*, the authors analyzed youth cannabis usage rates over a 24-year period and found “no evidence for an increase of adolescent marijuana use after passage of state laws permitting use of marijuana for medical purposes.” The authors concluded, “concerns that increased adolescent cannabis use is an unintended effect of state medical marijuana laws seem unfounded.”¹⁹

A 2019 study examining data from the 1993 to 2017 Youth Risk Behavior Surveys found no relationship between medical cannabis laws and youth cannabis usage. The same study also found that adult-use legalization may be associated with a *decrease* in youth usage rates.²⁰

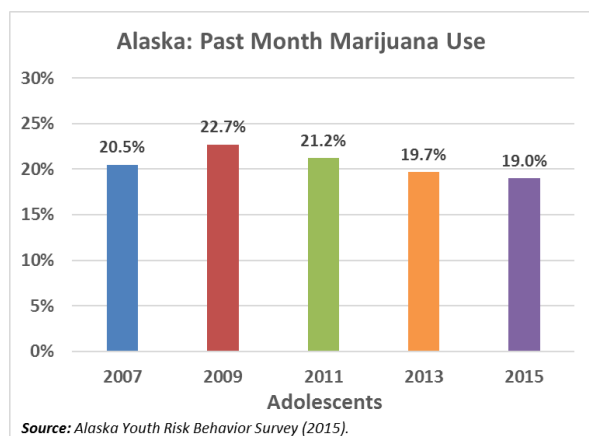
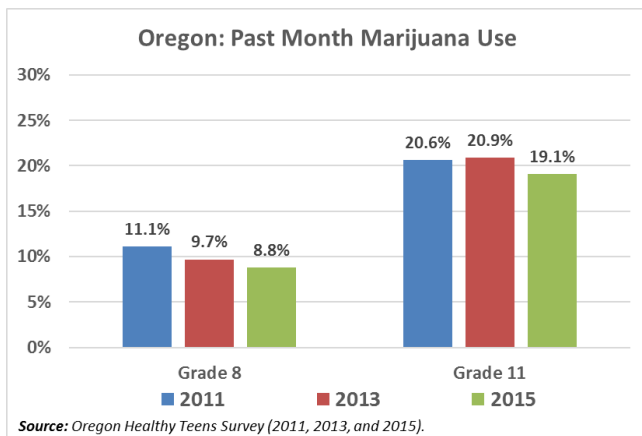
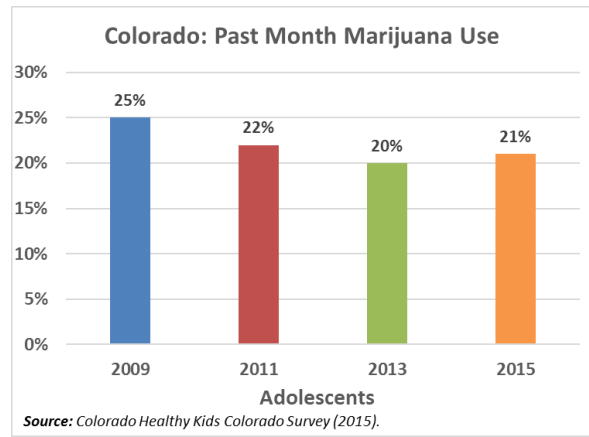
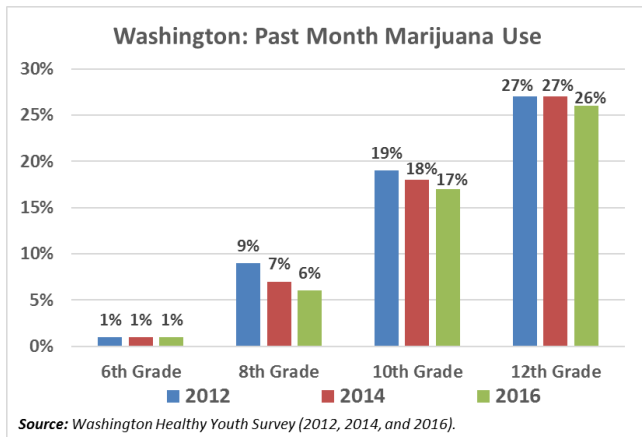
While there are fewer years of data available on the impact of adult-use legalization laws on youth usage rates, initial data shows that these laws have not resulted in increased youth cannabis usage. In fact, states that have already implemented recreational cannabis laws have seen youth usage rates decline across the board.

- *Colorado*: Between 2009 and 2015, the percent of adolescents who have tried cannabis at least once in their lifetime fell from 43 percent to 38 percent. Over this same period, the percent of adolescents who reported using cannabis in the past month fell from 25 percent to 21 percent.²¹
- *Alaska*: Between 2007 and 2015, the percent of adolescents who have tried cannabis at least once in their lifetime fell from 44.7 percent to 38.8 percent. Over this same period, the percent of adolescents who reported using cannabis in the past month fell from 20.5 percent to 19.0 percent.²²
- *Oregon*: Between 2011 and 2015, the percent of 8th graders who reported using cannabis in the past month fell from 11.1 percent to 8.8 percent. Over this same period, the percent of 11th graders who reported using cannabis in the past month fell from 20.6 percent to 19.1 percent. Note that Oregon’s survey of adult cannabis use only covers 8th and 11th graders.²³
- *Washington*: Between 2012 and 2016, the percent of 6th, 8th, 10th, and 12th graders who reported using cannabis at least once in their life or within the past 30 days either remained constant or declined. At most grade levels, usage rates declined.²⁴

Despite initial concerns that youth access to cannabis will increase following the passage of legalization laws, the CDC found that the perceived availability of cannabis among adolescents has declined considerably in recent years. Between 2002 and 2014, the percent of adolescents reporting that cannabis is either “very easy” or “fairly easy” to obtain fell from 55.0 percent to 47.8 percent.²⁵

As more states pass medical and adult-use cannabis laws, the United States has also seen a decline in cannabis use disorders among adolescents. In a June 2016 article published in the *Journal of the American Academy of Child & Adolescent Psychiatry*, researchers at the Washington University School of Medicine analyzed data from the National Survey on Drug Use and Health. Overall, the study found that cannabis use disorders among adolescents declined 24 percent between 2002 and 2013.²⁶ The study also found a noteworthy decline in the number of teenagers with cannabis-related issues; enjoying a drop in disciplinary issues with both parents and schools, and a seemingly diminished interest in getting high.

State-Level Youth Cannabis Usage Rate Data



Myth: Legalizing cannabis will empower illicit market activity.

Fact: Effective cannabis regulation can help eliminate illicit markets.

Cannabis legalization and regulation can be tools to neutralize illicit cannabis sales. As the Institute on Taxation and Economic Policy highlighted in its official testimony before the Vermont Senate Committee on Finance, “one primary motivation behind legalizing retail marijuana is to eliminate the illegal black market for marijuana and its social ills.”²⁷

Both legal and illicit markets for cannabis are driven by consumer demand and, like the markets for any other good, are influenced by ease of access, price, and product quality. These principles are supported by the Colorado Department of Revenue, which commissioned a report regarding the market size and demand for cannabis within the State. The report noted “If the price of regulated marijuana remains high, as it has in early 2014, black-market production could continue if it could compete with the regulated market on price, but the regulated market is likely to reduce market share held by the black market.” The Department also pointed out that if prices between the legal and illicit market are similar, “consumers would likely shift to the regulated market because the selection, quality, and product safety is generally much higher at a licensed retail provider.”²⁸

While there is certainly room for improvement, states that regulate medical and adult-use cannabis have made considerable progress towards reducing the size of the illicit market. According to an article in *The Economist*, Colorado's legal market has captured 70 percent of total cannabis sales.²⁹ In an economic impact analysis commissioned by the State of Colorado, the Marijuana Policy Group predicts that the illicit market's share of total cannabis sales will eventually fall to a mere 10 percent.³⁰

As governments consider passing medical and adult-use cannabis laws, policy experts forecast major declines in the size of the illicit market should politicians adopt the appropriate tax and regulatory levels. In an April 2017 policy brief, C.D. Howe Institute predicted that the passage of adult-use cannabis laws in Canada could result in the regulated market capturing as much as 90 percent of the country's illicit cannabis market.³¹

Prohibition is not an effective means of eliminating illicit markets for cannabis. Unlike other illicit drugs, consumer feelings about cannabis have changed and progressed significantly over time. Over the years, public polling by Pew Research Center has found that 57 percent of American adults are in favor of cannabis legalization, 49 percent of Americans have tried cannabis, 69 percent of Americans believe alcohol is more harmful to a person's health than cannabis, and 63 percent believe alcohol would still be more harmful to society if cannabis were legalized.³²

In light of existing consumer attitudes toward cannabis, prohibition in and of itself will not eliminate demand. In the absence of an effective regulatory framework, patients and consumers have few options other than the illicit market.

Myth: Legalizing cannabis will double traffic fatalities.

Fact: Preliminary data on traffic fatalities is mixed at best.

In states that have legalized recreational or medical cannabis, traffic collisions involving drivers testing positive for cannabis have increased. Opponents of legalization often site these statistics as one of the dangers of normalizing cannabis. Driving while impaired by any drug is dangerous and should be prohibited, but it is irresponsible to make incorrect inferences from the limited data.

In exploring potential connections between cannabis use and traffic fatalities, the National Highway Traffic Safety Administration (NHTSA) cautions that "drug presence does not necessarily imply impairment."³³ Since cannabis can be detected for a period of days or weeks after ingestion, drug presence remains long after impairment ends. Accordingly, any data associating the passage of medical and adult-use cannabis legislation with traffic fatalities warrants a degree of scrutiny.

That said, existing studies on cannabis legalization and highway safety are largely inconclusive.

In a recent examination of fatal car accidents, the Cato Institute found no major increase in fatal crashes following the passage of medical and adult-use cannabis laws in Colorado, Washington, Oregon, and Alaska.³⁴

The National Highway Traffic Safety Administration (NHTSA) conducted the largest and most comprehensive study on drug crash risk in the United States. Notably, the study found that after accounting for variables like age, gender, race/ethnicity, and alcohol consumption, "there was no significant contribution of drugs to crash risk."³⁵

According to a 2017 study conducted by researchers from Columbia University's Mailman School of Public Health and published in the American Journal of Public Health, **states with medical cannabis laws had lower traffic fatality rates than states without medical cannabis laws**, and the adoption of a medical cannabis law is "associated with immediate reductions in traffic fatalities in those aged 15 to 24 and 25 to 44 years, and with additional yearly gradual reductions in those aged 25 to 44 years."³⁶ This study is based upon decades of data from the National Highway Traffic Administration's Fatality Analysis Reporting System (FARS).

Additionally, traffic data from Colorado and Washington is being misinterpreted. The Washington Traffic Safety Commission (WTSC) released data in 2015 indicating the number of drivers involved in fatal crashes with active THC in their blood increased from 38 in 2013 to 75 in 2014. However, the reasons for the increases are not entirely clear. As the Seattle Times reported, "One obvious reason is that state-regulated pot stores opened in 2014, providing access to legal weed. But the first few stores didn't open until July, and their supply was scarce."³⁷ The article went on to say, "What's more, there were more marijuana-involved fatal crashes in the first half of 2014, before stores opened, than in the second half of the year."³⁸ Half of these drivers were also under the influence of alcohol, and the majority of those were intoxicated. Shelly Baldwin, the spokesperson for the WTSC, acknowledged that the presence of cannabis in a driver's system is an important factor to monitor but that it does not necessarily lead to collisions.³⁹

In Colorado, the number of traffic fatalities has slightly increased since cannabis was legalized. In 2012, the year Colorado voters legalized recreational cannabis, there were 474 traffic fatalities.⁴⁰ This figure increased to 481 in 2013 and 488 in 2014. Traffic fatalities were significantly higher in Colorado in the years prior to the state establishing any cannabis regulations. Colorado established laws to regulate

medical cannabis in 2009 and voters approved recreational sales in 2012. Between 2009 and 2014 the average number of traffic fatalities in Colorado was 467.5 compared to an average of 592 traffic fatalities between 2003 and 2008.⁴¹ This does not necessarily suggest that legalizing cannabis is related to safer roads, but rather that traffic data varies significantly over time, and it is difficult to have definitive answers without more exhaustive studies. 52 percent of drivers in Colorado who tested positive for cannabis also tested positive for alcohol and an additional 15 percent tested positive for other drugs.⁴² Regarding the available data on cannabis-impaired data Glenn Davis, the Colorado Department of Transportation’s Highway Safety Manager, said “We really do not have accurate data. I recognize that cannabis impairment is going to be a challenge for us. Davis added “I would say the increased availability of cannabis to the driving public has some impact on crashes, but we don’t know.”⁴³

End Notes

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