
SENATOR FOR A DAY PROGRAM

SENATE BILL

NO. 3
Session of 2020

INTRODUCED BY _____ March 5, 2020

REFERRED TO SENATE JUDICIARY COMMITTEE

Decriminalization of Cannabis in Pennsylvania

All counts of possession of cannabis shall be punishable only by monetary fine at a rate of \$100 per ounce.

If the person in possession has more than three ounces they shall participate in drug cessation and safety courses administered by a medical or judicial organization.

This bill shall take effect immediately.

More Reasons States Should Not Legalize Marijuana



Medical and Recreational Marijuana: Commentary and Review of the Literature

by Samuel T. Wilkinson, MD

Marijuana should undergo the same rigorous approval process as other medications prescribed by physicians, including randomized, placebo- and active-controlled trials to evaluate safety and efficacy, not by popular vote or state legislature.

Abstract

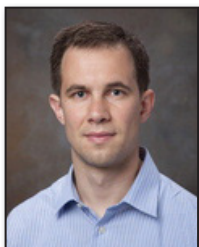
Recent years have seen substantial shifts in cultural attitudes towards marijuana for medical and recreational use. Potential problems with the approval, production, dispensation, route of administration, and negative health effects of medical and recreational marijuana are reviewed. Medical marijuana should be subject to the same rigorous approval process as other medications prescribed by physicians. Legalizing recreational marijuana may have negative public health effects.

Introduction

Recent years have seen a cultural shift in attitudes towards marijuana. At the time of this writing, medical marijuana is legal in 20 states and the District of Columbia; recreational marijuana is now legal in Washington and Colorado. A substantial and growing literature documents legalized marijuana may have adverse effects on individual and public health.

Medical Use of Marijuana

The term 'medical marijuana' implies that marijuana is like any other medication prescribed by a physician. Yet the ways in which medical marijuana has been approved, prescribed, and made available to the public are very different from other commercially available prescription drugs. These differences



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pose problems unrecognized by the public and by many physicians.

Lack of Evidence for Therapeutic Benefit

In the United States, commercially available drugs are subject to rigorous clinical trials to evaluate safety and efficacy. Data appraising the effectiveness of marijuana in conditions such as HIV/AIDS, epilepsy, and chemotherapy-associated vomiting is limited and often only anecdotal.^{1,2} To date, there has been only one randomized, double-blind, placebo- and active-controlled trial evaluating the efficacy of smoked marijuana for any of its potential indications, which showed that marijuana was superior to placebo but inferior to Ondansetron in treating nausea.³ Recent reviews by the Cochrane Collaboration find insufficient evidence to support the use of smoked marijuana for a number of potential indications, including pain related to rheumatoid arthritis,⁴ dementia,⁵ ataxia or tremor in multiple sclerosis,⁶ and cachexia and other symptoms in HIV/AIDS.² This does not mean, of course, that components of marijuana do not have potential therapeutic effects to alleviate onerous symptoms of these diseases; but, given the unfavorable side effect profile of marijuana, the evidence to justify use in these conditions is still lacking.

Contamination, Concentration & Route of Administration

Unlike any other prescription drug used for medical purposes, marijuana is not subject to central regulatory oversight. It is grown in dispensaries, which, depending on the state, have regulatory standards ranging from strict to almost non-existent. The crude marijuana plant and its products may be contaminated with fungus or mold.⁷ This is especially problematic for immunocompromised patients,⁸ including those with HIV/AIDS or cancer.⁹ Furthermore, crude marijuana contains over 60 active cannabinoids,¹⁰ few of which are well studied. Marijuana growers often breed their plants to alter the concentrations of different chemical compounds. For instance, the concentration of tetrahydrocannabinol (THC), the principal psychoactive ingredient, is more than 20-fold more than in marijuana products used several decades ago. Without rigorous clinical trials, we have no way of knowing which combinations of cannabinoids may be therapeutic and which may be deleterious. As marijuana dispensaries experiment by breeding out different cannabinoids in order to increase the potency of THC, there may be unanticipated negative and lasting effects for individuals who smoke these strains.

Marijuana is the only ‘medication’ that is smoked, and, while still incompletely understood, there are legitimate concerns about long-term effects of marijuana smoke on the lungs.^{11,12} Compared with cigarette smoke, marijuana smoke can result in three times the amount of inhaled tar and four times the amount of inhaled carbon-monoxide.¹³ Further, smoking marijuana has been shown to be a risk factor for lung cancer in many^{14,15} but not all¹⁶ studies.

High Potential for Diversion

In some states, patients are permitted to grow their own marijuana. In addition to contributing to problems such as contamination and concentration as discussed above, this practice also invites drug diversion. Patients seeking to benefit financially may bypass local regulations of production and sell home-grown marijuana at prices lower than dispensaries. We do not allow patient to grow their own opium for treatment of chronic pain; the derivatives of opium, like marijuana, are highly addictive and thus stringently regulated.

Widespread “Off-label” Use

FDA-approved forms of THC (Dronabinol) and a THC-analog (Nabilone), both available orally, already exist. Indications for these drugs are HIV/AIDS cachexia and chemotherapy-associated nausea and vomiting. Unlike smoked, crude marijuana, these medications have been subject to randomized, placebo-controlled, clinical trials. Yet despite these limited indications where marijuana compounds have a proven but modest effect in high-quality clinical trials, medical marijuana is used overwhelmingly for non-specific pain or muscle spasms. Recent data from Colorado show that 94% of patients with medical marijuana cards received them for treatment of “severe pain.”¹⁷ Similar trends are evident in California.¹⁸ Evidence for the benefit of marijuana in neuropathic pain is seen in many¹⁹⁻²¹ but not all²² clinical trials. There is no high-quality evidence, however, that the drug reduces non-neuropathic pain; this remains an indication for which data sufficient to justify the risks of medical marijuana is lacking.^{4, 23-25}

If marijuana is to be ‘prescribed’ by physicians and used as a medication, it should be subject to the same rigorous approval process that other commercially available drugs undergo. Potentially therapeutic components of marijuana should be investigated, but they should only be made available to the public after adequately powered, double-blind, placebo-controlled trials have demonstrated efficacy and acceptable safety profiles. Furthermore, these compounds should be administered in a way that poses

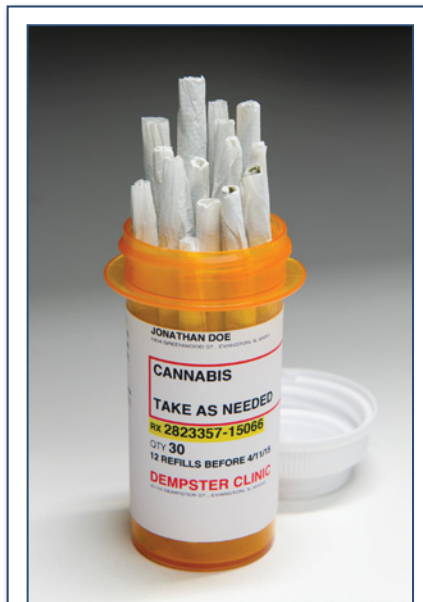
less risk than smoking and dispensed via standardized and FDA-regulated pharmacies to ensure purity and concentration. Bypassing the FDA and approving ‘medicine’ at the ballot box sets a dangerous precedent. Physicians should be discouraged from recommending medical marijuana. Alternatively, consideration can be given to prescribing FDA-approved medicines (Dronabinol or Cesamet) as the purity and concentration of these drugs are assured and their efficacy and side effect profiles have been well documented in rigorous clinical trials.

Recreational Marijuana

The question of recreational marijuana is a broader social policy consideration involving implications of the effects of legalization on international drug cartels, domestic criminal justice policy, and federal and state tax revenue in addition to public health. Yet physicians, with a responsibility for public health, are experts with a vested interest in this issue. Recent legislation, reflecting changes in the public’s attitudes towards marijuana, has permitted the recreational use of marijuana in Colorado and Washington. Unfortunately, the negative health consequences of the drug are not prominent in the debate over legalizing marijuana for recreational use. In many cases, these negative effects are more pronounced in adolescents. A compelling argument, based on these negative health effects in both adolescents and adults, can be made to abort the direction society is moving with regards to the legalization of recreational marijuana.

Myth: Marijuana is Not Addictive

A growing myth among the public is that marijuana is not an addictive substance. Data clearly show that about 10% of those who use cannabis become addicted; this number is higher among adolescents.²⁶ Users who seek treatment for marijuana addiction average 10 years of daily use.²⁷ A withdrawal syndrome has been described, consisting of anxiety, restlessness, insomnia, depression, and changes in appetite²⁸ and affects as many as 44% of frequent users,²⁹ contributing to the addictive potential of the drug.



There is some evidence that compounds naturally found in marijuana have therapeutic benefit for symptoms of diseases such as HIV/AIDS, multiple sclerosis, and cancer. If these compounds are to be used under the auspices of ‘medical marijuana,’ they should undergo the same rigorous approval process that other medications prescribed by physicians, including randomized, placebo- and active-controlled trials to evaluate safety and efficacy, not by popular vote or state legislature.

This addictive potential may be less than that of opiates; but the belief, especially among adolescents, that the drug is not addictive is misguided.

Schizophrenia and Other Psychotic Disorders

Marijuana has been consistently shown to be a risk factor for schizophrenia and other psychotic disorders.³⁰⁻³² The association between marijuana and schizophrenia fulfills many, but not all, of the standard criteria for the epidemiological establishment of causation, including experimental evidence,^{33,34} temporal relationship,³⁵⁻³⁸ biological gradient,^{30,31,39} and biological plausibility.⁴⁰ Genetic variation may explain why marijuana use does not strongly fulfill remaining criteria, such as strength of association and specificity.^{41,42} As these genetic variants are explored and further characterized, marijuana use may be shown to cause or precipitate schizophrenia in a genetically

vulnerable population. The risk of psychotic disorder is more pronounced when marijuana is used at an earlier age.^{32, 43}

Effects on Cognition

Early studies suggested cognitive declines associated with marijuana (especially early and heavy use); these declines persisted long after the period of acute cannabis intoxication.⁴⁴⁻⁴⁶ Recently, Meier and colleagues analyzed data from a prospective study which followed subjects from birth to age 38; their findings yielded supportive evidence that cannabis use, when begun during adolescence, was associated with cognitive impairment in multiple areas, including executive functioning, processing speed, memory, perceptual reasoning, and verbal comprehension.⁴⁷ Rogeberg⁴⁸ criticized the study’s methodology, claiming that the results were confounded by differences in socioeconomic status; this claim, however, was based on sub-analyses that used very small numbers. Additional sub-analyses⁴⁹ of the original study cohort showed that marijuana was just as prevalent in populations of higher

socioeconomic status, suggesting that socioeconomic status was not a confounding variable. Any epidemiological study is subject to confounding biases and future research will be needed to clarify and quantify the relationship between cognitive decline and adolescent marijuana use. However, the findings of the original study by Meier et al show there is indeed an independent relationship between loss of intelligence and adolescent marijuana use. This finding, moreover, is consistent with prior studies.⁴⁴

Other Negative Health Effects

Substantial evidence exists suggesting that marijuana is harmful to the respiratory system. It is associated with symptoms of obstructive and inflammatory lung disease,^{11,50} an increased risk of lung cancer,^{14,15} and it is suspected to be associated with reduced pulmonary function in heavy users.⁵¹ Further, its use has been associated with harmful effects to other organ systems, including the reproductive,⁵² gastrointestinal,⁵³ and immunologic^{10, 54} systems.

Social Safety Implications: Effects on Driving

Marijuana impairs the ability to judge time, distance, and speed; it slows reaction time and reduces ability to track moving objects.^{55,56} In many studies of drug-related motor vehicle fatalities, marijuana is the most common drug detected except for alcohol.^{57,58} Based on post-mortem studies, Couch et al determined that marijuana was likely an impairing factor in as many fatal accidents as alcohol.⁵⁹ One study showed that in motor vehicle accidents where the driver was killed, recent marijuana use was detected in 12% of cases.⁵⁷ Other research confirms a significantly increased risk of motor vehicle fatalities in association with acute cannabis intoxication.⁶⁰

Risk Perception and Use in Adolescents

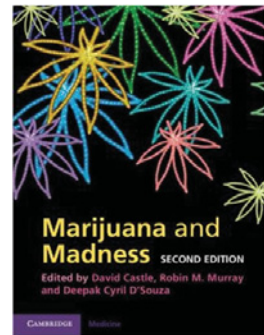
Marijuana use among adolescents has been increasing. Data that has tracked risk perception and use of marijuana among adolescents over decades clearly shows an inverse relationship; as adolescent risk perception wanes, marijuana use increases.⁶¹ As more states legalize medical and recreational marijuana, risk perception is expected to decrease, causing the prevalence of use among adolescent to continue to rise. This is among the most concerning of issues about the drug's legalization because so many of the negative effects of marijuana—including cognitive impairment and risk for short- and long-term psychosis—are heightened when used during adolescence.



BOOK REVIEW

Marijuana and Madness

Editors: David Castle, Robin M. Murray, Deepak Cyril D'Souza



A comprehensive overview of the psychiatry and neuroscience of *Cannabis sativa* (marijuana). It outlines the latest developments in understanding the human cannabinoid system, and links this knowledge to clinical and epidemiological facts about the impact of cannabis on mental health. Clinically focused chapters review not only the direct psychomimetic properties of cannabis, but also the impact consumption has on the courses of evolving or established mental illnesses such as schizophrenia. Effects of cannabis on mood are reviewed, as are its effects on cognition.

Source: [Amazon.com](https://www.amazon.com/) / Hardcover: 252 pages / Publisher: Cambridge University Press; 2 edition
ISBN-10: 1107000211 / ISBN-13: 978-1107000216

Conclusion

There is some evidence that compounds naturally found in marijuana have therapeutic benefit for symptoms of diseases such as HIV/AIDS, multiple sclerosis, and cancer. If these compounds are to be used under the auspices of 'medical marijuana,' they should undergo the same rigorous approval process that other medications prescribed by physicians, including randomized, placebo- and active-controlled trials to evaluate safety and efficacy, not by popular vote or state legislature. Furthermore, these therapeutic compounds should be administered via a route that minimizes long-term health risk (i.e., via oral pill) and should be dispensed by centrally regulated pharmacies to ensure the purity and concentration of the drug and allow for the recall of contaminated batches.

Marijuana for recreational use will have many adverse health effects. The drug is addictive, with mounting evidence for the existence of a withdrawal syndrome. Furthermore, it has been shown to have adverse effects on mental health, intelligence (including irreversible declines in cognition), and the respiratory system. Driving while acutely intoxicated with marijuana greatly increases the risk of fatal motor vehicle collision. Legalization for recreational use may have theoretical (but still unproven) beneficial social effects regarding issues such as domestic criminal justice policy, but these effects will not come without substantial public health and social costs. Currently there is a lack of resources devoted to educating physicians about this most commonly used illicit substance. The potential

benefits and significant risks associated with marijuana use should be taught in medical schools and residency programs throughout the country.

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Disclosure

None reported.



10/24/2013 12:51 pm ET **Updated** Dec 06, 2017
This Is Why Marijuana Should Be Legal Everywhere
By [Renee Jacques](#)

A [Gallup poll released on Tuesday](#) reveals that for the first time in history, Americans are more in favor of legalizing marijuana than criminalizing it. 2013 has markedly been a successful year for marijuana legalization, with Colorado and Washington both passing laws to decriminalize the drug. Now, 58 percent of Americans are in favor allowing the plant to be legal.

With the majority of Americans agreeing that marijuana should be legalized, we've gathered up eight reasons why those who are still on the fence about the natural plant should possibly reconsider their feelings.

It's time to legalize!

No one has ever died of a marijuana overdose.

You may think having a large amount of THC in your system will kill you, but you are wrong. Ever since marijuana has been known to mankind, [not one single account of death from overdose has been recorded](#). On the other hand, in 2010, 38,329 people died from drug overdoses. [Sixty percent of those were related to prescription drugs](#). In that same year, [25,692 people died from alcohol-related causes](#).

Around 40% of Americans have already admitted to using marijuana.

Most polls regarding [Americans and their pot use hover around](#) the 40% mark for having tried marijuana at least once. This is compared to the [16% of Americans](#) who have tried cocaine, which is obviously a significantly lower percentage. Marijuana is becoming more and more ubiquitous every year despite [being less addictive than coffee](#). There's a reason people are feeling safer and safer trying the drug, which brings us to our next point...

Marijuana is much safer than already legalized drugs.

Harm Caused by Drugs

■ Harm to others
■ Harm to users

*With a maximum possible harm rating of 100

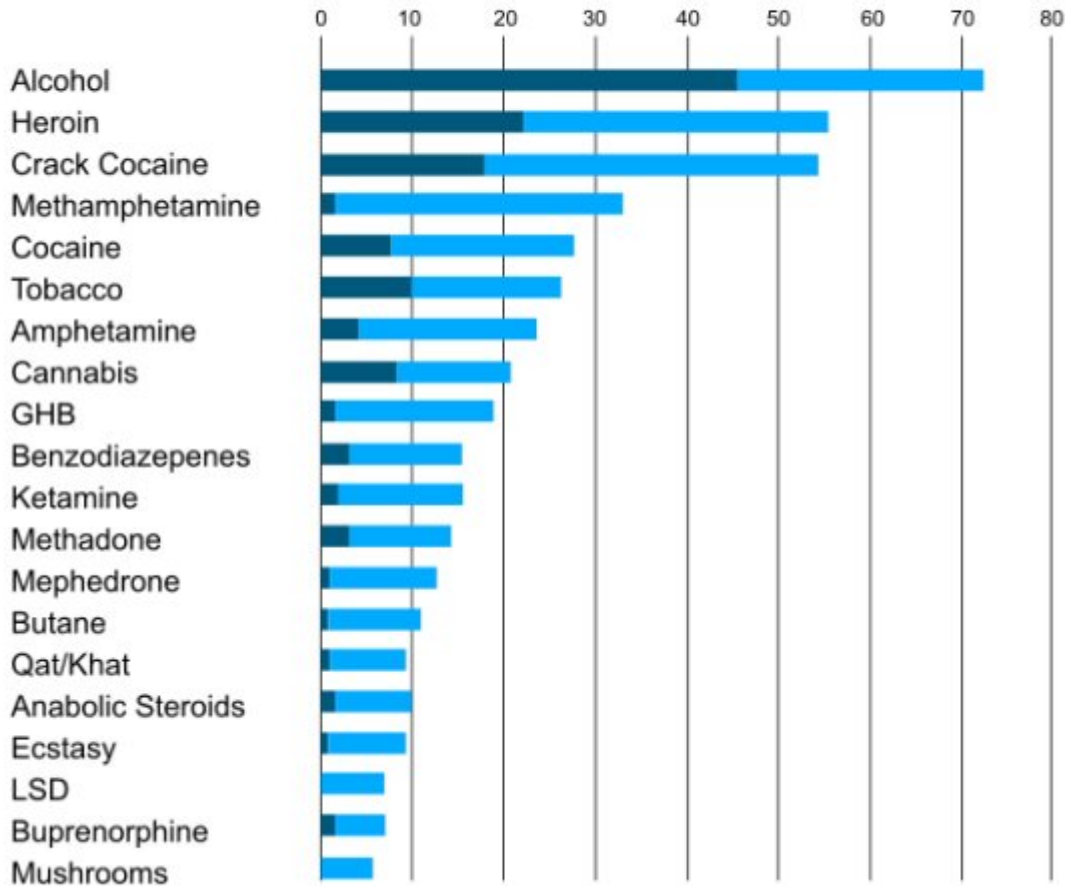


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If you are completely fine with alcohol and cigarettes, then there shouldn't be a reason you aren't [accepting of marijuana as well](#). As you can see from a [2010 study published in the Lancet](#) and reported on by [the Economist](#), a team of drug experts in the U.K. assessed the combined harms to others and to the user of marijuana as less than the harms posed by alcohol or tobacco use. The negative stigma of pot use has certainly made it seem like it's worse, and since using the drug is still illegal, the fact that only people who are willing to break the law will smoke has inevitably made it associated with a "pothead" culture. These are just the preconceived notions we've been brought up in though. A world where instead of drinking cheap beer, a hopeful political candidate can roll a joint to seem like the "people's choice" doesn't have to seem crazy. This scenario would actually be the [healthier choice](#).

Marijuana has a very low risk of abuse.

Contrary to popular belief, marijuana is not as addicting as one may think. Dr. Sanjay Gupta, CNN's Chief Medical Correspondent, recently wrote in his essay, "[Why I Changed My Mind About Weed](#)," that we

have been “systematically misled” on marijuana. He reports that marijuana leads to dependence in around 9-10 percent of adult users. Cocaine hooks about 20 percent of its users, and heroin gets 25 percent of its users addicted. The worst culprit is tobacco, with 30 percent of its users becoming addicted.

Cannabis can be a safe and useful sleep aid.

In a blog entry on SFGate, writer David Downs [explores the best strains of marijuana to help with insomnia](#). Downs found a quote from researcher I Feinberg, from “Clinical Pharmacology Therapy” in 1976, that says, “The effect on sleep of THC administration closely resembles those induced by lithium.” Also, the National Cancer Institute [announced in a study](#) that patients who ingested a cannabis plant extract spray reported more restful sleep.

Marijuana is used to alleviate a lot of medical ailments.

Medical marijuana is important to a lot of people. According to a [Discovery Health article](#), marijuana has been extremely successful in relieving nausea, which is extremely good news for cancer patients suffering from nausea as a side effect of chemotherapy. The drug also helps with people who have loss of appetite due to diseases such as HIV/AIDS. Furthermore, it helps relax muscle tension and spasms and chronic pain.

So many extremely successful people smoke marijuana.

Maya Angelou, Martha Stewart, Morgan Freeman, Ted Turner, Michael Bloomberg, and even Rush Limbaugh are all *high-functioning marijuana users*. Stewart, who is 72 years old, gave an interview with Bravo’s Andy Cohen over the summer of 2013 where she talked about “sloppy joints” and flat out said, [“Of course I know how to roll a joint.”](#) And this isn’t just an argument about how the “cool kids” do it and therefore so should you. There are big-time business people, such as Richard Branson, who couldn’t have accomplished as much as they have if they were being debilitated by a killer drug. Sure, there is a difference between the marijuana use of a “pothead” and [Oprah Winfrey](#), but we shouldn’t continue punishing the moderate users.

It’s simply not a gateway drug.

One of the biggest and most widespread arguments from marijuana detractors is that smoking marijuana will lead to using other drugs. As [Scientific American points out](#), the studies that show people who use marijuana first before trying other drugs is correlation and not causation. People who go on to use harder drugs also tend to smoke cigarettes and drink alcohol before trying the other substances plus with our current stigma on pot only people who are predisposed to being a “outlaw drug user” are going to smoke pot. On top of all of this, as mentioned above, nearly half the country has already tried pot which is more than how many [Americans know who Jennifer Lawrence](#) is and much much more than the percentage of Americans who are [left-handed](#).

In conclusion...

Legalization would be a beautiful thing.

Clarification: Language has been amended to more precisely describe the 2010 study of drug harms in the U.K.