

# Issues Surrounding Marijuana as Medicine

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*Editor's note: This essay was authored by [Ken C. Winters, Ph.D., Senior Scientist, Oregon Research Institute](#) & [Kevin A. Sabet, Ph.D., Director, Drug Policy Institute, University of Florida](#).*

This op-ed provides an overview of the key question at the center of the controversy: does marijuana's potential benefit outweigh its potential harms. We summarize the extent of medical marijuana laws in the U.S., marijuana's development as a medicine and conclude that health benefits of marijuana's core elements - THC and CBD - are associated with a modicum of support for a very limited number of health problems.

## Introduction

Currently, 29 states and the District of Columbia have legalized the use of marijuana for medical purposes (and 8 of these states allow recreational use). Many of the states allow for-profit medical marijuana dispensaries to operate, whereas only a few place qualifying conditions under the discretion of physicians. [A recent JAMA publication provides these data](#): a little more than 1 percent of the U.S. adult population uses marijuana based on a clinical recommendation, compared to nearly 12 percent of adults using marijuana for recreational purposes (Compton et al., 2017). Also, about 21 percent of medical marijuana users reside in states that have not legalized its use, which may reflect that fact that some physicians are recommending medical marijuana regardless of legalization in their respective states (Compton et al., 2017).

The issue that marijuana may have medicinal properties has emboldened proponents of marijuana legalization to further push for recreational liberalization of the drug. For decades, the National Organization for the Reform of Marijuana Laws (NORML) has capitalized on this strategy. The founder of NORML, Keith Stroup, said this in 1979 in an interview: "We [NORML] are trying to get marijuana reclassified medically. If we do that (we'll do it in at least 20 states this year for chemotherapy patients) [we] will be using the issue as a red herring to give marijuana a good name. That's our way of getting to them . . ." (appeared in the Emory Wheel student newspaper on Feb. 6, 1979, pp. 18-19).

## Does Marijuana Have Health Benefits?

The words "medical marijuana" implies that the whole marijuana plant is a safe and effective

medicine established by scientific inquiry. Yet the marijuana plant consists of hundreds of components; some are not linked to any medical value and some have different effects on different disorders and ailments. Also, many of the potential health or harmful effects of these components are not well-established. Whereas most of the research literature identifies THC and CBD (cannabidiol) as the two most likely marijuana constituents with medicinal value, compounding matters is that state-level medical marijuana laws often do not require standardized products in terms of THC and CBD, nor do they often restrict its administration to standardized methods.

Some benefits of THC and CBD have been found in a handful of controlled clinical trials for a very limited number of health problems. Whereas original efforts in the U.S. to legalize marijuana as medicine was often been associated with cancer, HIV/AIDS, and glaucoma patients, studies that exist, albeit few, suggest that only a small percentage of medical marijuana users report serious, life-threatening illnesses. The average medical marijuana user in a large California study was a 32-year-old white male with no history of chronic illness and a past of illegal drug use (O'Connell & Bou-Matar, 2007). A RAND analysis found that most frequently diagnosed conditions were musculoskeletal and neuropathic chronic pain such as back pain and arthritis, while HIV/AIDS, cancer, and glaucoma combined comprised only 4.4 percent of diagnoses (Nunberg, Kilmer, Pacula, & Burgdorf, 2011).

[The meta-analysis by Whiting and colleagues](#) (Whiting et al., 2015) published in *JAMA* concluded after analyzing 79 randomized medical trials that compared cannabinoids reputed to have medical value with placebos or comparators that few such comparisons yielded statistically significant results. Specifically, no improvements or statistically insignificant results were linked to these ailments: treatment of nausea/vomiting, appetite stimulation, treatment of chronic pain or spasticity, glaucoma, and psychosis (Whiting et al., 2015).

The potential for cannabis to treat chronic pain and to provide an alternative to opioid use is often advanced in the larger pro-marijuana argument. [The recent summary of clinical trials pertaining to pain relief](#) reviewed by the National Academies of Sciences, Engineering, and Medicine (2017), which concluded that there is “conclusive or substantial evidence” that cannabis or cannabinoids are effective for treating chronic pain in adults, has further emboldened the pro-marijuana side of the debate. Yet the jury is still out on this issue, as prominently expressed by [the director of NIDA, Nora Volkow, noted](#) that all of the controlled clinical studies had a fairly short follow-up and thus are only demonstrating short-term relief of pain, rather than a sustained reduction in pain (Volkow, 2017) .

Clearly there are numerous credible and bona fide examples where use marijuana led to a dramatic turn-around for individuals with devastating illnesses. But it is our view that dogmatic claims of marijuana's widespread medical benefits are not supported by research and that such misleading

claims are exploiting an uninformed public and policy makers.

### **Balancing Potential Health Benefits with Health Risks**

The oath of all medical doctors is “first, do no harm” and it is this principle at the center of the medical marijuana debate. It is instructive to examine two recent scholarly reports on the issue of marijuana’s adverse effects. [Volkow and colleagues \(Volkow et al., 2014\) summarized the literature](#) regarding nine potential adverse effects of marijuana. A rating of a ‘high level of confidence’ for supporting research was attributed to the link between marijuana use and these four of the nine health effects: addiction to marijuana and other substances; diminished life achievement; motor vehicle accidents; and symptoms of chronic bronchitis. In the recent report by the National Academies of Sciences, Engineering, and Medicine (2017), these health domains were cited as associated with “substantial” evidence as to negative effects of marijuana: mental illness (schizophrenia and other psychoses); respiratory disease; motor vehicle crashes; lower birth weight of offspring; and development of cannabis problems. (It is relevant to note that ‘conclusive evidence’ was not found for any marijuana-health risk connection.) Moreover, both reports noted that early-onset of marijuana use was linked to more significant negative health effects compared to those who start their marijuana use during adulthood.

### **Concluding Remarks**

The effect of medicalizing marijuana is an under-studied area. We do not know of any state allowing marijuana and extracts to be used as medicine that has developed and implemented a data collection system to study the effects on the health of its citizens. It is only recently that states have taken on the regulatory role of determining safety and efficacy of its marijuana products. On another front, since the mid-2000s, several pharmaceutical companies have been intensively researching marijuana’s compounds, particularly CBD, as treatment for medical conditions. Promising medications include Sativex, Epidiolex and Naboline. These and other marijuana-related medicines offer hope that effective medicine can be delivered without smoking the marijuana plant.

Given the importance of the topics raised here, it is critical, if not obvious, that states should implement strong regulatory policies that include a) the tracking of marijuana use and health-related variables by public health experts, not the marijuana industry, b) establishing a *per se* standard for driving while under the influence of marijuana, c) regulating the potency of edibles, d) regulating promotions and advertisements, and e) ensuring that sales do not occur to minors. Furthermore, the federal government could speed up research on marijuana’s components by lessening the regulatory burden on researchers to handle such components. A plan put together by researchers from various universities lists such specific steps that could be taken (SAM, 2017). However, none of this should be construed that it is ever a good idea to legislate medicine and bypass the scientific method for

determining safety and efficacy.

— Ken C. Winters, Ph.D. & Kevin A. Sabet, Ph.D.

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