Effects of the Federal Government's Move to Reschedule Cannabis: A Commentary

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ABSTRACT. The rescheduling of cannabis from the U.S. Drug Enforcement Administration's current most restrictive (Schedule I) designation would be an important step for cannabis research and researchers. We are researchers who have experience with cannabis research in preclinical, clinical, and policy domains and who represent a range of social science disciplines (e.g., Psychology, History). In this commentary, we share our perspectives on the history, policies, challenges, and benefits of moving cannabis from the current Schedule I designation (similar to heroin) to the less restrictive Schedule III (similar to ketamine). The rescheduling has the potential to contribute in multiple ways to research on cannabis' effects on the brain and behavior, policies for regulating medicinal and recreational use, and the use of cannabis to treat health conditions such as chronic pain. Although scientific evidence supports this rescheduling, there are challenges and pushbacks to keeping the regulations as they currently exist. Although "the devil is in the details," we present our reasons to advocate for improving access to cannabis for research. (*J. Stud. Alcohol Drugs, 86,* 8–12, 2025)

IN MAY 2024, the Drug Enforcement Administration of the U.S. Department of Justice proposed the transfer of marijuana/cannabis from Schedule I to Schedule III of the Controlled Substances Act (1971). The proposal to change the rules came after an August 2023 letter from the U.S. Department of Health and Human Services made the case that cannabis has medical uses and that its potential for abuse and dependence was manageable. The Department of Justice conducted an extensive review of scientific information and evidence related to cannabis' pharmacological effects, behavioral and physiological effects, epidemiological/prevalence data for groups such as adolescents, potential for abuse, and much more. The U.S. Attorney General concluded that the evidence showed that cannabis does not warrant control as a Schedule I drug, as is the case for drugs such as heroin, lysergic acid diethylamide (LSD), and peyote, and supported the move to Schedule III, which includes drugs such as ketamine, buprenorphine, and anabolic steroids. However, synthetically derived cannabis will remain under Schedule I. Even with the proposed move to Schedule III, cannabis would continue to be regulated under the Controlled Substances Act and would have to meet criteria imposed by the U.S. Food and Drug Administration (FDA).

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The comment period on this rule ended in July 2024. The Department of Justice received 45,500 public comments representing a range of perspectives. Among the viewpoints was a coalition of 18 state attorneys general and some members of Congress who proposed a public hearing on the rescheduling of cannabis, which would include testimony from experts such as physicians, scientists, and law enforcement officials. Among other issues, there is concern that if cannabis is moved to Schedule III, it could undermine state laws that prohibit or constrain the use of the drug. As of this writing in mid-September 2024, the public hearing was scheduled for December 2, 2024 but due to prehearing motions now will begin on January 21, 2025.

A brief history of federal and state regulation of cannabis in the United States

So how did we get here? The sequence of events (Figure 1) begins with the 1937 Marihuana Tax Act, which made marijuana/cannabis entirely illegal with no exceptions because there were no accepted medical uses for it—thereby joining heroin as one of the only two completely outlawed medicines to that point in U.S. history. In the 1950s, cannabis took on a starring role in U.S. drug wars, in part because it soon served as an example of the vicious external threats, usually coming from racialized minorities, which lured innocent White youths astray. There was a massive, well-organized, top-to-bottom push to portray cannabis as a real threat, primarily through what would later be called the "gateway" theory—that cannabis use inevitably led consum-

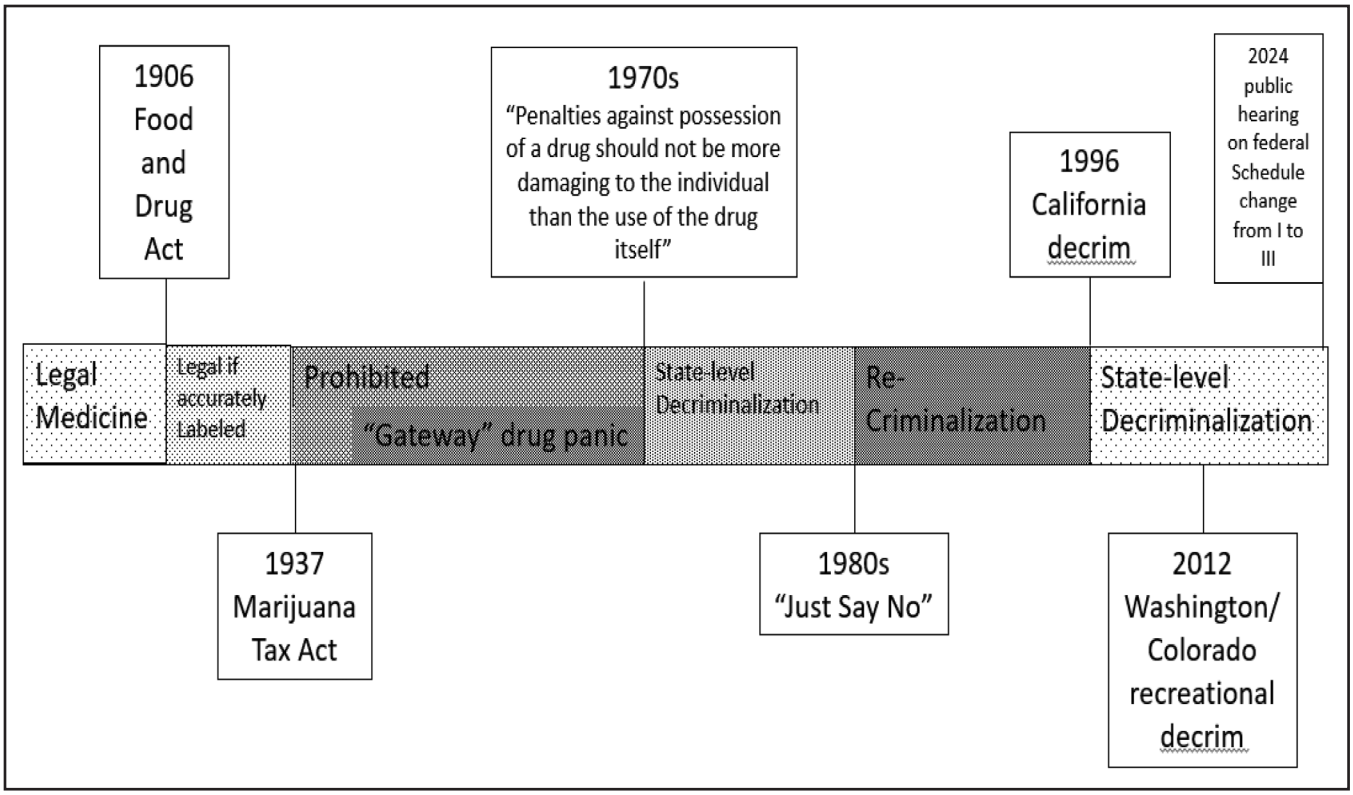

FIGURE 1. A timeline of the history of cannabis regulation from the start of the 20th century through the planned Department of Justice hearing on rescheduling cannabis on December 2, 2024

ers to "hard" drugs such as heroin and thus to addiction and ruin (Dufton, 2017; Lassiter, 2023).

This prohibition had limited research to examine the pharmacological, physiological, medical, and psychological effects of the various components of cannabis. In 1996, a proposition from cannabis advocates in California won the popular vote, thereby approving the use of cannabis for medical purposes. Colorado followed a similar approach, and in 2012, voters approved the legalization of the recreational use of cannabis by adults. Since 1996, many states have legalized marijuana for recreational and/or medicinal use. As of 2023, 38 states and Washington, D.C., had legalized medical cannabis, and 24 states plus the District of Columbia had legalized it for recreational use. Now there are 38 states, 3 territories, and the District of Columbia that have approved cannabis for medical use, and the prevalence of medical cannabis use among the U.S. adult population has risen exponentially in the past decade. Some reports suggest annual increases of 12.9% between 2013 and 2020, and more recent estimates suggest an increase of 33.3% between 2020 and 2022, indicating that more than 4 million patients across the United States were certified for medical cannabis in 2022 (Boehnke et al., 2024; Rhee & Rosenheck, 2023).

Similar increases have been seen in rates of recreational cannabis use by adults. The recent analysis of Monitoring the Future's 2023 data indicated that past-year (42%) and past-month (29%) use of cannabis was "historically high" among adults ages 19–30 years, with slightly lower rates among adults ages 35 to 50 years (past year = 29%, past month = 19%; Patrick et al., 2024).

Despite state-level legalization, the federal government has not yet legalized cannabis, and restrictive research policies are maintained. Such policies have discouraged efforts to expand medical research, thereby limiting understanding of the health effects of cannabis and inhibiting informed decision-making for patients, health care providers, and policymakers. Furthermore, the variability among federal and state policies can affect the generalizability of research findings, as the products studied may differ from state to state (Choo & Emery, 2017). This inconsistency can deter researchers and institutions from pursuing cannabis-related studies because of the fear of federal consequences and issues related to the generalizability of research findings.

Cannabis is a complex botanical substance that contains multiple components

The drug in question is a botanical—cannabis (*Cannabis sativa*)—which contains more than 100 compounds, including the psychotropic Δ9-tetrahydrocannabinol (THC). THC affects the body through the endocannabinoid system, which regulates mood, memory, pain, and appetite. THC causes a

psychoactive "high," and effects such as euphoria, altered senses, impaired memory, and deteriorated motor skills typically are experienced (Hall & Degenhardt, 2014). Another widely studied compound of cannabis is cannabidiol (CBD), which is not psychoactive and interacts with the endocannabinoid system differently than THC. Although it does not produce a high, CBD has various effects and potential therapeutic benefits, including reducing anxiety and stress as well as improving sleep. The most common methods of consuming cannabis are inhalation through smoking or vaping or ingestion through edibles (Sideris & Doan, 2024).

Despite the increasing public support for its use, the federal government has continued to resist legalizing cannabis use, which has discouraged efforts to expand research on medical and recreational cannabis (Hall, 2015). Federal policymakers justify their reasoning through their concerns about potential substance abuse and the lack of extensive scientific evidence supporting its medical usage. In fact, many existing studies about the therapeutic benefits of cannabis are small-scale and retrospective, often lacking the methodological aspect of randomized controlled trials (Volkow et al., 2014).

Barriers to research under Schedule I

The Drug Enforcement Administration classifies cannabis currently as a Schedule I drug, which signifies that it has no currently accepted medical use and could be misused. As a Schedule I drug, cannabis is subject to stringent regulations that make its production, distribution, and possession illegal other than for specific and limited research purposes. Scientific investigation of potential applications is severely restricted, making it extremely difficult for researchers to access and study cannabis, including conducting clinical trials, securing funding, and obtaining standardized cannabis products for research purposes. As a result, the Schedule I status of cannabis creates significant setbacks to gaining scientific knowledge and understanding of cannabis's potential therapeutic benefits and its effects on the brain and behavior. Scientists must obtain a special license from the Drug Enforcement Administration to study Schedule I substances, which often involves a rigorous and lengthy application process (Milgram et al., 2022). They must navigate complex review processes involving multiple agencies, including the National Institute on Drug Abuse (NIDA), the U.S. FDA, and the Drug Enforcement Administration. Next, clinical researchers must submit an investigational new drug application to the FDA. The FDA then reviews the investigational new drug application for at least 30 days to ensure participant safety. If the FDA identifies any risks or deficiencies, it can impose a clinical hold until issues are resolved.

Even with the expansion of the sources of cannabis, researchers are frequently limited to sourcing cannabis from a single, federally approved provider—NIDA—which may lead to various issues (NIDA, 2020). The product provided often has lower potency, and nonflower formulations (e.g., edibles and tinctures) are limited compared with the products available at state dispensaries. This mismatch can affect the validity of research because cannabis products are not representative of what is available in the commercial market (National Academies of Sciences, Engineering, and Medicine, 2017). Comparisons of cannabis provided from government sources were found to be "limited in diversity, not reflecting the range of chemotypes available to consumers in state markets" (Vergara et al., 2017, p. 3). For example, the THC level of NIDA cannabis was only 27%–35% of the THC potency of dispensary products (Vergara et al., 2017). Researchers must comply with strict storage and security protocols, creating logistical and financial burdens. As things currently stand, clinical research—particularly randomized controlled trials, which are necessary to evaluate the potential benefits and harms of cannabis—lags behind both state regulatory policies and clinical uses. Specifically, we know little about the dosing regimens that are safest and most effective, the conditions for which cannabis is most effective, or which subgroups of persons may benefit most from cannabis.

Potential benefits of rescheduling cannabis from Schedule I to Schedule III

The regulatory landscape for cannabis research varies immensely among federal, state, and local levels. Rescheduling cannabis from Schedule I to Schedule III is consistent with the acknowledgment that cannabis has some "acceptable medical uses" (National Academies of Sciences, Engineering, and Medicine, 2017). It also would significantly enhance research opportunities because the latter classification contains fewer restrictive policies. This would contribute to an increase in the number and diversity of research studies, allowing more inclusive investigations into the potential benefits and risks associated with cannabis use. Although a Drug Enforcement Administration registration is still required to conduct research with Schedule III substances, the requirements are different from those conducting research with Schedule I substances. For example, for a Schedule III substance, no investigational new drug application to the FDA is required, the investigator is not required to submit a full protocol when submitting the application, and most relevant to cannabis, there is more flexibility in the type of products allowed in research.

Reclassification of cannabis to Schedule III would reduce the restrictions on where cannabis can be purchased for research (i.e., products available at commercial dispensaries). This would enable investigators to test formulations and doses that patients most commonly use, increasing the validity and generalizability of our research. For example, a researcher could compare the efficacy of different doses of edible formulations in a randomized controlled trial,

minimizing expectancy effects that are currently limiting observational studies. This would provide an opportunity to draw both internally and ecologically valid conclusions about the efficacy of cannabis. This would also provide the opportunity to rigorously evaluate potential harms, including interactions with other medications and other adverse effects. The capacity to evaluate various products also would enable more mechanistic behavioral pharmacology studies that have been hampered by cannabis' current Schedule I classification. Improving the nature and quality of cannabis research can improve the reliability of findings and inform health care policies and clinical practices. This research could also lead to the development of new medications and treatment options for various health conditions.

Much of our current understanding of the mechanisms of drugs of abuse comes from animal studies (Panlilio et al., 2010). Rescheduling cannabis would also allow for an increased number of studies in preclinical models using clinically relevant doses and routes of administration, which have been demonstrated to have important impacts on the pharmacokinetic and behavioral responses to cannabinoids, particularly THC (Penman et al., 2023; Wiley et al., 2021).

Challenges and considerations

Despite the potential advantages of rescheduling cannabis, some challenges may be present. Particularly with studies involving vulnerable populations such as adolescents and individuals with mental health disorders, researchers must ensure that participants are fully informed of the potential benefits and risks of the study being conducted (Hall & Degenhardt, 2014). Another set of challenges that may arise because of this change is controlling for confounding variables. Factors such as polysubstance use, socioeconomic status, and preexisting health conditions can complicate research findings and their interpretations. Therefore, researchers must implement designs and methods that account for these variables to ensure the validity and reliability of their results. Regulatory frameworks, such as the development of standardized protocols for cannabis cultivation, distribution, and utilization in research, would need to be adopted. This could also involve the enhancement of monitoring mechanisms to maintain a safeguard against drug abuse (National Academies of Sciences, Engineering, and Medicine, 2017).

Conclusion

Millions of patients in the United States are using cannabis to manage a variety of symptoms, and others are using cannabis for psychological and social reasons. It is the responsibility of cannabis researchers to conduct rigorous research that would allow for the development of evidence-based guidelines for medical and recreational use. Cannabis (particularly CBD) shows promise for medical use in pediatric conditions like epilepsy, attention-deficit/hyperactivity disorder, and autism spectrum disorder, and some combinations of THC and CBD have shown efficacy in the management of chronic pain, but significant challenges remain. As more states legalize the use of cannabis, it is crucial to conduct thorough research to ensure cannabis is safe and effective. The Schedule I classification of cannabis has restricted research, leaving many unanswered questions about its safety and long-term effects on children and adults. Reclassifying cannabis to Schedule III would facilitate the kind of research that is desperately needed to understand if, when, and how cannabis has therapeutic properties as well as risks. It also will help integrate cannabis into medical practice responsibly, balancing potential benefits with the need to protect public health. Overall, rescheduling cannabis from its current Schedule I designation has notable potential to enhance research into its impacts on the brain and behavior. By reducing regulatory constraints and allowing for more comprehensive studies, researchers will be able to obtain clearer insights into both the benefits and risks of cannabis use. As a result, there may be changes in public health policies, clinical practices, and therapeutic applications, all of which can contribute to a more balanced and evidence-based approach to cannabis regulation and use. We need scientific answers to practical and pragmatic questions of fundamental importance for anyone who cares about the potential benefits and harms of cannabis use.

Conflict-of-Interest Statement

The authors have no known conflicts of interest to disclose.

References

Boehnke, K. F., Sinclair, R., Gordon, F., Hosanagar, A., Roehle, D. R., Smith, T., & Hoots, B. (2024). Trends in U.S. Medical cannabis registrations, authorizing clinicians, and reasons for use from 2020 to 2022. *Annals of Internal Medicine, 177,* 458–466. https://doi.org/10.7326/M23-2811

Choo, E. K., & Emery, S. L. (2017). Clearing the haze: The complexities and challenges of research on state marijuana laws. *Annals New York Academy Science, 1394,* 55–73. https://doi.org/10.1111/nyas.13093

Dufton, E. (2017). *Grass roots: The rise and fall and rise of marijuana in America.* New York, NY: Basic Books.

Federal Comprehensive Drug Abuse Prevention and Control Act of 1970 [Controlled Substances Act], 21 U.S.C. §811 (1971). https://uscode.house.gov/view.xhtml?path=/prelim@title21/chapter13&edition=prelim

Hall, W. (2015). U.S. policy responses to calls for the medical use of cannabis. *Yale Journal of Biomedical Medicine, 88,* 257–264. https://www.ncbi.nlm.nih.gov/pubmed/26339208

Hall, W., & Degenhardt, L. (2014). The adverse health effects of chronic cannabis use. *Drug Testing and Analysis, 6,* 39–45. https://doi.org/10.1002/dta.1506

Lassiter, M. D. (2023). *The suburban crisis: White America and the war on drugs.* Princeton, NJ: Princeton University Press.

Marihuana Tax Act of 1937, Pub. L. 75-238, 50 Stat. 551 (1937). https://www.druglibrary.org/schaffer/hemp/taxact/mjtaxact.htm

Milgram, A., O'Malley, K. N., Prevoznik, T. W., & Valentine, N. S. (2022).

DEA researchers manual: An informational outline of the Controlled Substances Act. Drug Enforcement Administration. https://www.deadiversion.usdoj.gov

National Academies of Sciences, Engineering and Medicine. (2017). The health effects of cannabis and cannabinoids: The current state of evidence and recommendations for research. Washington, DC: National Academies Press. https://doi.org/10.17226/24625

National Institute on Drug Abuse. (2020). NIDA's role in providing cannabis for research. https://nida.nih.gov/research/resources-grants-contracts/nidas-role-in-providing-cannabis-research

Panlilio, L. V., Justinova, Z., & Goldberg, S. R. (2010). Animal models of cannabinoid reward. *British Journal of Pharmacology, 160,* 499–510. https://doi.org/10.1111/j.1476-5381.2010.00775.x

Patrick, M. E., Miech, R. A., Johnston, L. D., & O'Malley, P. M. (2024). *Monitoring the Future Panel Study annual report: National data on substance use among adults ages 19 to 65, 1976–2023.* Ann Arbor, MI: Institute for Social Research, University of Michigan.

Penman, S. L., Berthold, E. C., Mihalkovic, A., Hammond, N., McCurdy, C. R., Blum, K., Eiden, R. D., Sharma, A., & Thanos, P. K. (2023). Vaporized delta-9-tetrahydrocannabinol inhalation in female Sprague Dawley rats: A pharmacokinetic and behavioral assessment. *Current Pharmaceutical Design, 29,* 2149–2160. https://doi.org/10.2174/1381612829666230419093809

Rhee, T. G., & Rosenheck, R. A. (2023). Increasing use of cannabis for medical purposes among U.S. residents, 2013–2020. *American Journal of Preventive Medicine, 65*(3), 528–533. https://doi.org/10.1016/j.amepre.2023.03.005

Sideris, A., & Doan, L. V. (2024). An overview of cannabidiol. *Anesthesia & Analgesia, 138*(1), 54–68. https://doi.org/10.1213/ane.0000000000006584

Vergara, D., Bidwell, L. C., Gaudino, R., Torres, A., Du, G., Ruthenburg, T. C., deCesare, K., Land, D. P., Hutchison, K. E., & Kane, N. C. (2017). Compromised external validity: Federally produced cannabis does not reflect legal markets. *Scientific Reports, 7*(1). https://doi.org/10.1038/srep46528

Volkow, N. D., Baler, R. D., Compton, W. M., & Weiss, S. R. B. (2014). Adverse health effects of marijuana use. *New England Journal of Medicine, 370*(23), 2219–2227. https://doi.org/10.1056/nejmra1402309

Wiley, J. L., Taylor, S. I., & Marusich, J. A. (2021). Δ9-Tetrahydrocannabinol discrimination: Effects of route of administration in rats. *Drug and Alcohol Dependence, 225,* 108827. https://doi.org/10.1016/j.drugalcdep.2021.108827