# Out of the Shadows

## The Legalization of

# CANNABIS

### The Role of

- Municipalities
- Schools
- Law Enforcement


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The Environmental Resource Council (ERC) is a nonprofit organization promoting health and safety. Since 1973 ERC has received support from the National Institute on Drug Abuse, State Departments of Human Services, Public Safety, and Natural Resources, and the Bush, Blue Cross, Medtronic, and Google Foundations. This document has been developed without outside support from the above or any other organization.

In 1977 ERC entered into agreement with courts to provide drug education as an alternative for young people found in possession of a small amount of cannabis. Over 7,000 adults and juveniles attended ERC drug education programming through court orders, thus avoiding incarceration and the stigma of a criminal record. We believe they learned valuable lessons about cannabis and other drugs. We learned a lot from them.

ERC
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# Out of the Shadows
# The Legalization of Cannabis


**A multi-billion dollar industry transitions from criminal control to regulated business.**

## EXECUTIVE SUMMARY/INTRODUCTION

*In the best and worst of societies, the pursuit of pleasure for some becomes the responsibility of others.*

The multi-billion dollar cannabis industry is metamorphosing from a criminal enterprise to a lawful and regulated business.

This transition involves new providers operating under new state laws and local government guidelines. Understandably the transition is complex. There are problems to address and valuable advantages in overcoming them.

### What is cannabis?*

It's a plant used historically for fiber (hemp), as a mild relaxant (CBD), and as an intoxicant (THC). Most laws and concerns relate to its intoxicating properties.

### Is it dangerous?

It can be misused but many people using cannabis don't harm themselves or others. Understanding the risks is important. Use is inherently safer when managed by legal and regulated providers as opposed to criminals.

This report lists many health and safety risks, but the major concern is intoxicated behavior. People using cannabis may do dumb and dangerous things. Often, risks most affect vulnerable populations, especially youth. In states that legalize adult cannabis, use by youth declines but remains a concern.

### How is it regulated?

It wasn't until relatively recently. Cannabis had been used as a medicine and social

**A brief video summary of health risks can be accessed at ENVRC.org or scan the QR code.**

***The term "cannabis" is typically more appropriate than "marijuana." The term marijuana (or originally marihuana) was selected and written into the federal criminal code to focus on ethnicity or Hispanic immigrant status, not the biologic nature of the plant.**


**Following the repeal of alcohol prohibition in 1933, federal alcohol prohibition agents shifted to drugs. Concern centered on foreigners and ethnic minorities. Cannabis, redefined as marijuana, was the prime substance of focus.**

intoxicant for centuries. It became a major health and social concern following the repeal of alcohol prohibition in 1933.

Under the direction of former alcohol prohibition agents, the Federal Bureau of Narcotics (FBN) was formed. The new agency prioritized preventing cannabis use focusing on "Negros, Hispanics, Filipinos, immigrants, and entertainers."[1,2]

The FBN popularized the foreign-sounding term, "marijuana," for cannabis. In the 1950s the agency also indicated that Communists were promoting cannabis use. In the 1970s cannabis became legally categorized as a Schedule I Narcotic. This is the most serious category of illicit drugs and precluded its use medicinally or in research. Possession became a serious federal crime. It may be rescheduled to a Schedule III drug; although possession would remain a federal crime, medicinal use and research would be limited but permitted.

Illegal cannabis use among younger Americans became institutionalized in the 1970s. This increased use contrasted with Federal "Wars on Drugs" in the 70s and 80s. More people were concerned about use and more people were using.

Starting in the 1970s some municipalities legalized cannabis for adults. The paradigm of cannabis being federally criminal, yet legal in states, relates to the constitutional right of states to establish their own criminal codes. Practically speaking state and local governments, not the federal government, control America's criminal justice infrastructure.

By the mid-1980s, a criminal cannabis industry, which the Wall Street Journal pegs at over $30 billion, had become firmly established. A Gallup Poll in 2023 showed that the number of admitted regular users had doubled since 2013 and that in 2024 over 50% of adults had tried using.

As states have legalized medical and recreational cannabis, regulated lawful businesses are displacing criminal enterprises.

## What happens when a state legalizes?

Each state is unique but, essentially, they establish guidelines for lawful distributors and templates for local governments, usually municipalities, to follow in approving and overseeing local providers.

Some combination of state and local government then reviews plans for distribution by approved providers. This transition can become protracted. Issues often arise, including sentiments, zoning, ordinances, the provider's operational experience, financial stability, social justice status, and other issues.

Assuming it all comes together, the new provider is "in business" and the following happens:

- Underage sales are not permitted, and adolescent use is reduced.
- Significant new revenues are available to state and local governments.
- Cannabis is purity and dose controlled. The consumer is better protected.
- Other drug or toxic contamination is typically eliminated.
- Cannabis is often packaged with warnings and dosages. Package or posted warnings may include driving, providing the product to the underaged, storage around children, the risk of mixing intoxicants and other public health information.
- Local criminal elements lose financial support and other crime often progressively declines.
- Responsible substance abuse education becomes important for students who now encounter a world where cannabis, like alcohol, is legal and available. Cannabis revenue may support responsive education and abuse prevention.
- Local law enforcement must address cannabis use while driving. Law enforcement is often supported by cannabis tax revenue.
- An ongoing and productive relationship is established among local and state regulators and the new, lawful providers.
- The community may perceive cannabis as unrealistically safe unless the transition includes responsible outreach and prevention programs. These are also sometimes supported with cannabis revenues.
- Increased emergency room visits occur with cannabis-related gastrointestinal problems and psychotic reactions.
- There will be a need to adjust medicinal dosages for surgical procedures, relating to a patient's cannabis use.

## What can go wrong?

A lot.

We studied seven states that had legalized cannabis for at least five years. Specifics of what we observed are described in our full report *(available for download)*. In summary, there are five problem areas:

1 **Federal Schedule I and Potentially Schedule III –** Many normal business practices for cannabis providers are unavailable as a result of continuing federal prohibitions. These include interstate transport, banking prohibitions, poison control information, response to a contaminated product, and others. In some cases, the states have created supportive programming, although, often not. If cannabis is rescheduled as Schedule III drug, it will remain illegal federally.

2 **State Agency Clarity –** Given the nature of this new, lawful cannabis industry, there will be several interested state agencies. It seemed that when there was a clear lead agency—sometimes the governor's office—a functional and organized regulatory system could be more effectively established. At a minimum, the roles of the respective agencies must be clear.

3 **State and Local Collaboration –** A clear working relationship between state and local agencies must be established and maintained. The selection criteria for providers seem to be the major impediment. Each state may prioritize different characteristics but typically local government selects and oversees local distribution.

4 **Regulatory Approaches –** In some state and local areas regulators were either dismissive or imperious to the providers. They saw themselves as primarily policing providers. State programs tended to succeed where regulators envisioned themselves as both monitoring and supporting providers. One of the state regulators described the successful relationship with providers that evolved in her state as "paternal."

5 **Provider Approaches –** Considering that the industry operated as a criminal enterprise for decades it's hardly surprising that a culture of suspicion toward public regulators exists. For the transition to a lawful enterprise, providers must accept the authority of state and local regulators. Sometimes unanticipated expectations are required for operating a lawful cannabis business. These include worker safety, required product lab testing, labeling, and hygiene. The provider benefits from support and guidance from regulators. A successful, lawful cannabis industry should strive for a respectful, ongoing collaboration between providers and regulators. Both are trying to create something of value.

Operational concerns emerged that were often unexpected. Some of the disruptive issues involved climate change concerns and hydroponic versus sun and earth plantings. Crop disease countermeasures are an issue since the US Department of Agriculture cannot become involved, and product recall procedures for corrupted substances are problematic. Litigation regarding identifying "privileged" providers delayed several state programs.

## Something of Value

It is challenging to run any business. When it is in the midst of a major transformation, problems of operation and regulation may seem insurmountable. However, we cannot continue to maintain an industry of this size and potentially dangerous nature as a criminal enterprise. Transparency and regulation are necessary.

Providers and regulators must take on the challenge of successful product legalization.

### Smoking and Eating/ Drinking Cannabis

Inhaling hot carbon irritates bronchial tissue while apparently not placing moderate users at risk. Ingestion often causes unanticipated delayed and prolonged intoxication. Psychological and gastrointestinal problems may follow over-ingestion.

**If the complete report is not attached, scan the QR code for a copy of the complete report at no cost or go to ENVRC.org**

[1] Marijuana VIP: Seth Rogen, Congressional Testimony, March 2, 2022, www.cannaconnection.com

[2] Sargent, Max. Cannaconnection.com/blog7217-harry-j-anslinger

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## I. WHAT IS CANNABIS?

Cannabis Sativa L (cannabis) is the biologic term for a plant species that provides commercial fiber and contains over 80 compounds defined as "cannabinoids." Some cannabinoids have psychoactive properties. Depending upon the characteristics of the plant, or "cultivar," the plant can be bred for fiber and textile purposes, a non-intoxicating mood relaxant, medicinal treatments, or a recreational intoxicant. Modern agricultural husbandry techniques can significantly enhance desired characteristics.

### HEMP (a fiber)

The conventional term for the fiber-oriented plant is "hemp." Hemp holds commodity status as an agricultural product. Hemp may be processed for textiles, with production promoted by many governments. Its textile application is both traditional and, with new processing innovations, its use is expanding. Extremely small quantities of low-dose relaxants and intoxicants may be extracted from hemp.

### CBD (a relaxant)

There is a cannabis component that creates a calming mental state, but not disorientation or intoxication. It is technically termed "cannabidiol," and is better known as CBD. It has been approved for medically addressing epileptic seizures but is most often used as a mood-influencing relaxant. Technically CBD is mildly psychoactive but not considered an intoxicant. In some states, it is not regulated; in other states, there are regulations regarding thresholds of trace intoxicants (usually less than .3%). CBD is typically used to mitigate depression or anxiety and as a sleep aid. It may be available over the counter and through the Internet.

### THC (an intoxicant)

The intoxicating cannabinoid is "tetrahydrocannabinol" or THC. Isomers within THC produce intoxication and, depending upon the dose and the setting in which the THC is inhaled or ingested, there are both physiological and behavioral impacts. THC and consequent intoxicated behavior cause social concern and regulatory focus, especially regarding youth. The term "marijuana" typically refers to cannabis with a significant, intoxicating, THC burden.

# II. HEALTH AND CANNABIS

### Inhaling and Ingesting Cannabis

**We safely drink and eat while tobacco smokers often suffer and die. Transferring this dynamic to cannabis use is understandable but problematic.**

**> Our immune systems protect us when inhaling limited amounts of carbon. Cilia in our lungs cleanse toxic particles escalating them into our mouths where, with support from our salivary glands, they are swallowed and flushed out of us.**

**> Once addicted to nicotine, chronic frequent use of tobacco will overwhelm immune systems causing disease and death.**

**> Both the chemical nature of cannabis as it relates to tobacco(36) and comparatively fractional use significantly limit risk. Inhalation is often unpleasant and may harm those with bronchial challenges but moderate use seems safeguarded.**

**> With ingestion the digestive system processes the cannabis slowly, delaying intoxication often promoting overuse. It also prolongs intoxication, sometimes causing psychotic and/or gastrointestinal problems. Most emergency room admissions relate to ingestion.**

**Hopefully, better research and labeling/warnings will evolve allowing us to better guide and protect.**

There is concern and confusion regarding what risk the use of THC represents to whom and under what conditions. Inaccurate information both overstating and understating risk has been and continues to be published both in traditional media and especially on the Internet.

Older "War on Drugs" government publications are often seriously inaccurate. Present federal publications, particularly from the Department of Health and Human Services and the Centers for Disease Control and Prevention, are of value.

Some publications, supporting cannabis legalization have described use as promoting mental and physical health—without serious academic substantiation.

We can now epidemiologically compare the fundamental health characteristics of a population that was essentially unexposed to cannabis (pre-1965), with a population in which a substantial percentage use. We also can identify some responsible, scientifically credible, research that conscientiously provides an accurate understanding of health risks.

Given the increase in cannabis use over the last 50 years, if cannabis created a serious public health problem, we would likely have identified indications of population-wide harm. Such health consequences have become obvious with methamphetamines, opiates, cocaine, and, although underemphasized for a time, tobacco and alcohol. This does not mean that the use of cannabis is safe, but widespread public health harm connected to cannabis use has not been observed. There are risks with cannabis use, and individual users have been hurt and have hurt others. It is possible that improved health care and health promotion, especially tobacco use reduction, have masked some unknown, population-wide risks. It seems unlikely.

There are defined risks associated with cannabis use, especially among certain groups, including youth. However, our fundamental social and public health well-being has not been jeopardized as medical and recreational THC use has become institutionalized.

If managed wisely, adult legalization may provide a public health opportunity to better understand, prevent and respond to misuse. It also may create additional problems involving underappreciating risks, aggressive marketing, or higher dosages.

**A brief video summary of health effects is available at ENVRC.org or scan the QR code.**

Unwise and dangerous behavior is the greatest and most common risk. The essence of the cannabis high—the inability to judge time, a sense of well-being, and simply put, an inability to think normally—creates pleasure as well as risk. From making a dumb social decision, like

misplacing a wallet, or from unsafe sex to drowning, being high can put users and those around them in discomfort or jeopardy. With a scrambled sense of timing and perception, driving while "high" is especially dangerous.

Concerns regarding adolescent use are primarily based on behavioral and developmental issues. As a young person struggles to come to terms with the responsibilities, challenges, and risks of an adult world, intoxicated behavior becomes especially damaging and often dangerous.

For youth and adults, the pleasant feelings typically associated with cannabis must be balanced with an appreciation for potential problems and harm.

The following describe cannabis health-related topics.

## Cannabis Use Disorder (CUD)

All people make mistakes and occasionally do dumb and dangerous things. Both happen more often to intoxicated people, no matter what the intoxicant. In the case of cannabis there is also a continuum of pleasure and penalty for recreational users.

For healthy adult occasional user negative things can happen involving behavior but risk is typically limited and diminishes as they learn and to adjust use, supported by common sense.

As the director of the National Institute on Drug Abuse stated when discussing a normal healthy adult population using reasonably:

*There's no evidence to my knowledge that occasional marijuana use has harmful effects.*(5)

—Dr. Nora Volkow. Director NIDA

However, there are extremely harmful consequences for compulsive cannabis users who may progressively slip into addiction or Cannabis Use Disorder (CUD). A few individuals find the state of cannabis intoxication so captivating that they disrupt their lives and the lives of those for whom they care with compulsive use. For some, cannabis use becomes a progressively destructive and life-degrading addiction.

The diagnosis of Cannabis Use Disorder or CUD, often equating with addiction, involves aberrant behavioral criteria. A substance abuse professional will look for pathological behaviors including engaging in hazardous actions, social isolation, family and financial disregard, destabilizing constant cravings for cannabis, the inability to end or limit use, and a blind focus on pursuing intoxication. Essentially, they document a basic human quality of life being sacrificed to cannabis intoxication.

The American Society of Addiction Medicine has determined that adolescents are far more likely to slip into an addictive pattern of abuse than adults. They estimate that between a bit less than 10% and a bit over 30% of users may trip at least two behavioral signals of CUD or addiction.(6)

There are conflicting guidelines and variations in determining which signals or sets of behavior constitute CUD and when treatment or counseling support is necessary. There is consensus among most public health professionals that CUD/cannabis addiction is real.

Interestingly, as cannabis use and legalization have increased there has been a decrease in treatment admissions (2002 to 2015).(7) It is possible that people are learning about risk and are establishing responsible guidelines for use. Or possibly with partial legalization misuse, along with use, is not seen as a serious problem.

Some deny that cannabis use could evolve into actual addiction and usually it does not, but at some level CUD is real. Potential behavioral risk and a drive toward compulsive use should be accepted as a potential reality for all users but especially adolescents.

Neal Pollack, perhaps best known for his genius on the quiz show Jeopardy, is considered by many the greatest living American author. In 2020 he wrote a shocking and powerful book chronicling his personally tragic, destructive addiction to cannabis, *Pothead—My life as a marijuana addict in the age of legal weed*. He articulately describes his self-destructive descent into cannabis dependency and his struggles in achieving abstinence and maintaining recovery.

We will list and comment on many hypothetical and documented risks relating to the use of cannabis but risky intoxicated behavior and progressing into the state of

addictive chemical dependency are by far the two most significant threats associated with cannabis.

Additional information on the following issues can be obtained by opening and reviewing the attachments specific to the following topics.

### Meta-analysis of Health Risk

When there are mixed findings in a controversial area of research, a highly respected academic institution or group of institutions will conduct an analysis that includes an exhaustive and carefully documented review of credible and academically published literature. Their findings are termed, a "meta-analysis."

The National Academies of Science, Engineering and Medicine produced a meta-report describing the most significant, credible health risks of cannabis use. A summary of their findings is attached. **(Attachment 1)**

The following are additional concerns regarding health risk and cannabis use.

### Gateway Drug

"Gateway drug" means that use of a drug leads to using other drugs. With cannabis, this does not appear to happen with frequency, but it does occur. **(Attachment 2)**

### Amotivational Syndrome – Burnout

A controversial concern is that heavy use causes some users to become nonproductive and antisocial. **(Attachment 3)**

### Adolescent Cannabis Use and IQ Impact

Adolescent heavy use and diminished adult IQ scores seem contemporaneous, but cannabis use is not necessarily causative. **(Attachment 4)**

### Mental Health Issues

The impact of cannabis use may exacerbate existing problematic mental health conditions. **(Attachment 5)**

### Cancer

Present research indicates that the relationship of cannabis to cancer does not constitute a definable risk, but continued research is important. **(Attachment 6)**

Cannabis has a role in chemotherapy response, and a role in cancer prevention is being researched. **(Attachment 20)**

### Pregnancy/Breast Feeding

Cannabis use during pregnancy and while breastfeeding involves metabolites passing into both a developing fetus and nursing infants. The impact is not understood but of serious concern. Use during pregnancy or while breastfeeding is discouraged. **(Attachment 7)**

### Heart or Blood Pressure Effects

Cannabis use increases heart rates and blood pressure, which can be problematic for those with cardiac concerns. Some limited research implies a relationship between use and cardiac problems. **(Attachment 8)**

In some situations, CBD extracts may reduce blood pressure. **(Attachment 20)**

### Fertility

Relationships to fertility are possible but unlikely. There are concerns for both men and women. **(Attachment 9)**

### Cannabis Overdose

A physiological overdose involving only cannabis is extremely unlikely. Overdose through contaminated cannabis has occurred. **(Attachment 10)**

### Complexion

Although often reported, there is no documented connection to complexion issues. **(Attachment 11)**

### Purity

Illicit cannabis may contain toxic contaminants through herbicide application, naturally absorbed, soil-based toxins, or other drugs batched in by illicit sellers. If cannabis is grown and processed following proper guidelines, purity may be attained. **(Attachment 12)**

### Potency

Not understanding THC-related potency and the consequent impact of cannabis use may create risk. **(Attachment 13)**

### Potentiation – Mixing Drugs

Blending two or more psychoactive drugs may create erratic and dangerous results. Cannabis plus alcohol represents the most serious public health risk. **(Attachment 14)**

### Edibles, Including Beverages

Post-legalization mass production of THC beverages and edibles represents risks with both childhood poisoning and an unanticipated

differentiation in the rhythms of intoxication when switching from inhalation to ingestion. **(Attachment 15)**

## Adult Emergency Room Admissions

Following legalization, an increased number of individuals reported to emergency rooms with panic reactions or gastrointestinal discomfort. The medical response typically involves time, a calming environment and potentially selective medication. **(Attachment 16)**

## Anesthesia Influence

With patients who had heavy exposure to THC, the protocol for providing anesthetic during dental and medical procedures may require increased dosages. THC usage should be shared with healthcare professionals. **(Attachment 17)**

## Fentanyl Overdose Through Inhalation

The increase in fentanyl availability may cause illegal cannabis to be contaminated with fentanyl and dangerous. **(Attachment 18)**

## Toxic Contamination

Without federal food and drug safety controls, cannabis products may be contaminated with toxic organic and inorganic compounds. **(Attachment 19)**

## Cannabis Promoting Health

There are many publications indicating cannabis can promote both a healthy lifestyle and health in general. Some are substantiated, many are being responsibly researched, and some claims are irresponsible. **(Attachment 20)**

## Caution Regarding Research Interpretations

Research regarding THC and health is more extensive and extensively quoted and misquoted than any other mood-altering drug. There are volumes of sound, academically published materials but also often emotionally influenced interpretations of both responsible and irresponsible research.

Two examples of published misinformation:

**Moderate cannabis use helps college freshmen successfully adjust.**(1)

Several post-secondary faculty observed that cannabis-using freshmen appeared to be adjusting more successfully than nonusers. A survey of a few dozen post-secondary faculty indicated that "light marijuana use" and freshman adjustment seemed to be positively correlated. The "finding" made its way into student newspaper publications. A carefully constructed analysis was undertaken with appropriate research protocols and subject control. The singular, statistically sound relationship to cannabis use was concurrent alcohol use. Using cannabis should not be credited with supporting successful adjustment among freshmen to post-secondary education.

**Autism is caused by a mother's use of cannabis.**(2)

A respected research publication reviewed incidents of autism among children of women who used cannabis during pregnancy. They indicated a modest relationship. However, all subjects had used illegal cannabis, so they were likely exposed to unknown dosages and other toxic compounds. Also, test subjects who used illegal marijuana during pregnancy may have tended toward less thoughtful prenatal care. Considering the limitation in subject selection and that the differential was slight, it was improper to publicly announce that "maternal use of cannabis causes autism."

The study's authors understood these research limitations and did not assert causality. However, their research was inappropriately cited in the lay media, seemingly validating a causal link. Additional research makes sense as does a general appeal for pregnant women to refrain from using psychoactive compounds that pass the placenta and influence lactation. However, identifying a mother's cannabis use as a cause of a child's autism was unjustifiable.

Knowledgeable and unbiased analysis in determining the reliability of published cannabis health-related claims is critical, especially at this juncture of criminal to commercial transition.

# III. CANNABIS USE AND REGULATION

## Historic Cannabis

Civic leaders who are now charged with managing legal cannabis will benefit from considering the remarkable history of cannabis, especially regarding government interactions.

Over 5000 years ago cannabis was used in China and Japan for both textile fiber and as a ceremonial and likely recreational intoxicant.(3)

In ancient Judea, it was batched with frankincense and burned for inhalation on Old Testament-era synagogue altars. The ancient Greek scientist Herodotus recorded that Scythians often burned cannabis and inhaled the smoke to achieve "pleasurable feelings."(4)

Cannabis seeds were found in ancient Egyptian excavations. The plant as an intoxicant has been with humanity throughout recorded history and possibly prerecorded history.

## Cannabis Regulation in America

The earliest mention of cannabis involving North America involved a decree in 1619 from King James I, which mandated that "New World" Virginian planters grow cannabis hemp to support the manufacture of textiles, especially rope. Cannabis farming became institutionalized in Virginia and was one of three primary crops grown at Mount Vernon by George Washington.

The intoxicating properties of cannabis were evident and of possible concern as Europe moved into modernity. In 1689 the British Royal Society charged the scientist Robert Hooke with examining

**Harvesting cannabis commercially in the 1700s.**

cannabis intoxication. Professor Hooke reported to the Society that inhaling marijuana makes one "very merry" and "exceedingly hungry." He did not perceive that it represented a threat.

Over the next 150 years, in addition to hemp for textiles, cannabis extracts were often blended into unregulated commercial medicine and likely also used for recreational purposes.

Like many unregulated medical elixirs, liquid cannabis extracts were marketed as general cure-alls. As an interesting example, in the late 1800s Medical Doctor S. Stewart presented a widely distributed paper to the Nebraska Veterinary Medical Association promoting the use of cannabis extracts not only for humans but for large animals. He acknowledged that cannabis may "produce hallucinations" but presents no other "unpleasant aftereffects." He believed cannabis should be considered a replacement for opium, which has short-term and especially long-term harmful aftereffects ranging from constipation to addiction. He observed that use as a feed supplement had positive effects on the health of large animals for mitigating pain, especially abdominal distress.

*"I have discarded opium and chloral hydrate in this class of cases (abdominal discomfort and general pain), and do not expect to resort to them so long as this agent (cannabis) serves me so faithfully."*(8)


**Cannabis was batched with malt to mitigate pain and to remedy or prevent disease. Most prominently, in the mid to late 1800s, Maltos-Cannabis was mass-produced by the Swedish Pharmaceutical Corporation, Tekniskia Fabriken, and widely distributed in Europe and the United States as a nutritious "Food Remedy." Essentially, it was considered a vitamin supplement.**

Interestingly, in 2024 the Association of American Feed Control Officials gave "hempseed meal" initial approval for use with certain farm animals. Exactly how it will be used in both veterinary medicine and as a possible large animal feed supplement is under review.

Concurrent with unregulated medical use in the 1880s, cannabis was identified in the popular press as a "fashionable narcotic" often used in "hashish parlors." An 1883 article in Harper's Magazine explained that these cannabis parlors were frequented by males and females of "the better classes," unlike opium dens or taverns. The article explained that in addition to around 500 such facilities in New York City similar parlors existed in Boston, Philadelphia, and Chicago. Articles published for popular consumption in 1883 should not be considered reliable historical documentation; however, it seems clear that cannabis at some level was being used recreationally.


**Cannabis as a Patent Medicine**

There were a few concerns published in newspapers identifying problems with the use of recreational cannabis, sometimes termed "loco weed." As an example, on March 6, 1884, the New York Times reported that a "well dressed young man" who had used cannabis walked into the New York City Hospital hallucinating that someone had stolen his legs. After a short time, he "recovered his senses" and walked out of the hospital.

The casualties resulting from the misuse of unregulated patent medicines, especially opium and cocaine, became so obvious that in 1906 Congress passed the Pure Food and Drug Act. This triggered differing regulations in some states


Minneapolis Star, 11 December 1934

**Following the repeal of alcohol prohibition, the new Federal Drug Enforcement Agency (DEA) would lead the effort to eliminate drugs and crime.**

**William Creighton Woodward, a physician/ attorney representing the American Medical Association, vigorously opposed the Marijuana Tax Act. It would, he believed, restrict the use of a proven often-used pharmaceutical with potential for yet undiscovered medicinal value. Director Anslinger, he argued, was advocating both unwise and unconstitutional use of federal policing authority.**

involving local law enforcement. When the federal role in controlling unregulated medicines was challenged, Supreme Court Justice Oliver Wendell Holmes supported promotion of regulation, writing, mind-altering drugs "…should be thrown into the sea where it would be better for people and worse for the fishes."(9)

With the federal act and emerging public concerns, local law enforcement of intoxicating compounds began.

In 1914, what has been identified as the first cannabis drug raid in America occurred in Los Angeles when police simultaneously raided two so-called "Dream Gardens" and confiscated a "wagon load" of cannabis. Many of those arrested were Mexican-Americans. The "drug raid" made national news, setting the stage for ethnic and often immigrant-focused drug policing.

In 1925 an international opium convention identified specific differences between hemp, with only trace THC, and those forms of cannabis with THC thresholds that induced intoxication. Based on this delineation and in consideration of new federal pharmaceutical regulations, in 1930 a Federal Bureau of Narcotics (FBN) was established. Initially, it simply encouraged state governments to adopt uniform guidelines for the possession of potentially abusable drugs, including cannabis. It soon became something much more.

The first director of the FBN was an articulate federal alcohol prohibition agent facing unemployment with the repeal of Prohibition. His name was Harry Anslinger. Until 1962 he would direct the Federal Bureau of Narcotics (FBN), which in 1968 evolved into the Bureau of Narcotics and Dangerous Drugs (BNDD), and then in 1973 became the present Drug Enforcement Agency (DEA).

Director Anslinger would define American drug policy for decades, focusing on cannabis, which he chose to identify as the more foreign or Hispanic-sounding, "marijuana." He created the first war on drugs with an expressed focus on, "Negros, Mexicans and immigrants." (10) His focus on foreigners and aliens would include Communists during the 1950s Red Scare.

Anslinger promoted a Marijuana Tax Act, which would allow his agency authority over the entire nation. This was passed and then partly repealed as unconstitutional. Much more significant was his skillful inciting of public fear through the now-nationalized media.

The following are five statements he made or were reported takeaways from his nationally distributed press briefings:

1. Marijuana is the most violence-causing drug in the history of mankind.
2. Reefer (smoked cannabis) makes darkies think they're as good as white men.
3. There are 100,000 total marijuana smokers in the US, and most are Negroes, Hispanics, Filipinos, and entertainers.

4. You smoke a joint and you're likely to kill your brother.
5. Marijuana leads to pacifism and Communist brainwashing.(11)

He nearly went too far when he referred to a Latino Hispanic who questioned his agency's conduct as a "…ginger-colored ni**er." He survived senate censure through support from pro-segregation senators. One Senator declared that Anslinger "deserved a medal of honor" for his efforts and candor.

**Billie Holiday, a Black vocalist in the 1930s and '40s.**

Billie Holiday was a Black vocalist in the 1930s and '40s who was targeted by the FDA and Director Anslinger as the FDA focused on "negros, entertainers and subversives." After popularizing the early civil rights song, *Strange Fruit*, which protested Black lynching, Ms. Holiday had checked all three boxes.

After appearing at Carnegie Hall, further performing in New York was banned because of federal drug charges. She was consistently harassed even when she was terminally ill. FDA agents handcuffed her to her hospital bed until a local judge ordered the handcuffs removed. Outraged federal agents found that they could not defy local court orders. These federal vs. local authority dynamics would play out with both cannabis laws and social justice concerns.

Anslinger's perspectives and racially oriented focus survived him. Several years after he retired, Richard Nixon's 1968 presidential campaign revived Director Anslinger's powerful anti-drug and racist themes. During his campaign and as President, Nixon declared a second war on drugs. Years later *Harper's* interviewed John Ehrlichman, Nixon's Deputy Chief of Staff, regarding the Nixon War on Drugs. Ehrlichman stated:

*"The Nixon campaign in 1968, and the Nixon White House after that, had two enemies: the antiwar left (those opposing the Vietnam War) and Black people…we knew we couldn't make it illegal to be either against the war or Black, but getting the public to associate the hippies with marijuana and Blacks with heroin and then criminalizing both heavily we could disrupt those communities."(12)*

In the civic fervor of the late '60s and early '70s, cannabis, now legally identified as "marijuana," was criminalized as a Schedule I narcotic allowing no medical use or research on therapeutic use, and promoting incarceration for sale or possession. Concerns about selective enforcement and use of cannabis outside the United States for medical purposes created a backlash. Internationally respected neuro brain researcher, Dr. Andreas Zimmer, found it necessary to leave the National Institutes of Health and relocate to Bonn, Germany, to continue his research on THC and Alzheimers/elderly dementia. In 2005 his research provided convincing evidence that synthetic THC administered under the right conditions may inhibit dementia. It is not presently prescribed but under review by several pharmaceutical houses.

Law enforcement began using the new law to selectively target "undesirables." A young Black man driving through a suburb was likely to get stopped and searched, as was any young man with long hair and an attitude, or those with antiwar or civil rights involvement. A marijuana leaf emblem became prominent in many antiwar and even some civil rights demonstrations.

A critical aspect of drug-related law enforcement is that federal law enforcement agencies do not control an infrastructure with the capacity to enforce local laws. This dynamic in American civics would empower states and municipalities as they first decriminalized and then legalized marijuana while it remained a federal crime. Realistically local government was, and still is, typically in charge of which and how laws are enforced.

In 1972, Ann Arbor, Michigan, was the first American municipality to pass a resolution decriminalizing possession of cannabis. The young mayor was elected on a platform that prioritized police focus on "real


**Social justice and anti-war protests sometimes adopted the cannabis leaf as a symbol.**

crimes," as opposed to cannabis possession. Other cities followed, including Madison and San Francisco. Over the next five years, eight states would decriminalize marijuana, making small amount possession a civil offense as opposed to an actual crime. By 2024 most Americans resided in states where marijuana possession was legal for medical and/or recreational purposes by state statute, while technically remaining a federal crime.

With the election of President Carter in 1976, Nixon's second war on drugs quietly ended. Also that year, Minnesota decriminalized small amount possession if the violator attended an approved drug education class. Our nonprofit organization provided these classes throughout the state in coordination with the courts and schools. The identities of possession violators would not be transmitted to an FBI database, there would be no threat of incarceration, and violators would not have a life-debilitating criminal drug record. Instead, they would be warned about dangers associated with cannabis, as well as with alcohol, tobacco, and other drugs.

The Carter administration actively supported the Minnesota approach, to the consternation of federal enforcement agencies, especially the Drug Enforcement Administration.

One DEA agent likened state decriminalization to the Confederacy firing on Fort Sumter. Some wanted martial law declared, with the military enforcing marijuana possession for local medical or recreational use.

In 1977 the Minnesota National Guard was mobilized to destroy a small marijuana patch in rural Minnesota. Heavily armed infantry were airlifted into the outskirts of the small community. They then surrounded and burned an abandoned patch of plants. A critical newspaper pointed out that the plants could have been eradicated by the part-time county weed inspector with a corn knife. If there was a legitimate safety concern, a deputy sheriff could have accompanied the local weed inspector. This use of military to "wrestle a few weeds to the ground" was publicly ridiculed but it was also indicative of a growing concern regarding liberalized cannabis attitudes.

President Reagan was elected in 1980, vowing to reinitiate the "War on Drugs." The Reagan Federal Anti-Drug Abuse Act mandated serious prison sentences for some cannabis offenses with a possible death penalty for distributors. The law was later amended to include automatic suspension of a driver's license for certain drug possession even if no automobile was involved. By the mid-'80s a substantial minority of young adults used cannabis. Considering the widespread use and serious penalties, all but three states opted out of enforcing the new Federal War on Drugs model statute. No state aggressively enforced the cannabis position portions of the statute.

The Reagan administration realized that public support was required for their anti-drug/anti-cannabis objectives. Initially, First Lady Nancy Reagan was designated to promote a third war on drugs similar to how First Lady Rosalynn Carter had promoted support for challenged children.

Nancy Reagan had limited management experience and her appointment became problematic


Photo: Wikipedia

**First Lady Nancy Reagan was an unusual choice to lead a war, but it was also an unusual war.**

when it became public that she was consulting psychics for advice. She was popular but had the wrong personality to seriously lead an aggressive "war on drugs." The administration required an aggressive moral crusader to inspire community outrage. They needed another confrontative, media-savvy Harry Anslinger. They found one in William Bennett.

William Bennett was a conservative talk show host and author of several books lamenting the degeneration of traditional national and religious values. He was appointed Secretary of Education and later became the first National Drug Control Director. He used both appointments and his formidable communication skills to promote more punitive drug laws with a focus on cannabis. He persuaded some states to prevent or abandon decriminalization of possession and reintroduce harsh criminal prosecution and potential child protection measures against parents who used cannabis.

Hypothetically, parents could be imprisoned for possession and lose their children. Losing child custody for cannabis possession rarely, if ever, occurred. Local courts and social services agencies would have to support such action.

Like Harry Anslinger, Bennett sometimes made outrageous statements, likely for media impact. On the nationally syndicated *Larry King Live* television program he lamented potential drug law violators having "habeas corpus" rights. He also stated that "beheading" drug dealers would be "morally plausible." He made media-savvy trips to states that had decriminalized marijuana, indignantly labeling them "notoriously weak" to the local press. California and Minnesota were two of his targets.

His trip to Minnesota received substantial media attention. His emotional communication style and dramatic outrage were widely covered. However, Minnesota had enacted restrictions on smoking in public buildings and as a heavy tobacco smoker, Director Bennett became frustrated trying to find a place to smoke in the state capitol. He had Secret Service agents escort legislators out of their lounge to allow him to smoke in private. His conduct undermined his effectiveness, even among anti-cannabis state legislators. While Director Bennett was charismatic with the press, he hadn't been "Minnesota nice" in removing legislators from their lounge. He did not obtain support for recriminalizing cannabis possession in Minnesota.

Federal policy regarding marijuana became an enigma. It was a law that defied enforcement but it remained federal law. In 2016 when California and Maine legalized adult use, President Obama officially directed federal agencies not to interfere with states that legalized medical and/or recreational use. He did express concern that legal cannabis might become a public health problem, particularly regarding youth. However, he felt those challenges could best be addressed through education and potential counseling support, rather than criminal prosecution.

President Trump did not address the federal versus state dichotomy nor did President Biden. Essentially, President Obama's position from 2016 remained federal policy as states progressively decriminalized and legalized both medical and recreational use. By 2024 nearly 60% of Americans answered "yes" to a Gallup poll questionnaire asking, "Do you think the use of marijuana should be legal?"

This odd criminal federal/state dynamic persists, creating confusion as a legal, regulated cannabis industry emerges among states.

There have been unsuccessful congressional initiatives to reschedule cannabis, allowing federal infrastructure and regulatory support systems, such as banking and food and drug safety. President Biden has supported reducing the scheduled status of cannabis from Schedule I to less punitive Schedule III, but its possession still remains a federal crime.

# IV. SELECTIVE ENFORCEMENT VS LAWFUL REGULATION

*Unwise laws should be observed but changed.*

**—Abraham Lincoln, 1854 Peoria Illinois**

The use of cannabis is commonplace in many nations. Serious enforcement of any prohibition would require the unrealistic prosecution of a substantial portion of society. Selective enforcement or shifting to legalization are the only realistic civic options.

The European approach typically preserves technical illegality with selective enforcement and sometimes controlled use. Police, courts, and policymakers decide when and where to enforce cannabis laws on certain people or categories of people under certain conditions.

As an extreme example, Russia maintains a criminal prohibition and selective enforcement of cannabis possession. The Russian government grows and uses cannabis for agricultural and commercial purposes and, like the rest of Europe, recreational cannabis is used covertly. In November 2022, following the discovery of less than a gram of medically prescribed cannabis oil, the American professional basketball player Brittany Griner was sentenced to nine years in a Russian penal colony. Her prosecution permitted the Russian government to bargain with the United States for the release of convicted Russian espionage agents in return for her repatriation.

While there is widespread cannabis use in Europe (often involving hashish), legalization has not been the typical response. Malta has legalized adult cannabis use, and both Germany and Luxemburg have petitioned the European Union to consider adult legalization. In 2023 the German parliament voted to establish licensed facilities, which then could allow on-site cannabis use. In 2024 both Germany and Luxemburg legalized small amount possession but how it will be managed is unclear. Selective enforcement remains the general European regulatory option. The production of hemp for textile use is financially supported by European governments, further complicating potential enforcement since hemp does contain a low burden of THC.

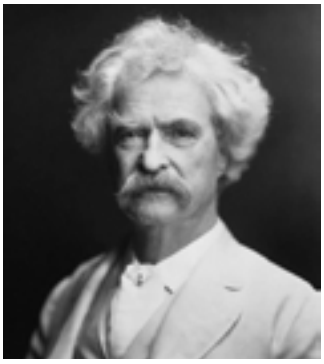
Recreational use in some European countries, including the Netherlands, Portugal, Switzerland and now Germany, involves semi-regulated Cannabis Social Clubs. These are either nonprofit social organizations or licensed coffeehouses where cannabis prohibitions are not enforced. Their respective governments may monitor product safety and prevent underage access. It is probable that if one of the regulated distribution facilities promoted or even allowed underage access, or distributed marijuana contaminated with pesticides or other drugs, they would be shut down. As in the United States, concerns regarding underage use strongly influence regulatory considerations.

Criminal elements often provide and distribute THC products in Europe. Cannabis revenues are sometimes used to finance other criminal enterprises, as was the case during alcohol prohibition in

the United States and presently in states that have not legalized cannabis. Following legalization, there is typically a reduction in property crime, which may relate to reduced, sustained criminal income for supporting unrelated criminal activity.

Unlike much of Europe, there is a predisposition in the United States for local control of many aspects of civic life. Independently elected school boards govern education, and locally elected representatives govern counties, parishes, and municipalities, which also control local law enforcement. This concept of local control enabled states to legalize cannabis, with state and local governments regulating distribution while it remained illegal, federally. State and local operational control was also the pattern of governance for lawful alcohol distribution following the federal repeal of Prohibition in 1933. The state established regulatory guidelines and local municipalities would oversee operational specifics for municipal liquor stores and liquor store licensing.

As the trend toward state legalization continues, understanding the characteristics and challenges faced by states and local communities that have piloted legalization is valuable.



*History doesn't repeat itself, but it often rhymes.*

**—attributed to Mark Twain**

*Tell others of the past to wisely prepare them for their future.*

**—Confucius**

# V. STATE LEGALIZATION

> **“They are weird!** headlined a Canadian editorial. **Once Canada legalized cannabis that was that. But if a Canadian with cannabis crosses into a U.S. state that has also legalized, they faced arrest, even though it’s legal on either side of the border agent’s booth.”**

## Defying Federal Cannabis Law—Insurrection or Good Civics?

*How can the federal government criminalize cannabis while municipalities and states legalize it?*

Checks to federal authority are baked into American laws and values. The founding fathers created three independent branches of federal government and left many issues that affect our lives, including running schools and most law enforcement, to local governments.

The Kansas-Nebraska Act in 1854 gave states the choice of prohibiting or allowing slavery. That act wouldn’t stand. The Constitutional rights of enslaved Black Americans trumped local governments’ authorizing slavery. But it took a civil war to get that relationship straight. In some matters, federal authority is absolute, but not in others. That’s the way America is set up, and in the end it usually works.

In 1920 the Volstead Act federally prohibited alcohol and assigned around 50 federal agents per state to enforce this prohibition over the many millions who found pleasure in alcohol. Support from local government was tepid, verging on hostile. Chicago’s chief of police reported that “Sixty percent of my police force (are) in the bootleg business.” A speakeasy raid in Detroit arrested the county sheriff, a congressman, and the mayor. Without local support, Federal Prohibition was unpopular, unenforceable, and repealed.

Two areas where federal control is accepted are taxation and regulation of food and drug safety. Both became the basis for federal cannabis prohibition.

When former alcohol prohibition agent Harry Anslinger was named director of a new federal drug agency, he secured passage of the Federal Marijuana Tax Act, technically giving his agency nationwide authority. It was a fiction. Would a burglar really pay taxes on a profitable theft?

When the Tax Act was ruled unconstitutional, cannabis was quickly scheduled as a highly dangerous drug under federal pure food and drug controls preserving federal agency authority.

By 1970 a substantial number of Americans were using cannabis for medicinal and recreational purposes. It had also become divisively symbolic in both the Anti-Vietnam War and social justice movements. Model anti-cannabis laws became more aggressive just as use was gaining serious cultural acceptance. Conflicting beliefs and values were on a collision course when something remarkable happened, beginning in Ann Arbor Michigan.

The State of Michigan had signed on to the Nixon “War on Drugs,” involving aggressive prosecution of cannabis offenses. In Ann Arbor, a college town, there had been only minimal cannabis enforcement, but now possession and sales became serious. In 1969 a respected civic leader and poet named John Sinclair was sentenced to a 10-year prison term for selling two cannabis cigarettes.

Students organized a protest rally, which exploded into an historic event. It never got out of control or violent, but ex-Beatle John Lennon and many national celebrities attended the event and over 15,000 showed up, many defiantly smoking cannabis.

At the apex of the event, John Sinclair's weeping four-year-old daughter's plea for mercy was broadcast to the gathering. Many attendees and some security police wept.

Things changed. Michigan's legislature reduced small amount possession to a simple misdemeanor, which assured John Sinclair's immediate release. More significantly the City of Ann Arbor formally passed an ordinance to "legalize cannabis." San Francisco and Madison followed suit, but the real change was that local governments could publicly decide not to enforce federal cannabis prohibitions. The technical validity of the Act was successfully challenged in court but practical control remained with local government. No one smoking cannabis in Ann Arbor would be arrested.

In the years and decades that followed cities and states would publicly ignore or modify cannabis laws, openly preempting the federal criminal scheduling of cannabis.

In 2012 an aggressive, federally supported anti-drug program encouraged children to report their parent's cannabis use to law enforcement. The resulting public outrage led the states of Colorado and Washington to formally legalize cannabis in public defiance of federal law.

By 2016 most Americans were living in states that had legalized medicinal and/or recreational use and were painstakingly establishing state-controlled cannabis delivery systems. President Obama then ordered the Federal Justice Department not to "stand in their way."

## Anticipated Concerns (Fears)

When Colorado and Washington State approved ballots to legalize cannabis for recreational use, they had delayed enactment dates. This provided the states time to prepare and allowed the Federal Department of Health and Human Services (HHS) to commission a report speculating on social and public health concerns.(13)

Following adult legalization, increased underage use was presumed, and the HHS report identified the following seven potential concerns for youth in that regard:

1. Perception among students of reduced risk, thus increasing use
2. Impaired cognitive functioning
3. Marijuana dependence (psychological and physical)
4. Degrading school performance
5. Psychotic illnesses
6. Drop in intelligence
7. Gateway to other drug use

The report also warned that in both Britain and France, following cannabis's being criminally "liberalized" (still illegal but possession not aggressively enforced), there had been an increase in juvenile admittance to substance abuse treatment. The report speculated increased cannabis dependence among youth and the need for more substance abuse treatment centers following adult legalization.

Similar youth impact concerns were voiced. Colorado Governor Hickenlooper expressed concern regarding more young people being exposed to cannabis following adult legalization.(14) Former US Attorney General Edwin Meese issued a widely publicized condemnation of legalization focusing on assured youth-related spikes of violent and property crime, as well as nationwide degraded intelligence.(15) Charles Stimpson, writing for the Heritage Foundation, confidently predicted inevitable… "violent crime surges…"(16)

The HHS report ended by stressing that the effect of adult legalization, especially among youth, could not be accurately anticipated. In this they were correct.

There were variations in how states approached adult legalization but there were several consistent trends. Many were unexpected.

## Adolescent Use

Opponents of state legalization had warned of an imminent increase in juvenile-related crime. Shortly after Colorado's legalization, the state attorney general reported that adolescent crime indeed appeared to be "positioning" to increase.

Then, following the first year of legalization, Denver Police Chief Robin White, expressing surprise,

issued a data-based report documenting a nearly 10% drop in property and violent crime.(17) No one was sure why, but juvenile-oriented crime seemed to decline following legalization.

As more states legalized adult use, the predicted crime wave seemed to become instead a progressive reduction in crime.

In 2021 HHS published a follow-up to their 2014 warning of increased youth use and consequent crime.

The updated HHS report indicated there were no, or only limited, shifts in cannabis use by students, with younger adolescents reporting reduced use. Progressive increases in use among adults continued, essentially comparable to the rest of the country.

Eventually, the reduced use among adolescents was again documented. Youth reduction in use is likely related to lawful distribution businesses denying youth access. Unlike criminal distributors, they simply don't sell to underage youth. In addition, a financial windfall to local governments from sales had resulted in funding for some school districts to upgrade their drug education, public health-oriented abuse response and prevention efforts. Local funding for law enforcement also often increased with cannabis sales revenues.(18)

Washington State and California, which had also legalized, documented comparable decreases in reported use by adolescents following legalization. Use within the last 30 days had decreased by over 20% for grade 8 and 13% for grade 10. There appeared to be no change in grade 12. These use patterns contrasted with the increased prevalence of use during 2010–2016 when use among youth in the nation steadily increased.(19)

The National Survey on Drug Use and Health in 2017 similarly found that teen cannabis use in Colorado declined as use percentages in the rest of the country continued to grow.

In Washington State there was also an analysis of cannabis–abuse treatment among youth, finding no increase in diagnosis of abuse.

Research specific to Oregon following their legalization at first "…found no significant changes in adolescent use." An interesting aspect of the Oregon research was that it compared local distribution policies with student use. The Oregon legislation allowed communities to "opt-out" of allowing a local distribution system. Research found that, "… communities opting out of sales had growth in marijuana use [among youth]." Regulated, local, lawful distribution again correlated with reduced adolescent use. It seemed likely that illegal distribution continued for youth in areas without ready access to lawful adult distribution.

By 2021 reduced adolescent use following adult legalization seemed consistent.

It is possible that even though cannabis has become generally unattainable through legal distributors, adolescents now perceive the use of cannabis as less threatening. Revised drug education and prevention programming should be prioritized and potentially funded through cannabis proceeds. The risks of cannabis use, especially for youth, are real.

## Adult Use

*…recreational marijuana legalization was not associated with a significant shift in the likelihood of marijuana use…(20)*

We cannot detect a significant increase in adult use but that does not mean that it has not occurred. Anecdotally, when discussing adult use patterns with state regulators we found that most believe there is an increase in adult use. The unexpected higher lawful sales may indicate that we either significantly underestimated the levels of adult use or that more is being used.

Reported adult use was variable depending on state and local management and the survey instruments. Although typically greater than expected, in most states there appears to have been only a limited shift in adult use, although possibly an increase in the amount or frequency of use. We don't know what has changed since we have no reliable base for use pre-legalization. Illegal use was in the shadows, and surveys of illegal behavior are chronically unreliable and typically underreport illegal behavior.

Those now using legally are given accurate dosage information and presumably use a safer dose of a purity-controlled product. The paradigm may have changed but

there has been no significant social disruption and users are obviously safer.

As the 2021 publication commenting on use patterns in Washington and California summarized, "Cannabis use prevalence did not appear to change in response to recreational legalization. …researchers struggle to understand the actual consequences of loosened legal restrictions."(19)

> **For youth, it is likely that access, not attitudes, has been affected. Revised and more responsive drug education and prevention are important for the community, especially youth.**

## Crime

It was correctly understood that adolescents using cannabis, or any other intoxicant, are uniquely susceptible to engaging in reckless behavior. Following adult legalization, Washington State University in collaboration with the Justice Department began an in-depth review of both property and violent crime.

They found that once legal cannabis shops opened, there was a progressive decline in area burglaries. They detected no other major changes in the incidence of criminal behavior among adolescents.

As author of the Washington State Justice Department Cannabis and Crime report put it,

*"…at a minimum the sky isn't falling."*

In 2020 the Digital Object Identifier Foundation (DOI) reviewed Uniform Crime Report data (UCR), comparing the effects of legalized cannabis on crime in Colorado and Washington State. They included geographic areas from six other states near lawful cannabis distribution but outside both states.

They observed reductions in property crime, larceny, and simple assault in both states and out-of-state areas near legal distributors. They again identified a connection between access to lawful cannabis distribution and crime reduction. (21)

For youth, it is likely that access, not attitudes, has been affected. Revised and more responsive drug education and prevention are important for the community, especially youth.

The cause of reduced crime, especially property crime, following legalization is not understood. Some experienced law enforcement officers felt they knew why one impacted the other.

A huge portion of the population purchases illegal cannabis, with the dark cash flow financially supporting criminal lifestyles and conduct. Once illegality and accompanying cash streams convert to lawful business, the criminal world takes a serious financial hit. They likened it to crime that thrived during alcohol prohibition and diminishing progressively following legalization.

The term, "Dairy Queen Effect," was used. If somehow Dairy Queen stores could no longer sell soft ice cream, even though they could still sell other things, their businesses would struggle. When a principal revenue-providing product disappears, it harms the production-losing provider.

This may or may not be the reason for crime reduction following legalization, but crime reduction appears concurrent with legalization.

## Overdose

**The synthetic opiate fentanyl is responsible for the majority of American overdose deaths. In 2023 for the first time in five years fentanyl overdoses decreased. This may or may not relate to reduced use of illicit cannabis potentially contaminated with fentanyl.**

## Workplace Drug Tests

**About 6% of working Americans have their urine tested for drugs. In states that have legalized marijuana 5.8% failed as opposed to 3.3% in states where cannabis remains illegal. This may relate to testing protocols or increased adult use.**

# VI. CRIMINAL TO LEGAL TRANSITION

> **“In 2021 cannabis tax revenue in Massachusetts approached $75 million. The alcohol tax revenue was a bit over $50 million.”**

> **“Rhode Island Marijuana Retailers Shatter Monthly Sales Record, Capping Off $100 Million in Cannabis Purchases in 2023.”**

As the Cato Institute described the situation in a 2021 analysis of states legalizing adult use:

*State-level legalization of marijuana had generally minor effects. One notable exception was the increase in state tax revenue…(22)*

What significantly changed was control of distribution and financial impact. A huge flow of revenues shifted from the criminal world to transparent, lawful commercial organizations and state and local public service providers.

## Financial Consequences

Tens of billions of dollars that had been flowing to local, national and international criminal enterprises for over 50 years now shifted to control by neophyte legitimate businesses, and untested state and local public agencies.

There had been an overestimation of the social and health risks of legalization and, conversely, an underestimation of financial impact and the complexity of managing this new, lawful industry.

In terms of exactly how much revenue will shift from criminal enterprise to regulated businesses and public service is not understood. Revenues typically exceed anticipated projections as states legalize. Yet, there are huge problems with establishing a new cannabis industry. Many local providers would fail as new state and local regulators adjusted to manage the transition. Federal criminalization scheduling would compound problems for both providers and regulators.

The Vicente law firm, which worked with the legal distribution system in Colorado for a decade, projected that once the Minnesota system is established, if managed correctly, annual sales should initially be around $500 million and expand to $1.5 billion by 2029. Of course, this is only an estimate.

Regulators from other states with whom we discussed financial projections hypothesized that because states surrounding Minnesota are maintaining criminal sanctions there will be substantial out-of-state sales. If Minnesota's adjoining states eventually adopt legalization, Minnesota sales will instantly plummet. That occurred in Colorado and destabilized Colorado providers that had overexpanded. The capacity to produce cannabis inexpensively repeatedly created oversupply and contributed to provider problems in nearly all states following legalization.

## State Experiences

Understanding successes and failures in other states may help us maximize advantages and anticipate problems. There will be both significant public health and financial opportunities and problems.

## Federal and State Dynamics

The Supremacy Clause of the Constitution allows federal law to preempt state laws; however, the 10th Amendment to the Constitution does not allow the federal government to force a state to criminalize an act. Federal criminalizing of cannabis means

that regulators and providers face problems, including:

- Federally authorized banks are limited in supporting cannabis operations.
- Federal food and drug regulators can't assure product safety.
- Suppliers and travelers face costly interstate restrictions and prohibitions.
- Federal agencies can't address plant disease or support safe and effective pesticide use.
- Federal worker safety laws in federally regulated OSHA states are often limited in protecting cannabis employees.

Any number of operational activities common to responsible business practices are affected. Important responsibilities pass to often unprepared state and local agencies that must work with cannabis providers often unfamiliar with running a highly regulated business.

## State and Local Regulatory Approaches

States have taken different paths in regulatory authority. Alaska, Oregon, and Washington State rely upon existing alcohol control authorities, while Colorado eventually gave control to its Department of Revenue. Georgia is relying on its licensed pharmacies to oversee medical and possible recreational distribution. California, Maine, and Massachusetts have established independent cannabis control departments. Minnesota presently has a regulatory split between recreational and medical oversight responsibilities, which are in different agencies. They are discussing combining some services.

When we spoke to regulators in states where cannabis had been legalized for at least five years, all described challenges and frustrations in responsibly transitioning criminal to legal. One seasoned regulator described her state's regulatory journey as, "coming to terms with chaos."

We reviewed basic policy approaches in Colorado, Washington State, Oregon, California, and Maine. We focused on Colorado and Washington State because both legalized in 2012, so they had been addressing regulatory challenges for over a decade. California and Maine both legalized in 2016. In our view, Maine managed the transition with limited disruption but California experienced more serious problems. We felt we learned from both.

## Displacing Criminal Infrastructure

In the 1970s illegal but tolerated harvesting of cannabis was institutionalized in geographic areas favorable to growing THC-enriched cannabis. Financially successful illegal enterprises thrived in Washington State, Oregon, Northern California, and Hawaii. Nationally, cannabis supply was supplemented by local regional growers and product smuggled into the United States, principally through Mexico.

Initially, a primary concern for transition to lawful providers was that the well-established criminal systems would successfully compete with regulated providers. This black market competition was one of many impediments, but cannabis customers generally sought to purchase from credible legal providers. Some users had concerns about product safety, others feared dealing with criminals. There were other more substantial and largely unanticipated problems.

## Impediments to Successful State Cannabis Providers

Lawful cannabis providers typically faced protracted struggles in securing non-bank financing due to federal criminalization and state and local rules and protocols. Once through the financial, state and local licensing labyrinth, there were often unanticipated high sales and revenue streams for providers

### MAYBERRY R.F.D.

**Local Providers in Mayberry. . .**

**So, our new legal marijuana business in California is all screwed up. Hey, it's not just us that can't figure out what to do. In Mayberry, Gomer and Goober set up shop in a corner of Floyd's barber shop. The stuff is still illegal federally so the boys can't use a bank and have Barney standing guard over the cash. Andy gave him a real bullet in case some hippies came into town. Secondhand smoke is also a problem. Barney keeps forgetting his pants and Floyd's giving everyone Mohawks.**

**— attributed to Jay Leno**

and consequentially state/local governments. However, within one or two years, oversupply, brutal marketplace competition, and other problems often emerged. Providers struggled and many outlets closed. There were exceptions within states and among providers but generally the legal cannabis systems initially thrived and then faced serious obstacles.

Typically, states had developed plans to support the criminal to legal transition but they were often unsuccessful. In the case of Washington State, operations didn't begin for nearly two years, with enactment in July 2014. Even then, their transition was troubled to the point of dysfunction before instituting reforms. Both California and Maine had created especially thoughtful and detailed operations plans, but Maine struggled through challenges and California stumbled.

As the San Jose Mercury News reported regarding problems with California's initial regulatory approach:

*Unfortunately, high taxes, a slow-moving permitting process and local government resistance have stifled the ability of the legal market to better get off the ground.(23)*

Each state faced its own unique problems but there were also some consistently troubling areas. In our view, the most significant issues involved fundamental misunderstandings and sometimes dysfunctional relationships between providers and regulators. When they learned to work respectfully with each other, the successful transition from criminal to lawful became a reality.

## Regulatory Challenges

The initial regulatory challenge involves multiple state agencies and departments with incompatible operational roles and responsibilities. From the Departments of Revenue and Health to Agriculture and Public Safety, multiple state agencies have understandable but often conflicting interests.

When a governor's office took direct initial leadership or established and empowered a single controlling authority, there generally seemed to be an increase in responsible state program management. Several agencies would remain involved, but they would have clearly defined roles.

Once a responsible state system was in place, the interaction between state and local governments could also become problematic. One specific problem involved a state issuing licenses or "qualifying" a potential provider for licensure, then local municipalities would utilize zoning rules or ordinances to amend, frustrate, or prevent operations. Depending upon how the state law was written, the local governing agency may prioritize providers differently.

This problem has been termed the "phantom license" issue in which the state seems to authorize a license or prioritization for obtaining a license only to have the hopeful provider blocked by local government.

The issue of a state's prioritizing special populations for earlier or favorable licensing, or technically qualifying for a license, also became problematic in some states. In New York, this issue seriously destabilized the transition because of protracted litigation. To the extent state and local government work together, and qualifications are clear, fair and transparent, problems are diminished.

Initially, some Washington State regulators maintained what appeared to us to be an almost hostile approach to providers. They implemented the highest provider taxes in the country (37%) and the protocol for licensure was confusing and protracted.

Many experienced Washington State cannabis providers relocated to other states. When the adjoining state of Oregon legalized adult use, cannabis was imported from Oregon into Washington State, often by former Washington State providers. As its program began to fail, Washington State carefully shifted procedures and approaches. They helped develop a more productive working relationship between providers and local government. Regulators needed to listen to and respect providers while maintaining appropriate controls. They needed and achieved a practical and sensitive management relationship.

In Maine, careful analysis of the potential cannabis market in 2016 allowed state agencies to guide and support, as well as monitor. Significantly they warned providers of potential market problems. They seemed to develop a sort of

collaborative sharing of information and objectives. The relationship with providers was described by one senior regulator as "paternal," including both regulating and supporting responsible providers. They had specific problems with some institutionalized illegal providers, yet, with responsible management, customers steadily shifted to lawful and regulated providers.

The new providers in Maine also understood what had happened in other states involving unstable overproduction of cannabis. The supply of cannabis is nearly always greater than the demand after the first or second year. They were warned that heavier use of cannabis during COVID-19, as well as out-of-state sales, might be artificially high. Providers were given information and advice through state regulators to prepare for inevitable downward shifts in the market. Protocols for obtaining and preserving provider licenses were generally straightforward, and involved training and interaction with state and especially municipalities. Location sensitivities also permitted some, but limited aggressive competition.

States and municipalities needed lawful providers to follow responsible guidelines but also to thrive. Where there was discord, things had to change—and did. Regulators began to focus on better working relationships with providers. Respect must also work the other way, between providers and regulators.

## Providers Mindset

In California, the providers were usually large, established illegal operators, culturally hostile to regulatory interference. Many cannabis producers worked against adult legalization. When legalization occurred, they were resistant to regulatory interference. They objected to California's strict OSHA safety guidelines for employees, mandated unionization, and water rights controls regarding both access and contaminated nutrient-laden water discharge.

Many Northern California providers continued to work outside of state regulation and, for a time, they were allowed to do so. Obviously, this undermined the transition process. The United Cannabis Association reported that in California, "…there are nearly three times as many unlicensed dispensaries and delivery services as there are licensed ones."

Testing and validating THC thresholds became a special point of contention. Some laboratories were accused of falsifying THC burdens under pressure from their provider customers. The use of legal and illegal migrant workers, taxes, product safety guidelines, state testing for toxins, and marketing restrictions also were serious issues, often creating discord.

Currently, California providers and regulators are working through disconnects and problems. The new breed of lawful providers must accept regulatory compliance as a non-negotiable condition of successful business operations.

## Civil and Regulatory Litigation

Ambiguities in state statutes and regulations may be seized upon by disgruntled providers or dissatisfied local units of government. Both civic and regulatory legal action can inhibit state programs. Issuing preferred licenses to special populations and conflicts with local control involving zoning and ordinances are the principal causes of civil and regulatory litigation. For example, in New York and Michigan litigation regarding identifying prioritized providers based on "special populations" seriously delayed and distorted program implementation.

## Competition

Concerns regarding competition among providers quickly evolved. When regulation, location, or taxation frustrated customers they took their business to other states, other providers, small local lawful cultivators, or (usually third choice) the illegal black market. As providers become locally established, as with municipal liquor stores, there emerges financial pressure among municipalities to promote local sales. This should be anticipated in establishing location zoning and operational guidelines.

If the community understands that a portion of revenues from the sale of cannabis products will go to local schools, law enforcement, or other public services, that seems to benefit local provider sales.

Another competition concern relates to marketing, especially any default to youth-oriented imagery or appeals. Washington State enacted rules banning images of cartoons, toys, and pictures that appeal to young children. Colorado strictly regulates child-safe packaging.

Statewide guidelines regarding marketing and packaging, especially involving edibles, make sense. Competitive marketing must not trump public health and safety, but there will be pressure to do so.

## Common Interest Interactions

Gatherings held statewide and regionally for local regulators and providers to share concerns and opportunities with state regulators have been valuable. Issues may involve financial challenges, taxation, industry trends, and public health. Presentations from schools and law enforcement organizations that benefit from cannabis tax revenues are of interest and value.

In some states, direct financial support is provided to schools to support drug education and substance abuse prevention, and to local law enforcement to address cannabis/driving concerns and prevention of black market cannabis and other illegal drug sales. Sharing these community events with the public reinforces the value of lawful versus criminal providers.

In discussions with successful state regulators, they recommended prioritizing face to face instead of electronic meetings, and always extending invitations to local media.

## Economic and Public Health Concerns

Unexpectedly, climate change-sensitive environmental groups and public health professionals in several states became involved in cannabis policy issues.

Climate change advocates opposed the use of hydroponic cultivation and wanted it banned in favor of using natural "soil and sun" to grow legal cannabis. They have presented tables projecting the fossil fuel and eco-costs of using electronic growth lighting, artificial climate controls, and the negative consequences of discharging hydroponic nutrient-enhanced water.

Conversely, public health/toxicity professionals expressed concerns about cannabis growing in untested soil because of its potential for bio-accumulating toxins. They also expressed concerns regarding fungal growth and consequent over-fungicide application. From a toxicity and public health perspective, hydroponically grown plants are often considered safer to inhale and ingest.

While eco-public health resolution remains a work in progress, some believe a reasonable solution may involve identifying products as either hydroponically or naturally grown, allowing the provider to decide what they wish to offer and the customer what to purchase.

## Crop Protection

The federal criminal scheduling of cannabis prevents critical agricultural support from addressing the spreading of contaminating crop disease. When crops are produced in large quantities in highly segregated areas, what are termed "viroid diseases" develop and may evolve to threaten the species. They can profoundly undermine agricultural productivity.

Beginning at a large California greenhouse involving tens of thousands of isolated plants, a viroid identified as HLVd emerged in 2022 and is erratically spreading throughout the United States. It has infected many cannabis nurseries in several geographic areas. It causes what is termed "dudding" or degrading of the THC in the plant, making it unable to be of medical or recreational value. Federal criminalization prevents the U.S. Department of Agriculture from addressing this issue.

As the Wall Street Journal reported:

*As long as marijuana remains illegal under federal law, state level groups lack much needed engagement with federal agencies that could help them tackle pathogens and contaminants like HLVd…(24)*

The U.S. Agriculture Department typically establishes quality standards and inspection requirements for crops to prevent the spread of viroid plant pandemics. States may need to consider providing crop security support to lawful producers.

# VII. CONCLUSION

**In the best and worst of societies the pursuit of pleasure for some becomes the responsibility of others.**

Annually, cannabis represents an over $30 billion industry. It has operated in the shadows of criminal control for 50 years, financially supporting a criminal culture and other illicit ventures. Guiding a transition to a new lawful enterprise is a monumental social and civic challenge. There are obvious advantages to adult legalization. Significant revenues are denied criminal operations, and cannabis products should become purity and dose controlled. Yet, there will be risks.

With legalization, new lawful producers may increase the intoxicating dosages and implement aggressive marketing, both of which could have harmful consequences.

While underage access is denied, young adult attitudes toward risk may also change, promoting abuse when they come of age.

While some crime diminishes following legalization, some criminals may shift to selling more dangerous drugs. They also may focus on selling to the underaged for whom lawful purchases are prohibited.

Operational challenges are problematic at state and local levels and among new lawful providers. The conflict regarding how the state qualifies applicants and how local governments interact with them often becomes divisive and even litigious.

The cannabis transition may provide transparency, health and safety controls, and lawful revenues, but sensitivity to risk is necessary among regulators and providers. Support for schools and local law enforcement should be considered fundamental to this unique and necessary transition.

Hopefully, our efforts to describe relevant issues or concerns will be of value to the new lawful providers, responsible public servants, and our community.

Godspeed!

# CANNABIS RISK AND ATTACHMENTS

Quantifying cannabis risk based on research is challenging, with research often skewed to overstate or understate risk. There are several reasons:

- The chemistry of cannabis involves variable blends of several mood-altering compounds which, along with dose, purity, and use setting, can confound research results. We often don't know exactly what is being used in what ways to associate with outcomes.
- Laws and attitudes regarding cannabis have improperly influenced the funding of research, the research itself, and especially lay publications interpreting research findings.
- Legislative prohibitions have restricted research limiting Randomized Clinical Trials (RCT), often defaulting to Real-World Evidence (RWE), which may be valuable but is more often subject to predetermined convictions.

For decades it has been clear that cannabis is of medical value.(25) Deferring patient use to the criminal justice system as opposed to health care providers demonstrates the intransigence of attitudes regarding cannabis. Unquestionably many people suffered needlessly. Similarly, the cynical denial that use can lead to harm by some cannabis advocates is irresponsible.

As the cannabis industry shifts from criminal control to transparent and regulated enterprises we can do better. The new empowered providers and regulators can guide and protect users and the community, but it is necessary that they have access to realistic assessments of risk.

Cannabis has been and is used responsibly by many healthy and productive adults, but it also may support unwise or even dangerous behavior. It represents special risks to certain groups, especially youth.

Comments on several areas of health and safety concern follow.

**ATTACHMENT 1**

## Meta-analysis of Health Risk

*Back to Referrer*

**Findings of the National Academies of Science, Engineering and Medicine**

*In 2017, the National Academies of Science, Engineering, and Medicine completed a comprehensive review of over 10,000 academic journal-published marijuana health research studies.*

*Dr. Marie McCormick, Chair of the Multi-Academy Review and Professor of Pediatrics at the Harvard School of Medicine released the following key findings after formal approval by each of the National Academies*.

**Medicinal Value** – Marijuana has medical value in pain reduction involving muscle spasms, especially related to multiple sclerosis and cancer patients experiencing chemotherapy-induced nausea and vomiting.

**Cancer** – There is no evidence that smoking marijuana increases the risk of cancer, such as is a consequence of tobacco use.

**Bronchitis** – Smoking marijuana regularly may aggravate bronchitis and chronic coughing.

**Cardiovascular Complications** – Smoking marijuana by individuals with heart disease may increase the risk of cardiovascular complications.

**Pregnancy and Birth Weight** - There is some evidence (conflicting) that smoking marijuana during pregnancy positively correlates with lower birth weight.

**Mental Health** – Some mental health problems such as schizophrenia are concurrent with the use of marijuana. Marijuana may or may not "cause" schizophrenia. Possibly, those with schizophrenic tendencies may seek marijuana intoxication as a form of self-medication. Additional research in this area would be important.

**Motor Vehicle Operation** – Injury or death occurring while a person is intoxicated, particularly operating a motor vehicle, is a risk associated with marijuana use.

**Relationship to Other Drug Use** – The use of other more physically dangerous chemicals correlates with marijuana use. This includes alcohol misuse, the use of tobacco products, and the use of other drugs. Whether marijuana use is causative or statistically concurrent with the use of other drugs is not understood.

**Heavy Use Among Adolescents** – The use, especially heavy use, by adolescents is associated with both academic performance problems and socialization problems. Again, both may be concurrent as opposed to causative.

**Chemical Dependency** – Chronic and compulsive use can evolve into dependency problems, with adolescents being especially at risk.

**ATTACHMENT 2**

## Gateway Drug

*Back to Referrer*

Gateway drug means that use of one drug leads to using other drugs. This seems a logical outcome considering pre-legalization underground channels for all illegal drug traffic. Other drugs may flow through the same criminal networks as cannabis.

This paradigm changes as legal providers replace criminals. Disconnecting cannabis from criminal providers will likely reduce exposure to illicit drugs. Concerns about more dangerous drugs should be addressed with responsible warnings possibly supported by adult legalization programming funds. This should also be a focus of post-legalization school drug education and prevention programs. Successful reduction in tobacco use demonstrates the value of effective prevention messaging.

Some believe the stress following cessation of heavy, long-term cannabis use may produce a craving that could drive the user to another more dangerous drug. Animal studies have identified that such cravings occur physiologically.

Statistically, cannabis users rarely try more dangerous drugs, but most users of "heavy" drugs initially had used cannabis as well as alcohol and tobacco.

The conclusion of a 96-page inquiry by the Justice Department and submitted to the Library of Congress in 2018 stated that "No causal link between cannabis use and the use of other illicit drugs can be claimed at this time."(26)

In analyzing numeric relationships, the RAND organization found that few cannabis users admit to having tried more dangerous drugs. Considering this and other findings, RAND concluded that:

*Marijuana 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.(27)*

A review by the Institute of Medicine on behalf of the National Academy of Sciences studying the cannabis/gateway relationship identified many other exposures and relationships that preceded the use of illicit dangerous recreational drugs and reported:

*There is no conclusive evidence that the drug effects of marijuana is causally linked to the subsequent abuse of other illicit drugs.(28)*

This relationship is not well understood. Relying on survey data regarding admitting to illegal activity on a research questionnaire has serious reliability limitations. However, as cannabis use has progressively increased, the use of most other illicit drugs has often receded. There are periodic fluctuations in patterns of other drug use that may or may not relate to cannabis. The relationship of cannabis use to other drug use seems remote but a potential consequence of use by some individuals.

**ATTACHMENT 3**

*Back to Referrer*

**Amotivational Syndrome — Burnout**

With regular, heavy use over time, the user builds up what is termed a "body burden" of lipid-soluble cannabis constituents. The impact of this heavy-use physiology is not well understood. Behavioral changes seem to also occur among some heavy long-term users. The result has been described as a sort of "deadened" response to stimulation—to life. This dull inactivity, or burnout, has been replicated in laboratory animals. Compulsive long-term use is discouraged by societies in areas of the world where cannabis use is a cultural norm. Some researchers question the nature and even the existence of "amotivational syndrome," but other psychopharmacology researchers, substance abuse counselors, and professionals who interact with cannabis users believe it is a real condition involving compulsive, heavy, long-term use.

Regular, heavy, youthful users may sometimes go unnoticed by adults, while their condition is obvious to fellow students. A student will probably describe a burnout as a nice, dull person who "just takes up space." Often, but not always, a heavy compulsive user has trouble with schoolwork, has little interest in social activities, and is described as existing in a state of blurry detachment. As a student in one of our young adult drug education programs put it, "They aren't really living in the same world as the rest of us."

Schools should be supported in responding to the new, legalized cannabis paradigm. A chemical dependency assessment with the possibility of substance abuse treatment should be available. This support has been provided in many states, often through local governments that benefited financially from adult legalization.

Research in both Canada and New Zealand (which have a higher prevalence of cannabis use than the United States) reported detecting a possible relationship to lower IQ (8 points+/–) among adults who had been identified as smoking "5 joints" a week or more in adolescence. This causal relationship was challenged by subsequent research, which asserted that physical health or socio-economic conditions caused both heavy use and slightly diminished IQ. This research implied that heavy adolescent use was related to a common third factor, possibly compromised social/family support or congenital problems. In other words, the two were "concurrent," not "causative." This issue is addressed in more depth in Attachment 4.

Extremely few who try cannabis or use occasionally become heavy users, but the loss of potential among heavy users is common enough so most high school students describe "regular or consistent use" as having degraded one or more fellow students whom they can identify. In a pre-legalization survey, high school seniors reported that cannabis was readily available but "regular use" was frowned upon.

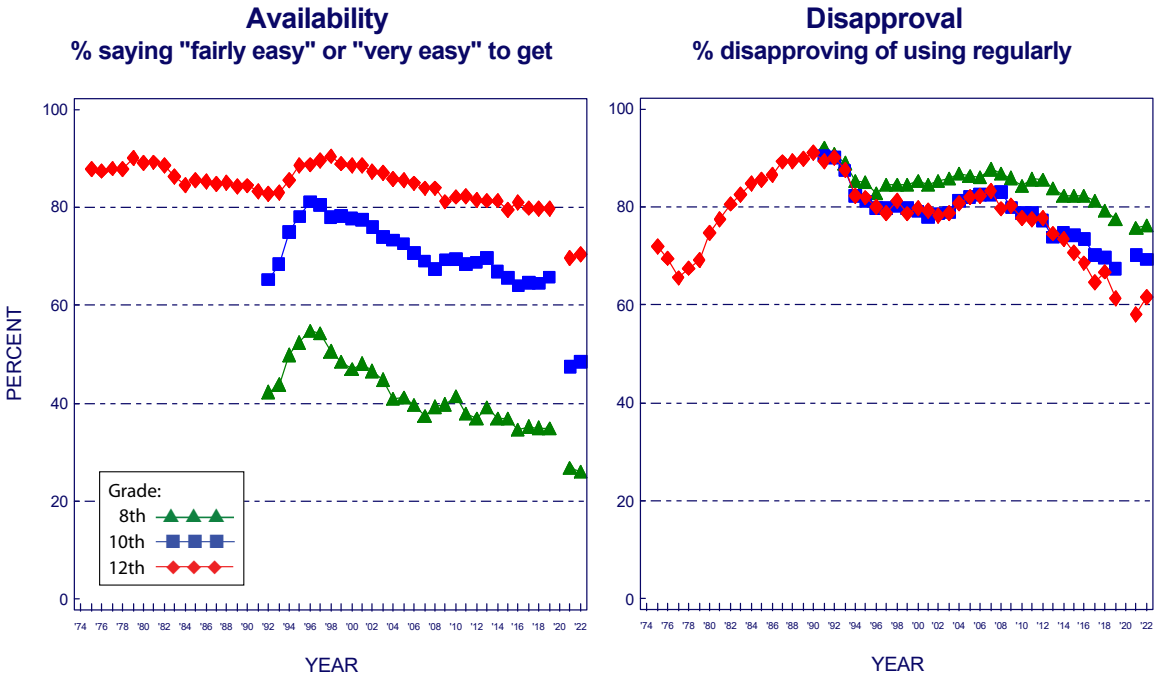
Compulsive users may require chemical dependency treatment. However, their need for support is not readily detected because they often can pull themselves together enough to temporarily cope socially. In comparison to alcoholics compulsive cannabis users often function among us longer before conditions require them to confront their chemical dependency.

**ATTACHMENT 4** **Adolescent Cannabis Use and IQ Impact**

*Back to Referrer*

It is well understood that teenagers are more susceptible than adults to the effects and risks of alcohol and presumably other forms of intoxication. As neurologist Francis Jensen expressed it, "The teenage brain is not just an adult brain with fewer miles."(29) It functions differently regarding stimulation, pleasure, intoxication, and consequently, behavior.

**Marijuana: Trends in Disapproval and Availability for Grades 8, 10 and 12**




Source. The Monitoring the Future study, University of Michigan, 2022.

Understandably, cannabis use in adolescence and its ultimate impact on intelligence has been a primary focus of much responsible research. Some research seemed to indicate a decrease in adult intelligence quotients (IQ) in conjunction with heavy use by adolescents (using five days a week or more). As these heavy users matured, their self-reported heavy use correlated with what appeared to be a reduced IQ of around 8 points.(30) However, subsequent research, including a definitive twin study, indicated that cannabis use, even heavy use, did not diminish IQ. The two dynamics were concurrent, i.e. the same conditions creating or allowing or promoting youthful heavy use also contributed to a downward shift in intelligence.(31,32,33,34)

In the January 18, 2016, issue of *Science Immunology*, two other studies addressing this issue were reviewed. One involved an analysis of 2,000 British youth, and the other studied identical twins, one who used marijuana heavily and one who abstained. In both studies, it appeared that after taking environmental factors into account, there was, in the words of the article, "no measurable link between marijuana use and IQ." In the February 2, 2016, issue of *Proceedings of the National Academy of Sciences*, the two studies supported the *Science Immunology* findings, reported that "…there was no evidence of a dose-response relationship between frequency of use and intelligence quotient (IQ) change."(31) After taking all factors into account, in the words of the Academy of Science publication, "…marijuana-using twins failed to show significantly greater IQ decline relative to their abstinent siblings."

Use, especially heavy, compulsive use among adolescents, should be considered not only problematic in itself, but just as importantly, a probable signal of other problems. Underage use should be considered a serious health-related issue. But adolescent cannabis use has not been demonstrated to equate with causing a downgrade in a user's intelligence quotient.

**ATTACHMENT 5** **Mental Health Issues**

*Back to Referrer*

Use of cannabis, alcohol, or other drugs sometimes blends with troubled thinking and consequently troubled behavior. Cannabis use is probably not so much causing mental health issues as it is pushing an already troubled person closer to the edge. Fear becomes panic, hopelessness becomes depression, and depression becomes dangerous. Cannabis intoxication will influence the mindset of a stable person and possibly push an unstable person into crisis. This is particularly a threat for youth.

In 2021 a British study involving over 100,000 participants found the following: …*cannabis use was disproportionately highly correlated with psychotic experiences among individuals with a high genetic risk of schizophrenia*.

It is possible that cannabis is sought after for self-medication by potentially troubled or psychologically at-risk individuals. Individuals with mental health challenges may be disproportionately attracted to cannabis use.(35)

When a young person is troubled, he or she sometimes uses cannabis or other drugs to feel better, to self-medicate a challenging time in life, or ease depression. Typically, the last thing an emotionally challenged person needs is to move further away from reality through self-prescribed intoxicants.

**ATTACHMENT 6** **Cancer**

*Back to Referrer*

The 2017 health risk Meta review by the National Associations of Science, Engineering, and Medicine did not find evidence to indicate cancer causation. Subsequently, there has been published research on potential relationships to testicular cancer impact among heavy cannabis users. At this point, these risks warrant further study but in our view the relationship to risk is unsubstantiated. A potential connection to testicular cancer, which has been used in anti-cannabis warnings to adolescent males, should not be used or at least identified as hypothetical.

Considerations regarding cannabis inhalation and consequent disease, especially lung cancer, were also reviewed by the National Associations. At this point, beyond bronchial irritation, which may be serious for those with bronchial challenges, a direct connection between inhaling cannabis and lung cancer was not identified as a risk for cannabis smokers. Ongoing research may discover a relationship. However, considering the comparative infrequency of inhaled particle exposure compared to tobacco use, and the nature of cannabis smoke, a correlation with typical tobacco inhalation and a probable lung cancer risk does not seem justifiable.(36) The concept that smaller particle size associated with cannabis smoke renders inhalation more dangerous has been speculated but not substantiated.

Human immune systems routinely address infrequent inhalation of carbon-based, micro airborne debris. That would include typical cannabis inhalation. While more research is appropriate, any link between inhaling cannabis, especially by a typical user, and consequent lung cancer is speculative.

**ATTACHMENT 7** **Pregnancy/Breast Feeding**

*Back to Referrer*

Cannabis can pass through the placenta and has been associated with lower infant birth weight in some studies but not others. Some compounds in cannabis will also pass through breast milk. Pregnant women and nursing mothers have special reasons not to use cannabis, tobacco, or alcohol.

Cannabis has not been associated with congenital birth defects, such as those caused by alcohol use during pregnancy (fetal alcohol syndrome or effects). There is limited emerging research suggesting the possibility of other fetal impacts.

Pregnant women should avoid any cannabis use as well as any psychoactive compound that passes the placenta. State cannabis programs in Michigan, Illinois and Maryland have issued warnings for pregnant and nursing women not to use cannabis. Minnesota legislation also supports such warnings.

**ATTACHMENT 8** **Heart or Blood Pressure Effects**

*Back to Referrer*

Like many chemicals and activities, using cannabis makes a person's heart beat more rapidly, causing an uptick in blood pressure. Unless the user is already at risk from heart disease or has high blood pressure, a consequent health risk due to increased heartbeat/blood pressure is unlikely. Cannabis users should share their use patterns with physicians, especially if there are cardiac concerns. Among heavy users, there has been research indicating an increase in the incidence of cardiac problems, especially strokes.

Cardiac issues represent the leading cause of death for Americans, with 800,000 +/- suffering cardiovascular disease annually. The American College of Cardiology estimates that possibly 80% of heart attacks are preventable, with heart-healthy lifestyles involving diet, exercise, and avoiding tobacco.

With exceptions for the COVID-19 pandemic of 2020, cardiac disease has been steadily declining over the last two decades as the use of cannabis has progressively increased. However, research released in 2024 by the National Institute of Health and published in the *Journal of The American Heart Association* identified a 25% increase in the likelihood of heart attack and a 42% increase in the likelihood of a stroke associated with daily use of cannabis through smoking.(37) Among weekly smokers, the numbers declined to 3% for the likelihood of heart attacks and 5% for the likelihood of stroke. If these relationships are statistically validated, they may involve unhealthy lifestyles among heavier cannabis smokers or be connected to dose-related cannabis use. Whether the potential risk relates to toxic exposure or the lifestyle of heavy users there may be a connection between heavy use and a greater incidence of cardiac problems.

Dr. Peter Grinspoon, an instructor at Harvard Medical School. a practicing physician and author of a recent book on cannabis stated that he is "cautious" in prescribing cannabis to patients that have a problematic cardiac history but also recognizes that the research identifying a relationship is not strong. Subjects using cannabis with cardiac symptoms may be more susceptible to lifestyle-related health problems. More and better research is required regarding a possible relationship.(38)

**ATTACHMENT 9** **Fertility**

*Back to Referrer*

Several publications have stated that there may be some decrease in both sperm production and egg preservation following heavy cannabis use over a long period of time. The National Institute on Drug Abuse has limited discussion of fertility impact, but many fertility professionals recommend that women trying to become pregnant refrain from cannabis use. Limited data indicates that male use may also diminish male fertility.

**ATTACHMENT 10** **Overdose**

*Back to Referrer*

The amount of cannabis required to reach what is termed LD-50 (a point at which 50 percent of those receiving a specific dose would die) cannot realistically be reached. There has never been a recorded lethal overdose relating to cannabis use alone. There are situations in which cannabis intoxication in combination with alcohol intoxication contributed to ingesting lethal amounts of alcohol.

Fentanyl-contaminated cannabis represents a serious risk of overdose and death. Three-quarters of all fentanyl overdoses in America involve inhalation or smoking. It is probable that some overdosage from fentanyl involved individuals thinking they were smoking a high THC dosage of cannabis. No research has or would be able to validate or discount this relationship.

Deaths have occurred from vaping illegal cannabis when toxic lipids were used by criminal providers to heat the cannabis. The lipid compound was toxic, not the cannabis.

**ATTACHMENT 11** **Complexion**

*Back to Referrer*

Some anti-cannabis literature has connected acne to marijuana use. Cannabis is often tried at the same time in life in which hormones naturally fluctuate. So, body change, including excessively oily skin prone to infection, may occur concurrently with cannabis use. There is no evidence that marijuana use is connected with skin infections and consequent complexion problems.

**ATTACHMENT 12** **Purity**

*Back to Referrer*

Because buyers of illegal drugs are supplied by criminals—people and organizations that break rules for profit—consumers cannot trust an illegal product's purity. A drug provider operating in the shadows is immune from not only taxation but regulatory consumer product safeguards.

Some illegal cannabis growers batch herbicides, insecticides or fungicides with plants to enhance crop yields. Some dealers consciously blend in other drugs to make the cannabis intoxication experience appear to result from higher levels of THC.

Even cannabis produced by the federal government (NIDA) for research purposes was identified as testing positive for mold. Both ingesting and especially inhaling mold, in addition to influencing research results, may have serious health consequences.(39)

Where the purity of cannabis is uncertain, there is inherent danger. As an example, some illegal cannabis vaping cassettes contained an unsafe lipid for creating THC vapor. The lipid became toxic when heated, causing thousands of emergency hospitalizations and some deaths in Europe.

Documenting purity and THC dosage is a critical responsibility of state and local regulators. In some states, local law enforcement receives financial support from cannabis tax revenue to prevent illegal cannabis distributors from providing potentially contaminated products. This represents responsible law enforcement and public health.

In some states that have legalized cannabis, private laboratories have been accused of providing false lab results to licensed providers. The state should monitor THC diagnostic laboratories for technical protocols and integrity.

**ATTACHMENT 13** **Potency**

*Back to Referrer*

With illegal cannabis, a wide variation in THC and other constituent burdens creates erratic levels of intoxication. The user can be shocked by an unexpected high and leap through the stages of intoxication. This surprise high has been progressively seen more often as widely diverse potency levels of cannabis have entered illegal markets.

When state and local regulations are in place, standardized dose levels should be available on packaging. There should also be a clear understanding displayed on the packaging or in handouts or postings explaining the relationship between dosage and intoxication. Some regulators have suggested color-coded packaging designating the level of potency of the product. Understanding the intoxication potential of a product is obviously of great value to the user. However, published dosage levels, alone, may not influence unwise use. Warnings explaining dosage-to-intoxication relationships should accompany warning information.

**ATTACHMENT 14** **Potentiation: Mixing Drugs**

*Back to Referrer*

Mixing two or more psychoactive drugs is always risky. Each drug impacts cognition in different ways; combining them may cause unanticipated feelings and erratic behavior. Unexpected, weird highs with unpleasant consequences can occur. Mixing two or more drugs is not necessarily like "adding them together" but more like shaking two dice and multiplying the results.

For states that have legalized adult use, one of the most serious concerns involves the consequences of exposure to both cannabis and alcohol while operating a motor vehicle. The intoxication level is compounded by the different effects of the two legal intoxicants. Coordination, timing, and visual acuity are impacted in different ways. Warnings of blending alcohol and cannabis would ideally be described at cannabis and alcohol distribution sites and possibly posted on the packaging. Postings at liquor stores as well as cannabis provider sites would be of significant public health value.

Often with support from local cannabis sales revenue, training for law enforcement officers focusing on identifying cannabis/alcohol intoxication has been institutionalized. Unlike alcohol, blood and breath testing determining cannabis intoxication levels is complex but evolving. At present, documenting "stoned" driving is a challenge for law enforcement. Many law enforcement professionals are relying upon recorded observations of both erratic driving and recorded on-site driver interactions.

**ATTACHMENT 15** **Edibles, Including Beverages**

*Back to Referrer*

Following adult legalization there was aggressive creation and marketing of THC and CBD edibles and beverages. In both cases, the products were promoted as visually appealing, were often flavored, and appeared comparable to commercial candies, snack food, beers, and soft drinks. Consumer trust in commercial products was misplaced.

Two significant problems quickly emerged. The first problem involved young children who were attracted to the visual aspects and flavorings of the edible products. Young children often place items in their mouths to experience tactical feelings and explore taste. Many children experience a condition termed, "pica," where they compulsively place any available small, interesting items in their mouths. Consequently, many childhood cannabis poisonings have occurred following the legalization and commercialization of edibles.

Because cannabis is federally illegal, the Food and Drug Administration (FDA) has limited or no control over mandating packaging or warnings that might be common for other products at risk of harming children.

When the Centers for Disease Control (CDC) identified that many children were harmed by ingesting flavored melatonin (a food supplement and sleep aid), FDA guidelines were quickly established for label warnings and child-proof packaging. The FDA has also recently mandated warning labeling for heavy caffeine-dosed power drinks that may disorient and harm children. Because the federal scheduling of cannabis products prevents similar protections for children, some states have insisted on packaging guidelines alerting parents and guardians of potential child poisonings. Some states have also regulated taste and visual marketing guidelines for both THC and CBD edibles/beverages as well as dosages.

A second issue with ingestion involves the unexpected intense and prolonged state of intoxication. Because the sensation of intoxication following ingestion is delayed when compared to inhaling, a user may continue to ingest unsafe quantities of THC and unexpectedly become highly intoxicated. They also remain intoxicated over an unanticipated extended period.

Inhaling cannabis provides a more rapid sensation of intoxication which also dissipates much more quickly than when it is ingested. Although metabolic rates and dosages are variable, intoxication through inhalation of a typical THC dosage may involve one or two hours, and ingestion three to four hours. Some research has indicated that when users believe they are no longer intoxicated, their vestibular coordination and cognition remain impaired.

With the market-driven development of many new forms of ingested THC and CBD, it is critical that both packaging and accurate public health information regarding the intensity and duration of intoxication be displayed. Dosages of THC should be clearly labeled, along with interpretations of dosage regarding levels of intoxication. We believe color coding to symbolically identify dosage makes sense.

Individuals with a history of inhaling, and who are switching to the new generation of edibles, need to be aware of the difference in rhythms of intoxication.

**ATTACHMENT 16** **Emergency Room Admissions**

*Back to Referrer*

With legalization, users have felt more comfortable reporting to emergency rooms with cannabis-related problems. These have generally involved psychotic or paranoid reactions and gastrointestinal complaints (hyperemesis). Similar THC-related ER admissions occurred before legalization, although were less frequently reported. Consequently, emergency rooms have typically developed standard procedures for both psychotic reactions and gastrointestinal complaints. The usual response involves providing a calming environment, time for detoxification, and possibly selective medication. For hyperemesis terminating cannabis use is nearly always prescribed.

**ATTACHMENT 17** **Anesthesia Influence**

*Back to Referrer*

The 2022/23 journal *Frontiers and Psychiatry* published a well-documented concern/warning for oral surgeons and physicians regarding patient use of both THC and CBD, pre-sedation. There may be a need to increase sedation dosages especially among heavy users. For health procedures involving sedation, some professional healthcare providers are recommending

pre-procedure interviews, asking about the patient's use of THC and CBD. This issue is being addressed through continuing education programs for healthcare professionals.

Further research is necessary, but in our view, package or posted warnings regarding the importance of sharing THC and CBD use with medical and dental providers, pre-sedation, should be considered.

**ATTACHMENT 18** **Fentanyl Overdose Through Inhalation**

*Back to Referrer*

Since 2017 the mass production of legal and illegal opiates (oxycodone and fentanyl) has been responsible for hundreds of thousands of deaths. Smoking, not injecting, represented 74% of the fentanyl overdose deaths. Understandably, there is little quantifiable data, but it is a reasonable assumption that some of the deaths involved the users believing that they were smoking high-potency cannabis. The batching of opiates, most often fentanyl, with cannabis has been detected by law enforcement agencies in recent years as the price of fentanyl declined and became more available. The user may be aware of a synthetic opiate/cannabis mixture or simply believe they are experiencing a higher potency of THC in the cannabis.

**ATTACHMENT 19** **Toxic Contamination**

*Back to Referrer*

The federal scheduling of cannabis as a Schedule I narcotic prevents food and drug safety controls upon which American consumers have come to rely. As cannabis becomes lawful, unregulated toxic contamination represents a risk for consumers. Addressing this risk is a technical challenge for states, municipalities, and especially lawful providers who are subject to civil litigation. As the *American Journal of Public Health* published in 2024:

*Federal regulators set product standards for cigarettes and minimum standards for growing and harvesting fruits and vegetables on farms. However, there aren't any national standards for testing marijuana for possible contaminants such as pesticides, solvents, fungi, and bacteria. Nor is there a federal agency providing oversight.(40)*

There is a source of cannabis toxicity which is rarely mentioned. The cannabis plant is a "bioaccumulator," meaning it will efficiently absorb and retain burdens of toxic metals and pesticides, and also support certain fungal spores. This is one of the factors causing hemp fibers to become resilient for commercial use as a textile. In Europe, hemp is even batched with concrete to become a sustainable building material. However, this characteristic also represents a toxic risk, especially for those with compromised immune systems. Hydroponically grown cannabis is unlikely to absorb or be exposed to natural toxic compounds, but plants grown in contaminated soil and exposed to herbicides and fungus (or fungicides) represent a toxic risk. Heavy metal burdens have been identified in heavy cannabis users. Two especially toxic fungi, Cryptococcus and Aspergillus, have also been identified in cannabis.

Because of federal scheduling, the Food and Drug Administration (FDA) has limited or no authority to establish and enforce safety standards. In 2023 the FDA received 1,200 reports of adverse toxic exposures from cannabis, but their only possible response was to pass their concerns on to the states that had legalized cannabis and had established an infrastructure that could potentially respond. They had no way to compel criminal providers to adhere to safety guidelines. This situation represents a challenge for state and local governments.

Upon legalizing cannabis, several states established toxic and purity guidelines, often in response to a specific contamination event. Their respective departments of health may or may not have the infrastructure to provide product safety monitoring. California now requires testing for dozens of contaminants, and both Oregon and Colorado have established standards and randomized toxicity testing validation.

In Arizona, upon discovering an especially heavy toxic fungal burden in a cannabis product, the state persuaded the distributor to issue a voluntary product recall. Ironically, the product was marketed as "Grim Reefer." At first, some media sources considered such a recall "too weird" to pass on to the public.

Arizona is now in the process of establishing an advisory council for toxicity testing of cannabis products. They are presently uncertain how to proceed. As one of the council members correctly pointed out there are "substantial discrepancies in how different states are approaching this issue."

Given America's internationally respected standards for food and consumable product safety, people assume that all marketed commercial products are safe. If federal law continues to prevent the FDA from providing and enforcing safety standards, the use of cannabis, even from lawful distributors, may represent a toxic risk, particularly in the case of those with immune system challenges.

**ATTACHMENT 20**

**Public Health and Medical Value**

*Back to Referrer*

Seeking pleasure through an intoxicant is not necessary for quality of life, but many find the use of cannabis, like alcohol, pleasurable and of personal value.

With the shift from criminal to transparent, lawful control, it becomes important to recognize possible personal and public health benefits as well as risks.

**Safety, Dosage, and Purity**

In every state that legalized adult use, and typically working through state and local health departments, responsible systems for monitoring dosages and purity are institutionalized. There were often serious problems with operational systems and especially testing laboratory integrity, but they were corrected. Ultimately the cannabis user will receive a safer product with appropriate warnings relative to risk and misuse.

**Resources Used for Supporting Public Health**

Many states have used resources from cannabis taxation to better serve and protect the community, especially youth. This included funding for schools to support legal cannabis responsible health education, promote prevention outreach, and to support substance-abuse assessment with access to helping professionals. Law enforcement also often received support to strengthen efforts to address intoxicated driving and prevent criminal sales of cannabis and other drugs to youth.

In Minnesota, the Red Lake Native American Nation opened the first recreational cannabis distribution center in 2024 with a commitment to use profits to "fund opiate addiction prevention and support youth programs."

This local youth focus has followed decisions made by many states and local governments that have benefited financially to support enhanced drug education and abuse prevention.

We believe post-legalization drug education should include a focus on:

- Risks of cannabis use
- Special risks with illegal cannabis use
- Extremely dangerous risks of other drug use

**Specific Medical Considerations**

The following are 10 areas of a number of documented or potential medical or public health value regarding cannabis:

**1. Pain**

Pain suppression is reflected in how an individual's metabolism and central nervous system function. In 2024 the Minnesota Department of Health had enrolled over 40,000 patients for medical cannabis prescriptions. Roughly 60 percent are related to chronic pain. For many the use of cannabis represents an option to avoid opiate use and negative side effects, including dependency. As David Rak, program research manager with the Minnesota Department of Health stated, "People who have chronic pain (are finding) something that helps them over the course of months and years."

Cannabis may have special value as a non-opiate alternative to pain control but professional medical and pharmaceutical counsel for responding to prolonged discomfort should be promoted.

**2. Sleep**

In 2022 following Canada's legalization of adult marijuana use, *The Journal of Psychopharmacology* published a study regarding how cannabis was used for non-prescribed medical purposes. The results showed that 46 percent of the respondents used cannabis to address sleeping problems.

There has been a concern regarding the use of non-prescribed cannabis as a sleeping aid.

Dr. Michael Howell, Director of Sleep Medicine at the University of Minnesota, cautioned that regular use of any pharmaceutical, including cannabis, may mask serious problems. Dr. Bhanu Kolla, a Mayo Clinic psychiatrist working with sleep-related issues also expressed concern that a tendency to increase dosage over time may result in exacerbating sleep problems.

Infrequent use of smaller doses and especially counsel from a professional trained in sleep dysfunction should be considered.

**3. Inflammation Reduction**
The Rockefeller Institute of Medical Research has published on inflammation and neuropathic pain reduction and documented positive results, especially regarding CBD dosages.(41)

**4. Alcohol and Other Addiction Relapse**
The National Institutes of Health began studying relapse among recovering alcoholics, identifying CBD as potentially useful in supporting drug or alcohol addiction recovery.(42)

Animal testing has documented that CBD may reduce stress-induced cravings, anxiety, and lack of impulse control. Piloting among human test subjects is pending.

In his book, *The Disease of Addiction*, Joseph Caravella suggests caution in using this recovery option until further research is completed as does Dr. Peter Grinspoon in his book *Seeing Through the Smoke*.(43)

**5. Anxiety Disorders**
Anxiety disorders are among the most common afflictions for which people have used CBD and THC. Research has suggested that CBD may be effective in treating generalized anxiety disorder. Anxiety response research presently focuses on which patterns of potential use in conjunction with other support are most helpful for which conditions. A medical professional should be involved in any use of THC for anxiety.

**6. Blood Pressure**
Typically, with cannabis use, blood pressure becomes higher; however, NIH published an analysis in 2017 documenting that CBD without THC used in the proper dosage appears to reduce blood pressure without substantial side effects. This is the subject of current research.(44)

**7. Gastrointestinal Disorders**
While THC has been associated with emergency room admissions for gastrointestinal discomfort, NIH research also found that CBD may be effectively used to prevent and treat certain GI disorders. These include irritable bowel syndrome, Crohn's and colitis.(45)

**8. Cancer**
Cannabis has effectively been used to alleviate side effects of chemotherapy. This is no longer speculative but an accepted tool in oncology.(46)

Several recently published research studies indicate that with the correct dosage, CBD may retard cell growth in addressing tumors in several cancers by promoting natural immune systems. This research is preliminary but considered promising.(47)

**9. Exercise**
When a sprinter was suspended from Olympic participation after testing positive for cannabis, there was curiosity. Cannabis was being informally used by several successful athletes to enhance performance.

Formal studies are underway at the University of Colorado Boulder to ascertain the impact on athletic performance following controlled dosages of cannabis. The World Anti-Doping Agency has determined that cannabis may increase performance, especially in endurance athletics, and is consequently prohibited. The Agency found that "…a growing number of athletes are mixing (cannabis) with workouts, to spark motivation, ease recovery, or find more enjoyment in exercise."

**10. Elderly Dementia**

Much cannabis research in the United States was terminated based on legal interpretations of Federal Schedule I prohibitions. National Institutes of Health researcher, Dr. Andreas Zimmer, relocated to Bonn Germany, when the German government allowed him to continue his research on cannabis addressing dementia. He is now considered one of the world's most respected international neuroscientists addressing the prevention of Alzheimer's/dementia.

In 2005 his research provided documentation that synthetic THC could slow brain degeneration and may have a role in addressing Alzheimer's and elderly dementia. There have been both animal and human research findings supporting a positive connection. The FDA has not approved a specific pharmaceutical regimen to treat common dementia. However, there is a possibility that therapeutic support addressing early dementia through synthetic THC may be forthcoming. Research continues. With cannabis rescheduling to a Schedule III, more and better research should be forthcoming.

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Following graduation from the University of Minnesota in Forensics, Bruce served in Vietnam as an Army Scout. After his war experience, he earned a Master's Degree in Public Health/ Epidemiology and then founded the Minnesota Institute of Public Health, a company that developed and distributed health information. Subsequently, Bruce founded the Institute for Environmental Assessment (www.ieainstitute.com), a major Midwestern environmental engineering corporation providing health and safety support to office buildings, factories, schools and hospitals.

Throughout his career, Bruce published on environment and health, served on public and private boards, including appointments to the State Environmental Quality Board by three Governors. He also provided commentaries on public radio and public television.

In 2007, Bruce retired from his companies to chair the board of the nonprofit Environmental Resource Council, (www.envrc.org), which is supported by federal and state grants and several foundations.

He and his wife, Claudia, have two grown children and three grandchildren. They live on a scenic river in Minnesota — three days by canoe from their lake cabin.

**In the best and worst of societies the pursuit of pleasure for some becomes the responsibility of others.**


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