



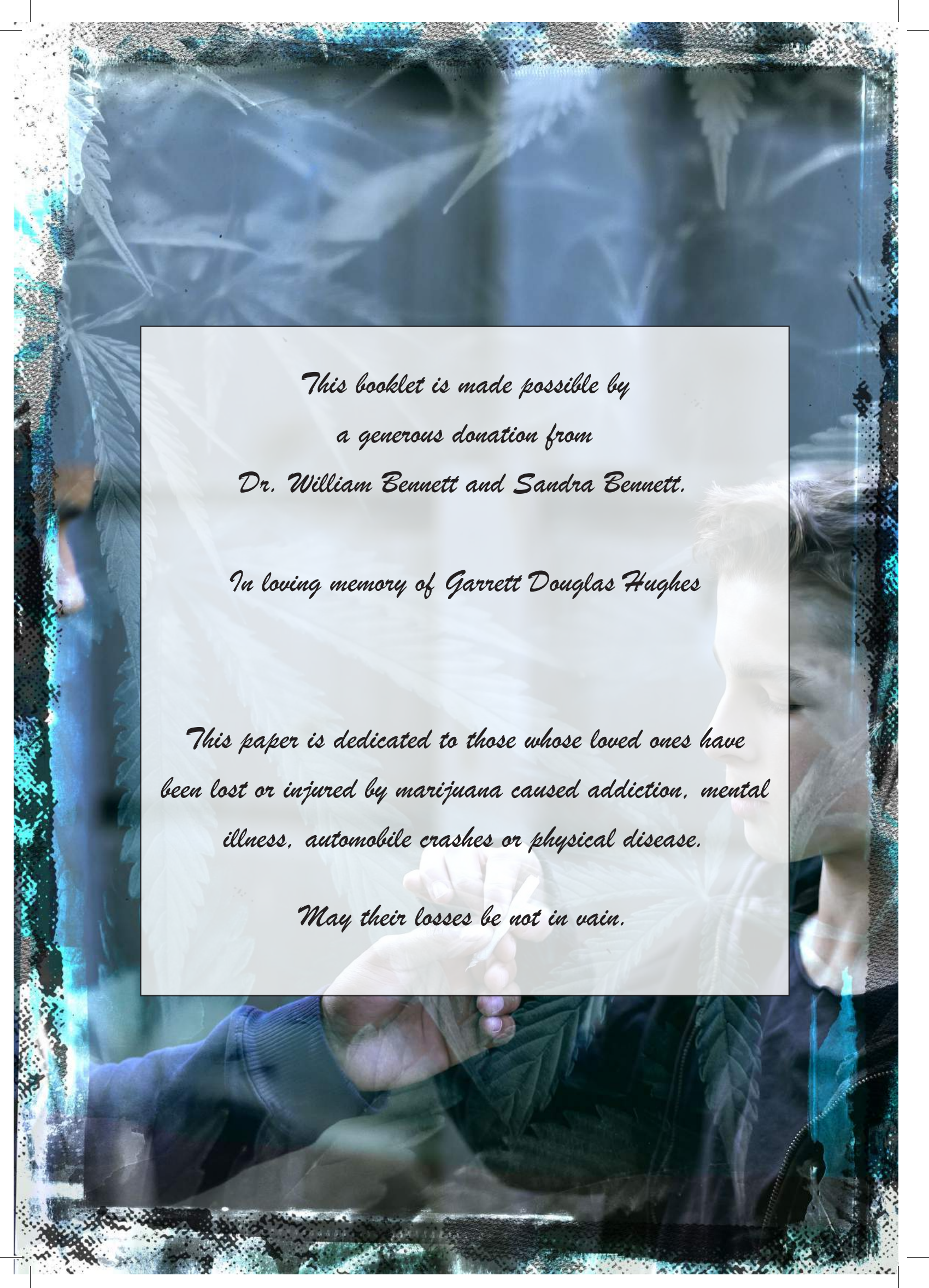
**Americans Against
Legalizing Marijuana**
AALM.info

THE RISKS OF MARIJUANA USE

Americans Against Legalizing Marijuana

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A person is holding a large, green cannabis leaf in front of their face, partially obscuring it. The person is wearing a dark blue jacket. The background is a blurred outdoor setting with trees and foliage. The entire image is framed by a decorative border with a green and blue pattern.

*This booklet is made possible by
a generous donation from
Dr. William Bennett and Sandra Bennett.*

In loving memory of Garrett Douglas Hughes

*This paper is dedicated to those whose loved ones have
been lost or injured by marijuana caused addiction, mental
illness, automobile crashes or physical disease.*

May their losses be not in vain.

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September 1, 2022 edition

Americans Against Legalizing Marijuana is an all volunteer IRS approved non-profit 501(c)(3) dedicated to providing information on the harms of marijuana to individuals and our Country based on the premise of

No Use of Any Illegal Drug and No Illegal Use of Legal Drugs

MARIJUANA IS A DANGEROUS DRUG: HERE IS THE SCIENCE

Compared to years past, marijuana and the products derived from marijuana, have much higher THC (Tetrahydrocannabinol) content. THC is the substance in marijuana that is primarily responsible for the psycho-affective effects on a person. The marijuana of today is highly potent, addictive, and the negative effects can be long-acting. Marijuana is classified as a hallucinogenic drug under federal law.

Even though marijuana production, possession, and distribution are illegal under the federal Controlled Substances Act and the federal Food and Drug Administration medicine and food laws, some states have “legalized” marijuana and/or cannabidiol (CBD) under state law due to lobbying by the marijuana industry. However, producing and selling marijuana is still illegal under federal law.¹

Marijuana and other cannabis products are inherently dangerous substances and even with warnings and “regulation” it is not safe to use or sell or distribute them. The sellers and distributors of these products should be civilly liable for any damages. This includes “medical” marijuana care providers.

This paper discusses the many harms caused by marijuana use that are amply documented by science. The marijuana industry is using the playbook of the tobacco and opiate industries in manipulating public opinion. For over 20 years, the marijuana industry has falsely and fraudulently denied:

1. that marijuana use causes mental illness, birth defects, addiction, violence, cancer and otherwise endangers the health of those who use it and their unborn children;
2. that marijuana is a highly addictive drug that they manipulated in order to sustain addiction;
3. that they marketed and promoted marijuana as not being harmful when in fact it is;
4. that they intentionally marketed to young people under the age of twenty-one and denied doing so;
5. that they concealed evidence to prevent the public from knowing about the dangers of marijuana to protect the industry from adverse litigation results.

We use the term “marijuana” because that is the term for most of the cannabis products that are sold. However, this paper is concerned with all plant derived or synthetic cannabinoid products that require warnings such as cannabidiol (CBD) and Delta 8-THC, Delta 9-THC, Delta 10-THC and THC-O-Acetate and tetrahydrocannabivarin (THCV).²

The word “cannabis” refers to all products derived from the plant *Cannabis sativa*. The cannabis plant contains about 540 chemical substances. The word “marijuana” refers to parts of or products from the plant *Cannabis sativa* that contain certain amounts of tetrahydrocannabinol (THC). THC is the substance that’s primarily responsible for the effects of marijuana on a person’s mental state. Some cannabis plants contain very little THC. Under U.S. law, these plants are considered “hemp” rather than marijuana. 21 U.S.C. § 802 (16)

The best way for people to avoid these harms is to avoid marijuana and other cannabis products. This paper does not endorse marijuana or cannabis use in any form and opposes its use and legalization and commercialization. We hope that consumers will be deterred from marijuana and cannabis use. The exceptions are the FDA approved cannabinoid-based medicines that can be used under medical direction.

There are definite well-documented risks of physical and mental damage from marijuana and other cannabinoid products. For example, any medicine that the Food and Drug Administration approves requires warnings by the product manufacturer or seller or medical care provider. This is the case where marijuana or any other products of cannabis such as hemp and cannabidiol (CBD) are to be approved for any use by the FDA for medicinal purposes.

The FDA has not approved the cannabis plant for any medical use. However, the FDA has approved several drugs that contain individual cannabinoids. Epidiolex, which contains a purified form of CBD derived from cannabis, was approved for the treatment of seizures associated with Lennox-Gastaut syndrome or Dravet syndrome, two rare and severe forms of epilepsy. Marinol and Syndros, which contain dronabinol (synthetic THC), and Cesamet, which contains nabilone (synthetic chemical similar to THC) are approved by the FDA. Dronabinol and nabilone are used to treat nausea and vomiting caused by cancer chemotherapy. Dronabinol is also used to treat loss of appetite and weight loss in people with HIV/AIDS.

The few Cannabinoid products that have been approved for use by the FDA, including Epidiolex, Marinol and Cesamet have extensive warnings of the many risks of use. The FDA drug label for Marinol issues a warning that the drug “may cause psychiatric and cognitive effects and impair mental and/or physical abilities. Avoid use in patients with psychiatric history.” The FDA drug label for prescription CBD in the form of Epidiolex issues a warning that the drug may cause “Hepatocellular injury (liver), somnolence and sedation, suicidal behavior and ideation.”³ While these boxed warnings exist on low potency prescription cannabis products, there may be no warnings on much higher potency federally illegal marijuana products sold at marijuana stores or dispensaries.

Unless there are proper labeling and warnings the consumer has no complete way of knowing the potency or purity of the product, as state-legalized marijuana lacks the quality control of FDA-approved medicines or foods, although in some states the percentage of tetrahydrocannabinol (THC) and cannabidiol (CBD) are listed on the products sold in state-legalized stores or dispensaries.

ABOUT SCHEDULE 1 DRUGS

Drugs are divided up into five “schedules” by federal law depending on their addictiveness, potential harm and usefulness as a medicine. Schedule 5 are the least harmful. The most addictive and dangerous drugs are put into Schedule I. Marijuana is a schedule I drug because: (1) the drug has a high potential for abuse; (2) the drug has no currently accepted medical use in treatment in the United States; and (3) there is a lack of accepted safety for use of the drug under medical supervision.

21 U.S.C. §§ 811, 812(b). *Gonzales v. Raich*, 545 U.S. 1, 15 (2005). Marijuana as a Schedule I drug cannot be prescribed for any medical purpose. This was upheld in federal court in 2015 in *US v. Pickford*, 100 F.Supp.3d 981 (ED CA 2015). See also <https://www.dea.gov/drug-information/drug-scheduling>.

1. GENERAL HEALTH RISKS

There are definite health risks associated with the consumption of cannabis derivatives such as tetrahydrocannabinol (THC) and CBD. These health risks can be idiosyncratic and unpredictable in nature even with low potency marijuana. Health risks can also be dependent on biochemical, mental health, and/or other physical and psychological factors. The risks are many and include:

- Psychosis
- Suicides
- Lung damage
- Cancer
- Brain damage
- Neonatal Exposure
- Opioid abuse
- Motor vehicle and home and work place accidents
- Cannabis Hyperemesis Syndrome.⁴

CONCLUSION: Use of marijuana products can cause damage to the user’s physical and/or mental health.

2. RISKS TO UNBORN CHILDREN AND PARENTS

There are health risks for mothers and fathers and unborn children associated with the consumption of marijuana. For women who are pregnant, breast-feeding, or planning on becoming pregnant, a warning should be provided. Irreparable damage is being done to the DNA of both male and females and their children by marijuana use. The basic scientific understanding of the damage to DNA has been known for decades.⁵

Cannabinoid use during pregnancy can be harmful to a baby's health. This includes THC and CBD. The chemicals in marijuana (in particular, tetrahydrocannabinol (THC) pass through the mother's system to the baby and may harm the baby's development. Although more research is needed to better understand how marijuana may affect mothers and their babies during pregnancy, the American College of Obstetricians and Gynecologists (ACOG) strongly advises that pregnant women not use marijuana.⁶

The Colorado School of Public Health reports that there is a 50% increase in low birth weights among women who use marijuana during pregnancy. Low birth weight sets the stage for future health problems including infection and time spent in neonatal intensive care.⁷

Prenatal marijuana use has been linked with:

- a. Developmental and neurological disorders and learning deficits in children.
- b. Premature births, miscarriages, stillbirths.
- c. An increased likelihood of a person using marijuana as a young adult.
- d. The American Medical Association states that marijuana use may be linked with low birth weight, premature birth, behavioral and other problems in young children.
- e. Birth defects and childhood cancer.
- f. Reproductive toxicity affecting a father's sperm in spermatogenesis, which is the process of the formation of male gamete including meiosis and formation of sperm cells.
- g. Data implicate cannabinoids including cannabidiol (CBD) in a diverse spectrum of heritable congenital anomalies.⁸

Marijuana use is not recommended in pregnancy and is associated with poor health at birth⁹ and future cognitive and emotional problems in children.¹⁰ Despite these known risks, a recent investigation into regulated cannabis dispensaries in Colorado found that employees, when asked, recommended cannabis for pregnancy-associated morning sickness 69% of the time and usually did not recommend speaking to the woman's physician first.¹¹

CONCLUSION: There are physical and mental health risks for mothers and fathers and unborn children associated with the consumption of marijuana.

3. RISKS TO MENTAL HEALTH

Marijuana use, especially frequently (daily or nearly daily) and in high potency, can cause disorientation and sometimes unpleasant thoughts or feelings of anxiety and paranoia. People who use marijuana are more likely to develop a temporary psychosis (not knowing what is real, hallucinations, and paranoia) and long-lasting mental disorders, including schizophrenia (a type of mental illness where people might see or hear things that are not really there). The association between marijuana and schizophrenia is stronger in people who start using marijuana at an earlier age and use marijuana more frequently. Marijuana use has also been linked to depression, social anxiety, and thoughts of suicide, suicide attempts, and suicide.¹²

Marijuana use can trigger measurable psychotic symptoms (observable in clinical studies of purified THC) in 40% of individuals with no family history of a psychosis.¹³ In regular recreational users, it can trigger full-fledged chronic psychotic disorders at a greater rate than any other recreational drug, i.e., more than LSD, PCP, cocaine, methamphetamine, amphetamine or alcohol (observable in large epidemiological and register-based studies).¹⁴ The risk is elevated about 5-fold by regular use of high potency marijuana.¹⁵ The facts illustrating that marijuana is a causal factor for psychoses were published in the journal Addiction.¹⁶

The major damage found by the National Academies of Sciences Engineering and Medicine in their 2017 report "The Health Effects of Cannabis and Cannabinoids" was that marijuana use was strongly associated with a greater risk of developing schizophrenia. Subsequent research has only strengthened this connection.¹⁷

The American Psychiatric Association states that:

There is no current scientific evidence that cannabis is in any way beneficial for the treatment of any psychiatric disorder. In contrast, current evidence supports, at minimum, a strong association of cannabis use with the onset of psychiatric disorders. Adolescents are particularly vulnerable to harm, given the effects of cannabis on neurological development.

Medical treatment should be evidence-based and determined by professional standards of care; it should not be authorized by ballot initiatives.

No medication approved by the FDA is smoked. Cannabis that is dispensed under a state-authorized program is not a specific product with controlled dosages. The buyer has no complete way of knowing the strength or purity of the product, as cannabis lacks the quality control of FDA-approved medicines, although in some states the percentage of delta-9tetrahydrocannabinol (THC) and cannabidiol (CBD) are listed on the products sold in state-legalized stores or dispensaries.

Prescribers and patients should be aware that the dosage administered by smoking is related to the depth and duration of the inhalation and therefore difficult to standardize. The content and potency of various Cannabinoids contained in cannabis can also vary, making dose standardization a challenging task.

Even non-smoked means of consumption, such as edible forms of cannabis, tinctures, and ointments have variable absorption, bio-availability, and a range of phytocannabinoids and other biologically active compounds which are not measured or controlled for in production.

Physicians who recommend use of cannabis for “medical” purposes should be fully aware of the risks and liabilities inherent in doing so.

The APA does not endorse cannabis as medicine.¹⁸

The state of Colorado warns that use of marijuana concentrates may lead to psychotic symptoms and/or psychotic disorder (delusions, hallucinations, or difficulty distinguishing reality) and mental health symptoms/problems.¹⁹

CONCLUSION: Use of marijuana products can cause severe damage to the user's mental health including psychotic symptoms and/or psychotic disorder (delusions, hallucinations, or difficulty distinguishing reality) and other mental health symptoms and problems.

4. RISKS OF SUICIDE

There is significant evidence linking cannabis use and suicide, especially in teens and young adults.²⁰ In 2019, a review of multiple publications found that adolescent cannabis use was associated with increased depression in young adulthood and a tripling of the risk of a suicide attempt.²¹ Marijuana is the most prevalent substance found in completed teen suicide in the state of Colorado.²² A population-based cohort study of Medicaid-enrolled youths with mood disorders found that the presence of cannabis use disorder was significantly associated with an increased risk of nonfatal self-harm, all-cause mortality, and death by unintentional overdose and homicide.²³

CONCLUSION: Use of marijuana products can cause users to become suicidal or to engage in self-harm.

5. DAMAGE TO MENTAL ABILITY

Research shows that exposure to marijuana is associated with cognitive decline, poor memory, inattention, impaired learning performance, reduced dopamine brain response-associated emotionality, and increased addiction severity in young adults. Marijuana use directly affects brain function - specifically the parts of the brain responsible for memory, learning, attention, decision-making, coordination, emotions, and reaction time. Developing brains, such as those in babies, children, and teenagers, are especially susceptible to the harmful effects of marijuana and tetrahydrocannabinol (THC).²⁴

CONCLUSION: Use of marijuana products can cause damage to the user's mental functioning.

6. CARDIAC AND LUNG DAMAGE

There is an emerging literature on serious cardiac events being triggered by potent marijuana use in the young, including fatalities. Stroke, arrhythmias, and

cardiomyopathies are major outcomes of concern. Smoked marijuana, regardless of how it is smoked, can harm lung tissues and cause scarring and damage to small blood vessels.²⁵

CONCLUSION: Use of marijuana products can cause damage to the user's heart and cardiac system and lungs.

7. RISKS OF CANCER

Smoked marijuana, regardless of how it is smoked, can harm lung tissues and cause scarring and damage to small blood vessels. Smoke from marijuana has many of the same toxins, irritants, and carcinogens (cancer-causing chemicals) as tobacco smoke. Smoking marijuana can also lead to a greater risk of bronchitis, cough, and mucus production, though these symptoms generally improve when marijuana smokers quit.²⁶

Independent studies have shown that the risk for testicular cancer is doubled by regular use.²⁷

Marijuana use may also cause other cancers. Experimental studies show that Cannabinoids are an important cause of community-wide genotoxicity impacting both birth defect and cancer epidemiology. For example, the State of California has declared that marijuana smoke has been identified through reputable research as carcinogenic, and relates to or causes developmental malformations (teratogenic), and causing other potential harms to the user and those exposed to marijuana smoke. Marijuana may be involved with head and neck cancer, lung cancer, bladder cancer, brain cancer, and testicular cancer and childhood cancers.²⁸

CONCLUSION: Use of marijuana products can cause cancer.

8. RISKS OF DEPRESSION

Adolescents who use cannabis have a significant increased risk of depression and suicidality in adulthood.²⁹ Researchers from McGill and Oxford Universities carried out a systematic review and meta-analysis that included 23,217 individuals from 11 international studies. They found that cannabis use among adolescents is associated with significant increased risk of depression and suicidality in adulthood. The population attributable risk was found to be around 7%, which translates to more than 400,000 adolescent cases of cannabis attributed depression.³⁰

CONCLUSION: Use of marijuana products can cause depression in the user.

9. DAMAGE TO CHILDREN

The rate of marijuana exposures in the “medical” marijuana states among children under the age of six was reported in a study published in Clinical Pediatrics. The data comes from the National Poison Data System. 75% percent of the children ingested edible marijuana products such as marijuana-infused candy. Clinical effects include drowsiness or lethargy, ataxia (failure of muscle coordination), agitation or irritability, confusion and coma, respiratory depression, and single or multiple seizures. Because more states are likely to pass legislation legalizing medical and recreational use of marijuana, increased efforts to establish child-focused safety requirements regarding packaging of commercially sold marijuana products are needed to help prevent more children from being exposed to this drug.³¹

In Colorado, one in six infants and toddlers hospitalized for lung inflammation are testing positive for marijuana exposure. This has been a 100% increase since legalization (10% to 21%). Nonwhite kids are more likely to be exposed than white kids.³²

Marijuana related emergency room visits by Colorado teens is substantially on the rise. They see more kids with psychotic symptoms and other mental health problems and chronic vomiting due to marijuana use.³³

Marijuana use is tied to concurrent and lasting changes in adolescent cognitive functions, according to a study that tracked high school students for 4 years. Of particular concern was the finding that marijuana use was associated with lasting effects on a measure of inhibitory control, which is a risk factor for other addictive behaviors, and might explain why early onset marijuana use is a risk factor for other addictions.³⁴

CONCLUSION: Use of marijuana products can cause damage to the physical and/or mental health of children.

10. BRAIN DEVELOPMENT IN CHILDREN

Marijuana affects brain development. Developing brains, such as those in babies, children, and teenagers, are especially susceptible to the harmful effects of marijuana and tetrahydrocannabinol (THC).³⁵ Heavy marijuana use has shown visible negative alterations in both brain structure and function.³⁶

Research shows that infants exposed to THC before birth suffer a wide array of neurocognitive and neurobehavioral deficits that cascade throughout childhood and adolescence, resulting in adverse social, health, educational and economic

consequences. Exposing the developing brain to marijuana can prime the brain to addiction and have potential negative consequences. Although scientists are still learning about the effects of marijuana on developing brains, studies suggest that marijuana use by mothers during pregnancy could be linked to problems with attention, memory, problem-solving skills, and behavior in their children.³⁷

CONCLUSION: Use of marijuana products can damage brain development in children.

11. RISKS OF HIGH POTENCY MARIJUANA

Marijuana products today can be up to 99% THC, the psychoactive chemical in marijuana.³⁸ The amount of THC in marijuana has been increasing steadily over the past few decades. For a person who's new to marijuana use, this may mean exposure to higher THC levels with a greater chance of a harmful reaction including mental illness.

Limiting the availability of high potency marijuana may be associated with decreased marijuana addiction and mental illness.³⁹ However, this does not imply that low potency marijuana could be safely or more safely used. Even in small low potency amounts, damage of all kinds can be done to those of all ages and their children.⁴⁰

CONCLUSION: Marijuana products may contain high potency marijuana. High potency marijuana is known to cause many mental health and physical health problems.

12. CANNABIS HYPEREMESIS SYNDROME (CHS)

CHS is now commonly recognized in hospital emergency rooms in long term marijuana users. CHS is potentially fatal and associated with painful retching, vomiting, and abdominal pain.⁴¹

The state of Colorado warns that use of marijuana concentrates may lead to Cannabis Hyperemesis Syndrome (CHS) (uncontrolled and repetitive vomiting).⁴²

CONCLUSION: Use of marijuana products can cause damage to the user's physical and/or mental health. It can cause uncontrollable and repetitive vomiting.

13. RISKS OF VIOLENCE

According to research studies, marijuana use is linked to aggressive behavior and domestic violence and can cause or exacerbate psychoses and produces paranoias all of which can lead to violence and homicide. Marijuana use has also been linked to mass shootings.⁴³

PTSD patients who were marijuana users have been found to make less progress in overcoming their condition and were more likely to be violent. Initiating marijuana use after PTSD treatment was associated with worse PTSD symptoms, more violent behavior, and alcohol use. Marijuana may actually worsen PTSD symptoms or nullify the benefits of specialized, intensive treatment.⁴⁴

CONCLUSION: Use of marijuana products can cause the user to become violent.

14. DRIVING AND OPERATION OF MACHINERY

Cognitive capabilities and perceptions can be immediately impaired due to the THC in marijuana and Cannabinoids such as CBD. This can include low levels of THC. THC can impair important skills required for safe driving or operation of machinery by slowing reaction time and the ability to make decisions, impairing coordination, and distorting perception.⁴⁵

Epidemiology data from road traffic arrests and fatalities indicate that after alcohol, THC is the most frequently detected psychoactive substance among driving populations. The data clearly shows a reduced ability to drive safely after THC use.⁴⁶ As stated in the Surgeon General's 2016 report Facing Addiction in America, marijuana's THC is a serious threat to the physical and mental health of our children and that its use is a major hazard to public safety.⁴⁷

Based on state data, the state of Colorado warns that use of marijuana's THC may impair the ability to drive or operate machinery.⁴⁸

THC causes a decline in motor performance resulting in delayed reaction times and reduced ability to stay in one's own driving lane. Cognitive functions decline reducing one's ability to maintain sustained attention to driving conditions and leading to poor decision-making, impulse control and memory.⁴⁹ The adverse effects

of THC on driving safety have been proven with controlled laboratory experiments driving simulators and real-world driving experiments.⁵⁰

Chronic users build up a tolerance to some, but not all of the effects of THC. To compensate for their tolerance, chronic users consume higher quantities of a drug to obtain their desired effect and are just as impaired as occasional users.⁵¹

CONCLUSION: Use of marijuana products will cause the user to be unsafe in driving a motor vehicle or operating machinery.

15. POST-TRAUMATIC STRESS DISORDER (PTSD)

The use of marijuana can make PTSD worse and increase the risk of suicide.⁵² Those who have PTSD should be warned about its use. The only blind sample clinical study on the response of PTSD patients to marijuana found no benefit as compared to a placebo.⁵³

CONCLUSION: Use of marijuana products may be harmful to people with Post Traumatic Stress Disorder.

16. HARMFUL DRUG AND MEDICINE INTERACTIONS

There are many concerns about the interaction between marijuana (cannabis) and medications. Cannabinoid levels can be increased by other medications. Cannabinoids can affect levels of other drugs. Smoking marijuana can increase clearance of some drugs. Additive effects can occur with other drugs. There are potential “red flag” interactions.⁵⁴

Consumers need warning labels on some prescription medications from the pharmacy such as “Do not take with alcohol” or “Do not take with grapefruit juice.” Pharmacies can check for medication interactions.

The marijuana plant has over 400 chemicals that include tetrahydrocannabinol (THC), the psychoactive chemical and cannabidiol (CBD). These products are metabolized in the liver and may alter the metabolism of many medications resulting in toxicity or under dosing of the medications. There are 379 drug interactions with THC, 25 major and 354 minor. There are 539 drug interactions with cannabidiol

(CBD), 9 major and 482 moderates. Drug interactions with marijuana products can be life threatening. Marijuana and CBD and all Cannabinoids, may interact with the following medicines:

- Sedatives - such as Barbiturates, lorazepam (Klonopin), lorazepam (Ativan), phenobarbital (Donnatal), zolpidem (Ambien) and others. The sedative effect can be increased.
- Theophylline - decrease the effects of theophylline which is bronchodilator - it opens up the airways in the user's lungs to make breathing easier.
- Disulfiram (Antabuse) - using it and marijuana can cause agitation, trouble sleeping, and irritability.
- Fluoxetine (Prozac) - using it and marijuana can cause irritation, nervousness, jitteriness, and excitation (hypomania).
- Warfarin (Coumadin) - using it and marijuana can increase the chance of bruising and bleeding.⁵⁵

Marijuana and CBD may also interact with

- Zonisamide
- Eslicarbazepine acetate (Aptiom—Sunovion)
- Cyclosporine Calcium channel blockers
- Benzodiazepines
- Haloperidol (Haldol—Johnson & Johnson)
- Atorvastatin (Lipitor—Pfizer)
- Simvastatin
- Antiepileptic drugs (caution with children)
- Clobazam
- Corticosteroids
- Some hospital-administered antibiotics
- Medicines that make patients lethargic (marijuana can accentuate that)
- Marijuana increases the level or effect of a lot of different medications.⁵⁶

Alcohol: The combination of alcohol and marijuana can have severe psychomotor effects impairing driving.⁵⁷

CBD: CBD may potentially interact in a negative way with anti-epilepsy drugs such as:

- Carbamazepine (Tegretol)
- Phenytoin (Dilantin)
- Phenobarbital (Luminal, Solfoton, Tedral)
- Primidone (anti-seizure)⁵⁸

CONCLUSION: Use of marijuana products can cause a harmful interaction with other drugs or medicines. Consult the user's health care provider before use. Inform the user's health care provider of any medications being taken.

17. RISKS OF IMMEDIATE SIDE EFFECTS

Marijuana users should be warned of the possibility that marijuana may cause immediate side effects such as headache, dizziness, drowsiness, dry mouth, nausea, and paranoid thinking. Smoking cannabis might also increase appetite, increase heart rate, change blood pressure, and impair mental functioning. Some reports suggest that smoking cannabis may also increase the risk of heart problems such as heart attack and abnormal heart rhythm.⁵⁹

CONCLUSION: Use of marijuana products can cause immediate harmful side effects.

18. UNLAWFUL USE OUTSIDE OF THE STATE

Some state laws that "legalize" marijuana are clear that it can only be used in that state. The product is unlawful outside the state.⁶⁰

CONCLUSION: Marijuana products cannot be used outside of certain states or be taken across state lines.

19. LACK OF REGULATORY CONTROL

In some states the marijuana product may be produced without regulatory oversight for health, safety, or efficacy and consumers should be warned if this is the case. The State of Colorado warns about this.⁶¹

CONCLUSION: Marijuana products may be produced without regulatory oversight for health, safety, or efficacy.

20. INTOXICATION MAY BE DELAYED

The intoxicating effects of all forms of marijuana, including marijuana edibles may be delayed. Owing to the idiosyncratic and unpredictable effects of marijuana, there is no way in which its safety and efficacy can be assured. Those who use any cannabinoid product need to be fully apprised of the risks involved in the use of these drugs.⁶²

CONCLUSION: Use of marijuana products may cause intoxication that may be delayed.

21. CONTAMINATION

Marijuana consumers should be warned that there may be nonorganic pesticides, fungicides, and herbicides used during the cultivation of the marijuana. The pesticides and fungicides used in marijuana growing are dangerous chemicals.⁶³ In addition, the cannabis plant is known as a hyper-accumulator; as it grows, it can take up unusually high levels of toxic heavy metals from the soil or growing medium through its roots and potentially into its flowers.⁶⁴

There have been reports of contamination of cannabis/cannabinoid products with microorganisms.⁶⁵

CONCLUSION: Marijuana products may contain microorganisms, nonorganic pesticides, fungicides, herbicides and heavy metals acquired during the cultivation of the marijuana.

22. AGE LIMITS

There are age limits for “legal” consumption under the state laws. However, this implies that marijuana can be safely used or “regulated” if there are age limits. Age limits are of no avail with a substance that has known harmful physical, mental, and psychological effects.⁶⁶

CONCLUSION: Use of marijuana products by anyone under the age of __ may be illegal under state law. Use of marijuana products by any one of any age is illegal under federal law.

23. ADDICTION

One study estimated that approximately 3 in 10 people who use marijuana have Cannabis Use Disorder (CUD). Another study estimated that people who use marijuana have about a 10% likelihood of becoming addicted. The risk of developing CUD is greater in people who start using marijuana during youth or adolescence and who use marijuana more frequently. The following are signs of CUD:

- Using more marijuana than intended.
- Trying but failing to quit using marijuana.
- Spending a lot of time using marijuana.
- Craving marijuana.
- Using marijuana even though it causes problems at home, school, or work.
- Continuing to use marijuana despite social or relationship problems.
- Giving up important activities with friends and family in favor of using marijuana.
- Using marijuana in high-risk situations, such as while driving a car.
- Continuing to use marijuana despite physical or psychological problems.
- Needing to use more marijuana to get the same high.
- Experiencing withdrawal symptoms when stopping marijuana use.⁶⁷

The state of Colorado warns that use of marijuana concentrate may lead to cannabis use disorder/dependence, including physical and psychological dependence.⁶⁸

CONCLUSION: Use of marijuana products may cause the users to develop cannabis use disorder/dependence (addiction), including physical and psychological dependence.

24. PAIN MANAGEMENT

Even though pain management is one of the most common reasons people report for using medical marijuana in the United States, there is limited evidence that marijuana works to treat most types of acute or chronic pain. Further, marijuana legalization is not associated with decreases in opioid overdose deaths and that

prior research findings that it did reduce deaths could be coincidental. Importantly, using marijuana either alone or in combination with opioids has been shown to increase risk for opioid misuse. There is no evidence that marijuana works to treat opioid use disorder. Safe and effective FDA-approved medications are available to treat opioid use disorder.⁶⁹

The potential benefits of cannabis-based medicine (herbal cannabis, plant-derived or synthetic THC, THC/CBD oromucosal spray) in chronic neuropathic pain might be outweighed by their potential harms.⁷⁰

CONCLUSION: Use of marijuana products may cause the users to develop cannabis use disorder/dependence, including physical and psychological dependence. Such products are not good pain relievers.

25. RISKS OF POISONING

Edibles such as food and drink products infused with marijuana, have some different risks than smoked marijuana, including a greater risk of poisoning. Unlike smoked marijuana, edibles can take from 30 minutes to 2 hours to take effect, so some people may eat too much, which can lead to poisoning and/or serious injury. They can cause intoxicating effects that last longer than expected, depending on the amount ingested, the last food eaten, and medications or alcohol used at the same time. They can be unpredictable. The amount of tetrahydrocannabinol (THC), or the concentration or strength, is very difficult to measure and is often unknown in edible products. Many people who use edibles can be caught off-guard by their strength and long-lasting effects.⁷¹

CONCLUSION: Use of marijuana products may result in poisoning and unpredictable toxic effects.

26. RISKS OF SECONDHAND MARIJUANA SMOKE

The known risks of secondhand exposure to tobacco smoke - including risks to the heart and lungs - raise questions about whether secondhand exposure to marijuana smoke causes similar health risks. Secondhand marijuana smoke contains many of the same toxic and cancer-causing chemicals found in tobacco smoke and contains some of those chemicals in higher amounts.⁷²

The state of California warns that marijuana smoke may be cancerous.⁷³

CONCLUSION: Secondhand exposure to marijuana smoke has risks including risks to the heart and lungs.

27. RISKS OF MAKING GLAUCOMA WORSE

Recent evidence shows that cannabis in either tetrahydrocannabinol (THC) or cannabidiol (CBD) are both harmful to the eye and have a deleterious effect on glaucoma. CBD has been shown to increase intra-ocular pressure (IOP) the fundamental problem with most forms of glaucoma. THC lowers IOP but the effect is transient and therapeutically worthless. Chronic cannabis use causes damage and loss of retina ganglion cells as does the disease glaucoma. Moreover, ganglion cells are central nervous system tissue, like the cells of the brain, and may serve as a surrogate marker for brain cell loss. This might account for neurological problems associated with heavy cannabis use such as memory loss, lethargy, and poor motivation, permanent IQ loss in youthful users, aggression, psychoses, etc. Half a century of research has found no benefit to any cannabis products in ophthalmology. Use of sham “medical” marijuana, CBD, or any form of cannabis is not recommended for glaucoma or any other eye condition by the American Academy of Ophthalmology or the Glaucoma Society. No physician should ever recommend cannabis use for any of the many forms of glaucoma.⁷⁴

CONCLUSION: Use of marijuana products may make glaucoma worse and may cause eye damage.

28. RISKS OF AUTISM

Marijuana use makes autism scores worse. Autism Spectrum Disease (ASD) “is the commonest form of cannabis-associated clinical teratology.”⁷⁵ A teratology is a collection of four things having something in common, such as a deformity with four features.

This is likely epidemiologically highly significant for the US, where autistic spectrum disorders have been shown to be growing exponentially. Cannabis use across the US was shown to be independently associated with autism rates across both time and space, to be dose-related, and, based on conservative projections, has been predicted to be at least 60% higher in cannabis-legal states than in states where cannabis was illegal by 2030.⁷⁶

CONCLUSION: Use of marijuana products can make autism scores worse in the user.

29. RISKS OF OPIOID DEPENDANCE

A *PubMed* review of 2,237 titles resulted in 14 studies that met inclusion criteria to review and found cannabis use ranging 6.2 – 38% in chronic opioid users compared to 5.8% in general population. Cannabis use in chronic opioid patients showed statistically significant associations with present and future aberrant opioid-related behaviors.⁷⁷

Many studies show that marijuana use increases the likelihood of opioid use disorder and opioid misuse⁷⁸ and it is not a good pain reliever.⁷⁹ It might be of some benefit for chronic pain patients who do use the drug to know that marijuana is an intoxicant and like any intoxicant, including beverage alcohol, pain sensations may be dulled while the intoxicated person is under the influence of the intoxicant. And like any other intoxicant, the cause of the pain is not affected by the use of the intoxicant and the pain will return when the effects of the intoxicant wear off.

CONCLUSION: Marijuana products are intoxicants and have been shown to increase the likelihood of opioid use disorder and opioid misuse and they are not good pain relievers.

30. RISKS OF ALLERGIC REACTION

Allergic disease associated with marijuana exposure and use has been reported with increased frequency, including anaphylaxis.⁸⁰

CONCLUSION: Use of marijuana products may cause a life-threatening allergic reaction.

31. RISKS OF SLEEP DISTURBANCE

A large study has shown that marijuana use can cause problems with sleep such as progressive sleep disturbances, and other negative effects to sleep architecture and quality.⁸¹

CONCLUSION: Use of marijuana products cause problems with sleep such as progressive sleep disturbances, and other negative effects to sleep architecture and quality.

32. RISK OF USE OF CBD

The FDA warns that prescription CBD in the form of Epidiolex may cause hepatocellular injury (liver), somnolence and sedation, suicidal behavior and ideation.⁸² Epidiolex is a very pure form of CBD and is derived from hemp and does not contain THC as do some other CBD products.⁸³

In addition, CBD products that are not approved by the FDA may be medical fraud, mislabeled or contaminated.⁸⁴

CONCLUSION: Use of CBD may cause hepatocellular injury (liver), somnolence and sedation, suicidal behavior and ideation and exposure to contamination.

33. RISK OF USE WITH EPILEPSY

Cannabinoids, primarily CBD, have been studied for the treatment of seizures associated with forms of epilepsy that are difficult to control with other medicines. Epidiolex (oral CBD) has been approved by the FDA for the treatment of seizures associated with two epileptic encephalopathies: Lennox-Gastaut syndrome and Dravet syndrome. Epileptic encephalopathies are a group of seizure disorders that start in childhood and involve frequent seizures along with severe impairments in cognitive development. However, not enough research has been done on cannabinoids for other, more common forms of epilepsy to allow conclusions to be reached about whether they're helpful for these conditions.⁸⁵

CONCLUSION: Use of cannabis may cause people with epilepsy to not get proper treatment.

34. RISK OF USE AND STROKE

There is growing evidence links cannabis use to cerebrovascular disease, including aneurysmal subarachnoid hemorrhage (aSAH) and acute ischemic stroke. Aneurysmal subarachnoid hemorrhage (aSAH) is a sudden life-threatening bleeding

occurring in the subarachnoid space. In a population-based study, the aSAH incidence was twice as high in cannabis users as in nonusers in a younger age group.⁸⁶

CONCLUSION: Use of cannabis may cause strokes.

35. RISK OF INJURY TO OLDER ADULTS

Cannabis use is associated with an increased risk of injury among older adults.⁸⁷

CONCLUSION: Use of cannabis may increase the risk of injury to older adults.

36. RISK OF USING MARIJUANA AS MEDICINE

Over the past several years, FDA has issued several warning letters to firms that market unapproved new drugs that allegedly contain cannabidiol (CBD). As part of these actions, FDA has tested the chemical content of cannabinoid compounds in some of the products, and many were found to not contain the levels of CBD they claimed to contain. Many contained THC. It is important to note that these products are not approved by FDA for the diagnosis, cure, mitigation, treatment, or prevention of any disease. In addition, the FDA has consistently warned against using any cannabinoid product as a medicine unless it is approved by the FDA. Consumers should beware purchasing and using any such products.⁸⁸

CONCLUSION: Use of marijuana/cannabis as a medicine may not be safe or effective unless approved by the FDA.

END NOTE

We hope this document will guide state officials and legislators on how to protect the public until the marijuana legalization laws are reversed.

ABOUT THE AUTHOR

David G. Evans, Esq., is Senior Counsel for the Cannabis Industry Victims Educating Litigators (CIVEL) who educate lawyers on how to make the marijuana industry accountable to their many victims. Mr. Evans is a plaintiff's litigator in personal injury and employment law cases. He is the author of the books *Employee Medical Leave, Benefits and Disabilities Law* and *Drug Testing Law, Technology and Practice* published by Thomson Reuters. Attorneys who desire more information can contact Mr. Evans at seniorcounsel@civel.org. The CIVEL website is: www.civel.org. It has additional informative materials for victims and attorneys.

He is the author of the following articles published by Thomson Reuters and available on Westlaw:

Marijuana and Product Liability, *Cannabis Law* 300:100

"Medical" Marijuana and Medical Malpractice Liability, *Cannabis Law* 500:100

Client and Case Vetting of Medical Malpractice Cases Involving Marijuana, *Cannabis Law* 500:400

Here are some websites to learn more about marijuana. They all have research and good quality information.

Americans Against Legalizing Marijuana
www.aalm.info

Driving Under the Influence of Drugs (DUID) Victims Voices
<http://www.duidvictimvoices.org>

Drug Free America Foundation
<https://www.dfaf.org>

Every Brain Matters
<https://everybrainmatters.org>

Gordon Drug Abuse Prevention
Gordondrugabuseprevention.com

International Academy on the Science and Impact of Cannabis
<https://iasic1.org>

Johnny's Ambassadors
<https://johnnysambassadors.org/research/>

Marijuana Victims Alliance
<https://www.mvaa.info>

Moms Strong
<https://momsstrong.org>

Parents Opposed to Pot
<https://poppot.org>

Smart Approaches to Marijuana.
<https://learnaboutsam.org>

The Marijuana Report - up to date research
<https://themarijuanareport.org>

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We wish to acknowledge that some of this information was obtained from the on-line library of the International Academy on the Science and Impact of Cannabis (IASIC). IASIC is an organization of international experts on cannabis who are guided by medicine and science to provide accurate and honest information that guides decision-making. <https://iasic1.org/library/>

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Scott Chipman, Vice President, Americans Against Legalizing Marijuana www.aalm.info

ADDITIONAL RECOGNITION

Mark S. Gold, M.D. Distinguished Life Fellow, the American Psychiatric Association, Distinguished Fellow American College of Clinical Pharmacology, Distinguished Fellow, American Society of Addiction Medicine has conducted studies on marijuana that are cited herein.

We also wish to refer the readers to an excellent book Cannabis in Medicine an Evidence-Based Approach, Dr. Kenneth Finn, Editor, published by Springer in 2020. <https://link.springer.com/book/10.1007/978-3-030-45968-0>

This is a comprehensive compilation of multiple facets of cannabis from a medical perspective. It includes several non-medical sections which indirectly impact medicine from a public health and safety perspective. It provides an evidence-based approach to cannabis and medicine. The book includes chapters on:

- The Properties and Use of Cannabis Sativa Herb and Extracts
- Cannabinoid and Marijuana Neurobiology
- The Pharmacodynamics, Pharmacokinetics, and Potential Drug Interactions of Cannabinoids
- Cannabis and Neuropsychiatric Effects
- Cannabis and the Impact on the Pediatric and Adolescent Population
- Acute Emergency Department Presentations Related to Cannabis
- Evidence of Cannabinoids in Pain
- Cannabis in Pulmonary Medicine
- Clinical Cardiovascular Effects of Cannabis Use
- Cannabinoids in Neurologic Conditions
- Ocular Conditions and the Endocannabinoid System
- Cannabis in Oncology and Symptom Management
- Cannabis in Palliative Medicine
- Charting the Pathways Taken by Older Adults Who Use Cannabis: Where Are the Baby Boomers Going Now?
- Cannabis in Dermatology
- Fetal and Neonatal Marijuana Exposure
- Cannabinoids in Gastrointestinal Disorders
- Looking at Marijuana Through the Lens of Public Health
- Cannabis-Impaired Driving: Evidence and the Role of Toxicology Testing
- The Legal Aspects of Marijuana as Medicine

FOOTNOTES

1. Marijuana that is distributed under state laws is derived from the cannabis plant and is thus a "botanical Cannabinoid." 21 U.S.C. § 802 (16). The federal Food and Drug Administration (FDA) has only approved one botanical Cannabinoid, a CBD, as a medicine. All other botanical marijuana/Cannabinoids (THC or CBD) dispensed under state law as medicine or for "recreational use" or as a food or food supplement are illegal under the Food and Drug Administration (FDA) laws. Source: FDA Advisory, What You Need to Know (And What We're Working to Find Out) About Products Containing Cannabis or Cannabis-derived Compounds, Including CBD, November 25, 2019, available at www.fda.gov.

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Delta 8-THC <https://cen.acs.org/biological-chemistry/natural-products/Delta-8-THC-craze-concerns/99/i31>

Delta 10 -THC <https://extractionmagazine.com/2020/03/21/the-bizarre-crystallization-of-%CE%B410-thc/>

THC-O, also known as THC-O-Acetate <https://www.hempgrower.com/article/thc-o-acetate-q-and-a-dr-ethan-russo-credo-science/>

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Marinol - https://www.accessdata.fda.gov/drugsatfda_docs/label/2006/018651s025s026bl.pdf

Epidiolex - https://www.accessdata.fda.gov/drugsatfda_docs/label/2018/210365bl.pdf

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<https://www.cdc.gov/marijuana/health-effects/brain-health.html>
<https://www.cdc.gov/marijuana/health-effects/cancer.html>
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<https://www.cdc.gov/marijuana/health-effects/mental-health.html>
<https://www.cdc.gov/marijuana/health-effects/chronic-pain.html>
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Delta-8 tetrahydrocannabinol, also known as delta-8 THC, is a psychoactive substance found in the *Cannabis sativa* plant, of which marijuana and hemp are two varieties. Delta-8 THC is one of over 100 cannabinoids produced naturally by the cannabis plant but is not found in significant amounts in the cannabis plant. As a result, concentrated amounts of delta-8 THC are typically manufactured from hemp-derived cannabidiol (CBD). It is important for consumers to be aware that delta-8 THC products have not been evaluated or approved by the FDA for safe use in any context. They may be marketed in ways that put the public health at risk and should especially be kept out of reach of children and pets.

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Doctors Warn

Cannabis Can Cause Serious Health Hazards

IASIC, the International Academy on the Science and Impact of Cannabis, is a medical organization of doctors who educate on the impacts of cannabis, based on the scientific and medical literature. IASIC is a non-partisan and non-political group created to facilitate informed decisions when considering health and cannabis policy.

Thousands of peer-reviewed medical articles have been published on the harms of cannabis and marijuana: Emergency Department (ED) Visits, Psychosis, Suicide, Brain Development, Neonatal Exposure, Opioid Use, Traffic Fatalities, High Potency Use, Problematic Use and Cannabis Hyperemesis Syndrome.

While we support FDA-approved cannabis-based products that have met the rigor of scientific study, it is our conclusion, based on review of the scientific evidence, that the negative impacts of cannabis strain our health care and addiction treatment resources to an extent that far surpasses the perceived benefits.

Calling attention to the growing science on the risks of cannabis, we see an urgent need for smart public health policies that follow the science, prevent addiction, and decrease mental illness, including psychosis, depression, and suicide.

IASIC, The International Association on Science and Impact of Cannabis wants the public and our leaders to be informed decision makers.



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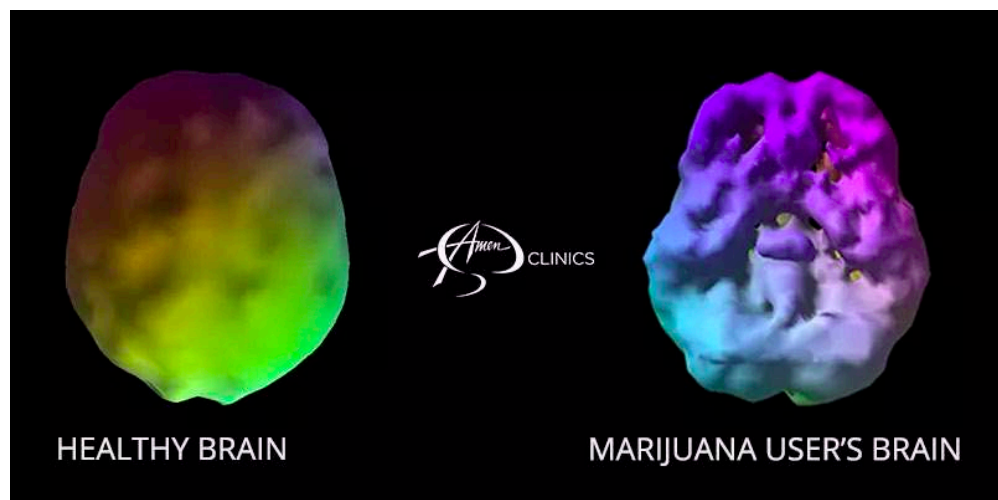
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IASIC

YOUR BRAIN IS AMAZING - DON'T RUIN IT WITH POT

Reported rates of marijuana use have more than doubled in the past decade. Medical marijuana is now legal in nearly half of US states and is increasing access to the drug for current and potential future users. Although it is often portrayed as harmless, and sometimes even therapeutic, there has not been nearly enough studies done to prove this. In fact, marijuana is often prescribed for issues like anxiety, though studies cannot comprehensively show this to be true. The current available information of the impact marijuana has on the neurophysiology of the brain show, predominantly, depressive effects.

In a recent study using PET imaging to demonstrate the release of dopamine in the striatum, a region of the brain that is involved in working memory, impulsive behavior, and attention, results showed that heavy marijuana use has similar dopamine releasing behaviors as cocaine and heroin with addiction. Several studies in chronic cannabis users show structural changes to the hippocampus persist, even after six months of abstinence.



U.S. Surgeon General Dr. Vivek Murthy has already warned that we're too quick to legalize the popular drug when research still hasn't shown whether or not it's truly safe. With Amen's new research, there is proof that Dr. Murthy's concerns are well warranted.

Just published in the most recent Journal of Alzheimer's Disease, the research finds that, after studying imaging of 1,000 cannabis users' brains, there were signs of noticeable deficiencies of blood flow. The study, which included 25,168 non-cannabis users, and 100 healthy controls, shows a scary and obvious difference in blood flow levels for those that used cannabis. Additionally, those that used marijuana showed a significant lack of blood flow in the right hippocampus, the area of the brain that helps with memory formation. This part of the brain is severely affected with those that suffer from Alzheimer's disease.

Our research has proven that marijuana users have lower cerebral blood flow than non-users. The most predictive region separating these two groups is low blood flow in the hippocampus on concentration brain SPECT imaging. This work suggests that marijuana use has damaging influences in the brain – particularly regions important in memory and learning and known to be affected by Alzheimer's. Our research demonstrates that marijuana can have significant negative effects on brain function. The media has given a general impression that marijuana is a safe recreational drug, this research directly challenges that notion.

Several studies of perfusion imaging in marijuana users have shown similar results compared to ours. A small O15 PET study in a sample of 12 marijuana users used a randomized clinical trial design to examine brain perfusion before and after marijuana use. The study results found frontal, temporal and occipital lobe hypo-perfusion – all findings concordant with our study.

<https://www.amenclinics.com/blog/amen-research-marijuana-affects-blood-flow-brain/>



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We advocate for No Use of Illegal Drugs and No Illegal Use of Legal Drugs

AALM Literature Available Upon Request



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This 40-page booklet documents the risks and consequences of marijuana use.

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*These documents are available in PDF Format,
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AALM's Position Papers

AALM has several position papers covering the major issues of marijuana use.

Americans Against Legalizing Marijuana is an all-volunteer IRS approved non-profit 501(c)(3) dedicated to providing information on the harms of marijuana to individuals and our Country based on the premise of No Use of Any Illegal Drug and No Illegal Use of Legal Drugs.

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