

IS IT EFFECTIVE? IS IT LEGAL? WE ASKED DR. UPFAL TO EXPLAIN
THE EFFICACY OF THE DRUG AND THE CURRENT MICHIGAN LAW.

Medical Marijuana

Although cannabis, commonly known as marijuana, has been used medicinally for 1,000 years, such use remains controversial. Under the Federal Controlled Substance Act, marijuana is classified by the U.S. Drug Enforcement Administration (DEA) as Schedule I, meaning that it cannot be legally prescribed in the United States.¹ Like heroin and LSD, it is still classified by the DEA as having no acceptable medical use. The U.S. Department of Justice believes that “marijuana is a dangerous, addictive drug that poses significant health threats to users,” and that “marijuana has no medical value that can’t be met more effectively by legal drugs.”²

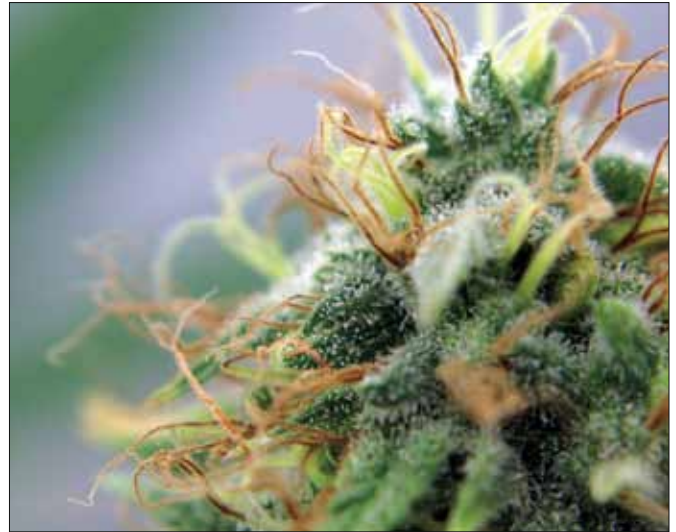
On the other hand, the American Medical Association has urged that marijuana be rescheduled by the DEA to facilitate the research and development of cannabis-based medications and alternative delivery methods (besides smoking). In the AMA’s position paper, it was noted that “smoked cannabis reduces neuropathic pain, improves appetite and caloric intake especially in patients with reduced muscle mass, and may relieve spasticity and pain in patients with multiple sclerosis.”³

Currently, 16 states plus the District of Columbia have legalized the use of marijuana upon recommendation of a physician. The role of the physician is generally to validate that (1) the patient indeed suffers from a medical condition for which marijuana use is acceptable to state law, and (2) to recommend that this drug would be a reasonable therapeutic choice for the patient. This differs from a prescription in that it is not an authorization to purchase a drug under the Controlled Substance Act, but rather it exempts the patient from prosecution for possession of marijuana under state law.

As marijuana remains illegal under federal law, states that have passed medical marijuana laws do not protect patients from prosecution or seizure of plants by the federal government, should it choose to do so. Under President Barack Obama’s current administration policy, however, patients in compliance with their state medical marijuana statutes will not be prosecuted for mere possession of marijuana.

Limited Research

There are few quality research studies on the therapeutic value of medical marijuana. Research limitations have included a small amount of funding for quality studies of marijuana as medicine, as well as difficulty for investigators to gain



A close look at marijuana as a plant grown for medicinal purposes.

authorization to legally obtain and study the drug. Study populations have generally been small.

Additionally, in placebo-controlled randomized studies, the active agent has been easy to distinguish from placebo, introducing a potential bias. Further, volunteer subjects may not be representative of the general population, and may have pre-conceived efficacy expectations which may affect their reporting of subjective end-points.

The best research review to date has been that published by the National Academy of Science Institute of Medicine in 1999 at the request of the White House.⁴ Since that time, several quality studies have been completed by the Center for Cannabis Research at the University of California, San Diego.

Mechanism of Action

Marijuana interacts with the body’s endocannabinoid receptors, which are present both in the brain and throughout the body. Stimulation of these receptors will exert multi-system effects impacting nausea, pain, hunger, metabolism, anxiety, immune function and inflammation. Endocannabinoid receptors exist in two varieties: CB1 and CB2. The former are found throughout the limbic system—affecting mood; the hippocampus—affecting memory; and the basal ganglia and cerebellum. The absence of endocannabinoid receptors in the medulla may account for the fact that marijuana, unlike most

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Editor's Note: Marihuana is one of two acceptable spellings and is consistent with the spelling in the Michigan Public Health Code, Act 368 of 1978, and Initiated Law 1 of 2008.

The Michigan Medical Marihuana Act

The Michigan Medical Marihuana Act (MMMA) was approved by Michigan voters on November 4, 2008.

As of June, 2011, approximately 150,000 applications have been received by the Michigan Department of Community Health. About 16,000 of the applications have been denied (primarily based on incomplete documentation).⁵

The MMMA authorizes marijuana possession on the basis of both qualifying diseases and qualifying symptoms. Diseases include cancer, HIV/AIDS, glaucoma, hepatitis C, amyotrophic lateral sclerosis (ALS), Crohn's disease, Alzheimer's with agitation, and nail patella syndrome. Qualifying symptoms in a patient with any chronic or debilitating disease include cachexia (wasting syndrome), severe nausea, severe and chronic pain, severe or persistent muscle spasms, and seizures. A recent report noted that over 90% of registered patients listed severe pain, muscle spasms or nausea as their qualifying symptoms.

Only a medical doctor or doctor of osteopathy with a bona fide doctor-patient relationship can sign the application for medical marijuana use in Michigan. While it is not illegal for the registered patient to possess marijuana, there is no legal means to purchase marijuana in the state of Michigan. Thus, the patient can either grow their own supply or obtain the plant material from a "caregiver." Patients who grow their own may possess: up to 12 plants in a secured facility, 2.5 ounces of useable plant material (not including seeds and stems), and related paraphernalia.

Possession of marijuana on a school bus, in a public school or correctional facility is prohibited, as is smoking of marijuana in a public place. Pharmacies are not authorized to dispense medical marijuana or fill prescriptions for marijuana. Further, the MMMA does not require that any insurer or government medical assistance program reimburse patients for the costs related to the use of medical marijuana.

The patient has the option to name a caregiver who can assist them by providing the drug. The registered caregiver may grow and possess an equivalent amount of marijuana plant material (12 plants/2.5 ounces) for each of up to five patients under their care. Registered caregivers must be 21 years of age and have no drug-related felony convictions.

other pain relieving medications, does not cause respiratory depression. CB2 receptors are primarily found outside of the brain and are believed to modulate immune system function and the body's inflammatory response.

Endocannabinoid receptors are naturally stimulated by an endogenous neurotransmitter, N-arachidonylethanolamine, which is commonly referred to as Anandamide (the Sanskrit root, "ananda", meaning bliss). The primary psychoactive agent in marijuana, delta-9-tetrahydrocannabinol (THC), binds to CB1 and CB2 receptors with about equal affinity. Interestingly, there is an inhibitor of CB1 receptors, Rimonabant, which had been under development as an anti-obesity agent. However, the FDA rejected its use because of its severely depressing effect on mood and the associated risk of suicide.

Efficacy

Efficacy of medical marijuana is best established for cachexia, such as the wasting syndrome experienced by people with HIV, and in treating severe nausea and vomiting, such as that resulting from chemotherapy. Recent studies also support the use for medical marijuana in treating neuropathic pain and spasticity in persons with multiple sclerosis, spinal cord injury, other nerve tract trauma, diabetic neuropathy, and HIV neuropathy. It can be helpful as an adjunct to decrease the use of opiates and it may be effective in treatment of pain for some who do not respond to traditional therapeutic agents.

While marijuana has been shown to reduce intraocular pressure in glaucoma patients, it is actually of little practical value in the treatment of this condition. This is because to effectively treat glaucoma and reduce the risk of blindness, the patient would need significant doses administered frequently (e.g. every three hours). The side effects of such use would undermine the value of the drug for treating this condition.

Adverse Effects

Undesirable actions of marijuana include adverse respiratory and psychological effects. Such side effects are dose dependent, and for most users, readily reversible upon cessation of use. Unlike many other therapeutic drugs and pain killers, there is no known lethal dose for marijuana.

Smoking the drug can cause respiratory irritation and cough. Based upon the well-established adverse effects of smoking tobacco, concerns have been raised about long-term respiratory outcomes such as chronic obstructive pulmonary disease (COPD), asthma and lung cancer. However, whether or not such diseases result from the typical medical marijuana user's frequency and dosing use has not yet been established.

The risk may be reduced when the patient uses a vaporizer

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Employment Implications

As marijuana can impair the performance of safety sensitive work such as driving, operating machinery, climbing ladders or making medical decisions, the drug should obviously not be used when performing such tasks. Most employers would have legitimate productivity concerns about on-the-job use of the drug regardless of the nature of the work. However, determining that an employee has come to work intoxicated by marijuana can be difficult.

Employees who are subject to drug testing are not exempt from such testing by medical marijuana regulations. Nor is there guidance in the Act for how employers may interpret a positive drug test for marijuana when there is state authorized medicinal use. This may pose challenges for both the employee/patient and the employer because urine drug tests cannot distinguish between on-the-job and off-the-job use of marijuana. A regular medical marijuana user may test positive for as long as a month after last use of the drug. Thus, a positive drug test in itself cannot serve as evidence of impairment on the job.

The Michigan Medical Marihuana Act (MMMA) is somewhat vague about the rights of employers and employees regarding the use of medical marijuana. On the one hand, Section 4(a) of the MMMA states that "A qualifying patient who has been issued and possesses a registry identification card shall not be subject to arrest, prosecution, or penalty in any manner, or denied any right or privilege, including but not limited to civil penalty or disciplinary action by a business or occupational or professional licensing board or bureau, for the medical use of marihuana in accordance with this act..."⁶ Thus, one might consider that an employer cannot discriminate (deny a right or

which heats the plant material to vaporize the cannabinoids without generating the toxic products of combustion such as polycyclic aromatic hydrocarbons, acrolein, benzo[a]pyrene, nitrosamines, oxides of nitrogen, and carbon monoxide.

Psychoactive effects of marijuana may include sleepiness, dizziness, anxiety, and cognitive impairment such as reduced memory, ability to focus, and reaction time. For a person who already has balance problems or cognitive challenges, this may increase risk for falls.

Marijuana use has been shown to impair driving performance on driving simulation trials for up to three hours by decreasing a person's car handling performance, slowing reaction time, and impairing time and distance estimation. While simple, routine tasks are not measurably impaired by marijuana, more complex tasks such as accident avoidance may be significantly impacted. While marijuana is believed to pose a safety risk, its effect is less impairing than that seen with alcohol intoxication.

Forms of Cannabinoids

The Michigan Medical Marihuana Act addresses the use of herbal marijuana (direct use of plant material, which can be smoked, vaporized or cooked and ingested). However, cannabinoids are legally available in the United States in pharmaceutical form (capsules) by a physician's prescription. Marinol™ (generic name, dronabinol) is a synthetic form of delta-9-THC in sesame oil. Cesamet™ (generic, nabilone) is another synthetic compound, which similar to delta-9-THC stimulates endocannabinoid receptors. Following ingestion of these capsule forms, the drug undergoes liver metabolism and enters circulation. The onset is more gradual, and the duration of effect is longer compared with smoked marijuana.

Not yet available in the United States, Sativex™, an oral
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privilege or impose disciplinary action) against an employee who is a medical marijuana user. On the other hand, Section 7(c) states that "Nothing in this act shall be construed to require... an employer to accommodate the ingestion of marihuana in any workplace or any employee working while under the influence of marihuana."⁷

Thus far, the courts in Michigan and other states appear to be siding with the employer's right to take disciplinary action, terminate or refuse to hire medical marijuana users who test positive on a drug screen without regard to when the use took place.

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mouth spray, contains delta-9-THC and cannabidiol, a related compound. Sativex™ is currently available in Canada, the United Kingdom and Spain. Similar to herbal marijuana, it has a rapid onset and shorter duration than the oral forms. It is used for neuropathic pain, spasticity, overactive bladder and cancer pain.

Herbal marijuana peaks as quickly as nine minutes after smoking, and its effects last up to several hours. Because patients can perceive the effects of smoked (or vaporized) marijuana so rapidly, it enables self-titration of dosing.

In patients with severe nausea, smoking or inhaling vapors is better tolerated than ingesting oral capsules. Herbal marijuana contains over 400 substances and over 60 cannabinoids, some of which are psychoactive, and some are not (e.g., cannabidiol). The herbal form has a broader range of therapeutic compounds as well as toxins compared to the pharmaceutical products. ❖

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Disclaimer: Dr. Upfal is not in the business of certifying medical marijuana users and has no conflicts of interest to disclose.

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