

MEDICAL MARIJUANA: SCIENTIFIC MECHANISMS AND CLINICAL INDICATIONS

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ABSTRACT

Finally in the early 21st century, medicinal cannabis is being rediscovered by physicians and patients alike. This paper discusses the current state of medicinal marijuana in the U.S. We'll look at contemporary medicinal use in the context of the 5000-year history of the therapeutic use of cannabis. This includes cannabis use in ancient times, in patent medicines, its use in the early 20th century, and assess the modern medicinal cannabis research that started in 1949. The paper will cover the current legal status of medicinal cannabis, recent research, the role of the FDA, physician practice standards, medical indications, and mechanisms of action.

INTRODUCTION

We stand at the dawn of a new era for medicinal cannabis. Since 1964, when Dr. Raphael Mechulam, of Jerusalem University, isolated tetrahydrocannabinol (THC) we have learned more about the marvels of the brain's neurochemistry. There has developed a greater understanding of the role of serotonin in depression and we have had the discovery of endorphins, the naturally-occurring opiates, and the endocannabinoid system. In 1992, Professor Mechulam described the endocannabinoid system. He characterized the endogenous cannabinoid receptors and the endogenous cannabinoids that bind to these receptors.

We have crossed the threshold into exciting cannabis-related treatments for many conditions and symptoms. Cannabis gives relief from chronic pain which arises from a myriad of pain-producing illnesses; cannabis provides both analgesia and anti-inflammatory relief for autoimmune diseases such as rheumatoid arthritis, fibromyalgia, complex sympathetic dystrophy, and restless leg syndrome; and assists many with mental health problems, including attention deficit disorder (ADD), post-traumatic stress disorder (PTSD), depression, and obsessive compulsive disorder (OCD) – to name but a few conditions which have been shown to benefit from cannabis and cannabinoids.

THE HISTORY OF MEDICINAL MARIJUANA

The Current Situation

All surveys conducted over the past 10 to 15 years concerning the medicinal use of cannabis, show over 70% of the American public believe that the medicinal use of cannabis should be legal if a physician recommends it. The results of the most recent survey reveals that approximately 80% of adult Americans now share this view. Given these findings it is no surprise that 12 states in the U.S. have legalized the medicinal use of cannabis. Bill Richardson, Governor of New Mexico, signed the latest state medicinal cannabis legislation into law in April 2007.

The State of Oregon has a mandatory patient identification program; therefore state officials know exactly how many physicians in Oregon have recommended cannabis to at least one of their patients. 2340 physicians in Oregon have recommended the use of cannabis to one or more of their patients. Over in California, there is a voluntary patient identification card program. Because the program is voluntary we can only estimate the number of doctors in the State of California that have recommended cannabis to their patients. Typical estimates range between 3000 and 5000 physicians.

Many health care organizations recognize the medical utility of cannabis. Well over a 100 health-related entities including The American Public Health Association, The American Academy of Family Physicians, the American Pain Management Association, the Institute of Medicine and The American Nurses Association, have officially come out in favor of the medicinal use of cannabis.

A Brief History of the Medicinal Use of Marijuana

It is not clear how far back the medicinal use of cannabis goes. The first official recognition of marijuana's medical usefulness is usually attributed to Shen Nung, the second

emperor of China and also the God of Agriculture and Pharmacy. Shen Nung is credited with identifying 300-400 medical herbs by personally testing their properties, and is recognized as being responsible for the *Pen Tsao Ching*, which is considered the first *Materia Medica*. Chinese oral history states that this written in 2637 B.C.

Unfortunately, we do not have a copy of the first *Materia Medica*, the oldest *Materia Medica* we do have is from India. It is thought to have been written somewhere between 1100 and 1700 BC. Like all major *Materia Medica* ever written, including ones from Egypt, Greece and Rome, it contains references to the medicinal use of cannabis.

When the 1937 Marijuana Tax Act hearings were held, the American Medical Association (AMA) testified against the proposed legislation. Dr. William Woodward, the AMA's chief lobbyist and both a doctor and a lawyer, testified before the House Ways & Means Committee that "The AMA knows of no dangers from the use of cannabis." At that time it had been in the USP for over 75 years and was found in 28 patent medicines.

The AMA not only made it clear that it thought the act should not be passed, but they also strongly urged that if the legislation passed, it should not be called the Marijuana Tax Act. This was because in those days no one in the medical profession used the term medical marijuana – it was always referred to as cannabis. The AMA pointed out that marijuana was a slang term which was unfamiliar to most people, including those in medicine and in industries that relied on hemp. It was confusing not to use conventional terminology.

Today the government has created a purposeful, untrue and unnecessary confusion between hemp and what was known as cannabis (which we now have come to call marijuana). There is a big difference between industrial hemp and cannabis, or marijuana. Hemp is what industrial cannabis is called. Hemp is tall and spindly and is used to make paper and fiber. It contains approximately 0.3% THC, the most pharmacologically active chemical of the 483 chemicals in cannabis. Medicinal cannabis is shorter, much bushier and more densely flowered than hemp. Cannabis (aka marijuana, weed, grass) contains somewhere between 4% and 10 or 11% THC and, in rare instances, as much as 20% THC.

Some supporters for the legalization of marijuana suggest that George Washington grew cannabis for medicinal or recreational purposes because he separated the male and the female plants. The male plant produces hemp with its long strong fibers for rope, cloth and paper. The female plant produces cannabis, as the female has an abundance of flowering tops and a higher concentration of THC. However, Washington was probably separating the males from the females to improve the production of hemp. Until 1883, hemp had been the number one agricultural commodity in the world for 1000 years.

Dr. William B. O'Shaughnessy reintroduced cannabis to Western medicine in 1839. O'Shaughnessy had spent several years in India. While there he heard of cannabis' medicinal use, and he conducted several years of animal and human research on cannabis while in India. However, medically he is probably best known as the physician who discovered that the best way to treat cholera is to replace all the fluids that have been lost. Cannabis remained a popular medicine during the 19th century. In the 1890s, Sir Joshua Reynolds prescribed tincture of cannabis to Queen Victoria for the treatment of her pre-menstrual syndrome. Cannabis is still used for that indication today.

Sir William Osler, M.D., considered the founder of modern medicine, wrote the first textbook of internal medicine in the late 1890s. In his textbook, Osler wrote that cannabis was the most effective treatment for migraine headaches. That opinion was held for many years by numerous prominent physicians. As late as 1942, Dr. Morris Fishbein, long-time editor of the *Journal of the American Medical Association*, wrote an article stating that cannabis was the most effective treatment available for migraine headaches. And as cannabis is reemerging as a therapeutic agent, physicians are once again recommending cannabis to relieve the symptoms of migraines.

Cannabis was in the United States Pharmacopeia (USP) from 1854 until 1941. During that time it was the third or fourth most common ingredient in patent medicines. Prominent drug companies, such as Squibb, Eli Lilly, Merck, and Parke-Davis all had products that contained cannabis. People consumed these medicants with benefit and without reporting significant adverse side effects.

In the 1920s and 1930s, as medicine evolved into the modern medicine of today, manufactured pharmaceuticals began to appear. The increasing numbers and presumed specificity of these manufactured pharmaceuticals caused many to discount herbal medicine. Many of the modern physicians of the 30s, 40s and 50s did not believe that plants which grew naturally and were used by primitives could be as effective as manufactured pharmaceuticals produced by chemists and pharmacologists.

Federal control in the United States over medicinal cannabis began in the late 1930s. First came the 1937 Marijuana Tax Act. This law did not make cannabis illegal. Instead it added bureaucratic impediments which made it more cumbersome for drug companies to use cannabis in medications. It became necessary for pharmaceutical companies to keep records on cannabis and to pay a tax on its use. Therefore many drug companies began to omit cannabis from their medications.

Then, the Federal Food, Cosmetics and Drug Act (1938) came about. It was passed as a result of a sulfa drug produced by Massengill, which sadly contained a compound similar to antifreeze. This led to the death of 100 people. It was this act that gave the Food and Drug Administration (FDA) the power to decide whether or not a drug was safe. As a result of this, all future pharmaceuticals required the FDA to certify their safety.

This 1938 law grandfathered in the medications, including cannabis, that were on the market at that time. Soon in 1942, cannabis fell out of the United States Pharmacopeia. This was largely because drug companies were not using it anymore. Later cannabis was bureaucratically and arbitrarily categorized as a “new” drug and therefore was required to be covered by the 1938 Act. A legal challenge is currently in the courts that cannabis does not require FDA approval because it is covered by the grandfather clause.

In 1969, the Marijuana Tax Act was declared unconstitutional in a case involving famed 60's guru and former Harvard professor, Timothy Leary, Ph.D. whose mantra was “Turn on, tune in, drop out.” However, we are now constrained by the Controlled Substances Act, which was passed in 1970. Cannabis is placed in Schedule I, which is reserved for drugs which have no known medical use in the U.S. This law is thought by many conservative Republicans to abuse

the 9th and 10th amendments to the Constitution, which limit the powers of the federal government and protect state's rights.

Between 1978 and 1992, a program called the Compassionate Investigational New Drug (IND) Program, existed in the US. The purpose of this government program was to provide cannabis to patients who the government deemed received medicinal value from it. It required going through a cumbersome bureaucracy to get approval. At its height the IND had 15 patients enrolled in the program and 25 more approved (some texts say the numbers were 12 on the program and 28 or 35 approved). Each one on the program, be it twelve or fifteen, received 300 hand-rolled 0.9 gram cannabis cigarettes per month from the federal government.

The program was closed to new entrants in 1991 because too many people were applying. In the words of Dr. Mason, head of the United States Public Health Service at the time, the first Bush administration was concerned that if too many patients were on the program, the public might get the idea that marijuana was actually good for you. In fact if hundreds of patients were on the program it would have made it difficult for the federal government to continue to contend that marijuana has no medical value. There are still five surviving patients who remain in the program, four who receive their 300 marijuana cigarettes each month in the mail; the fifth gets his 300 every three (3) weeks.

Modern Day Research into the Medicinal Use of Marijuana

The United States government has largely stood in the way of constructive research regarding the medicinal use of cannabis. One of the leading medicinal cannabis practitioners in California, and in the United States, was the late Dr. Todd Mikuriya, who was in charge of marijuana research for the federal government at the National Institute of Mental Health (NIMH) for a short period of time in the late 1960s. Mikuriya was very familiar with the India Hemp Commission Report (1894), produced by the British in India, having read all 3340 pages of it. He was very excited about scientifically exploring the possibilities surrounding the medicinal use of cannabis. However, Mikuriya soon found that the government was more excited about finding out about anything that was wrong with cannabis. The government made clear their aversion to

understanding how cannabis worked and why it had been used medicinally for at least 3000 years. So NIMH and Mikuriya soon parted company.

Current federal drug czar John Walter, has said that there is no research that shows that cannabis is useful from a medicinal point of view. Former drug czar General McCaffrey has said that cannabis was Cheech and Chong medicine. Both of these bureaucrats have evidently done limited literature searches into the subject. If they had, they would have found that there has been quite a lot of research into the medicinal use of cannabis both here and abroad. Much of this research has produced positive findings about cannabis' medicinal efficacy.

The first modern study of the medicinal use of cannabis was conducted in 1949. The results of that study suggested that cannabis may be useful in dealing with seizures. Not surprisingly, I have a number of patients today, who get a great deal of relief from seizures by using cannabis. In the 1970s and 1980s studies were conducted in eight different states, including Georgia, Tennessee, New York, California, and New Mexico, which demonstrated that cannabis was useful in treating nausea and as an appetite stimulant.

The next breakthrough for the modern day medicinal use of cannabis occurred in 1985. In response to increasing medicinal use of cannabis by AIDS patients and cancer victims, the U.S. government encouraged the development and approval of synthetic delta-9 THC. This product is marketed under the trade name Marinol®. It does have therapeutic benefits. The FDA has approved it for treatment of nausea in cancer patients and/or treatment for appetite stimulation in AIDS patients. Off label, it has been used to treat pain, ADD and other conditions. I am the largest prescriber of Marinol® in the Santa Barbara County. However, I find that it has more side effects, costs more, and does not work as well as cannabis and may cause dysphoria. Nevertheless for many, it is effective with few side effects.

In 1992, Mechulam characterized the endocannabinoid system, the system of receptor sites and neurotransmitters that explain why cannabis affects us as it does. Even though we know less about the endocannabinoid system than other neurotransmitter system, the endocannabinoid system is the largest neurotransmitter system in the brain.

Another great leap forward in the modern day medicinal cannabis research came about in 1999, when GW Pharmaceuticals, a British phytochemical company, started to conduct research on six different strains of cannabis and combinations of these strains. They developed different tinctures of cannabis delivered under the tongue via a metered sprayer.

GW's research effort was in response to the 1997 report of the House of Lord's Science and Technology Committee and a growing need to address the medical needs of British Multiple Sclerosis (MS) patients who were being arrested for possession of marijuana in embarrassing numbers. The MS patients were using marijuana because it was providing relief from muscle spasm and pain with few side effects.

In 2000, the California Marijuana Research Center (CMRC) was set up at the University of California at San Diego School of Medicine. The CMRC has administered more than eighteen FDA-approved smoked cannabis medical studies done at four UC Medical Schools, including a study by Dr. Daniel Abrams *et al* published in the February 2007 issue of the *Journal of Neurology*. Abrams' study was designed to determine the effect of smoked cannabis on the neuropathic pain of HIV-associated sensory neuropathy. The results showed that even the government's low-grade cannabis was capable of reducing daily pain by 34%. These results led the authors to conclude: "Smoked cannabis was well tolerated and effectively relieved chronic neuropathic pain from HIV-associated sensory neuropathy. The findings are comparable to oral drugs used for chronic neuropathic pain."

Research conducted by Dr. Donald Tashkin, a noted pulmonologist at UCLA, has found revealing and possible counter-intuitive findings about the pulmonary effects of cannabis. Some of Tashkin's research (Tashkin *et al*) clearly shows that cannabis is a bronchodilator and is useful in treating asthma. This is consistent with the historical fact that in the 1920's Australia and France had cannabis containing smokables for treatment of asthma.

Another of Tashkin's studies, reported at the 2006 International Cannabinoid Research Society (ICRS), demonstrated that cannabis smokers actually have a reduced risk of lung cancer over non-smokers. Tashkin states that more research is needed to confirm or refute this finding. But when paired with the Kaiser-Permanente survey of 65,000 patient charts which found no

difference in cancers of the mouth, throat and lungs in people who smoked nothing and those who smoked cannabis, it strongly suggests that smoking cannabis either lowers cancers of the respiratory tree or has no effect on respiratory cancer rates.

The Medicinal Marijuana Movement

The arrest of Robert Randall in 1972 triggered the medicinal marijuana movement. Randall was going blind. He was also a recreational user of cannabis. One night he noticed that it alleviated some of his symptoms. After that he started using marijuana therapeutically and growing it. After he was arrested for cultivating a few plants, Randall sued the government. He contended that he would go blind if he did not continue to use cannabis.

The government had Randall evaluated both at UCLA and at John Hopkins, who both found that cannabis was the only treatment that lowered Randall's interocular pressure. They concurred that without cannabis he would go blind. Subsequently, as part of a legal settlement, the government agreed to begin sending him cannabis. The Compassionate Investigational New Drug (IND) Program emanated from the court settlement to Randall's lawsuit.

At the time the IND program was terminated in 1991, there were 15 people in the program. A further 28 had been approved and were waiting to get their cannabis from the government. But the program was terminated because too many people had applied – hundreds, possibly up to two thousand people had submitted the paperwork to get on the program and were waiting to have their requests for medicinal marijuana processed by the government. The sheer number of people waiting to see if they could be accepted on the program, and the government's commitment to total prohibition of cannabis, was more than enough to make the government concerned, and the IND program was axed.

No more people were approved for the program. Those who were newly approved but had not yet received any cannabis from the government never got it. Only the 15 IND patients receiving government marijuana in 1992 were grandfathered in and continued to receive it. Dr. Mason, head of the USPHS at the time, is quoted as saying, "If there are too many people on this program people will get the wrong idea that there is something good about marijuana."

MEDICAL MARIJUANA TODAY

Who Might Benefit From Medical Marijuana?

Cannabis is of great benefit to a vast number of people with a wide range of conditions. Tens of millions more would benefit if it were obtainable through conventional distribution. Pain is the number one condition treated with cannabis by doctors in California, Oregon, and Colorado – three of the 12 the states in which it is legal to use cannabis under state law if it is approved or recommended by a physician. Migraine is another condition for which cannabis can be extremely effective. Some of my patients have told me that if they take cannabis with the onset of their migraine prodrome it prevents the migraine from developing. Other migraine sufferers say that while cannabis does not prevent the migraine from occurring, it makes them less severe and does help to control the symptoms.

Cannabis can also provide great relief from nausea, is an appetite stimulant, and helps with depression. All of which are of great benefit to AIDS and cancer patients. Cannabis seems to be particularly good at dealing with pain issues associated with arthritic or autoimmune conditions. This is likely because of its analgesic and anti-inflammatory properties. Of course, it is well known that cannabis is useful for helping people with sleeping difficulties.

Other conditions that cannabis may benefit include: seizures, glaucoma – cannabis decreases intraocular pressure by approximately 25% – peripheral neuropathy, asthma, and irritable bowel syndrome. Research by Professor Daniel Piomelli, a pharmacologist at the University of California, Irvine, demonstrates that cannabis may also be of benefit to people with bipolar disorder, Tourette's syndrome, ADD, and panic attacks. Clinical experience supports Professor Piomelli's contention.

One of the most exciting uses for cannabis is for treatment of PTSD. This is very important for servicemen returning from the war in Iraq. In California, unlike other states where the medicinal use of cannabis is legal, we do not only have a discrete list of conditions that physicians are allowed to recommend cannabis for. California has a list of specific conditions, but physicians also have the legal right to use their discretion to recommend cannabis for "any other

medical condition” for which we feel cannabis will be medically useful. This has allowed cannabis use for the psychological problems noted above.

The Great Debate

The medical marijuana movement has had its fair share of critics. The majority of them do not have a medical background. The critics tend to be of the belief that the medicinal use of cannabis is a hoax, and has more to do with legalizing cannabis for recreational purposes than to relieve the symptoms of people who are ill. If something (say Valium or morphine) has medicinal value and people want to utilize it therapeutically, that does not mean that society is also sanctioning its recreational use. These are two different issues and this effort to confuse the two is unfortunate because cannabis has significant medicinal value.

Fortunately, many leading figures and organizations have publicly supported the medicinal cannabis movement. The former Surgeon General of the United States, Dr. Joycelyn Elders, said that there is an overwhelming amount of evidence to show that cannabis can relieve certain types of pain. An 1997 editorial published in the *New England Journal of Medicine*, said that they thought that the federal policy of preventing physicians from prescribing marijuana for ill patients was “misguided, heavy-handed, and inhumane.” Furthermore, the government-funded Institute of Medicine report into the medicinal use of marijuana concluded that cannabis does indeed have medicinal properties.

Dr. Andrea Barthwell, who served as Deputy Director for Demand Reduction in the Office of National Drug Control Policy (ONDCP), between 2002 and 2005 has had an interesting changing of position. During her time at the ONDCP she was highly critical of medical marijuana. However, she is now is a paid lobbyist for GW pharmaceuticals, the company that makes Sativex®, which is tincture of cannabis.

Another person who seems to have dramatically changed his opinion on medical marijuana is Bob Barr, a former member of the United States House of Representatives. Barr was a vigorous opponent of marijuana and a strong supporter of the War on Drugs. However, since joining the Libertarian Party, Barr has seemingly reversed his previous opinions. He is now a

paid lobbyist for the Marijuana Policy Project, whose goal is to legalize the recreational use of marijuana. He bases this change on solid Libertarian philosophy – that after 9/11 the federal government accrued too much power to itself at the expense of the states.

Is Medical Marijuana Safe?

There is no question that cannabis is safe. Every governmental study ever done by the U.S., Canadian, Australian, British and European countries has recommended the legalization of the recreational use of cannabis, never mind its medicinal use. Of course, the FDA has already approved Marinol®, which is a synthetic version of delta-9 THC. Delta-9 THC is the most pharmacologically active ingredient in cannabis, but it is also the most euphoric, and so Marinol® causes more euphoria and therefore more dysphoria than cannabis, and it is perfectly legal. Sativex®, a whole plant alcohol extract (tincture of cannabis), is made from two strains of cannabis; one high in THC and the other in CBD. Sativex® was approved for sale in Canada and has been marketed there by Bayer AG for several years.

In 1988 after a two-year rescheduling hearing FDA Chief Administrative Law Judge wrote that cannabis was one of the safest therapeutic agents known to man. This was after over 5000 pages of testimony. He concluded that American doctors should be able to prescribe marijuana.

Administering Medical Marijuana

The most well known method of taking cannabis is smoking it. However, in recent years vaporization has become more and more popular. Vaporization involves heating up the cannabis to a temperature which releases the volital cannabinoid containing oils that are in the plant into the air. At present, there are a couple of hundred different kinds of vaporizers on the market. The vaporization point for the various chemicals in cannabis is 190 to 340 degrees Fahrenheit and the combustion point is 451 degrees Fahrenheit. The smoke produced by vaporization is both cooler and contains about 70% fewer irritants than smoking marijuana cigarettes (aka joints).

Cannabis can also be consumed sublingually. That is the way that Sativex®, an under the tongue metered spray, is administered. It can be ingested orally, which is how Marinol® is

administered. It is also possible to use cannabis topically. Topical application of tincture of cannabis is an effective route of administration for people with arthritis of the hands, wrists, and feet. This tincture can provide pain relief and diminish swelling in the small joints of the fingers, wrists, and even ankles and toes of a patient whose small joints are afflicted by arthritis.

The respiratory route of administration is generally the best because the therapeutic effects of cannabis are almost instantaneous when taken in via the lungs. The respiratory route also allows for easy dose titration. The respiratory route can be via smoking or vaporizing. Vaporizing provides about 70% less irritants than smoking.

The problem with taking cannabis orally is that absorption rates vary, depending on motility and contents of the gastrointestinal tract. Unless you are using Marinol the dose may vary. If it is too much it can cause dysphoria, which can last for a couple of hours.

How Does Marijuana Exert its Medicinal Effects?

Cannabis is a 21-carbon molecule that contains 483 chemicals, of which 66 are cannabinoids. Many of the 483 compounds have medicinal value. Research continues to gain more knowledge about these molecules. Recently a hearing was held before the DEA Chief administrative law judge, Mary Ellen Bittner. The DEA was ordered to give a license to Dr. Albert Craker at the University of Massachusetts, who is an expert in medicinal plants, so that he could grow cannabis. His research goal is investigation of the ingredients in various strains of cannabis to determine, which of the chemicals were most effective at treating the wide variety of medical conditions that respond to the medicinal use of cannabis.

How does cannabis exert its medicinal effects? The medicinal effects of cannabis are mediated by the endocannabinoid system. An increase in cannabinoids either endogenous or exogenous, increases the amount of the neurotransmitter dopamine in the brain. We know that dopamine acts in a different way to any other neurotransmitter. Instead of stimulating the next neuron on the pathway up the CNS, dopamine actually doubles back on itself and de-polarizes the neuron that just released it by reversing the concentration of sodium and potassium inside and outside the cell. The effect of this is that it slows down neurotransmission.

So, if a person is having migraines caused by an overload of the electrical circuits in a certain part of the brain, slowing down the speed of neurotransmission, leads to fewer neural impulses, which in turn, decreases the likelihood or severity of a migraine. The same thing is true of people that have panic attacks, if you have negative thoughts that are moving at warp speed to the midbrain, you are overwhelming the emotional control center of the brain, the limbic system. Cannabis slows down the speed of neurotransmission exposing the cerebral cortex to fewer slower moving neural stimuli. This allows the higher centers of the brain to have time to more rationally assess the relative danger or the negativity and put a more rationale point of view on that sensory input.

One suggestion is that cannabis and cannabinoids increase the amount of free dopamine in the brain by freeing dopamine from binding to another neurochemical, dopamine transporter. The dopamine transporter and dopamine bond form an electrochemical bond. This ties up the dopamine so the dopamine is not free to act as one of the brain's "off switches". We were all taught in medical school that 70% of the brain is there to turn off the other 30% – dopamine is one of the "off switches" that helps modulate sensory input. Therefore, if there is not enough dopamine present in the brain, certain parts of it become overloaded, and the illness you have depends upon the part or parts of the mid-brain that is being overloaded.

Cannabinoids compete with dopamine for the binding sites on the dopamine transporter, and in sufficient quantity it wins, thus freeing up more dopamine to help slowdown the speed of neurotransmissions. This, in my opinion and many others, is responsible for much of the therapeutic value of cannabis. Although it has effects on certain receptor sites in the brain that contribute to its therapeutic value. It probably directly affects the appetite and sleep centers in the brain, decreases the perception of pain and centrally decreases nausea. Peripherally cannabinoids stimulate CB2 receptors in the GI tract which is what makes cannabis valuable in treating Crohn's Disease and IBS.

The Law Surrounding the Medical Use of Marijuana

The use of medical marijuana in California is governed by the Compassionate Use Act of 1996, or Proposition 215. In January 1997, Dr Marcus Conant and five other physicians filed a class action lawsuit against the federal government in response to threats made by government officials that the DEA would revoke the BNDD license for writing prescriptions and Medicare participation, and possibly prosecute, any doctor who recommended marijuana to a patient. They felt that this infringed on the right of any American's free speech and specifically that the federal government was trying to unconstitutionally limit physician advice.

A preliminary injunction prohibiting federal officials from threatening or punishing physicians for recommending medical marijuana was issued by the 9th Circuit in April 1997, and a permanent injunction was issued in September 2000. However, in June 2001, the Bush administration filed an appeal challenging the permanent injunction. Finally, in October 2002, after a long and protracted legal battle, the Ninth Circuit Court of Appeals unanimously upheld the right for doctors to recommend marijuana to their patients. The Justices emphasized that it is the role of the states, not the federal government, to regulate the practice of medicine. This decision was then appealed to the U.S. Supreme Court who declined to hear it.

The outcome of this legal battle is that physicians now have protection from the federal government to use their First Amendment free speech right to answer their patients' questions regarding marijuana. So, if a patient asks you if you think cannabis might be helpful for their arthritis, you now have the federal court certified freedom to answer them without fear of the federal government harassing you.

The Medical Board of California has been the principal impediment to the smooth implementation of Proposition 215. As past Medical Director of the oldest County-organized Medi-Cal Managed Care Program in the Country, and former doctor of a CSU student health center, I have over 20 years experience in quality assurance and I am greatly disappointed at the quality of the quality assurance provided by the California Medical Board. Their guidelines are vague, their process frequently opaque. They have intimidated physicians to the point that there has been a reluctance on the part of many Californian physicians to do anything that might bring

them to the attention of the medical board, because any sort of disagreement with them is aggravating, time consuming, and expensive – and that is when you win.

As I said, the MBC guidelines are vague, not necessarily bad. What is bad is that their very vagueness allows wide latitude for interpretation by the MBC. This has created a barrier. The courts have ruled that the MBC has illegally attempted to investigate doctors for approving cannabis even when the MBC has received no quality of care complaint. This has been intimidating to many physicians.

The MBC guidelines state that there needs to be a *bona fide* doctor-patient relationship, a good-faith patient's history and physical examination must be performed and you need to review relevant medical records. The guidelines also state that you have to have a plan with objectives and demonstrate that the patient has a condition that will benefit from the use of cannabis.

If a physician is making medicinal cannabis recommendations, it is imperative to keep good records, preferably typed so that other people can read them. You also need to follow-up the patient as is appropriate. The MBC says you need to see them at least once a year. If the patient's primary treating physicians were not so intimidated by the MBC, these criteria would be very easy to accomplish.

The problem is that different physicians have different ideas about just about everything. The same is true with physicians who make frequent recommendations for medicinal cannabis. Some physicians who operate HMO style practices have given the medicinal marijuana movement a bad name. These doctors may see the patient only briefly before granting their approval for medicinal cannabis. The position they have taken seems to go something like this: if a patient tells them that they have a particular medical problem and that cannabis is useful to them, these doctors will recommend cannabis. They say that they have no reason not to approve it's use when it provides medical benefit, because they see cannabis as being extremely safe, and because they can.

I take a more conservative point of view. First, we pre-screen the prospective patient at the time a person desires to make a 215 appointment. We do not make an appointment for just anyone. Unless we have pretty good idea that they are likely to qualify, we do not make a

prospective patient an appointment. Before the office even issues an appointment to see me we want to know what the patient's diagnosis is, whether other healthcare practitioners have seen them, and if their problem adversely affects their ability to work or to do activities of daily living. If their responses sound reasonable, we will give them an appointment. We try to see their medical records before their appointment, or if not, we have them bring them in with them.

If a patient arrives without their records and decides to proceed with their appointment, they are advised that the most they can expect is an "in process" letter which states I will approve with receipt of confirming records. In a few instances, where a physical exam documents a serious problem (e.g., missing limb, S/P lumbar or cervical fusion, multiple knee surgeries), a recommendation may be made without records in hand. Just because a patient has got an appointment to come in and see a doctor for a medical marijuana approval does not mean they are going to get one. At present most cannabinologists believe that the patient should have a documented and/or demonstrable medical problem.

I tell all my patients about the voluntary patient identification program that exists in California – remember in Oregon the patient participation program is mandatory. Therefore, in California, a patient does not need to participate in the program to be within the law, but it gives the patient something to show the police to prove that they did not write up the letter themselves. In total, the appointment takes 45 to 60 minutes.

CONCLUSION

Where do we go from here? The question is whether or not we are going to let people take responsibility for their own health. Why should people suffer unnecessarily? Cannabis has provided millions world-wide with relief from chronic pain caused by a myriad of pain-producing illnesses. Cannabis has significantly improved the quality of life of people with cancer, Aids, arthritis, and the list goes on. The medical marijuana movement is not concerned with decriminalizing or legalizing cannabis for recreational use. It is concerned with helping people with serious illnesses and disabilities to get on with their lives.

The issue is will the pharmaceutical companies take control over the medical use of this plant through patenting strains and creating synthetic cannabinoids while being protected by the government, or will people be able to grow a safe, cheap, effective medication.

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