

CHAPTER 3

WHY ALL THE CONTROVERSY?

WHAT DOES THE RESEARCH ACTUALLY SHOW?

There is not a shred of scientific evidence that smoked marijuana is useful or needed.

-- U.S. Drug Czar, Gen. Barry McCaffrey, Aug. 16, 1996

Marijuana is the safest therapeutically active substance known to man... safer than many foods we commonly consume.

-- DEA Judge Francis L. Young, Sept. 6, 1988

The written record on medicinal marijuana stretches back over 2,000 years. Yet, after hundreds of studies, experiments and reports, there is still no consensus about its effects. Wildly emotional arguments rage about whether or not marijuana should be considered a legitimate medicine. Other than the opiate narcotics, it is hard to think of another medicinal plant that has generated so much worldwide controversy. With the experts unable to agree, it is understandable that patients are left wondering what to do.

Let's take a look at the history of this controversy, and then see if we can separate the scientific truth from the political distortion. You may be surprised to learn just how much time and energy has gone into this dispute, and how many countries and civilizations have been involved in it. It may also surprise you to learn that some of the most convincing scientific data supporting the medicinal use of marijuana has come from the very federal and state governments that now most vigorously oppose its use.

Ancient References to Marijuana as a Medicine

The most detailed, ancient descriptions of the medicinal uses for marijuana come from China and India. Though modern high technology medicine does not commonly refer back to the medicinal practices of ancient civilizations, it is interesting to see to what extent marijuana was a fixture in some of their healing traditions. If nothing else, this confirms that marijuana has a significant medical history, and that modern claims for its medicinal use have not been pulled from thin air.

The world's oldest surviving list of medical drugs is the Chinese *Shen-nung Pen-tshao Ching*, a pharmacopoeia compiled nearly 2,000 years ago. This book, which is based on oral traditions reaching back centuries more, gives marijuana the name, "ma." The Chinese ideogram of "ma" depicts two plants drying in the sunlight. The book lists more than 100 ailments treated with various parts of the marijuana plant. The smoking of

marijuana seems to have been uncommon in ancient China. Instead, patients took it in liquid and food preparations, including extracts, and topical preparations.

The *Shen-nung* text specifically cites marijuana's value for reducing the pain of rheumatism (joint inflammation) and for treating digestive disorders, including constipation and diarrhea. It is also recommended for use as an anesthetic before surgical operations, and to ease the symptoms of patients with malaria and beriberi. Another Chinese text, written in 1578 by Li Shih Chen, also speaks of marijuana's use as an anti-nausea agent, an antibiotic, and a means to stop hemorrhaging.

Literature from ancient India describes similar medical conditions for which various marijuana preparations were used. One commentator notes that marijuana “has been intimately associated with magical, medical, religious and social customs in India for thousands of years.” Sushruta, an ancient Indian healer, recommended marijuana to relieve congestion and as part of a cure for fevers. Ayurveda, a traditional Hindu system of medicine practiced in India since the first century A.D., cites marijuana as an appetite stimulant, a digestive aid, a pain reliever and a sleeping potion.

In 1893, British colonial authorities decided to investigate the many uses of marijuana in India, in part as a scientific inquiry, and in part to determine the “threat” marijuana may have posed to the country. Of course, the British didn’t consider their own favorite intoxicant, alcohol, as a “threat” even though many of their Indian subjects most certainly did. The investigation, conducted by the Indian Hemp Drugs Commission,

heard testimony from Indian and Western doctors on the medical uses of marijuana. A wide range of claimed uses were discussed, including marijuana's ability to control spasms and cramps, to reduce pain, to fight digestive disorders, to anesthetize patients facing minor surgery, and to ease asthma and bronchitis.

The British Commission was duly impressed. They took special note of the fact that many of the Indian medical applications of marijuana matched the way European doctors were utilizing the plant at the same time. In conclusion, the Commission wrote, “Cannabis indica (marijuana) must be looked upon as one of the most important drugs of Indian *Materia Medica* (their pharmacopoeia).”

There is ancient literature about marijuana from other parts of the world, as well, including Africa, the Middle East, ancient Greece, and the Roman Empire. Like many modern references, these ancient descriptions of how marijuana is used in disease treatment also mention the psychological effects of the drug, but in these cases it is often in glowing terms. These texts credit marijuana with quickening the mind, enhancing concentration, eliminating stress, creating joyful feelings, and enhancing sexual pleasure. The fact that marijuana had medical value was never very far removed from the fact that it also made people feel good.

Marijuana is outlawed in America – over Doctors' Objections

Marijuana products were in widespread use in the United States during the nineteenth century. Doctors recommended marijuana to treat a variety of ailments and pharmacists sold marijuana over-the-counter as an ingredient in numerous remedies. However, marijuana began to lose its role in medicine with the development of aspirin, which displaced it as a routine painkiller. When opium derived drugs such as morphine found increasing use in surgery and other medical applications, the popularity of marijuana declined further.

During the period of Prohibition of Alcohol (1920-1933), the psychoactive properties of marijuana left it open to criticism by some of the same moralistic and religious forces who opposed consumption of the psychoactive drug, alcohol.. Eventually, these forces prevailed. In 1937, Congress passed the Marijuana Tax Act which effectively made continued use of marijuana a criminal offense.

During hearings conducted before the passage of the Marijuana Tax Act, the lone opponent was a representative of the American Medical Association (AMA). He was treated derisively by committee members who questioned why the medical profession had not been more aggressive in fighting the “menace” of marijuana. Nonetheless, the AMA representative argued that any law banning marijuana should at least exempt it for medical purposes. His testimony included this statement:

“There is positively no evidence to indicate the abuse of cannabis (marijuana) as a medicinal agent or to show that its medicinal use is leading to the development of cannabis addiction. Cannabis at the present time is slightly used for medicinal purposes, but it would seem worthwhile to maintain its status as a medicinal agent.... There is a possibility that a re-study of the drug by modern means may show other advantages to be derived from its medicinal use.”

Over AMA objections, marijuana was removed from the American pharmacopoeia in 1941, and any hope for further research or legal medical use of marijuana came to an end. In 1970, Congress restructured federal drug laws with the Controlled Substances Act, which repeated the initial mistake and kept marijuana banned for medicinal use.

Modern Research on Medical Marijuana Begins

Just after passage of the Controlled Substances Act, the first new, modern medical use for the drug was discovered. In a strange bit of irony, a UCLA researcher began a study to develop methods by which the police could detect whether or not a person was intoxicated with marijuana. Instead, he inadvertently discovered marijuana’s ability to reduce intra-ocular (internal eye) pressure and help patients with glaucoma. The

researcher had intended to assess whether or not the pupil dilation that often accompanies marijuana smoking could be used by police to tell who was high and who was not. But he stumbled on a finding that saved many glaucoma patients from blindness, and led to a new area of medical research.

Soon after, when cancer chemotherapy was in its early stages and the substances used were highly toxic, word began to spread among patients that marijuana could eliminate the intense nausea that many experienced during treatment. During this period, in the early 1970s, the social and cultural changes provoked by the movements of the 1960s had led to the widespread recreational use of marijuana. Some cancer patients were also recreational users, and they discovered, by accident, that their recreational use of marijuana reduced chemotherapy-induced nausea.

Something similar was happening in the nation's Veterans Administration hospitals. U.S. troops in Viet Nam had easy access to large quantities of marijuana. Many became frequent recreational users. Some of these soldiers received spinal cord injuries and continued their recreational marijuana use. These disabled veterans discovered that marijuana could control the painful muscle spasms associated with spinal cord injury.

Synthetic THC (Marinol)

During this period, scientists discovered the principal psychoactive ingredient in marijuana, delta-9-tetrahydrocannabinol (delta-9-THC or just THC). This was the compound primarily responsible for the psychoactive condition or “high” associated with marijuana use. Later research revealed that the “high” probably resulted from a complex interaction of several compounds in marijuana, but there is no doubt that THC is the principal cause.

At this point, modern medicine had what it needed to partially accept marijuana – a single synthetic chemical compound that could be isolated, patented, manufactured and distributed for profit by a drug company. THC was tested and found to relieve the nausea caused by cancer chemotherapy. The FDA approved it for sale for that purpose, and later for AIDS wasting syndrome, and it was put on the market under the brand name, Marinol.

Nevertheless, concentrated THC was a powerful psychoactive drug and many patients didn’t like it. They complained that it made them too “high” (a condition called dysphoria), or that it caused intense anxiety, or that it kept them from carrying on normal activities for up to six hours at a time. Patients also complained about the price of Marinol. A year’s supply can cost as much as \$15,000, too high a price to pay, some said, for a flawed version of a common weed easily grown in anyone’s backyard. There were many other complaints about Marinol, as well.

Patients experiencing extreme nausea find it difficult to swallow any medication in pill form. Some patients vomit when trying to swallow the capsule and are unable to use it. When Marinol does work, many patients claim it takes over an hour to relieve their symptoms. This probably results from the fact that the THC passes through the liver before reaching the receptors in the brain where psychoactive reactions and nausea suppression take place. Because Marinol takes so long to reduce nausea, some patients have complained that they are at risk of overdosing when they are driven to get quick relief from their violent symptoms.

One of the reasons many patients prefer smoking marijuana to swallowing Marinol is that it allows them to precisely regulate the amount of THC they take into their systems. Because smoking permits an almost instantaneous transmission of the THC in the marijuana to sites in the brain where it works to control nausea, patients are able to simply continue smoking until the nausea subsides. This allows some to stop smoking before they get “high”. When the anti-nausea effect wears off, they can smoke a little more if they need to. Because individual patients respond differently to different doses, smoking allows patients to determine the proper dose for themselves. As a result, they can avoid taking too much, which is not possible with Marinol.

It has been suggested by researchers that cannabidiol, one of the 460 known compounds in marijuana smoke, actually reduces some of the anxiety brought on by THC in its pure form (Grinspoon, 1997; 44). While some patients report feelings of anxiety or

discomfort after using either drug, these feelings generally cease to occur in those who repeatedly administer smoked marijuana. Patients who were unfamiliar with smoked marijuana initially, describe more pleasurable feelings after they are acquainted with, and can anticipate, its effects. With Marinol, on the other hand, many patients report that it has an unpleasant and debilitating effect on them even with continued use.

While most patients seem to prefer smoked marijuana to Marinol, some prefer Marinol or marijuana ingested in food because of a general aversion to smoking. This is the most common concern voiced about smoking marijuana instead of ingesting it. Some patients who prefer marijuana instead of Marinol, but do not like to smoke, choose to cook the marijuana into food. Baked brownies are the most popular way to do this. Marijuana can also be added to alcohol, oil, or butter, and it can be used to make beverages, sauces, and other baked foods. There are many methods of administering medicinal marijuana, however, patients using it to combat nausea, generally do not want to eat anything to gain relief. Eating marijuana in any form has many of the same problems of delay and dose control that THC does.

State-Sponsored Research on Marijuana

As interest in marijuana for medical applications grew, scientists undertook new research studies. Simultaneously, a minor public outcry erupted over the injustice of

sending seriously, even terminally, ill patients to jail for marijuana violations. Many patients bravely defended their marijuana use in public and pleaded with elected officials to change the laws that branded them as criminals.

New Mexico launched the first official state-sponsored marijuana research program. Five other states eventually followed suit, including California, New York, Tennessee, Michigan and Georgia. Each of these state studies relied on marijuana supplied by the federal government, and the research designs were all approved by the Food and Drug Administration.

The report on New Mexico's research program (Dansak, 1986) that was conducted from 1979 to 1986 stated that marijuana was not only effective as an anti-nausea drug, but also that it was “far superior to the best available conventional drug, Compazine, and clearly superior to the synthetic THC pill.” The study, which reported on 169 patients, found that “more than 90 percent of the patients who received marijuana....reported significant or total relief from nausea and vomiting,” with no major side effects (Randall,1990; 149). All the patients in the study had to prove, as a condition of participation, that they had tried other anti-nausea drugs without success.

In the New York state research program, 199 patients suffering from nausea induced by cancer chemotherapy were given marijuana between 1982 and 1985. Over 90% reported it to be effective in reducing their symptoms (Vinciguerra, 1988). The California state research program was much larger, involving thousands of patients

between 1981 and 1989. Like the New Mexico program, THC and smoked marijuana were both part of the California research protocol. By 1983, their annual report concluded, “The California Program also has met its research objectives. Marijuana has been shown to be effective for many cancer chemotherapy patients, safe dosage levels have been established, and a dosage regimen which minimizes undesirable side effects has been devised and tested (Randall, 1990, 235).”

Even the federal government found some merit in the medical use of marijuana. In 1976, a glaucoma patient in Washington, D.C. was arrested for growing a small amount of marijuana. When he was charged with illegal cultivation, he raised a “medical necessity” defense and was acquitted. An agency of the federal government decided to resolve this contradiction in the law by supplying the patient with marijuana. This “solution” allowed him to avoid illegally growing it himself, or illegally purchasing it from others. The federal government was willing to look the other way with respect to the illegality of his possession of marijuana.

Over the next 14 years, the federal government approved marijuana distribution to a handful of other patients. Then, in 1990, they were deluged with about 400 new applications, mostly from patients with AIDS who were beginning to discover that marijuana could benefit them, as well. About two dozen of these applications were approved before federal officials suddenly discontinued the program in 1992. In all, some

34 patients were at one time receiving marijuana from the federal government. Eight of those patients survive today.

Nothing reveals the contradictions in federal policy toward marijuana more clearly than the fact that there are still eight patients in the United States who receive a tin of marijuana “joints” (cigarettes) every month from the federal government. The marijuana is grown for the government on a small plot administered by the University of Mississippi. These eight people can legally possess and use marijuana, at government expense and with government permission. Yet hundreds of thousands of other patients can be fined and jailed under federal law for doing exactly the same thing.

An objective observer might have concluded that with the findings coming out of the various state research programs, and the federal government’s willingness to help at least a few patients, laws regarding the medical use of marijuana would have been relaxed by the early 1980’s. Unfortunately, that period coincided with widespread national concern over illegal drug use, most of it involving heroin, crack cocaine, and other hard drugs. First Lady Nancy Reagan launched her “Just Say No,” campaign, and her husband’s administration dramatically increased penalties and enforcement appropriations for drug offenses.

Marijuana, a soft drug, was lumped in with the others because of the mistaken belief that it led, almost inevitably, to hard drug use. Once that happened, any hope of a special dispensation for the medical use of marijuana was lost, captive of the new political

“realities.” Equally tragic, all research on the medical uses of marijuana came to a screeching halt, since the only legal source for marijuana was the federal farm in Mississippi, and federal officials stopped making any of their crop available to scientists.

Politics Triggers Renewed Interest in Marijuana Research

Politics, once responsible for blocking medical marijuana research, has more recently been the source of renewed interest in it. The passage of California’s Proposition 215 in November, 1996, which permitted patients to use marijuana under state law, created a national political earthquake. Contradictions in government policy were exposed to millions, and quickly turned a majority of Americans against laws that prevented patients from using marijuana. A national poll conducted by ABC-TV and the Discovery Channel six months later revealed that 69 percent of the American people favored the legalization of marijuana for medical use.

With public opinion swinging so dramatically against them, federal officials were forced to moderate their policies. Their basic opposition to medical marijuana did not change. What did change was their public attitude toward research. Various promises were made that scientists would once again be permitted to conduct research and that federally grown marijuana would be supplied to them under tightly controlled conditions.

But as of this writing, at the end of 1997, only one scientist in the entire nation has actually received permission to go forward. Hopefully, he will soon be joined by others.

Unlike the environment faced by researchers and patients in the 1970s and early 1980s, medical marijuana research today would be conducted under the spotlight of the mass media, with an active national political controversy brewing in the background. Voters in several states are likely to be considering ballot initiatives in 1998 similar to Proposition 215 in California. Hopefully, political efforts of this sort, alongside ongoing research work, will lead to a resolution of the medical marijuana controversy that is based on science instead of politics.

Anecdotal Evidence vs. Controlled Scientific Research

Before leaving the subject of scientific research, a final comment is necessary regarding the reliability of medical claims for marijuana. Research findings on marijuana have been criticized for being unscientific or anecdotal. There is a kernel of truth in these claims. Marijuana research cannot easily be fit into the typical model of a controlled scientific study because it simply isn't possible to create an effective placebo for marijuana.

Rigorously controlled studies on marijuana with human subjects would require the formation of two groups, only one of which receives marijuana. The other, or control,

group would get a placebo, a substance outwardly identical to marijuana but with none of its telltale qualities. If members of the two groups have been selected at random, and if the groups are sufficiently large, differences between the two groups can be attributed to the presence or absence of marijuana.

Unfortunately, the psychoactive properties of marijuana make it impossible to create a placebo. A researcher can give a subject something to smoke that looks and even smells like marijuana. It is called hemp, marijuana's non-psychoactive cousin. Hemp is a plant used to make rope, cloth, and paper. It is very similar to marijuana, but has no psychoactive properties. Just like marijuana, growing or possessing raw hemp is illegal in the United States. Despite its outward similarity to marijuana, anyone smoking industrial hemp will instantly know that it is not marijuana precisely because it doesn't have those psychoactive properties that are instantly evident.

Therefore, marijuana can never be researched in tightly controlled scientific studies. That does not mean that all research on marijuana is invalid. The New Mexico state study, cited above, allowed people to compare marijuana versus oral THC (Marinol) with respect to the ability of each to control nausea. The subjects then reported to the researchers which substance worked best. Instead of accepting such research as valid, some scientific critics of medical marijuana take the very orthodox position that the self-reports of the subjects are not reliable. They argue that such reports are possibly colored by what the subjects want to believe.

Certainly, this is possible. But when study after study yields similar results, when those results are supported by decades, if not centuries, of similar experience, it is time for medical marijuana opponents to concede that the research conclusions have some validity. These results are valid even though they are often based on patient's subjective (anecdotal) responses rather than objective measurements by the researchers. Furthermore, when the substance in question has been in worldwide use for millennia and has been conclusively demonstrated to pose no threat to life or limb, it is simply cruel not to allow patients to derive what benefit they can from it.

The term, “anecdotal evidence,” is a pejorative one in science. It is used to put down non-rigorous research. But when hundreds, thousands, even tens of thousands of patients come forward, all describing the same phenomenon in more or less the same terms, it is time to put scientific rigor aside and accept the obvious truth. Certainly, that has happened regarding marijuana’s ability to alleviate nausea, to stimulate appetite, and to control muscle spasms. It is beginning to happen in a host of other areas, as well, as the next chapters in this book will demonstrate.

Many doctors care for patients on a daily basis in clinics, offices, and hospitals. These “clinical” doctors often have different attitudes than doctors who concentrate primarily on research. Good clinical doctors seek anecdotal evidence from patients to help with diagnosis and treatment. This is especially true when managing subjective problems such as nausea and pain. It would be impossible to evaluate an anti-nausea or

anti-pain medication without the use of important subjective “anecdotal evidence.”

Listening to “anecdotal evidence” over many years transmits valuable education to doctors and contributes to “clinical experience”. One of us (R.B.) went to a medical school where the motto was, “The patient is the textbook.” Clinical experience and academic research are both important in providing optimal medical care.

Additional research is always welcome. Using the lack of controlled studies to forestall acceptance of the medicinal uses of marijuana, particularly for extraneous political, moral or religious reasons, can no longer be justified. Penicillin was first put on the market after being tested on only six human subjects, hardly enough to qualify as a scientifically rigorous test. However, to withhold penicillin after seeing what it did for those six patients would have been a criminal act, given what it could do for everyone else.