Medical value stirs debate

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While the limited legalization of medical marijuana has won widespread approval from patients' advocacy groups, a cloud of controversy remains over the efficacy of the medicine itself, which many still view as a recreational drug with potentially dangerous side effects.

Doctors and medical groups across the nation stand on both sides of the issue, at the heart of which lies the chemical composition of not only the plant in question, but the human body.

Cannabis, which has been used medically for centuries, contains more than 400 chemicals, 60 of which have been identified as cannabinoids. The most widely recognized of the cannabinoids in marijuana are tetrahydrocannabinol and cannabidiol, more commonly referred to as TCH and CBD. Scientists and users have understood for some time that TCH and CBD produce very specific reactions in the human body, but only in the past few decades has science gathered enough information to understand why marijuana produces such effects, according to the Society for Neuroscience.

"Basically, cannabinoids in the blood sugar bind to the CB1 receptor on the cells, which causes a cascade of reactions in the cell," said John Kropa, chief science officer at Genovations Creations, a medical marijuana research lab in Colorado Springs.

"Depending on the cannabinoids, that reaction can do several different things. Each specific cannabinoid does a different thing to the body."

The key to marijuana use is the presence of the natural form of THC occurring in the body, formally called endocannabinoids. Such chemicals bind to cannabinoid receptors, CB1 and CB2, in the brain and body to elicit a number of responses. In a sense, cannabinoids act as regulators of various body function such as mood, hunger, pain and anxiety.

"Endocannabinoids travel in the opposite direction of most brain signals," stated a report from the Society for Neuroscience in December 2007. "In this way, they play a part in regulating almost all brain and body processes, making endocannabinoids prime targets for treating many diseases and conditions."

When cannabinoids enter the body through the use of marijuana, TCH and CBD essentially hijack cannabinoid receptors in the body, eliciting an artificial response. Such responses can be manipulated to regulate pain, ease body tremors associated with multiple sclerosis and Parkinson's disease, and prompt hunger.

Joe Leininger, of Mancos, uses medical marijuana to cope with pain resulting from a herniated disk in his neck. Doctors prescribed Leininger a combination of Fentanyl patches, Percocet, muscle relaxants and antidepressants to manage his symptoms, but the pharmaceuticals did not provide the same level of relief as marijuana.

Today, Leininger relies solely on cannabis for pain relief and says his overall health has improved since ceasing use of synthetic THC replaces marijuana

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While state and local governments have slowly moved toward the legalization of medical marijuana since Proposition 215 was approved by California voters in 1996, many in the medical community have argued the need for medical marijuana has already been met by approved pharmaceuticals containing the same chemical components as cannabis.

"Medical marijuana already exists," states the Drug Enforcement Administration on its website. "It's called Marinol."

Approved in 1985, Marinol is the trade name for dronabinal, an analogue of one compound, THC. The original application of Marinol was specifically for nausea and vomiting associated with cancer and chemotherapy in patients who did not respond to conventional treatments. In 1992, the FDA expanded the use of the medication to include anorexia associated with weight loss in patients with AIDS.

"One of the ideas we talk about is the efficacy of the medicine," said Lori Raney, a psychiatrist with Axis Health System in Cortez and Durango. "If you want to talk about efficacy, we have THC in a pill that is already available out there and can be prescribed. It is already approved by the (Food and Drug Administration) and has a specific amount of THC."

The development of Marinol was facilitated by the DEA and initiated by the National Cancer Institute after a study regarding the use of THC in relieving nausea and vomiting. The National Academy of Science, Institute of Medicine released a study in 1999 espousing the benefits of pharmacochemical THC, stating, "the future of cannabinoid drugs lies not in smoked marijuana but in chemically defined drugs that act on the cannabinoid systems that are a natural component of human physiology."

The strict regulation of FDA approved Marinol is the biggest draw for physicians such as Raney.

"There is regulation," Raney said. "You know there is X amount of every single active medicine in those pills. There is just no way of knowing what you are getting in the plant. Marinol is a very fixed amount of THC. It is controlled."

Tight control is one complaint medical marijuana proponents have against Marinol.

"The active ingredient in Marinol is an analogue of one compound," THC states a 2005 report titled "Marijuana Versus Natural Cannabis: Pros, Cons and Options for Patients," released by the National Organization for the Reform of Marijuana Laws. "However, several other cannabinoids available in cannabis have also
traditional pain medication.

"Not being on all the pharmaceuticals makes me feel a lot better healthwise," Leininger said.

Leininger also cites the cost of medical marijuana as a side benefit.

"It was like $700 a month for pain meds," he said. "For medical marijuana, it's $50 to $100. It is drastically cheaper."

While much scientific study validates the benefits of endocannabinoids, the specific use of marijuana for medical purposes is still questioned by many in the medical community.

In April 2006, the Federal Drug Administration issued an interagency advisory clarifying the federal government's position that "smoked marijuana is harmful" and has not been approved "for any condition or disease indication."

In a comprehensive study released in 1999 by the National Academy of Sciences, Institute of Medicine, the institute determined that "Although marijuana smoke delivers THC and other cannabinoids to the body, it also delivers harmful substances, including most of those found in tobacco smoke. In addition, plants contain a variable mixture of biologically active compounds and cannot be expected to provide a precisely defined drug effect."

Clinical trials of marijuana have yet to be completed at the same level of traditional medicine as a results of the plant's identification as a Schedule I drug.

"It is very difficult to do research with medical marijuana to determine how it works and if it works because it is illegal to use and dispense," said Lori Raney, a psychiatrist with Axis Health System in Cortez and Durango. "Those are big issues limiting the ability to see if it works."

Some medical organizations, such as the American Medical Association, have called for the reduction of marijuana from a Schedule I to II drug so well-controlled studies can be completed. So far, the FDA has rebuffed any attempts to declassify marijuana as Schedule I.

While acknowledging the benefits of marijuana use for chronic wasting syndrome, pain associated with HIV infections and the relief of nausea, Raney also cautioned that the negative impacts of marijuana use might counteract any positive effect.

"The problem is, in these conditions people are already so physically compromised," Raney said. "If on top of that you smoke (marijuana), it may actually lead to more physical complications because of the toxins that are in marijuana itself."

A study conducted by the federal Drug Enforcement Administration concluded that most of the hazardous chemicals found in tobacco smoke are also present in the 400-plus chemicals in smoked marijuana. The study stated:

"The harmful chemicals and carcinogens that are byproducts of smoking create entirely new health problems. There are four times the level of tar in a marijuana cigarette, for example, than in a tobacco cigarette."

Such facts give Raney pause when it comes to the overall benefits of smoked marijuana.

"As a physician, I have seen so much more harm than good," Raney said. "I cannot be in favor of reducing it to a Schedule II drug to do the studies. There may be others that might think that is the right thing to do, but in my particular field there is nothing that I can see that marijuana would be helpful for. I don't want to see it in clinical studies."

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