

Medical Marijuana: What the Research Shows

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April 02, 2014

Dustin Sulak, DO, is a doctor on the front lines of [medical marijuana](#).

Sulak has recommended various forms of marijuana to his patients and has seen striking results. Patients with chronic pain needed fewer prescription pain meds. Patients with multiple sclerosis had less painful muscle spasms. Patients with severe irritable bowel syndrome began to eat again.

“These responses are the most impressive to me,” says Sulak, who practices at Maine Integrative Healthcare in Manchester. Maine is one of 20 states, along with the District of Columbia, where medical marijuana is legal. “With irritable bowel syndrome, we’ll see patients who were at death’s door turn around dramatically.”

Sulak’s experience is powerful and adds to the large body of personal stories -- dating from 5,000 years ago -- about the therapeutic value of marijuana.

But the scientific evidence behind the drug’s benefits remains elusive, even as 10 more states consider legalizing medical uses in 2014. The problem: In 1970, the federal government classified marijuana as an illegal, highly addictive drug with no medical value, making research harder to do.

A Marijuana Discovery

Here’s what is known: About 20 years ago, scientists discovered a system in the brain that responds to 60 chemicals in marijuana, also known as cannabis. It’s called the endocannabinoid system. This system plays a role in many of the body’s functions, such as in the heart, along with the digestive, endocrine, immune, nervous, and reproductive systems. The discovery sparked interest in finding specific chemicals made from marijuana that could be targeted for specific conditions.

Since that time, scientific projects around medical marijuana worldwide have sped up dramatically. Many of the studies that have been done show that chemicals in marijuana can help treat some conditions. They have helped manage pain and reduced muscle spasms in MS patients. They’ve worked as an appetite stimulant, and as an alternative drug for brain disorders such as schizophrenia and Tourette’s syndrome.

Few of these studies, though, followed a controlled clinical trial. This is considered the best type of trial because it compares a drug to another drug, or to a placebo (a "fake" treatment).

Also, most of the studies had fewer than 200 patients. So doubt continues about marijuana's value and who it really can help, says J. Michael Bostwick, MD. He's a psychiatrist at the Mayo Clinic and author of a review of medical marijuana research.

Based on medical science, it seems possible that marijuana-based treatments could be developed for some conditions; but federal restrictions make it hard for the research to advance, Bostwick says.

That's because scientists in the U.S. have to get approval from the Drug Enforcement Agency (DEA) and the FDA to do research on medical marijuana.

A series of studies allowed by the DEA came to a conclusion similar to Bostwick's. The 13 studies were done by The Center for Medicinal Cannabis Research at the University of California in San Diego between 2000 and 2010.

The conclusion: "Cannabinoids may be useful medicine for certain indications" and deserve further research, wrote Igor Grant, professor and executive vice chairman of the Department of Psychiatry at the university. The studies also showed that inhaling marijuana through a vaporizer or a spray was a better way to deliver it than by smoking.

Among the unanswered questions about medical marijuana is the risk to users. About 10% of people who smoke marijuana become addicted. It's not known what that means if it is being used for medical reasons, Bostwick says. He adds that some patients find the effects of marijuana "intolerable."

Marijuana-Based Drugs

Despite the obstacles, three FDA-approved drugs are made from marijuana. They include:

Marinol and Cesamet: Both drugs are used to treat nausea and lack of appetite related to chemotherapy and in AIDS patients. They are man-made versions of THC, the primary chemical in marijuana that gives users a "high." Both were approved in the 1980s.

Epidiolex: This drug to treat children's epilepsy received FDA approval in 2013. Its use is highly restricted.

Another drug, Sativex, is in clinical trials in the U.S. for pain with breast cancer. It is a combination of chemicals from the marijuana herb and is sprayed into the mouth. Sativex is approved in more than 20 countries to treat muscle spasms from MS and cancer pain.

Research on Marijuana

No single organization tracks all research studies of medical marijuana and marijuana-based drugs and herbs. The following review is a summary of controlled studies since 1990. It is based on reporting; research provided by NORML, the marijuana legalization advocacy group; and data found in PubMed, the National Institutes of Health's RePORTER, and a database

maintained by the International Association for Cannabinoid Medicines, a medical marijuana research organization based in Cologne, Germany.

Alzheimer's Disease: One 1997 trial found that synthetic THC could ease symptoms of Alzheimer's. Patients were less agitated and ate better after treatment.

Autism: Two animal studies show that chemicals in marijuana may help symptoms of some forms of autism. A study of children with autism is underway at the University of California Irvine Medical Center.

Cancer: Several studies on animal and human cells and a small study on 9 people suggested THC and other cannabinoids (chemicals derived from cannabis) might slow the growth of brain cancer. Multiple lab studies in human cells have also shown the potential for them to slow other kinds of cancers, such as breast cancer and leukemia; no studies in people have taken place.

Chronic Pain: More than 45 studies have looked at marijuana and pain related to chronic diseases such as cancer, diabetes, fibromyalgia, multiple sclerosis, HIV, rheumatoid arthritis, and spinal injuries. The studies have included smoked marijuana, along with herbal and man-made forms. The majority of the studies showed an improvement in pain relief in comparison to a placebo or to other traditional pain medications. About a quarter of the studies showed no improvement.

Epilepsy: Personal stories and animal studies have shown that cannabidiol, one of the chemicals in cannabis, may help seizures in children with epilepsy. New York University just announced it will do a study of children with epilepsy and marijuana.

Digestive Disorders: Personal stories and several early studies have shown that smoking marijuana can help people with digestive diseases such as colitis, irritable bowel syndrome, and Crohn's disease. Some of the results included a reduction in bowel inflammation and reduced acid reflux. Further, some patients were able to retain more nutrients in their bodies, and the disease went into remission.

MS: More than 24 studies have looked at smoked marijuana, cannabinoids, and MS. Most reported that it helped relax patients' rigid muscles and helped with pain. Sativex is approved to treat MS in 24 countries, but not in the U.S.

Schizophrenia: Two clinical trials showed that THC and cannabidiol could help with psychotic and other symptoms. The National Institutes of Health is funding a small clinical trial that also aims to show whether THC and cannabidiol can ease symptoms.

SOURCES:

- Dustin Sulak, DO, Maine Integrative Healthcare, Manchester.
- *USA TODAY*, “Which states have legalized medical marijuana,” Jan. 6, 2014.
- The Huffington Post, “Marijuana-Like Chemical May Help Autism And Fragile X Syndrome Symptoms,” Sept. 27, 2012.
- The New York Times, “We Need Proof on Marijuana,” Feb. 12, 2014.
- Ranganathan, M. National Institutes of Health RePORTER.
- Ben Amar, M. *Journal of Ethnopharmacology*, April 21, 2006.
- ProCon.org: “15 States with Pending Legislation to Legalize Medical Marijuana.”
- Bostwick, J. *Mayo Clinic Proceedings*, February 2012.
- Michael Bostwick, MD, Mayo Clinic.
- Hazekamp, A. *Cannabinoids*, Feb. 13, 2010.
- Grant, I. *The Open Neurology Journal*, published online May 4, 2012.
- Grant, I. *Virtual Mentor*, May 2013.
- Alice Mead, vice president U.S. professional relations, GW Pharmaceuticals.
- GWPharm.com: “Sativex.”
- News release, Cannabis Science Inc.
- Guzman, M. *Nature Reviews Cancer*, Oct. 3, 2003.
- NORML.org: “Gliomas/Cancer,” “Recent Research on Medical Marijuana,” “Gastrointestinal Disorders.”
- Volicer, L. *International Journal of Geriatric Psychiatry*, 1997.
- International Association for Cannabinoid Medicines.
- Foroughi, M. *Child’s Nervous System*, April 2011.
- Naftali, T. *Clinical Gastroenterology and Hepatology*, October 2013.
- Földy, C. *Neuron*, April 11, 2013.
- Jung, K-M. *Nature Communications*, 2012.

Reviewed on March 03, 2014.

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Cite this article: “Medical Marijuana: What the Research Shows” - *Medscape* - Apr 02, 2014.