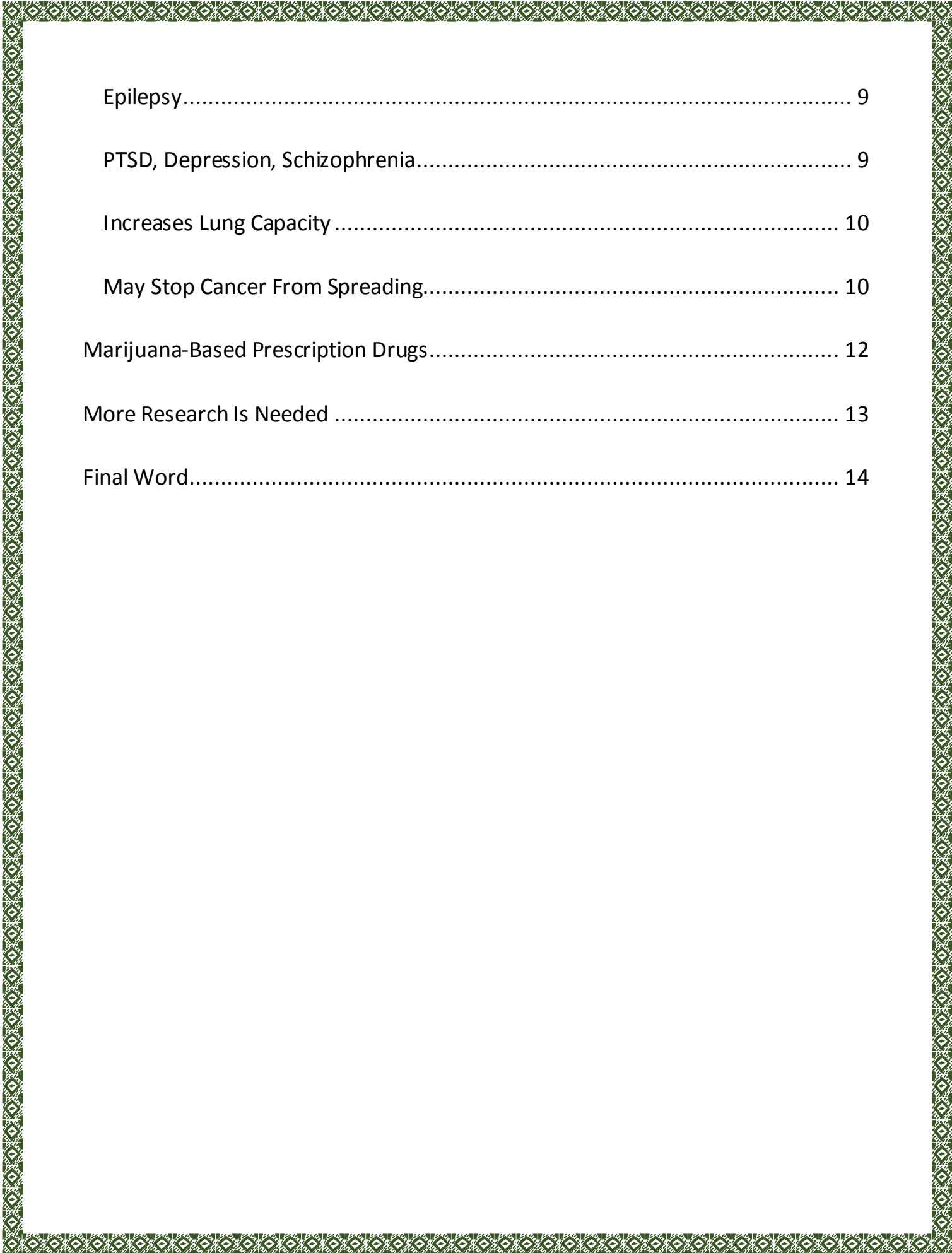




**THE CANNABIS HERB**  
*Medicinal Uses For*  
**MEDICAL MARIJUANA**  
**What The Science Shows**

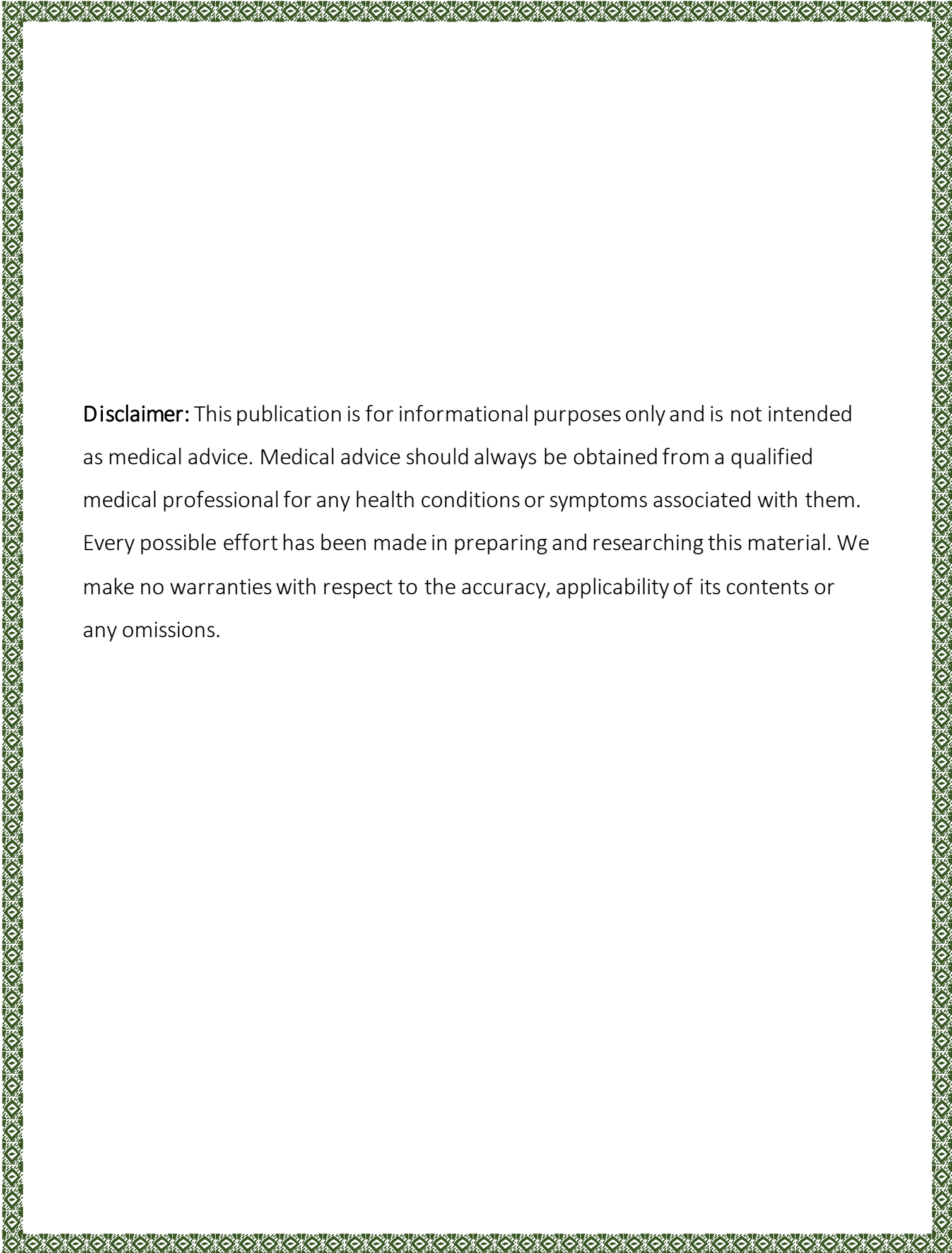
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# What Is Marijuana

Marijuana comes from the cannabis plant, specifically it is the preparation of the buds that grow on this plant intended for use as medicine or a psychoactive drug. Cannabis is considered an herb, and marijuana goes by many slang names, pot, weed, grass, ganja, bud, herb, Mary Jane, trees, and others.



## Active Ingredients

Marijuana is a mood altering (psychoactive) drug. THC or tetrahydrocannabinol is the psychoactive chemical compound in cannabis that causes its high. Interestingly though, unlike other illicit and illegal mood altering drugs (cocaine, ecstasy) cannabis also contains CBN (cannabinol) and CBD (cannabidiol), active ingredients that represent its medicinal effects.

## US Legal Status

According to US Federal law, marijuana is a Schedule I controlled substance, which means it is an illegal drug that is considered to have detrimental effects on human welfare and health, and so is regulated by federal and state governments.

### Schedule I Drug...

*“These substances have no accepted medical use, are unsafe, and hold a high potential for abuse. Examples include heroin, LSD, marijuana, peyote, and ecstasy.”*

While the cannabis plant is an herb, it differs from other herbs, such as lavender, chamomile, black cohosh and others because it is mood altering or psychoactive...

*“A psychoactive drug, psychopharmaceutical, or psychotropic is a chemical substance that changes brain function and results in alterations in perception, mood, or consciousness”*

Any type of mood altering drug is believed to hold potential for abuse.

# Medical Marijuana

Regardless of the above, many states disagree with federal law, since as of 2017, medical marijuana has been legalized in 33 of the 50 United States. California was the first to legalize it in 1996.

In fact, some states have legalized recreational marijuana as well, including Colorado, Massachusetts, Maine, Nevada and California and more states are expected to follow suit, but this is a whole other topic.

Moreover, medical marijuana is approved and legal for various medical conditions in more than 20 countries around the world, including:

- Australia
- Chile
- Canada
- Colombia
- Croatia
- Czech Republic
- Germany
- Finland
- Israel
- Italy
- Jamaica
- Macedonia
- Netherlands (all marijuana unofficially tolerated)
- Portugal (full decriminalization)
- Romania



## Discoveries Of Healing Properties

In the last few years, medical marijuana has become a hot topic and there is a lot of debate about its benefits. According to a news story featured on CNN, the cannabis plant contains more than 400 distinct and individual chemicals, and its effect on the brain and body are still largely unknown.

According to WebMD, 20 years ago, scientists identified the endocannabinoid system in the brain that was found to respond to 60 chemicals in cannabis. This system was found to play a role in various internal bodily functions, including the digestive, heart, endocrine, nervous, and immune and reproductive. This discovery triggered a lot of interest in the use of cannabis as a treatment method for a variety of medical conditions.



## Blocks To Research

However, most studies since have focused on its harm as opposed to its benefits, mainly because of issues surrounding its legal status and federal restrictions, such as the fact that scientists in the United States need to get approval from the DEA (Drug Enforcement Agency) and the FDA before they can perform any research on medical marijuana.

However, many states and medical experts accept its use for a variety of medical conditions and their symptoms and the voters showed their agreement at the polls in 28 states.

Dr. Dustin Sulak, DO, who practices at Maine Integrative Healthcare in Manchester told WebMD that he has seen striking results when he administered medical marijuana to his patients, including chronic pain patients who needed fewer prescription medications, multiple sclerosis sufferers finding relief from painful muscle spasms and those with severe IBS (inflammatory bowel disease) being able to eat once again.

*“With inflammatory bowel disease, we’ll see patients who were at death’s door turn around dramatically,” said Dr. Sulak*



## Dispensing Practices

Medical marijuana is treated as medicine, therefore various rules and laws exist that dictate how it is dispensed. In no state can you walk into a drug store and buy medical marijuana, it can only be obtained at one of a number of special dispensaries that are highly regulated by law, and you need to have a doctor's recommendation, also known as a "rec," which is a legal prescription.

These rules and regulations vary by state, as do the legal responsibilities of the patient, as to how much they can buy and legally have in their possession at any one time, among other considerations.

For example, in California a patient is only allowed to possess up to 8 ounces at any one time, while in Nevada, patients can possess 16 ounces.





# The Pharmacology Of Medical Marijuana

## Pharmaceutical Grade

It is important to note that the medical marijuana sold in dispensaries, is a pharmaceutical grade of cannabis and not something obtained from illegal drug dealers.

Pharmaceutical marijuana is grown in many different strains, and is engineered with certain characteristics in mind, such as appetite stimulation.



## Strains Of Medical Marijuana

Medical marijuana strains are created using breeding, cross-breeding and blending practices in order to yield varying characteristics (body and mind effects) necessary for certain medical conditions to best serve patient's needs.

**These qualities include but are not limited to**

- Strength of the “high” for pain relief
- Sleep inducement
- Appetite stimulation
- And others

## Medical marijuana is grown in three different species/strains:

- **Indica** – typically produces a “heavy” body affect, called “body stone” that means patients should not plan to be active while using this strain. The Medical Marijuana Association describes indica to be relatively high in both THC and CBD, and relaxing to the muscles and body. Indica is typically used for medical conditions associated with pain, muscle spasms, and for symptoms seen in MS, Parkinson's disease, arthritis and others. Indica strains are best used in the evening or at bedtime.
- **Sativa** – A “daytime” strain, produces strong “mind effects” that are ideal for relaxation and conditions of the mind. The Medical Marijuana Association reports that sativa is low in CBD and fairly high in THC, so it provides a more energetic effect as it stimulates the mind and not the body. Typically, this strain is used for cancer, AIDS, and migraines, as it stimulates appetite, reduces nausea, and lifts mood. Sativa strains are best used during the day.
- **Hybrid** (mix of sativa and indica) strains capture the best of sativa and indica, and are described as ideal for patients needing to address a variety of different symptoms.



## Main Differences In Strains

According to the Medical Marijuana Association, what makes each of the above strains different is the amount of THC and CBD in them. THC causes the high, while CBD provides medical benefits. It is the proportion of THC and CBD that determines the strains effects for the treatment of distinct medical conditions.

Under the umbrella of the above strains, there are many different medical marijuana products that are given cute names, such as Afghani #1, Pluto OG and Purple Kush.

Patients can choose strains based on their known effects, such as for chronic pain, cancer, glaucoma, insomnia, joint pain, multiple sclerosis, nausea and others.

## Administration Method Options

Dispensaries offer various forms of medicinal marijuana.

- Bud form (inhalation)
- Shatters and Oils (inhalation)
- Oral Administration (swallowed, chewable and oral injection via syringe)
- Edibles
- Wax
- Vaporizers





## What The Science Shows

What are the benefits of medical marijuana? Are there any? Where is the proof? We have found a few relevant tidbits that show just where and how marijuana may be affecting medical treatments around the world.

### Chronic Pain Relief

A small study of pain patients in Canada showed that concentrations of THC added to conventional pain management treatments could see a decrease in overall pain experienced by the patient.



Web M.D. details a study published in the Canadian Medical Association Journal describing the percentages of THC given to patients during the study. Although the study was small and the perceived drop in pain was low, it can still be considered significant.

WebMD mentions there have been more than 45 studies that evaluated marijuana for conditions that feature chronic pain, including diabetes, cancer, HIV, arthritis, fibromyalgia, and spinal injuries. The studies have included smoked marijuana, along with herbal and man-made forms. Most of the studies showed positive results where pain was improved with the use of cannabis versus a placebo or traditional pain medications. A fourth of the studies showed no improvement.

These studies add to the pool of support to fund more major studies in the United States and worldwide.

## Multiple Sclerosis

CNN reports that the Sativex strain is approved in 25 countries to treat muscle spasms in multiple sclerosis.

## Nausea Relief And Appetite Stimulation

One of the most widespread uses for medical marijuana is for patients who are receiving cancer treatments or those with AIDS. Marijuana helps to significantly stimulate the appetite, and reduce nausea, which can be really helpful those receiving chemotherapy, which causes severe nausea and loss of appetite leading to the patients inability to eat. For AIDS patients who have trouble eating, it is reported to do the same.

## Epilepsy

CNN also reports that more than 100 families have moved to Colorado, USA so they can get access to "Charlotte's Web," a strain of cannabis oil that has been shown to dramatically reduce seizures in kids who suffer from epilepsy, as it contains the chemical CBD, which is low in THC.



## PTSD, Depression, Schizophrenia

Medical Daily cites three different studies that showed medical marijuana was useful when treating patients who were suffering from Post-Traumatic Stress Disorder, depression, and schizophrenia. These findings could indicate a great alternative treatment option for those suffering from mood disorders.

The problem with using marijuana to treat mood disorders was that the instance of mind-altering side effects was higher than with traditional medications. Hallucinations, anxiety, and other side effects are common for those who used marijuana to treat any disorder. Having these

types of side effects with someone who already has a mood disorder could lead to severe complications.

A small study at Harvard found medical marijuana to stabilize the brains of people who have bipolar disorder.

### **Increases Lung Capacity**

Time magazine reports on a study done at UCLA that shows that those who smoked marijuana over long periods of time had improved lung capacity as compared to non-smokers. This was for two specific testing parameters that measure how much air you can breathe out and how much air you can take in with one inhalation.

Scientists were surprised to see the results because similar studies of those who smoke tobacco always showed a decrease in lung function.

These studies could indicate that those who smoke marijuana are just better at taking lung function tests. Because of how lung function tests are performed, in a similar fashion to how marijuana is smoked, the marijuana smokers may just have had more practice at the activity than actual lung function improvement.

### **May Stop Cancer From Spreading**

Scientists have found that key elements in marijuana may stop cancer from metastasis.

Metastasis is the process that cancer goes through to spread in the host body.

Usually, harsh drugs like chemotherapy and radiation are used to stop this process. An article in The Huffington Post reports that a study published in 2007 shows that cannabidiol stopped the metastasis of cancer in many aggressive forms of cancer when studied in mice.



Cannabidiol is a substance found in the marijuana plant that is non-toxic and non-psychoactive. The body produces natural cannabinoids and using this material may enhance chemicals already present within the human cell structure.

This study could lead to amazing breakthroughs for cancer patients around the world. Current methods to stop cancer from spreading throughout the body can be extremely invasive and cause a lot of harm to the systems they are trying to protect.

A natural substance that could stop the metastasis process without leaving the body worse for the wear would be beyond a miracle.

It is interesting to note that in many of the countries and US states that have legalized medical marijuana, chronic pain, MS symptoms, cancer related nausea and appetite loss, along with AIDS are all conditions cited as legal for its use.

## Marijuana-Based Prescription Drugs

WebMD reports two drugs made from marijuana that are FDA approved.

- **Marinol and Cesamet** are used to treat lost appetite and nausea in patients with AIDS and those undergoing chemotherapy. These laboratory created versions of THC drugs were both approved in the 1980s.
- **Epidiolex** is a drug that is highly restricted and approved by the FDA for use in children with epilepsy.

**Nabiximols** is the scientific name for Sativex, a drug that's active ingredients are THC and CBD and which comes in the form of a mouth spray. Sativex is now approved in more than 20 countries, including Canada and the UK to treat Multiple Sclerosis muscle spasms and cancer pain. Currently Sativex is not approved for use in the US, though the FDA is reviewing its approval.

## More Research Is Needed

Unfortunately, when it comes to medical marijuana there is much more anecdotal evidence than scientific proof, mainly due to the restrictions placed on the study of medicinal cannabis.

A team of researchers led by Penny Whiting (University Hospitals Bristol, UK) analyzed 79 randomized trials, which are considered the gold standard in research where study subjects are randomly assigned either the test object, in this case medical marijuana, or a placebo.

All the studies evaluated marijuana's effectiveness in treating a wide variety of symptoms, including loss of appetite, depression, anxiety, insomnia, psychosis, nausea from chemotherapy, Tourette syndrome and others.



While most of the trials showed marijuana to improve symptoms over the placebo, in many of the studies the researchers admitted that there was uncertain as to the effect being simply by chance, as the association was not statistically significant.

Whiting and her colleagues concluded that, further, larger and more robust studies are needed that include randomized clinical to prove medical marijuana's effects.



## Final Word

For some, marijuana should not ever be legal under any conditions. The moral issue of a legalized mood-altering drug, especially on a federal level in the United States continues to inflame the controversy surrounding medical marijuana, and it does not look like the federal government will legalize its use anytime soon. It is just too controversial for any politician to fully commit to.

**Is there a final word on the safety or truth to claims of cannabis being the best treatment for certain ailments like chronic pain or cancer?**

No. The science is still in its infancy.

However, there is some amazing research that shows that the marijuana plant may hold many medical miracles just waiting to be discovered.

Ultimately, those patients that endure incredible suffering, be it from cancer treatments, MS, AIDS or any of a number of chronic pain conditions that find relief from medical marijuana maybe the only opinions that matter on whether it actually works or not.

