



**Holistic Healing • Natural Medicine
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MARIJUANA AS MEDICINE – PART 3

By Lono Ho'ala – Biochemist, Author, and expert at Natural Medicine. Lono is the Chief Executive Officer of Eagle's Nest Wellness Center in Cascade CO, a recognized leader in the use of medical-grade marijuana for serious disease.

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In Part 1 of this series we discuss the potential for harm when ingesting marijuana grown with Plant Growth Regulators (PGRs.) This is a problem seriously underestimated by both growers and consumers of cannabis products.

In Part 2 we explained the history of the politics justifying why marijuana is listed as a Schedule 1 Narcotic with no accepted medical use.

In this Part 3 we explain the components that create the medicinal value of marijuana.

THE ENDOCANNABINOID SYSTEM

After several decades of research, scientists studying the effects of marijuana made several important discoveries. Not only did they identify the active ingredient in marijuana, but they also discovered where and how it works in the brain via a new system they called the **endocannabinoid (EC) system**.

The EC system is a unique communications system in the brain and body that affects many important functions, including how a person feels, moves, and reacts.

The natural chemicals produced by the body that interact within the EC system are called cannabinoids. They interact with receptors to regulate these important body functions.

THE CANNABINOIDS

Marijuana is known to be composed of about 480 natural compounds. About 66 of these have been classified as “cannabinoids.”

The cannabinoids are separated into subclasses:

Cannabigerols (CBG)

Cannabichromenes (CBC)

Cannabidiols (CBD)

Tetrahydrocannabinols (THC)

Cannabinol (CBN) and cannabinodiol (CBDL)

Other cannabinoids (such as cannabicyclol (CBL), cannabielsoin (CBE), cannabitriol (CBT) and other miscellaneous types).

These are all active, organic compounds in the marijuana plant—and each offers unique benefits that researchers are just starting to understand.

TETRAHYDROCANNABINOL

The most famous and controversial of the cannabinoids is tetrahydrocannabinol, or THC. THC is the chemical responsible for most of marijuana's psychological effects. It does this by mimicking certain cannabinoids manufactured naturally by the body's own recently discovered endocannabinoid system.

Cannabinoid receptors associated with thinking, memory, pleasure, coordination and time perception are concentrated in certain areas of the brain. THC attaches to these receptors and activates them thereby affecting a person's memory, pleasure, movements, thinking, concentration, coordination, as well sensory and time perception.

Because of THC, marijuana is often termed a “narcotic” by the federal government and law enforcement. In fact, this is a gross mischaracterization. Marijuana is not addictive in the sense of opiate derived drugs or stimulants like cocaine and methamphetamine. However, THC does produce a euphoria that can easily become a habit.

The proper way to look at cannabis is as a euphoriant that can be habituating rather than a narcotic that is addictive. If a

person wants to have an intelligent conversation about this plant It is important to recognize the difference.

The psychological effects of THC are moderated by the influence of the other components of the plant, most particularly cannabidiol (CBD.)

CANNABIDIOL

CBD or cannabidiol is the most-studied cannabinoid. It has potentially therapeutic effects on conditions like diabetes, rheumatoid arthritis, cancer, nausea, Parkinson's, and Alzheimer's.

First identified in 1940 many researchers feel that CBD is quite possibly the single most important cannabinoid in the marijuana plant. That is because CBD is the cannabinoid that seems to possess the greatest therapeutic potential.

Studies demonstrate a wide range of therapeutic effects of cannabidiol on several conditions, including Parkinson's disease, Alzheimer's disease, cerebral ischemia, diabetes, rheumatoid arthritis, other inflammatory diseases, nausea and cancer.

A team of Italian and Israeli investigators have discovered that CBD possesses anxiolytic, antipsychotic, antiepileptic, neuroprotective, vasorelaxant, antispasmodic, anti-ischemic, anticancer, antiemetic, antibacterial, antidiabetic, anti-inflammatory, and bone stimulating properties.

Martin Lee, cofounder and director of the non-profit group Project CBD – which identifies and promotes CBD-rich strains of cannabis – agrees. Cannabidiol is “the Cinderella molecule,” writes Lee in his new book, *Smoke Signals: A Social History of Marijuana – Medical, Recreational, and Scientific* (Scribner, 2012). “[It's] the little substance that could. [It's] nontoxic, nonpsychoactive, and multicapable.”

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CBD is also exceptionally safe for human consumption. According to a just published clinical trial in the journal *Current Pharmaceutical Design*, the oral administration of 600 mg of CBD in 16 subjects was associated with no acute behavioral and physiological effects, such as increased heart rate or sedation. “In healthy volunteers, ... CBD has proven to be safe and well tolerated,” authors affirmed. A 2011 literature review published in *Current Drug Safety* similarly concluded that CBD administration, even in doses of up to 1,450 milligrams per day, is non-toxic, well tolerated, and safe for human consumption.

Presently, however, options for US patients wishing to utilize CBD are extremely limited. Most domestically grown strains of cannabis contain relatively little CBD and many cannabis dispensaries do not consistently carry such boutique varieties.

The informed consumer should know that many products contain CBD oil that originates in China, where the hemp plant is used to detoxify soils at industrial sites. This oil can contain high levels of toxic heavy metals like cadmium and arsenic. Products made with this oil are unsuitable to be used as medicines and must be avoided.

Those interested in availing themselves of the therapeutic benefits of CBD are best advised to work with one of the small handful of prominent cannabis dispensaries staffed by professionals experienced at using marijuana as a medicine.

Eagle’s Nest Wellness Center in Cascade (just west of Colorado Springs) is such a dispensary. Staffed by people trained in biochemistry and experts at marijuana horticulture, Eagle’s Nest carries CBD-rich strains of cannabis and a wide variety of CBD-infused products that are free of toxic chemicals and heavy metals. They are also experts at how these products should be used.

CANNABINOL

Cannabinol (CBN) is largely a product of THC degradation. It is typically available in cannabis in minute quantities and it binds relatively weakly with the body's endogenous cannabinoid receptors. The compound's known therapeutic potential includes its ability to induce sleep, ease pain and spasticity, delay ALS (Lou Gehrig's Disease) symptoms, increase appetite, and halt the spread of certain drug resistant pathogens, like MRSA (aka 'the Superbug').

CANNABICHROMENE

Cannabichromene (CBC) was first discovered in 1966. It is typically found in significant quantities in freshly harvested, dry cannabis. CBC has anti-inflammatory, antimicrobial, and modest analgesic activity. CBC has also been shown to promote anti-cancer activity in malignant cell lines and to possess bone-stimulating properties.

CANNABIGEROL

Cannabigerol (CBG) is also documented to possess anti-cancer, anti-inflammatory, analgesic, and anti-bacterial properties. According to a 2011 review published in the British Journal of Pharmacology, “[A] whole plant extract of a CBG-chemotype ... would seem to offer an excellent, safe new antiseptic agent for the treatment of multi-drug resistant bacteria.” A more recent review published this year in the journal Pharmacology & Therapeutics further acknowledges that CBG and similar non-psychoactive cannabinoids “act at a wide range of pharmacological targets” and could potentially be utilized in the treatment of a wide range of central nervous system disorders, including epilepsy.

TETRAHYDROCANNABIVARIN

Discovered in 1970, tetrahydrocannabivarin (THCV) is most typically identified in Pakistani hashish and cannabis strains

of southern African origin. Research demonstrates that THCV has anti-epileptic and anticonvulsant properties, as well as the ability to mitigate inflammation and pain – in particular, difficult-to-treat neuropathy due to diabetes.

CONCLUSION

Because of the irrational federal policies toward marijuana, patients are being denied the use of these highly beneficial compounds – even when they have no capacity to make a person high. The good news is that as more and more people discover the painful consequences of this unreasoned government hypocrisy, laws are slowly changing around the country. It is only a matter of time until the beneficial use of these extraordinary compounds are legally available anywhere.

Please consider donating to our Compassionate Care Program. Many ill people are in need of high quality marijuana for the treatment of their cancers and other serious illnesses but they can't afford the expense. Your donations go to a 501(c)3 Foundation and are completely tax deductible. 100% of the proceeds go to benefit the patient.

Another way you can help is to consider an investment in a program that will lease a medical hemp and marijuana grow and processing facility to Eagle's Nest Wellness Center, LLC. Accredited investors who can afford a minimum \$25,000 for 5 years will earn 12% per year secured by real estate.

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