



temescal
wellness



Understanding Therapeutic Cannabis



“If we know there is suffering and do nothing to alleviate it, we ourselves become the tormentors”

Primo Levi

Qualifying Conditions in New Hampshire

- Cancer
- Glaucoma
- Positive status for HIV
- Epilepsy
- Acquired immune deficiency syndrome
- Hepatitis C
- ALS
- Muscular dystrophy
- Alzheimer's disease
- Parkinson's disease
- Crohn's disease
- Multiple sclerosis
- Chronic pancreatitis
- Spinal cord injury or disease
- Traumatic brain injury
- Lupus
- One or more injuries that significantly interferes with daily activities

A Patient may Qualify with These Symptoms.

- Severe pain for which other treatments produced serious side effects
- Severe pain not responding to previously prescribed medications or procedures
- Elevated intraocular pressure
- Cachexia
- Chemotherapy induced anorexia
- Wasting syndrome
- Moderate to severe vomiting
- Seizures
- Severe, persistent muscle spasms
- Agitation of Alzheimer's
- Constant or severe nausea

How Long Have People Been Using Cannabis Therapeutically?



Indochinese texts from over 3000 years ago describe cannabis being used to treat both mental and physical conditions. Evidence suggests that cannabis was used by both the Greek and Roman empires.

Dr. William B. O'Shaughnessy brought medical cannabis to the United States in 1839. It was originally introduced as a alcohol based tincture.

In the 1920's and 1930's cannabis was banned in both the UK and the United States.

THC was discovered in 1964 by an Israeli doctor named Raphael Mechoulam.

California passed proposition 215 to legalize the therapeutic use of cannabis in 1996.

New Hampshire passed HB 573 (RSA 126-X) in June 2013 legalizing the therapeutic use of cannabis for patients with qualifying medical conditions.



How does cannabis work in my body?

The active ingredients in cannabis are called cannabinoids. Cannabinoids (THC, CBD, THCV, etc.) are chemical compounds derived from the cannabis plant. There are over 85 different cannabinoids in the cannabis plant. Each cannabinoid provides relief for a variety of symptoms. When cannabis is ingested, these cannabinoids bind to CB1 and CB2 receptors throughout endocannabinoid system (ECS). Each cannabinoid produces different effects depending on which receptor they bind to.

How Cannabis is Classified

Sativa - This variety tends to have a mood elevating effect on patients. Some patients report increased energy and a sense of well-being. Sativa strains are often used during the daytime.

Indica - This variety can induce a deep body relaxation. Indica strains are often used in the evening.

Hybrid - This variety has attributes of both the indica and sativa variety.

CBD Rich - These strains are known to help many different medical conditions with little to no psychoactive effects.

The two most popular cannabinoids are THC and CBD.

THC, or tetrahydrocannabinol, is a psychoactive cannabinoid that may provide relief for patients with severe pain, nausea, poor appetite, muscle spasms and cancer tumor production.

CBD, or cannabidiol, is a non-psychoactive cannabinoid that may provide relief for patients with severe, persistent muscle spasms, severe pain, and agitation of Alzheimer's Disease.

CBD has potent anti-tumor, antioxidant, anti-spasmodic, anti-psychotic, anti-convulsive, and neuroprotective properties. CBD directly activates serotonin receptors, causing an anti-depressant effect, as well.

Top Cannabinoid Benefits

CBG	CBC	CBGA	CBCA	THCA	...	✓	Anti-Inflammatory (Reduces inflammation)
THC	CBD	CBN	CBC	CBGA	...	✓	Analgesic (Relieves pain)
CBD	CBG	CBC	THCA	CBDA	...	✓	Anti-Proliferative (Inhibits tumor cell growth)
THC	CBD	CBN	THCA		...	✓	Antispasmodic (Suppresses muscle spasms)
CBD	CBG	CBC	THCV		...	✓	Bone Stimulate (Promotes bone growth)
	CBD	CBG	CBGA		...	✓	Antibacterial (Kills/slows bacteria growth)
		THC	CBD		...	✓	Antiemetic (Reduces vomiting/nausea)
		CBD	THCV		...	✓	Anti-Epileptic (Reduces seizures)
			THC		...	✓	Appetite Stimulant (Increases appetite)
			CBD		...	✓	Neuroprotective (Protects Nervous System)

* These statements have not been validated by the FDA and are a summary of current therapeutic cannabis research and patient anecdotal experience. Therape

CBD modulates the psychoactive effect of THC.

A 1:1 ratio of CBD to THC will result in a 30-50% reduction of the psychoactive effect.

A 4:1 ratio of CBD to THC will result in a minimal psychoactive effect.

Patients can reduce or eliminate the cannabis “high” by adjusting the CBD to THC ratio.



Basic Terminology

Flower - This is the most common form of cannabis. It is the dried plant in its raw form. Flower is either vaporized or smoked.

Concentrate - The essential components of the cannabis plant are extracted into a concentration that can be vaporized or smoked.

Tincture - The essential components of the cannabis plant are extracted and suspended in a liquid concentrate to be ingested sublingually.

Edible - The essential components of the cannabis plant are infused into food or capsules and ingested orally.



Do I have to smoke cannabis or are there other options for me?

There are many different ways to take cannabis. Alternative methods include:

Vaporizing - inhaling a mist

Ingestion - including capsules and edibles

Tinctures - a liquid preparation

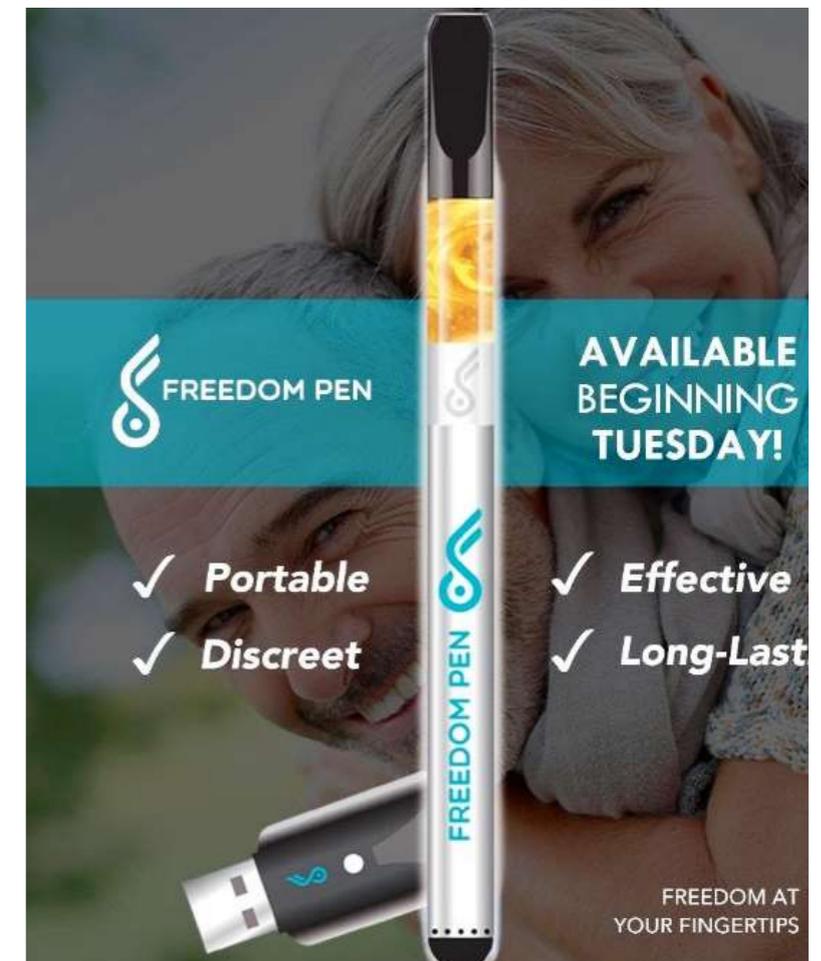
Topicals - applied to the skin

Ingestion Methods - Inhalation

Inhalation is the most common way to ingest cannabis. It has the fastest onset and is easy to titrate. Inhalation includes both smoking and vaporizing. Vaporizers turn cannabinoids into a gentle mist which is less irritating to the respiratory system than smoke.

Smoking - most common
onset: 1-5 minutes
duration: 1-4 hours

Vaporizing - gaining popularity, less irritating to respiratory system
onset: 1-5 minutes
duration: 1-4 hours



Ingestion Methods - Edibles and Capsules

Edibles and Capsules provide long acting symptom relief and are very discreet. Many patients who experience difficulty with sleep turn to these products for overnight symptom relief.

Edibles - measured dosing, long lasting symptom management, no respiratory irritation, discreet
onset: 1-2 hours
duration: 6-8 hours



Tinctures

A **Tincture** is a liquid preparation that is dosed in drops underneath the tongue for a sublingual absorption. This discreet method is ideal for new patients who wish to increase their dose slowly through micro-dosing.

Tinctures - measured dosing, no respiratory irritation, discreet
onset: 5-30 minutes
duration: 1-6 hours



Ingestion Methods - Transdermal Patches

Transdermal patches are discreet and long acting. They are formulated with cannabis oil that penetrates the skin and enters the bloodstream for systemic symptom relief.

Transdermal - measured dosing, long lasting symptom management, no respiratory irritation, discreet
onset: 30-60 minutes
duration: 4-12 hours



Ingestion Methods - Salve

A **Salve** is a topical preparation that is formulated to provide **local** symptom relief. This product is non-psychoactive and does not enter the bloodstream.

Salve - targeted application, fast relief, no respiratory irritation, discreet
onset: variable
duration: variable





Dosing Cannabis: Start LOW and go SLOW

Many patients report using edibles, capsules, or transdermal patches for long acting symptom relief. Breakthrough or intermittent pain is often managed with vaporizing, smoking or a sublingual tincture.

When **smoking** or **vaporizing** cannabis, doses are measured in **puffs** or **inhalations**.

When using **tinctures**, doses are measured in both **milligrams & drops**. **Capsules** and **edibles** are dosed in **milligrams** with an average starting dose of 5-10 milligrams. Often 2.5 mg is an excellent starting point with **Cannabis Naive** patients.

Cannabis compounds have **biphasic** properties. Patients are encouraged to use the lowest dose needed to relieve their symptoms.

“Less is more” when using medical cannabis.



Cannabis and Parkinson's Disease

Cannabis, a potent neuroprotectant and anti-inflammatory agent, is often used as an adjunct therapy to traditional Parkinson's medications. While much research is still needed, preliminary data suggest that cannabis can help with general and motor symptoms, a sense of general well-being, and a reduction in medication-associated dystonia. Evidence also suggests that cannabis can reduce the frequency of REM sleep disorder in Parkinson's patients.

Cannabis is often used to combat muscle rigidity, reduce pain, elevate mood, reduce anxiety, and improve sleep.

A list of current research can be found on the Project CBD website.

<https://www.projectcbd.org/condition/41/Parkinson%E2%80%99s-Disease>

Parkinson's Disease

- **Effects of cannabidiol in the treatment of patients with Parkinson's disease: An exploratory double-blind trial**
- **Prospects for cannabinoid therapies in basal ganglia disorders**
- **Evaluation of the neuroprotective effect of cannabinoids in a rat model of Parkinson's disease: Importance of antioxidant and cannabinoid receptor-independent properties**
- **Cannabinoids provide neuroprotection against 6-hydroxydopamine toxicity in vivo and in vitro: relevance to Parkinson's disease**
- **Cannabidiol can improve complex sleep-related behaviours associated with rapid eye movement sleep behaviour disorder in Parkinson's disease patients**
- **Cannabidiol for the treatment of psychosis in Parkinson's disease**
- **Symptom-relieving and neuroprotective effects of the phytocannabinoid Δ^9 -THCV in animal models of Parkinson's disease**
- **Therapeutic potential of cannabinoids in CNS disease**
- **CB2 Receptors Activation Protects against Oxidative Stress and Neuroinflammation Associated Dopaminergic Neurodegeneration in Rotenone Model of Parkinson's Disease**

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Cannabinoids reduce levodopa-induced dyskinesia in Parkinson's disease: a pilot study.

Neurology. 2001 Dec 11;57(11):2108-11.

Cannabinoids reduce levodopa-induced dyskinesia in Parkinson's disease: a pilot study.

Sieradzan KA1, Fox SH, Hill M, Dick JP, Crossman AR, Brotchie JM.

Author information

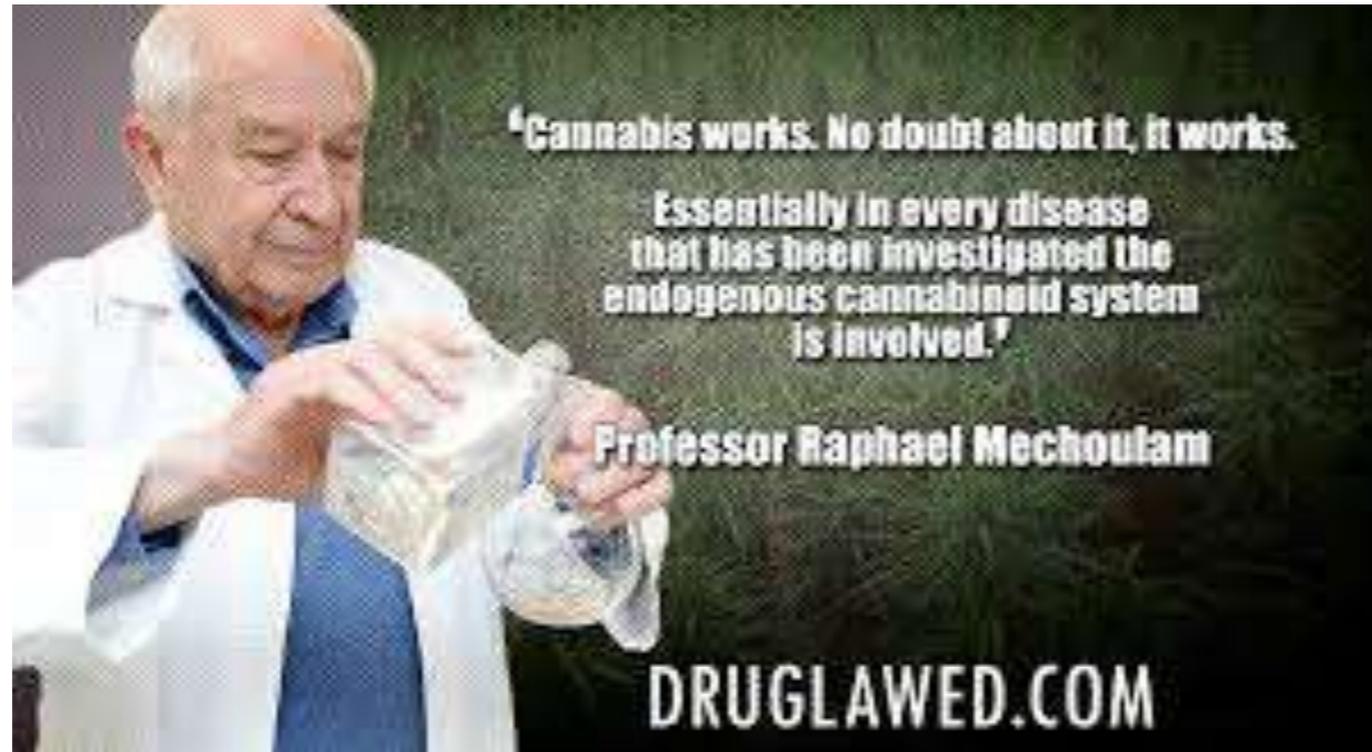
Abstract

The lateral segment of the globus pallidus (GPI) is thought to be overactive in levodopa-induced dyskinesia in PD. Stimulation of cannabinoid receptors in the GPI reduces gamma-aminobutyric acid (GABA) reuptake and enhances GABA transmission and may thus alleviate dyskinesia. In a randomized, double-blind, placebo-controlled, crossover trial (n = 7), the authors demonstrate that the cannabinoid receptor agonist nabilone significantly reduces levodopa-induced dyskinesia in PD.

PMID: 11739835

[Indexed for MEDLINE]

Dr. Raphael Mechoulam



- In the late 1980s, receptors were found in the brain for THC (tetrahydrocannabinol), the primary psychoactive component in marijuana. But since THC doesn't naturally occur in the body, the presence of these receptors puzzled scientists. The mystery was solved a few years later with the discovery of arachidonylethanolamide, later called Anandamide.
- It is considered an [endocannabinoid](#) — a substance produced in the body that binds to cannabinoid receptors.
- Dr. Raphael Mechoulam, "The Scientist" is responsible for isolating THC in 1964. His team has continued researching Cannabis and in the 1990s discovered the Endocannabinoid System, the mother modulator found in all mammals.
- He has been quoted as saying "I only wishes I had another life to devote to the study of cannabis"
- The next slide is his.

What is the Endocannabinoid system?

The ECS is a neuromodulatory system that is found in the brain and other systems throughout the body including the immune system. It is comprised of CB1 and CB2 receptors and is known to regulate a variety of physiological processes. Those processes include but are not limited to appetite, mood, pain sensation, memory, GI functions, inflammatory response and immune function.

Anandamide and 2-AG are endocannabinoids that play an important role in this retrograde feedback system.

The Human Endocannabinoid System

CBD, CBN and THC fit like a lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological processes affecting pain modulation, memory, and appetite plus anti-inflammatory effects and other immune system responses. The endocannabinoid system comprises two types of receptors, CB1 and CB2, which serve distinct functions in human health and well-being.



Tetrahydrocannabinol



Cannabidiol



Cannabinol



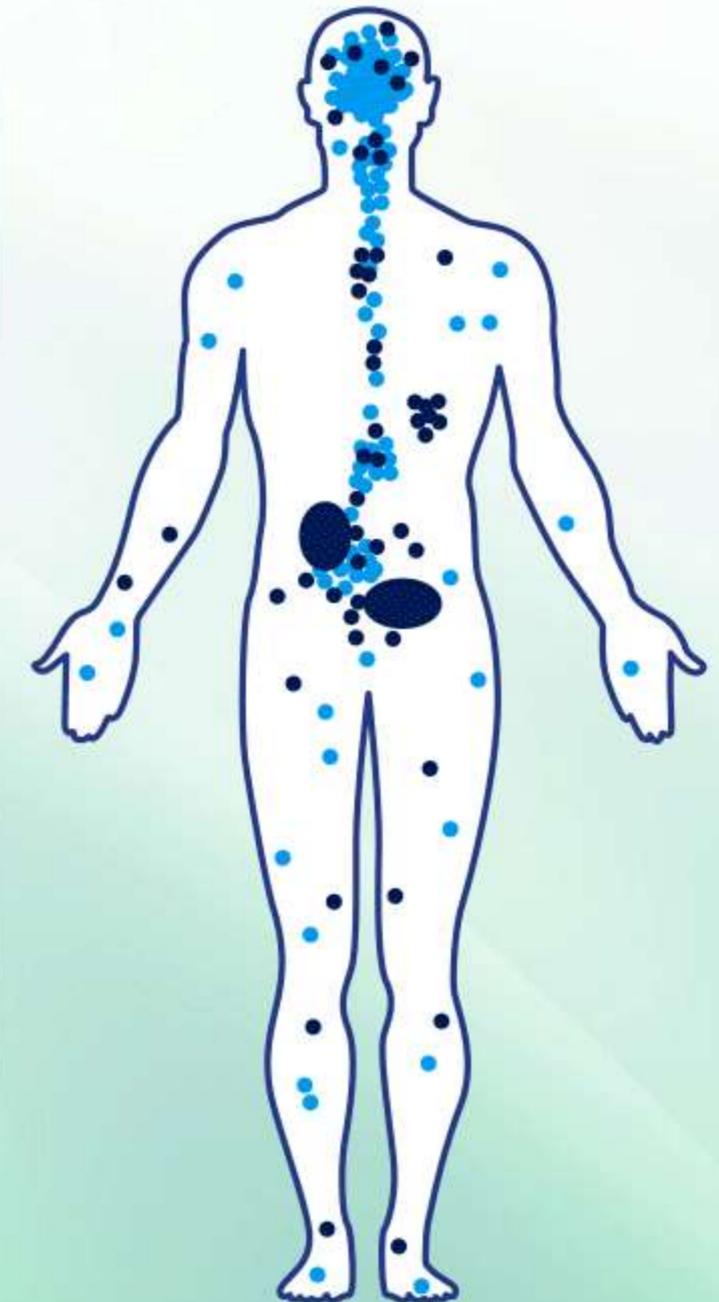
CB1 receptors are primarily found in the brain and central nervous system, and to a lesser extent in other tissues.



CB2 receptors are mostly in the peripheral organs especially cells associated with the immune system.

CBD does not directly "fit" CB1 or CB2 receptors but has powerful indirect effects still being studied.

Receptors are found on cell surfaces



A Word from Mechoulam



Raphael Mechoulam
Professor at Hebrew
University of Jerusalem

Dear Ms Dost,

Thank you for your warm words.
I believe that when used, based on good knowledge, medical marijuana and in many cases pure cannabidiol can be a very useful drugs. It is unfortunate that in many (most ?) countries they are not used even with strict regulation.
I shall be glad to learn of your experience with patients. We do not have enough data by medical professionals.

Best wishes

R. Mechoulam

The Patient, The Caregiver, The Dispensary and the Assessment



* A patient cannot enter our alternative treatment center without a New Hampshire state issued cannabis card and photo ID. Spouses, caregivers, or children cannot enter our treatment center unless they have a state issued therapeutic cannabis caregiver card along with a photo ID. It is recommended that all Parkinson patients designate a caregiver to accompany them when visiting Temescal Wellness.

**** Many People find it helpful to track their response to cannabis. At Temescal wellness we provide a tool for their use.***

* **THUS**...It is important to develop a custom assessment for each patient. Proper assessment is essential in titrating the proper dose for each patient. An assessment should be conducted before and after administering cannabis. Clinicians must take into consideration the method of ingestion and the onset of that particular ingestion method.

PATIENT STRAIN & PRODUCT LOG

Please use this log to document cannabis product, strain use, and associated effects and symptom relief.

DATE/TIME USED	CANNABIS PRODUCT	STRAIN/TYPE	METHOD OF USE	EFFECTS & SYMPTOM RELIEF	DOSAGE
<i>Example</i> 5/5/2016 9:00 AM	Flower	Mother of Berries (MOB)	Vaporized	Eased pain & helped me sleep	2 puffs
<i>Example</i> Notes: I really liked this strain. It helped with pain relief and insomnia. I felt calm, relaxed and happy. The effects lasted about 2.5 hours.					
Notes:					

Potential Drug Interactions and Side Effects

High doses of CBD have the potential to inhibit the function of cytochrome P450 enzymes. Anticoagulation drugs and drugs with a narrow therapeutic window should be carefully monitored.

While cannabis has no lethal dose, some patients can experience side effects with doses that are too high. Potential side effects include euphoria, dry mouth, dry eyes, paranoia, anxiety, mild orthostatic hypotension, and mild tachycardia. Slow titration can usually minimize or eliminate any side effects.



Temescal ATC Locations

DOVER, NH

26 Crosby Road, Units 11-12
Dover, NH 03820

HOURS

Monday: 12 – 7 pm
Wednesday: 12 – 7 pm
Thursday: 12 – 7 pm
Saturday: 11 am – 5 pm

LEBANON, NH

367 Route 120, Unit E-2
Lebanon, NH 03766

HOURS

Tuesday: 12 – 7 pm
Friday: 12 – 7 pm
Sunday: 11 am – 5 pm



Questions?

Sources influencing the powerpoint:

- Mechoulam, Raphael PhD, “The Scientist”; the Endocannabinoid System, Anandamide and 2-AG
- Russo, Ethan, MD; Inventor, Postulates; “The Chronic Endocannabinoid System Deficiency” theory
- Project CBD
- New Hampshire Medical Marijuana Laws



Thank You