

Medical Cannabis Safety Sheet

Benefits of Medical Cannabis

Therapeutic Potential of Medical Cannabis

Cannabinoids have demonstrated therapeutic effects in a broad range of conditions due to the widespread distribution of cannabinoid receptors throughout the body.

The endocannabinoid system (ECS) is a regulator of physiologic homeostasis and there is interest in targeting the ECS with pharmacotherapy. The body has **endogenous** (endo: naturally occurring within in the body) cannabinoids that exert their effect on the ECS. In addition, **exogenous** (exo: outside the body) cannabinoids, such as CBD and medical cannabis, can be ingested to exert an additional effect on the ECS.

Modulating the activity of the ECS has proven effective in human studies on mood and anxiety disorders, movement disorders, neuropathic pain, epilepsy, multiple sclerosis, spinal cord injury, cancer, atherosclerosis, myocardial infarction, stroke, hypertension, glaucoma, obesity/metabolic syndrome, insomnia, Alzheimer's disease, and osteoporosis. The majority of human research has focused on spasticity, nausea and vomiting, anorexia, and chronic pain. Some conditions, such as migraine, fibromyalgia, and irritable bowel syndrome (IBS) have pathophysiological patterns that suggest an underlying clinical endocannabinoid deficiency, which may be treated with cannabinoid administration.

Clinical Evidence

A 2017 report from the National Academies of Sciences, Engineering, and Medicine found conclusive or substantial evidence that cannabis or cannabinoids are effective:

- For the treatment of chronic pain in adults
- As anti-emetics in the treatment of chemotherapy-induced nausea and vomiting
- For improving patient-reported multiple sclerosis spasticity symptoms

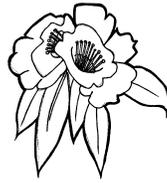
The report also found moderate evidence that cannabis or cannabinoids can be effective for: improving short-term sleep outcomes in individuals with sleep disturbance associated with obstructive sleep apnea syndrome, fibromyalgia, chronic pain, and multiple sclerosis.

There is limited, but increased research, in clinical data demonstrating that cannabinoids are safe and effective in the treatment of seizure disorders, Tourette syndrome, and multiple geriatric conditions and to reduce their pill burden.

There are also clinical studies that demonstrate improvements in anxiety, depression, and neurocognition when medical cannabis is used.

References:

<https://www.aerzteblatt.de/int/archive/article/127603>
[https://www.epilepsybehavior.com/article/S1525-5050\(16\)30477-2/abstract](https://www.epilepsybehavior.com/article/S1525-5050(16)30477-2/abstract)
<https://www.ncbi.nlm.nih.gov/pubmed/28464701>
<https://www.ncbi.nlm.nih.gov/pubmed/29398248>
<https://www.ncbi.nlm.nih.gov/pubmed/27816801>
<https://www.ncbi.nlm.nih.gov/books/NBK423845/>
<https://www.ncbi.nlm.nih.gov/pubmed/18404144>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2241751/>
<https://healer.com/cannabiseducation/>
<https://www.ncbi.nlm.nih.gov/pubmed?term=24160757>
<https://www.mayoclinic.org/healthy-lifestyle/consumer-health/in-depth/medical-marijuana/art-20137855>
[https://www.mayoclinicproceedings.org/article/S0025-6196\(18\)30709-2/fulltext#sec8](https://www.mayoclinicproceedings.org/article/S0025-6196(18)30709-2/fulltext#sec8)



Entourage Effects of Medical Cannabis

The entourage effect of medical cannabis is one reason to incorporate the whole plant when using cannabis for the medical benefits.

Cannabis (*Cannabis sativa*, *Cannabis indica*, and *Cannabis ruderalis*) is known to contain hundreds of physiologically active compounds. These include but are not limited to phytocannabinoids (plant-based cannabinoids), terpenoids (naturally occurring organic chemicals derived from terpenes) and flavonoids (plant metabolites). Whole plant cannabis preparations have been used traditionally in my wife's home country of Nepal and South Asia via Ayurvedic Medicine. Whole plant preparations exhibit superior therapeutic effects and have less adverse effects than isolated natural components of cannabis or synthetic cannabinoids. Therefore, the most clinically useful strategy is to use the whole cannabis plant. In modern terms, this means ingesting the combination of delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD), which can be achieved by selecting specific cannabis chemovars (plant strains). CBD has been shown to antagonize the undesirable side effects of THC, such as intoxication, sedation and tachycardia, while enhancing the analgesic, anti-emetic, and anti-carcinogenic properties of THC. In addition, the psychoactive side effects of THC are rarely noticeable when the CBD:THC ratio exceeds 4:1.

References:

McPartland, John M., and Ethan B. Russo. "Cannabis and cannabis extracts: greater than the sum of their parts?." *Journal of Cannabis Therapeutics* 1.3-4 (2001): 103-132.
Russo E, Guy GW. A Tale Of Two Cannabinoids: The Therapeutic Rationale For Combining Tetrahydrocannabinol And Cannabidiol. *Med Hypotheses* 2006;66:234-46.
<https://bpspubs.onlinelibrary.wiley.com/doi/pdf/10.1111/j.1476-5381.2011.01238.x>
<https://healer.com/cannabiseducation/>
<https://www.ncbi.nlm.nih.gov/pubmed?term=24160757>
<https://www.mayoclinic.org/healthy-lifestyle/consumer-health/in-depth/medical-marijuana/art-20137855>
[https://www.mayoclinicproceedings.org/article/S0025-6196\(18\)30709-2/fulltext#sec8](https://www.mayoclinicproceedings.org/article/S0025-6196(18)30709-2/fulltext#sec8)

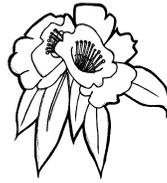
Side Effects of Medical Cannabis

Safety Profile of Medical Cannabis

- Average effective oral dosing range of plant based cannabinoids is 0.05-25mg/kg/day. When starting medical cannabis, it is a good rule of thumb to "start low and go slow" when titrating the dose up. The lowest effective dose should be consumed.
- No deaths occurred in monkeys treated acutely with delta-9-tetrahydrocannabinol (THC) with up to 9,000mg/kg.
- Acute fatal cases in humans have not been substantiated.
- Myocardial infarction may be triggered by inhaled THC due to effects on circulation in individuals who are unable to tolerate orthostatic hypotension or tachycardia.

Safety and side effects of Medical Cannabis

Further study is needed, however medical cannabis use is generally considered safe. Different strains of cannabis have different amounts of THC and other cannabinoids and side effects may vary with the different strains. The adverse effects of medical cannabis are within the range tolerated for other medications. A 2008 review found that in 23 randomized controlled trials there was no higher incidence of serious adverse events following medical cannabis use compared with control, while *non-serious adverse*



events were significantly higher in the cannabinoid groups. Dizziness was the most common non-serious adverse effect.

Some side effects of medical cannabis include, but are not limited to:

- Euphoria, altered consciousness
- Acute panic or paranoid reaction
- Altered motivation
- Orthostatic hypotension
- Headache
- Dry mouth (xerostomia)
- Dry eyes
- Lightheadedness
- Dizziness
- Drowsiness
- Fatigue
- Nausea
- Paranoid thinking
- A disconnected state (dissociation)
- Increased appetite
- Coughs
- Breathing problems, for people who smoke cannabis
- Impaired attention, memory, and psychomotor performance
- Increased heart rate (tachycardia)
- Increased risk of heart attack or stroke
- Withdrawal symptoms

Don't drive or operate machinery when using cannabis.

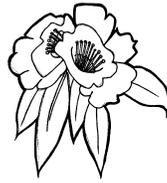
Patients should consider discontinuing medical cannabis if it is not beneficial or if they are experiencing adverse effects.

Cannabis-naïve patients demonstrate more frequent adverse effects, while regular users experience less psychotomimetic, perceptual altering, and amnesic effects. THC can broaden its own therapeutic window over time due to heterogeneous tolerance-building to various effects, with therapeutic effects more resistant to tolerance development than side effects.

The adverse effects of medical cannabis cannot and should not be equated with the effects of illicit cannabis use or cannabis abuse.

While smoking is not the preferred delivery method for medical use, even long-term heavy cannabis smokers have no increased incidence of lung cancer, although they can suffer other pulmonary symptoms suggestive of obstructive lung disease.

If you have a mental health condition, use cannabis with caution. Cannabis use might worsen manic symptoms in people who have bipolar disorder. If used frequently, cannabis



might increase the risk of depression. Cannabis use also might worsen depression symptoms. Research suggests that cannabis use increases the risk of psychosis in people who have schizophrenia.

Caution should be exercised when considering medical cannabis for individuals under the age of 25 years because the brain continues to develop until this age, and the potential for cannabis to have a lasting impact on cognitive performance is unknown.

Cannabis has a central nervous system (CNS) depressant effect. As a result, cannabis use in combination with anesthesia or other drugs used during or after surgery might cause an additive effect. Don't use cannabis two weeks before planned surgery.

Pregnancy, Breast Feeding, and Medical Cannabis

Medical cannabis should not be used during pregnancy. When cannabis is smoked or eaten, the chemicals reach the *fetus* by crossing the *placenta*. Research is limited on the harms of cannabis use during pregnancy. There are possible risks of cannabis use, including babies that are smaller at birth and *stillbirth*. Using cannabis also can be harmful to a pregnant woman's health (see above for the list of side effects). The American College of Obstetricians and Gynecologists recommends that pregnant women not use cannabis.

It is recommended that you stop using cannabis before trying to get pregnant. The effects of cannabis on the fetus may occur even during the first *trimester*.

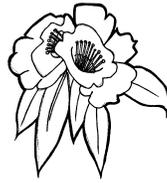
Researchers are still learning about the effects of cannabis during pregnancy. However, experts agree on the following:

- Cannabis exposure may disrupt normal brain development of a fetus.
- Babies whose mothers used cannabis during pregnancy may be smaller at birth.
- Research suggests an increased risk of stillbirth. It is not known if this is only because of cannabis use or due to use of other substances, such as cigarettes.
- Some studies suggest that using both cannabis and cigarettes during pregnancy can increase the risk of *preterm* birth.

Little is known about the effects of cannabis on breastfeeding babies. Because it is not clear how a baby may be affected by a mother's cannabis use, the American College of Obstetricians and Gynecologists recommends that women who are breastfeeding not use cannabis.

References:

Russo, Ethan B., Alice P. Mead, and Dustin Sulak. "Current Status and Future of Cannabis Research." *The Clinical Researcher* 29:2 (2015): 58-64.
<https://www.ncbi.nlm.nih.gov/pubmed/4212215>
<https://www.ncbi.nlm.nih.gov/pubmed/15159677>
<https://www.ncbi.nlm.nih.gov/pubmed/11401936>
<https://www.ncbi.nlm.nih.gov/pubmed/25101425>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2413308/>
https://www.rand.org/pubs/commercial_books/CB405.html
<https://www.ncbi.nlm.nih.gov/pubmed/18185500>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2219532/>
<https://www.ncbi.nlm.nih.gov/pubmed/15075621>
<https://www.ncbi.nlm.nih.gov/pubmed/17035389>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2720277/>
<https://healer.com/cannabiseducation/>
<https://www.ncbi.nlm.nih.gov/pubmed?term=24160757>
<https://www.mayoclinic.org/healthy-lifestyle/consumer-health/in-depth/medical-marijuana/art-20137855>
<https://www.acog.org/Patients/FAQs/Marijuana-and-Pregnancy?IsMobileSet=false>



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Drug Interactions with Medical Cannabis

Medical cannabis is metabolized primarily by the hepatic cytochrome P-450 isozymes 3A4, 2C19 and 2C9 and therefore has the potential for drug interactions via CYP450 inhibition. Make sure you check with your physician to see if there are any drug interactions you should be concerned about.

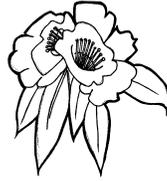
Possible drug interactions include, but are not limited to:

- **Alcohol and benzodiazepines:** Cannabis use might increase the effects of alcohol and benzodiazepines. There is an increase of sedation and central nervous system (CNS) depression.
- **Anticoagulants and anti-platelet drugs, herbs and supplements:** These types of drugs, herbs and supplements reduce blood clotting. Cannabis might change how the body processes them, possibly increasing the risk of bleeding.
- **CNS depressants:** Cannabis use in combination with CNS depressants might cause an additive sedative effect.
- **Cannabinoid-opioid interactions:** There is synergistic analgesia with greater-than-additive effects. There is not enhancement of cardiorespiratory suppression with combination treatment due to the very low density of cannabinoid receptors in brainstem cardiorespiratory centers. There are minimal pharmacokinetic interactions in humans with morphine, and none with oxycodone. Adding low dose cannabinoids to opioids widens the therapeutic window and should help reduce the need for opioid dose-escalation.
- **Anticholinergic Drugs:** These may increase the psychoactive side effects of medical cannabis.
- **Non-Steroidal Anti-Inflammatory Drugs (NSAIDs):** NSAIDs, in particular indomethacin, can antagonize the effects of medical cannabis.
- **Protease inhibitors:** Cannabis use with use of these antiviral drugs might reduce their effectiveness.
- **Selective serotonin re-uptake inhibitors (SSRIs):** Mixing cannabis with this type of antidepressant might increase the risk of mania.

References:

<https://www.ncbi.nlm.nih.gov/pubmed/14706563>
<https://www.ncbi.nlm.nih.gov/pubmed/22048225>
<https://www.ncbi.nlm.nih.gov/pubmed/29463913>
<https://www.ncbi.nlm.nih.gov/pubmed?term=24160757>
<https://www.mayoclinic.org/healthy-lifestyle/consumer-health/in-depth/medical-marijuana/art-20137855>
<https://www.acog.org/Patients/FAQs/Marijuana-and-Pregnancy?IsMobileSet=false>
[https://www.mayoclinicproceedings.org/article/S0025-6196\(18\)30709-2/fulltext#sec8](https://www.mayoclinicproceedings.org/article/S0025-6196(18)30709-2/fulltext#sec8)
<https://healer.com/cannabiseducation/>

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**Medical Cannabis Safety Sheet
Acknowledgment of Receipt**

I have discussed with Dr. Strong of Kathmandu Clinic the risks associated with medical marijuana, including known contraindications, risks of medical marijuana use to fetuses, and risks of medical marijuana use to breastfeeding infants.

By signing this form, I hereby acknowledge that I have received and read the following Medical Cannabis Safety Sheet from Dr. Strong of Kathmandu Clinic.

Date _____

(Signature of Patient or Patient's Legal Representative)

(Printed Name of Patient or Patient's Legal Representative)