

MCAS and Cannabidiol (CBD)

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Endocannabinoids are naturally-occurring substances found within the body. Endocannabinoids are found in breast milk and have also been linked as the source of the “runners high” one can get with exercise. Endocannabinoids are part of a neurotransmitter system that promotes relaxation and regulates other body functions like sleep, hunger, memory, and even aspects of the immune system. They have been touted as big players in the maintenance of homeostasis in the body.

Phytocannabinoids are very similar to endocannabinoids and come from plants. One of the more common and potent sources on the market comes from the hemp plant. Cannabidiol (known as “CBD”) is the non-psychoactive component of the cannabis plant that stimulates cannabinoid activity. Due to the stigma associated with the psychoactive tetrahydrocannabinol (THC) ingredient in marijuana, CBD oil has unjustly received a bad rap based on association by those who are not aware that the two compounds operate distinctly.

A 2015 peer-reviewed review article in *Neurotherapeutics* noted that THC can be addictive, while “cannabidiol (CBD), in contrast, appears to have low reinforcing properties with limited abuse potential” and that it appears to inhibit drug-seeking behavior.¹ However, it may take a while for American mainstream medicine to jump on board fully with the use of CBD, in-part due to its stigma but also due to the limited research studies conducted in the U.S. (thus far).

That being said, more and more peer-reviewed research articles on CBD use in other countries are coming back with some astonishing results. According to the 2015 review, “Human studies on CBD corroborate preclinical findings on its therapeutic effects on nausea, inflammation, and cerebral ischemia.”¹ Epilepsy, anxiety and depression, cardiovascular disease, endometrial inflammation, neurological conditions, and atopic dermatitis are a small example of the conditions that show promising results in CBD research.^{1,2,3,4} CBD has promising initial research into potential use for patients with addictions and opioid abuse.¹ Its use has also been associated with a reduction in allergy symptoms, and cannabis appears to have a bronchodilating effect in the asthmatic population.^{3,4} CBD appears to decrease autonomic nervous system activation¹ and it would be interesting to study its effects in a population of patients who present with MCAS and hyperadrenergic POTS.

It appears that to date there is no high-quality research evaluating CBD use in patients with MCAS or mastocytosis. Ständer and colleagues evaluated the role of cannabinoid receptors (CB1 and CB2) in human cutaneous mast cells including one patient with mastocytosis. The authors concluded that “The abundant distribution of cannabinoid receptors on skin nerve fibers and mast cells provides implications for an anti-inflammatory, anti-nociceptive action of cannabinoid receptor agonists and suggests their putatively broad therapeutic potential.”⁵

Additional sources support that CBD appears to have a therapeutic impact on mast cell activation. CBD use reduces the production of cytokines (such as interleukins released by mast cells) in human subjects.⁶ An Italian research team conducted a review of studies examining CBD and mast cell activation in 2008. They noted evidence of in vitro animal and human prevention of mast cell activation via different pathways following cannabinol exposure.³ The authors concluded that “cannabinomimetic compounds, including PEA and its congeners, act to control MC (mast cell) activation and degranulation early during the inflammatory response, thus leading to a swift resolution and preventing the development of chronic inflammatory disease.”³

Furthermore, a 2017 review of pain management in the MCAS patient by Wirz and Molderings concluded that CBD offers a promising future for analgesic therapeutic options for patients with MCAD.⁷ While the research is somewhat preliminary, it appears that CBD has tremendous neuroprotective, anti-inflammatory, antimicrobial, and antioxidant effects on the human body and offer a promising potential for patients with mast cell overactivation and allergic disease. CBD oil does not contain THC and it appears that it has been approved in all 50 U.S. states.⁸

Anecdotally in the online MCAS community it seems to be helpful for some patients, particular those with high pain levels, inflammation, and insomnia. CBD may have potential side effects, depending on the dosage. Patients have reported GI issues, tiredness, lightheadedness, and low blood pressure.¹ Patients with MCAS may need to factor these possibilities into their decision to use CBD, as they are often already prone to these symptoms. Many patients find that using CBD oil at bedtime is most optimal to prevent side effects and assist with symptoms of insomnia. However, studies have noted both sleep-inducing and wakefulness characteristics with CBD use, so it's not certain that it assists with insomnia.¹

Initial caution may be needed as CBD oil, like any new medication or supplement, could in theory cause reactivity in patients with MCAS. Long-term effects are currently unknown, and CBD is metabolized in the liver and could in theory interact with other drugs metabolized in the same area, such as pain medications and steroids.¹ CBD oil can also interact with certain medications such as tricyclic antidepressants and anti-anxiety meds, so it's another topic to discuss with one's medical team.¹

References:

1. Hurd YL, Yoon M, Manini AF, et al. Early Phase in the Development of Cannabidiol as a Treatment for Addiction: Opioid Relapse Takes Initial Center Stage. *Neurotherapeutics*. 2015;12(4):807-815. doi:10.1007/s13311-015-0373-7
2. Devinsky O, Cilio MR, Cross H, et al. Cannabidiol: pharmacology and potential therapeutic role in epilepsy and other neuropsychiatric disorders. *Epilepsia*. 2014;55(6):791-802. doi:10.1111/epi.12631
3. De Filippis D, D'Amico A, Iuvone T. Cannabinomimetic Control of Mast Cell Mediator Release: New Perspective in Chronic Inflammation. *J Neuroendocrinol*. 2008;20(s1):20-25. doi:10.1111/j.1365-2826.2008.01674.x
4. Pini A, Mannaioni G, Pellegrini-Giampietro D, et al. The role of cannabinoids in inflammatory modulation of allergic respiratory disorders, inflammatory pain and

- ischemic stroke. *Curr Drug Targets*. 2012;13(7):984-993. <http://www.ncbi.nlm.nih.gov/pubmed/22420307>. Accessed September 6, 2018.
5. Ständer S, Schmelz M, Metze D, Luger T, Rukwied R. Distribution of cannabinoid receptor 1 (CB1) and 2 (CB2) on sensory nerve fibers and adnexal structures in human skin. *J Dermatol Sci*. 2005;38(3):177-188. doi:10.1016/j.jdermsci.2005.01.007
 6. Srivastava MD, Srivastava BI, Brouhard B. Delta9 tetrahydrocannabinol and cannabidiol alter cytokine production by human immune cells. *Immunopharmacology*. 1998;40(3):179-185. <http://www.ncbi.nlm.nih.gov/pubmed/9858061>. Accessed September 6, 2018.
 7. Wirz S, Molderings GJ. A practical guide for treatment of pain in patients with systemic mast cell activation disease. *Pain Physician*. 2017;20:E849-E861.
 8. Badiner A. High on Health: CBD in the Food Supply – Reality Sandwich. http://realitysandwich.com/171680/high_health_cbd_food_supply/. Accessed September 6, 2018.