

Post-Traumatic Stress

Post-traumatic stress disorder (PTSD) is a psychiatric health response to a traumatic event. Symptoms of post-traumatic stress may include flashbacks, nightmares, and severe anxiety, as well as uncontrollable thoughts about the event. These symptoms may persist long after the triggering event and may be unresponsive to conventional therapeutic treatments. An estimated one in ten Americans suffers from post-traumatic stress.

The endogenous cannabinoid system is believed to play a "critical role ... in the etiology of PTSD in humans."¹ Researchers theorize, "Cannabis may dampen the strength or emotional impact of traumatic memories through synergistic mechanisms that might make it easier for people with PTSD to rest or sleep and to feel less anxious and less involved with flashback memories. ... Evidence is increasingly accumulating that cannabinoids might play a role in fear extinction and anti-depressive effects."² Studies show that cannabinoid administration can facilitate fear extinction memory recall in both animals and in humans.³⁻⁴

Small clinical trials assessing the use of individual cannabinoids have shown success in PTSD treatment. A 2014 Israeli trial reported that the adjunctive administration of orally absorbable THC "caused a statistically significant improvement in global symptom severity, sleep quality, frequency of nightmares, and PTSD hyperarousal symptoms" in a cohort of ten subjects.⁵ Separate trials report that the administration of nabilone, a synthetic cannabinoid, safely mitigates various symptoms of post-traumatic stress, including insomnia, chronic pain, and treatment-resistant nightmare.⁶⁻⁷

Observational trial data provides inconsistent results. A retrospective review of PTSD patients' symptoms published in 2014 in the *Journal of Psychoactive Drugs* reported a greater than 75 percent reduction CAPS (Clinician Administered Posttraumatic Scale) symptom scores following cannabis therapy.⁸ But a larger observational study of PTSD subjects reported that "those who never used marijuana had significantly lower symptom severity four months later than those who continued or started use after treatment."⁹ Similarly, a 2015 case-control study found no association between self-reported cannabis use and mental health symptom severity in a cohort of veterans with probable PTSD.¹⁰ A separate study similarly reported "no significant positive nor negative associations between baseline cannabis use and end-of-treatment PTSD symptom severity and days of primary substance use."¹¹ A 2017 literature review by the Canadian Agency for Drugs and Technologies in Health concludes, "[T]here is evidence from very low quality studies to support the efficacy of smoked marijuana, oral THC, and nabilone in reducing some symptoms of PTSD."¹² As a result, experts presently advise physicians to "use their own clinical judgment when weighing the potential risks and benefits for a particular patient."¹³ Two military veterans advocacy organizations, The American Legion and AMVETS, have expressed support for veterans' access to cannabis therapy.

As of this writing, placebo-controlled randomized clinical data assessing cannabis' impact on PTSD are underway in both the United States and Canada.¹⁴⁻¹⁵

REFERENCES

- ¹ Nuemeister et al. 2013. [Elevated brain cannabinoid CB1 receptor availability in post-traumatic stress disorder: a positron emission tomography study](#). *Molecular Psychiatry* 18: 1034-1040
- ² Passie et al. 2012. [Mitigation of post-traumatic stress symptoms by cannabis resin: A review of the clinical and neurobiological evidence](#). *Drug Testing and Analysis* 4: 649-659
- ³ Rabinak et al. 2012. [Cannabinoid facilitation of fear extinction memory recall in humans](#). *Neuropharmacology* 64: 396-402.
- ⁴ Rabinak and Phan. 2014. [Cannabinoid modulation of fear extinction brain circuits: A novel target to advance anxiety treatment](#). *Current Pharmaceutical Design* 20: 2212-2217.
- ⁵ Roitman et al. 2014. [Preliminary, open-label, pilot study of add-on oral delta-9-tetrahydrocannabinol in chronic post-traumatic stress disorder](#). *Clinical Drug Investigation* 34: 587-591.
- ⁶ Cameron et al. 2014. [Use of a synthetic cannabinoid in a correctional population for posttraumatic stress disorder-related insomnia and nightmares, chronic pain, harm reduction, and other indications: a retrospective evaluation](#). *Journal of Clinical Psychopharmacology* 34: 559-564.
- ⁷ Fraser G. 2009. [The use of a synthetic cannabinoid in the management of treatment-resistant nightmares in posttraumatic stress disorder \(PTSD\)](#). *CNS Neuroscience & Therapeutics* 15: 84-88.
- ⁸ Greer et al. 2014. [PTSD symptom reports of patients evaluated for the New Mexico Medical Cannabis Program](#). *Journal of Psychoactive Drugs* 46: 73-77.
- ⁹ Medscape. December 15, 2004. "[Medical marijuana may worsen PTSD symptoms, increase violence](#)."
- ¹⁰ Johnson et al. 2016. [Mental health symptom severity in cannabis using and non-using Veterans with probable PTSD](#). *Journal of Affective Disorders* 190: 439-442.
- ¹¹ Ruglass et al. 2017. [Impact of cannabis use on treatment outcomes among adults receiving cognitive-behavioral treatment of PTSD and substance use disorders](#). *Journal of Clinical Medicine* 7 [online ahead of print]
- ¹² Canadian Agency for Drugs and Technologies in Health. 2017. [Medical marijuana for post-traumatic stress disorder: A review of clinical effectiveness and guidelines](#).
- ¹³ Stephanie Yarnell. 2015. [The use of marijuana in post traumatic stress disorder: A review of the current literature](#). *The Primary Care Companion for CNS Disorders* 17.
- ¹⁴ Vancouver Sun. September 13, 2016. "[B.C. Scientists launch research trial into effects of marijuana on PTSD](#)."
- ¹⁵ The Leaf Online. April 27, 2016. "[PTSD cannabis study to finally move ahead](#)."