

Huntington's Disease

Huntington's Disease (HD) is an inherited degenerative brain disorder characterized by motor abnormalities and dementia produced by selective lesions in the cerebral cortex and, in particular, the striatum. There are presently no known conventional therapies available to alleviate HD symptoms or delay HD-associated striatal degeneration.

Although the administration of cannabidiol in HD patients provided little symptomatic relief compared to placebo in a single clinical trial,^[1] more recent preclinical data indicates that cannabinoids may possess potential to moderate the advancement of the disease and similar neurodegenerative disorders.^[2-3]

Specifically, experimental data published in the *Journal of Neuroscience Research* in 2011 reported that the combined administration of the plant cannabinoids THC and CBD provide neuroprotection in rat models of Huntington's Disease. Authors reported, "[O]ur data demonstrate that a [one to one] combination of THC and CBD-enriched botanical extracts protected striatal neurons against ... toxicity." By contrast, the administration of individual, selective synthetic cannabinoid agonists did not produce similarly favorable outcomes.

Investigators concluded, "In our opinion, these data provide sufficient preclinical evidence to justify a clinical evaluation of [one to one THC to CBD] cannabis-based medicine ... as a neuroprotective agent capable of delaying disease progression in patients affected by HD, a disorder that is currently poorly managed in the clinic, prompting an urgent need for clinical trials with agents showing positive results in preclinical studies."^[4]

REFERENCES

[1] Consroe et al. 1991. Controlled clinical trial of cannabidiol in Huntington's Disease. *Pharmacology, Biochemistry, and Behavior* 40: 701-708.

[2] Luvone et al. 2009. Cannabidiol: a promising drug for neurodegenerative disorders? *CNS Neuroscience & Therapeutics* 15: 65-75.

[3] Sagredo et al. 2012. Cannabinoids: Novel Medicines for the Treatment of Huntington's Disease. *Recent Patents on CNS Drug Discovery* 7: 41-48.

[4] Sagredo et al. 2011. Neuroprotective effects of phytocannabinoid-based medicines in experimental models of Huntington's disease. *Journal of Neuroscience Research* 89: 1509-1518.