

**Title:** Effect of Oral Cannabidiol on Markers of Systemic and Pulmonary Inflammation in people with Chronic Obstructive Pulmonary Disease: An open-label clinical pilot study

**Abstract:** Chronic obstructive pulmonary disease (COPD) affects 17% of Canadians aged  $\geq 40$  years and is characterized by abnormal circulating levels of systemic and lung-specific inflammatory biomarkers, which increase the risk of adverse health outcomes, including exacerbations and comorbidities (e.g., cardiovascular disease [CVD]). Effective management of inflammation in COPD remains a challenge for healthcare providers. Cannabidiol (CBD) is the main non-psychoactive phytocannabinoid of the *Cannabis sativa* plant that is receiving progressively greater attention for its potential anti-inflammatory properties. However, the effect of CBD therapy on biomarkers of inflammation in COPD is unknown and represents the focus of our research. We hypothesize that CBD therapy will decrease circulating levels of C-reactive protein (CRP), fibrinogen, TNF- $\alpha$ , interleukin (IL)-6, IL-8 and surfactant protein-D (SP-D), and increase circulating levels of Clara cell protein-16 (CC-16). Twenty-four adults (12 males, 12 females) aged  $\geq 40$  years with moderate to severe COPD will be recruited. Following a one-week baseline control (pre-CBD) period, participants will be randomized in a 1:1 ratio to receive either 300 or 600 mg/day of CBD isolate for a period of four weeks, where CBD will be given by mouth in an open-label manner. Serum concentrations of systemic inflammatory biomarkers (CRP, fibrinogen, TNF-, IL-6 and IL-8) and lung-specific inflammatory biomarkers (CC-16 and SP-D) will be measured and compared at multiple time points during the baseline and treatment periods. The anticipated results of this study will provide preliminary evidence on the efficacy of oral CBD as a novel anti-inflammatory therapy in COPD.

Emily Russell, MSc. (c)

ID: 260802261

[emily.russell@mail.mcgill.ca](mailto:emily.russell@mail.mcgill.ca)

Clinical Exercise Respiratory Physiology Laboratory (CERPL)