

# Safety and tolerability of escalating cannabinoid doses in healthy cats

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First Published March 26, 2021 Research Article

<https://doi.org/10.1177/1098612X211004215>

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## Abstract

### Objectives

The aim of this study was to determine the safety and tolerability of escalating doses of orally delivered cannabis oils predominant in cannabidiol (CBD), tetrahydrocannabinol (THC), or both CBD and THC in healthy cats.

## Methods

In this placebo-controlled, blinded study, 20 healthy adult cats were randomized to one of five treatment groups (n = 4 per group): two placebo groups (sunflower oil [SF] or medium-chain triglyceride oil [MCT]), or three plant-derived cannabinoid oil groups (CBD in MCT, THC in MCT or CBD/THC [1.5:1] in SF). Up to 11 escalating doses of each formulation were delivered orally via syringe to fasted subjects, with at least 3 days separating doses. Safety and tolerability were determined from clinical observations, complete blood counts (CBCs) and clinical chemistry. Plasma cannabinoids (CBD, THC) and metabolites (7-COOH-CBD, 11-OH-THC) were assessed.

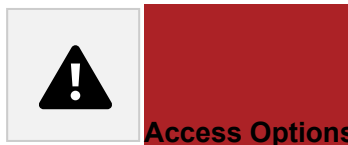
## Results

Titration to maximum doses of 30.5 mg/kg CBD (CBD oil), 41.5 mg/kg THC (THC oil) or 13.0:8.4 mg/kg CBD:THC (CBD/THC oil) was safely achieved in all subjects. All observed adverse events (AEs) were mild, transient and resolved without medical intervention. Gastrointestinal AEs were more common with formulations containing MCT. Constitutional (lethargy, hypothermia), neurologic (ataxia) and ocular (protrusion membrana nictitans) AEs were more common with oils containing THC (CBD/THC and THC oils). There were no clinically significant changes in CBC or clinical chemistry across treatment groups. Higher plasma levels of the cannabinoids and their metabolites following administration of the CBD/THC combination product are suggestive of a pharmacokinetic interaction.

## Conclusions and relevance

This is the first feline study to explore the safety and tolerability of CBD and THC, alone and in combination, in a controlled research setting. These findings will inform veterinarians of the safety profile of cannabinoids, particularly when considering the potential therapeutic use of CBD in cats or recognizing clinical signs associated with accidental exposure to THC-containing products.

**Keywords** [Cannabidiol](#), [tetrahydrocannabinol](#), [safety](#), [cannabinoid adverse effects](#), [cannabinoid administration and dosage](#)



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