

# Cannabidiol use guidelines in behavioral medicine in dogs and cats: what do we know?

## Results of the CBD working group and position statement proposition

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An increasing number of pet owners are turning to products containing cannabidiol (CBD) as a natural, safe, and over-the-counter remedy for behavioral issues<sup>1</sup>. A significant proportion of these owners believe that CBD helps reduce discomfort and undesirable behaviors in their dog or cat<sup>1,2</sup>.

CBD is a phytocannabinoid derived from hemp (*Cannabis Sativa Linn*) and is defined by both American<sup>3</sup> and European<sup>4</sup> agricultural authorities to contain less than 0.3% tetrahydrocannabinol (THC).

There are various types of CBD products derived from hemp:

*Full Spectrum*: Contains 10-25% of CBD and includes more than 100 other phytocannabinoids, terpenes, flavonoids, fatty acids, and additional phytochemicals.

*Broad Spectrum*: A THC-free distillate with 25-80% CBD concentration.

*CBD Isolate*: A pure CBD product with concentrations exceeding 95%<sup>5,6</sup>.

This diversity in available CBD products, each with its unique formulation and varying CBD concentrations, can cause inconsistencies in study results and self-reported outcomes from pet owners.

Moreover, pharmacokinetic studies of orally-administered CBD in dogs have shown significant interindividual variations<sup>7</sup>. Bioavailability can also vary based on the product's formulation: from 100% for oil, 54.7% for capsules, to 9.9% for creams<sup>8</sup>. Thus, different products with the same CBD concentration might produce varied outcomes.

The anxiolytic and calming effects of CBD primarily rely on CB1, 5-HT1A, and TRPV1 neurotransmission. The efficacy of CBD appears to have a bell-shaped curve, suggesting it's effective at moderate doses but not necessarily at very low or high doses<sup>9-11</sup>.

At the time of this position statement's drafting, only four peer-reviewed studies have examined the impact of CBD on canine behavior<sup>12-15</sup>, with none focused on cats. Notably, none of these

studies reported a significant calming or anxiolytic effect in dogs for the tested dosages, frequencies, and durations.

Furthermore, all animal and human studies consistently reported elevated levels of the enzyme alkaline phosphatase (ALP) as the most common blood parameter abnormality<sup>7</sup>. This increase might be attributed to enhanced liver activity since CBD and other cannabinoids are metabolized by and inhibit several human liver cytochrome isozymes, especially P450 16. However, it's unclear whether the rise in ALP is indicative of liver disturbances.

In light of these findings, the European Society of Veterinary Clinical Ethology would like to issue the following position statement:

There is a pressing need for standardized research on the effects of CBD on canine behavioral disorders. At present, no study demonstrates the effectiveness of CBD for a specific behavioral disorder.

Given our current understanding, the ESVCE recommend the following guidelines:

- Expect potential variations (effects and doses) based on the product's formulation.
- Favor the use of CBD isolate over full or broad spectrum products, for this previous reason.
- Adhere to local regulations and only use products derived from *Cannabis Sativa* containing less than 0.3% THC.
- A recommended starting dose is 2.5 mg/kg twice daily, potentially increasing to 10 mg/kg twice daily if needed. Limited efficacy is anticipated at both low and high dosages. These doses might vary if using any broad spectrum product.
- According to human studies, combinations with other psychotropic medication should be used with caution due to potential drug interactions for many of them (e.g. fluoxetine, opioids, tricyclic antidepressants, benzodiazepines, other CNS depressants).
- Regularly monitor liver function (a month after starting the treatment, then every 6 months). Even when using over-the-counter products, liver parameters should be checked<sup>17</sup>.
- When the pet is in a pathological state (i.e. phobic, anxious, depressive, impulsive etc.), CBD cannot replace a consultation with a veterinarian behaviourist for an assessment, diagnosis and provision of a comprehensive behaviour modification program which may include psychotropic medication.

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