

Epilepsy Fact Sheet

This information sheet is designed to provide you with a clear overview of your pet's condition. We understand that receiving a diagnosis of epilepsy can be overwhelming, and our aim is to empower you with knowledge and resources to help you navigate your healthcare journey.

Cannabidiol (CBD) and Your Pet's Epilepsy

Despite there being many established anti-seizure drugs like phenobarbital, potassium bromide, and levetiracetam, a significant number of dogs continue to experience breakthrough seizures or intolerable side effects. In this frustrating landscape, the surge of vet and pet carer interest in cannabidiol (CBD) is impossible to ignore. Driven by compelling human data and widespread marketing, we are increasingly asked about these products for epileptic pets. The available scientific information is rapidly evolving, the laws are ambiguous, and product quality varies wildly. Let's look at what we know to empower your decision-making.

Is CBD the same as marijuana?

Marijuana refers to *Cannabis sativa* plants or products that contain high concentrations (5-30%) of THC (Delta-9-tetrahydrocannabinol). THC is the primary intoxicating component of the plant responsible for the so-called 'psychoactive' properties – it's what is responsible for the 'high'. There are well over 100 chemicals in the plant (so-called phytocannabinoids), of which THC is just one. In pets, it is THC that is responsible for the well-documented signs of toxicity, including ataxia, sedation, urinary incontinence, and, in severe cases, seizures and coma. Marijuana remains a federally controlled substance in the United States, and its use in veterinary medicine is illegal. Hemp is also derived from the *Cannabis sativa* plant but contains no more than 0.3% THC on a dry weight basis. The vast majority of veterinary CBD products are derived from hemp.

Cannabidiol or CBD is a major chemical present in hemp, also one of the 100 others, which does not cause the untoward brain effects. It does not produce intoxication and is very safe. Importantly, most commercial products are not pure CBD isolates. They are often "full-spectrum" or "broad-spectrum" hemp extracts, meaning they contain CBD alongside various other plant compounds, including its relative, cannabidiolic acid (CBDA), as well as minor chemicals (or cannabinoids) like cannabichromene (CBC) and cannabigerol (CBG). This is a crucial distinction, as these compounds may influence both the effectiveness and the safety of the product, often improving it.

Can I buy any CBD product I see advertised or over-the-counter?

It is essential to recognize that the CBD market for pets is largely unregulated. Studies have repeatedly found significant inaccuracies in product labeling, with many products containing substantially more or less CBD than advertised, as well as detectable levels of THC and contaminants like heavy metals and pesticides. The FDA has not approved any CBD products for use in animals and cautions against their use due to the inability to ensure safety or effectiveness. However, safe, effective, and legitimate products are available under the guise of nutritional supplements. Your veterinarian or neurologist can talk to you more about this topic. It is imperative that you only use products derived from legal hemp that provide a certificate of analysis (COA) from an independent, accredited laboratory. This COA should confirm both the cannabinoid profile (verifying high CBD and negligible THC content) and the absence of contaminants like pesticides, heavy metals, and mycotoxins.

What do I need to know about dosing CBD?

CBD is almost always administered in an oil-based capsule or solution, which significantly enhances absorption. Furthermore, the presence of food, particularly a high-fat meal, can increase absorption and peak serum concentrations, a phenomenon well-documented in humans and likely applicable to dogs. This underscores the importance of consistent food administration. Additionally, it is known that products containing CBDA may achieve higher levels and have a potentially greater effect at a lower milligram dose.

A practical starting dose for a dog already on an anti-seizure drug is based on the dog's weight and is administered by mouth every 12 hours with a meal. It is reasonable to start at the lower end of the dosing range and consider a gradual upward titration every 2-4 weeks if seizure control is inadequate and the product is well tolerated, with careful monitoring. As yet, there are no commercially available blood tests that can be used to guide the dosing as there are for phenobarbital and potassium bromide use.

How safe is CBD?

It is critical to distinguish CBD from THC. Studies investigating THC-containing oils in dogs have demonstrated a clear and significant risk of moderate to severe adverse events, including pronounced lethargy, low body temperature, and severe wobbliness (ataxia), even at much lower doses than well-tolerated CBD. This underscores the absolute necessity of using high-quality, hemp-derived products with verified minimal THC content.

The short-term safety profile of CBD in healthy dogs is generally excellent, which is one of its most attractive features. However, several important considerations and potential side effects must be recognized.

In clinical epilepsy trials, the most frequently reported side effects when adding CBD to existing anti-seizure drug regimens have been mild to moderate sedation and ataxia. These effects are often transient, resolving within days to a couple of weeks as the dog acclimates. Gastrointestinal signs, such as vomiting or diarrhea, have also been reported but are less common. It is critical to note that

these studies involved dogs on other anti-seizure drugs, making it difficult to disentangle the effects of CBD from drug interactions or the underlying condition.

Will CBD interfere with the anti-seizure medications that my pet is already taking?

This is arguably the most important safety aspect. CBD is primarily broken down by the liver and can affect how the liver breaks down, or metabolizes, other drugs. The potential for CBD to inhibit the metabolism of phenobarbital, leading to increased levels of this anti-seizure drug and subsequent toxicity, is a major theoretical concern. Fortunately, dedicated drug-interaction studies have provided reassuring data. A recent clinical trial showed no significant effects on serum phenobarbital, zonisamide, or potassium bromide concentrations during CBD/CBDA treatment. This suggests that the interaction may not be as profound as feared, though monitoring phenobarbital levels after initiating CBD is still a prudent precaution.

How effective is CBD for dogs with epilepsy?

This is the core question for any new therapy. In human medicine, it has been shown that the use of CBD in a patient already on an anti-seizure drug led to a significant reduction in seizure frequency. This robust human information provides a strong scientific foundation for its investigation and use in veterinary patients.

The evidence for CBD in canine epilepsy is now based on some strong clinical trials, though the total number of dogs studied remains in the hundreds rather than thousands.

The first controlled trial, performed in 2019, evaluated the use of twice-daily CBD-rich hemp oil in 26 dogs with idiopathic epilepsy, which was resistant to anti-seizure drugs. The key findings were:

- 89% of dogs in the CBD group had a reduction in seizure frequency.
- The average reduction in seizure frequency was 33%

A second study in 2022 used a CBD/CBDA-rich hemp extract in 14 dogs with seizures resistant to standard anti-seizure drug use. Seizure frequency was significantly reduced during treatment. Six of the 14 dogs achieved a $\geq 50\%$ reduction in seizure activity.

The largest study to date was published in 2023. This study enrolled 51 dogs with drug-resistant idiopathic epilepsy. Dogs received CBD as an add-on therapy, and the results confirmed a modest benefit where multiple dogs again achieved a $\geq 50\%$ reduction in seizure frequency.

The collective evidence from these controlled trials in dogs, as well as those in humans, indicates that CBD has a significant antiseizure effect as an add-on therapy in patients with tough-to-control epilepsy. It is not a "magic bullet." It is unlikely to result in complete seizure freedom in most cases, but it can provide a meaningful reduction in seizure frequency for a subset of patients. It is best viewed as a valuable addition to a treatment plan rather than a replacement for conventional AEDs.

This information sheet is intended for educational purposes only and does not replace professional veterinary medical advice, diagnosis, or treatment. Always consult a qualified veterinarian regarding your pet's health.