

# POTENTIAL CLINICAL CANNABIS APPLICATIONS & IMPLEMENTATION TIPS

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The third section in this four-part series will focus on therapeutic targets within the endocannabinoid system of veterinary patients. Drawing from human and animal research, this lecture will outline “lessons-learned” from human medicine and what veterinary practitioners can and should extrapolate from our physician counterparts.

Building on the previous lecture on cannabis products, this lecture will discuss product formulations available to pet owners, pros and cons of ingested, topical, and even inhaled cannabis in animals, as well as guidance on product administration and monitoring plans.

This lecture will also include discussion on working with the pet owner to keep a product administration journal, improving diagnostic and monitoring compliance, adjusting existing clinical protocols for cannabis cases, and locating available cannabis resources.

## **Clinical applications & dosing guidelines**

As with any medication, veterinary practitioners should seek to understand the underlying mechanisms of action in order to appropriately match the product’s molecular profile to the patient’s condition. However, as research-backed information on clinical applications is only now becoming available for veterinary medicine, practitioners must lean on human-led research and/or safety studies for human products that have utilized animals as the test subjects. Even though extrapolation is required for some clinical applications, our understanding of endo- and exogenous cannabinoid mechanisms of action is growing by leaps and bounds.

One of the most disorienting characteristics of cannabis medicine for today’s medical professionals may be that cannabis products allow for (and often require) a very individualized dosing plan. Traditional research and dosing guidance is based on a single-molecule paradigm where the product under investigation influences a single system and commonly has a single action within that system. The influence of the



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endocannabinoid system throughout the body and across multiple systems makes it difficult to translate traditional research methods and dosing guidelines to cannabis administration. Additionally, cannabis products that have a complex spectrum (multiple molecules) have an even wider set of effects and complex interactions (synergy) than single-molecule products.

Cannabis dosing guidelines must incorporate an understanding of the product's molecular profile, the influence of the individual molecules on multiple body systems, the synergistic effects of and between these molecules, and the individualized response of each patient. Although specific weight-based guidelines are becoming available, the adage of “start low, go slow” is still the most relevant recommendation for starting a cannabis regimen in any patient regardless of species, condition, or patient temperament.

## *CBD/THC ratios*

Although CBD and THC are only two of the many molecules produced by the cannabis plant, these two molecules frequently make up the largest portion of any cannabis product. Products that contain higher concentrations of CBD are most effective for immune system imbalances, anxiety disorders, mild pain control, and a subset of seizure conditions.

Products that contain a more balanced ratio of CBD to THC provide stronger pain control, stronger anti-inflammatory effects, improved nervous system regulation, and greater success in a subset of behavior disorders.

## *Chemovars*

The chemical variety or “chemovars” of a cannabis plant are used to describe a plant's unique molecular profile including cannabinoid molecules, terpenes and flavonoids. Instead of than dealing with only individual molecules, knowledge of the chemovar allows practitioners to think about the synergistic (entourage) effect of *all* the molecules acting together.





Cannabis products that incorporate as much of the plant's complex molecular profile as possible provide the following:

1. Increased safety – reduction of any undesirable side effects
2. Increased therapeutic potential – increased medicinal effect
3. Unique synergistic effects

### **Importance of nursing care**

Due to the unique dosing paradigm that is emerging in cannabis medicine, the importance of pet parent counseling and education, product safety evaluation, and nursing care throughout the administration timeline is becoming increasingly obvious. Conditions such as seizures, severe pain, and palliative care in veterinary medicine already require complex nursing care and the use of cannabis in these conditions requires the same. These trends mirror those that are observed on the human side of cannabis medicine – especially in senior patients or hospice care. The successful implementation of cannabis therapy in these cases requires that the pet parents have a medical resource to answer product questions, access administration assistance, and improve the husbandry care for these animals.

Fortunately for the veterinary cannabis industry, a population of individuals skilled in nursing care and client-education is already available in our veterinary technicians. Veterinarians should work within their clinic environment to maximize the potential of their technicians for providing pet parents with medical counseling, close monitoring of patient response, and maintaining up-to-date patient histories.





## **Pet-appropriate product formulations**

Any cannabis product administered to an animal should be evaluated for pet-safe formulations. Human cannabis products can frequently contain extra additives, coloring or sweeteners as well as known toxins such as xylitol, chocolate, raisins, etc.

While inhalation and topical product formulations are not yet easily utilized in veterinary medicine, applications for these formulations may not be far off. However, in the interim, orally administered cannabis is the most common formulation available in veterinary medicine. Even within this category, options abound. Oral cannabis products are available in tinctures (liquid), pills, capsules, treats and powdered products. Each of these formulations has pros and cons for the condition being treated, ease of administration by the pet parent, and individual animal preferences.

Veterinary practitioners should also evaluate the product for cautious use in food allergies cases and the presence of contaminants.

## **Pet parent journals & diagnostic monitoring**

Veterinary health care teams should emphasize the importance of monitoring to assess both positive or negative trends in animals that are receiving a cannabis product.

Veterinarians should use their clinical judgment to protect the health and wellbeing of their patient just as with any other off-label medication or husbandry decision made by a pet parent. Practitioners may consider implementing the following monitoring protocol:

Baseline (prior to starting cannabis):

- Examination
- Screening labwork

3-4 weeks after reaching target dose

- Examination
- Screening labwork
- Drug level monitoring (as needed)



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6 or 12 months (depending on concurrent diagnostic needs)

- Examination
- Screening labwork
- Drug level monitoring (as needed)

### *Pet parent journal*

Every animal is unique and the right cannabis product and dose varies between animals. Practitioners should instruct pet parents to keep a journal of their animal's response to cannabis administration. Not only does this process involve the pet parent in their animal's health care monitoring, empower the pet parent to make health decisions for their animal, but also is essential in identification of both positive and negative clinical trends.

