

## Using CBD Oil in Pets With Malignancies – Does It Work?

Interest in CBD products has exploded in recent years thanks to groundbreaking research. Discover how CBD oil may help improve treatment in dogs with tumors and other malignancies.

Analysis by [Dr. Karen Shaw Becker](#)

### STORY AT-A-GLANCE

- All animals with a spinal column (e.g., humans, dogs and cats) have an endocannabinoid system (ECS); cannabinoids (e.g., CBD oil) function as messengers for the ECS
- Interest in CBD products has exploded in recent years thanks to research that shows cannabidiol oil has a wide range of medical benefits
- An example: CBD oil can support a multimodal treatment plan for dogs with cancer due to its ability to reduce pain and inflammation, relieve nausea, improve appetite, and enhance immune system performance
- CBD oil may also improve the effectiveness of cancer treatments such as radiation and chemotherapy
- Research is also currently underway to determine if cannabidiol has the potential to kill cancer cells directly, and whether it works better or worse with chemotherapy and/or radiation

**Editor's Note: This article is a reprint. It was originally published July 31, 2020.**

CBD is a cannabinoid containing naturally occurring chemicals that act on the brain and body. The oil is produced from the cannabis plant and has no psychoactive properties like the THC (tetrahydrocannabinol) found in marijuana. Since it's also thought to have a wider range of medical benefits than THC, interest in CBD products has exploded in recent years.

CBD is extracted from cannabis plants and processed as an isolate or as a full-spectrum oil combined with other related cannabinoids. CBD oils made with full-spectrum extracts are thought to have superior therapeutic effects vs. cannabidiol-only oil.

There are two common strains of cannabis in use today — hemp and marijuana. Hemp is a cannabis plant that contains less than 0.3 percent of THC; marijuana has more than 0.3 percent. CBD products for pets are typically sourced from hemp.

### CBD Oil Works With the Endocannabinoid System

Humans, dogs, cats, and all creatures with a spinal column have an endocannabinoid system (ECS). The ECS was discovered fairly recently and named for the *Cannabis sativa* L. plant species due to the plant's ability to dramatically affect it. According to the veterinary journal *dvm360*:

*"... the body makes its own (endo)cannabinoids as part of the nervous system, or at least as a partner to it. There are cannabinoid receptors in the brain, heart, lungs, liver, spleen, intestinal tract, muscles, bone, reproductive system and circulatory system, among others. There is some evidence to suggest that the endocannabinoid system is responsible for the 'runner's high' in people."*<sup>1</sup>

The job of the ECS is to regulate functions such as eating, sleeping, relaxing, protecting, and forgetting by maintaining homeostasis via activators and receptors located in the central nervous system and immune system.

Cannabinoids function as messengers for the ECS, and according to Bark magazine, "... their effects depend on the receptors to which they bind. This is a very specific process; a receptor will only accept the particular compound for which it exists, and is unaffected by others."<sup>2</sup>

## **CBD Oil Can Enhance Cancer Treatment Protocols**

There is growing interest among pet parents and members of the veterinary community in the cancer-fighting properties of CBD (cannabidiol) oil for dogs. At the present time, there's not enough research to say definitively that CBD oil is an effective tool against canine cancer. However, in my experience, it can absolutely enhance the benefits of a multimodal treatment plan, especially for certain types of cancer at certain stages of progression.

- **CBD decreases pain and inflammation** — Pain and inflammation go hand-in-hand with both the disease of cancer and many of the treatments used to fight it. Medications for pain can have adverse side effects, especially NSAIDs (non-steroidal anti-inflammatory drugs), which in dogs can cause significant gastrointestinal (GI) problems, liver and kidney failure, and more.

We don't yet have a complete picture of all the potential downsides of pain medications in dogs, especially older and immuno-compromised individuals. However, the power of CBD to reduce both pain and inflammation is well studied.<sup>3,4</sup>

CBD may also improve the effectiveness of standard pain medications, resulting in the need for fewer of these drugs and/or lower dosages. Research indicates that CBD is very safe in both humans and dogs, with fewer and less-severe side effects than standard pain management medications.

- **CBD relieves nausea and improves appetite** — A very common result of cancer treatment in dogs is nausea and lack of interest in eating. There's also the threat of cancer-induced cachexia, a metabolic disorder characterized by physical wasting away from loss of weight and muscle mass that is life-threatening.<sup>5</sup>

Research shows that cannabinoids improve both appetite<sup>6</sup> and nausea.<sup>7</sup> The endocannabinoid system may play a significant role in metabolic processes and microbiome health, since the gut is loaded with endocannabinoid receptors and transmitters that support both friendly bacteria in the GI tract, as well as gut-brain signaling.<sup>8</sup>

- **CBD enhances immune system performance** — Research shows that the endocannabinoid system is closely linked with the immune system.<sup>9</sup> CBD has a demonstrated ability to reduce oxidative stress,<sup>10</sup> which in turn enhances the immune system's ability to fight off pathogens without damaging healthy tissue.
- **CBD may improve the efficacy of standard cancer treatments** — A 2018 study on human cancers suggests CBD is very effective in assisting the ability of radiation therapy to shrink tumors.<sup>11</sup> So much so, in fact, that it may be possible to decrease the dose of radiation without reducing its effectiveness.

Another 2018 study showed that mice with pancreatic cancer who received CBD in addition to a chemotherapy drug had a threefold increase in survival rate over treatment with the drug alone.<sup>12</sup>

It's becoming increasingly clear that the endocannabinoid system in animals has a relationship to cancer. Portions of the peripheral and central nervous system's intricate signaling mechanism as it relates to the development of cancer appears to have a dynamic response to cannabinoids.

## We May Soon Learn CBD Also Possesses Anti-Tumor Properties

There's a 3-year study underway at the University of Guelph's Ontario Veterinary College (OVC) to explore the potential use of cannabidiol to treat canine bladder cancer — not just the symptoms, but the disease itself.

A small team of researchers is looking at what effect cannabidiol (CBD) has on cancer cells, as well as its effect on chemo and radiation therapies in dogs. By learning more about the potential anti-cancer properties of CBD, the team hopes to highlight alternative therapies to help manage the disease, especially for a common but hard-to-treat form of bladder tumor called urothelial carcinoma (UC). According to a University of Guelph news release:

*"Hocker [Prof. Sam Hocker of OVC's Department of Clinical Studies] will study the effects of CBD on bladder cancer cell lines. He hopes to learn whether the substance kills cancer cells and how it works, including whether the process involves endocannabinoid receptors occurring naturally in the body."<sup>13</sup>*

The study will focus on three different cell lines from canine bladder tumors. The researchers will apply CBD to the cell lines to determine if it can kill the cells alone (I take this to mean if it kills only cancer cells and not healthy cells) and whether it works better or worse with chemotherapy and/or radiation.<sup>14</sup>

*"The goal of my particular studies is to just evaluate whether cannabis kills cancer cells and if so, by what mechanisms is it doing that," Hocker told The Star. "So can we treat these dogs with bladder cancer with traditional chemotherapy or radiation therapy in conjunction with CBD and will it change the overall survival or will it extend that survival for this type of cancer dogs have?"<sup>15</sup>*

I'm impatiently awaiting the results of this study, as I believe we've only scratched the surface of the potential healing properties of cannabidiol — especially for animals.

## Sources and References

<sup>1</sup> [dvm360, December 18, 2019](#)

<sup>2</sup> [Bark, October 2018 Updated January 2019](#)

<sup>3</sup> [Ward, S.J. et al. British Journal of Pharmacology, 2013](#)

<sup>4</sup> [Costa, B. et al. European Journal of Pharmacology Volume 556, Issues 1–3, 5 February 2007, Pages 75-83](#)

<sup>5</sup> [Gullett, N. et al. Cancer-induced Cachexia: A Guide for the Oncologist. J Soc Integr Oncol. Fall 2009;7\(4\):155-69](#)

<sup>6</sup> [Fride, E. et al. Experimental Biology and Medicine, Vol 230, Issue 4, 2005](#)

<sup>7</sup> [Sharkey, K.A. et al. European Journal of Pharmacology Volume 722, 5 January 2014, Pages 134-146](#)

<sup>8</sup> [Storr, M.A. et al. Current Opinion in Pharmacology Volume 7, Issue 6, December 2007, Pages 575-582](#)

<sup>9</sup> [Tanasescu, R. et al. Immunobiology Volume 215, Issue 8, August 2010, Pages 588-597](#)

<sup>10</sup> [Booz, G.W. Free Radical Biology and Medicine Volume 51, Issue 5, 1 September 2011, Pages 1054-1061](#)

<sup>11</sup> [Yasmin-Karim, S. et al. Enhancing the Therapeutic Efficacy of Cancer Treatment With Canna-binoids. Front Oncol. 2018; 8: 114](#)

<sup>12</sup> [Ferro, R. et al. Oncogene 37, 6368–6382 \(2018\).](#)

<sup>13</sup> [University of Guelph News Release, October 29, 2019](#)

