

# A Growing Case for Cannabis

## How Expanded Research Is Clearing Up Cannabis Confusion

by Sarah Rumple

**“He’s one of those dogs that needs a job,”** Stacia Smith said as she described her dog Max.

Smith adopted the now-10-year-old mixed-breed dog from a shelter when he was a puppy, and he has excelled in agility ever since.

“He’s a little hard on his body,” explained Smith, who lives in Tamaqua, Pennsylvania. “Ever since he came home, he’s been an on-the-go dog.”

In late 2017, when Smith began to notice her “on-the-go dog” struggling to walk up the stairs to go to bed at night, she wanted to help him feel better. But she wanted to do it as naturally as possible. When a friend raved about a cannabis product from ElleVet Sciences that she was using on her dog, Smith decided to give it a shot with Max.

“Within two weeks, I could take him out and he could run and chase his ball and swim . . . and he’d come home and be fine,” Smith described, her voice filled with joy. “He wouldn’t have that stiffness or pained look in his eye. It was so weird to see him almost like in a second puppyhood.”

**“Organized veterinary medicine cannot call for more research and then refuse to publish research.”**

—LIZ HUGHSTON, MEd, RVT, CVT, VTS (SAIM, ECC)

## Cannabis in Veterinary Medicine: The Science

Max's story isn't uncommon. As the legal status of cannabis changes in the US and Canada and more pet owners have access to cannabis products for their own ailments, more are interested in trying to help their pets with these same products.

But ask a group of veterinarians about cannabis, and most will express their concern over the lack of scientific data surrounding its use.

"We have a ton of studies in humans and in numerous animal models about the safety, efficacy, and toxicity of CBD [cannabidiol], THC [tetrahydrocannabinol], and other phytocannabinoids," explained Stephen Cital, RVT, RLAT, SRA, VCCS, VTS-LAM (Research Anesthesia).

Two companion animal studies have been published in the past year, and other studies have recently been completed, are currently underway, or are in the planning stages. The studies have not been published by American print journals, although, as of January 2019, *JAVMA* is reviewing one study for publication.

"Organized veterinary medicine cannot call for more research and then refuse to publish research," said Liz Hughston, MEd, RVT, CVT, VTS (SAIM, ECC). "My impression is that the AVMA's [cannabis] position statement has iced a lot of the enthusiasm."

According to Hughston, the AVMA's position, which was published in a January 2018 document titled, "Cannabis: What Veterinarians Need to Know," indicated that there is no

evidence on cannabis in animals, that it is illegal for veterinarians to prescribe cannabis, and that CBD products are illegal for use in pets.

"What the report did was create fear and uncertainty among veterinary researchers, so many studies that were in progress were halted, and many more could not get approval to proceed," Hughston said.

The published clinical studies include:

- "Pharmacokinetics, Safety, and Clinical Efficacy of Cannabidiol Treatment in Osteoarthritic Dogs," a study conducted by veterinary researchers at Cornell University's College of Veterinary Medicine, used an industrial hemp-based CBD oil from ElleVet Sciences. Published in *Frontiers in Veterinary Science* in July 2018, the study concluded that

"2 mg/kg of CBD twice daily can help increase comfort and activity in dogs with OA."

- "Pharmacokinetics of Cannabidiol Administered by 3 Delivery Methods at 2 Different Dosages to Healthy Dogs" was conducted by researchers at Colorado State University's College of Veterinary Medicine and Biomedical Sciences and published in 2018 in the *Canadian Journal of Veterinary Research*. The study found higher systemic exposures with an oral CBD-infused oil formulation and that the oral CBD-infused oil provided the most favorable pharmacokinetic profile (rather than oral microencapsulated oil beads or CBD-infused transdermal cream).

Many informal studies have been completed, with various



Ten-year-old Max is running fast again after being on CBD for more than a year.

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—FRED METZGER, DVM, DABVP

cannabis companies testing the pharmacokinetics/pharmacodynamics (PK/PD) of their products.

“Companies keep repeating these same PK/PD studies with their particular products so they can say they have a study behind it,” said Cital. “It would be more helpful if they did clinical studies with certain conditions to see if CBD helps with those conditions. Yes, we know this dose works, we know this dose isn’t toxic, we know the side effects. Now, let’s determine what it can be used for.”

And a handful of companies are doing just that.

In June 2017, Fred Metzger, DVM, DABVP (Canine/Feline), medical director of AAHA-accredited Metzger Animal Hospital in State College, Pennsylvania, was approached by ElleVet Sciences and asked if he was interested in trying CBD in dogs.

“I said, ‘No, I don’t understand that. I’m not trained in that,’” said Metzger. “I’m not a homeopathic vet. I’m a regular vet. I went to Purdue. We used NSAIDs and opioids.”

ElleVet executives convinced Metzger to meet with them, and they brought a secret weapon that would prove to change his mind: Joe Wakshlag, DVM, PhD, DACVN, DACVSMR, of Cornell University’s College of Veterinary Medicine.

“Joe told me, ‘I’ve done the preliminary studies on this, and this is going to replace almost everything we’re doing in pain management. It’s going to get turned on its head with what I’m seeing in my research.’ After that, I wanted to know all about this stuff,”

Metzger recounted. “As veterinarians, we weren’t supposed to be talking about it, but I looked at the research he was doing, and he needed people to try it out. I thought, maybe I’ll get sued. Maybe I won’t. But I’m going to try this on a couple animals.”

Metzger first tried it on his head technician’s 14-year-old farm dog. The dog was so arthritic, Metzger’s technician was ready to euthanize.

“I told her, ‘I have no idea what this stuff’s going to do, but it’s not going to hurt anything. Let’s try it,’” Metzger said. “The dog’s still alive more than a year and a half later.”

The improvement in the first dog encouraged Metzger to try CBD on additional patients. In the beginning, he took the “worst cases”—those with cancer who were going to be euthanized anyway. “I would say 80%–90% of the dogs we tried it on—and we put it on some really rough cases—showed significant improvement with no side effects.”

Metzger’s team then assisted Wakshlag with initial safety studies. Since June 2017, Metzger has transitioned from skeptical to curious to believer.

“I was not a believer. Now I’m a complete believer because we’ve seen what it’s done, and we have at least 200 dogs on it,” Metzger said. “And now, we’re doing some of the original cat research, too.”

Since the Cornell study was published, Wakshlag has moved to the University of Florida, where he continues to research CBD for various conditions.

See pages 48–49 for a look at some of the ongoing trials using cannabis in animals.

ElleVet is also conducting many informal trials based on requests from companion animal veterinarians, pet owners, and even zoo veterinarians.

“We have a zoo that is looking to treat some of their geriatric mammals that have arthritis,” explained Amanda Howland, cofounder and chief branding officer of ElleVet Sciences. “And that same zoo has a jaguar that obsessively chews on his tail, and they’re really hoping the strong antianxiety component of the CBD will help.”

According to Howland, the zoo veterinarian plans to keep records and conduct video surveillance of the animals to assess the improvement. “If it goes well for them, we may look into doing more with zoos,” Howland said. “I think that’s a population that could we could really help—both for stress and for chronic pain.”

And, Howland says, ElleVet receives calls from pet owners looking to help their pets—from dogs and cats to pigs and goats—regularly.

“We had a pet owner who purchased our product because her dog was diabetic, and she had read that, in humans, diabetes is a condition that people are looking to see if hemp and CBD can help,” said Howland. “So, she bought it to give to her senior dog who was doing poorly. His blood sugar was sky high. Six weeks later, she called us and said that his blood sugar was in the normal range. It went from 700–800 to 100–200 consistently. I was amazed. This is a

SPECIES	CONDITION	TRIAL DETAILS / STATUS	RESEARCHERS	COMPANY
<b>Dogs</b>	Epilepsy	<p>This pilot study has been completed and, as of January 2019, is under review at <i>JAVMA</i>.</p> <ul style="list-style-type: none"> <li>• Double-blind, placebo-controlled study</li> <li>• 16 client-owned epileptic dogs</li> <li>• Nearly 90% had fewer seizures when receiving 5 mg/kg CBD oil daily compared to about 20% of those receiving a placebo</li> </ul>	Stephanie McGrath, DVM, MS, DACVIM (Neurology), et al.	Applied Basic Science Corporation (ABSC)
<b>Dogs</b>	Osteoarthritis	<p>This study was completed at the end of 2018 and, as of January 2019, it is under review at <i>JAAHA</i>.</p> <ul style="list-style-type: none"> <li>• Double-blind, placebo-controlled crossover study</li> <li>• Each participant received 5 mg/kg CBD or the placebo for six weeks and then the opposite for six weeks</li> </ul>	Sebastian Mejia, DVM, et al.	ABSC
<b>Dogs</b>	Epilepsy	<p>This ongoing three-year trial is using a larger sample of epileptic dogs than the original CSU study. Researchers are using the same product, but they have increased the dose.</p>	McGrath, et al.	ABSC (funded by the American Kennel Club's Canine Health Foundation)
<b>Dogs</b>	Cancer	<p>This formal study began in January 2019. Researchers are interested in learning how:</p> <ul style="list-style-type: none"> <li>• CBD may impact tumor growth</li> <li>• CBD can help make chemotherapy patients more comfortable</li> </ul>	Joe Wakshlag, DVM, PhD, DACVN, DACVSMR, and others at the University of Florida College of Veterinary Medicine	ElleVet Sciences
<b>Dogs</b>	Epilepsy	A formal study that began in January 2019.	Wakshlag and others at the University of Florida	ElleVet Sciences
<b>Dogs</b>	Postsurgical (TPLO) pain	A formal study that began in January 2019.	Wakshlag and others at the University of Florida	ElleVet Sciences
<b>Cats</b>	Pain and hyperesthesia	A formal, ongoing study that began in 2018 and will conclude in 2019.	Curtis Dewey, DVM, MS, DACVIM (Neurology), DACVS	ElleVet Sciences



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<b>Cats</b>	Anxiety and related feline lower urinary tract disease (FLUTD)	In an informal, surface field trial, Metzger wants to determine if CBD can effectively reduce feline anxiety and FLUTD.	Fred Metzger, DVM, DABVP (Canine/ Feline)	ElleVet Sciences
<b>Horses</b>	Arthritis and laminitis	Luedke and Wilhelm, cofounders of VetCS, are conducting this ongoing study to determine the absorption and half-life of CBD (the VetCS hemp paste) in horses. The study is still in its early stages, but researchers are finding that the half-life of CBD in horses seems to be about eight hours—nearly double what it is in dogs.	Chelsea Luedke, DVM, MS, and Trish Wilhelm, CVT, VCC	VetCS
<b>Horses</b>	Multiple conditions	<p>Three research proposals:</p> <ul style="list-style-type: none"> <li>• “The Detection of Cannabidiol Administration to Horses”</li> <li>• “The Presence of Tetrahydrocannabinol in Full Spectrum Cannabidiol Products Result in Positive Findings in Horses”</li> <li>• “The Chronic Administration of Cannabidiol Tincture Results in Decreased Clearance if Intravenously Administered Phenylbutazone in Horses”</li> </ul> <p>Researchers want to determine how different methods of administration and dosages of CBD can impact withdrawal times and testing results in horses. The studies will begin when funding has been procured.</p>	William Muir, DVM, PhD, MS, DACVEC, DACVA; Robert J. Silver, DVM, MS; et al.	Folium Biosciences
<b>Monkeys</b>	Chronic inflammatory bowel disease (IBD)	This formal study is currently underway. Researchers aim to assess the effect of CBD on laboratory monkeys with chronic IBD.	University of Florida	ElleVet Sciences
<b>Birds</b>	Proventricular dilatation disease (PDD)	Luedke and Wilhelm are working with eight birds suffering from PDD to determine the effect CBD has on the disease.	Luedke and Wilhelm	VetCS



Max is flying high and experiencing a “second puppyhood,” according to his owner, Stacia Smith.

“I can’t stress enough the importance of choosing a reputable product, because the flood gates are open, and there are already hundreds of products out there being labeled for animals.”

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great success story, and it shows us that diabetes is an area where we need more research.”

## Cannabis in Veterinary Medicine: The Legal Status

In the US and Canada, 2018 was a year of change for cannabis law.

### Cannabis Law in the US

The Agricultural Improvement Act of 2018 was signed into law by President Trump on December 20, 2018. Also known as the 2018 Farm Bill, this new legislation has no effect on the legal status of marijuana (those parts of the *Cannabis sativa* L. plant containing more than 0.3% THC), but it “unequivocally removes hemp and its derivatives, including cannabidiol (CBD) products, from the purview of the Controlled Substances Act,” said Keenan M. Jones, an attorney with Hoban Law Group in Denver, Colorado.

With CBD and other hemp products (containing less than 0.3% THC) no longer being controlled substances, are veterinarians able to recommend them without fear of losing their Drug Enforcement Administration (DEA) license? Not so fast, said Jones, who pointed out several factors that could affect a veterinarian’s ability to prescribe or recommend hemp products for pets:

- The 2018 Farm Bill gives each state the ability to regulate hemp on its own terms, and it does not prohibit more restrictive regulation of hemp.
- If a state decides not to regulate hemp on its own terms, it will be subject to federal regulations regarding the production and sale of hemp. These regulations have yet to be developed.
- The U.S. Food and Drug Administration also intends to modify its regulations regarding hemp.

“Hopefully, there is clarification within those regulations as to how veterinarians are permitted to advise pet owners regarding hemp products,” said Jones.

Until then, Casara Andre, DVM, cVMA, and owner of Veterinary Cannabis, Educating and Consulting, thinks veterinarians should utilize their technicians to provide harm-reduction education to pet owners.

“The technician is really well suited to provide that education, and it also gets around the DEA issue,” Andre said.

Through Veterinary Cannabis, technicians can become certified veterinary cannabis counselors (VCCs), and they “receive training in utilizing their medical background as veterinary technicians to create a cannabis-administration plan that is safe for the animal, maximizes medicinal potential, and is complementary to the veterinarian’s ongoing treatment protocols and recommendations.”

Cital and Hughston both teach the class regularly and serve as VCCs for Veterinary Cannabis, taking calls from pet owners and veterinary professionals with questions about cannabis for pets.

“It’s important that we have veterinary personnel involved in this client-patient-dispensary relationship,” said Hughston. “Someone who’s knowledgeable, who can do harm-reduction education, and who can talk to them about product selection to make sure they’re using a safe product, we need to have a veterinary person in there.”

### Cannabis Law in Canada

On October 17, 2018, Canada became the second country (after Uruguay) to legalize cannabis for nonmedical, or adult, use at the federal level.

“The Canadian government stepped away from calling it recreational use,” said Sarah Silcox, DVM, CVA, CVSMT, owner of Greenwood Veterinary House Call Services near Toronto, Canada. “They think it sounds like too much fun.”

According to Silcox, “All products that are being sold for nonmedical purposes under the Cannabis Act are still regulated, and licensed producers are obligated to follow good production practices.” Some of the regulations include:

- Producers must be able to track the origins of the product with lot numbers.
- They have to be tested for things like heavy metals, microbial contamination, any solvent residues, and pesticides.
- CBD and THC concentrations must be labeled on the packaging.

Medical marijuana has been legal in Canada since 2001. The latest iteration of Canada’s medical cannabis law was called the Access to Cannabis for Medical Purposes Regulations (ACMPR). That was repealed with the enactment of the Cannabis Act in 2018 but is now included as part of the Cannabis Regulations under the Cannabis Act. As with the ACMPR, under these regulations, medical doctors and nurse practitioners are permitted to authorize cannabis for their patients. With this medical authorization document, patients order directly from a licensed producer.

Under the Cannabis Act, no medical document is required, and anyone can purchase cannabis products through licensed retailers.

Silcox brought up some important notes:

- None of the products being sold under the Cannabis Act are approved for animal use.
- Veterinarians (as well as naturopathic doctors, dentists, and others) are not included as healthcare practitioners who are able to authorize cannabis for medical purposes.

Silcox recently founded the Canadian Association of Veterinary Cannabinoid Medicine and has worked closely with the Canadian Veterinary Medical Association advocating for amendments to the regulations surrounding Access to Cannabis for Medical Purposes Regulations that would include veterinarians and other prescribing groups.

Until veterinarians are included as healthcare practitioners who are legally able to authorize medical cannabis use, they are legally unable to prescribe or make official recommendations for cannabis. “But in our discussions with our provincial regulatory body, we’ve been advised that harm-reduction education is a thumbs up,” said Silcox.

### Cannabis in Veterinary Medicine: The Future

While the recent legal changes in the US and Canada may have muddled the veterinary cannabis waters, they’ll also lead to more research, which is music to a veterinarian’s ears. The legal changes will also increase access to cannabis for humans, and

that means more products will be available, more pet owners will use it, and more pets will be exposed to it.

“I can’t stress enough the importance of choosing a reputable product because the flood gates are open, and there are already hundreds of products out there being labeled for animals,” urged Cital. “But now, with the Farm Bill, we expect to see a bigger influx of products. . . . You have to use products that have studies or real names behind them.”

A reputable product will always have a certificate of analysis, which details the cannabinoid content and confirms potency and purity. Each batch should be tested.

“It’s like wine,” said Metzger. “It’s different year to year, so you must have the same profile. And that’s where the testing comes in—the purity. The good companies will have a certificate of analysis.”

“We want to create a foundation of science in this rapidly expanding area of treatment,” said Howland. “And, just as with the diabetes example, there are a lot of areas that need to be looked at. We’re excited to keep doing that and to help as many animals as we can.”

Smith believes the CBD has certainly helped her 10-year-old Max. “It’s just all around one of the best things I’ve come across.” ❀



Sarah Rumble is an award-winning veterinary writer and editor living in Denver. She has written several feature articles on cannabis in veterinary medicine with her arthritic, cannabis-loving schnauzer curled up by her side.