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Hemp products.

Dr. Rob Silver sits down to answer many of the questions pet parents have about cannabis and hemp products for pets

Both dogs and cats respond very well to zero-THC cannabis products in the treatment of anxiety, pain, inflammatory conditions and seizures

Pets with severe pain may benefit from products containing THC, but at the present time, it's very difficult for most pet parents to receive veterinary guidance on the use of these drug-like substances

Dr. Rob also discusses CBD delivery routes, plant extraction methods, potency inconsistencies, use-by timeframes and how to best determine the quality of a product

Today I have a very special return guest joining me to discuss the latest developments in the world of cannabis and hemp-derived products for pets — Dr. Robert Silver.

Dr. Rob is the author of "Medical Marijuana and Your Pet" and is considered the cannabis-for-pets authority in the integrative veterinary community.

He's also the chief medical officer for Rx Vitamins for Pets, and ran a thriving integrative veterinary practice in Boulder, Colorado for decades.

Safety of cannabis products for pets

I asked Dr. Rob to talk about how dog parents can be sure they're using cannabis products safely with their dogs.

He replied that a good place to start is with product selection.

"There are a lot of products in the marketplace as more and more companies are seeing an opportunity to make money," he explains.

"Some companies are launching products that may not contain what they are supposed to contain.

For instance, hemp is a form of cannabis that has very low levels of tetrahydrocannabinol (THC) — non-psychoactive levels.

Dogs, we have found, are extremely sensitive to the adverse effects of THC.

If you have a hemp product that is improperly labelled or improperly extracted so it has an excessive amount of THC in it, then you could have an adverse reaction."

Dr. Rob believes that in most situations, there's no need for THC in a product to achieve a good response in dogs.

There are products on the market now that are zero-THC and are unlikely to cause an adverse reaction.

He recommends pet parents talk to the manufacturer of the product they're considering and ask for proof that label claims match what's actually in the bottle.

Dr. Rob and his team have performed several safety studies on cannabidiol (CBD) in dogs and have found that it's quite safe at current recommend dosages.

At higher dosages, dogs can develop some diarrhea as well as mild elevations in the liver enzyme alkaline phosphatase.

Is THC necessary in cannabis products for dogs?

I've personally heard from many cannabis enthusiasts that using the **whole plant**, which includes a tiny or homeopathic amount of THC, is more therapeutic, and that cannabis-derived CBD is more effective for their veterinary patients than hemp-derived CBD.

I asked Dr. Rob for his opinion.

"Personally, I think it's kind of an urban myth that you need THC for a product to work," he responded.

"But I would like to clarify definitions here.

There is something we call isolate, which is about 99.7% pure CBD.

Studies have shown that when you're using that pharmaceutically purified CBD, you need much higher dosages of it than you would need with what they call a full-spectrum or a broad-spectrum extract.

Full-spectrum and broad-spectrum extracts contain the full spectrum of terpenes, major and minor cannabinoids and flavonoids that are naturally occurring in the plant.

Broad-spectrum is defined as having little or no THC in it, and full spectrum is defined as having hemp levels of THC.

As an herbalist, I could tell you that the whole plant works much better than any isolated part of it.

That's why we're able to get good clinical response at lower dosages with broad- or full-spectrum as compared to isolate.

I work for a company and designed a product that we sell specifically to veterinarians.

In the last four years, we've distributed 150,000 bottles of this product to veterinarians who have dispensed it to their clients to treat their dogs.

This product has zero THC in it and yet we are getting remarkable results with it, without even a homeopathically small amount of THC.

I think THC has good effects.

I think THC has good effects when combined with the CBD, but it's not necessary.

There are risks associated with THC in dogs who are sensitive to it.

I think that as long as you're using the right potency of a product, enough milligrams of CBD, you don't need THC in every case. If you're treating more severe pain, for example, with aggressive cancers, it may be appropriate to use a product with THC [versus] when treating uncomplicated pain, anxiety, or epilepsy."

Dr. Rob also points out that it's possible THC actually precipitates some epileptic seizures, but that the subject is still being studied and is not without controversy.

"I think as long as you're using low levels of THC that aren't going to adversely affect the dog, I think you're okay," he says.

"But I don't think you need it.

Based on my empirical experience with 150,000 bottles, which is a lot of clinical experience — I don't think you need it."

Veterinary conditions that respond well to CBD.

Next, I asked Dr. Rob to talk about some of the conditions CBD can treat in dogs, as well as dosing recommendations.

"We're finding that for conditions like anxiety or behavior issues, using a lower dose seems to work just fine," he explains.

"I've established a range of dosages, and I'm going to use the metric system to describe this, although we probably need to translate into pounds for your average dog owner.

But in general, we're looking at 1/10th of a milligram per kilogram of body weight at the low end and 5/10th of a milligram per kilogram of body weight at the high end.

At the low end of 0.1 to maybe 0.2 or 0.25 is a dosage that works well for anxiety and can work well for minor pain.

We've even seen it have some effectiveness with epilepsy.

My suggestion to a pet owner who's looking to introduce CBD to their dog is to start with a low dose.

Because oftentimes we find that an animal will respond really well at dosages that are much lower than we would expect them to.

This stuff isn't cheap, and in addition, there's always the potential when you're using something new in an animal that it could have some sort of an unexpected reaction.

I think it's always best to start low.

Try that for a couple of weeks, see if you're getting the response you want, and if not, then bump it up a little bit.

I'm talking about a tenth of a milligram per kilogram (mg/kg) twice daily, but we know in the safety study, they were doing 5 mg/kg, and that was safe.

There's a lot of wiggle room with dosages."

In terms of what conditions CBD can be used for in pets, anxiety is certainly one, pain is another and also inflammatory conditions such as irritable bowel syndrome (IBS), inflammatory bowel disease (IBD) and asthma.

There's also a lot of interest in using CBD for atopy (skin allergies), and Dr. Rob says it should work because there are cannabinoid receptors in dogs' skin.

However, he hasn't yet seen any clinical reports of animals with atopy responding well to CBD, so perhaps we're not using the right dosage. In theory, it should work, but we haven't seen it work yet.

CBD + THC to treat severe pain in dogs.

"CBD works for many types of pain," says Dr. Rob, "especially neuropathic pain, because CBD has an affinity for the nervous system. It crosses the blood-brain barrier. It actually works directly on the nervous tissue to reduce inflammation, to reduce pain.

It works on all kinds of pain. As you get into more severe pain, that's where we may need to bring in the THC.

This is because CBD and THC actually treat pain in two different ways. CBD treats the pain by reducing inflammation.

THC reduces the pain by actually interfering with the pain signals from nociceptive nerve endings (nerves that signal pain).

When you use both of them together, you get a much better pain response."

Of course, once you add in THC, it becomes more problematic, because more is needed than is available in hemp, which means switching to marijuana to obtain products that have enough THC to reduce the dog's pain.

This can be a slippery slope, because in a dog with no exposure to THC, if too much is given, you can wind up at the emergency animal hospital with an adverse reaction.

"That's another reason why I'm advocating not getting too involved with THC,"

Dr. Rob explains. *"Really, the use of THC is something that should be recommended by a veterinarian.*

It's a drug-like substance — THC is much more drug-like than CBD.

Veterinarians need to be involved.

They need to copy the model set by medical marijuana doctors who give advice to human patients about how to use THC, how to introduce it and how to develop tolerance so you don't have adverse reactions.

However, veterinarians are having their hands tied across the country by veterinary medical boards that are saying, 'We can't get involved in this.' This is all because when legislation was passed for medical marijuana for humans, it didn't include language to include veterinarians in the process and conversation.

That was a big oversight.

Unfortunately, veterinarians aren't very politically active, but we need to enlist the aid of dog owners.

We need to do petitions.

We need to do political action, so language can be inserted in the legislation that allows veterinarians to give advice about the use of THC. We're seeing something like that starting now in California.

Dr. Gary Richter has done a good job getting that legislation moving in the right direction.

It's not perfect but it's a good start."

Because they have nowhere else to turn, desperate dog parents are seeking advice from employees at medical or recreational marijuana dispensaries — employees who have no knowledge of veterinary medicine.

"It's crazy," Dr. Rob agrees. "Dog owners are desperate, and I don't blame them.

Their animals are very sick and many of the conventional therapies we offer aren't as effective as we'd like them to be.

They can also be toxic, disfiguring, expensive, and may not even work. Cannabis offers solutions that are non-toxic and safe and not that expensive.

I've spoken with pet owners who have actually had marijuana sent to them from dispensaries at states where it's legal, when they're in states where it's not legal, taking great risk."

CBD for cancer patients

I've always assumed cannabis or hemp-derived products would be safe for every type of human cancer, but recently I've heard that certain extracts might actually feed the disease.

I asked Dr. Rob if there are situations where hemp- or cannabis-derived products would not be indicated or could be contraindicated for certain types of cancers.

He replied that we don't have all the answers yet, but that he's seen remarkable responses with CBD used with cancer patients, even CBD alone without THC, which has been my experience as well, and certainly neither of us has seen a cancer accelerate with the use of CBD or THC.

"I think we're seeing some backlash," says Dr. Rob, "from people who are trying to latch onto something — anything, really, whether real or imagined — as a way of countering the trend toward accepting cannabis. There still are quite a few people out there who are negatively disposed towards it.

I've worked with a veterinary oncologist in California, one of the leading and largest referral centers in the country.

Clients are putting their animals on THC and CBD from dispensaries in California.

The oncologist is helping them tweak the dosages and ensuring safety. She's been getting some remarkable remissions.

But we do know that not every tumor cell is responsive to cannabis. It seems as though carcinomas are more sensitive than sarcomas, just as a general rule of thumb.

With this oncologist, I was actually able to get accurate concentrations of the product and accurate weights for the animals.

I was able to determine how many mg/kg of THC were being used in these animals who went into remission. None of them went higher than 0.85 milligrams per kilogram twice daily of THC.

Some of them went as high as 4 or 5 mg/kg twice daily of the CBD. It's not like you need a whole lot. It's not like they have to be little walking zombies in order to treat the cancer.

Lower doses can work just fine.

Tumor cells have receptors on them for THC, for endocannabinoids. That's why the THC can downregulate the growth of the cancer cell. CBD promotes increased blood levels of our own endogenous THC, which is why CBD can help with cancer as well.

The science is just beautiful as far as how cannabis works. I'm really just addicted to it.

I mean I'm addicted to the science. It's incredible."

Which CBD delivery methods are most effective?

Next, I asked Dr. Rob to talk about the difference between tinctures, capsules, powders and patches.

"Well, we know that CBD and THC are not very well absorbed orally," he replied.

"But they are absorbed well enough to have an effect."

It's just, numerically, the absorption is not that great.

Yet, we can take them orally and still get very, very good results.

If you're going to be giving it long-term, it may not matter whether you're using a product that has a rapid onset or its better absorbed or less absorbed.

Because over time, it all kind of evens out and you can get even blood levels with it.

I think the most convenient or the most popular form right now is what they call a tincture, which is an oil, an infusion.

It's liquid.

The value of that is you can actually start low with just a few drops.

As you see how much effect it has, you can add more if needed.

Some animals don't like to have liquids put in their mouth.

You can put the tincture on food, but it's best if you put it on a small amount of bribe food in between meals, just so this very expensive, poorly absorbed oil doesn't get lost in all the digesta and gets pooped out instead of properly absorbed.

The problem with patches is you have to clip some hair in order to get skin contact.

I think transdermal delivery with the pluronic lecithin organogel (PLO) rubbed into the ear flap is probably more appropriate for our hairy dogs.

A study at Colorado State University (CSU) last year looked at the absorption differences between squirting the product into the oral cavity to be absorbed through the mucosal membranes, giving it orally, and applying it transdermally.

The researchers found that transmucosal delivery had the most rapid onset and the highest blood levels, followed by oral delivery, and finally transdermal.

But when you compare blood levels over a period of several weeks, they're about the same, which means that all three administration techniques are therapeutic."

How to determine the quality of a CBD product

As CBD-for-pets manufacturers try to differentiate themselves in what's becoming a very crowded marketplace, Dr. Rob expects to see marketing campaigns that hype product bioavailability and compliance. And while a competitive marketplace is good, he advises dog owners to choose the product that fits their budget, is easiest to administer and has excellent quality control to ensure the label and contents of the bottle match.

"From there, I think over the course of a lifetime of an animal, consumers will probably try a variety of different types of formats to find what works for them best personally," says Dr. Rob.

I asked Dr. Rob how pet parents should go about making sure a product is "as advertised" through third-party validation.

"It takes time and work," he explains, *"but this is also how you vet the trustworthiness of the company."*

The consumer (pet parent) has to ask the company for a Certificate of Analysis (CoA) performed by a third-party laboratory.

The CoA will tell you what the potency is, in terms of how many milligrams per milliliter or milligrams per chew, or whatever it is.

A good CoA will also have analysis for heavy metals, for microbial contamination, for solvent residues and for pesticides.

More and more companies, as competition increases, are offering these.

They may have them posted on their website or make them available upon request. When the company doesn't have a CoA, it's a very clear signal that the consumer should shop elsewhere.

There are some products that are labelled for veterinary use, like those my own company, Rx Vitamins sells.

We sell exclusively to veterinarians.

There are two other products right now that are also sold only to vets — products that were used for the studies at CSU and Cornell.

If a veterinarian is carrying a product labelled specifically for professional use, that product most likely has met higher standards for quality control."

Plant extraction methods.

With regard to methods of extraction, it seems competing companies are using these as a selling point as well.

I asked Dr. Rob if pet parents should concern themselves with extraction techniques.

"Each method of extraction has some pros and some cons," he explains. "The higher temperature ones tend to lose some of the more delicate, volatile components in the plant.

The lower temperature ones don't yield as well but give a better distribution of these delicate elements.

Ultimately, it's not just what you're able to pull out of the plant but whether you're able to remove the solvent after you've done that.

Alcohol extracts can wind up having zero alcohol residue after you've completed the whole process.

It doesn't really matter whether you're using alcohol or CO2.

The best extraction solvents right now are liquid CO2 under pressure or alcohol extractions.

They have the highest yield and the lowest solvent residue.

Those would be the best.

Whether one is better than the other, really you need to look at the CoA to make sure that it has all the constituents of the plant that you want, the terpenes, the minor cannabinoids and the content of CBD.

It's a technical thing. I understand why consumers are confused.

It's a lot of chemistry."

The problem of product or brand inconsistency.

All CBD products come from plants, and plants change with moisture and seasonal variability.

I know that many of these plants are grown in controlled environments, but there's still uniqueness between strains, soil conditions, fertilizers, nutrient solutions and more.

I've had people tell me that a bottle of XYZ product worked for a while and then quit working.

I asked Dr. Rob if it's possible there's really that much variation within one brand or product.

"If it's poorly regulated, yes," he replied. "For my Rx Vitamins products that I get from a hemp grower in Colorado called Folium Biosciences (I also work for them as chief veterinary officer), we make sure we third-party test every batch. We make sure it stays consistent.

We've recently had a change in the color of the solution.

It's now a darker green, probably because the carrier oil, the hempseed oil, has a slightly different color to it now.

But when we look at the analysis, as far as content of CBD and the terpenes and the freedom from contamination, they're all fine.

Consumers are calling us up to ask about it, but we're not seeing any problems with the efficacy.

If another company isn't doing much testing or maybe is deriving its oil from a variety of different sources, you might see that it has problems with its efficacy being inconsistent, perhaps due to a limited shelf life, depending on how it's stored.

Maybe their measuring technique isn't as accurate as it should be. You certainly could see a variation from batch to batch in lower quality products."

How quickly do CBD products lose their potency?

When it comes to use-by dates, I asked Rob if he recommends products be used up in, say, a year?

Six months? Three months?

He explained that in the aging studies he and his team have done with hemp tinctures, it's about an 18- to 24-month window, which is pretty good.

But the product must be kept sealed, cool and out of direct light.

It's also important to handle the dropper carefully.

If it touches your dog's mouth or another surface, be sure to wipe it off before it goes back in the bottle.

"The bottle should probably be kept in the refrigerator, which will also maintain better shelf life," says Dr. Rob.

"It does deteriorate.

I have a batch in my refrigerator, a bulk batch, about a gallon of oil, that has been there since October.

I just recently had a lab reanalyze it. It went from 30 mg/ml down to 28 mg/ml in a period of nine months.

It's still pretty good, but it does show some gradual deterioration, and that was under the best of circumstances."

As for concerns about pesticides on plants:

"Pesticides need to be tested for, period," says Dr. Rob.

"We don't know if there's some drift from a neighboring field where pesticides are being applied.

That's why testing is very important.

The hemp plant is what we call a bioremediator, which means it will pull up stuff from the soil.

Actually, they used hemp plants around the Chernobyl accident to draw toxins up from the soil.

Now, you can't use the plant after that.

You have to burn it because it accumulates these toxins in it.

Certainly, plants that are grown, like let's say, in a high-selenium soil, could have high levels of selenium that could wind up being a problem.

They could be toxic as well.

That's why analyzing is really important, so you know what you've got.

But hemp and cannabis are naturally very resistant to pests and almost

everything when they're grown outside. Grown indoors, we tend to see more mold.

We see insects and things like that.

But outside, the plants are extremely hardy and usually don't need any kind of pesticide or herbicide applications.

Generally, they don't even need that much in terms of fertilization.

They're weeds.

They're very robust. They grow very well."

So, the takeaway message today is that when choosing a CBD product, dotg parents should go with a company that provides a Certificate of Analysis (CoA) and is happy to answer consumer questions.

"Exactly," agrees Dr. Rob.

"Many companies are recognizing this now and posting their CoAs on their website.

It's something that has to be done in order to reassure the consumer that what they're getting will be safe and effective."

This has been a fantastic update! I was able to ask Dr. Rob all the questions that people regularly ask me.

It's been a few years since we covered this topic in-depth, and things are changing fast.

I greatly appreciate Dr. Rob Silver giving us the benefit of his vast expertise on this subject!