



How CBD Calms Your Pet



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Summer is here and its big bangs—summer parties, fireworks, thunderstorms, and more—may have many pet owners concerned about their furry friends' stress. Hemp extract (more specifically, cannabidiol or "CBD") is one natural supplement veterinarians and pet parents alike are recommending for its calming and de-stressing effects. In this article, the Earth Buddy team breaks down how this supplement can help calm our pets.

What is Cannabidiol (CBD)?

Cannabidiol is one of over 100 natural compounds found within the cannabis plant.

Since federal approval for over-the-counter purchase in 2018¹, CBD has been used widely for its support to an array of both human and pet health conditions such as:

- Bone & Joint Discomfort
- Health inflammatory response
- Promotes relaxation
- Supports antioxidant function
- Helps maintain a normal & relaxed disposition
- Immune enhancing effects



CBD is non-intoxicating and non-addictive. These benefits, along with minimal side effects², make CBD an appealing option for wellness.

Research on CBD's Calming Effects

If you are reading this, chances are you are a go-gettin' pet parent who, prior to purchasing CBD for your pet, wants to understand more details on how exactly CBD calms your pet.

As such, you have likely done some digging online and realized that since CBD has only been approved for over-the-counter sale since 2018, a) formal studies on its supplementation are sparse, and b) of the studies out there, their language might be tricky to understand.

At Earth Buddy, we want to contribute to the understanding of CBD as a supplement, and its effects, and break down some of its most compelling literature to date.

The following are a few of what we consider the most informative reports related to CBD's benefits for soothing stress and promoting a state of calm:

Research Finding #1: Research Survey³

- Overview: 442 human participants were surveyed to determine the mood balancing effects of CBD, and to determine which strains were most effective
- Findings: Participants reported a level 8.03 (out of 10) effectiveness of CBD's relief of their stress

Research Finding #2: Scientific Study⁴

- Overview: Mice were observed with and without administration of various doses of CBD during activity tests to determine if CBD would produce mood balancing-like behavior
- Findings: Administration of 30mg of CBD contributed to relaxation-like behavior during forced swim tests, as well as exploratory behavior in open-field arena tests

Research Finding #3: Scientific Study5

- Overview: In response to the previously-mentioned mice test, 57 male participants were subjected to a simulated public speaking test (a well-tested anxiety-inducing method) to determine the effects of different doses of CBD on humans
- Findings: CBD produced mood balancing effects congruent with the results of the animal studies, with a bell-curve effect at the middle dose being more effective than a low or high dose

Research Finding #4: Scientific Study6

- Overview: Human patients diagnosed with generalized social stress underwent brain imaging with and without CBD to assess its mood balancing effects
- Findings: CBD promotes relaxation, further demonstrated in imaging by having effects on activity in limbic and paralimbic brain areas

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While a deep appreciation of these findings is warranted, we are excited to share even more to marvel at: the biology behind how CBD calms your pet. It all begins with something called the endocannabinoid system (ECS). An ECS exists in all mammals' bodies, and its whereabouts spread quite extensively from the brain and other organs to tissues, glands, and cells.

The ECS's primary function is to bring the body to a state of homeostasis. The ECS is a "great balancer," one could say.

Now, you may have noticed the name, endocannabinoid system, gives an immediate impression that this inherent body system might be related to CBD—the cannabidiol extract from the cannabis plant.

And you would be correct. Exactly how the ECS brings the body to a state of homeostasis is through communication between receptors called endocannabinoids, which tell the body what to do and how to regulate.

These endocannabinoids do not have to always be made in the body; in fact, they can be brought into the body from outside sources such as plants, in which case they would be called phytocannabinoids—one of which is CBD.

When it comes to stress and anxiety, the ECS has a specific type of receptor called CB1, which is found in the central nervous system.

When CBD is supplemented in the body, it speaks to the CB1 receptors in a way that helps adjust the brain's response to serotonin.

This adjustment actually allows for more activated serotonin receptors, which have been associated with mood balancing and relaxation effects.

RECOMMENDED PRODUCT: Sleep Support 300mg CBN:CBD

Cannabinol (CBN) is a heat activated molecule that has shown to help with restlessness and promotes a calming effect for pets. The combination of high CBN and low CBD provides a unique and abundant blend of plant molecules creating a synergistic effect that cannot be achieved by single-molecule products. CBN is mildly psychoactive, which can help pets cope with external stresses.



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- Helps maintain contentment during separation, travel, motion sickness, and tension caused by changes in your pet's daily routine
- Supports normal recovery from stress
- May reduce hyperactivity & promote relaxation
- May reduce hyperactivity & promote relaxation
- Whole Plant Hemp Extracts with a full-spectrum of CBD, CBN cannabinoids and terpenes are blended into organic MCT (medium-chain triglycerides) oil from coconuts and grapeseed
- Plants grown at high-elevation under the rocky mountain sunshine with clean water from glacial melt
- All products subjected to rigorous third-party lab testing for potency and impurities

The Entourage Effect and Other Benefits of Whole Plant Extract

Scientists and researchers have reported cases in which, when CBD was isolated from the rest of the plant's constituents, CBD was effective at alleviating certain symptoms up until a certain dose. After having reached a certain dose, no further increases in dose were reported to be effective.

However, when the scientists administered the full spectrum cannabis extract to their patients, with the same amount of CBD as prior, there was no ceiling effect to its efficacy. This phenomenon was named "the entourage effect," and is continuing to be studied by industry experts. CBD experts are looking into further benefits of keeping as much of the plant intact as possible, including plant components such as:

- Terpenes: The "essence," or smell and taste, specific to each cannabis plant. A plant's specific terpene makeup is created in response to the plant's exposure to light's spectrum and intensity. These terpenes interact with the cannabinoids within the plant, thus, including them in a supplement affects the supplement's overall support to the body.
- CBN: A cannabinoid like CBD which has been shown to have specific beneficial effects in discomfort, restlessness, brain function and health immune function.
- CBG: A cannabinoid shown to have beneficial effects in immune function, supports normal bowel function and maintains calmness.

Footnotes & Sources:

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How to Use CBD for Pets

In a time when people might be overwhelmed by the mention of “CBD,” we at Earth Buddy want to take a minute to pause and break down what cannabidiol actually is and discuss the benefits and dosing of CBD for pets for various health reasons.



CBD on the Rise

Hearing the term CBD (short for cannabidiol) almost everywhere? You are not alone. This natural product is on the rise for health and wellness in humans and pets, with sales projected to increase by 58.9% each year until 2028.¹

Currently a \$3.7 billion industry worldwide², cannabidiol is being recommended by doctors and veterinarians alike to treat an array of human and pet ailments.

Of all of those consumers, are you one who wants to stop to understand what CBD is, how we can use CBD to support pet health, and how to quantify the best dose of CBD for pets?

In this article, we aim to shed light on those important topics. Let's begin by taking a look at what CBD is:

What is CBD?

Cannabis (also known as “marijuana” or “hemp”) is a flowering plant that can grow from about 1.5 to 35 feet in height. Within its structure are 113 natural compounds known as cannabinoids—two of which you may already know:

1. CBD, short for cannabidiol
2. THC, short for tetrahydrocannabinol

While you have likely heard about the psychoactive THC which has been ingested by humankind for centuries due to its intoxicating effects, our article’s focus is on non-intoxicating, non-addictive CBD, which actually makes up about 40% of the cannabis plant’s extract.

Since 2018, CBD has been approved by the U.S. government³ to be extracted from the plant and sold as an over-the-counter supplement. Various forms have been created for pets based on the use or palatability:

- Edible chews
- Oral tinctures
- Powders
- Capsules
- Topical creams and salves

In just four years, studies⁴ are beginning to reach conclusions on the efficacy of CBD for pets as veterinarians and pet owners are observing an array of benefits first-hand.

The Body's Endocannabinoid System

A mammal's body contains many different types of receptors, each signaling different systems in the body to stay in communication, perform various functions, etc.

Similar to how there are receptors in the endocrine system which tell hormones what to do, there are endocannabinoid receptors that help regulate certain functions of the body.

In fact, the endocannabinoid receptors are part of a system all of their own in the body, called the endocannabinoid system (ECS) which has a primary function of bringing the body to a state of homeostasis.

In doing so, the ECS has been known to help influence the body's stress response, digestion, inflammation, and more. In the case of stress, for example, the body's natural ECS would kick in and aim to bring the nervous system back to balance.



RECOMMENDED PRODUCT: 1000mg Hemp Extract for Dogs



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- Whole Plant Hemp Extracts with a full spectrum of CBD, cannabinoids, and terpenes are blended into organic MCT (medium-chain triglycerides) oil from coconuts
- MCT from coconut carrier oil is an amazing source of healthy fat that provides energy slowly throughout the day and is low in calories
- Supports a low-carb or ketogenic diet
- CBD (cannabidiol), plus significant quantities of CBG (cannabigerol), CBC (cannabichromene), and many other bioactive cannabis phytomolecules
- Plants grown at high-elevation under the rocky mountain sunshine with clean water from glacial melt
- All products subjected to rigorous third-party lab testing for potency and impurities

CBD for Calming in Pets

In some instances, the body's endocannabinoid system efforts are not effective enough to bring the body out of a stress response. This is when supplementing with cannabinoids such as CBD can be very helpful.

In these cases, CBD may boost natural levels of endocannabinoids (including the feel-good "anandamide") as it decreases the body's enzymes which break down the endocannabinoids.

Additionally, CBD has been reported to affect how the brain's receptors respond to serotonin already in the system, helping promote a balanced mood and state of calm.

Other Benefits of CBD for Pets

Other health conditions CBD is helpful with are:

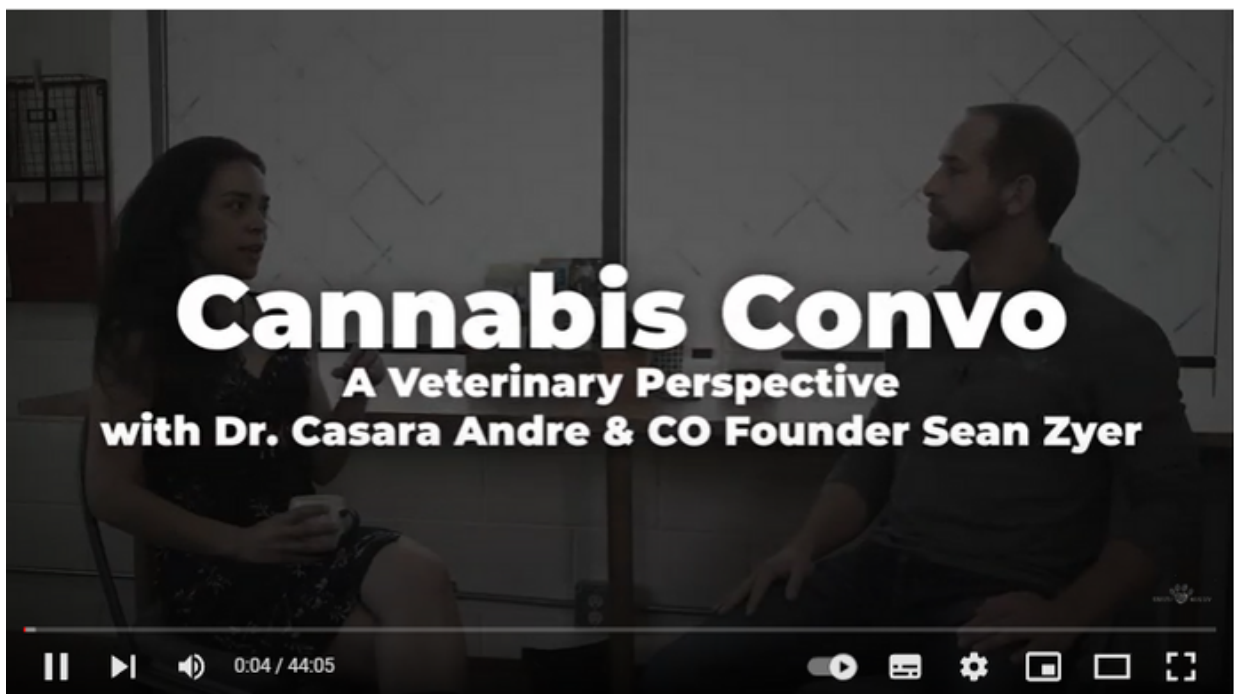
- Joint Discomfort
- Healthy inflammatory response
- Nervous system support (by interacting with neurotransmitters)
- Immune enhancing effects
- Promotes relaxation
- Promotes homeostasis



How to Use CBD for Pets

As a pet CBD supplier, one of the biggest efforts Earth Buddy wants to undertake is spreading knowledge not only on the benefits of CBD for pet wellness but also on proper use and dosing.

So our Earth Buddy co-founder, Sean Zyer, met up with esteemed veterinarian, Dr. Casara Andre to have a conversation about the best ways to use CBD for pets.



We've placed some of the key takeaways from that conversation into 3 steps to help you get started with using CBD for your pet:

#1. Start low, go slow, and keep a journal

While starting low and going slow is a smart way to begin any new supplement, Dr. Andre explains that keeping a journal is another of the most beneficial things a pet owner can do when beginning their pet on CBD.

Keeping a quick journal on a paper on your refrigerator, tracking on your family's calendar, or a simple digital note in your phone allows you to track and moderate the CBD dose and your pet's benefit level.

"Even in a low dose treat form and capsule form, we still see animals respond amazingly well. So, we should still be journaling those" states Dr. Andre.

For exact mg dosing recommendations based on your pet's weight, please view our [Pet CBD Dosing Guide](#).



#2. Bring your vet into the conversation

While some may begin supplementing CBD to their pets on their own, it is recommended that you find a veterinarian who is willing to be a part of your treatment plan.

Dr. Andre works with pet parents supplementing with CBD and takes a good look at their tracked journals. "For me to be able to see trends over time," she states, "means that I can look at that and say oh we sort of peaked at benefit here. Now, we're not seeing any better. Let's change something, let's make a difference."

#3. Begin with the right questions

What is going on with the pet?

One of the critical pieces of information to have sorted out prior to looking at a CBD product and/or meeting with a veterinarian is a focused account of what you are observing in your pet:

Is your pet diagnosed with something specific, and are there any other behaviors or ailments you are noticing?

Dr. Andre explains, “We really start with a diagnosis. So, what body systems are we trying to affect with the molecules we’re putting in the animal? What concurrent conditions are going on?”

Taking a good look at these things helps us understand the dosing and type of CBD our pet would best benefit from.

What should we focus on more, CBD dosing or CBD’s molecular makeup?

The short answer is: it depends.

In fact, this is a super important question to ask because it depends. Meaning, that if you don’t see a benefit from giving CBD to your pet (or if the benefit wears off over time), simply upping the dosage may be the wrong thing to do.

This is where a veterinarian can be very helpful, as this is a tricky one. Dr. Andre explains in the case of certain cancers and seizures, using a CBD with more of a molecular mix versus one, strong isolate tends to be more beneficial in supporting multiple body systems.

In certain cases of using a high dose isolate, Dr. Andre explains, “when we lower the dosage but add in more molecules, we have a better clinical outcome.”

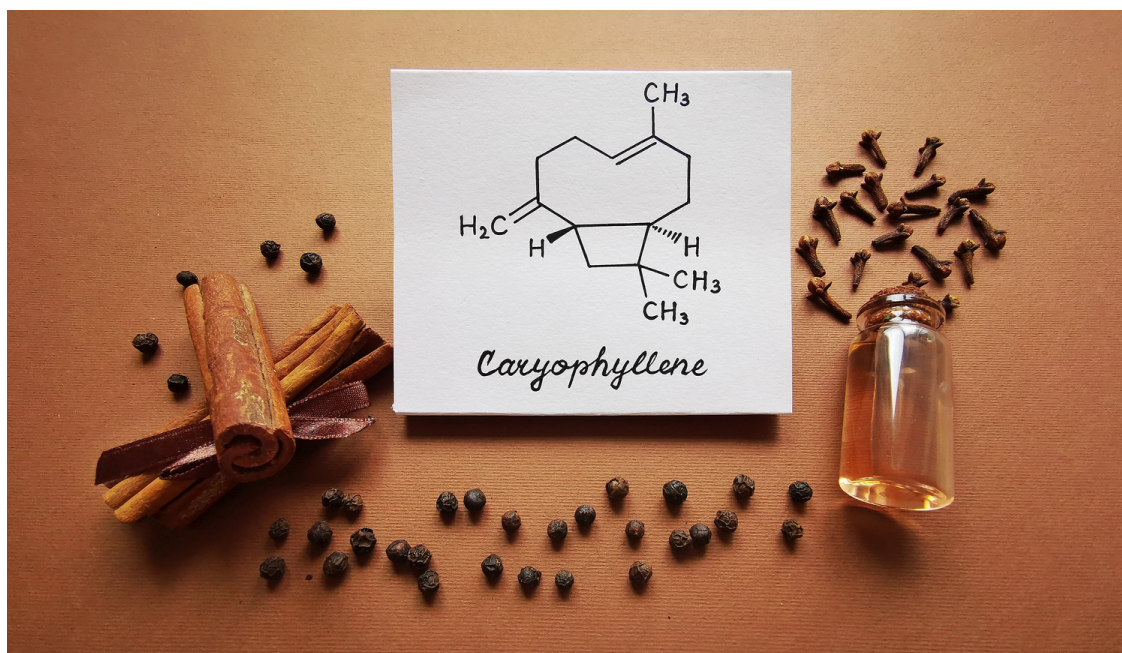
What You Can Do Next

If after reading this information you are ready to purchase CBD for your pet, a good next step is to assess if the product you are interested in is an isolate or a molecular mix.

You can ask the CBD brand for a COA (Certificate of Analysis) which will entail some of the following details:

- Cannabinoid profile (You may be able to see if the CBD is an isolate or a mix of different molecules. You may want to lean on your vet for which is recommended based on your pet's needs.)
- Safety information (You'll want to see that the product is free from heavy metals and has no pesticides.)

Cannabinoids and Terpenes for Pet Health



Where Does CBD Come From?

The Cannabis plant is an herb that can grow to reach between 1.5 to 35 feet tall. The male and female plants look mostly alike: varying shades of green, one main stem, and branches with jagged, fan-like leaves comprising up to 13 fingers.

Where the sexes differ is that the female actually flowers (the male simply buds). It is on the females' flowers that are beautiful, crystal-like coatings called "trichomes" exist. These barely visible trichomes are where the medicinal compounds are produced.

So, when you hear of THC, CBD, or any medicinal use of cannabis, it is most likely the female plant that is being referred to (the male plant's components are usually used for hemp textiles, breeding and other non-medicinal reasons).

Let's take a further look into the medicinal compounds made by the female plant.

The Components of the Cannabis Plant



Since we have already mentioned the more widely known compounds, THC and CBD, it is worth noting that these two belong to one type of medicinal compound found in the cannabis plant: cannabinoids. Yet there are over 400 distinct chemical compounds found within the cannabis plant, which fall under the following categories:

- Cannabinoids
- Terpenes
- Flavonoids
- Lipids
- Omega Fatty Acids
- Chlorophyll

Our focus for today's article will be looking at the medicinal properties of cannabinoids and terpenes. Let's begin a dive into those now.

Medicinal Compounds of the Cannabis Plant

Of the hundreds of compounds found in the cannabis plant, two overarching categories are being widely investigated for medicinal properties: cannabinoids and terpenes.

Cannabinoids:

One of the most fascinating things about cannabinoids is that they are not only made in plants—they are also made in the body (both yours and your pets!).

The cannabis plant produces around 100 different cannabinoids—some of which you may have heard of (CBD and THC), and some of which you may have never heard of before (CBN, CBG, etc.). Below are a few of the more widely seen cannabinoids at this time:

- **THCa and THC:** tetrahydrocannabinolic acid is the most widely found component of the cannabis plant. Once heated, THCa converts to the non-acidic form of the molecule widely used and known as THC. THC is known for inciting an intoxicating feeling. It has medicinal benefits for pets such as helping occasional discomfort, supporting inflammatory response and more.
- **CBDa and CBD:** cannabidiolic acid is the second most prevalent component of the cannabis plant. Like THCa, CBDa is the acidic form of the molecule which is then heated to convert to the non-acidic version—CBD—used amongst humans and pets. It is non-psychoactive, non-addictive, and has been known to support a variety of functions in the body such as immune response, inflammatory response, digestive health, stress management and more.

- CBC: cannabichromene is non-psychoactive and has been known to support digestive and nervous system function, as well as a healthy inflammatory response.
- CBN: cannabinol is mildly psychoactive and supports healthy inflammatory response, nervous system function and the body's innate ability to fight pathogens.
- CBG: cannabigerol accounts for less than 1% of the cannabis plant. It is non-psychoactive and supports healthy inflammatory response, nervous system function and the body's innate ability to fight pathogens.

RECOMMENDED PRODUCT: Sleep Support 300mg CBN:CBD

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- Helps maintain contentment during separation, travel, motion sickness, and tension caused by changes in your pet's daily routine
- Supports normal recovery from stress
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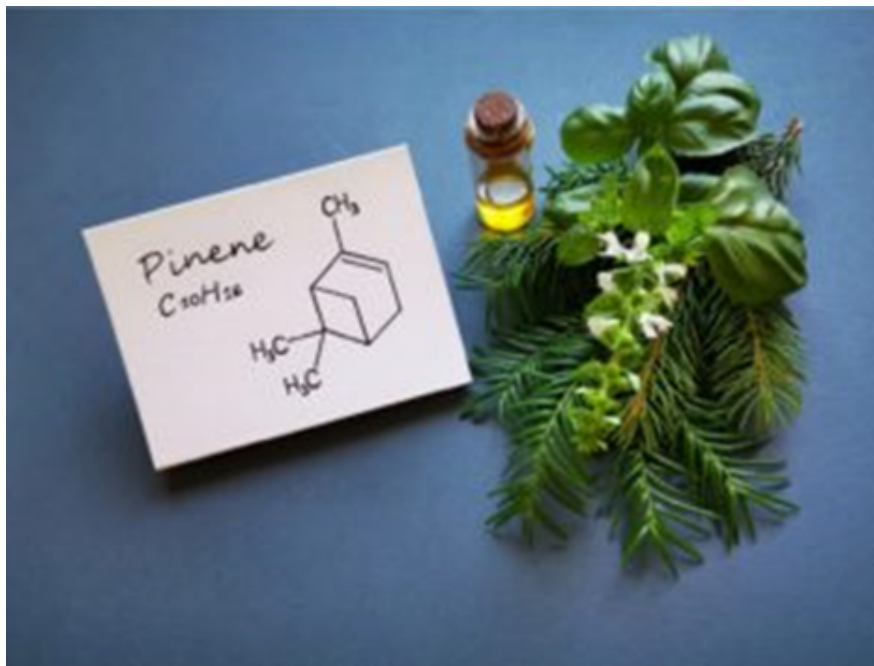
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Terpenes:

Do you appreciate the smell of rosemary, a lemon rind, or a pine tree? You can thank terpenes for that. Unlike cannabinoids, terpenes are compounds found in many plants throughout the world.

Terpenes are designed by the plant's unique exposure to light and give each plant its own distinct smell and flavor. While these traits form a protective resource for the plants, attracting pollinators and warding off unwanted visitors, terpenes have been found to host a variety of medicinal properties for pets as well. Below are a few of the terpenes found in cannabis:

- Limonene: has a citrus aroma and is found in fruit rinds and peppermint. This terpene supports the central nervous system, among other parts of the body.
- Pinene: contains a pine aroma and is also found in pine needles and rosemary. This terpene also supports the central nervous system as well as a healthy inflammatory response.



The Benefits of a Full Spectrum CBD Product for Our Pets

At this point, you may be considering the inclusion of terpenes and other cannabinoids in your pet's next CBD product.

While there is still much to discover about the components of the cannabis plant, studies have shown that the inclusion of more than one component enhances the benefits of the others.

Next time you purchase CBD, look for a breakdown of what other cannabis components are included. If you do not see any, you can ask your supplier for a Certificate of Analysis, which may list the various cannabinoids and terpenes in the product.

Footnotes & Sources:

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