



CBD

**for HEALTH &
WELLNESS**

QUESTIONS YOU SHOULD BE ASKING

RENA GREENBERG



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About the Book

After facing death at the age of 26, and surviving, Rena Greenberg has been on a mission to help people get healthy. *CBD for Health and Wellness: Questions you should be asking*, is being referred to as the CBD bible. It lets the consumer know everything they need to know about CBD, including why it may not work, and how to know what to look for when buying CBD, to get optimal results.

This book is one of a kind in that it reveals little known secrets that many CBD manufacturers would rather the consumer didn't know. If you are thinking of trying CBD to help with any ailment, malady or just for general energy and wellbeing, in this book, Rena will take you by the hand and show you what to look for.

You will learn how to use CBD properly, what to do if it's not working, the difference between the 4 types of CBD, the vital distinction between CBD and medical marijuana, and how to be certain you are getting authentic, medical grade CBD. Because CBD has skyrocketed in popularity the last few years, with little to no regulation, consumers have often felt duped.

CBD for Health and Wellness: Questions you should be asking, clears up all CBD confusion. Should you decide to incorporate this "miracle plant compound" into your healthcare regime, the wisdom and knowledge you will gain from this book is sure to set you up for greater wellbeing and success.



FDA Disclaimer

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Foreword

If you've been struggling with your health for a long time, you should know author, speaker, and coach Rena Greenberg has your back. For me, finding Rena has been a lifesaver, and I'm honored to write the foreword for her newest book.

CBD for Health & Wellness - Questions You Should Be Asking is written for people like you and me. People who need help and aren't finding it from the established medical community.

While we are told that CBD has been around for millennia, it's only within the last few years that it has entered the mainstream.

But as someone seeking help for my health condition, I noticed early on that a lot of the information about it was confusing and misleading.

And that's a big problem. There's so much misinformation, some unintentional, but much of it is nothing but a cleverly disguised marketing pitch, making it hard to distinguish fact from fiction.

The cost? Of course, our hard-earned money. But maybe also your hopes, dreams and faith in CBD as a solution for your malady. That was certainly the case for me. My personal experiences with CBD had very much dashed my hopes, before I met Rena.

Fortunately, Rena Greenberg has restored my faith in CBD as a solution for my ailment. I suffer from central nervous system pain. It started a long time ago from a round of antibiotics gone sideways. My pain has been chronic.

Over the last few years, I must have tried every CBD tincture, cream, lotion, edible that I could find. For some unknown reason, none of the products worked.



After talking with Rena, I knew immediately she was the real deal and she'd give it to me straight.

I was not disappointed. Much of what she shared with me you'll discover in this book. It's a godsend. Rena's like your own personal CBD coach.

Rena is not a doctor. But she is a super-knowledgeable, passionate, strong woman – with an unstoppable desire to help people plagued by serious health challenges.

What impressed me most about Rena is her own health background, both because of the personal health issues she's been able to overcome, and I'm blown away by all the people she has helped over the years.

In this book, my advice to you as a fellow traveler, let her take you by the hand and show you how CBD can help put an end to your struggle, or at least make it more bearable.

I guarantee, with Rena, you won't be disappointed. I've learned so much from her that has made my life better, and I believe you will, too.

Yours in good health,

Rick Duris

Health Writer & Researcher



Why I Wrote a Book About CBD

When I first started mentioning CBD to my clients, colleagues and friends — and even to physicians, I was often met with a blank stare. “What is CBD?” they would ask curiously.

Today, mentioning CBD elicits a completely different response. Most people have heard of CBD. According to Time Magazine, many people struggling with pain, depression, sleep issues, anxiety, arthritis, overweight, inflammation and diabetes, have tried it.

Many doctors I work with prescribe CBD to their patients to help reduce pain, inflammation, and even to help with disorders such as Fibromyalgia, Parkinson’s Disease and Multiple Sclerosis. In fact, we have several neurologists who refer their patients to Rena’s Organic CBD on a regular basis.



I first discovered CBD, after 30 years as a wellness consultant and educator, helping thousands of people to get healthy, with my hospital-based weight loss and stop smoking programs. At the time (around 2017), I was struggling with glaucoma. Glaucoma is a serious disease of the eye, caused by high pressures that tear down the optic nerve, creating permanent vision loss. My ophthalmologist was adamant that I would need surgery or increased medication. I wanted neither but I knew I had to do something.

My husband, Barry, suggested I try CBD. “What’s CBD”? I asked naively. He explained that it was the non-psychoactive component of the Cannabis plant. I resisted. After all, I’m personally very susceptible to addiction. Plus, I had just spent the previous three decades helping thousands of people struggling to break free from their crippling addictions. I couldn’t afford to take a risk.



With few options for managing my progressive eye disease, I reluctantly tried CBD. I was amazed at the immediate changes I noticed. First of all, I did not get high! It was true, there was no psychoactive component in CBD. I did feel more relaxed, though. My eye pressures went down dramatically, which made my eye doctor very happy.

Additionally, to my surprise, I was sleeping better and I felt my mood uplifted. It seemed that the CBD was balancing out my hormones. I wanted to learn everything I could about CBD so I could share this miraculous plant compound with my clients and my following.

I set out to research CBD. What I discovered, unfortunately, was that there was very little true data and many inaccuracies in the information that was being pumped out. I had never intended to create my own brand but that’s ultimately what happened. Not only did I want to educate people on how to find the best CBD, I needed to make sure that it was available at a price people could afford, without compromising quality.



This is how my own brand, Rena’s Organic, was born. *In fact, if you’d like to try the best CBD on the planet, I invite you to sign up for my newsletter at [RenasOrganic](#) so you can get discounts and savings off the purchase price, and get started.* Keep reading, though, because this book will show you why and how you too can benefit from taking CBD.

It breaks my heart to hear from so many people that they’ve tried CBD but didn’t get the results they had hoped for. The reality is, I know from years as a health & wellness educator, that there is no one thing that works for everyone. Still, it’s



amazing how many areas of our lives CBD can help with when we take the right CBD properly. And there's plenty of the "wrong" CBD out there right now. I'll explain more later.

The reality is, there remains so much confusion and misinformation about CBD. I felt the need to help others understand the miracles of CBD, to help educate them, and the result of that is this book.

I want people to get the same excellent results I did. But that can only happen if you are taking high quality, authentic, medical grade CBD. And that's not as easy as it should be. With no regulation, anybody can put out any CBD product they want. Products are mislabeled. Either no potencies are on the labels, or upon lab testing it often turns out that the potencies claimed on the label are not accurate. In some cases, random testing of CBD purchased from dispensaries and shops, showed that there was no CBD in the product at all! *That's right— even in dispensaries!!* There are many other issues to be aware of as well.

People want to know how to take CBD. What is CBD used for? What do you do if it doesn't work for you? In this book, I am going to answer all these questions and more, such as, are there any risks? What is the best potency/dosing? Are there any drug interactions to be concerned about? Why is organic important?

Maybe you have heard about the amazing health benefits people are getting with CBD and want to try it for yourself. Perhaps you are taking CBD now and enjoying its calming, pain-relieving, energizing effects. Or, you may be someone (I hear from these people a lot!) who tried CBD and sadly, didn't get the results you were looking for.





No matter which category you fall into, this book will offer you insights and solutions that you most likely have never heard before. Enjoy and please feel free to reach out to me anytime with comments or questions at: Rena@RenasOrganic.com

My life's work has been helping people to find health — mental, physical, emotional and spiritual health — after having survived a heart attack at the age of 26, turning my life around, and having the blessing of a second chance at life.

This experience led me to creating a wellness, weight loss and stop smoking, stress-free living program called [EasyWillpower](#), that 75+ hospitals sponsored me to share with thousands of people. My program teaches people how to connect to the innate higher wisdom of the mind, heart and body to release unproductive habits and live a healthy life.

I feel honored and grateful to have helped over 200,000 people turn their lives around. It is my deep hope, that I can help you, too, to step into the healthiest, happiest, strongest version of yourself.

CBD is a plant compound that has helped me change my life for the better and I'm delighted to share with you the surprising facts about how and why CBD can work so well, when taken properly. Please enjoy the read. Let's start with the basics.

To your health & happiness always,

Rena



Is CBD the Same as Medical Marijuana?

No, it absolutely is not. That's because marijuana, whether medical or recreational, is going to get you high. This is due to its active component being THC, which is psychoactive in nature. CBD, on the other hand comes from the same Cannabis plant family, but it does not get you high. By law, CBD, which is now legal in every state except Idaho, South Dakota and Nebraska, cannot contain any more than .3% THC. That's point 3 percent, which is not enough to get you high. But it is enough to activate the plant's cannabinoids and terpenes for therapeutic value.

Dr. Michael Moskowitz, MD, who runs the Bay Area Pain Clinic in Sausalito, California, coined CBD a "miracle." While talking about the plant from which CBD or Hemp is derived, Cannabis — the same plant that medical marijuana comes from — Dr.

Moskowitz says, "While we have known about CBD long before we discovered THC (the psychotropic) aspect of Cannabis, it was incorrectly considered an inactive cannabinoid."



Dr. Moskowitz goes on to say that, "Research from animal studies, basic pharmacology and human studies have demonstrated the following properties of CBD: anti-cancer, anti-proliferative (inhibits tumor cell growth), anti-emetic (stops nausea and vomiting), anti-inflammatory, anti-

bacterial, anti-diabetic, anti-psoriatic, anti-diarrheal, analgesic (reduce pain), bone stimulant, immunosuppressive, anti-ischemic (lowers blood pressure), anti-spasmodic, vasorelaxant, cardio-protective, neuroprotective, anti-epileptic, anti-psychotic, anxiolytic (reduces anxiety), and weight-loss promoting."



Dr. Moskowitz asserts, “For any scientist, lawmaker or physician to deny this evidence is, in a word, unscientific. On the other hand, the relatively random way this treatment is conducted is just as unscientific.”

I agree with Dr. Moskowitz wholeheartedly. The problem is, people do not know how to correctly shop for and use this “miracle healing” compound known as CBD.

Sadly, for every person who tells me of a miraculous experience with CBD removing their pain, helping them sleep or eliminating anxiety, I hear still from others: “I tried it and it didn’t work.”

That’s because, according to Margaret Haney, professor of neurobiology at Columbia University Medical Center, “Much of the CBD on the market could be ‘snake oil.’ CBD products on the market are almost completely unregulated. Products might not contain the amount of CBD that is advertised, and might even contain undesirable ingredients, such as THC (or impurities).”

Patients who take CBD without knowing what they are getting are “just throwing their money away,” Haney says.

“It’s unfortunate that there aren’t many options for consumers to ensure that the CBD they buy is safe – or even has any CBD in it,” says Dr. Esther Blessing, an associate professor of psychiatry at New York University who is studying the use of CBD for PTSD (post-traumatic stress disorder) patients.



Blessing became interested in [studying CBD](#) because of the fact, “that it doesn’t seem to have any major side effects, unlike so many pharmaceuticals.” ¹

It’s for this reason that I am passionate about getting this vital information out to people who are suffering with pain, inflammation, sleep issues, anxiety or addiction, and who could benefit from taking authentic CBD, and knowing how to use it properly.

Read on and you will learn everything you need to know about how to select top quality, therapeutic, medical grade CBD to get the relief you and your loved ones have been praying for.

Included in this book are little known secrets about CBD that make a huge difference.

I will also share vital information about what CBD is, how it works in the body, how CBD/Hemp is cultivated, the difference between Hemp and CBD and most importantly how to use CBD for the greatest benefit, including what to do if it’s not working.

Another concerning issue is the fact that many people do not know the difference between medical marijuana and CBD. This reality may put those individuals who are suffering and in pain at a disadvantage. One physician shared with me his experience with patients who had wanted to try CBD, but didn’t know where to get it, so they simply got a medical marijuana card, instead.

When you go to a dispensary, it’s likely that the product sold will have an elevated THC level, even if there is CBD in it. This doctor lamented to me what a shame it was that he saw over and over his patients who had gone to a dispensary first, end up giving up on CBD altogether, because they didn’t want to get high, especially not on a daily basis.

What they didn’t know is that true CBD does not get you high. So even though marijuana is now sold in more and more states as a medicine, a consumer does need to be aware that they will get high from ingesting Cannabis with high amounts of THC. The good news is, there is an alternative: high quality full spectrum CBD.





What Should I Look for When Buying CBD?

First, take a look at the bulk material from which your product was bottled.

It's essential that when you purchase your CBD, you not only take a look at the 3rd party analysis (COA) of the product itself, but also the bulk biomass Hemp material from which it's made.

Why?

Because, it's sad, but true, that labels for CBD products can be misleading. I used to tell my clients to simply, "read the label," for the CBD products they were thinking of purchasing. This way they could see the potency of the CBD product, whether it was manufactured in the USA, and whether it was organically grown. Also, a good CBD product will always have a QR code on the label, leading to more detailed information documenting the potency and purity of the product.

I no longer believe that reading the product label is sufficient. Now, I encourage CBD shoppers who are serious about their health and finding the best product to help them, to take their research a step further.

What's in the Bulk Biomass Hemp?

Go to the website of the CBD provider. Do they offer legitimate 3rd party testing (from an accredited laboratory), not just for the product you are



purchasing, but also third-party testing for what's known as the biomass — the bulk hemp? Do they offer metal, microbe, potency, terpene and cannabinoid testing for the master extract created from the bulk hemp?

Only by seeing this testing will you truly know the terpene levels and whether your CBD is indeed full spectrum. Full spectrum is far superior to distillate. Yet, much CBD that is actually distillate is being falsely labeled as full spectrum.



By taking that extra step to examine the COAs (3rd party testing) for the bulk Hemp and master extract, you will immediately be able to know whether your product is a distillate or a true full spectrum. I will explain more in the coming paragraphs about what this means and why all this is important.

And I will share example COAs with you so you know what to look for.

But first, let's talk about why it's essential that you know that your hemp is organically grown and some other important keys to look for.

Why is Organic Hemp so Important?

One of the intrinsic properties of the Hemp plant, is its ability to remove contaminants from the soil and absorb them. Hemp is so successful at “cleaning out” contaminants from the earth, that it was actually used to clean up after the nuclear spill in Chernobyl!

That's right. In 1986 there was an explosion at a nuclear facility in Ukraine. Much of the surrounding ground was contaminated with radioactive isotopes and left unfit for habitat or agriculture. [Hemp was used as a phytoremediator to accumulate the contaminants in the soil.](#) This project was spearheaded by the Ukrainian Academy of Agricultural Sciences and the US biotech firm, Phytotech.²



According to Robert Thomas, Chemist at Scientific Solutions, due to its deep root system, Hemp is known to absorb toxic metals that may be in the ground.

In fact, 10 years after the nuclear explosion, a team of German researchers confirmed the Chernobyl results by showing that hemp was able to extract lead, nickel, cadmium and other heavy metals from nearby contaminated land.³



What does this have to do with your CBD? Everything!

Science has shown us that if there are pesticides, heavy metals or any other toxins in the soil or environment where Hemp seeds are planted, the plant will absorb them. That may be a great boon for farmers seeking to remove toxins from the soil with phytoremediation, but it's definitely not good for anyone wanting to consume CBD for medicinal purposes.

I began to wonder, is it possible that when someone tries CBD with no success, perhaps they are consuming CBD that is derived from unclean, or worse, toxic Hemp?

To make sure that does not happen to you, it's essential to only consume CBD that you are certain is planted in organic, [chemical-free and metal-free soil](#).⁴



Does Your Supplier Know Where The Hemp They're Selling Is Grown?

Unfortunately, many CBD sellers, including at dispensaries, do not have the information to provide full transparency regarding the source of not only the product they are selling, but the Hemp seeds from which the product was cultivated.

Some honest sellers truly believe their seeds are cultivated in the United States, but according to industry insiders, often these seedlings are obviously from China.

As discussed, the environment where Hemp is cultivated is extremely important, because if the soil isn't impeccably clean and pure, the plant could ultimately contain high levels of toxic metals such as mercury or lead. This is because one



male seeds, that produce the highest quality of Resin — and therefore more high-quality CBD and other beneficial cannabinoids.

Due to the fact that the many beneficial compounds in the Hemp plant can easily be degraded or lost, cultivating high quality hemp crops is a very unique process. Hemp farming differs considerably when compared to traditional agricultural growing. One factor that is often overlooked in Hemp farming is the importance of maintaining a female field. Because male plants have many seeds, they actually negatively impact the female's ability to grow and produce.



The result? A lower quality CBD yield from the female plant. This is important because the presence of male seeds can lower the total amount of CBD in the bulk hemp from 15% to only 2-10% CBD content. When CBD manufacturers use a lower quality bulk material, it's not suitable for a full spectrum product.

You should be able to see the certificate of analysis for the bulk hemp product out of which your full spectrum CBD was derived from. If the CBD content on the bulk material is any lower than 10%, you can be certain that you do not have a full spectrum product, no matter what the label says.



In order to then produce a full spectrum CBD end product, they have to clean up the inferior Hemp with a process known as distillation. This is a refined process that is 100% avoidable when higher quality bulk Hemp is used.

Important Takeaway:

A reputable CBD supplier should be completely transparent. Documentation proving the amount of CBD present in the raw material should be available for the consumer. This would be the only way to truly determine that your product is indeed full spectrum.





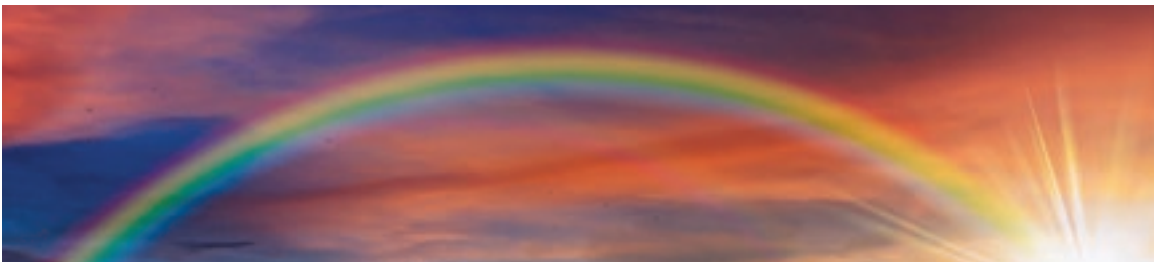
What are the Types of CBD & Can I Ignite the “Entourage Effect” in My Body?

Why is Full Spectrum CBD Important & What is the Entourage Effect?

First discovered by Israeli scientists Shimon Ben Shabat and Raphael Mechoulam, in 1998, [The Entourage Effect](#) asserts that cannabinoids and terpenes in the Hemp/Cannabis plant working together produce a far superior healing effect, than individual parts of the plant, when isolated.

According to Dr. Ethan Russo, of the International Cannabis and Cannabinoids Institute in Prague, Czechia, “The case for Cannabis synergy via the ‘entourage effect’ is currently sufficiently strong as to suggest that one molecule is unlikely to match the therapeutic potential of Cannabis itself as a phytochemical factory.”⁵

Only Full Spectrum CBD employs the Entourage Effect — meaning that all the components of the plant work together to increase the medicinal benefits of the plant. It’s important for a consumer to make sure that they are actually getting authentic full spectrum CBD, and not an isolated chemical Hemp product.



Is Full Spectrum the Whole Plant?

A full spectrum CBD is made from all aerial parts of the plant, meaning the leaves and flowers.

Suppliers who include much of the stems and seeds are utilizing parts of the plant that don't contain terpenes or cannabinoids. In a bit, we will talk about how to know if the product you are about to ingest is truly full spectrum and why this is important.

Stems in the Hemp plant are useful, but not to ingest. According to the Pennsylvania Hemp Industry Council, Hemp fiber in the stalks is the part of the plant that is used to produce fuel, clothing, building materials and paper. The stalks are not recommended for ingestion. ⁶



Again, the best CBD is full spectrum, derived from the flower and leaves (aerial parts), not the seeds and stalk. True Full Spectrum is the least refined and contains the natural beneficial properties that are in the Hemp plant.

Hemp seeds are healthy, for sure, but for the high cost of CBD, they are, again, not the most useful part of the plant, as they do not contain cannabinoids and terpenes.

Hemp seeds are technically a nut, high in omega 3 and omega 6 oils and protein. Hemp seeds indeed produce a nutritional oil, similar to olive oil and grapeseed oil, and may be a wonderful additional ingredient in your CBD product.

But be very careful that the Hemp you purchase is not strictly made from just Hemp Seed Oil. CBD tinctures are generally in a base of either MCT (medium chain triglyceride) or Hemp Seed Oil, both of which are high quality oils, high in omega 3, and a good medium to help your body absorb the CBD. MCT oil is derived from coconut oil and has multiple health benefits, including assisting with **weight control** and improving **cognitive functioning**.



What's the Difference Between CBD, THC and Hemp?

The technical term for CBD is Industrial Hemp. Hemp means that the Cannabis plant was bred to contain less than point 3 percent THC. When strains of Cannabis are cultivated with more than .3% THC, they retain the name “Cannabis.”

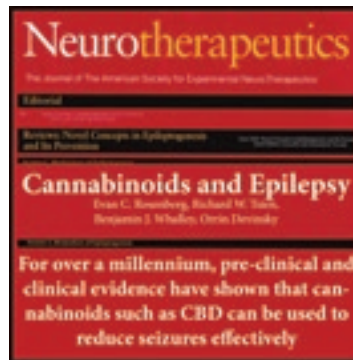
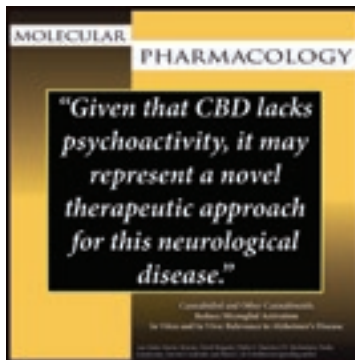
The fact is, all CBD is Hemp. However, not all Hemp is CBD (short for cannabidiol). Hemp can very well be just plain Hemp Seed Oil.

CBD contains hundreds of medicinal cannabinoids, terpenes and flavonoids, making it a much sought-after healing plant compound.

According to Molecular Diversity Preservation International (MDPI), “The most enterprising situation for hemp in the USA is CBD extraction from hemp flowers for pharmaceutical uses. CBD was first extracted from Cannabis in the late 1930s and has ever since been found to have the curative potential for disorders like inflammation and anxiety as well as a potential neuroprotective agent and an anti-oxidant. Marijuana primarily produces THC, while hemp varieties produce CBD.”⁷

THC (which stands for delta-9-tetrahydrocannabinol) is a psychoactive compound, which creates a feeling of being high or stoned.⁸

CBD, on the other hand, allows people to get all the therapeutic benefits of the plant, without getting high, and instead able to feel fully functional throughout the day. In fact, many people who take CBD on a daily basis, report having greater focus, memory and concentration.⁹



The National Academy of Sciences reported on studies showing that the non-psychoactive cannabinoid, **CBD (Cannabidiol), plays a therapeutic role as a neuroprotectant**. According to PNAS, “This data suggests that the cannabinoid, cannabidiol (CBD), may be a potentially useful therapeutic agent for the treatment of oxidative neurological disorders.” The report stated that CBD is a potent antioxidant that protects neurons.¹⁰



When the consumer hears the word, Hemp, they often think that word is interchangeable with CBD. In some cases, they are correct. Unfortunately, though, much of the time the word Hemp is used, it is falsely implying CBD, when in reality it is nothing more than Hemp Seed Oil, derived only from the seeds of the Hemp plant, containing no therapeutic cannabinoids and no beneficial terpenes.

As discussed earlier, Hemp Seed Oil is a healthy oil, no doubt. However, healthier oils like flax seed oil have higher levels of omega 3 oil, whereas Hemp seed oil contains a balance of both omega-3 and omega-6, with higher levels of omega-6. Though both fats are necessary, according to the [American Journal of Clinical Nutrition](#), the typical American diet is much too high in Omega 6 fat already, and eating more omega-3 fats is encouraged. ¹¹

The point is that Hemp Seeds and Hemp Seed Oil are high in protein and healthy fat. However, they are not medicinal like CBD is, and it's very misleading to the consumer who is seeking CBD and is instead confronted with "Hemp" products touting medical claims.

Can You Buy CBD on Amazon?

For example, what many consumers don't realize is that CBD is prohibited on Amazon. Anyone selling Hemp on Amazon, has testified to Amazon that there are no cannabinoids (the medicinal part of the plant) or CBD in their products. That's required by Amazon due to silly Federal regulations that hopefully will be changed soon. Regardless, this is the current situation. No CBD is allowed to be sold on Amazon.

Yet, consumers don't know this. They trust Amazon so they search for CBD on the Amazon website. Many products pop up when you search for CBD Oil on Amazon. Unless a CBD product has snuck past the Amazon review team, you will notice that the products are all labeled as Hemp. Therefore, you have no way of knowing whether the product contains any CBD at all, or whether it's just plain Hemp Seed Oil.



One way to "tell" would be price. Anything ridiculously cheap, like \$19.99 or \$29.99 is unlikely to contain any real CBD. Ironically, for Hemp Seed Oil, with no CBD, those prices are actually high and a complete rip-off! A one once bottle of Hemp Seed Oil should cost no more than \$5, as the market value of just plain Hemp Seed Oil (with no CBD) is about \$1.75 per oz or less (retail).



And if the product did contain authentic CBD, it could not sell for so low a price because it costs a lot to manufacture authentic medical grade organically grown CBD.

Either way, whether you are getting only Hemp Seed Oil or some kind of watered-down CBD, you are most likely not getting a quality product. But if the product is labeled as Hemp Seed Oil, with no potency (Hemp Seeds do not contain a potency, the way CBD does), at least the seller is a more honest manufacturer and you may still benefit from the product, depending on what you are using it for.

What is Delta-8?

When it comes to CBD, like most every other consumable that is being marketed to us by the food and supplement industry, we are constantly being inundated with “new and improved.” But sometimes the tried and true is worth sticking to.

Right now a lot of CBD manufacturers are hyping the “new and superior Delta 8 Tetrahydrocannabinol” for all kinds of maladies.

The reality is, unlike CBD, Delta 8 is a form of THC.

When isolated, it absolutely will get you high. If you are looking to get stoned, then that’s your product, because it is indeed a form of marijuana. So even though Delta-8 THC is often being marketed and sold alongside CBD (since technically it is derived from Hemp), it’s important to realize that it is not CBD.

Consumers need to know what they are getting. Dr. Varun Vohra, Director of the Michigan Poison Center at Wayne State University, is a board-certified toxicologist. He warns of children who have gotten into gummies or edibles containing delta-8, and ended up in the hospital, with symptoms such as difficulty breathing, rapid heart rate, and uncoordinated movements.

CBD is a medicinal compound in the Hemp plant (from the Cannabis plant family) which does not get you high. Full spectrum CBD does contain trace amounts of both Delta 8 and Delta 9 THC, in addition to an array of other medicinal cannabinoids, terpenes and flavonoids, which is what creates the Entourage Effect (activating your body’s own endocannabinoid system to return all bodily systems to homeostasis).

The wonderful thing about CBD is that you can take it daily and it will not alter you, unlike THC in medical or recreational marijuana, which does have a psychoactive effect. Research on CBD’s incredible ability to improve so many areas of health, is mounting.



Where is Your CBD Grown?

Where the CBD is grown is a very important factor.

The Colorado Department of Agriculture has a well-established program with clearly defined rules and regulations for growing Hemp. In other words, it's not the wild-wild west scenario.

If a farmer wants to grow Hemp in Colorado, they must follow strict guidelines. Particularly if the product label or website claims organically grown, or boasts a USDA organic certificate. Knowing the CBD originates from the clean air state of Colorado can help to reassure the customer that they are getting a higher quality product.

Oregon benefits from a Department of Agriculture that is supportive and innovative. Oregon also has a strong Hemp research department at Oregon State University. The downside of Hemp grown in Oregon is that it is a high humidity state, as is Florida and Washington. Hemp is very sensitive to mold, and this can be a huge problem.

One of the benefits of Colorado for cultivating CBD is that it has very low humidity. CBD that is grown in Washington, Oregon, Kentucky and even Florida, necessitates a concern for the propensity for mold. Often this mold is visible on the bulk Hemp material.

The concerning element here is that it's possible for the end CBD product to test mold-free, and yet the bulk material used to distill the CBD extraction, still could have contained mold.



As a health-conscious consumer, you have every right to ask your CBD supplier to display testing showing that the bulk Hemp material contained no mold.

Another benefit of only ingesting CBD grown in Colorado, is the fact that the clean-air state of Colorado is not a huge agriculture state. Surprisingly, the reason why this is beneficial is that there are few neighboring farms that could potentially be using pesticides. When Hemp is grown in states where farming is a prominent industry, even if the Hemp farm itself is organic, it's possible that pesticides from close-by farms could blow over, causing contamination.

Pesticide Drifting is the term used by the EPA (Environmental Protection Agency) to define the tendency of pesticide dust or droplets to move through the air to



any site other than the one it was intended for. This unwanted occurrence can negatively impact the environment, people’s health and be damaging to area crops.

One of the challenges with both the Hemp and Cannabis plant, is the plant’s tendency to want to draw contaminants such as heavy metals and pesticides from the soil (as mentioned earlier).

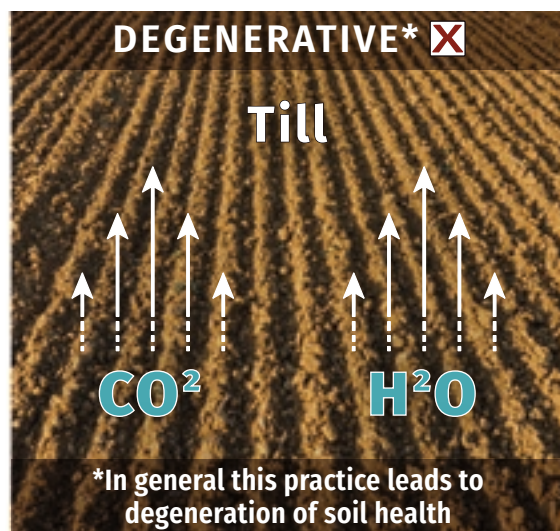
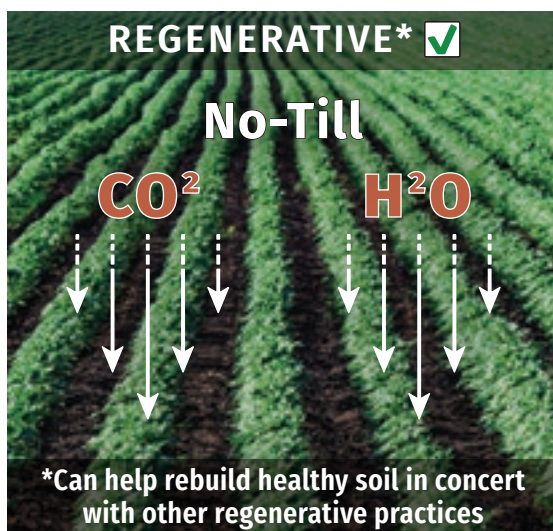
It’s essential that measures are taken to maintain healthy plants and soil. The first step is to have the soil itself tested prior to any growing, to make sure that it is free from toxic pesticides and metals.

How is the Soil Cultivated?

Many farmers regularly plow their fields using machinery, in order to eliminate weeds and prepare the soil for planting. The problem with this practice is that it erodes the health of the soil. High quality soil is rich in valuable microorganisms. When tilling a field and turning the soil over, these beneficial living microorganisms are most likely disturbed and destroyed. By avoiding tilling the fields altogether, the soil is able to retain its rich biodiversity.

As an alternative to plowing the fields, a small number of health-conscious farmers regenerate the soil by using compost and other herbs. It’s also possible to create a pollination environment that attracts beneficial insects to maintain soil that is rich in nutrients. These facts about how the soil is cultivated may be available on a CBD supplier’s website. *A consumer has every right to ask for this information as all these factors may play a role in the quality of the CBD.*

I am very proud of the fact that all Rena’s Organic CBD is grown and cultivated on organic soil that is manually maintained. Though this is much more labor



intensive, it is absolutely worth it, because our soil is healthy and rich in beneficial nutrients, producing a much higher quality CBD. I believe these are very important steps in creating the best CBD end product.

Growing On USDA Organic Certified Land

Since therapeutic benefit is the primary reason most Americans consume CBD, it would be counter-productive to ingest products that could potentially carry dangerous pesticide residue. Additionally, organic farming is safer and more sustainable for both people and the planet.

A legitimate question for any consumer is, “Is the CBD I’m about to purchase, grown on USDA certified organic land? Especially since we already know that Hemp is a very porous plant.

The Hemp/Cannabis plant pulls nutrients from the soil and environment, but, if harmful substances are present in the ground, Hemp has the tendency to absorb these as well.

Organic certified Hemp offers the reassurance that there are no pesticides or metals in the earth, whether from neighboring farms or from previous crops. Manufacturing with only organically certified CBD show a greater level of commitment to making available only top-notch CBD health products.



A USDA certified organic seal (or at least knowing that your CBD is organically grown) demonstrates a commitment to providing the highest quality products with superior health benefits.

What Part of the Plant is in Your Final CBD Product?

Even if you are getting a full spectrum product, a consumer needs to be aware that the most cannabinoid rich elements of the plant are the flowers and leaves (aerial parts). As you learned earlier, there is no CBD in the stalks and seeds.

Many Hemp farmers use machinery to harvest the Hemp. The result is that the stalks are automatically included in the harvest, though they are void of CBD.

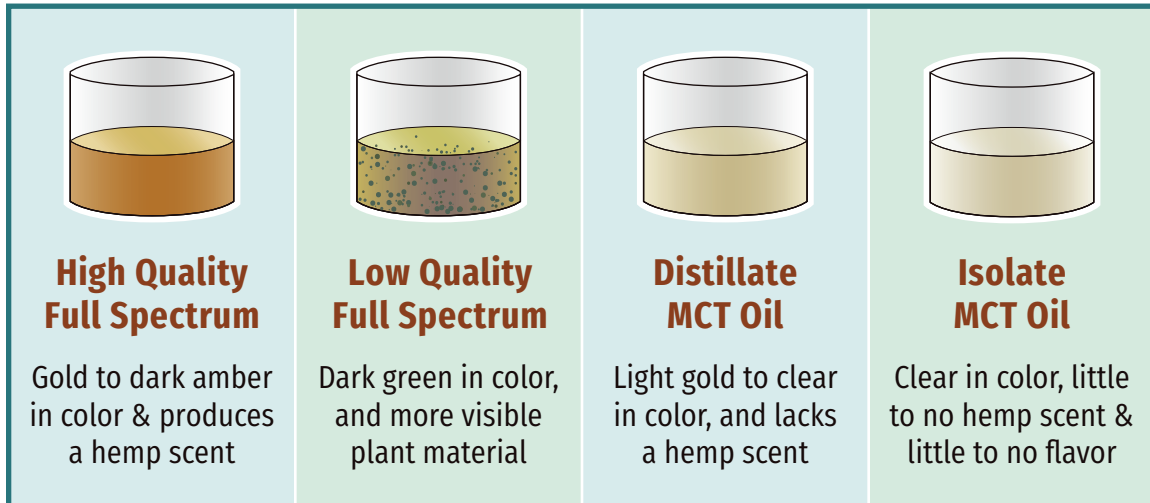
What’s best is for the CBD to have been minimally processed and thus harvested by hand, not with equipment that potentially damages the raw material or causes nutrient loss.



Types of CBD

<p>BEST Full Spectrum Hemp Extract</p>	<p>Contains both major and minor cannabinoids, as well as phytonutrients from the plant and terpenes, which are found in the essential oils of the plant. This is by far the best CBD. It's the least processed (depending on the method of extraction) and encourages the <i>Entourage Effect</i>, meaning the whole plant works together to produce maximum therapeutic benefits.</p>
<p>OK CBD Distillate</p>	<p>Though a distillate may contain more CBD than the full spectrum, do not be deceived. Most of the beneficial phytonutrients and terpenes have been stripped from the plant, due to the high heat process, reducing its medicinal benefit. Distillate is necessary when a lower quality bulk hemp material was used, as it's the only way to increase the amount of CBD. That's because lower quality bulk hemp often contains only 2-5% CBD, instead of the 12-17% CBD present in high quality bulk hemp.</p> <p>The only way to know if your product is a distillate or a true full spectrum (regardless of the label) is to see third party testing of the bulk hemp material and to check the color. Distillate is lighter. It's the color of honey — golden brown. Full Spectrum is amber or dark brown in color — more like molasses. Of course, if the end product is mixed with Hemp Seed Oil, it will automatically take on the dark brown hue. But if the product is mixed with MCT Oil or Olive Oil, and is more golden in color, you will know right away that it is a lower quality product.</p>
<p>GOOD Broad Spectrum</p>	<p>This is a good choice if you absolutely want zero THC (but still want the whole plant), as the THC is removed. However, the THC is removed through a chemical process, which makes it less desirable. Broad Spectrum is also likely to have fewer minor cannabinoids, flavonoids and terpenes than Full Spectrum. It is generally a clear color.</p>
<p>BAD Isolate</p>	<p>Products containing isolate often have deceiving labels boasting high levels of CBD. Isolates are produced with a heavy chemical process using a harsh chemical named Pentane. CBD isolate is highly processed and will not contain any minor or major cannabinoids. It is void of beneficial phytonutrients or terpenes.</p>





What's truly concerning, additionally, is that many testing laboratories have noted that a high percentage of isolate is synthetic. Through microscopic analysis it has been reported that CBD claiming to be isolate made in the USA, is often simply cheap synthetic compounds from China.

Synthetic CBD Isolate

Due to the rapidly accelerating popularity of CBD, many companies have begun producing synthetic CBD as a way to quicken production time while maximizing profits. This is problematic because the consequence of ingesting synthetic CBD can be very severe.

In fact, the [FDA issued a statement](#) warning about significant health risks associated with ingesting contaminated synthetic cannabinoid products.

Unfortunately, an unsuspecting consumer would never know that their CBD is synthetic and impure!

Due to misleading labeling and false advertising, and the lack of regulation at this time, synthetic CBD products can be impossible to differentiate from natural CBD products. The scary truth is that it's not uncommon for CBD products created from synthetic isolate to boast that they are "effective" with "no side effects."

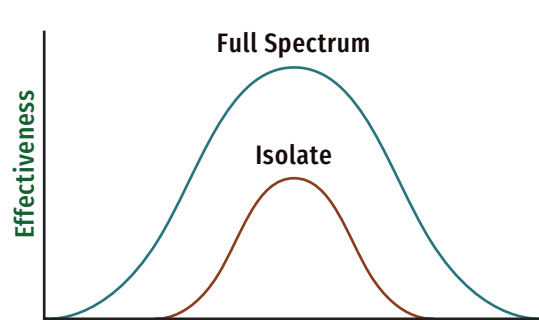
A significant study conducted by the [Journal of Medical Phyto Research](#) in Los Gatos, California, reported that one of the greatest risks of consuming synthetic CBD is that it generates dangerously high levels of the enzymes Alanine Amino Transferase (ALT) and Aspartate Amino Transferase (AST), in the body's attempt to remove the toxic substance.



This is all the more reason to be sure to stay away from CBD isolate, unless you are 100% certain that it is organic. Even still, as discussed, the better option is organically grown Full Spectrum CBD. Even in true USA grown CBD isolate, the therapeutic benefits of isolate are short-lived as demonstrated in the following study.

Scientific Studies Confirming Full Spectrum CBD Superior Anti-Inflammatory Benefits

[A 2015 study in Pharmacology and Pharmacy](#), conducted at Department of Medicinal and Natural Products, Institute for Drug Research, The Hadassah Medical School, The Hebrew University of Jerusalem, Jerusalem, Israel shows that CBD that is supported by the other constituents of the Hemp plant carries a more long-lasting anti-inflammatory and anti-nausea benefit. In this study the researchers determined that though pure isolated CBD has anti-inflammatory benefits, those benefits are along a bell-shaped curve, meaning they peak quickly and fall away rapidly, as well. This makes pure CBD (isolate) difficult to use in a therapeutic setting.



Isolate vs. Full Spectrum Bell Shaped Curve

However, when the CBD is in the presence of the other natural compounds in the Hemp plant (as in full spectrum), the limitations of purified CBD can be overcome. This could be explained by the entourage effect, or the synergistic benefits of the interactions of the whole plant, including the other phyto cannabinoids that are present in Full Spectrum CBD.

According to the above referenced study, Cannabidiol (CBD), a major constituent of Cannabis, has been shown to be a powerful anti-inflammatory and anti-anxiety drug, without exerting a psychotropic effect.

This study confirms that full spectrum CBD extracts are far more desirable than isolates because the parts of the plant work together synergistically to create longer lasting medicinal benefits.¹²

What is Full Spectrum and the Entourage Effect?

Most states allow CBD to contain up to .3% THC, which is known as Full Spectrum CBD. Why this tiny amount of THC? This negligible amount of THC is just enough to activate the CBD and other minor cannabinoids to create what is known as the Entourage Effect. This is what gives CBD its therapeutic value. When CBD is stripped of all THC, as in Isolate, it loses most of its healing potential.



Broad Spectrum CBD is a good alternative. It contains zero THC but still is manufactured from the whole plant, retaining a robust terpene and cannabinoid profile. The downside of Broad Spectrum CBD is that the THC is removed via a chemical process. Therefore, the most preferable, if you are not worried about drug testing, is full spectrum CBD.

THC is the part of the plant that is known for its psychoactive effect. However, in such miniscule amounts it does not make you high, but it does contain a medicinal benefit.

Full Spectrum Hemp CBD Extract

- > Contains Major and Minor Cannabinoids, Terpenes & Flavonoids
- > Ranges from 20-72% CBD
- > To use in finished product, look for potency of 60%+ CBD for whole plant Entourage Effect

Distillate Process

- > Contains Major and Minor Cannabinoids
- > High heat process removes Terpenes & Flavonoids
- > Necessary when CBD is derived from poor quality full spectrum extract, in order to “clean up” the product.
- > Ranges from 80-90%+ CBD

Broad Spectrum / T-Free Process

- > **Contains no THC** (it’s chemically removed)
- > Contains Major and some Minor Cannabinoids
- > Has fewer minor Cannabinoids, Terpenes or Flavonoids
- > Ranges from 78%-90%+ CBD

CBD Isolate Process

- > Heavy chemical process using Pentane
- > This is the **most processed CBD**
- > Void of all other Cannabinoids
- > Contains zero Beneficial Terpenes or Flavonoids
- > 99%+ CBD

Understanding More About the Entourage Effect and Full Spectrum

When all the natural components of the hemp plant work together in a harmonious way, it’s known as the Entourage Effect. The guiding principle is that the sum is greater than its parts. Full Spectrum CBD encourages the Entourage Effect. That’s because the whole plant contains hundreds of terpenes (plant essential oils) and cannabinoids that work together to give the CBD its maximum healing potential.



Research has shown that it's the terpenes and flavonoids that help increase the bioavailability of the cannabinoids, which then increases the nutritional value of the CBD.

What is Distillate?

Only lower quality full spectrum products require an additional process of refinement known as distillation or CBD distillate. This process cleans up the look of the final product and increases the number of cannabinoids in the end product, which will indeed give a more positive result on third party tests for CBD content, but not for terpenes.

The downside of this method is that the way distillate is produced is by heating the full spectrum extract to extremely high temperatures. In the process, though the CBD content is increased, valuable plant compounds with therapeutic benefits, such as terpenes and flavonoids, are destroyed.

Why is Distillation Necessary?

That's a great question. Distillation is NOT necessary with true full spectrum products. It is a high heat process that causes the loss of valuable phytonutrients, and is not desirable. The fact is, many products labeled full spectrum, are indeed poor-quality distillates.



Distillation is necessary when inferior bulk product is utilized to make the CBD oil or product. That's because with lower quality bulk Hemp, the end product is dirtier and must be cleaned up with the distillation process. How can you know if your product is a distillate? Look at the terpene testing for the Master CBD Distillate Extract used to make your end product. When compared with the terpene count from a true full spectrum product, the terpenes can be decreased by over half.

The reason why you want to look at the Master CBD Distillate Extract laboratory analysis, is because terpenes can always be added back in, but when they are added back in, they do not contribute to the entourage effect, which allows the components of the whole plant to work together holistically to create a therapeutic benefit.

Only full spectrum CBD offers the ability for the hundreds of cannabinoids, flavonoids and terpenes that are in the natural plant to work synergistically to create the highest benefit for the end user. True full spectrum requires no distillation.



Can You Get a Zero THC Product?

When a product is labeled as zero THC, it will be either broad spectrum or isolate. Broad Spectrum is preferred. Full Spectrum is the best choice especially when it's a high-quality Full Spectrum, it has not been subjected to harsh refining processes and it contains phytonutrients, cannabinoids and terpenes found in the Hemp plant. Broad Spectrum is the next best option, because it is still the whole plant, but only the THC has been removed. The worst choice is isolate.

Why You Want to Avoid CBD Isolate

Manufacturers of CBD isolate boast the fact that there is zero THC, which is only a plus if you are concerned about drug testing. If not, the tiny amount of THC that is in full spectrum (less than point 3%) is actually what is needed to activate the CBD and give it its full medicinal benefit.

CBD isolates are manufactured with a toxic chemical known as pentane. The process involves continuously heating and cooling the Hemp repeatedly, until the end result is a powdered CBD isolate. This harsh process removes all the beneficial compounds from the plant material, leaving it devoid of beneficial phytonutrients, cannabinoids and terpenes. However, it is indeed 99% CBD only with zero THC.

What's all the Fuss About Nano?

Similarly, you may have heard of “Nano” CBD. In looking for a competitive edge, a lot of CBD marketers, including celebrities, are using very complicated language to convince vulnerable health-seekers of its superior benefits. Proponents of Nano CBD claim that it allows the CBD to be more fully and completely absorbed into your body.



But what they aren't telling you is that in order to create a “Nano” product, which means breaking the CBD down into tiny particles, a chemical process is required.

The most common chemical used is, propylene glycol. Even though the FDA has deemed this chemical to be “safe,” the World Health Organization recommends highly limiting the amount of this chemical ingested. There are documented potential health risks, including toxicity, especially for people who have kidney or liver disease. In fact, the American Contact Dermatitis Society recently named propylene glycol as the “allergen of the year.”



In a nano product, every drop of CBD oil is covered with this highly controversial chemical. And the reality is, it's just not necessary. Your digestive system is a natural emulsifier, meaning its job is to digest and break down the oils that you ingest. Simply swishing a high-quality full spectrum CBD oil in your mouth for a few moments before swallowing it, will offer the same benefit of a more rapid absorption into the body. Without the chemicals and without the risk.

Do not be deceived by a lot of hype around nano. Remember when it comes to CBD, just like all the nutrients you ingest, the less processed it is, the better. The closer the foods and herbs you put in your body are to their natural state, the more Mother Nature can help you to heal and bring your body-mind back into balance.



Full Spectrum VS. Isolate

An analogy would be comparing a whole grain pilaf, teeming with life force energy and nutrients, to Captain Crunch or Rice Krispies cereal, which are devoid of nutrients. Both the nutrient rich whole grain and the processed cereals are made from grain, but there is a world of difference between the two.

Full Spectrum CBD is similar to the Whole Grain. Isolate more like the processed cereal, which may or may not have vitamins added back in. But even so, it can't be compared to eating the whole plant with all the nutrients intact.

Terpenes



A high-quality CBD full spectrum product will be rich in terpenes. Terpenes are a natural compound found in healing essential oils and plants. **Terpenes have been shown to assist in healing inflammatory diseases and with pain control.** In an extract that is full spectrum, the terpenes work together with the CBD to increase a therapeutic outcome.

The amount of terpenes found in any plant varies. Studies support the fact that terpenes offer medicinal benefits. A high-quality Hemp extract that is sent for third party analysis is very likely to contain beneficial terpenes such as humulene, terpinene, myrcene and bisabolol.



Full Spectrum CBD retains these important terpenes because it contains the whole plant. In the process of distilling Hemp or creating CBD isolates, valuable terpenes are lost. You can add them back in, but the Entourage Effect cannot be re-created, because the end product is no longer the whole plant.

Myrcene: The terpene Myrcene was studied with the results published in the Journal of Toxicology and Industrial Health. The research showed that this beneficial terpene contains valuable antioxidant properties and helps to reduce physiological stress. ¹³

Terpinene: A study in the Journal of Medicinal Plant and Natural Product Research Biochemistry revealed that this terpene reduces inflammation and necrosis (death of cells) in the body. ¹⁴

Bisabolol: In a study from the Journal of the American Oil Chemists' Society, Bisabolol has been found to be an anti-inflammatory, analgesic (reduce or eliminate pain) and antibiotic agent. ¹⁵

Humulene: A study in The European Journal of Pharmacology proved that the terpene Humulene may be an important tool for managing and treating anti-inflammatory conditions. ¹⁶





How do I Read a Certificate of Analysis?

A certificate of Analysis or COA is a document that confirms that a regulated product has been formulated according to specification. Note in the following examples that the distilled CBD product has higher CBD content than a full spectrum, but it's actually lower quality since it only has less than half the number of terpenes.


Remember, it's the whole plant — cannabinoids plus terpenes that give the CBD its therapeutic value due to the Entourage Effect. An isolate is the lowest quality CBD as it has no terpenes and no other cannabinoids. Studies have shown that the therapeutic benefits of isolate CBD alone are very short-lived.



Examples of Biomass/Bulk Hemp Material Test Results

Cannabinoid Profile Testing (Potency) for Bulk Hemp Material

Any CBD amount over 10% in the bulk mass is considered to be high quality Hemp.



CERTIFICATE OF ANALYSIS

prepared for: **RENA'S ORGANIC**
7458 North Tamiami Trail
Sarasota, FL 34243

B20-A

Batch ID: 25-May-2020

Test ID: 8251356.0049

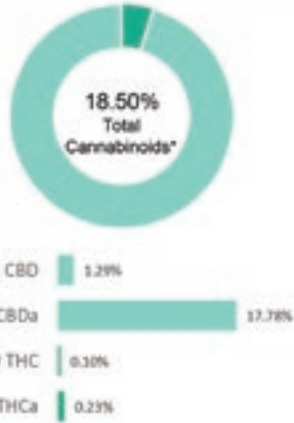
Reported: 25-May-2020

Method: TM14

Type: Plant

Test: Potency

CANNABINOID PROFILE



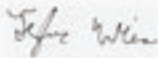
18.50%
Total
Cannabinoids*

- CBD 1.29%
- CBDa 17.78%
- delta 9 THC 0.10%
- THCa 0.23%

Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.10	0.23	2.3
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.05	0.10	1.0
Cannabidiolic acid (CBDA)	0.11	17.78	177.8
Cannabidiol (CBD)	0.06	1.29	12.9
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.05	0.00	0.0
Cannabinolic Acid (CBNA)	0.14	0.00	0.0
Cannabinol (CBN)	0.06	0.00	0.0
Cannabigeronic acid (CBGA)	0.09	0.61	6.1
Cannabigerol (CBG)	0.05	0.07	0.7
Tetrahydrocannabinolic Acid (THCVA)	0.08	0.00	0.0
Tetrahydrocannabinarin (THCV)	0.04	0.00	0.0
Cannabidivarinic Acid (CBDVA)	0.10	0.17	1.7
Cannabidivarin (CBDV)	0.06	0.00	0.0
Cannabichromenic Acid (CBCA)	0.07	0.65	6.5
Cannabichromene (CBC)	0.09	0.00	0.0
Total Cannabinoids		18.80	188.01
Total Potential THC**		0.30	3.02
Total Potential CBD**		16.85	168.83


NOTES:
N/A

FINAL APPROVAL



Tyler Wiese
25-May-2020
5:35 PM


PREPARED BY / DATE



David Green
25-May-2020
5:48 PM

APPROVED BY / DATE

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC, in the condition it was received. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC. ISO-IEC 17025:2005 Accredited AZLA Certificate Number 4329-02



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Suppliers should be able to provide a certificate of analysis from an accredited laboratory showing that the product is free of microbial contaminants such as mold, pesticides and heavy metals such as arsenic, cadmium, lead and mercury.

You especially want to be able to verify that the Bulk Hemp from which your product is derived NEVER had any mold on it, especially if it originated in a more humid state. In Colorado, this is much less of an issue since it's a low-humidity state.

Microbial Contaminants Testing for Bulk Hemp Material



CERTIFICATE OF ANALYSIS
 prepared for: **RENA'S ORGANIC**
 7458 North Tamiami Trail
 Sarasota, FL 34243

B20 Biomass

Batch ID:	N/A	Test ID:	2465217.030
Reported:	22-Nov-2019	Method:	Concentrate - Test Methods: TMD5, TMD6
Type:	Flower		
Test:	Microbial Contaminants		

MICROBIAL CONTAMINANTS

Contaminant	Result (CFU/g)*
Total Aerobic Count**	None Detected
Total Coliforms**	None Detected
Total Yeast and Molds**	None Detected
E. coli	None Detected
Salmonella	None Detected

* CFU/g = Colony Forming Unit per Gram
 ** Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form.
 Examples: 10² = 100 CFU
 10³ = 1,000 CFU
 10⁴ = 10,000 CFU
 10⁵ = 100,000 CFU


NOTES:
 Free from visual mold, mildew, and foreign matter
 TYM: None Detected
 Total Aerobic: None Detected

FINAL APPROVAL

 Mara Miller 22-Nov-2019 4:43 PM	 David Green 22-Nov-2019 6:10 PM
PREPARED BY / DATE	APPROVED BY / DATE

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Heavy Metals Testing Bulk Hemp Material



CERTIFICATE OF ANALYSIS
prepared for: **RENA'S ORGANIC**
7458 North Tamiami Trail
Sarasota, FL 34243


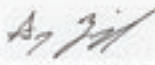
B20 Biomass

Batch ID:	N/A	Test ID:	T000030648
Reported:	25-Sep-2019	Method:	Arsenic = Arsenic EPA 8020A (mod), Cadmium = Cadmium EPA 8020A (mod), Lead = Lead EPA 8020A (mod), Mercury = Mercury EPA 8020A (mod)
Type:	Flower		
Test:	Metals		

HEAVY METALS

Compound	Reporting Limit (ppm)	Result (ppm)
Arsenic	0.05	<0.05
Cadmium	0.05	<0.05
Lead	0.05	<0.05
Mercury	0.05	<0.05

FINAL APPROVAL


 PREPARED BY / DATE	Sam Smith 5-Dec-2019 8:49 AM	 APPROVED BY / DATE	Greg Zimpler 5-Dec-2019 9:05 AM
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Pesticide Testing Bulk Hemp Material



CERTIFICATE OF ANALYSIS
 prepared for: RENA'S ORGANIC
 7458 North Tamiami Trail
 Sarasota, FL 34243

B20 Biomass


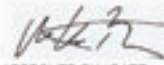
Batch ID:	Test ID: 2459203.0034
Reported: 23-Sep-2019	Method: TM17
Type: Flower	
Test: Pesticides	

PESTICIDE RESIDUE

Compound	Dynamic Range (ppb)	Result (ppb)	Compound	Dynamic Range (ppb)	Result (ppb)
Acephate	58 - 2697	ND*	Malathion	58 - 2697	ND*
Acetamiprid	58 - 2697	ND*	Metolaxyl	350 - 2697	ND*
Avermectin	350 - 2697	ND*	Methiocarb	58 - 2697	ND*
Azoxystrobin	58 - 2697	ND*	Methomyl	58 - 2697	ND*
Bifenazate	58 - 2697	ND*	MGK 264 1	58 - 2697	ND*
Boscalid	350 - 2697	ND*	MGK 264 2	350 - 2697	ND*
Carbaryl	58 - 2697	ND*	Myclobutanil	350 - 2697	ND*
Carbofuran	58 - 2697	ND*	Naled	350 - 2697	ND*
Chlorantraniliprole	58 - 2697	ND*	Oxamyl	58 - 2697	ND*
Chlorpyrifos	350 - 2697	ND*	Paclbutrazol	58 - 2697	ND*
Clofentezine	58 - 2697	ND*	Permethrin	350 - 2697	ND*
Diazinon	58 - 2697	ND*	Phosmet	58 - 2697	ND*
Dichlorvos	350 - 2697	ND*	Prophos	350 - 2697	ND*
Dimethoate	58 - 2697	ND*	Propoxur	350 - 2697	ND*
E-Fenpyroximate	350 - 2697	ND*	Pyridaben	350 - 2697	ND*
Etofenprox	350 - 2697	ND*	Spinosad A	58 - 2697	ND*
Etoazole	350 - 2697	ND*	Spinosad D	350 - 2697	ND*
Fenoxycarb	58 - 2697	ND*	Spiromesifen	58 - 2697	ND*
Fipronil	350 - 2697	ND*	Spirotetramat	350 - 2697	ND*
Flonicamid	58 - 2697	ND*	Spiroxamine 1	58 - 2697	ND*
Fludioxonil	350 - 2697	ND*	Spiroxamine 2	58 - 2697	ND*
Hexythiazox	350 - 2697	ND*	Tebuconazole	58 - 2697	ND*
Imazali	350 - 2697	ND*	Thiacloprid	58 - 2697	ND*
Imidacloprid	58 - 2697	ND*	Thiamethoxam	58 - 2697	ND*
Kresoxim-methyl	58 - 2697	ND*	Trifloxystrobin	350 - 2697	ND*

* ND = None Detected (Defined by Dynamic Range of the method)
 N/A

FINAL APPROVAL

 Chris Jungling 23-Nov-2019 8:03 AM PREPARED BY / DATE	 Mike Brarvold 23-Nov-2019 4:59 PM APPROVED BY / DATE
--	---

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Organic Soil Testing Sample: Aerial View



Organic Soil Testing Sample: Soil Analysis Report SW Field

Soil Analysis Report
OrganiCalc for Vegetables - Logan Labs

Report name: **Southeast Field**

*Email address:

Soil type: **Default (Ca:Mg = 68%-12%)**

Test Date: 4/2/2020 Today: 06-Apr-20

Logan Labs Mehlich 3 Test Results

Sample Location: **Southeast Field**

Sample ID: **1**

Lab Number: **187**

* Sample Depth in Inches: **6**

* Total Exchange Capacity (M.E.): **23.71**

* pH of Soil Sample: **7.90**

* Organic Matter (%): **6.15**

* Sulfur: ppm: **32**

Mehlich III as (P2O5): **1088**

* Phosphorus lbs/acre: **1088**

Calcium: Desired value: **7040**

* lbs/acre: Value found: **7040**

Deficit:

Magnesium: Desired value: **760**

* lbs/acre: Value found: **760**

Deficit:

Potassium: Desired value: **1547**

* lbs/acre: Value found: **1547**

Deficit:

* Sodium: lbs/acre: **60**

* Calcium (60 to 70%): **74.23**

* Magnesium (10 to 20%): **13.36**

* Potassium (2 to 5%): **8.37**

* Sodium (.5 to 3%): **0.55**

Other Bases (Variable): **3.50**

Exchangable Hydrogen (10 to 15%): **0.00**

* Boron (ppm): **1.29**

* Iron (ppm): **187**

* Manganese (ppm): **64**

* Copper (ppm): **9.56**

* Zinc (ppm): **19.15**

Aluminum (ppm): **326**

Cobalt (ppm):

Molybdenum (ppm):

Selenium (ppm):

Silicon (ppm):

EC mmhos/cm:

(* = required entry)

Alerts

Click this switch ON to override an 'Email Error' message, if present.

Choose Target Nitrogen Amount

100 lbs/acre

<https://growabundant.com/how-much-nitrogen-should-i-add/>

Choose Compost/Nitrogen Sources

Best fit source will have this N-P-K: 1-0-0

1: Feather Meal (12-0-0)

2: Feather Meal (12-0-0)

Or enter your own: My fertilizer or compost

	N	P	K
		(as P2O5)	(as K2O)

Enter Area To Be Amended and Select Units:

2.5 acre(s)

lbs/oz

Enter Depth To Mix Amendments


6 inches

Amendment Report Report name: Southeast Field Test Date: 4/2/2020

Recommended Amendments for 2.50 acre(s)	Amt	Units	Notes
Azomite	1088	lbs	5
Feather Meal (12-0-0)	2083	lbs	4
Agricultural Sulfur	250	lbs	
Borax	36	lbs	
Total weight of all amendments 3457 lbs			

Raw Full Spectrum Master Extract Test Samples

Heavy Metals Test for Full Spectrum Master Extract



CERTIFICATE OF ANALYSIS
prepared for: **RENA'S ORGANIC**
7458 North Tamiami Trail
Sarasota, FL 34243


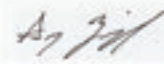
763 B 20 GOLD * FULL SPEC ANALYSIS

Batch ID:	N/A	Test ID:	T000036696
Reported:	5-Dec-2019	Method:	Arsenic = Arsenic EPA 8000A (mod), Cadmium = Cadmium EPA 8000A (mod), Lead = Lead EPA 8020A (mod), Mercury = Mercury EPA 8020A (mod)
Type:	Other		
Test:	Metals		

HEAVY METALS

Compound	Reporting Limit (ppm)	Result (ppm)
Arsenic	0.05	<0.05
Cadmium	0.05	<0.05
Lead	0.05	<0.05
Mercury	0.05	<0.05


FINAL APPROVAL

 Sam Smith 5-Dec-2019 8:49 AM	 Greg Zimpler 5-Dec-2019 9:05 AM
PREPARED BY / DATE	APPROVED BY / DATE

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Residual Solvents Test for Full Spectrum Master Extract



CERTIFICATE OF ANALYSIS
 prepared for: **RENA'S ORGANIC**
 7458 North Tamiami Trail
 Sarasota, FL 34243

763 B 20 GOLD * FULL SPEC ANALYSIS


Batch ID:	N/A	Test ID:	1047895.001
Reported:	22-Nov-2019	Method:	TMD4
Type:	Concentrate		
Test:	Residual Solvents		


RESIDUAL SOLVENTS

Solvent	Reportable Range (ppm)	Result (ppm)
Propane	100 - 2000	0
Butanes <small>(isobutane, n-Butane)</small>	100 - 2000	0
Pentane	100 - 2000	0
Ethanol	100 - 2000	1800
Acetone	100 - 2000	0
Isopropyl Alcohol	100 - 2000	0
Hexane	5 - 120	0
Benzene	0.2 - 4	0.0
Heptanes	100 - 2000	0
Toluene	18 - 360	0
Xylenes <small>(m,p,o-Xylenes)</small>	43 - 860	0

NOTES:
Free from visual mold, mildew, and foreign matter.

FINAL APPROVAL



Alex Smith
 22-Nov-2019
 2:13 PM


David Green
 22-Nov-2019
 5:33 PM

PREPARED BY / DATE

APPROVED BY / DATE

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Certificate #4329.02

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Cannabinoid Profile Test (Potency) for Full Spectrum Master Extract

Below is a COA for a full spectrum extract testing total cannabinoids. The total amount present in this analysis is 73.41%. This is ideal for a full spectrum product rich in terpenes and flavonoids, from the whole aerial parts of the Hemp plant.



CERTIFICATE OF ANALYSIS

prepared for: **RENA'S ORGANIC**
7458 North Tamiami Trail
Sarasota, FL 34243

763 B 20 GOLD * FULL SPEC ANALYSIS

Batch ID:	Test ID:	2192671.007
Reported:	Method:	TM14
Type:	Concentrate	
Test:	Potency	

CANNABINOID PROFILE

73.41%
Total
Cannabinoids*

CBD	67.04%
CBDa	0.00%
delta 9 THC	2.92%
THCa	0.00%

Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.18	0.00	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.09	2.92	29.2
Cannabidiolic acid (CBDA)	0.19	0.00	0.0
Cannabidiol (CBD)	0.11	67.04	670.4
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.10	0.00	0.0
Cannabinolic Acid (CBNA)	0.25	0.00	0.0
Cannabinol (CBN)	0.11	0.00	0.0
Cannabigeronic acid (CBGA)	0.16	0.00	0.0
Cannabigerol (CBG)	0.09	1.67	16.7
Tetrahydrocannabinolic Acid (THCVA)	0.15	0.00	0.0
Tetrahydrocannabinarin (THCV)	0.08	0.00	0.0
Cannabivarinic Acid (CBDVA)	0.18	0.00	0.0
Cannabivarin (CBDv)	0.10	0.33	3.3
Cannabichromenic Acid (CBCA)	0.13	0.00	0.0
Cannabichromene (CBC)	0.16	1.45	14.5
Total Cannabinoids		73.41	734.10
Total Potential THC**		2.92	29.20
Total Potential CBD**		67.04	670.40

% = % w/w; * Percent (Weight of Analyte / Weight of Product)
 ** Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.
 *** Total Potential THC/CBD is calculated using the following formula to take into account the size of a different group during decarboxylation step.
 Total THC = THC + THCa (0.877) and Total CBD = CBD + CBDa (0.877)

NOTES:
N/A

FINAL APPROVAL



Sam Smith
Sam Smith
 19-Nov-2019
 3:48 PM

PREPARED BY / DATE

Greg Zimpler
Greg Zimpler
 19-Nov-2019
 3:58 PM

APPROVED BY / DATE

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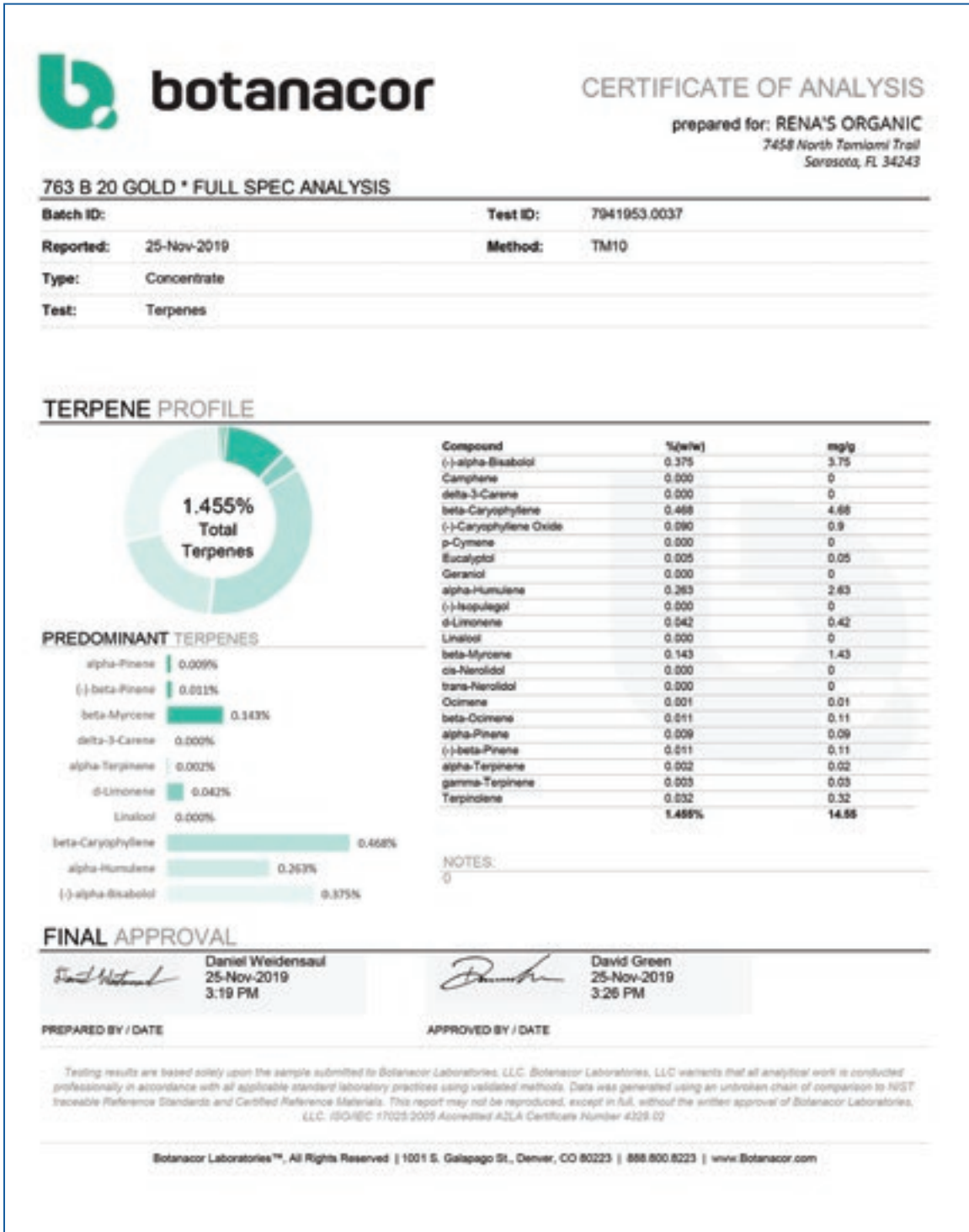



Certificate #4329.02


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Terpene Profile Test for Full Spectrum Master Extract

This COA analyzes total terpenes in the Full Spectrum Hemp Extract. The total Terpenes present equals 1.45%.



Pesticide Testing for Full Spectrum Master Extract



CERTIFICATE OF ANALYSIS
 prepared for: **RENA'S ORGANIC**
 7458 North Tamiami Trail
 Sarasota, FL 34243

763 B 20 GOLD * FULL SPEC ANALYSIS



Batch ID:	Test ID: 2559202.0034
Reported: 23-Nov-2019	Method: TM17
Type: Concentrate	
Test: Pesticides	

PESTICIDE RESIDUE

Compound	Dynamic Range (ppb)	Result (ppb)	Compound	Dynamic Range (ppb)	Result (ppb)
Acophale	58 - 2697	ND*	Malathion	58 - 2697	ND*
Acetamiprid	58 - 2697	ND*	Metaxyl	350 - 2697	ND*
Avermectin	350 - 2697	ND*	Methiocarb	58 - 2697	ND*
Azoxystrobin	58 - 2697	ND*	Methomyl	58 - 2697	ND*
Bifenazate	58 - 2697	ND*	MGK 264 1	58 - 2697	ND*
Boscalid	350 - 2697	ND*	MGK 264 2	350 - 2697	ND*
Carbaryl	58 - 2697	ND*	Mydobutanil	350 - 2697	ND*
Carbofuran	58 - 2697	ND*	Naled	350 - 2697	ND*
Chlorantraniliprole	58 - 2697	ND*	Oxamyl	58 - 2697	ND*
Chlorpyrifos	350 - 2697	ND*	Paclobutrazol	58 - 2697	ND*
Clofentezine	58 - 2697	ND*	Permethrin	350 - 2697	ND*
Diazinon	58 - 2697	ND*	Phosmet	58 - 2697	ND*
Dichlorvos	350 - 2697	ND*	Prophos	350 - 2697	ND*
Dimethoate	58 - 2697	ND*	Propoxur	350 - 2697	ND*
E-Fenpyroximate	350 - 2697	ND*	Pyridaben	350 - 2697	ND*
Etofenprox	350 - 2697	ND*	Spinosad A	58 - 2697	ND*
Etoazole	350 - 2697	ND*	Spinosad D	350 - 2697	ND*
Fenoxycarb	58 - 2697	ND*	Spiromesifen	58 - 2697	ND*
Fipronil	350 - 2697	ND*	Spirotetramat	350 - 2697	ND*
Flonicamid	58 - 2697	ND*	Spiroxamine 1	58 - 2697	ND*
Fludioxonil	350 - 2697	ND*	Spiroxamine 2	58 - 2697	ND*
Hexythiazox	350 - 2697	ND*	Tebuconazole	58 - 2697	ND*
Imazali	350 - 2697	ND*	Thiacloprid	58 - 2697	ND*
Imidacloprid	58 - 2697	ND*	Thiamethoxam	58 - 2697	ND*
Kresoxim-methyl	58 - 2697	ND*	Trioxystrobin	350 - 2697	ND*

* ND = None Detected (Defined by Dynamic Range of the method)
 N/A

FINAL APPROVAL

 Chris Jungling 23-Nov-2019 8:03 AM PREPARED BY / DATE	 Mike Branvold 23-Nov-2019 4:59 PM APPROVED BY / DATE
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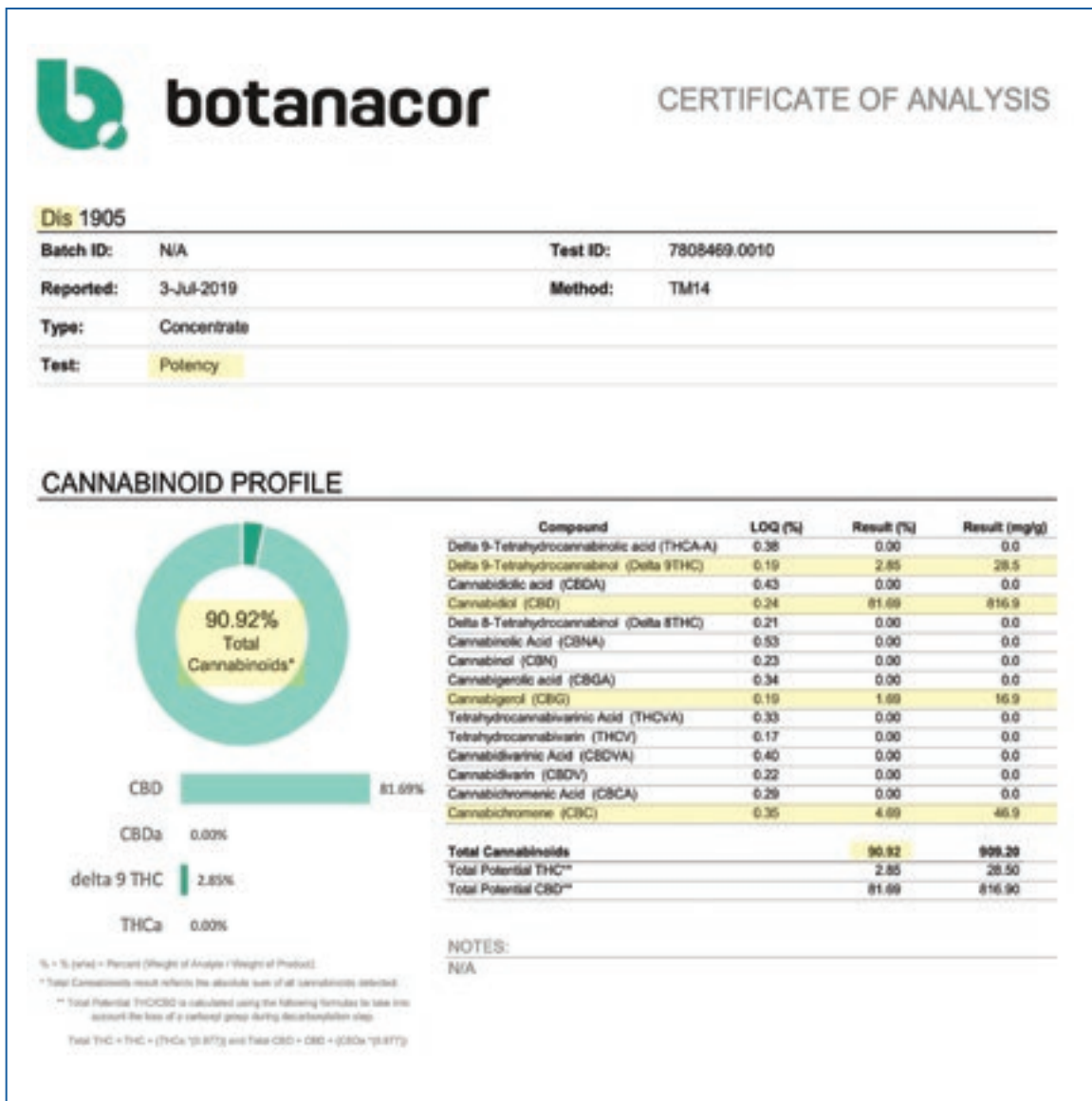
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Distillate Master Extract Total Cannabinoid Analysis

This is a COA for a distillate analyzing total cannabinoids (potency), totaling 90.92%. The processing required to create a distillate removes many of the plant compounds, such as phytonutrients, from the Full Spectrum Extract. This leaves only the Cannabinoids, which is why the CBD content increases. However, this reduces the overall benefit, as the Entourage Effect can only happen when the whole plant is left intact, as in Full Spectrum.

Distillate Potency Test (Total Cannabinoids)

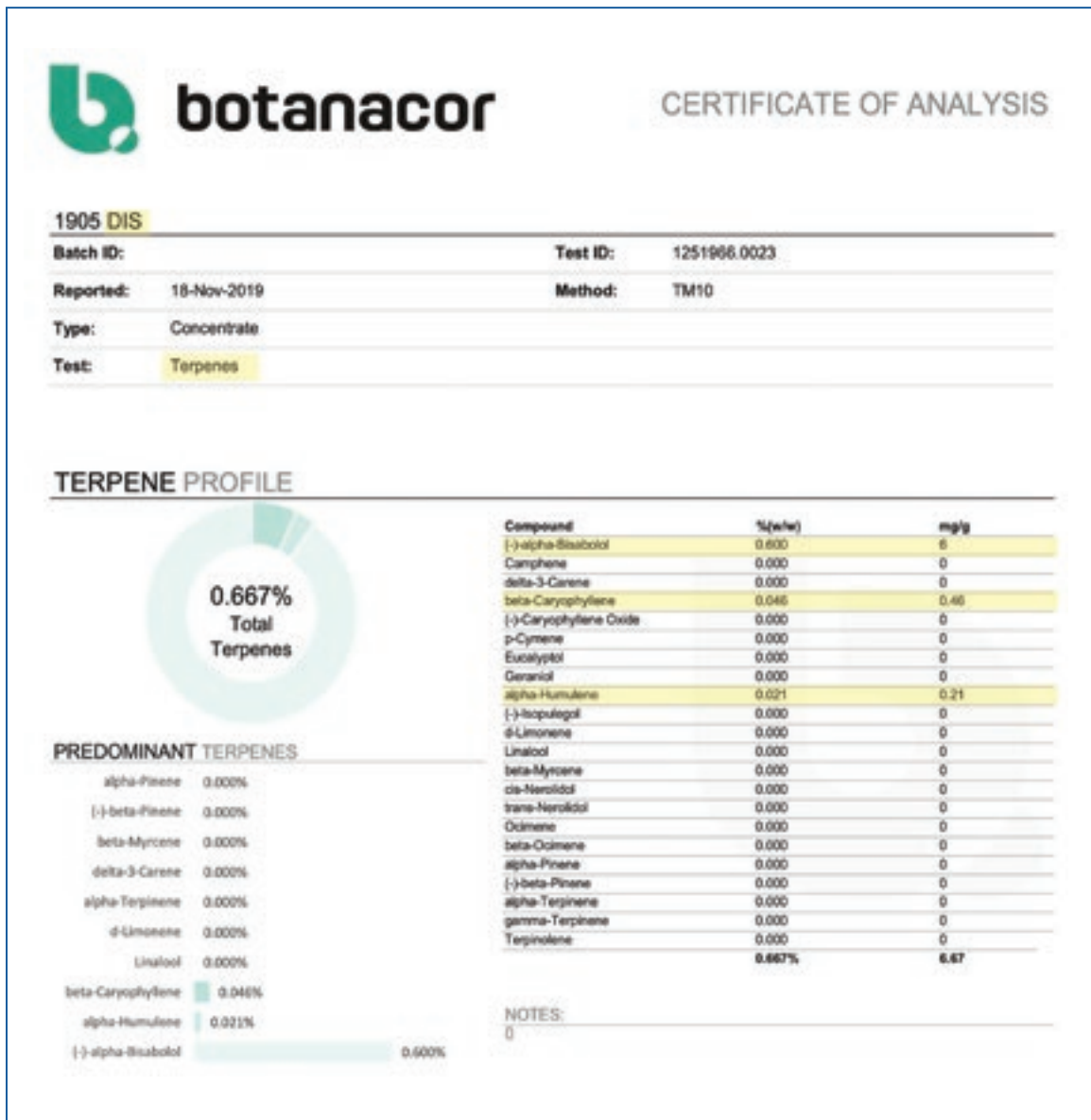


Distillate Master Extract Total Terpene Analysis

Below is a COA for a master extract distillate with a Terpene analysis. When added together, the total Terpene count equals 0.667%. When compared with the Full Spectrum Extract, both the quantity and percentage of terpenes has decreased by more than half.

This indicates a loss of nutrients and beneficial plant components from the Full Spectrum product. So even though it has more Cannabidiol, it offers less of an Entourage Effect than a Full Spectrum, and is therefore less desirable.

Distillate Terpene Test



Pure Isolate Cannabinoid Analysis and Residual Chemical Analysis

Below is a COA analyzing total cannabinoids for an Isolate. You can see that the only cannabinoid present is CBD. That's because all the other cannabinoids and terpenes that were in the Hemp have been removed with a chemical extraction process, using a chemical called pentane. This process strips the Hemp of everything besides the CBD.

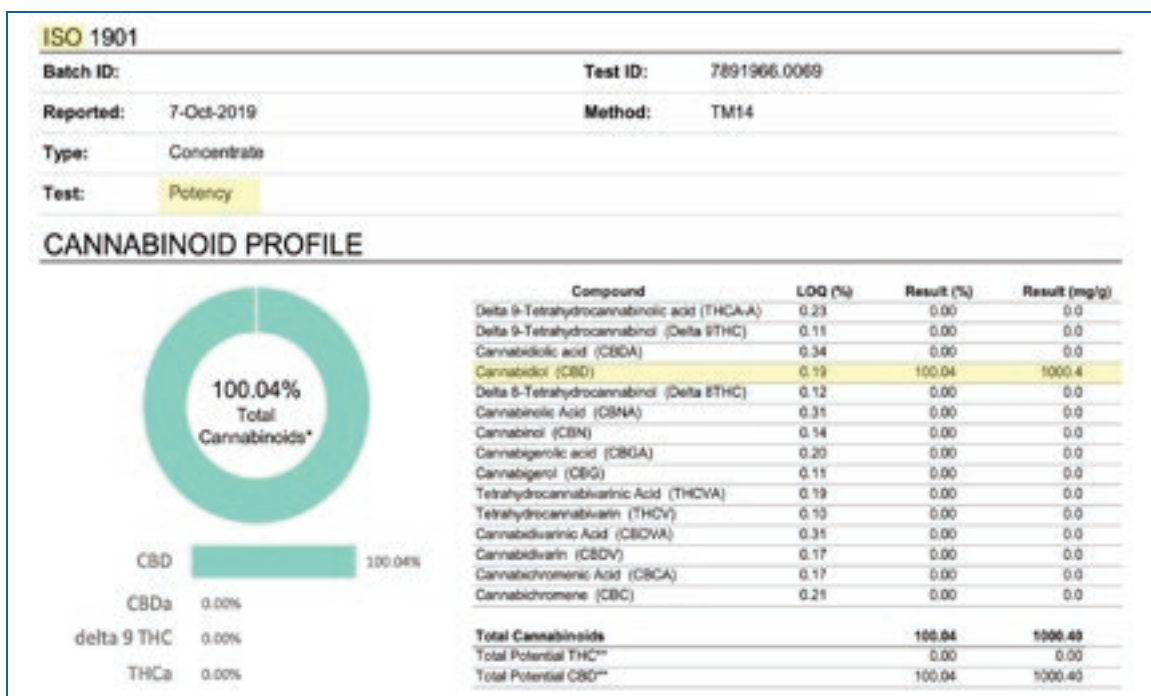
This lack of terpenes and the systematic loss of terpenes displays the loss of therapeutic compounds through multiple extractions of the Full Spectrum Extract.

Despite the fact that the CBD content increases, it's at a high cost as other highly beneficial plant constituents that work synergistically with CBD to increase its benefits, are lost.

Earlier I showed you a study demonstrating researcher's findings when they tested isolated CBD for therapeutic benefits. Their results pointed to a bell-shaped response that has been observed. This means that the benefits of the CBD peak at a certain concentration, and then drop down rather quickly, as opposed to Full Spectrum CBD which has been found to give more lasting benefits.

Additionally, it is common to find the chemical Pentane still present in CBD isolate, as you can see in the Residual Solvent test below.

Pure Isolate Cannabinoid Analysis



Pure Isolate Residual Analysis (Pentane Present)

Botanacor services		CERTIFICATE OF ANALYSIS	
ISO 1901			
Batch ID:	1901	Test ID:	4225826.021
Reported:	26-Feb-2019	Method:	TM04
Type:	Concentrate		
Test:	Residual Solvents		
RESIDUAL SOLVENTS			
Solvent	Reportable Range (ppm)	Result (ppm)	
Propane	100 - 2000	0	
Butanes (Isobutane, n-Butane)	100 - 2000	0	
Pentane	100 - 2000	154	
Ethanol	100 - 2000	0	
Acetone	100 - 2000	0	
Isopropyl Alcohol	100 - 2000	0	
Hexane	6 - 120	0	
Benzene	0.2 - 4	0.0	
Heptanes	100 - 2000	0	
Toluene	18 - 360	0	
Xylenes (m,p,o-Xylenes)	43 - 860	0	



Final Product Certificates of Analysis for Potency, Terpenes, Metals and Microbes

As a consumer, you have every right to inspect the certificates of analysis of not only your final product, but similar to the COAs above, the master extract and bulk hemp certificates of analysis. Only with this review can you be certain that you are getting true full spectrum CBD, that has never been in contact with mold, metals, pesticides or microbes.

Here are some typical tests, including terpene and cannabinoid (potency) analysis for a high-quality final CBD product (1500 mg. full spectrum CBD tincture). Reputable CBD manufacturers will always make sure you are getting more CBD than is claimed on the label – *never less*.


The reality is, with a true full spectrum you get more cannabinoids than just the CBD. For example, on the label below for the 1500 mg. CBD in MCT Oil (peppermint), you can see that this product is claiming to contain 1500 mg. CBD.

The third-party testing, from a highly accredited laboratory, reveals that there is actually 1598.41 mg. CBD in the bottle. This means that you are getting an extra almost 99 mg. of CBD in the bottle! Also, the total cannabinoid potency is reported to be 1815.94, verifying that this a true full spectrum product. Remember, only an authentic full spectrum CBD product can invoke the entourage effect in your body. In this “1500 mg. CBD” product, as a bonus, you are getting an array of over 200 mg. additional therapeutic cannabinoids, in addition to the almost 1600 mg. CBD.

Every CBD product you buy should have a QR code that takes you directly to this information.



1500 mg. CBD Full Spectrum Potency




CERTIFICATE OF ANALYSIS

prepared for: **RENA'S ORGANIC**
7458 North Tamiami Trail
Sarasota, FL 34243

Rena's Organic 1500mg CBD Tincture (Peppermint)

Batch ID: 544744	Test ID: T000145181
Type: Unit	Submitted: 06/09/2021 @ 11:58 AM
Test: Potency	Started: 6/10/2021
Method: TM14	Reported: 6/11/2021

CANNABINOID PROFILE



1598.41
mg CBD

CBD 5.71%

CBDa 0.00%

delta 9 THC 0.21%


THCa 0.00%

Compound	LOQ (mg)	Result (mg)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	4.50	ND	ND
Delta 9-Tetrahydrocannabinol (Delta 9THC)	4.63	58.44	2.1
Cannabinolic acid (CBDA)	3.82	ND	ND
Cannabidiol (CBD)	3.73	1598.41	57.1
Delta 8-Tetrahydrocannabinol (Delta 8THC)	5.09	ND	ND
Cannabinolic Acid (CBNA)	2.92	ND	ND
Cannabinol (CBN)	1.33	4.25	0.2
Cannabigeronic acid (CBGA)	4.28	ND	ND
Cannabigerol (CBG)	1.02	59.99	2.1
Tetrahydrocannabinolic Acid (THCVA)	3.62	ND	ND
Tetrahydrocannabivarin (THCV)	0.93	ND	ND
Cannabivarinic Acid (CBDA)	1.59	ND	ND
Cannabivarin (CBV)	0.88	2.92	0.1
Cannabichromenic Acid (CBCA)	1.65	ND	ND
Cannabichromene (CBC)	1.80	91.93	3.3
Total Cannabinoids		1815.94	64.9
Total Potential THC**		58.44	2.1
Total Potential CBD**		1598.41	57.1

NOTES:
of Servings = 1, Sample Weight=28g


% = % w/w = Percent (Weight of Analyte / Weight of Product)
* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.
** Total Potential THC/CBD is calculated using the following formula to take into account the loss of a carboxyl group during decarboxylation step.
Total THC = THC + (THCa * 0.877) and
Total CBD = CBD + (CBDA * 0.877)
ND = None Detected (Defined by Dynamic Range of the Method)

FINAL APPROVAL



Michele Gaenon
11-Jun-2021
11:54 AM


PREPARED BY / DATE



Taylor Brevik
11-Jun-2021
11:55 AM

APPROVED BY / DATE

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1500 mg. CBD Full Spectrum Microbial



botanacor

CERTIFICATE OF ANALYSIS
 prepared for: RENA'S ORGANIC
 414 26TH STREET WEST
 BRADENTON, FL 34208

Rena's Organic 1500mg CBD in MCT Oil with Mint

Batch ID: 544338	Test ID: T000117692
Type: Concentrate	Submitted: 01/05/2021 @ 11:13 AM
Test: Microbial Contaminants	Started: 1/6/2021
Method: TM24, TM25, TM26, TM27, TM28	Reported: 1/9/2021

MICROBIAL CONTAMINANTS

Contaminant	Result (CFU/g)*
Total Aerobic Count**	None Detected
Total Coliforms**	None Detected
Total Yeast and Molds**	None Detected
E. coli	Absent
E. coli (STEC)	None Detected
Salmonella	None Detected

* CFU/g = Colony Forming Unit per Gram
 ** Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form.
 Examples: 10² = 100 CFU
 10³ = 1,000 CFU
 10⁴ = 10,000 CFU
 10⁵ = 100,000 CFU

NOTES:
 Free from visual mold, mildew, and foreign matter
 TYM: None Detected
 Total Aerobic: None Detected
 Coliforms: None Detected

FINAL APPROVAL

 Sarah Henning 9-Jan-2021 2:33 PM	 Greg Zimpler 9-Jan-2021 5:21 PM
<small>PREPARED BY / DATE</small>	<small>APPROVED BY / DATE</small>

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Certificate #4329.03



What's the Best CBD Extraction Method?

Everything You Need to Know About CBD Extraction

When CBD is extracted from Hemp, it not only pulls from the plant beneficial phytonutrients such as cannabinoids, terpenes and flavonoids, but if toxic metals and pesticides are stored in the plant, it will be extracted as well. The only way to avoid this is to make sure that the Hemp plant itself is clean and pure.

Additionally, it's essential to know that the extraction method of the CBD you are ingesting is safe and effective and that no harmful solvents are being utilized.

Solvents used in the Hemp extraction process can be full of chemicals that contain injurious elements or pesticides, which can potentially wreak havoc on the body, when ingested. One way to create the cleanest product possible, is to extract using only food grade, organic, Kosher alcohol, without any harmful chemicals.



Cold Subzero Extraction

The less processing applied to the Hemp plant the better.

An extraction process known as organic sub-zero cold extraction is a preferred no-pressure process. This keeps the vital terpenes intact rather than tearing them from the finished CBD oil.

With sub-zero extraction, you get higher levels of CBD, with less oil. The end product oil is of a higher quality with more cannabinoids such as CBC and CBG as well as therapeutic terpenes and phytonutrients.

This creates what is known as the Full Spectrum Entourage effect discussed earlier – the beneficial compounding of health benefits that comes from using the whole plant, and not just isolated parts. *At Rena's Organic, we only use cold subzero extraction for all our CBD, with food grade, kosher, organic ethanol.*

Subcritical CO2 Extraction

By contrast, CO2 extraction (which is the most common form of extraction) requires that the plant is turned into a powder-like substance prior to extraction. So much pressure is applied that the terpenes (volatile essential oils) from the plant may be torn and lost.

A Closer Look at CBD Extraction Methods

Supercritical CO2 Extraction

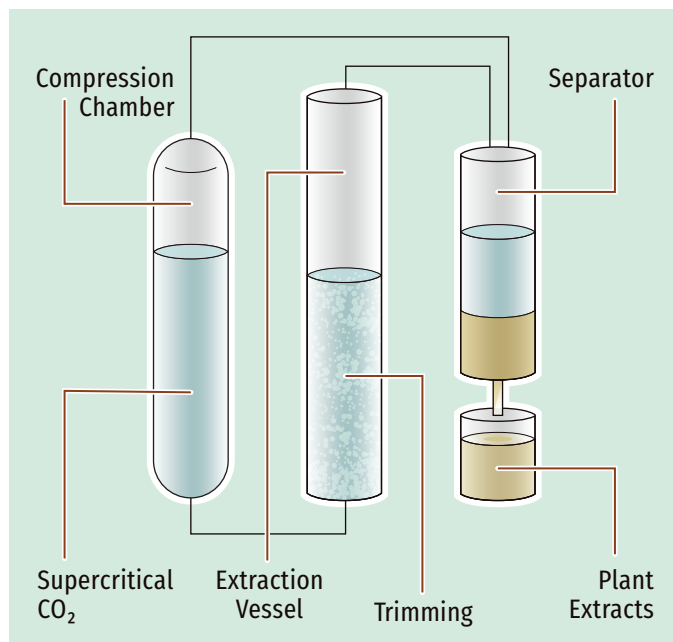
Supercritical CO2 extraction is also known as a carbon dioxide method.

Here's how it works:

1. Carbon Dioxide (CO2) is changed from a gas to a liquid through a method known as condensation, where it is exposed to a sufficiently high pressure and temperature.

2. The bulk Hemp material is ground into a thin powder and pressed into a compression chamber.

3. Liquid Carbon Dioxide is pushed through the chamber housing the powdered Hemp plant material (milled).



4. Pressure is then decreased and the CO2 returns to a gaseous substance.



5. The supercritical extraction of Hemp remains, including excess plant fats and lipids.
6. These plant fats and lipids must be removed as they create rancidity and lessen the medicinal strength of the CBD.
7. To remove these excess plant fats and lipids, a winterization refinement process is used.
8. Winterization involves freezing the final material in ethanol to separate out the fats and produce a cleaner end product. It's possible that a manufacture will use either a food-grade kosher ethanol or a cheaper ethanol that is not as safe, to cut corners. Only Food Grade Kosher ethanol is considered by the FDA to be GRAS (generally recognized as safe).
9. Following winterization, the CBD extract is ready to be bottled and sold.

Pitfalls of Supercritical CO2 Extraction



The second step, known as the milling process, where the plant material is ground into a fine powder often results in a degradation of the plant material where valuable terpenes and cannabinoids are lost due to their inherently volatile nature.

To get a clearer picture of why this happens, it's important to realize the sticky nature of terpenes and cannabinoids. If you were to take a stroll through a thriving Hemp field, your clothing would naturally become covered with a sticky substance, known as Resin. Hemp plants are just naturally sticky.

If farmers working with hemp in their fields become covered with this sticky substance, how much more so will cannabinoids and terpenes stick to the machinery during the milling phase of Super Critical CO2 extraction. Since there is no other way to extract with Super Critical CO2, loss of valuable plant properties is unavoidable with this method.

Research has shown that valuable terpenes are lost with Super Critical CO2 extraction. To compensate, some manufacturers will add terpenes back in after the extraction is complete, similarly to when vitamins are added back in to processed food that has been stripped of nutrients. ¹⁷



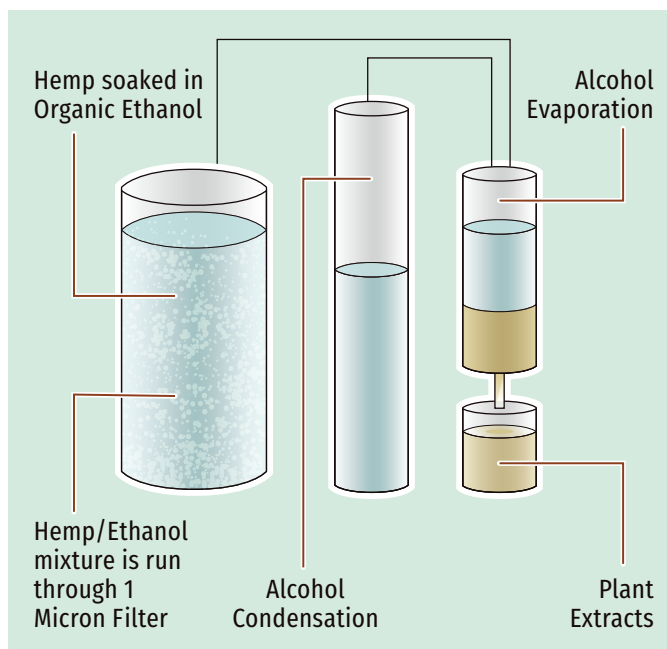
Subcritical CO2 Extraction

This process is very similar to Supercritical CO2 extraction, except that it uses sub-zero temperature to extract the hemp material from the plant. It's an expensive method because it takes more time and produces less end product, so it is not used very much. Unfortunately, this method also results in a loss of beneficial terpenes.

Cold/Subzero Extraction: A Closer Look

Here's how a subzero extraction is produced:

1. Hemp plant material is soaked in ethanol (preferably food grade and organic) in a freezer with the temperature at 40 below zero, for 24 hours.
2. After the freezing cycle is complete, the Hemp plant material continues to stay submerged in the ethanol.
3. The Hemp material is then run through a centrifuge, separated and filtered.



4. All the alcohol is evaporated off in a heated column. The final product contains zero alcohol.

5. The final CBD product remains, with its cannabinoids and terpenes intact.

Advantage of Subzero Extraction

With the cold subzero extraction method, no other extractions or processes are necessary. Since no other extractions are required, a strong full spectrum CBD product is produced, making it likely to benefit from the entourage effect where the sum of the plant left intact, is greater than its parts. In other words, all the components of the whole plant work together synergistically to bring out the therapeutic potential in the extract's properties. The sub-zero cold extraction process is considered to be very promising when it comes to retaining healing properties within the extract.



Ambient Extraction

This is also an ethanol extraction, though it is extracted at room temperature. It does use a mechanical procedure to remove the alcohol from the Hemp plant extract. The disadvantage to this method is that more lipids and plant components are lost, than when using a subzero extraction. This requires another processing step known as winterization.

Winterization

This additional refinement process is not necessary when using cold subzero extraction. However, Hemp that is extracted with the Ambient and Supercritical CO2 methods do need this additional step. Winterization involves freezing the final Hemp material in ethanol after it is extracted in order to separate out the fats (lipids that cause rancidity) to create a cleaner final product. It's important to know whether the extractor is using only food grade ethanol (which is more costly).





Is CBD Legal?

The legality of CBD is a changing landscape. More and more people are demanding the opportunity to experience the healing benefits of CBD. Prior to the passing of the Farm Bill (first in 2014 and most recently again in 2018), only the seed and stalk of the Hemp plant were allowed to be extracted legally. With the passing of the Farm Bill, the entire Hemp plant can now be cultivated and extracted, legally.

The stalks of the Hemp plant are used to create paper, fabric and fuel. The seeds are used for food and Hemp Seed oil. Only the flower and leaves (aerial parts) contain cannabinoids that can be used for medicinal benefits.

On the Federal level, CBD is now legal. Each state is free to create its own set of regulations and requirements.

At the present time, CBD is illegal in Idaho, South Dakota and Nebraska. In all other states, CBD is 100% legal, but 8 states have specific labeling requirements. For example, Florida, Texas, Louisiana, Utah and Indiana all require QR codes leading to a third-party certificate of analysis, on the labels. Kansas requires that all products produced there have zero THC.





Is Some CBD Superior to Others and Why?

What's the Difference Between CBD You Buy Online and CBD You Buy at the Supermarket?

As you can see, there can be a world of difference when it comes to the quality of CBD. The field is currently unregulated, so in a sense, when it comes to shopping for CBD, buyer beware.

Wherever you buy your CBD, be aware that super low pricing is probably a good indicator that you are getting crap. High quality, organic CBD costs a lot to produce and that should be reflected in the price.

Your CBD product should have a QR code that takes you straight to the certificate of analysis, so you can see for yourself that your product is free of metals and microbes and has the CBD potency listed on the label.



Additionally, you want to be able to easily locate on the seller's website the certificates of analysis for the master batch of Bulk Hemp that was used to make your product, to be certain that it has at least 10-18% CBD (for true full spectrum) and contains no mold (which is a big problem in certain states that cultivate CBD).

Higher quality Hemp, cultivated from female seedlings will produce higher quality bulk hemp material (without stalks), eliminating the need for the chemical process of distillation (used to clean up inferior Hemp). The quality of the Hemp is clearly visible on the COA for the Bulk Hemp material. If the CBD amount on the Bulk Hemp material is only 2-10%, that indicates poor quality Hemp that will require distillation, before bottling. Distillation is a high heat process that removes the Hemp plant's natural terpenes and flavonoids.

At Rena's Organic, every CBD product has a QR code on the label that leads directly to 3rd party testing from an accredited laboratory, revealing potency, terpene, and purity (microbial and heavy metal) testing. Additionally, our product labels clearly state that our CBD is grown in Colorado, USA.

Be aware that a lot of USA manufacturers are getting their seeds from Europe, because it's actually a lot cheaper to do so. Why is this a problem? For the reasons discussed above, you can not then be sure if the seeds have never been in contact with toxic soil or air, particularly since many seeds claiming to be from Europe, are actually from China.



You'll also find on [RenasOrganic.com](https://www.renasorganic.com) a [Third-Party Testing page](#) dedicated to all the COAs, including analysis of our organic soil, Bulk Hemp, and Bulk CBD Master Extract, so you can see where the final products have been derived from.

Additionally, beware of products marked with ridiculously high levels of CBD. This is a sure sign that the product has been spiked with CBD isolate, which may very well be synthetic. Authentic full spectrum CBD is most likely not at a potency higher than 1500 mg. for a tincture and 1000 mg. CBD for a topical pain relief cream.

Did you realize that when you see product labels with very high amounts of CBD, it's because manufacturers are spiking their products to increase the amount of CBD present? They could be adding synthetic CBD from China (as mentioned earlier), and a customer would have no way of knowing. Suppliers may do this without even questioning whether this is a safe practice!

The only other way a product can have higher levels of CBD is if it's a medical marijuana product with corresponding high levels of THC. THC will get you stoned. If you do not want to get high, but simply want the medicinal benefits of CBD, then you always want to get full spectrum CBD with less than point 3% THC, only. Products with greater levels of CBD than 1500 mg. (if they are true full spectrum and not just isolate) must have more THC in them, based on the math, and that is likely to create an unwanted "high."

What's the Difference Between CBD You Buy Online or at the Medical Marijuana Dispensary?

It depends on the THC content at the dispensary. If it has higher THC, it is a medical marijuana product. For example, with a 900 mg. CBD tincture at the dispensary, the THC could be 10 mg. which is way too high for a Hemp product. That's going to make you high. For everyday use, where you are not getting high, that's where you want to buy Hemp from a reputable source that is not a dispensary.

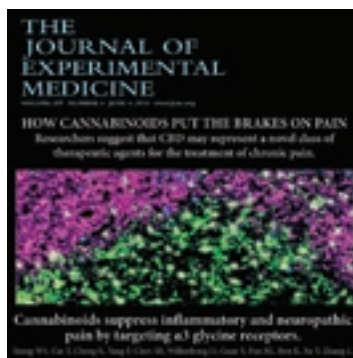




How Does CBD Work in the Human Body?

In the 1990s, it was discovered that the human body has an Endocannabinoid System. The Endocannabinoid System consists of receptor cells located throughout the brain and central nervous system. These receptor cells are named CB1 and CB2. The receptor cells regulate many bodily functions (which is why CBD is known to help change how you think, sleep, eat and feel).

CBD binds with and interacts with the CB1 and CB2 receptor cells, influencing them and communicating various responses. [Scientific studies](#) have shown a wide array of benefits including anti-inflammatory actions, the sleep-wake cycle, reducing pain perception, reducing anxiety, improving learning and memory, as well as tumor reduction.¹⁸



The Endocannabinoid System

You can think of the receptor cells as locks that are abundantly situated throughout

your brain and body. The cannabinoid molecules (whether endogenous or from plants) will fit like a key, activating these cells.

The ECS (endocannabinoid system) receptors are activated by substances known as endocannabinoids and phytocannabinoids. Endocannabinoids are endogenous, meaning they are generated from within your own body. Phytocannabinoids come from plants. The most powerful phyto-cannabinoid that is non-psychoactive, is CBD.

One of the primary endocannabinoids that the body produces is arachidonylethanolamine (AEA), and is nicknamed Anandamide, from the Sanskrit word “Ananda” meaning bliss – according to Dr. Ethan Russo.

When this system is functioning perfectly, as it should, we actually feel our best.

The Endocannabinoid System

A Vital Part of Every Aspect of Human Health

The Endocannabinoid System Regulates Health Throughout the Body

- Endocrine System
- Digestive System
- Immune System
- Nervous System
- Cells & Skin
- Brain
- Heart & Lung
- Lymph System
- Muscles & Bones
- Fat Cells & Tissue
- Liver, Spleen, Kidneys
- Blood Vessels & Blood



CB1

CB1 receptors are primarily found in the brain + central nervous system and to a lesser extent in other tissues

The Endocannabinoid System Modulates

- Muscle Control
- Metabolism
- Inflammation
- Appetite
- Mood
- Energy
- Eye Pressure
- Stress Response
- Focus & Memory
- Body Temperature
- Motivation & Reward
- Libido & Sexual Pleasure



CB2

CB2 receptors are mostly in the peripheral organs especially cells associated with the immune system



However, the body also produces a degradative enzyme that breaks down the Anandamide. [According to Dr. Ethan Russo](#), “Cannabidiol, among its many activities is capable of inhibiting AEA breakdown by the enzyme fatty acid amidohydrolase



(FAAH), thus strengthening and prolonging its (the Anandamide molecule's) effects." This is a wonderful finding as it explains how CBD can be so effective in increasing a sense of happiness as it is activating the "Bliss Molecule." ¹⁹

Cannabidiol has been found to be an inhibitor of Anandamide uptake and metabolism, according to [research](#) conducted at the University of Salerno and University of Naples, Italy. ²⁰

"[Biochemical studies](#) indicate that cannabidiol may enhance endogenous anandamide signaling indirectly, by inhibiting the intracellular degradation of anandamide catalyzed by the enzyme fatty acid amide hydrolase (FAAH)," According to the Endocannabinoid Research Group in Napoli, Italy and the Department of Medicinal Chemistry at Hebrew University. ²¹

What does this mean to you and me? It's actually great news! Our bodies produce a bliss molecule. The secret to health and happiness may be in generating more of that natural compound and keeping it active and alive in the bloodstream and cells longer. This research is proving that this is what high quality CBD is meant to do. It keeps the naturally-occurring Anandamide molecule in the bloodstream longer.

In fact, in a study that examined how Cannabidiol can be beneficial for the treatment of schizophrenia, conducted at Heidelberg University in Mannheim, Germany, the authors concluded that Cannabidiol (CBD) impedes the degradation of the endocannabinoid anandamide (Bliss Molecule), thus allowing more anandamide to circulate in the body for a longer period of time.

[Researchers in Germany](#) reported, "Cannabidiol treatment was accompanied by a significant increase in serum anandamide levels, which was significantly associated with clinical improvement. The results suggest that inhibition of anandamide deactivation may contribute to the antipsychotic effects of cannabidiol potentially representing a completely new mechanism in the treatment of schizophrenia." ²²



Not only is CBD being researched to help people with psychosis, but it's been shown to lower anxiety and depression for the average person. In the [American Psychiatric Nurses Association Journal](#), Dr. Marion Newton and Dr. David Newton of Shenandoah University, presented research with proven therapeutic uses for CBD for several psychiatric and neurologic diseases. The studies submitted all emphasize the importance of ingesting only high-quality CBD. ²³





How Do I Read and Understand CBD Labels?

As a shopper about to spend your hard-earned money, you deserve to know what you are purchasing. Understanding your CBD product's label is key to identifying what you have purchased. It's scary to think about false labeling, but sadly, this is not that uncommon. When it comes to CBD, it's very important that you are informed of what to look out for. There are so many products and there is a lack of regulation around label claims. In this section, I'm going to show you examples of labels, both good and bad, to help you differentiate between products, and to be able to recognize a truthful label.





Label Example #1

It's impossible to be a whole hemp extract and still be THC free. This product is claiming both, which must be false. Full Spectrum extracts, by definition, contain a small percentage of THC in the final product (under 0.3%). When the THC is removed it's no longer considered to be a whole hemp extract.

A supercritical CO2 clean extraction does not use solvents, but the process doesn't remove THC from the plant.

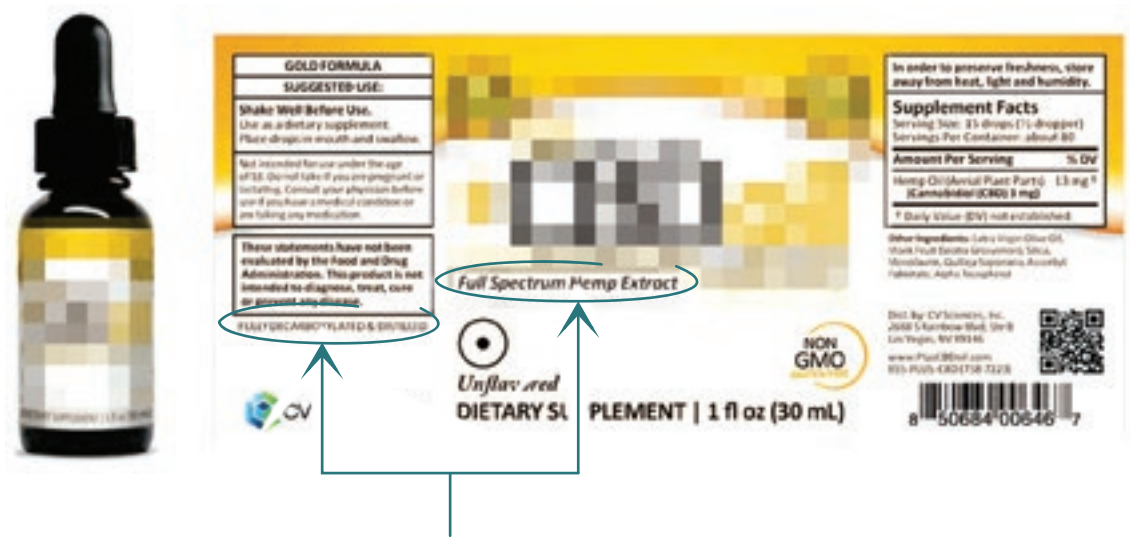
A chemical extraction is necessary to create a THC-free product. Hexane and Pentane are solvents commonly used to remove THC. Hexane for Broad Spectrum products and Pentane for Isolate.

The entourage effect is only present with true Full Spectrum products. That's because it's a result of the cannabinoids and terpenes in the Hemp plant working together to synergistically provide a therapeutic benefit. Completely removing the THC from the final product also eliminates these beneficial plant compounds. Adding essential oils, essences or oils back into the formula is likely to add additional benefits, but it is not the same as the entourage effect. That's because the entourage effect signifies all the components of the hemp plant working together, with nothing removed.

Suggested Use: Adults take 1 dropperful (1 mL) 1 or more times daily as desired.

Supplement Facts	
Serving Size 1 Dropperful (1 mL)	
Servings Per Container 30	
Amount Per Serving	
Broad Spectrum Hemp Extract Blend	947 mg*
Hemp Extract (whole plant) in Organic MCT Oil (from coconut) [10mg Cannabidiol (CBD)]	
Entourage Effect Blend	2.25 mg*
Essence of Organic Peppermint (flower, leaf, stem) Oil, Essence of Organic Spearmint (leaf) Oil, Essence of Organic Orange (peel) Oil, Essence of Organic Lavandin (flower & stem) Oil, Essence of Organic Frankincense (resin) Oil	
*Daily Value not established.	
Other Ingredients: Organic Chocolate Mint Flavor.	
Contains: Tree nuts (coconut).	

Label Example #2



On the front panel of the label it states, “full spectrum hemp extract.” However, on the side of this product label it says that this is a distilled product. Full spectrum extract and distillate are not the same! A distillate is created from a full spectrum extract. However, in order to produce a distillate, a high heat process is used during which many of the terpenes and flavonoids are destroyed, leaving only the cannabinoids. This eliminates the Entourage Effect.

CBD in Container	250mg	←
CBD per Serving	3mg	←
Serving Size	15 single drops or 1/2 a dropper full	
Serving per Container	80 servings	

Additionally, the mathematical calculations on this label are clearly incorrect. The website states that this product contains 250 mg. CBD and 3 mg. CBD per serving. The label states that there are about 80 servings per container.

Let's calculate this out:

CBD per serving = 3 mg.

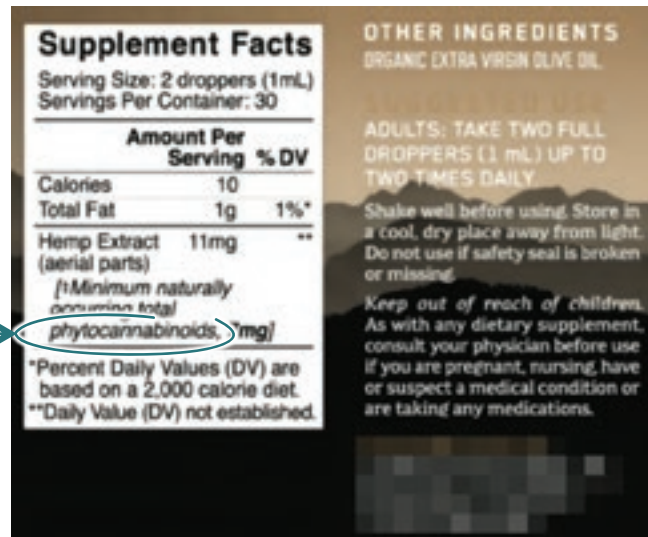
Serving size of 3 mg. x 80 servings = 240 mg. CBD

The amount of CBD present in the bottle (if it can be confirmed with 3rd party testing) is less than what is claimed on the website.



Label Example #3

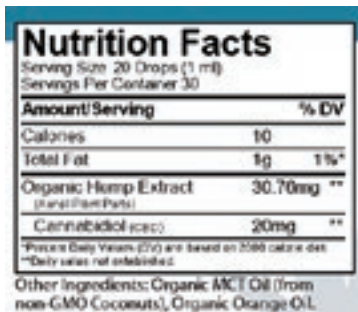
This is a product label of a leading CBD brand. The label is very confusing because it reports only total phytocannabinoids and not CBD! In any full spectrum product, the phytocannabinoid content is greater than the amount of CBD. The only way the phytocannabinoid content can be equal to the CBD content is if it's an isolate, since in that case the only cannabinoid present is CBD.



For example, in the full spectrum extract COA in this book, the COA

reveals that 67.04% of the master extract is CBD, while the total cannabinoid percentage is 73.41%. In this case, 6.37% of the extract contains phytocannabinoids other than CBD. Based on this label, it's impossible to know how much CBD is actually in the Label Example #3 product.

Label Example #4



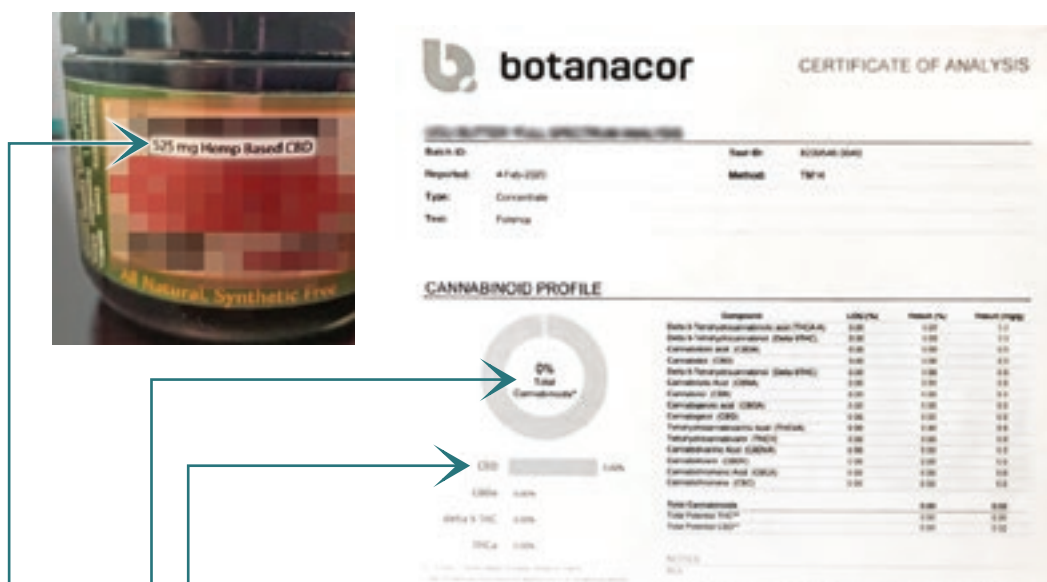
This is a good example of a label that makes sense.

- 20 mg. CBD (Cannabidiol) per serving
- Serving size is 20 drops (1 mL)
- Servings per container is 30
- 600 mg. CBD per 1 oz. container
- 30.76 Organic Hemp Extract per serving
- Total Hemp Extract per bottle = 922.80 mg.
- Total CBD per bottle = 600 mg.

USDA Organic Certified shows that a strong quality assurance program is in place.

See all the components on the Rena's Organic label that let you know you are getting authentic full spectrum CBD with additional Hemp Extract, USDA certified organic. We go the extra mile because I want you to get real results!

Label Example #5



This is an example of a cheap topical product. It turns out, it's cheaper for a reason. Even though the label claims to have 525 mg. Hemp based CBD in the bottle, it turns out that when it was sent out for testing, it actually contained 0.00 CBD! You can see these results on the certificate of analysis we received from the accredited lab that tested this product. Be careful when purchasing cheaper products. This jar of pain relief cream cost \$29.99. Quality CBD is expensive to produce so the only way to reduce the cost is to cut corners.

Label Example #6

This company claims 300,000 mg. in a fluid ounce. This is not possible! If you were to fill a one fluid ounce container with water, it would fit, at the most, 30,000 mg. If you filled a one fluid ounce container with oil, the most that could fit in that bottle would be 28,000 mg. There is no possible way to have 300,000 mg. in one fluid ounce.



Label Example #7: Understanding the Math on a Label

Learning to read this label will require some math. By learning how to read the label, you will be able to determine what type of extract was used, by calculating the percentage of CBD present.

Knowing how to read a label and check the math can help you to confirm the exact type of extract that was used. As you learned earlier, a high-quality full spectrum extract ranges from 60%-70% CBD. The master extract is what was used to create the final product that is sold on the shelf (or online).



$$\begin{array}{r} 10 \text{ mg. CBD} \\ 15.36 \text{ mg. extract} \\ \hline \end{array} = \frac{X \text{ CBD}}{100}$$

If you calculate this out, $X = 65.1\%$ CBD

A distillate will range from 70-88% CBD and isolate will be above 98% CBD. (At first glance that may seem like an advantage, but it's important to remember that the cause for the higher CBD levels is a heat and/or chemical processing for both distillate and isolate, stripping the product of valuable terpenes and flavonoids, eliminating the much-needed Entourage Effect).

On this label we can see that there is 15.36 mg. hemp extract per serving and 10 mg of cannabinoids, representing CBD. Based on this information, we can use cross multiplication to conclude the percentage of CBD in the dropper bottle.

Based on the understanding that a high-quality full spectrum extract ranges from 60%-70% CBD we can determine that this product is most likely derived from a high-quality full spectrum hemp extract. It can also be helpful to check other features, such as color and scent, to be certain of a high-quality full spectrum extract. The color should be a dark amber, not a bright gold. Bright, honey-colored gold is a sign that your product is a distillate.

Of course, if your CBD is in Hemp Seed Oil as opposed to MCT or Olive oil, then it will be darker in color, not because it's necessarily full spectrum, but due to the darker color of the Hemp Seed Oil. But if your product is in MCT oil and it's bright gold or lighter, it's likely that it is a distillate, which is inferior.

The scent should be of the hemp plant, although it is possible that a CBD product could be spiked with a fake hemp flavoring or scent, which may not be on the label.

That's why it's best to take into consideration all these factors: color, scent, and math to determine quality of extract, when looking to purchase a high-quality CBD product.



Are There Any Known Drug Interactions with CBD?

How Does CBD Interact with Prescription Medicine?

A drug interaction can occur when two drugs react with one another. When this happens, the individual taking the two drugs may experience a stronger effect from either drug, or a weaker effect from the first drug, usually called the “object drug.” It can also increase or decrease the side effects from the “object drug” by increasing or decreasing the amount of the drug in the bloodstream.

These reactions are called “pharmacokinetic.” How much of the drug is in the body and the body’s response to the drug is what causes a pharmacokinetic interaction.

All pharmaceuticals are modified, detoxified and removed from the body by metabolic enzymes.

Metabolic enzymes are responsible for proper digestion, breathing, cellular energy, and many other life-sustaining functions. When [metabolic pathways](#) are dysregulated, diseases such as obesity, diabetes, hormonal imbalance, cancer, high blood pressure and osteoporosis, are prevalent.²⁴

One family of metabolic enzymes that metabolizes nearly 60% of all medications is known as Cytochrome P450. These enzymes are mostly found in the liver, though they can also be located in the intestines, in the lungs and in other parts of the body. As it turns out, the primary metabolic enzymes that break down CBD also come from the same P450 family and are known as CYP3A4 and CYP2C19.

Prescription drugs that are also broken down by those enzymes and follow the



same metabolic pathway, can be affected by ingested CBD. This is very similar to the grapefruit warnings you may have seen on certain medicines. What CBD and grapefruit have in common is that they both bind with and neutralize the CYP450 enzymes in the gut, though grapefruit is known to have a much stronger effect.

This can cause an increase or decrease of the medications in the body, because the ingested CBD is changing the amount of the metabolic enzymes present. According to the District of Columbia Department of Health, CBD can increase the amount of medication in your blood.

How intensely this all plays out in your body mainly depends on the **dosage of both the medication and the CBD** that you're taking, according to Yasmin Hurd, director of the Addiction Institute at the Icahn School of Medicine at Mount Sinai. "If the concentration of CBD is high enough, it could inhibit the activity of those enzymes, so you would end up with more of the other drug getting into your system," she added.²⁵ "On the flip side, very low amounts of CBD don't seem to have that much of an effect on how well your body processes other medications."

Drug interactions with CBD usually simply require an adjustment of the amount of CBD or in some cases, permission from your doctor to modify the amount of the prescription medication, if possible. That's because these interactions may actually be a positive occurrence, because they may enhance the effect of the pharmaceutical requiring less of it.

Also, some experts recommend simply taking your medications and CBD separately, at varying times of the day, to allow enough time for the liver's enzymes to build back up.

Some people are more sensitive than others. Some of the factors that contribute to how different people's bodies respond to certain medications can be significantly influenced by age, weight and genetics.



According to many [studies](#), CBD has been found to be safe and well-tolerated. ²⁶

However, bear in mind that if you drink alcohol or take prescription drugs for anxiety or depression, CBD can inhibit the enzymes that metabolize these drugs. In consultation with your doctor, your physician may reduce the amount of medication necessary to offset this action.

The metabolic enzymes that CBD could potentially degrade are in the liver. Dr. Michelle Henry, a board-certified Harvard-trained surgeon, suggests that when you take CBD orally, it then goes through your gastrointestinal system and some of the absorption is reduced, thus lowering the likelihood of an interaction.

According to Dr. Henry, applying CBD topically carries almost zero risk because the skin provides the least likely route for CBD to get into the bloodstream. When you apply CBD as a cream (for pain relief or skin-care), it's highly unlikely to cause any kind of interaction with medication.

The University of Alabama published an interesting case study describing a case where a patient was on Coumadin (a blood thinner). Coumadin is known to cause adverse drug reactions.

In fact, among adults 65 years and older, Coumadin (also known as Warfarin) was one of the 15 most common drugs responsible for an estimated 60 percent of the emergency room visits for adverse drug events. ²⁷

The doctor was able to reduce the Coumadin dose when the patient also began to use CBD (Cannabidiol). Because CBD acts as an inhibitor of the CYP2C9 and CYP3A4 enzymes that metabolize Coumadin, the patient ended up needing less Coumadin (only 70% of the original dose). ²⁸



Are There Any Known Drug Interactions with CBD?

The following prescription medications are metabolized by the CYP family of enzymes. If you are taking a drug listed below, let your doctor know that you will be also taking full spectrum CBD. Because CBD is being metabolized by the same enzymes, it is possible that you may need less of the prescription or over-the-counter medication than you may otherwise require.

That's great news. *CBD can help you to reduce the amount of medication you are taking, so you have fewer side effects from your meds and you save money.* Please work with your doctor when you make any changes to your prescription medication intake.

Drug	Brands	Condition Treated
Alprazolam	Xanax	Anxiety
Aprepitant	Emend	Nausea & Vomiting from Chemotherapy
Baclofen	Lioresal, Gablofen	Muscle Spasms
Buprenorphine	Belbuca, Probuphine, Buprenex and Butran	Severe Pain
Busiprone	Anxiolytic	Anxiety
Carbamazepine	Tegretol, Equetro & others	Seizures, Nerve Pain, Bipolar
Citalopram	Celexa	Depression
Clonazepam	Klonopin	Seizures, Panic Disorder, Anxiety
Clopidogrel	Plavix	Blood Thinner for Stroke & Heart Attack Prevention
Cyclobenzaprine	Amrix, Fexmid	Muscle Relaxant
Cyclophosphamide	Cytoxan	Cancer including Lymphomas & Leukemia
Cyclosporine	Restasis, Sandimmune	Organ Transplant Rejection (<i>prevention</i>)



Drug	Brands	Condition Treated
Dexamethasone	Ozurdex, DexPak	Eye Swelling
Dextromethorphan	Tussin Cough, Scot-Tussin, Diabetes DF, Robitussin ER, Tussin Maximum Strength	Cough
Diazepam	Valium	Anxiety, Alcohol Withdrawal, Seizures
Diphenoxylate & Atropine	Lomotil	Diarrhea
Disulfiram	Antabuse	Alcohol Abuse or Addiction
Dronabinol	Marinol	Nausea & Vomiting from Chemotherapy
Duloxetine	Cymbalta	Depression; Nerve Pain
Edaravone	Radicava	Amyotrophic Lateral Sclerosis (ALS)
Efavirenz/ Emtricitabine/ Tenofovir Disoproxil Fumarate	Atripla	Human Immunodeficiency Virus (HIV)
Elvitegravir/ Cobicistat/ Emtricitabine/ Tenofovir Alafenamide	Genvoya	Human Immunodeficiency Virus (HIV)
Elvitegravir/ Cobicistat/ Emtricitabine/ Tenofovir Disoproxil Fumarate	Stribild	Human Immunodeficiency Virus (HIV)
Entacapone	Comtan	Parkinson's Disease
Escitalopram	Lexapro	Depression
Eszopiclone	Lunestra	Insomnia

Drug	Brands	Condition Treated
Fentanyl	Duragesic	Severe Chronic Pain
Fingolimod	Gilenya	Multiple Sclerosis (MS)
Fluoxetine	Prozac	Depression
Gabapentin	Neurontin	Seizures and Pain caused by Shingles
Galantamine	Razadyne	Dementia
Granisetron	Sustol	Nausea & Vomiting from Chemotherapy
Haloperidol	Haldol	Antipsychotic
Hydrocodone	Vicodin	Moderate to Severe Pain
Hydroxyzine	Histamine	Allergies
Isocarboxazid	Marplan	Depression
Levetiracetam	Roweepra, Keppra	Seizures
Lorazepam	Ativan	Anxiety, Seizures
Losartan	Cozaar	High Blood Pressure
Meloxicam	Mobic, Viviodex	Osteoarthritis (OA) and Rheumatoid Arthritis (RA)
Methadone	Diskets, Methadone Intensol, Methadose and Dolohine	Pain, Addiction to Opioids
Nabilone	Cesamet	Nausea & Vomiting from Chemotherapy
Nortriptyline	Pamelor	Depression, Nerve Pain
Olanzapine	Zyprexa	Antipsychotic
Ondansetron	Zofran	Nausea & Vomiting from Chemotherapy



Drug	Brands	Condition Treated
Oxcarbazepine	Octellar XR, Trileptal	Epileptic Seizures
Oxycodone	Roxicodone, Xtampza, Oxaydo	Moderate to Severe Pain
Palonosetron	Aloxi	Nausea & Vomiting from Chemotherapy
Phenelzine	Nardil	Depression
Prednisone	Deltosone, Rayos	Inflammation, arthritis, eye disease, immune system disorders, skin diseases, blood disorders, cancer, allergies, breathing problems
Pregabalin	Lyrica	Nerve pain, muscle pain, fibromyalgia
Propranolol	Inderal LA or XL, Hemangeol	High Blood Pressure, Chest Pain, Tremors, Migraines
Quetiapine	Seroquel XR and Seroquel	Antipsychotic
Quinidine	Nudextra	Irregular Heartbeat, Malaria
Rifaximin	Xifaxan	Irritable Bowel Syndrome, Diarrhea
Riluzole	Rilutek	Amyotrophic Lateral Sclerosis (ALS), also known as Lou Gehrig's Disease
Risperidone	Risperdal	Schizophrenia, bipolar disorder, irritability in autism
Ropinirole	Requip	Parkinson's Disease, Restless Leg Syndrome
Rosuvastatin	Crestor	High Cholesterol
Selegiline	Eldepryl, Zelapar	Depression
Sertraline	Zoloft	Depression

<i>Drug</i>	<i>Brands</i>	<i>Condition Treated</i>
Siponimod	Mayzent	Multiple Sclerosis (MS)
Temazepam	Restoril	Insomnia
Tetrabenazine	Xenazine	Huntington's Disease
Tolcapone	Tasmar	Parkinson's Disease
Topiramate	Trokendi XR, Qudexy XR, Topomax	Seizures; Migraine headaches
Tramadol	Ultram	Pain Reliever
Tranlycpromine	Parnate	Depression
Trazodone	Desyrel	Insomnia
Venlafaxine	Effexor	Depression
Warfarin	Coumadin	Blood Clots
Zolpidem	Ambien	Insomnia

A thorough list of herbs and pharmaceutical drugs that are metabolized by the CYP family of enzymes can be found here: <https://www.ebmconsult.com/content/pages/cytochrome-cyp-p450-enzyme-medication-herbs-substrates>





What Do I Need to Know About Dosage, Side Effects, Cost & Risks of CBD?

What Should I Know About Dosage?

[Dr. Bill Rawls](#), medical doctor and nutritional expert, recommends the average dose of CBD to be 10-50 mg. one-three times per day. Dr. Rawls finds that for people who are suffering with pain conditions, more CBD is typically well-tolerated, even 100-200 mg. 1-3 times daily. Although some people do better with less CBD, most people need at least 15-30 mg daily to perceive any benefit.

Most CBD products report the amount of CBD in the entire bottle as well as the amount per dose on the label. A 100 mg. CBD bottle only offers about 3.3 mg. CBD per dropperful, which is not very significant. A medium grade product will offer at least 10 mg CBD per dropperful (300 mg bottle) or 20 mg. CBD per dropperful (600 mg product) and a high concentration CBD bottle will offer 1500 mg CBD per bottle which would be 50 mg. CBD per dropperful (perfect for someone in pain).

Dr. Rawls suggests that it's best to get used to CBD by starting at a lower dose and gradually beginning to increase as needed. Most people notice the effects of CBD right away, but some people take a few weeks of ingesting CBD to really notice any difference.

These are some of the conditions that researchers have studied the effects of CBD on, and the dosages used in those studies:



Bowel Disorders: 5 mg. twice daily, sublingual (study conducted at the University of Mississippi) ²⁹

Anxiety: 15-60 mg. daily, oral (Neurotherapeutics) ³⁰

Type 2 Diabetes: 100 mg. twice daily, oral (American Diabetes Association) ^{31, 32}

Pain Due to Cancer: 50-600 mg. daily, oral (BioMed Central) ³³

Parkinson's Disease: 75-300 mg daily (Frontiers in Pharmacology) ³⁴

Like Dr. Rawls, most health practitioners who dispense CBD report that their patients experience benefits when ingesting between 10-40 mg of CBD, for everyday use. People in pain report that they do tend to require higher potencies and dosages.

When taking CBD for anxiety or many other ailments, it's best to give it at least 2-4 weeks to experience the full benefits. There is no set dose that works for everyone, so be prepared to change the frequency, potency or dose of the CBD you are taking.

For example, many people experience the most relief when they take small amounts of CBD throughout the day, rather than one large dose. Also, some people do better with CBD oil in a tincture, taken sublingually while others have better results with a CBD herbal blend that they drink, perhaps due to the increased efficacy when combining CBD with other nutrient-rich, therapeutic ingredients (such as specific herbs/phytocannabinoids).

Some people, especially those with chronic conditions, do better with 1-3 doses per day. For intermittent symptoms, many people do well taking CBD only as needed.

For me, though I do like to take a half to full dropper of 600 mg. CBD about one hour before bed, it's my CBD Super Cider that I enjoy throughout the day. I find that it really keeps me feeling energized and balanced. I typically take about a teaspoon and a half (in a shot glass), three times a day. One tablespoon of CBD Super Cider contains 25 mg. full spectrum CBD.

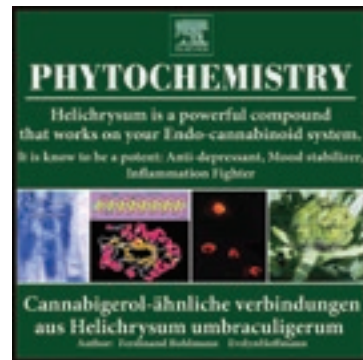
Since my primary goal is to keep my eye pressures down, I personally always want to ingest at least 25-40 mg. CBD per day. What I love about the CBD Super Cider is that it also has 40 grams of a very energizing and calming herbal formula blended in. I can actually feel it.

Plus, the organic apple cider vinegar in the concentrate helps with the absorption of the herbs and is great for my digestion and keeping my body alkalized. And the



organic cherry gives it a delicious taste with no other sweetener needed. I find that drinking CBD Super Cider helps to curb food cravings so it's easier for me to stay away from sugar and simple carbs. The herbs in the formula are phyto-cannabinoids (all organic), so they work synergistically with the CBD.

When I researched the herbs for the formula, and then consulted with a master herbalist, to confirm the selections, I was so happy to find herbs that had documented health benefits. For example, [turmeric](#), [black pepper](#), [helichrysum](#), [nutmeg](#), [cinnamon](#), [cacao](#) and [echinacea](#) are known to have anti-inflammatory, anti-oxidant, energizing, uplifting and blood sugar balancing qualities.



Are There Any Factors That Influence Dosage?

Body Weight – people who weigh less can usually get the same benefits with less CBD, as people who weigh more.

Alcohol or other Depressants – If you are already taking medication that makes you drowsy, you may need less CBD, as the compounding effect could increase drowsiness.

Condition being treated – To control epilepsy, or severe pain, some people need higher doses. But for everyday use, for wellbeing and mood, many people need lower dosing.

What Dose is a Safe Dose?

Research indicates that CBD has a relatively low risk of toxicity.

The [World Health Organization](#) reported that in studies using monkeys, CBD was found to not affect behavior or bodily functions at doses less than 30mg for every two pounds (1500 mg. CBD for a 100-pound monkey), which would be a very uncommon dose.³⁵



According to the World Health Organization, [CBD is well-tolerated](#) by most people. It does not cause a “high” and does not pose an abuse risk like marijuana does. ³⁶

Current Drug Safety Journal reported on the findings from a group of [studies](#) ³⁷ suggesting that CBD is non-toxic and doesn't adversely affect body temperature, gastrointestinal function, heart rate, blood pressure, psychomotor or psychological functions. The studies also indicated that chronic use of CBD and high doses of even up to 1,500 mg/day of CBD are well tolerated in humans. A [review](#) of hundreds of CBD studies revealed that even at a dose of 1500 mg. CBD daily, there was no sign of psychomotor slowing, no negative mood effects and no abnormality in vital signs. ³⁸

Does CBD have any side effects?

According to the Food and Drug Administration, the following side effects are possible when ingesting CBD:

1. Diarrhea or decreased appetite
2. Mood changes, such as irritability or agitation
3. Feeling sleepy

For some people, CBD can have a stimulating effect. It can be helpful to stop ingesting CBD several hours before bedtime, in those cases.

The FDA also indicated that these side effects generally disappear when CBD is stopped or when the dose is lowered. ³⁹

Are There Any CBD Risks?

The good news is that there have been zero reports of anyone overdosing on Cannabis or CBD. That's because neither THC nor CBD causes suppression of the respiratory or cardiac systems. This is a wonderful distinction from both alcohol and narcotics, both of which can lead to death.

The International Journal of Molecular Sciences states, “Cannabidiol has been reported to have low toxicity, is generally well tolerated, and has a good safety profile.” ⁴⁰

According to [researchers](#) at the University of Salerno, Italy, the main risk with CBD is the complete lack of regulation. Research published in Pharmacology & Therapeutics warns that the “patient is not assured about the quality of the



product itself, the effective dosage of CBD that is fundamental for its therapeutic effectiveness, the purity and the absence of chemical or microbiological contaminations, thus raising critical public safety concerns.”⁴¹

*In fact, the FDA has **cited** that when they tested the chemical content of various cannabinoid products, many were found to not contain the levels of CBD claimed on the label. Additionally, there have been reports that the FDA is investigating regarding unsafe levels of pesticides, heavy metals and other contaminants in CBD products that were on the store shelf, ready to be sold to unknowing consumers.*⁴²

This is why I can't emphasize enough the importance of reviewing those certificates of analysis for your CBD products, not just for the end-product but for the master extract and bulk hemp used to manufacture the CBD you are going to ingest, and even the soil where your CBD was cultivated. It's essential that you only purchase CBD from a trusted source.



What if CBD Doesn't Work for Me?

Questions to ask yourself: What kind of extract was it? Was it a quality source? Many times, isolates, distillates and even broad-spectrum products just don't work. Many manufacturers of distillate claim it's full spectrum, when it's not. It's possible you didn't get a true full spectrum product and that's why it didn't work.

A full spectrum is going to be dark gold to amber in color with lots of terpenes in the COA. Ask the manufacturer for the COA of the raw hemp or bulk extract product. Because if there is over 70% CBD in the bulk master extract, that's not a full spectrum product. If it's 75% CBD or higher or the color is more clear, that is a distillate.

A distillate is less effective because it doesn't have the terpenes and flavonoids (phyto-nutrients with anti-oxidant effects). The full spectrum extract COA will prove that the product is indeed full spectrum full of terpenes. Distillate comes from bulk hemp, too, but the process of refining strips the product of terpenes and flavonoids.

Terpenes added in later after the Hemp has been stripped with a chemical process does NOT equal a full spectrum product. Remember full spectrum is the whole plant, specifically the flower and leaves (aerial parts of the plant loaded with cannabinoids and terpenes) to create the Entourage Effect.



Another thing to consider is changing the brand, dose or frequency, if you have not experienced relief or an improvement in your symptoms. If you are using a CBD brand that you have researched and trust, you may also consider switching to a different product within their line, for example an oral product, topical and/ or a different potency tincture. Gummies and vaping are not recommended for reasons discussed below.

Assuming you are certain you are using a high-quality full spectrum CBD product, if you don't experience the full benefits of CBD when you begin taking it, you may do better if you increase or in some cases, decrease, the amount of CBD you are taking.

Alternatively, you may want to change the potency and/or product. For example, some of our Rena's Organic customers prefer CBD Super Cider and others prefer our organically grown CBD tinctures.

While for many people, a higher dose of CBD has been reported to be very helpful, especially when it comes to relieving discomfort, for some people, micro-dosing or ingesting only a few drops of CBD a day, is the most beneficial.

It's important to remember that CBD builds up in the system. Some people say CBD didn't work. However, upon further investigation, it turns out they only took it once or twice! Many people report that when they start incorporating taking CBD into their daily routine, it's only then that they really begin to notice the benefits.

People in physical pain, 90% of the time, do better by topically applying 1000 mg. CBD pain relief cream on the painful area. For the inside-outside approach, many people take CBD orally, along with applying the 1000 mg. CBD Pain Relief Cream on the distressed area, topically.



I'm thrilled to know that our Rena's Organic 1000 mg. CBD Pain Relief Cream has helped so many people. *In fact, in 2021 First for Women Magazine ran a feature story about one of my customers, Cindy Diskin. In the full-page story, Cindy shared how the 1000 mg. CBD Pain Relief Cream "saved her life," by stopping her throbbing head pain from a concussion, when nothing else would even touch it. (See [Appendix](#) for full article) Quality makes such a difference!*

In fact, my 94-year-old Mother called me up the other day to tell me how much the Rena's Organic 1000 mg. CBD Pain Relief Cream is

helping her ailments including her sore back, arthritic hands, and a painful big toe! I'm so grateful I have something that can help her. I have many customers calling me to order and reorder my full spectrum CBD products, so eager to find something that can help their aging parents who are suffering from various maladies.

CBD can have varying effects for different people and depending on the dosage. Current [Neuropharmacology researchers](#) found that CBD can actually increase wakefulness in some. Therefore, it's best to take CBD at least several hours before bedtime.⁴³

For people who use [CBD to reduce anxiety](#), it's likely they will also experience an improvement in their sleep. That's because, unlike anti-anxiety and anti-depressant drugs, CBD does not interrupt the sleep cycle.⁴⁴

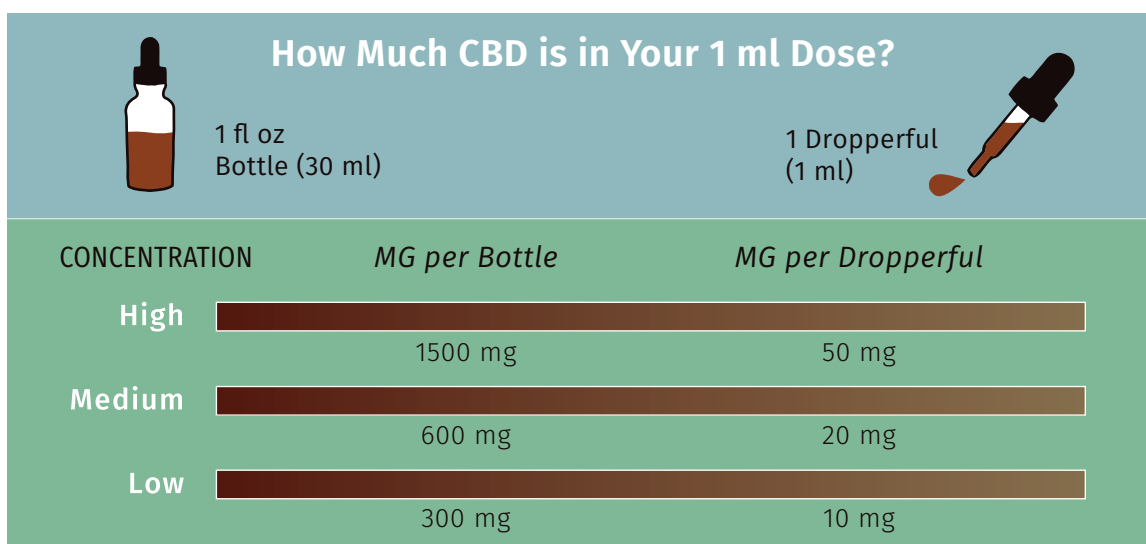
In general, high doses of CBD are likely to have a sedative effect whereas lower doses may increase a feeling of relaxed alertness.

Why the High Cost of CBD?

You may wonder, why does CBD have to cost so much? To manufacture authentic, medical grade CBD, is expensive. For the reasons discussed above, it's essential to grow on organic soil, using organic farming methods.

To insure the best crop, a Hemp geneticist and manual tilling of the soil is highly recommended. Automating these farming processes would bring the cost down but would also reduce the quality of the CBD yield. You only want to buy CBD from a reputable company that refuses to cut corners when it comes to quality.

It's true that CBD may be priced higher not because of quality, but simply because



the seller wants to make a greater profit, or the seller keeps a very high overhead.

The best way for a manufacturer to lower the cost of CBD is to reduce their overhead. Reducing our overhead is how Rena's Organic has been able to keep the cost of our very high-quality CBD as low as possible.

When CBD is priced low, look for the following red flags: the CBD that is priced too low could very likely be just hemp seed oil, very low-quality CBD, or there may be a very small amount of CBD in the product.

A reputable CBD seller will always have the concentration of the CBD on the label of the bottle. You also should be able to find the extraction method on the seller's website. The concentration is most likely going to be available as milligrams (mg) of CBD per ounce. If the amount is stated in ML (milliliters), bear in mind that there are 30 ML per one fluid ounce.

It's important to remember that the medicinal benefits come from the amount of CBD, not the quantity of oil.

So let's say you want to find out what your cost of one milligram of CBD is. You would just divide the total cost by the total milligrams in the bottle. Let's say for example that the product you are looking at is a 600 mg. one ounce bottle of CBD. The cost is \$80. If you divide 80 by 600, the cost comes out to about 13 cents per mg. of CBD.

If you compare that to a 100 mg. bottle of CBD where the cost is \$40 for a one-ounce bottle, that cost comes to 40 cents per mg. of CBD. Clearly in this case it's a much better value to get the 600 mg. bottle.

Is CBD Addictive?

According to research, CBD has been found 100% non-addictive. What this means is that even if you take CBD for a long time and decide to stop, you will not experience withdrawal symptoms.

On the other hand, recreational THC (which is the psychoactive component of marijuana), though not as incapacitating as alcohol or narcotics, can result in dependence. According to Dr. Bill Rawls, although studies are non-conclusive, the regular use of THC has been linked to atrophy in certain areas of the brain and a decline in certain cognitive functions. The good news is that studies are also indicating that CBD can help to restore areas of the brain damaged by extensive marijuana use.





What Disorders Does CBD Help With?

Research from the Department of Natural Resources and Environmental Design

at North Carolina A&T State University, reported: “CBD was first extracted from Cannabis in the late 1930s and has ever since been found to have the curative potential for disorders like inflammation and anxiety as well as a potential neuroprotective agent and an antioxidant.”⁴⁵

Prior to that Hemp seeds had been used for at least 3000 years, for baking, as hemp seed oils, for bird and fish feed, making soap and as lighting oil. The discovery of CBD as a medicinal plant compound is what has been making headlines in recent years.

The National Academies of Sciences, Engineering and Medicine stated that there is conclusive evidence that Cannabinoids are effective for the treatment of chronic pain and to alleviate chemotherapy induced vomiting and nausea. Additionally, they found CBD to improve the symptoms of anxiety, including public speaking.⁴⁶

Additionally, CBD is being recognized as a possible treatment for various neurological disorders, mental illness, anxiety, movement disorders and multiple sclerosis.





The multifaceted pharmacological effects of CBD. Source: <https://www.researchgate.net/publication/314080489>

According to the National Academies 2017 report on the health effects of cannabis and cannabinoids, researchers confirm that CBD works by interfering with the uptake or the enzymatic degradation of the endocannabinoid molecule, Anandamide (Bliss Molecule), thereby keeping more of this Blissful molecule in the body. This leads to a happier mood and a general sense of improved wellbeing.

The enzyme that wants to break down the Anandamide is known as the fatty acid amide hydrolase (FAAH) enzyme. By keeping more Anandamide in the body, CB1 receptors are likely indirectly activated. Bottom line? More Anandamide in the body leads to more blissful feelings.

CB1 receptors, in people and other mammals, are abundant in brain structures that regulate memory, appetite, emotions, motor responses (movement) and posture. The areas of the brain that are affected are the hippocampus, basal ganglia, basolateral amygdala, cerebellum and hypothalamus.⁴⁷

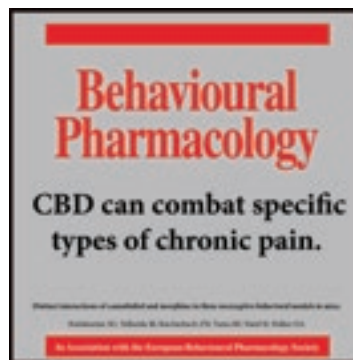
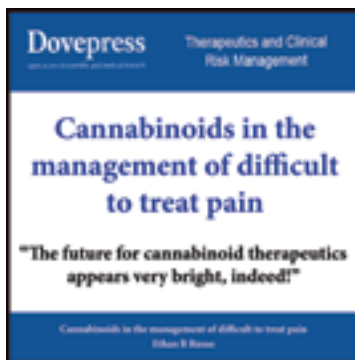


CB1 receptors are also found outside the brain and nervous system in the gastrointestinal tract, liver, fat cells and skeletal muscle. CB2 receptors are also found in the brain, but on a much smaller scale.

The abundance of these receptors throughout the body, from head to toe, explains why CBD can be so helpful for so many ailments.

The [Annual Review of Pharmacology and Toxicology](#) reported that the endocannabinoid receptors play an important role in many bodily processes including pain, anxiety, bone growth, immune function, metabolic regulation and cravings. ⁴⁸

Pain and Inflammation



Inflammation is the culprit for so many disorders including weight gain, diabetes, and many pain conditions. CBD is known to reduce inflammation. According to Harvard Health Publishing, CBD applied to the skin could help reduce pain and inhibit inflammatory responses, due to arthritis.

[Researchers](#) at the USA National Academy of Sciences concluded that CBD can also enhance adenosine receptor signaling, using a non-cannabinoid receptor mechanism. Adenosine is a vital building block to RNA and DNA, which are essential for all of life. By slowing down the deactivation of Adenosine, CBD has the potential to be of therapeutic value in reducing pain and inflammation. ⁴⁹

I'm very grateful that I rarely experience physical pain, but the few times I threw my back out, my 1000 mg. CBD Pain Relief Cream was a life saver. I just kept reapplying the cream on to my back, and in three days I was back jumping on my trampoline and walking on the beach.



I love the letters (emails) I get from people telling me how the Rena's Organic Pain Relief Cream is the only thing that can relieve their discomfort. Recently I got a call from a customer who told me that he has been in construction for 30 years. He said even products from the Dispensary that he got with his Medical Marijuana card couldn't touch the pain. I was so overjoyed when he told me that my 1000 mg. CBD pain relief cream was the only thing that helped him.

Neuropathic Pain

Nearly **10% of the US population** suffers from neuropathic pain.⁵⁰ Neuropathic pain is the result of injury or damage to the nerves that send information between the brain and spinal cord to the muscles, skin and other parts of the body.

The **damage to neurons** can occur after an accident, surgery or infection. Injury to the neurons can also be a result of disease, such as alcoholism, multiple sclerosis or stroke. Neuron injury can also occur as a result of chemotherapy. What commonly happens is that the nerves begin to misfire and send pain signals for no reason, even when no injury is present. Often diabetics suffer from neuropathic pain following diabetic damage to the nerves in the hands and feet, resulting in

a painful burning and numbness. This type of pain is typically described as tingling, numbing, freezing or like "pins and needles."⁵¹

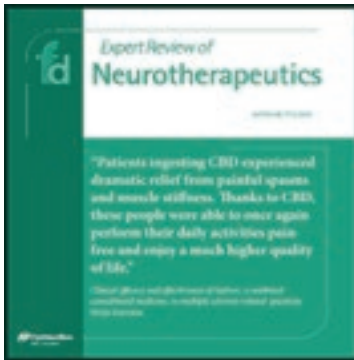


Sometimes pain pathways in the spinal cord and in the peripheral nerves become over-active and start mis-firing, sending increased pain signals that are completely disconnected from any original injury, disorder or wound. This kind of pain can be debilitating and adversely affect a person's quality of life.^{52, 53}

CBD, which is non-psychoactive, can lift your mood and shift the low energy and sadness that often accompanies pain. That's because **CBD is known to activate 5HT1A** serotonin receptors. It can also slow down the heart rate and increase positive feelings of wellbeing.⁵⁴

Fatty Acid Binding Proteins (FABPs) carry the endocannabinoid Anandamide (bliss molecule) within the cells of the body. **Research from Stony Brook University** reveals that when CBD binds with the FABP's, the level of Anandamide (bliss molecule) is raised. What that means is that as the CBD binds to the FABPs, the breakdown of Anandamide is prevented, keeping more of the bliss molecule in the body. It's the competition for the FABPs that may explain the increase of Anandamide in the body, following consumption of CBD.^{55, 56}





CBD has the ability to increase the pain-relieving action of opioid drugs. Some [research](#) is showing that CBD attaches to opioid receptor cells, thus boosting the effect of the opioids. Taking CBD often helps pain patients to lower their dose of pharmaceutical pain pills, reducing side-effects, lowering the chance of addiction and mitigating the risk of overdose.⁵⁷

There are several different mechanisms, [discovered by researchers](#), that explain how CBD can help with pain. TRP (Transient receptor potential) channels are a set of membrane proteins that are involved in the brain's signaling of temperature, sensation, pressure, smell, taste, vision and the perception of pain. A dysfunctional TRP channel goes hand in hand with many disease states, including pain. It's been discovered that CBD can regulate the TRPV1 receptor, which is connected to inflammation, pain and itching.⁵⁸

CNS Neuroscience and Therapeutics [published a study](#) looking at how CBD can help with the multitude of neurodegenerative disorders afflicting so many people. The most common neurodegenerative diseases are Alzheimer's disease and Parkinson's disease. These diseases are identified by a loss of neurons in certain areas of the nervous system. CBD has been shown to help by protecting nerves from injury and reducing stress caused by free radicals. The body produces free radicals, which can create oxidative stress, during normal metabolic processes.⁵⁹

Neuropathic Pain

Another mechanism by which CBD has been shown to alleviate pain is the [PPAR receptor](#) system. PPAR receptors (Peroxisome proliferator-activated receptors), when activated, reduce triglyceride levels, enhance glucose metabolism and play a major role in maintaining energy homeostasis. In research conducted by the Journal of Advanced Pharmaceutical Technology & Research, CBD was found to produce analgesic effects in cases of neuropathic pain and inflammation. Neuropathic pain can often be the result of a damaged nervous system.⁶⁰

Better Mood

The National Library of Medicine, [Neurochemical Research](#) indicated that CBD is a known agonist of serotonin 5-HT1A receptors suggesting it can positively affect mood by activating serotonin receptors as well as working with Endocannabinoid receptors to prevent the degradation of Anandamide in the body, thereby serving a dual function.⁶¹



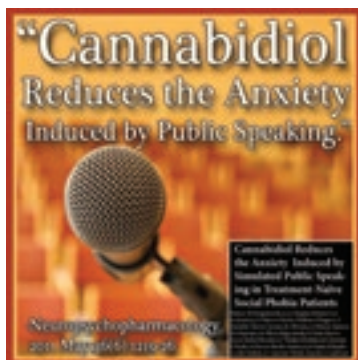
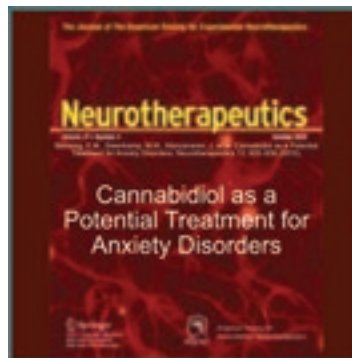
Nervous System Protection

Phytotherapy [Research confirmed](#) that CBD is recognized by scientists to have antioxidant, neuro-protective, sedative and anti-inflammatory properties. The fact that CBD lacks the unwanted psychotropic properties of its cousin Cannabis compound, marijuana, gives it the highest potential for therapeutic solutions. ⁶²

Anxiety

According to the National Alliance on Mental Illness, anxiety disorders are the most [widespread health concern](#) in the USA. In fact, over 40 million adults in the United States suffer with an anxiety disorder, including panic, phobias, social anxiety and generalized anxiety. ⁶³

[Research published](#) in the medical journal, Neurotherapeutics, compiled the findings of hundreds of studies, to conclude that CBD holds great promise as a treatment for panic disorder, social anxiety disorder, generalized anxiety, post-traumatic stress disorder and generalized anxiety disorders. CBD was found to even help to offset the anxiety produced by THC. The doses used in this review ranged from 15mg - 100 mg. CBD.



The mechanisms that make CBD work are two-fold. The first is that the Endo-Cannabinoid System is thought to be essential in regulating mood. The second factor is that scientists are discovering that a dysfunctional Endo-Cannabinoid System (ECS) is associated with inability to regulate and manage fear. ⁶⁴

Because science has discovered that CBD also is a [5-HT1A agonist](#) (stimulates the serotonin receptors), it may be a welcome treatment for some anxiety disorders. Therefore, CBD can assist with stress-induced anxiety and has anti-depressant effects as well. ⁶⁵

Sleep and Anxiety

In a 2019 Kaiser Permanente [medical study](#), the effectiveness of CBD for sleep and anxiety was studied in depth. The findings were that dosages varied widely, being anywhere from 25mg – 175 mg./day. This Kaiser Permanente review reported that patients with anxiety had better results with a lower dosage of CBD, while patients with sleep disorders tend to respond more positively to CBD in higher doses. In



fact, in this study, 47 patients with anxiety experienced a significant reduction in anxiety when ingesting just 25 mg. CBD daily. ⁶⁶

Sleep Issues and Insomnia

According to the American Academy of Sleep Medicine, 30% of adults suffer from some form of [insomnia](#). Shockingly, amongst people who have a history of medical and/or psychiatric disorders, the rates for sleep disturbances climb to 50-70% of the adult population. The definition of insomnia includes not only the ability to fall asleep, but also how well you are able to stay asleep.



Anxiety, depression, substance abuse and chronic pain may also play a role in chronic insomnia. Some of the risks to persistent, untreated insomnia include lower immunity, weight gain and obesity, asthma and respiratory issues, cardiovascular disease and diabetes. ⁶⁷

Do you have trouble falling or staying asleep? If so, first take a look at the obvious – your habits. Are you drinking too much caffeine or alcohol? Even if your caffeinated beverage doesn't feel that stimulating, it could be keeping you up later. What about your sugar intake? Sugar and chemicals in the processed food you eat can definitely interfere with your sleep, as they mess with your blood sugar.

Napping during the day can also keep you up at night. Another thing to look at is, are you getting enough exercise? Movement can help you sleep better.

Smoking can interfere with your sleep cycle as well, as can drinking too many fluids before bed. How's your stress level? Is your mind full of worry or re-living your past? If so, you may try hypnosis to achieve a more peaceful, quiet mind, and happy, open heart. A lot of people don't understand what self-hypnosis is and how it works, but it's truly a passion of mine. Hypnosis is a tool I've used to help thousands of people stop smoking, lose weight and change their lives. It's quite fascinating. To learn more you can go to [EasyWillpower.com](https://www.EasyWillpower.com)

Health giant, Kaiser Permanente [published a study](#) focusing on a surge of clinical evidence documenting that CBD holds therapeutic possibility for ailments such as anxiety, epilepsy, schizophrenia and sleep disorders. ⁶⁸

The Brazil Journal of Medical and Biological Research conducted a *study* to determine the effect of CBD on cortisol levels. Cortisol is known as the “stress hormone”



and elevated levels of cortisol have been correlated with anxiety, worry and not sleeping. The outcome was that CBD was found to have a sedative effect, reducing subjective stress levels, and helping to improve sleep. ⁶⁹

Dosing can vary widely depending on how a person responds to CBD. [A clinical trial published](#) in the Journal of Clinical Pharmacology revealed that patients given 10 mg. CBD for 20 days or 3 mg. per kg of weight (that would be 2.2 pounds, so a 100-pound person would have received 135 mg CBD), with doses varying from 40 mg to 160 mg. CBD, had definite sleep improvement, compared to the placebo, or even the people receiving sleep medication. ⁷⁰

Irritable Bowel Syndrome

Irritable Bowel Syndrome is a common gastrointestinal disorder, causing symptoms of diarrhea, constipation, or the alternating of the two, often accompanied with abdominal cramps.

The National Library of Medicine [published a comparative study](#) by Gastroenterology that indicating that Cannabinoid (CB1) receptors are present in blood plasma in the colon as well as in the mucosa and neuromuscular layers of the colon. ⁷¹

The European Gastrointestinal Motility Society concluded that cannabinoids like CBD have the potential for therapeutic effect for people suffering with [Irritable Bowel Syndrome](#). ⁷²



In a [study](#) reported by the American Gastroenterological Association, the nonselective cannabinoid agonists cannabinal and anandamide proved to decrease the tendency for diarrhea or loose stools (one very challenging symptom for people who suffer from IBS). ⁷³

Because of the widely reported ability of CBD to reduce inflammation and help to suppress pain, CBD is thought to be beneficial for Irritable Bowel Syndrome. ^{74, 75}

Ulcerative Colitis

Dr. Kimberly Langdon, MD, has written extensively about the potential benefits of using CBD to assist in the healing of Ulcerative Colitis, due to its anti-inflammatory



properties. Ulcerative colitis is a chronic affliction that causes inflammation in the rectum and colon. It can cause rectal bleeding, diarrhea, and abdominal pain.

Dr. Langdon reported on a [study](#) comparing the effectiveness of CBD against a control group that was given a placebo.

The participants were started on 50 mg. CBD twice daily, and if tolerated, were increased up to 250 mg. CBD per day.

After 10 weeks, 24% of the participants had gone into complete remission, with no more symptoms of ulcerative colitis. Additionally, many of the participants reported a better quality of life, as compared to the group taking the placebo.

Headaches

According to the [American Migraine Foundation](#), a migraine headache is defined by a minimum of 5 headaches, with no apparent cause of onset, that last between 4 – 72 hours, associated with light and sound sensitivity. Some migraine sufferers report nausea, vomiting and pain. These headaches are debilitating and have a profound negative impact on people’s lives. Approximately 10% of the population is affected.⁷⁶



The first course of action when dealing with migraines, is to look at the obvious. What makes the headaches worse? Are there any triggers that you can identify, such as certain foods, stress, exercise, lack of sleep, caffeine, medications, head or neck trauma or alcohol? If you can identify any of these factors, you are moving in the right direction.

If you can pinpoint a root cause, that information can prove to be very helpful. For example, if the headaches are precipitated by pain medication, increased stress, your menstrual cycle, or a lack of sleep, CBD has been shown to be helpful in all these instances.

However, the frustrating reality is that often the cause of migraine headaches is near impossible to track.

Some research is indicating that what’s known as [Endo-cannabinoid Deficiency Syndrome](#) may be a cause for many ailments, including fibromyalgia and headaches. The treatment would be an increase in phytocannabinoids, such as CBD.⁷⁷



A [study](#) reported by the European Academy of Neurology Congress stated that CBD and other cannabinoids were effective in reducing pain suffered by migraine patients, by over 40%. ⁷⁸

It's also suggested by the [American Migraine Foundation](#), that migraine patients who suffer from joint and muscle pain use CBD topicals and/or CBD oil, sublingually, for relief. ⁷⁹

The Journal of Pharmacology and Experimental Therapeutics [reported](#) that CBD has been demonstrated to be effective in headache related conditions, such as anxiety. ⁸⁰

TRPV1 receptors is a protein whose function is to provide pain sensations and to detect noxious stimuli in the environment. CBD has been shown to play an analgesic role that is associated with the TRPV1 receptors, thus lessening the sensation of pain. ⁸¹

Additionally, since [CBD is a 5HT1a receptor agonist](#), meaning that it stimulates the same receptors as serotonin (to enhance mood and positive feelings), it has been shown to be very helpful in reducing or eliminating headache pain. ⁸²

It's been reported that CBD taken regularly can be most effective for preventing headaches and migraines.

How to Take CBD for Migraines

The best way to take CBD for migraine headaches is to ingest it orally. Some people like to also use topicals, as they can provide some localized relief, especially if the pain is originating in the neck or temple areas. To prevent headaches, it's best to ingest the CBD orally, daily.

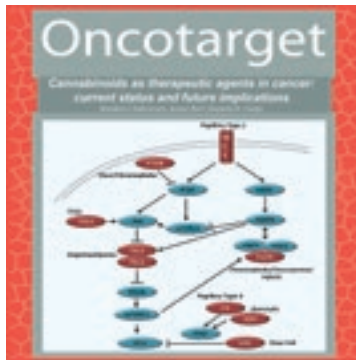
Dosing for Migraines

People who suffer from migraines have reported a reduction in frequency and lowering of intensity with dosages from 5-50mg. daily. It's best to start at a low dose and slowly increase as needed. Use the smallest amount of CBD needed to provide relief of symptoms. For example, you can start with just 2.5 mg. CBD (1-2 drops of 600 mg. CBD) and increase by 2.5 mg. every 48-72 hours, as needed and based on how your body responds. Most patients find ultimate success with dosing of 20-50 mg. CBD, per day. Though it's best to start with less, some patients have much better results with increased CBD dosing. Everybody is different. Monitor your progress by writing down your symptoms and the benefits you experience when you ingest CBD.



Nausea and Vomiting

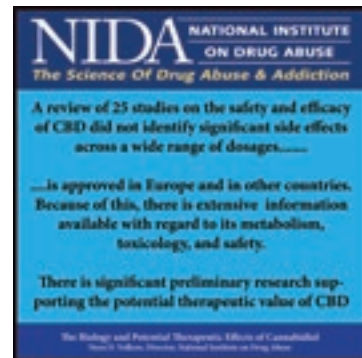
The [British Pharmacological Society](#) has reported on extensive research proving that manipulating the endocannabinoid system with CBD can prevent nausea and vomiting brought on by chemotherapy or other medical treatments. ⁸³



The ability CBD has to prevent nausea and vomiting is a wonderful discovery, particularly for chemotherapy patients. CBD has been found to be especially useful to prevent nausea brought on by anticipating the need to vomit. Since pharmaceutical drugs that prevent vomiting have not been able to solve the common malady of anticipatory nausea, CBD can help prevent a downward cycle for the chemo patient. This is thought to be achieved when CBD

activates 5-HT_{1a} (serotonin) receptors in the brain, reducing the release of 5-HT in the dorsal raphe nucleus. This is the region of the brain that controls learning, memory and affect.

Some clinical [research](#) has shown that effective CBD dosing for nausea is 1mg for every 2.5 pounds of body weight, so for a 100-pound person, 35-40 mg. may be a good starting dose. ⁸⁴



One of the issues with anti-nausea medications is that a common adverse side-effect is constipation. One of the benefits of CBD is that it is much less likely to produce that side effect as studies reveal that CBD is beneficial for bowel and intestinal health.

As always, with any illness or disease, it's best to look for root causes. Sometimes nausea and vomiting can be a result of constipation brought on by consuming pain killers, particularly opioids. In that case, it makes sense to address your pain issue first.

Some patients have found that they can work with their doctor to reduce anti-vomiting (antiemetic) medication when they add CBD.

When the Doctor Tells You It's All in Your Head

Sadly, so many people experience debilitating symptoms such as headaches, irritable bowel syndrome, fibromyalgia, muscle pain, and other pain conditions. To add insult to injury, often when you experience these types of symptoms, and



because there is no known treatment, you are often made to feel like there is nothing really wrong with you.

These conditions, unfortunately, carry a painful stigma, as they are known to be medication resistant. Also, let's face it, pain tends to be subjective and impossible to measure objectively, lending itself to doubt by other people, and regrettably, often by the very health providers you are seeking out for solutions.

Now, new and promising research is indicating that there may be a cause after all. Interestingly, the common element of all these conditions is what's known as hyperalgesia, which means an extreme sensitivity to pain.

This fact led some leading researchers to investigate whether these symptoms could be the result of a condition known as Endocannabinoid Deficiency Syndrome (first proposed in 2001).



The premise is that all humans have an endocannabinoid “tone” made up of the body’s endogenous cannabinoids (generated from within the body), including anandamide (the bliss molecule).

The “tone” also encompasses the metabolism of these cannabinoids and the condition of the cannabinoid receptors.

The theory is that, whether for genetic reasons or external factors, this system is compromised and becomes deficient, in people with these non-descript ailments and hyper-sensitivity. Research is supporting this theory as patterns of symptoms can be controlled by working with the endocannabinoid system and ingesting phytocannabinoids, such as medical grade CBD.



Since there are statistically significant differences in the amount of anandamide (bliss molecule) in the cerebrospinal fluid of people who suffer from migraines, it makes sense that ingesting CBD (which increases the amount of Anandamide in the body, by preventing its breakdown by the FAAH enzyme) would be very helpful.

Another exciting discovery along these same lines, for people who suffer with post-traumatic stress disorder, is that advanced imaging studies have indicated a [hypo-functioning Endocannabinoid System](#). Ingesting CBD can help to restore a failing endocannabinoid system.⁸⁵

CBD for Weight Loss

Adipose tissue is the fat that sits around your organs, expanding your belly, hips and thighs. Research is showing that CBD can enhance a process known as the “browning” of these fat cells, turning that stuck fat into energy, thus promoting weight loss.



This [study](#), published in Molecular Cellular Biochemistry Journal, concluded that CBD is a very promising therapeutic agent to prevent obesity. The study concluded that CBD greatly improves the way our body interacts with fat by making the means of fat burning more effective and efficient.⁸⁶

The International Journal of Molecular Sciences [reported](#) that cannabinoid receptors regulate our appetite, inflammation and metabolism. CBD inhibits

CB1 receptors (interestingly, THC activates these same receptors, creating the “munchies”), which helps to reduce body weight and food intake. The stimulation of CB2 receptors reduces inflammation and encourages anti-obesity effects by reducing weight gain and decreasing food intake.⁸⁷

Working with master herbalists, I have found that [combining full spectrum CBD](#) with other weight loss promoting ingredients, such as black pepper, organic apple cider vinegar and cinnamon, can increase weight loss results.



Can CBD Improve Libido and Increase Sexual Pleasure?

Though the evidence is mostly anecdotal, the consensus is that CBD can help to increase sexual pleasure, and for some people, sexual libido. Libido is defined as the desire to engage in sexual activity.

[Researchers](#) have found that the endocannabinoid system is present in the sexual reproductive organs as well as in the brain.



The reason why CBD helps to enhance sexual pleasure for some people may be two-fold.

One explanation may be the fact that [studies](#) have shown CBD to reduce anxiety, including anxiety in the bedroom. Another factor explaining how taking CBD orally works to enhance sexual pleasure is that it actually boosts and heightens sensation.

Although there are plenty of CBD products out there such as topical lubricants to reduce dryness, I recommend using them with caution, as often the fragrances or other ingredients in the formula can cause infection or irritation, especially to sensitive areas of the body, such as the genitalia.

The good news is that for many people ingesting CBD orally, such as with tinctures or CBD Super Cider, can actually stimulate considerably more pleasurable and fulfilling sex.

When taking CBD to increase libido or to enhance sexual desire, just like when first trying CBD for any other ailment or goal, I recommend starting slowly, as you may just need a small amount to notice big improvements.

For example, if you take a dropper full of 300 mg. CBD and do not get the effect you are looking for, you can always increase your dose. It's a very good idea to let your body get used to CBD slowly. Some CBD users report that taking 10mg-50mg CBD orally can enhance sensation, stimulation and sexual fulfillment, dramatically.





What are the Best & Worst Ways to Take CBD? Vaping? Gummies? Tincture? Cider?

Best Ways to Take CBD

For anxiety, sleep, chronic pain, gastrointestinal issues and most other ailments, the best way to take CBD is by mouth, either orally or sublingually (under the tongue). CBD oil that is taken sublingually works best when you let it sit for a few moments before swallowing it. This allows for better absorption in the body and increases bioavailability.

In fact, swishing the CBD around in your mouth for a moment or two, allowing it to be absorbed by your gums and inner cheeks, is ideal for enhancing absorbability and effectiveness.



Pairing CBD with other phytocannabinoids (plant cannabinoids) such as echinacea, turmeric, helichrysum, black pepper, cacao, nutmeg and cinnamon, can increase the effectiveness of the CBD (*as we've done in CBD Super Cider*). CBD is the strongest plant cannabinoid, but other herbs such as the ones just mentioned, have the ability to positively impact the body's endo-cannabinoid system.



For pain, the best approach for most people, is an inside-outside approach. This would involve taking CBD orally to help reduce the inner inflammation, and applying a high potency full spectrum CBD topically to the painful area. When looking for a CBD topical, check for potency (1000 mg. per 2 oz) is a terrific potency. Also, make sure to research the growing conditions for the CBD in the cream. Was it organically grown in the United States? From the seeds? Additionally, make sure that the CBD is full spectrum and that it is combined with high quality essential oils and menthol to assist with the pain-reducing therapeutic value of the salve.



Frontiers in Pharmacology [Journal](#) reported that even when ingesting CBD over a period of time, its analgesic (pain killing) benefits remain intact, and no tolerance is developed. Additionally, their reporting confirmed that CBD can lessen inflammation and reduce chronic anxiety.⁸⁸

Why You Should Avoid CBD Gummies

CBD Gummies are one of the most widely searched phrases, according to Google. But what most people don't realize is that gummies offer a very poor delivery system for CBD. Since authentic CBD is so expensive, it doesn't make sense to waste it by ingesting it with a method that offers very little bioavailability.

Additionally, CBD Gummies, like all gummies, are going to be produced with some kind of sweetener or flavoring. [“Natural](#)



Flavors” is an umbrella term that can mean anything. The FDA has no guidelines for what natural flavors really means. Therefore, it’s quite likely that the CBD Gummies you ingest will be manufactured with sweeteners or chemicals to increase food cravings and the desire for more.

Additionally, it’s not uncommon for people who ingest CBD Gummies to report adverse reactions such as headaches or feeling dizzy. This could be due to the fact that there is no regulation in terms of ingredients and the source of the CBD.

CBD Gummies are definitely not recommended and are an inferior choice for consuming CBD.

The Truth About Vaping

CBD can be heated up as an oil in a vape pen, where it is then converted to vapor. This vapor is then converted to smoke, which is inhaled into the lungs.

Advocates of vaping argue that it’s the fastest way to absorb CBD into the body. The problem with vaping is that the disadvantages outweigh the advantages, by far.

The metals from the vaping mechanism can easily leach into the product itself and end up in your body.

Also, be aware that it’s not uncommon for CBD vape cartridges to contain toxic and harmful agents such as propylene glycol and polyethylene glycol.

Just like with Gummies, vapes are notorious for “natural” flavors which may not be that natural at all. They are chemical compounds that can have an undesirable effect on your body. Additionally, all the concerns about lung damage around vaping are valid. And vaping can be addictive or habit-forming due to the other chemicals that are mixed in with the CBD to make it more appealing to smoke.

In fact, the Center for Disease Control and Prevention (CDC) **reported** an outbreak of lung injuries and dozens of deaths associated with vaping, as vaping has become more popular.⁸⁹



Northwestern Medicine reports on the following symptoms of lung related injury:

1. Rapid onset of coughing
2. Diarrhea
3. Difficulty breathing
4. Vomiting and nausea
5. Weight loss

Physicians speculate that these symptoms are a result of a buildup of oil and/or white blood cells in the lungs. These symptoms have landed many vape users in the Emergency Room.

According to Dr. Michael Joseph Blaha at Johns Hopkins Center for the Prevention of Heart Disease, when you vape, you are exposing yourself to all kinds of chemicals, many of which may be unsafe. The reality is, you don't really know what is in your [vape pen](#).⁹⁰

Yes, it's true that you can find all kinds of claims about how wonderful CBD vaping is and the quick absorption into the body. But any mechanism is only as good as its weakest link. If the vaping itself has the potential to harm your lungs and create a myriad of side effects, and puts toxic, addictive chemicals into your body, it's just not worth it.



Especially since taking high quality CBD orally and/or sublingually, from a [high quality source like Rena's Organic](#), offers reliable bioavailability without the unnecessary risks associated with vapes.



Conclusion

It is my hope that this book has offered you insight into the mystery of CBD and why it can be so challenging to find an authentic medical grade product. The information shared here should help you to be a better shopper and to know what to look for when shopping for CBD.

In short, remember these points:



1. The best CBD has to be organically grown, preferably with a USDA certified organic certificate on the website of the seller.

2. For CBD to be medically effective, it must be full spectrum. Isolates can offer symptomatic relief, but only on a bell shape curve, according to studies shared earlier, which means that the relief is short term. Additionally, many products labeled isolate, are actually made from synthetic chemicals.

3. Full spectrum CBD builds up in your system and research has shown this helps to create real change for many individuals suffering from various ailments.

4. Full Spectrum CBD is the most beneficial because it's the only kind of CBD that allows for the Entourage Effect. The Entourage Effect is based on the understanding that the sum of the entire plant is where the healing power lies, rather than in the individual parts. Full Spectrum carries a full array of beneficial terpenes and cannabinoids.

5. Low quality Bulk Hemp can't produce true full spectrum, which means that it will contain fewer terpenes. Even if terpenes are added back in, you are still not getting the whole plant, and therefore the CBD cannot produce the Entourage Effect.

6. Only by viewing the Certificate of Analysis for the Bulk Hemp product (should be at least 10% CBD or higher) and the COA for the Master CBD Extract (should be between 60%-70% CBD) can you tell if for sure your product is full spectrum. If the CBD content of the master extract is higher than 75%, distillation was required to get rid of the wax on the material, meaning that a high heat process was used, stripping the material of valuable terpenes.

7. If the CBD content was lower than 10% for the bulk hemp, it's very likely that you are ingesting poor quality hemp, extracted from the seeds and stalks, which do not contain CBD.

8. Some labels indicate Full Spectrum, when they are indeed Distillates. True full spectrum CBD is an amber, dark color. Distillates are a brighter honey gold color, and are less desirable (that extra distillation process is necessary when the CBD is derived from poor quality bulk hemp).

9. It's important for you to buy CBD from a company that displays third party testing from an accredited lab for each product (on its website and on the product labels via a QR code). This testing should indicate potency as well as purity, to insure the products are free from microbial contaminants and heavy metals.

10. To make sure your CBD is organic, and that the soil where it was cultivated is certified organic, check your supplier's website and look for the soil testing where the original hemp seeds were grown. Unless you know the soil was organic, the CBD could contain many unwanted pesticides and metals, even if they don't show up in the final product testing. Hemp is known to absorb the toxins from the air and soil. It's best to buy CBD that is grown in a clean air state, such as Colorado.

11. If your CBD was grown outside of Colorado, in a state with more humidity, check the COA of the bulk material to make sure there was never any mold in your CBD product, at any point in the cultivation (not just in the final product).

12. CBD works because it activates the body's own endocannabinoid system, which has receptor cells throughout the body that control how you eat, sleep, feel and think. This is why high-quality CBD can have a positive impact on almost every system of the body, and is known to assist with so many ailments.

13. CBD is known to block the degradation of the body's endogenous cannabinoid – anandamide. This is the Bliss Molecule. When you have more Bliss Molecule in your system, it's likely you will feel better mentally, physically and emotionally.

It's been my pleasure to share this information with you. Please reach out to me anytime with questions, comments or concerns. I can be reached at: Rena@RenasOrganic.com.

I have been helping people to find the answers to their health and wellness challenges and break free from addiction since 1990. I am so grateful that I had the good fortune to recover from my own near-brush with death, following suffering from a heart attack at the young age of 26. At that time, a permanent pacemaker was implanted into my heart. I feel so blessed that I was given a second chance at life and that I'm still alive today, able to share this vital information.

There's so much hype about health out there and I understand that it's often difficult to discern the facts.

It's my passion to help others avoid illness and disease by learning to take care of their own mental, physical and emotional health. And to help people find the best products and [strategies](#) to support them in achieving the highest quality of life.

CBD is such an amazing plant compound to assist in all those areas. Please visit me at RenasOrganic.com to learn more. Discover amazing and unique CBD products, including CBD combined with powerful healing herbs for weight loss, pain relief, stress control, better sleep, feeling calmer without anxiety, and an improved mood and energy level.

There's a reason [First for Woman Magazine](#) and [150 TV stations](#) across the United States featured the Rena's Organic 1000 mg. CBD pain relief cream, as a top trusted brand. It's because I truly care about the ingredients in my product. Yes, these healthful top notch organic ingredients cost me more, but that's OK. I'm able to keep the product prices affordable by keeping my overhead down.

I want people to get the best results possible. Nothing makes me happier than seeing the incredible results and relief people are experiencing. This is what I want for you, too!

Please write to me and tell me about the results you experience when you try Rena's Organic. I look forward to hearing your story.

God bless you always!

Rena





About the Author

Rena Greenberg's success with weight loss and addiction has been featured in 160+ TV and news stories including USA Today, Woman's World Magazine, The Doctor's Show, CNN, FOX-TV, Good Morning America and ABC-TV Nightline, as well as hosting her own show on PBS. Rena is the creator of Rena's Organic, a premier, medical grade line of CBD, NON-CBD and herbal health and wellness products.

Rena's Organic's premium USDA certified organic herbal elixir, CBD Super Cider, was announced as a Nexty Food Industry Award Finalist: Best New Hemp CBD Product. Rena's Organic 1000 mg CBD Pain Relief Cream was recently featured on TV news stations across America, as one of the most trusted and effective CBD products.

Since 1990, Rena's wellness program has been reviewed and sponsored in over 75 United States hospitals and 100+ major corporations, including Disney, Home Depot and AT&T. Hay House Author Rena Greenberg has worked with thousands of people all over the world, to help them lose weight, stop smoking, achieve optimal health and improve their lives.

At the age of 26, Rena was facing death. An unexpected heart attack awoke a passion for health and wellness that continues to this day. After spending 3 weeks in Cardiac Care, a permanent pacemaker was implanted, the Chief of Cardiology telling Rena that she had the heart of an 80-year-old. Following her near brush with death, Rena studied everything she could about health, nutrition and wellness, determined to find health.

Rena says that what has been most rewarding about her own journey with health is that it inspired her to help other people. She created a hospital-based wellness system that has helped support and motivate over 200,000 people to change their lives. Rena can be reached at: EasyWillpower.com and RenasOrganic.com.

Appendix

Article: Complete Pain Relief; [First for Women](#) 1/11/21



Cindy Diskin, 61, was forced to live life on the sidelines due to chronic pain—until she took a leap of faith on an unexpected natural remedy that restored her health and her vitality!



Cindy Diskin, Sarasota, FL

How am I going to get through the day? Cindy Diskin asked herself as she opened her eyes. "The sun was coming up, and I was mustering the energy to lift my head from my pillow, but I felt my pain start to rise too. And just like that, I knew that I was facing yet another day of draining discomfort.

Barely getting by

"Two years ago, I fell off my bike and hit my head. Right after the accident, I figured I'd be back to normal in 10 days. In reality, I couldn't get out of bed for six weeks due to headaches. For seven months, I lived with chronic pain and migraines—and the debilitating fatigue they brought. Even subtle things would trigger a flare-up. Walking over cracks on the sidewalk made my head hurt!

"I've always prided myself on being active. I exercised and did tai chi. But suddenly there was no denying that I was wasting 70% of every day just trying to cope with the physical and mental exhaustion of chronic pain. I had no energy to do anything. I used to love dancing, but it had been ages since I hit the dance floor. I also played guitar and piano in a band. But the sound of the music only hurt my head.

"From day one, doctors wanted to put me on serious medications, but I didn't want to be dependent on pain pills, so I refused. I feared the

medication would just mask what was going on and cause further damage. Still, weaker over-the-counter pills didn't make much of a dent with my symptoms. Most days, I'd curl up in front of the fireplace and try to wait out the pain and exhaustion. *This is too much for any person to endure.*

"Then my fiancé, Keith, aggravated his old back injury. I took him to an acupuncturist who suggested he try medical-grade CBD cream on his skin, assuring it was safe at effectively reducing inflammation that causes pain. 'I wish it would help with my headaches,' I chimed in. He replied, 'It could work for that too.'

"To tell the truth, the whole CBD craze scared me. My life was so clean: I ate right, didn't smoke and avoided prescriptions. I'd even successfully treated my Lyme disease naturally. Plus, as someone who was nine years sober, I didn't want to go within 100 yards of anything that had drugs in it. I asked the acupuncturist a dozen times, 'Are you sure there isn't any marijuana or THC in this cream?' He assured me, 'There's nothing in it that's mind-altering.' Still, I remained completely closed off to the idea. Leaving the appointment, I figured, *Keith can use it. I don't have to...*

A total turnaround

"It was only after seeing Keith's results that I got curious. He used the cream for five days and felt a dramatic improvement in the back pain he'd

been wrestling with for three decades! I did some research and learned that the formulation Keith used, Rena's Organic 1,000 mg. CBD Pain Relief Cream (RenasOrganic.com), had been developed by hypnotherapist and natural-health expert Rena Greenberg, who used CBD to treat her glaucoma. Seeing that it had been tested by a third-party lab for potency, I felt assured it was safe.

"So I reluctantly rubbed a little cream on the sore left side of my head. There was a slight tingling—like mint or eucalyptus—and within 10 minutes, my headache was gone for the first time in months. I was in disbelief, but I still wasn't ready to give CBD credit. Over the next few days, I repeated the process, applying the cream and feeling the pain dissipate, before I finally accepted that it truly worked. I kept using the cream when my pain flared, and my turnaround was astounding. There were no side effects—only pain relief!

"Within just a week, I felt so in control of my health, I started riding my bike again. And after several weeks, I no longer needed the cream—my pain didn't return. It felt like a gift to be able to treat my problem naturally. Like a true convert, I started telling everyone I knew who was struggling with pain about this product, saying, 'It's a miracle worker!'

"Looking back, it was a fluke that I even tried CBD cream, but it was the biggest factor in feeling human again. Keith and I still use our CBD cream whenever carpal tunnel or rotator cuff pain pops up. Now, with my health back, I'm a mover and a shaker like I was before. We're even dancing again. CBD totally turned my world around!" —As told to Lisa Maxbauer

Complete Pain Relief

News! These CBD creams are proven to safely ease even the most chronic discomfort

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“I’ve always prided myself on being active. I exercised and did tai chi. But suddenly there was no denying that I was wasting 70% of every day just trying to cope with the physical and mental exhaustion of chronic pain. I had no energy to do anything. I used to love dancing, but it had been ages since I hit the dance floor. I also played guitar and piano in a band. But the sound of the music only hurt my head.

“From day one, doctors wanted to put me on serious medications, but I didn’t want to be dependent on pain pills, so I refused. I feared the medication would just mask what was going on and cause further damage. Still, weaker over-the-counter pills didn’t make much of a dent with my symptoms. Most days, I’d curl up in front of the fireplace and try to wait out the pain and exhaustion. This is too much for any person to endure.

“Then my fiancé, Keith, aggravated his old back injury. I took him to an acupuncturist who suggested he try medical-grade CBD cream on his skin, assuring it was safe at effectively reducing inflammation that causes pain. “I wish it would help with headaches,” I chimed in. He replied, “It could work for that, too.”

“To tell the truth, the whole CBD craze scared me. My life was so clean: I ate right, didn’t smoke and avoided prescriptions. I’d even successfully treated my Lyme



disease naturally. Plus, as someone who was nine years sober, I didn't want to go within 100 yards of anything that had drugs in it. I asked the acupuncturist a dozen times, 'Are you sure there isn't any marijuana or THC in this cream?' He assured me, 'There's nothing in it that's mind-altering.' Still, I remained completely closed off to the idea. Leaving the appointment, I figured, Keith can use it. I don't have to . . .

A Total Turnaround

"It was only after seeing Keith's results that I got curious. He used the cream for five days and felt a dramatic improvement in the back pain he'd been wrestling with for three decades! I did some research and learned that the formulation Keith used, Rena's Organic 1,000 mg. CBD Pain Relief Cream (RenasOrganic.com) had been developed by hypnotherapist and natural health expert Rena Greenberg, who used CBD to treat her glaucoma. Seeing that it had been tested by a third-party lab for potency, I felt assured it was safe.

"So I reluctantly rubbed a little cream on the sore left side of my head. There was a slight tingling — like mint or eucalyptus — and within 10 minutes, my headache was gone for the first time in months. I was in disbelief, but I still wasn't ready to give CBD credit. Over the next few days, I repeated the process, applying the cream and feeling the pain dissipate, before I finally accepted that it truly worked. I kept using the cream when my pain flared, and my turnaround was astonishing. There were no side effects — only pain relief!

"Within just a week, I felt so in control of my health, I started riding my bike again. And after several weeks, I no longer needed the cream — my pain didn't return. It felt like a gift to be able to treat my problem naturally. Like a true convert, I started telling everyone I knew who was struggling with pain about this product, saying, 'It's a miracle worker!'



"Looking back, it was a fluke that I even tried CBD cream, but it was the biggest factor in feeling human again. Keith and I still use our CBD cream whenever carpal tunnel or rotator cuff pain pops up. Now, with my health back, I'm a mover and a shaker like I was before. We're even dancing again. CBD totally turned my world around!"

As told to Lisa Maxbauer

First for Women - January 11, 2021



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