HEMP 101

Education

DSQUARED
WORLDWIDE

An educational review on everything hemp derived for training purposes. This is a personal education for products that are derived by the hemp plants.

HISTORY

For over 12,000 years human beings have been cultivating the cannabis plant for food, medicine, fiber, fuel, and religious purposes. Cannabis is believed to have first evolved around 20 to 30 million years ago, in the southwestern Himalayas and Central Asia. The earliest written accounts of cannabis originates in ancient China, where the legendary emperor and father of Chinese Medicine, Shen Nung, promoted cannabis as a powerful herbal remedy, and called it the “Liberator Of Sin” His teachings and other healers until cannabis’ use covered 100 medical conditions, as evidenced in Chinese pharmacopeia, Pen-ts’ao Ching.

BIOLOGY

One of the most unexpected controversies around cannabis concerns its species – experts are divided on whether there is only one species of cannabis, or whether there are several distinct species. The most widely accepted description of the cannabis plant breaks it down into three subspecies (Cannabis Sativa, Cannabis Indica, and Cannabis Ruderalis).

These descriptions have been embraced by the cannabis community who commonly distinguish “sativa” strains from “indica” strains based on the perceived difference of effects. Most strains today are hybrids, a result of crossbreeding sativa and indica strains together, the primary effects of which are determined by the most dominant strain.

SCIENCE

In the late 1980’s researcher Allyn Howlette discovered a receptor in the brain that the cannabinoid THC binds to. Another primary receptor was identified, and the pair became known as CB1 & CB2.

CB1 receptors can be found in abundance in the brain, nervous system, glands, and organs, while CB2 receptors are found in the immune system. CB1 receptors are primarily stimulated by cannabinoids like THC, and are responsible for effects on memory, mood, sleep, appetite and pain sensation. CB2 receptors appear to be activated by cannabinoids like CBD (and THC to a lesser degree) and work to reduce inflammation and immune response.

EDNOCANNABINOID SYSTEM (ECS)

In 1990, Israeli cannabis researcher Raphael Mechoulam discovered what became known as the Endocannabinoid System or ECS for short, a biological regulatory system that promoted balance and well-being in all mammals. Not only did it explain how cannabinoids work with the body's receptors, but this system was also discovered to have involvement innumerous, vital physiological functions- including its ability to directly affect our body's response to injuries and inflammation.

This profound discovery could be called one of the twenty first century's greatest scientific breakthroughs, and it ushered in a flurry of studies. In fact, there are now over 22,000 published studies or reviews in scientific literature pertaining to the cannabis plant and its cannabinoids – nearly half of which were published in the last ten years.

"The Endocannabinoid System is the largest system in your body and operates an umbrella system for your entire body."

The ECS is always at work. The receptors are activated either by the body's own endogenous (internal) cannabinoids, or by plant cannabinoids (also called Phyto cannabinoids) like THC & CBD.

The cannabinoids and receptor mechanism are often described as a lock and key system. When the ECS is working properly, signals are firing, and optimal functioning is happening in the body. When the Endocannabinoid system is not functioning properly, Phyto cannabinoids can be introduced, plug in to the receptors, and switch the ECS on to do its job properly. The better the ECS is working, the more our bodies are in equilibrium, and less likely we are to develop disease.

Here are some of the capabilities of the ECS that have been discovered so far:

· Balance and Stregthens the nervous and immune systems
· Initiates pain control
· Calms inflammation
· Initiates neurogenesis (production of new nerve cells)
· Involved in protective mechanisms against illnesses including neurological diseases and nerve damage
· Found to suppress numerous cancer and possible Alzheimer's Dosease

MIGRATION OF THE CANNABIS PLANT

From 1500 to 200 BCE cannabis' use as a medicine spread across the world, from China to India, Persia, Egypt and Greece. Evidence suggests the plant may have played a vital role in the development of agriculture, which had a profound impact on both human beings and our planet. Cannabis first appeared in the Western Hemisphere during the colonization of Americas, where its sturdy fibers were used in production of rope, paper and clothing. By that time, cannabis was widely used as an herbal medicine across the world, and eventually added to the U.S. Pharmacopeia in 1850. Every major pharmacy in America offered medicinal cannabis tinctures until its prohibition began in the 1930s.

SPIRITUALITY

Of the 400+ identifiable chemicals known to exist in the plant, and at least 85 different cannabinoids, only THC has been found to be psychoactive. Remarkably, this makes cannabis one of a handful of plants with the power to affect human consciousness. Since ancient times, shamans (spiritual healers) from a diverse array of cultures around the world have used cannabis in their work. From the Scythians to Rastafari, the alchemists to Curanderos, cannabis has found a place in healing traditions across the world.

SPIRITUAL USES OF CANNABIS

- Quieting the mind for meditation
- Seeing through delusions and shifting perspective
- Diagnosing and treating diseases of the body, mind, and spirit
- Achieving transcendence, unity and spiritual bliss

WHATS THE DIFFERENCE?
CANNABIS vs HEMP

Semantics. Cannabis and Hemp are two breeds underneath the same species. Think of them as different breeds of dogs (a Labrador retriever and a chihuahua look different, but they are both dogs!). “Industrial Hemp” or “Hemp” is essentially just a variety of cannabis that grows <.3% THC. When someone asks what’s the difference between Cannabis and Hemp, the real answer is genetics. Hemp genetics are prone to grow extraordinarily little THC, and higher in other cannabinoids, or in many hearty strains grown for fiber, very little cannabinoids at all. Many of today’s cannabis strains have been refined and grown for higher THC, as you will find in medical and recreational approved states.

WHAT’S THIS PLANT ALL ABOUT?

Cannabis/Hemp happens to be one of the most, if not the most, pharmacologically active plants on the planet. This is due to its cannabinoid, phytonutrient, and terpene profiles. You may be thinking, why does cannabis seem to help with so many ailments. The short answer: it is highly effective at treating inflammation and pain. Cannabis/Hemp has potentially 20x the anti-inflammatory powers of aspirin, and over 2x more than that of hydrocortisone. It does this by interacting with our endocannabinoid system through its various cannabinoids.

Cannabinoids are the chemical compounds secreted by cannabis flowers that provide relief to an array of symptoms including pain, nausea, anxiety, and inflammation. These work their medicinal magic by imitating compounds our bodies naturally produce, called endocannabinoids, which activate to maintain internal stability and health (homeostasis!) To put a complex system simply, they mediate communication between cells. When there is a deficiency or problem with our endocannabinoid system, unpleasant symptoms and physical complications will occur.

Why does cannabis produce cannabinoids? The leading hypothesis is that secondary metabolites (or cannabinoids to cannabis) act as an immune system for the plant, fending off predators, parasites, and pests. Because humans (and almost any other animal with a spinal vertebra) have receptor systems that these cannabinoids bind to, we can also reap the benefits of for both health and enjoyment.

When cannabis is consumed, cannabinoids bind to receptor sites throughout our brain (called CB-1) and body (CB-2). Different cannabinoids have different effects depending on which receptors they bind to. For example, THC tends to bind to receptors in the brain, whereas CBN has an affinity for CB-2 receptors located mostly throughout the body. Depending on a cannabis product’s cannabinoid profile, different types of relief and effects are achievable. There are potentially more than 100’s of cannabinoids in cannabis yet to be studied!

ENTOURAGE EFFECT

A large part of alternative medicine revolves around using the entire plant for medicinal purposes rather than isolating or producing the active ingredient in a laboratory.

Herbalists excel at matching holistic, plant-based treatments to a variety of ailments, which, in practice, is known as whole-plant medicine. Whole-plant medicine has been in use for thousands of years in ancient healing arts such as Ayurveda and Traditional Chinese Medicine.

We live in a world of pills and quick fixes; and this alternative and holistic approach may seem old-fashioned, but there is change in the air and the isolated chemicals so many of us are consuming may be quickly going out of style.

Mounting evidence suggests that medical substances may be more effective in their whole and natural state.

This phenomenon, called the entourage effect, results when the many components within the cannabis plant interact with the human body to produce a stronger influence than any one of those components alone – it is a synergistic effect.

To understand the concept, think of it in terms of human interactions. We all have gifts and abilities that can carry us to a certain point in life. Sometimes, we will meet another person who has different gifts and abilities. When partnerships are formed between two people, and abilities are combined, achievements can be made that were otherwise unimaginable.

When we combine multiple compounds in their natural state, we do not end up with the sum of each part; instead, we get a multiplying effect. The different compounds can amplify each other's chemistry, making the overall plant more effective in addressing unwanted symptoms.

"The more compounds you have the wider range of therapeutic benefits"

The combined action of over 480 plus cannabinoids and other molecules in the plant present clinical advantages, such as lower adverse effects and greater efficacy on the therapeutical management of several conditions.

• Myrcene • Limonene • Pinene • Linalool • Caryophyllene • Humulene • Bisabol • Camphene • Eucalyptol	• Camphene • Geraniol • Phytol • Terpinolene • Trans-Nerolidol • Delta-3 carene	• THC • THCA • THCV • THCVA • THCP • CBN • CBNA • CBD • CBDA	• CBDV • CBG • CBGA • CBC • CBCA • Beta Sitosterol • Cannaflavin A • Cannaflavin B • Cannaflavin C	• Silymarin • Kaempferol • Luteolin • Anthocyanins • Apigenin • Quercetin • Vitexin • Isovitexin

CANNABINOIDS

CBD (CANNABIDIOL)

CBD, or Cannabidiol is the second most common cannabinoid in cannabis. It is non-psychoactive and has a much broader range of medical applications, including beneficial effects on neurodegeneration, autoimmune disorders, heart, and liver health.

CBD is famous for the promise it holds for treating treatment-resistant forms of childhood epilepsy. There is also evidence that CBD may have neuroprotective, anti-inflammatory and pain relieving properties while being a potential therapeutic in the treatment of motivational disorders like depression, anxiety, and addiction.

CBD works differently: Although it is a cannabinoid, CBD does not directly interact with the two classical cannabinoid receptors (CB1 and CB2). Instead, it affects signaling through CB1 and CB2 receptors indirectly. This partly explains why, in contrast to THC, CBD is non-intoxicating.

In addition to its relationship with the CB1 and CB2 receptors, CBD can increase levels of the body's own naturally produced cannabinoids (endocannabinoids) by stopping the enzymes that break them down.

Even more interesting, CBD also influences many non-cannabinoid receptor systems in the brain, interacting with receptors sensitive to a variety of drug and neurotransmitters. These include opioid receptors, known for their role in pain regulations. Opioid receptors are the key targets of pharmaceutical pain killers and drugs of abuse such as morphine, heroin, and fentanyl. CBD can also interact with dopamine receptors, which can play a crucial role in regulating many aspects of behavior and cognition, including motivation and reward seeking behaviors.

What does this mean? It raises the possibility that CBD's ability to influence either opioid or dopamine receptors may lie in its ability to dampen drug cravings and withdrawal symptoms, effects directly relevant to the treatment of addiction. This may also account in part for its anti-anxiety properties. It also means CBD plays a potent role in helping patients with anxiety and depression.

HOW TO CALCULATE ACIDIC CANNABINOIDS:

CBDa x .877 = Y

Y + CBD = Total THC %

For example, if a flower says it has 24.5% CBDa and 1.5% CBD in it, the equation looks like this: .

245 x .877 = .215

.215 + .015 = 2.165, or 21.7% total CBD

THC (TETRAHYDROCANNABINOL)

THC, or Tetrahydrocannabinol is the cannabinoid responsible for the euphoric high in cannabis. The isolation of THC came from an Israeli chemist by the name of Raphael Mechoulam. In 1964, Mechoulam isolated and synthesized THC from Lebanese hashish, marking the beginning of cannabis research that would lead to the discovery of many other cannabinoids, cannabinoid receptors throughout the body, and endocannabinoids.

What does THC do to us? In some users, it can bring about feelings of calmness or euphoria, while others can experience high paranoia or anxiety.

Some short-term effects of THC include elation, relaxation, sedation, pain relief, memory impairment, energy, hunger, drowsiness, increased heart rate, dry mouth, red eyes, slowed perception of time, laughter, dizziness, feeling heavy, anxiety or paranoia.

Now, that seems to be all over the board, and rightfully so. THC's effect on us is highly based on the individual's endocannabinoid system, their own physiology, and a particular strain profile or ingestion method.

THC has many medicinal benefits, and there are a variety of conditions it can help. Some of these include PTSD, neuropathic and chronic pain, insomnia, nausea, inflammation, arthritis, migranes, cancer, depression, anxiety, Chron's disease, Fibromyalgia, Alzheimer's, Multiple Sclerosis, Glaucoma, ADHD, Sleep apnea, and appetite loss.

THCV (TETRAHYDROCANNABIVARIN)

THCV or tetrahydrocannabivarin, is a compound in cannabis that offers a unique array of effects and medical benefits that sets it apart from other cannabinoids like THC and CBD. THCV is similar to THC in molecular structure and psychoactive properties, but it provides a variety of pronounced and altogether different effects.

- Appetite suppressant: In contrast to THC, THCV may dull the appetite. This may be good for consumers focused on wight loss, but THCV should be avoided by patients treating appetite loss or anorexia.
- Diabetes: Research shows promise in THCV's ability to regulate blood sugar levels and reduce insulin's resistance.
- Panic attacks: It appears to curb anxiety attacks in PTSD patients without suppressing emotion.
- Alzheimer's: Tremors, motor control, and Brin lesions associated with Alzheimer's disease appear to be improved by THCV, but research is still in progress.
- Bone growth: Because it promotes the growth of new bone cells, THCV is being looked at for osteoporosis and other bone-related conditions.

Where do high THCV strains come from? Look for African sativas. Lab results show that THCV is most abundant in sativas, particularly landrace strains. Strains like Durban Poison and Jack the Ripper are famous for having high THCV percentages.

THCA (TETRAHYDROCANNABINOLIC ACID)

THCA is a non-psychoactive cannabinoid found in raw and live cannabis plants. As the plant dries, THCa slowly converts to THC. Heat expedites this conversion in a process known as decarboxylation, or simply put, what happens when you smoke or vaporize flower.

On some lab tests you may notice that the most abundant cannabinoid is either THC or THCa. While THCA is the more accurate label for flower that hasn't been decarboxylated, they essentially mean the same thing if you assume the patient intends on smoking, vaporizing, or eating the product in some way.

Where do you find THCA? Every high THC strain that has not yet been decarboxylated contains THCA, and these cannabinoid levels are particularly high as a live or freshly harvested plant. Mary's Medicinals transdermal patches, as well as other companies, have THCA products, which aim to give patients all the relief and benefits of THC, without the psychoactivity.

CBN (CANNABINOL)

CBN, or Cannabinol, offers a unique profile of effects and benefits. So far CBN's studied benefits include pain relief, anti-insomnia, promotes growth of bone cells, antibacterial, anti- inflammatory, anti-convulsive, and appetite stimulant.

CBN's most pronounced attribute is its sedative effect, and according to Steep Hill Labs, 5mg of CBN is as effective as a 10mg dose of diazepam (a mild pharmaceutical sedative). Unlike THC, CBN induces little to no psychoactive effects. This is great news for patients needing to medicate with a clear head, although notably, most flowers contain only trace amounts of CBN, rarely exceeding 1% in dried flower.

This begs the question, where does one find CBN? As THC oxidizes (exposure to oxygen over time), it converts to CBN. This is why aged, poorly stored cannabis is likely to have higher levels of CBN than fresh flower in an air-tight container. CBN has a lot to offer patients and sufferers of sleeplessness.

CBG (CANNABIGEROL)

CBG, or Cannabigerol, offers a unique profile of effects and benefits. CBG is often referred to as the "mother cannabinoid" because it is the precursor to THC and CBD. This means that cannabis produces CBG early in its growth stage and when CBG's acids are exposed to light, they become THC and CBD. So far CBG's studied benefits include relieving intraocular pressure, meaning its promising for glaucoma patients, decreasing inflammation in IBS patients, protecting neurons, antibacterial, appetite stimulant, and antidepressant.

CBG is thought to boost anandamide, an endocannabinoid that naturally increases dopamine levels, and responsible for regulating various health functions such as mood, sleep, and appetite. GABA uptake in the brain may be obstructed by CBG, making this cannabinoid a possible anti-anxiety agent and muscle relaxant. CBG may also block serotonin receptors, showing potential antidepressant traits.

Unlike THC, CBG induces little to no psychoactive effects. This is great news for patients needing to medicate with a clear head, although notably, most flowers contain only trace amounts of CBG, rarely exceeding 2% in dried flower.

This begs the question, where does one find CBG? CBG is relatively low in most cannabis strains, although it is becoming more popular to find CBG in hemp strains.

SPECTRUMS OF EXTRACTS

Isolate: Isolate refers to an extraction process that isolates CBD from the rest of the compounds in the cannabis plant. After CBD concentrate is extracted and separated from the rest of the compounds in the plant, it then goes through a winterization process, which extracts any remaining waxes, terpenes, or cannabinoids. This creates a CBD product that tests as high as 99% CBD. This sounds appealing and is certainly how many of us were introduced to hemp and CBD, however, there are dangers to taking isolate based oils and products. (site study)

Broad Spectrum: Broad spectrum CBD is the middle ground option between isolate and full spectrum CBD. It begins as a full spectrum oil, with the full range of beneficial cannabinoids and terpenes, but it then goes through a refinement process to remove all THC compounds. Why would broad spectrum be a marketable product? It contains no THC. There is a large misconception in the hemp industry that having small amounts of THC can cause psychoactive effects, cause users to fail drug tests, and isn't

necessary for beneficial effects. While some of this is true, most of it is not. Concentrations in hemp products outside of legal states are not allowed to have more than .3% THC concentration, therefore will not be psychoactive effects.

Full Spectrum: Full spectrum CBD extracts a larger profile of beneficial cannabinoids and terpenes than broad spectrum. Full spectrum will contain trace amounts of THC, and more than 200 natural occurring phytonutrients, terpenes, flavonoids, cannabinoids such as CBD, CBDa, CBN, CBG, etc. These are the important compounds, that aid in helping nourish the endocannabinoid system.

Whole Spectrum: Whole spectrum is a combination of multiple extractions, rooted in an herbalist tradition, collecting the entirety of the plant in the extraction. When the "whole spectrum" of phytonutrients is present in the finished product, the endocannabinoid system (ECS) is activated such that a physiological response can often be recognized and described in the first few minutes after taking the product. For others, a couple weeks of consistent use proves an effective way to determine the value of whole-spectrum for their specific needs.

INTRO TO TERPENES

When selecting cannabis/hemp strains, most look to cannabinoid profiles to see how much THC or CBD is in a product, but as our knowledge of the plant increases through research and development, we're finding that terpenes are the key to flavor and a host of effects and benefits. Terpenes are a large category of organic chemicals, found in a variety of plants, from oranges to pine trees.

Not unlike other strong-smelling plants and flowers, the development of terpenes in cannabis began for adaptive purposes: to repel predators and lure pollinators. There are many factors that influence a plant's development of terpenes, including climate, weather, age, fertilizers, soil type, and even the time of day.

One of the most fascinating aspects of terpenes is their ability to work synergistically with cannabinoids, helping faster and more effective absorption of cannabinoids in the bloodstream.

Here is a list of some of the most common terpenes and what you can expect from them:

Pinene
Pinene is known to help with memory retention and aids in combatting short term memory loss. It has a forest like aroma and a clean, fresh scent.

Flavor: Piney
Benefits: Memory retention and mental energy
Other Sources: Pine Needles, Rosemary, Basil

Limonene
Limonene has a very citrus-forward nose. Users report increased focus and energy from this specific terpene. It has also been used as a mood booster for depression and mood disorders.

Flavor: Citrus/Sweet
Benefits: Mood boosting, increased focus and energy
Other Sources: Citrus fruit rinds

B-Caryophyllene
The terpene caryophyllene is strongly associated with the taste and scent of black pepper. It is known to be a pain relief aid due to its natural attraction to our CB2 receptors.

Flavor: Peppery and spicy
Benefits: Anti-inflammatory, Analgesic (pain relief), muscle relaxant
Other Sources: Black pepper and cloves

Humulene
Humulene has a very green, herbal flavor and aroma that is similar to that of the hops plant found in beer. This terpene is commonly attributed to curbing appetite and is being researched for its anti-cancer benefits.

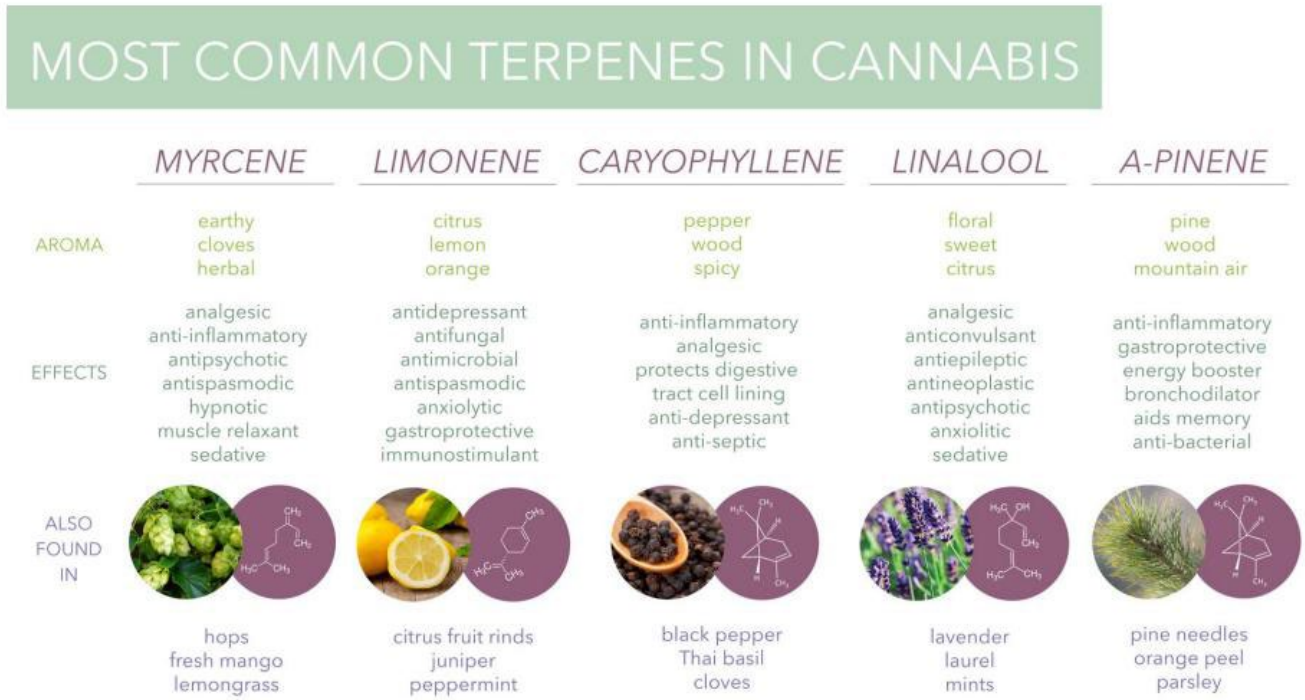
Flavor: Hoppy and herbal
Benefits: Anorectic and anti-cancer
Other Sources: Hops and Basil

Myrcene
Myrcene is a terpene that occurs often in highly fragrant plants and herbs such as mangoes, hops, bay leaves, thyme, and lemongrass. It is arguably the most common terpene in cannabis. Myrcene is naturally synergistic with cannabinoids as it allows cannabinoids to more easily bridge the blood-brain barrier. The higher the myrcene, the easier the absorption of cannabinoids.

Flavor: Earth and Citrus
Benefits: Anti-inflammatory, Analgesic (pain-relief), Sedative
Other Sources: Mangoes, hops, basil, lemongrass

Linalool
Linalool is a naturally occurring terpene found in many flowers and spices. It gives off a complex yet delicate floral aroma, and while its effects are myriad, it is in particular one of the substances used most widely to reduce stress. It was common in medieval times for people to put Lavender in pillows to help destress and promote sleep through the inhalation of Linalool.

Flavor: Floral
Benefits: Anti-anxiety, Anti-depressant, Sedative, Anti-inflammatory, Anti-epileptic
Other Sources: Lavender, Coriander.



INGESTION METHODS

Knowing and being comfortable with various ingestion methods is key to helping customers reach their desired outcome from the plant. Although a sublingual oil has been proven to be the most consistent and effective way to deliver cannabinoids into your system, there are pros and cons to every method of ingestion. Knowing these methods and applying them to specific products will help the retail process become smooth, easy, and fun for both you and your customers. Ingestion Method Specific Benefits.

Topical

● Direct/Spot-specific effects - CBD topicals can be applied right to problematic areas, allowing a spot specific or direct interaction with the muscle groups, joints, or areas seeking relief.
● Large bioavailability - our skin is our largest bioavailable organ; products like lotion and bath bombs can have higher absorption rates simply because of the surface area in which it can be absorbed.
● Skin conditions - CBD topicals are hands down the best method for skin conditions such as eczema, psoriasis, dry skin, acne, and more.

Onset: within 5-15 minutes
Duration: depending on amount used, between 2-4 hours

Edible

● Longer activation time - edible CBD is digested slower than other forms of ingestion and can last 2-4 hours longer than inhalation.
● Less harsh on lungs - edible CBD does not require any inhalation and therefore can be easier on those with sensitive lungs.
● Allows for greater plant synergy - CBD when added to other herbs and foods can allow for higher and longer lasting absorption rates.
● Discreteness - edible CBD can often be more discreet than other ingestion methods, great for those who require privacy when using CBD.

Onset: within 30-60 minutes
Duration: depending on amount used, between 2-5 hours

Flower (inhalation/combustion)
● Quickest way of absorption - Inhalation is arguably the fastest way to get CBD into the body. This also means its effects will be the shortest.
● Entourage effect - inhaling/combusting flower takes advantage of what we call the entourage effect: using multiple cannabinoids, terpenes, and Phyto cannabinoids provides more benefit to the body than inhaling CBD alone. This is because naturally, cannabis grows with 100's of different compounds on it, as opposed to isolating CBD in particular.
● Habitual pleaser - smoking can be habitual for many. CBD flower can help you quit or cut down on other forms of smoking like THC, nicotine, or tobacco consumption due to the actual act of being able to smoke.

Onset: within 1-2 minutes
Duration: 30 minutes - 2 hours

Sublingual
● Quick absorption - besides inhalation, tinctures are the fastest way to get cannabinoids into the bloodstream and users typically feel effects within 10 minutes of taking.
● Accurate dosing - CBD tinctures often are measured in mL, giving users a very accurate way of dosing for their needs. Because cannabinoids affect everyone differently, it's easier with tinctures to measure a dose, see what works for you, and repeat.
● Great for pets - treats and CBD food can be missed by pets, toyed with, and not consumed properly. Tinctures allow you to dose your pet accurately and with assurance that a full dose is given.

Onset: within 5-15 minutes
Duration: 5-12 hours.

HEMP SEED OIL

Aside from cannabinoids, hemp hearts, seed, and oil have many benefits to health. These are raw components of the plant that do not contain cannabinoids but are rich in Omega's and building block proteins. Over the past decade, hemp products like this have become more popular due to the increasing desire for a healthier nutrition.

A MORE EFFICIENT SOURCE OF IMPORTANT NUTRIENTS

Hemp Oil or Hempseed oil is obtained by pressing hemp seeds. Cold pressed, unrefined hemp oil is dark to clear light green in color with a pleasant nutty flavor. The darker the color, the grassier the flavor.

INTERESTING FACTS ABOUT HEMP OIL

- The manufacturing process of Hemp Oil includes cleaning the seed to 99.99% before pressing the oil.
- The modern production of Hemp Oil particularly in Canada has successfully lowered the THC values since 1998.

- Hemp Oil provides 9kcal/g and compared with other culinary oils as it is low in saturated fatty acids.
- Hemp Oil can be frozen for longer periods of storage time.
- THC is not a toxic compound in humans even at high dosages over long periods of time.
- Hemp Oil can be used continuously without developing a deficiency or imbalance of EFAs.

HEMP OIL FOR HAIR

- Hair Conditioner
- Hair Growth Stimulator
- Hair Moisturizer
- Strengthening the Hair

HEMP, NUTRITION AND THERAPEUTIC USES OF HEMPOIL

Variety of Diseases treatable with GLA and Linoleic Acid in Hemp Oil:

- Neurodermitis
- Pre- Menstrual Syndrome
- Cardiovascular Diseases
- Rheumatoid Arthritis
- Other diseases significantly alleviated by Hemp Oil.

HEMP OIL IN BABY CARE PRODUCTS

Hemp Oil provides the following benefits:

Prevents excessive moisture loss, drying and cracking of the skin.

Emollient, Lubricant and moisturizing properties.

Partially compensates for the effects of aging.