



TERRAMOR TECHNOLOGIES  
PRECISION LAB TESTING

## CBD

Cannabidiol is popularly used as a natural medicine for many health ailments. It is commonly known as CBD and is a kind of cannabinoid found in marijuana or Cannabis Sativa. Another key component of Cannabis Sativa is THC, which is responsible for the "high" that comes after smoking or consuming marijuana. However, CBD is not psychoactive.

### What is CBD ?

CBD is just one of at least 113 components of Cannabis, which are collectively known as cannabinoids. There has been extensive research about the health benefits of CBD and its relaxing effect on chronic pain and anxiety has been backed by research. This is why it is gaining so much momentum in the healthcare industry.

### Is it Marijuana ?

Now, this is the first question that pops up after you discover that this is an extract from Cannabis. The active ingredient that is responsible for the "high" effect of marijuana is THCA. When heat is applied, it converts to  $\Delta 9$  THC (Delta 9 THC) and then produces the high.

CBD, on the other hand, is entirely different. It is in no way psychoactive - meaning it won't change your state of mind when used. Significant changes are observed in the body after consuming CBD, which has potential medical benefits.

### Where CBD is extracted from ?

CBD is extracted from cannabis plants, but cannabis plants can refer to either hemp or marijuana, depending on the concentration of total THC. Hemp plants have less than 0.3% of THC. Many Growers and Processors are urging the USDA to change that percentage to 1% .

### How CBD interacts with the human body ?

Any cannabinoids like CBD can take effect only after they bind themselves with certain receptors in the body. The human body produces a few types of cannabinoids of its own, and the receptors responsible for responding to cannabinoids are CB1 receptors and CB2 receptors.

CB1 receptors are generally concentrated in the brain but can be found anywhere throughout the body. CB2, on the other hand, are found only in the immune system of the body and affect pain or inflammation. The CB1 receptors in the brain are responsible for activities like movement and coordination, emotion, pain, thinking, appetite, memory, mood, and other similar functions. THC attaches itself to these receptors, which can compromise these functions. CBD, on the other hand,

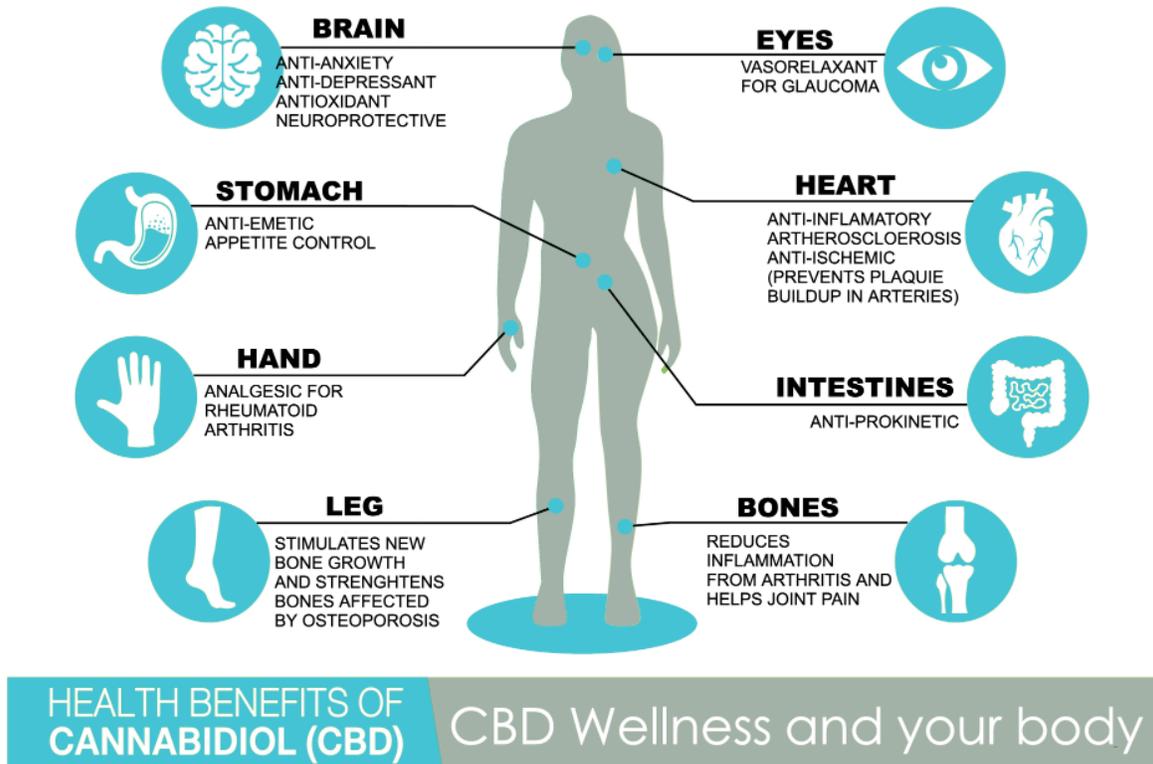
doesn't attach itself to either of these receptors and, instead, makes your body use cannabinoids produced due to CBD itself.

### **Now let's take a look at what CBD does once it enters your body and how the body absorbs it :**

- 5-HT<sub>1A</sub> is a serotonin receptor. This receptor is responsible for many of our symptoms and conditions like appetite, anxiety, addiction, pain, nausea, and sleep. Studies have shown that CBD directly affects and activates this receptor when provided in high concentration.
- The TRPV<sub>1</sub> receptors control the temperature of our body. It is also responsible for inflammation and pain. This study also showed that CBD binds itself to these receptors and then manipulates it in favor of our body.
- CBD is also seen to stimulate the adenosine receptor. This helps in the production of dopamine, which in turn controls various other emotions like motivation, reward, and cognition and even helps in motor control. It also helps in the secretion of glutamate that enhances the learning and memory capabilities of a person.
- Other receptors that are activated by CBD are the peroxisome proliferator-activated receptors (PPARs). These help the body to fight cancer cells and even help in the destruction of existing cancer cells.
- In our nervous system, the main inhibitory neurotransmitter is called GABA. When GABA-A binds with GABA, it has a naturally relaxing and soothing effect on the

body. CBD helps the GABA-A to bind with GABA, which in turn helps the body to fight anxiety.

## Some benefits of CBD



## Relieving pain naturally

Research has now shown that cannabinoids such as CBD can play a major role in treating chronic pain and anxiety. It helps in reducing chronic inflammation and puts the body at ease.

## Fighting addiction

There has been evidence of CBD helping people quit smoking. The craving for nicotine was also seen to reduce significantly

for people who were given an inhaler containing CBD. This treatment has huge potential to get people out of opioid addiction disorder. Many symptoms that are directly linked to substance abuse like anxiety and pain seem to decline after CBD treatment. This topic needs much more research, but at least we have some positive results to back further studies.

## Epilepsy

CBD oil has also shown promising results in the case of epilepsy seizures and hence, in 2018, the FDA approved the use of CBD (Epidiolex) in two rare cases of epilepsy seizures.

Doctors in the US can prescribe Epidiolex to treat the following two types of seizures:

Lennox Gastaut syndrome (LGS) generally affects children between the ages of 3 and 5.

Dravet syndrome (DS) - it is a genetic condition that occurs in children below the age of 1, and is rarely diagnosed.

Because of the wide spectrum of seizures, it becomes difficult to control the seizures in LGS and DS. But, CBD has shown really great results in this area. Also, the dosage has to be controlled by the physician according to the bodyweight of the child.

## Other neurological disorders

CBD has also shown positive results in patients who have various other neurological disorders. Although further research is needed, a study has found that CBD acts in a way similar to many antipsychotic drugs, and this can be used effectively to treat people with schizophrenia.

## Cancer-fighting

Many researchers have proven that CBD combats cancer. According to a [study](#) published in the British Journal of clinical pharmacology, CBD has been successful in preventing the spread of cancer cells. Not only that, it also helps in the destruction of cancer cells which reduces the cancer cell count in the subject's body.

Again, there is further research that needs to be done but the results are promising and according to the researchers, the low level of toxicity might have contributed to this result.

## Anxiety attacks

It is a known fact that people suffering from chronic anxiety are advised to stay away from cannabis as the THC in it may trigger, or sometimes intensify, the feelings of anxiousness and paranoia. But, quite contrary to that, CBD has shown completely different effects in people who have the same disorders. CBD has helped reduce these attacks and other disorders related to anxiety.

After reviewing several people, the conditions that can be helped using CBD are

PTSD (post-traumatic stress disorder)

Panic attacks

Obsessive-compulsive disorder (OCD)

Social anxiety disorder

General anxiety disorder

Further research is needed, but CBD can often lead to its own side effects while curing these types of disorders. The

magnitude of these side effects are yet to be determined. This has led many people to stop these medications. But again, there has been no definitive evidence of CBD adverse effects.

### Type1 diabetes

Inflammation of the attack cells of the immune system of the pancreas is known as type1 diabetes. In 2016, papers showed that patients with type 1 diabetes who had been treated with CBD, showed a significant reduction in the inflammation of the pancreas. Thus, CBD has become a potential cure (or just a first step in treatment) of type 1 diabetes.

Another independent study done in Portugal in the same year suggested that along with reducing inflammation, CBD can also protect and delay the occurrence of type 1 diabetes.

### Acne

Another field where CBD has shown promising results in is in fighting acne. When the sebaceous gland in our body works excessively, it results in inflammation, which in turn causes acne. In 2014, according to a study, the production of sebum that is responsible for causing acne was reduced significantly when treated with CBD, most probably due to its anti-inflammatory properties. Overproduction of sebum causes acne as it is an oily substance. The type of acne which is commonly found in acne vulgaris can be cured in the future with the help of CBD.

## Various stages of Alzheimer's

Lack of social recognition in many participants was seen to decrease when they were treated with CBD. This finding can help cure people in the early stages of Alzheimer's by helping them to remember the faces of different people without any difficulty. It might not eliminate it completely but may have the potential to slow it down.

Although further research is needed on the benefits of CBD on a wider scale, but the initial results are quite promising. More importantly, CBD oils and products containing CBD, are easily available for the public in many different forms from oils to salve , smokables , candies and more.

It is very important to understand that the quality of these products should be good and at par with the medical standards. So you should have a **potency test** of your CBD oils and product to be sure of their effectiveness. The [potency test](#) has become one of the most important parts of the CBD equation. Look for more articles by [Terramor Technologies](#) in the future regarding other Cannabinoids and their specific effects.