

# CBD for Depression: What Science Can Tell Us About Effects and Dosages

Today we are going to explore how CBD might help with symptoms of depression.

We reviewed several animal studies that looked at:

- Mechanisms of action of CBD for relief of depression symptoms
- What CBD doses were effective for depression relief
- The brain regions that CBD interacts with to bring these beneficial effects

We will also learn how to consume CBD in different ways, and how this can affect dosage.

At the end of this article, you will learn how to maximize your CBD dose and how to choose the product that works for you.

## Summary

- CBD relieves symptoms of depression in animal models
- CBD reduces these symptoms by interacting with serotonin receptors
- CBD's action on serotonin receptors reduces chronic stress in areas of the brain tied to depression
- CBD may be an effective mood stabilizer
- Full spectrum CBD oils may lower the needed dose for relief
- Multiple preclinical studies found that 30 mg/kg CBD is effective against depression
- Full spectrum CBD oil may be better for depression than isolate products
- If you cannot consume THC, broad spectrum or isolate CBD oils may work better for you

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### How Might CBD Reduce Depression?

Cannabis is well known to have elevating effects on mood. These beneficial effects come from a class of compounds in the Cannabis plant called phytocannabinoids (pCBs).

To date, 120 pCBs have been discovered ([8](#)). Two of them are known to have an antidepressant-like effect:

- Cannabidiol (CBD)
- Tetrahydrocannabinol (THC)

Serotonin, a signaling protein that regulates mood and cognition, is tied to this effect.

THC increases local serotonin release by activating the cannabinoid CB1 receptor. This same mechanism causes the psychoactive effects of THC ([16](#))([5](#))

CBD does *not* have psychoactive effects, and influences serotonin levels in a more direct manner ([13](#)).

CBD can act on over 65 proteins in our body. Some benefits from these interactions include anti-anxiety, anti-epileptic, and antipsychotic effects.

In general, CBD appears to help restore brain structure and function ([6](#)).

And like depression, some of these other therapeutic effects come from the impact of CBD on serotonin receptors.

### **Mechanisms of CBD for Depression Relief**

Depression can result from an imbalance in serotonin levels. Substances that bind to 5-HT serotonin receptors can change how these receptors transmit serotonin.

In the case of CBD, it indirectly binds to 5-HT1a, a receptor sub-type. Because it acts as an agonist here, it activates the receptor and enhances serotonin release ([15](#)).

There are certain regions of the brain that are related to depression, including:

- Amygdala;
- Prefrontal cortex;

When these regions are exposed to chronic stress, there is an increased risk of developing this mental health condition ([18](#)).

But CBD appears to provide relief in animal models of depression. Rats given CBD saw increases in amygdala proteins that produce antidepressant effects ([14](#)).

In the ventromedial prefrontal cortex (vmPFC) of rat brains, CBD provided relief from symptoms by acting on 5-HT1a receptors. ([16](#))

The antidepressant effects of CBD may not end at the 5-HT1a receptor. It produces several effects in the brain, and is able to bind to other sub-types of serotonin receptors ([17](#)) ([13](#)).

## **CBD and Traditional Antidepressants**

Both CBD and traditional antidepressants target serotonin signaling ([19](#)), but CBD typically has a better safety profile.

Depression is one of the most common reported uses for CBD ([4](#)), but to date, no human studies have looked into its potential in this aspect.

More research is needed, especially when considering that prescription medications are only effective in a maximum of 70% of patients with depressive disorders ([14](#)).

## **Review of Studies That Found Anti-Depressive Effects Associated with CBD**

Despite the complete lack of human studies, there are many rodent studies that show the antidepressant effects of CBD.

Rodents are biologically similar to humans. They are a good model of depression because they show many of the same symptoms that we have, including:

- Anhedonia - Lack of pleasure or interest
- Learned helplessness
- Hyperactivity

These studies induce depression in mice and rats that manifest as symptoms that are treated with CBD.

## **Acute and Chronic CBD Doses**

A 2016 study looked into the antidepressant effects of both acute (30 mg/kg) and chronically given (10 mg/kg) CBD in mice.

After a two week treatment period, both dosage types brought relief of depression symptoms. This is consistent with other research ([14](#))

The acute treatment had effects in a single dose, but suppressed the appetite of some subjects.

CBD raised serotonin levels as expected, but it also raised glutamate levels. Signaling pathways related to this compound are another way of controlling serotonin levels ([9](#))

## **CBD as an Adjunctive Treatment**

A 2018 study gave CBD with comparable doses of antidepressant medications to mice.

After being induced with depression, CBD alone relieved symptoms at a dose of 10 mg/kg.

When given with fluoxetine (Prozac), CBD was effective at 7 mg/kg and had a synergistic effect. This suggests that CBD may be even more useful when used alongside these medications.

However, this study also revealed that the antidepressant effects of CBD can depend on preexisting serotonin levels in the brain ([15](#)).

## **CBD and Anhedonia**

Rats with anhedonia were given oral CBD alongside food. What did they find?

CBD relieved this symptom at acute doses of 30 mg/kg ([19](#)).

A 2016 study supports this finding at the same dose, suggesting that CBD may help with anhedonia in humans. It also helped increase motivation, a lack of which is another depression symptom. ([20](#))

## **CBD and Learned Helplessness**

Learned helplessness is a behavior that shows after an animal has been repeatedly exposed to a stressor they cannot escape. It is a common symptom of depression, but CBD may help relieve it.

A 2018 study gave rats psychological tests to induce depression-like symptoms, including learned helplessness.

After being treated with CBD, both adults and adolescents had reduced symptoms, but the effects differed in these groups in a couple of ways.

The effect of CBD was less potent in adolescents, and a lower dose (10 mg/kg) was needed for relief compared to the effective dose in adult rats (30 mg/kg). ([3](#))

One study found no beneficial effects at all. Mice given a large dose range of CBD (0 - 96 mg/kg) had no noticeable relief from symptoms ([10](#)).

## What's the Best CBD Oil for Depression?

Hemp plant oils are extracted from the flowering tops and leaves of cannabis with either ethanol or carbon dioxide ([12](#)).

Edible CBD oil products typically fall into 3 categories:

1. CBD Isolate
2. Broad Spectrum
3. Full Spectrum

All animal studies that have investigated the potential of CBD as a treatment for depression have used CBD oil isolate. Therefore, it may help with depression in humans.

Unlike isolate and broad spectrum oils, full spectrum CBD also contains THC. This type of oil may be even more beneficial.

One human study used equal amounts of THC and CBD extract to reduce the intensity of depression related to cannabis withdrawal ([1](#)).

The research is quite limited, so go with the option you are more comfortable with. Full spectrum CBD oil can show up on a drug test because of the THC content.

To browse top-quality CBD oils, [click here](#).

## How to Use CBD Oil for Depression

Using CBD oil is a good way to consume therapeutic amounts of CBD.

But there are different types of CBD oil, and not all can be taken in the same way.

### Edible CBD Oils

This product type can be consumed in two ways:

- Oral - Swallowed by mouth
- Sublingual - Under the tongue

Orally taken CBD lasts the longest of all product types, but also takes the longest to kick in.

Because oral CBD is metabolized in the digestive tract, a relatively low percentage (6-19%) of the original dose gets absorbed. In other words, oral CBD has low bioavailability ([5](#)).

You can increase the bioavailability of CBD by taking edible oil sublingually.

Sublingual sprays are more rapidly absorbed and reach higher peak CBD concentrations than oral products, but less so than vaped CBD oils ([21](#)).

To take edible CBD oil this way, place the dose under your tongue and hold it there for 60 seconds before swallowing.

## Vaping CBD Oil

Sublingually taken CBD is the most common method of use, followed by vaping ([4](#)).

Vaping CBD is more discreet than taking edible oils, and the beneficial effects arrive and peak faster thanks to their rapid absorption.

CBD vape oils also have a much higher bioavailability of 31% ([7](#))

However, you should **never** use edible CBD oils as vape oils. They are not made to withstand the high temperatures of a vaporizer.

Vaping edible CBD oils may cause pneumonia ([11](#))

Related: [Best CBD Vape Oils](#)

## Dosing CBD Oil for Depression

Keep in mind that the effectiveness of a CBD dose can depend on multiple factors:

- Method of consumption - different levels of CBD absorption
- Edible oil types - full vs broad spectrum, isolate
- Biological differences - age, weight, metabolism
- Use of antidepressants

### How Much CBD Should You Take For Mood?

CBD is well tolerated in humans in doses up to 1600 mg.

Animal studies have consistently shown that a dose of 30 mg/kg is effective in adults, but there are no human studies to confirm this ([3](#))

However, this was not the only effective dose in animals. A dose range of 10 - 200 mg/kg CBD relieved depression symptoms ([5](#)).

The size of the dose itself is also important.

Larger doses of CBD may bring faster-acting effects. A single dose of 50 mg/kg eliminated hyperactivity in rats (9).

But the fastest onset of antidepressant effects came when CBD oil was used in both large and small doses combined.

Depressive disorders and anxiety share a lot of the same symptoms and are often comorbid with one another (2).

Therefore, CBD doses that have relieved anxiety symptoms may be similar for depression.

## Step-By-Step Guide for Using Edible CBD Oil

1. Select a high-quality edible CBD oil (we recommend [Receptra Naturals](https://www.herbonaut.com/cbd/reviews/receptra-naturals/))  
<https://www.herbonaut.com/cbd/reviews/receptra-naturals/>
2. Take your CBD oil within 2 hours of a meal that includes healthy fats;
3. Drop a 30 mg dose of CBD under your tongue;
4. Hold this dose for 60 seconds, then swallow it;
5. Wait at least 8 hours before taking a second dose. The effects of oral CBD peak within 2-4 hours;
6. In case of no effect, slowly increase the dosage by 10 mg increments until a maximum dose of 100 mg CBD.

CBD doses for depression relief may be more effective with full-spectrum oils.

To learn more about CBD dosage, [click this link](#).

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