# CBD VS. THC: WHAT'S THE DIFFERENCE?



As a medical cannabis patient, the amount of new information can feel overwhelming. There are a lot of new terms and concepts, and it is important to have an understanding of these. A solid foundational knowledge allows for better communication with doctors, pharmacists, and other health care practitioners. Let's take a look at some of the key elements.

## The Basics of THC and CBD

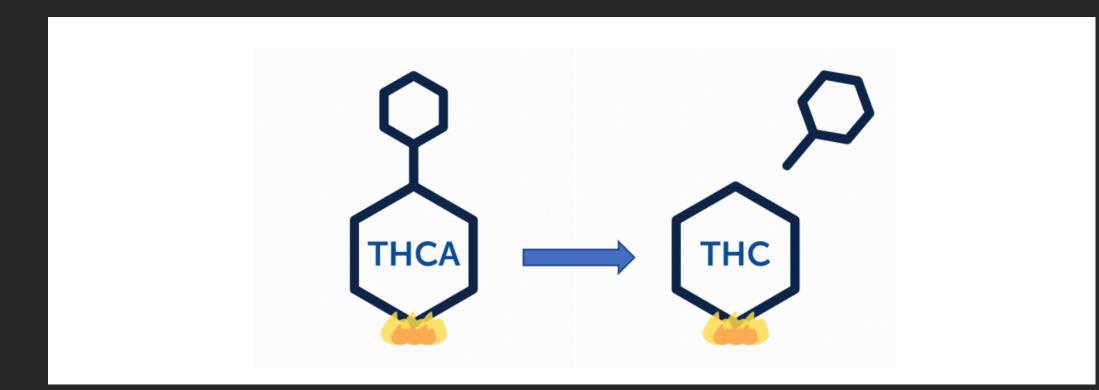
THC (delta-9-tetrahydrocannabinol) and CBD (cannabidiol) are produced by the cannabis plant. They are the main active ingredients found in cannabis and belong to a group

of molecules called cannabinoids<sup>1</sup>. Interestingly, they are not naturally produced by cannabis, instead they are

formed through a process known as decarboxylation  $^2$ .

In nature, THC and CBD exist as acidic versions of themselves called THCA and CBDA, and when cannabis is heated through smoking, vaporizing, cooking or baking the "acidic" portion of the THCA and CBDA molecule (known as a carboxyl) is removed, forming THC and CBD respectively 2.

It is important to note that our ingestible oils and vape concentrates come pre-activated which means they do not need to be activated through heating before use.



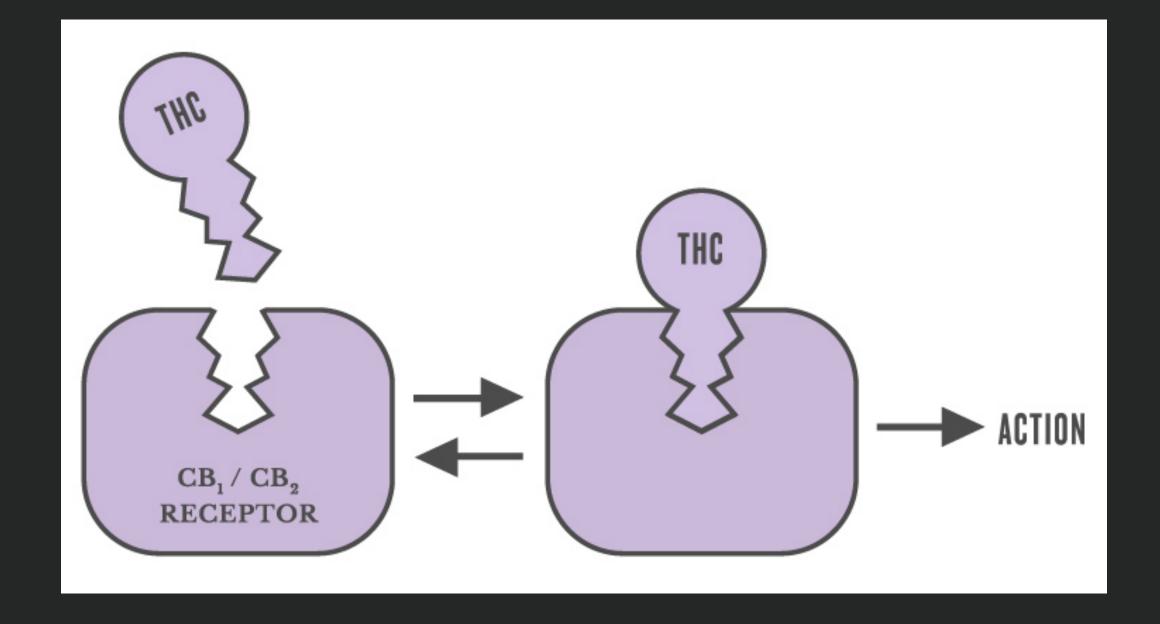
How are Cannabinoids Interacting With the Body? Over 100 different types of cannabinoids are produced by

the cannabis plant  $^1$ , with THC and CBD being the most abundant. Although THC and CBD are both cannabinoids when consumed they act very differently in the body.

THC is the main cannabinoid responsible for the feeling of

intoxication, commonly known as a "high" <sup>3</sup>. THC interacts with the body's endocannabinoid system (ECS) by activating cannabinoid receptors called CB1 and CB2. The ECS is an ancient signalling system and is responsible for helping regulate cognitive and physiological processes, memory, fertility, mood and appetite, among other

functions <sup>4</sup>. THC activates these receptors by binding to them in a manner that is similar to a lock and key, when this occurs changes happen in the body.



THC activates cannabinoid receptors in the body through a lock and key mechanism.

CBD is a non-intoxicating cannabinoid <sup>1,3</sup>, although when vaporized at high doses (400 mg) one study found CBD to be mildly intoxicating. Similar to THC, CBD interacts with the ECS, however, it does so in a different manner. As a result, CBD is thought to help counter some of the

unwanted side-effects felt from THC such as anxiety  $^{3,6,7}$ . In addition to the ECS, CBD also exerts its effects on the

body by interacting with other signalling pathways  $^{8}$ .

## Does the Ratio of THC or CBD matter?

Different cannabis products have different ratios of THC to CBD. Some are THC dominant, others CBD dominant, and still others are more balanced in their ratio. But what exactly does this mean?

Understanding the differences between these product types is important as the ratio of THC to CBD will influence the effectiveness and risk of encountering unwanted side effects from each product.

PRODUCT TYPE	RATIO	THC TO CBD RATIO		
<b>THC Dominant</b> High in THC / Low in CBD	THC >>> CBD	Dried Flower: Henik, Holden, Williston, Walker, Great Bear, Mohawk, Bienville, Sachigo, Grower's Blend Oil with Dosing Syringe: 20:1 Oral Spray: 20:1 Capsule: 6:0 and 10:0 Vapes: Aspen and Walker		
Balanced Comparable amounts of THC and CBD	THC ~ CBD	Dried Flower: Churchill Oil with Dosing Syringe: 10:13 Oral Spray: 10:13 Capsule: 6:8 and 10:13 Vapes: Churchill		

Dried Flower: Treasure Island Oil with Dosing Syringe: 1:25 Oral Spray: 1:25 Capsule: 1:15 and 1:25

DID YOU KNOW? CBD dominant products still contain small amounts of THC. This means individuals working in worksafe positions may still test positive for THC during random

drug screening and should speak with their employer before using cannabis  $^{9}$ .

### How to Help Prevent Unwanted Side-Effects?

In general, unwanted side effects from cannabis (i.e. dizziness, increased heart rate, and fatigue) are due to the amount of THC consumed  $^{3,10}$ . Interestingly, studies are beginning to emerge which shows that CBD can decrease unwanted side effects caused by THC3. Although further research is still needed to understand this interaction, Canada's lower-risk cannabis use guidelines recommend using products that contain lower amounts of THC or a higher ratio of CBD to THC (i.e. balanced or CBD dominant products)<sup>11</sup>.

#### Selecting the Right Ratio can help Predict Therapeutic Effects

Both THC and CBD contribute to the therapeutic effects of cannabis. The type and ratio of cannabinoids present in a product can help to determine its benefits. Research indicates that THC dominant, CBD dominant and THC:CBD balanced products can be helpful for treating certain diseases and/or symptoms including the following:

Therapeutic Use*	CBD dominant	THC dominant	Balanced	Reference
Suppression of nausea and vomiting as a result of chemotherapy		Х		12,13,14
Improvement of symptoms resulting from multiple sclerosis and spinal cord injury			Х	15-20
Epilepsy	Х			21-24
Pain such as chronic non-cancer or neuropathic pain	Х	Х	Х	25-30
Glaucoma		Х		31-32
Sleep Disorders		Х	Х	33-35
Stress	Х			36-38

\* This table has been provided for informational purposes only and is not intended to be used for product selection purposes.

When considering using Cannabis for medicinal purposes it is important to first speak with your doctor so that a proper assessment and diagnosis can be made. It is also important to let your doctor know which types of medication you are taking, as THC and CBD can interact with certain drugs.

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