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## Cannabinoids

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### WHAT IS A CANNABINOID?

There are over 480 natural components found within the Cannabis sativa plant, of which 66 have been classified as "cannabinoids;" chemicals unique to the plant. The most well known and researched of these, delta-9-tetrahydrocannabinol ( $\Delta$ 9-THC), is the substance primarily responsible for the psychoactive effects of cannabis.

The effects of THC are believed to be moderated by the influence of the other components of the plant, most particularly the cannabinoids.

The cannabinoids are separated into subclasses. These are as follows:

- Cannabigerols (CBG);
- Cannabichromenes (CBC);
- Cannabidiols (CBD);
- Tetrahydrocannabinols (THC);
- Cannabinol (CBN) and cannabinodiol (CBDL);
- Other cannabinoids (such as cannabicyclol (CBL), cannabielsoin (CBE), cannabitriol (CBT) and other miscellaneous types).

### WHAT DO CANNABINOIDS DO?

Like opiates (substances derived from the opium poppy such as heroin), cannabinoids affect the user by interacting with specific receptors, located within different parts of the central nervous system. Two kinds of cannabinoid receptors have been found to date and are termed CB1 and CB2. A substance that occurs naturally within the brain and binds to CB1 receptors was discovered in 1992 and termed "anandamide." Additional naturally occurring substances that bind to CB1 have since been discovered, and these, together with the receptors are termed the "endogenous cannabinoid system."

The actual effects that the cannabinoids have reflect the areas of the brain they interact with. Interactions tend to occur in our limbic system (the part of the brain that affects memory, cognition and psychomotor performance) and mesolimbic pathway (activity in this region is associated with feelings of reward) and are also widely distributed in areas of pain perception.

We are still learning about the endogenous cannabinoid system. Much of the research however, has focused on the many potential medical uses of man-made cannabinoids, called "synthetic analogues."

## WHAT IS THE DIFFERENCE BETWEEN CANNABINOIDS?

The major differences between the cannabinoids are determined by the extent to which they are psychologically active. Three classes of cannabinoids, the CBG, CBC and CBD are not known to have such an effect. THC, CBN, CBDL and some other cannabinoids on the other hand are known to be psychologically active to varying degrees.

CBD is probably the most abundant cannabinoid, contributing up to 40% of cannabis resin. Interestingly, CBD may actually have anti-anxiety effects and lessen the psychoactive effects of THC. This means that a plant with a greater percentage of CBD may reduce the intensity of the effects of the THC, which in effect lowers the potency of the plant. Use of a cannabis plant with less CBD has been shown to have an increased psychological impact and result in unwanted effects such as anxiety.

When THC is exposed to air it oxidizes and forms CBN. CBN is only very weakly psychoactive and not unlike CBD interacts with THC to reduce its effects. This is why cannabis that has been left out unused will have increasing amounts of CBN and decreasing amounts of THC and thus lose potency.



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