What Are Cannabinoids?

The Basics of Cannabinoids

- Refers to a group of Terpenophenolic Chemical Compounds
- Cannabinoids are naturally present in Cannabis ("Cannabis sativa") plant
- Cannabinoids are also naturally present in the nervous system and immune system
- Can be synthesized in a number of chemical variations

The word ‘cannabinoids’ is a group term for what scientists call ‘terpenophenolic’ compounds. Sounds just a little familiar right? That’s because it’s giving a bit of a shout out to the terpenes that are associated with and responsible for the various scents the flowers (or buds) of the cannabis plant. These terpenophenolic compounds have a binding reaction with the cannabinoid receptors in humans as well as many varieties of animals. This group term also covers the related secondary (not necessary for plant growth) metabolites that give the various and often desired pharmacological and psychophysiological effects from consuming various parts of the cannabis plant.

Now, on a rather technical basis, cannabinoids can include a variety of chemical classes - all of which bind with the cannabinoid receptors. This expansive group holds classical THC related cannabinoids, non-classical cannabinoids, the eicosanoids which are associated with the endocannabinoids, and many more chemicals that have cannabinoid related binding reactions with receptors. Let’s take an in-depth look at the varieties of cannabinoids that are available and get to know how these chemicals can play a part in our everyday lives.

The Three General Types of Cannabinoids

So, where do cannabinoids come from? This astoundingly large group of chemicals actually has multiple originating points interestingly enough. There are three ways that cannabinoids are created and introduced into our world (and sometimes our physiology): phytocannabinoids, endogenous cannabinoids, and synthetic cannabinoids. Let’s take a more detailed look at what these terms actually mean and explore the differences between them.

Phytocannabinoids

These cannabinoids are the chemical compounds which are naturally created within the cannabis plant. Phytocannabinoids, which are the classical cannabinoids, are also known as the herbal variety of cannabinoids, and are contained within the thick and sticky resins that the cannabis plants trichomes release. Scientists aren’t exactly sure why the plants produce this secondary metabolite containing substance, but have presumed that it could be a defense mechanism for the plant (which happens to interact nicely with our built in cannabinoid receptors). These cannabinoids include a rather long list of specific varieties that the plant produces, including tetrahydrocannabinol (THC), tetrahydrocannabinol acid (THCA),

tetrahydrocannabivarin (THCV), cannabidiol (CBD), and cannabinol (CBN) - and those are just the ones that scientists have given the most attention. Let's take a look at what each of these cannabinoids do and how they are related.

Basic Phytocannabinoids within the Cannabis Plant

- **Tetrahydrocannabinol - THC**

  THC is the main psychoactive component of cannabis and cannabinoids. The effects are often described as a 'cerebral experience' including euphoria, pain relief, hunger, drowsiness, and on occasion anxiety or paranoia. These influences are short-lived and are highly dependent on the user's body chemistry, frame of mind, and the amount consumed.
- **Tetrahydrocannabinol Acid - THCA**

  THCA is the precursor or a stepping stone to THC. THCA is a non-psychoactive chemical that converts or turns into THC when heat or acidity is introduced to the cannabinoids in this group. This chemical is also related to the anti-inflammatory and anti-nausea effects that users might experience.
- **Tetrahydrocannabivarin - THCV**

  THCV contains some psychoactive effects, and is also naturally present along with the previous chemicals mentioned. This particular cannabinoid has a higher temp requirement for full activation, and features some interesting effects. Some of these effects might include: appetite reduction, improved regulation of blood sugars, and can calm anxiety attacks (without nasty pharmaceutical side effects like emotional suppression).
- **Cannabidiol - CBD**

  CBD's lack the psychoactive effects of 'getting stoned' but holds on to all the medical benefits that cannabinoids can offer. This particular cannabinoid is protective of the nerves in the human body and can help generate nerve growth, as well as reduce inflammation, pain, and anxiety - all without the sensation of 'getting high'.
- **Cannabinol - CBN**

  This variety of cannabinoid is also less heavy on the 'high' of cannabis use, but provides some pretty amazing and particular benefits. Primarily, CBN has been noted for its ability to combat insomnia and has been marked as having antibacterial and anticonvulsive properties.

Endogenous Cannabinoids

These cannabinoids are naturally generated within human and animal bodies. If you've ever wondered why humans and cannabinoids tend to get along so well, it might be partly because we have built in receptors that cater specifically to cannabinoids. This system also contributes to the natural highs that the body and mind can experience after physical activity (ever experienced a 'runner's high'? - that's a natural cannabinoid reaction!). These internally generated cannabinoids are involved in nearly every stage of fertility and pregnancy, and helps mediate anxiety, mood, and hunger.

Synthetic Cannabinoids

These cannabinoids are synthesized to mimic the chemical composition of cannabinoids due to the various legal restrictions geared against natural plant based cannabinoids and their association with marijuana. These formulations of synthetic cannabinoids are likely most familiar from the rise of the synthetic marijuana across the world. These false versions of marijuana cannabinoids fall far short of the benefits that true cannabis based cannabinoids can offer when naturally produced as compared to the cannabinoids that were synthesized to be different than the cannabinoids that were directly affected by legislature. Many synthetic cannabinoids have been made illegal and banned across the world due to the negative impacts (including heart attacks, hallucinations, seizures, and even death) that these products have been causing over the last few years with their rise in use. Synthetic cannabinoids have taught a valuable lesson in the fact that each and every cannabinoid will interact differently with the body and that not all cannabinoids are treated equally within the body.

It should be noted that not all synthetic cannabinoids are the same. While synthetic marijuana may be well known (if extremely diverse in cannabinoid chemical formulation), there are also synthesized versions of THC that are made available through pharmaceutical companies (take Marinol for example - a popular synthetic cannabinoid prescription that aims to help battle the side effects of chemotherapy).