How Cannabis and Our Endocannabinoid System Work Together

Since the prohibition of cannabis in the early 1900s, marijuana has been synonymous with poor choices, addiction, and crime. However, increasingly more researchers, scientists, and medical professionals alike have been discovering ways that cannabis actually benefits us.

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That's right, cannabis is no longer the 'devil's lettuce' and instead is being used by millions in North America as a natural and alternative form of medicine. But how exactly does this 'drug' benefit our health? This is all thanks to a critical system working inside our own bodies known as the Endocannabinoid System, or ECS for short. We're going to go through the ins-and-outs of this system, how it works, what it effects, and how cannabis plays a role.

What is the Endocannabinoid System?

Cannabis has been used as a form of medicine since the earliest human civilizations, mainly utilized by tribes in different parts of Asia. It wasn't until the last century that cannabis was deemed supposedly unsafe. But that didn't stop endocannabinoids from being produced within our bodies. The endocannabinoid system is a network of receptors that are found in every part of our bodies. From tissues to organs, nearly all parts of our body are influenced by these receptors. There are two main endocannabinoid receptors found in our bodies, CB1 and CB2. It is these receptors that are responsible for reacting with cannabinoids that are created naturally in our body as well as cannabinoids we receive exogenously.

It's important to note that our ECS does not exist because of cannabis, but arguably cannabis exists because of the ECS. Every human being has one, and it is one of the very first things that develop in our bodies from conception. We're talking from as early as our two-cell form.

How Was the Endocannabinoid System Discovered?

Interestingly, we had no idea that this critical system existed in our bodies until 1992. However, the discovery began taking form back in 1988 when a government-funded study determined that the mammals have dedicated receptors that react to cannabinoids like THC and CBD. Scientists would soon find out that not only did these receptors exist, but that they are the most abundant type of neurotransmitter found in our brains.

At this time, it was difficult to perform research on cannabis because of its Schedule 1 classification as a dangerous illicit drug. That didn't mean that research was impossible, however, and most research at the time was funded by the government in hopes that the results would conclude their suspicions were true and reinforce their ruling. This was not what they found.

By 1992, both the CB1 and CB2 receptors had been found and identified in our brain. It was the discovery of a cannabinoid that was produced in our own bodies that solidified the find. This cannabinoid is known as Anandamide. Soon after, a second was discovered, 2-Arachinoylglycerol (2-AG).

The Significance of this Discovery

At the time that this was found out, researchers had no idea the full significance of the ECS. Our Endocannabinoid system is responsible for an unprecedented amount of functions and impacts every part of our life. Since the discovery, research on the medicinal benefits of cannabis has taken off and we know more about how our bodies work because of it.

Now that legalization has spread across Canada and parts of the United States, as well as the recent legalization of industrial hemp, research is being performed at an astounding rate.

What Does our Endocannabinoid System Do?

Now that we know more about how it was discovered and the significance of the discovery, let's take a deeper look into what functions are impacted by the ECS and how this plays a huge role in our overall health. As mentioned before, there are two cannabinoid receptors that are found all throughout the body— CB1 and CB2. Each of these are found in different systems and control different functions. We'll break them down individually so you can get a better idea.

CB-1 Receptors

These receptors are associated mainly in the brain and nervous system. However, they are found all throughout the body. CB1 receptors are found in the following:

- Lungs
- Thyroid Glands
- Brain
- Liver
- Vascular System
- Male and Female Reproductive Systems
- Heart
- Kidneys

While these receptors are found all throughout the body and in the same place you find much of the CB2 receptors in the body, they serve a different purpose.

CB1 receptors are responsible for pain management, mood regulation, and stimulus. When combined with proper cannabinoids, either naturally occurring or exogenous, you can expect anti-depressant and anti-anxiety effect, anti-psychotic properties, increased appetite, reduced nausea, and much more.

CB-2 Receptors

These receptors are responsible for different homeostasis-inducing effects than CB1. You will find more CB2 receptors in organs, especially within the immune system, gastrointestinal system, and spleen.

They perform more regulatory functions that aren't so connected to neurological response. You can expect these sorts of effects:

- Appetite Regulation
- Pain Management
- Reduced Inflammation

While this list isn't particularly long, most of the medicinal effects people are after when using cannabis comes from utilization of the CB2 receptors. The reason for this is because one of those items on the list covers a lot more ground than most realize— inflammation.

Inflammation is responsible for almost all chronic illnesses and symptoms in one way or another. Since CB2 receptors have a huge impact on inflammation, that means that these receptors have at least some measurable impact on pretty much every condition we know of.

Where Does Cannabis Fit Into This?

We know how this incredible system impacts our bodies and all the processes involved in making them function properly. But how does cannabis play into this? Well, it's simple. The system doesn't work without cannabinoids.

We talked about two of the cannabinoids we know of that our bodies produce on their own (2-AG and Anandamide). But, there are more than 100 other cannabinoids out there, and we're constantly discovering more of them.

Two of the most common and talked about cannabinoids that are found in cannabis are Tetrahydrocannabinol (THC)— which is found in most Sativa strains and Indica strains— and Cannabidiol (CBD) which is typically found in medical marijuana. If our receptors were a padlock, cannabinoids like THC and CBD would be keys that fit into those locks perfectly.

Certain cannabinoids fit better into one over the other, for example, THC works mainly with our CB1 receptors, and CBD works with our CB2 receptors. When these cannabinoids are introduced to the body, they seek out the ECS and fit themselves into the lock.

What does this mean exactly? We don't have all of the answers yet, but what we do know is that matching our ECS with cannabinoids can facilitate these process. For example, when you consume THC, your CB1 receptors can start to function at a higher rate. Meaning your depression decreases, your pain is reduced, and your serotonin spikes. Same goes for CBD and our CB2 receptors.

Our ECS, Cannabis, and Cancer

One of the biggest discoveries to date regarding our ECS and cannabis is the effect it has on cancer. Remember how we talked about homeostasis? Well, one function of homeostasis that our ECS has control over is a process known as Apoptosis.

Apoptosis is just a fancy word for natural cell death. All cells have to die and be replaced at some point, and our bodies do a great job at it. However, there are certain cells that won't die on their own, and this causes huge problems. We're talking about cancer cells.

It's been found that cannabis use actually facilitates apoptosis in these types of cells, virtually causing cancer to kill itself. Studies have actually shown that cannabinoids inhibit tumor growth naturally through this process.

While there have been several studies done and quite a few cases to back it up, the research just isn't strong enough yet to yell from the rooftops that cannabis cures cancer... But we're not too far off.

As more research is done thanks to legalization, we are getting closer and closer to understanding exactly how important our ECS is to us and how powerful cannabis can be in fighting chronic and even terminal illnesses.

What are the Medicinal Benefits of Cannabis?

Because cannabinoids are so vital in the utilization of this incredible system we have, it's no wonder that there are a host of health benefits associated with cannabis use. Here are just a few of conditions and symptoms that cannabis can affect:

- Parkinson's Disease
- Multiple Sclerosis
- Epilepsy and Seizures
- Chronic Pain
- Anxiety and Depression
- Insomnia
- Eating Disorders like Anorexia
- Asthma
- Nausea

These are just a few of the known conditions that cannabis has an effect on. There are many more, and tons more to be discovered. Only time and research will tell exactly how powerful cannabis actually is. Today, many people with chronic conditions are treating their symptoms with cannabis.

A Revolution Has Begun

We've only known about our Endocannabinoid system for less than 30 years. We have a long way to go in fully understanding the operations of this system and exactly how cannabis plays a role in this.

Over 9000 Canadians lost their lives to opioids between 2016 and 2018, and over 70,000 Americans died from an opioid overdose in 2017 alone. There is a crisis upon us, and to many, cannabis is the solution.

Not only is it a solution, but a revolution. A way to fight back against these addictive and life-altering substances and bringing back the kind of natural relief we've been utilizing since the beginning of human civilization.

As we look to the future of holistic, natural medicine, what role will cannabis play? What other natural substances out there may have been wrongfully demonized? Are there other powerful systems within our bodies like the endocannabinoid system that could unlock the answer to healing a sick and hurting world of people?

These are all questions that seek to be answered, and cannabis is just the beginning force of this revolution.

Perhaps it is time for us to take a step back and re-visit the ancient traditions that humans have utilized for thousands of years, what wisdom might we discover if we do? Of course it is amazing what medical breakthroughs have come about from new science, but who are we to say that there is no such discovery and insight to gain from the antiquated wisdom of the past.