



# The Endocannabinoid System

and medical cannabis  
a summary

With permission from  
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# Medial cannabis and The Endocannabinoid System

## Purpose and Foreword

Are you familiar with the benefits of medical cannabis? Is your doctor able to advise you in correct dosage and proper administration?

Probably not. Despite the vast amounts of published research and the historical basis of this more than 5,000 years old and well-known therapeutic practice, most doctors practically know little to nothing of the medical application of cannabis.

This picture is apparently in the process of changing, partly because the public demands it and people require access to safe, natural therapy that stimulates their body's ability to heal itself. A demand for which medical cannabis is the perfect solution. I hope this summary (written in December 2012) will serve to spread awareness and help to inform patients as well as health professionals, about the scientific evidence behind the medical use of cannabis.



## Introduction

While you're reading this review of the scientific literature regarding the therapeutic effects of cannabis and cannabinoids, one thing will soon become apparent: cannabis has a profound impact on the human body.

This one plant and its many different therapeutic compounds, seem to affect all aspects of our body and mind. The first question to arise is, how is it possible?

In many parts of the world, cannabis is used by patients with as different conditions as Cancer, Crohn's disease, Epilepsy, Chronic pain, Multiple sclerosis, Insomnia, Tourette's, and Eczema, to name a few.

All of these conditions are very different; They are different physiological conditions with vastly different symptoms. Patients are old and young; and some are undergoing conventional treatments while others

## Ancient Egyptian goddess Seshat

*(to the left in her role as  
the Goddess who measures)*

**is depicted with a hemp leaf in  
her head dress... Cannabis pollen  
was found on the mummy of  
Ramses II (nineteenth dynasty).  
Initially scholars debated as to  
whether the cannabis pollen was  
ancient or modern contamination.  
Additional research showed  
cannabis pollen in all known  
royal mummies...**

Exerpt From: <http://wikowedia.com/seshat.htmls>

*[In December 2012 a search on the internationally-renowned medical database PubMed ([www.pubmed.org](http://www.pubmed.org)) revealed 11,682 published articles that contain the word cannabis, when the word searched for was cannabinoid, the number of articles increased to 16,137.*

*A new search performed on the 1st of April 2017 (now: <https://www.ncbi.nlm.nih.gov/pubmed>). Provides the search number of*

*16,213 published articles which contain the word cannabis.*

*When the word “cannabinoid” is used, the number increases to 21,758 articles. That is more than two scientific publications per day over the last 20 years!*

*These numbers illustrate not only the scientific interest in understanding more about cannabis and its components, but also stresses the need for reviews and summaries of high quality.]*

are on a decidedly alternative road. But despite their differences, they all agree on one thing: cannabis improves their overall condition. As an explorer with the errand of enlightenment, I am always wary of anyone with broad claims, whom in the medical context, claims to be able to cure everything. Different popular health solutions often seem to surface, however always with little or no knowledge-scientific or clinical evidence to support their claims.

When I first began to investigate the therapeutic potential of cannabis, I found, however, no shortage of evidence. In fact, I saw an abundance of scientific research about the therapeutic potential and benefits of cannabis. Far more evidence than you’ll find for some of the most widely used treatments in conventional medicine.

### **But how can one plant help on so many different conditions?**

How can it give both soothing and healing effects?  
How can it be so safe and deliver such excellent results?

The quest to answer these questions- led scientists to the discovery of a previously unknown physiological system; a central component of human health and the ability of self-healing: The endocannabinoid system

### **The story behind the endocannabinoid system**

We start the story at the beginning of 1896 in which three British researchers named Wood, Spivey and

Easterfield isolated and named the first phytocannabinoid. They were working with an Indian hemp resin, known as “charas” and described a “physiological active substance” which they named the cannabinol (CBN). Then about four decades passed by without any significant progress in science. In 1939, one of America’s leading organic chemists, Roger Adams, managed to produce a red oil extract obtained from Minnesota’s wild hemp. Adams worked at The University of Illinois in Champaign-Urbana. He is credited for in 1940 to have isolated and identified the other plant-cannabinoid cannabidiol (CBD).

Then another 24 years went on before the next significant discovery. In 1964, professor of medicinal chemistry and natural products, Raphael Gaoni, from The Hebrew University in Jerusalem, became known as the first person to isolate and identify the structure of the active substance in the cannabis plant, THC, as well as to make a chemical analysis of its composition:  $\Delta^9$  tetrahydrocannabinol. The identification of the three plant cannabinoids are, however, only half the story. It was not until the discovery the human corresponding cannabinoid receptors that the story was completed. Because up until this point in history, it was thought that cannabis functioned in the same way as does an Alcohol.

All of this, however, would change in 1988. In studies with rat brains, the researchers attached radioactive tags to synthetic cannabinoids and tracked where they “landed”, and made an amazing discovery! They found two types of cannabinoid receptors in the body and named them “CB1” and “CB2”. This

discovery stood in contrast to the alcohol, which does not have any receptors, which is not part of the physiological system and which can easily cause alcohol poisoning. Cannabinoids, as those found in the cannabis plant, on the other hand, fits like a hand in a glove in the cannabinoid receptors in the body.

The discovery of cannabinoid receptors in animals led the scientists to an obvious question: what kind of naturally occurring chemical substance fits into these receptors? This time they found the answer relatively quickly. In 1992 the first endogenous cannabinoid was found by two researchers who worked in Mechoulam's Jerusalem laboratory. They discovered the first endogenous cannabinoid anandamide and named it after the Sanskrit word for bliss.

Since then, research has taken off and what started with the discovery of two receptors has led to the discovery of a complete and hitherto unknown physiological system.

### **What is the endocannabinoid system?**

The endocannabinoid system (ECS) named after the plant which led to the discovery, is one of the essential physiological systems; A system that is involved in the establishment and maintenance of human health. ECS refers to a group of neuromodulating lipids and their receptors that together plays a substantial role in the regulation of a wide range of physiological processes, including appetite control, energy balance, pain perception, mood, memory and immune reactions.

Endocannabinoids and their corresponding receptors can be found throughout the body: the brain, organs, connective tissue, glands and immune cells. In each place, the cannabinoid system performs different tasks, but the goal is always the same: homeostasis, the maintenance of a stable internal environment despite fluctuations in the external environment.

Cannabinoids promote homeostasis at all levels of biological life, from the subcellular to the organism as a whole, and perhaps on the very basis of society and beyond. Here is an example: autophagocytosis (from the Greek: auto "self"-phagein "to eat"), a process that involves cell-decomposition of un-

necessary or dysfunctional cellular components, is mediated by the endocannabinoid system. While this process keeps normal cells alive and allows them to maintain a balance between synthesis, degeneration and subsequent recycling of cellular products, it does have a deadly effect on malignant tumour cells; As it causes them to devour itself in a programmed cellular suicide, called apoptosis. The elimination of cancer cells promotes, of course, homeostasis and the survival of the entire organism.

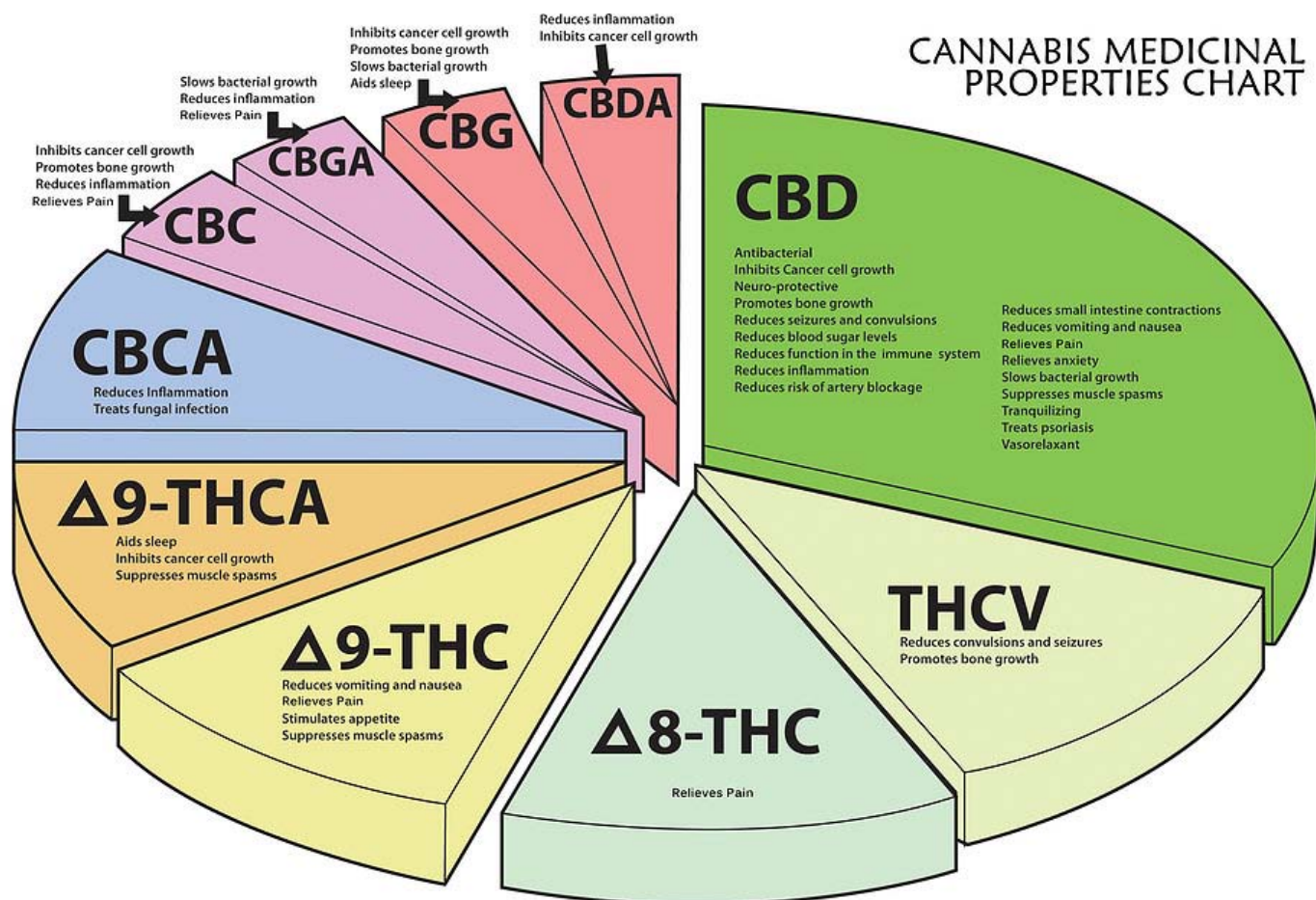
Endocannabinoids are also found in the intersections between the body's various systems and assists in communication and coordination between the different cell types. For example, in the context of a lesion, endocannabinoids releases the so-called activators and sensitizers from the damaged tissue and thus stabilises the nerve cells and prevents excessive activity, as well as it calms nearby immune cells to prevent the release of pro-inflammatory substances. Three different mechanisms of action at three different cell types to a single purpose: to minimise the pain and damage caused by the lesion.

The endocannabinoid system is, with its complex operations in our immune system, the nervous system and in all of our organs, literally a bridge between the body and the mind. By understanding this system, we begin to see a mechanism that explains how consciousness can promote health or illness respectively. In addition to regulating our internal and cellular homeostasis, cannabinoids also affect a person's relation to the external environment. Socially speaking, the addition of certain cannabinoids changes the human behaviour, often by promoting the desire 'to share' as well as creativity. By mediating neurogenesis, the new formation of neurons (brain cells), neuronal plasticity and knowledge, has a direct influence on a person's openness and ability to move beyond the limited thought patterns and behaviours from previous situations. The re-formatting of these old patterns are an essential part of the continued health of our rapidly changing environment.

\* intermediary processes in the central nervous system



## CANNABIS MEDICINAL PROPERTIES CHART



### What are the cannabinoid receptors?

Ranging from sea slugs to small roundworms and all other species of vertebrates, we share the endocannabinoid system, as an essential part of life and adaptation to environmental changes. By comparing the genetics of cannabinoid receptors in the different species, scientists estimate that the endocannabinoid system has evolved in primitive animals for over 600 million years ago.

Although it may seem we know much about cannabinoids, the thousands of scientific articles have only just begun to shed some light on the subject.

Large gaps exist probably in our current understanding and the complexity of the interplay between different cannabinoids, cell types, systems and individual organisms challenges researchers to think about physiology and health in brand new ways. The following brief overview summarises what we know (2012).

Cannabinoid receptors are found throughout the

body, embedded in cell membranes and is believed to be more numerous than any other receptor system. When cannabinoid-receptors are stimulated numerous physiological processes as a result. Researchers have identified two cannabinoid receptors as mentioned: “CB1” which is predominantly found in the nervous system, connective tissue, glands, reproductive organs and other bodies and “CB2” which is predominantly found in the immune system and its affiliated structures. Many tissues contains both the CB1 and CB2 receptors, each of which is associated with various operations. Research suggests, however, that there may be a third cannabinoid receptor just waiting to be discovered.

### What are cannabinoids?

We use to classify the cannabinoids in three groups:

- A: Endogenous cannabinoids (endocannabinoids), which is naturally produced by the body.
- B: Phyto-cannabinoids (plant cannabinoids), which, among other things. found in the cannabis plant.
- C: synthetic cannabinoids, such as Sativex, produced and distributed by pharmaceutical companies.

Endocannabinoids are substances that our body naturally produces to stimulate these receptors. The two most well-known of these molecules is called anandamide and 2-arachidonoylglycerol (2-AG). Phyto-cannabinoids are plant substances that stimulate cannabinoid receptors. Delta-9-tetrahydrocannabinol, or THC, is the most psychoactive, and certainly the most famous of these substances, but other cannabinoids, such as cannabidiol (CBD), cannabiol (CBN), tetrahydrocannabivarin (THCV), cannabichromene (CBC) and cannabicylol (CBL) wins the interest of researchers due to a number of different healing properties.

Most phyto-cannabinoids have been isolated from the cannabis plant, but other medical herbs such as *Echinacea purpurea* (Purple Coneflower, Purple Coneflower), have been shown to contain non-psychoactive cannabinoids.

The cannabis plant makes use of its own THC and the other cannabinoids, to promoting its own health and prevent disease. Cannabinoids have antioxidant properties that protect the plant from ultraviolet radiation, the cannabinoids neutralizes the harmful free radicals generated by UV rays and protects the cells. In humans the free radical causes aging, cancer and reduced healing. Antioxidants from plants has for long been marketed as dietary supplements for preventing the free radicals damage.

We produce also the cannabinoids in the laboratory. Synthetic THC, such as Marinol, Cesamet, THC and a Sativex-analog, are all recognised by the American food and drug agency, the FDA, and are used, inter alia, for the treatment of severe nausea associated with chemotherapy. Many other synthetic cannabinoids are used also in animal studies and some have potens up to 600 times stronger than THC.

## **Cannabis, ECS and good health**

While we continue to sort through new science concerning cannabis and cannabinoids, one thing is clear: a functional endocannabinoid system is crucial for health. From conception, the embryonic implantation on the wall in our mother's womb, for breast feeding and growth, to respond to lesions, then the endocannabinoids help us to survive in a fast paced,

ever changing and ever more challenging environment.

Questions that seems to ask themselves are: can one improve his endocannabinoid system by consuming cannabis? Can cannabis, in addition to treating symptoms, beyond even curing disease, help us to prevent diseases and promote health by stimulating this ancient system, we are all equipped with?

The answer I seem to be left with is, Yes. Research has shown that small doses of cannabinoids from cannabis can signal the body to produce more endocannabinoids and create more cannabinoid receptors.

This is one of the reasons why many first-time users of cannabis does not feel any special effect, but fed by their second or third time, marks a significant difference. The first exposure to cannabinoids has signaled to the body to produce more cannabinoid receptors and is now ready to react. More receptors increases an individual's susceptibility to cannabinoids, so smaller doses have greater effects, and the individual has an improved basis for endocannabinoid activity. I think that small, regular doses of cannabis seems like a perfectly balanced stimulus for our most central physiological system.

Many doctors are not thrilled at the idea of recommending a purely botanical drug, and feel directly offended by the idea of smoking a medicine. Our medical staff is unfortunately far more comfortable with individual, isolated, synthetic substances, that can either be swallowed or injected. Unfortunately this model restricts significantly the therapeutic potential of cannabinoids.

Unlike synthetic derivatives, cannabis contains more than a hundred different cannabinoids, including THC, all of which work in synergy to produce better medical effects and fewer side effects than synthetic THC analogues alone. Scientific studies and patients' enthusiasm indicates both that the cannabis has superior medicinal qualities in relation to synthetic cannabinoids.

Thomas Edison is credited for in 1902 to this pronouncement: "There have never been so many talented, active minds occupied with illness as now, and

all of their discoveries have tended towards the simple truth that you cannot improve on nature” Modern researching in cannabinoids has demonstrated that this claim is still valid.

So is it possible that cannabis is the most useful product to treat the widest range of human diseases? Has cannabis part in preventing against disease and maintain good health? and is cannabis an Adaptive aid in our increasingly toxic, cancer-causing environment? Yes. It is a simple fact, known and used by the indigenous medical systems in ancient India, China and Tibet, and which now is becoming more and more well-known and accepted by Western science. Of course we need more human-based research that examines the effectiveness of cannabis, but the evidence base is already large and growing constantly.

It is worth noting that there is a big difference on the health effects, depending on whether cannabis is taken orally or through evaporation/smoking. Through oral absorption you get 100% utilisation of the active substances, whereas through evaporation or smoking you obtain only approximately 10% of the beneficial utilisation of the active substances. This is due to, that certain of the active supporting substances contained in the cannabis, disappear in the event of heavy heating and we are not able to absorb all the active substances through the smoke. Just as we do not occupy 100% of the oxygen in the air we inhale, as well as smoking in the traditional way, there will be lots of smoke which is not inhaled. Therefore, it is recommended that for pharmaceutical use, consume cannabis orally.

[NOTE: Cannabis oil also known as CBD Oil can be purchased online in 2017 - more info at the end of this summary.]

Basically, cannabinoids are found in crude state as carboxylic acids, e.g. THC as THCa and CBD exists as CBDa whose mechanism of action is different from their decarboxylated opposites. It is the decarboxylation that makes cannabis ingredients psychoactive. If you want to avoid the psychoactive effect you can take fresh cannabis in, for example. Salads and smoothies.

Another health aspect of cannabis is the leaves and seeds of the plant. Cannabis - regardless of species, sativa, indica, ruderalis, male or female, hermaphrodite, wild, bred for industrial use or medical resin - is a fantastic “vegetable” containing all essential amino acids and essential fatty acids,

The diet-related uses of cannabis are many. Among other things, cannabis buds and leaves can be pressed as a delicious and tasty juices, the leaves can be used in salads and the seeds can be mixed into muesli, squeezed and shared into oil which can be ingested (not heated) in smoothies, milkshakes or whatever you might prefer. Seed shells can be crushed and used as protein powder and seeds can be blended with water into “a milk”.

### **Cannabinoids, learning and memory**

After this comprehensive introduction to the topic, I would like to take hold of the first topic of particular interest, especially because cannabis often and uncontradicted, will be put in the context of impaired learning and poor memory.

First a little introduction of concepts. DSI stands for Depolarized-induced Suppression of Inhibition. It is one of the ways in which cells are replying to each other. This form of cellular communication is the chemical process called “retrograde signaling”. In neuroscience, retrograde signaling is a phenomenon in which a signal travels from a postsynaptic neuron to a presynaptic neuron. just Imagine like people in a conversation, cells need to let other cells know how things stand. Retrograde signaling is when the receiving cell “talk back” and confirms to the sending cell, that a message is received; the receiving cell also provides a feedback on the original message. Think of this as when one gives a nod in order to signal the understanding in a conversation, just on a cellular level.

### **LTP stands for long-term potentiation**

In neuroscience, long-term potentiation (LTP) is a long-lasting increase in signal transmission between two neurons caused by synchronous stimulation. It is one of several phenomena underlying synaptic plasticity, chemical synapsers ability to change



strength. Just as memories are thought to be encoded by modification of synaptic strength and stored in the connections between neurons, LTP is considered for being one of the major cellular mechanisms that underlies learning and memory.

Whatever the case is, in brief - cannabis sharpens your attention and makes whatever you do, into something that is close to the most interesting thing in the whole world, focused attention is said to increased learning .... Ability to multitask and mental to connect seemingly different topics, while at the same time filter out unimportant inputs - is the perfect recipe for really intense learning.

With regard to memory, it is also untrue that one will be worse to remember, the increased focus in the present moment makes on the other hand, that you do not think about things that are irrelevant to one's immediate situation.

Cannabis helps one to forget, which is not the same as being bad to remember, but more and in details about this later ...

### **Cannabis, fatty foods and craving**

An often overlooked effect of the endocannabinoid system, is observed when we eat tasty foods such as sweets and fatty foods. When we eat fatty foods such as French fries or chips, a chain reaction of signals kickstartes in our body. The signals are formed by receptors in our mouth, which, among others are responding to food high in fat. Signal substances belong to the endocannabinoid system. The signal will be sent down from the mouth to the intestine, which in turn sends the signal on to the brain. The brain will then have to know that it is fatty foods we eat, and enable the so-called "reward center" in the brain. Reward Center make us feel comfortable, and it makes us want to eat even more fat.

The body works like this, because in immemorial time, it was equal to survival to have eaten lots of fatty foods, when it at a rare time was available. In other words, it is a completely natural reaction to the food that we consume.

The same applies to most other mammals which also has developed a consistent craving for the hard-to-reach fatty food that is so rich in nutrients. It is the

same mechanism that makes that cannabis smokers experience to get very "strong craving".

## **Treatment of different diseases**

Stimulation of the cannabinoid system has many opportunities to cure a wide range of diseases. The list is only tentative and has been discovered in experiments in laboratories, or tested by private persons who sought relief and found it.

The conclusion is, that by stimulation of the cannabinoid system, the results obtained are significant positive, among others: withdrawal symptoms (rehabilitation), ADHD, Allergies, Alzheimer's, Anxiety, Asthma, Blood poisoning (sepsis), burns, Diabetes, Epilepsy, Hepatitis (liver inflammation), Brain Tumors, skin diseases (Acne, Psoriasis, eczema), Inflammation, Ischemia, Nausea and vomit (by chemotherapy), Bone Diseases (osteoporosis, arthrorheumatism, bone metastases), circulatory disorders (Ischemia), Cancer, Leukemia, liver function and brain damage, Meige Syndrome (dystrophi facial musculature), MS (Multiple Sclerosis), Nerve protective (BSE Jakob Jacobs), overweight (decreases the appetite), Parkinson's disease, Post traumatic stress (PTSD), Prostate Cancer, Schizophrenia, Pain (chronic), Stress, Sleep (improved) ...

The following describes in detail: Bone Diseases, Diabetes, Cancer and Stress.

### **Bone-related diseases**

Recently it has been demonstrated that the endocannabinoid system is also implicated in the regulation of bone metabolism. Bone metabolism is a lifelong process in which the mature bone tissue is removed from the skeleton (a process known as bone resorption) and new bone tissue is formed (a process called ossification or new bone formation). An imbalance in the regulation of bone remodeling's two sub-processes, bone resorption and bone formation results in many metabolic bone diseases, such as osteoporosis (bone frailty).

Experiments with mice with targeted inactivation of cannabinoid receptors, have shown that canna-



binoids play a central role in the regulation of bone metabolism. Mice with CB1 deficiency developed age-related osteoporosis as a result of decreased bone formation and accumulation of bone marrow fat, while mice with CB2 deficiency developed age-related osteoporosis as a result of increased bone turnover with disconnection of bone resorption of bone formation.

The active ingredient of the cannabis plant, Delta (9)-tetrahydrocannabinol, activates CB1 and CB2 receptors and thus mimics the effect of endocannabinoids, produced by the body itself. A series of preclinical studies have demonstrated the potential role of cannabinoids and their receptors in bone metabolism.

Pharmacological and genetic modulation of cannabinoid receptors suggests that cannabinoids will be very promising in the treatment of bone diseases associated with accelerated bone-osteoklastisk resorption including osteoporosis, rheumatoid arthritis and bone metastases.

## **Diabetes**

One of the endocannabinoid signal system's functions is to regulate energy balance, among others, by increasing the energy-storing in adipose tissue and reduce energy consumption by influencing both lipid and glucose metabolism.

Although this usually is regulated by hormones and neuropeptides, both central and peripheral aspects of the endocannabinoid regulation can be dys regulated and thereby contribute to obesity, Dyslipidemia and type 2 diabetes.

As reviewed previously, regular doses of cannabis can help to stabilize and regulate the body's natural production of endocannabinoids and restore homeostasis.

In addition, cannabis helps to stabilize blood sugar levels. Cannabis has anti-inflammatory effects that may help by suppress arterial inflammations, as are common for diabetes. Cannabis has Neuroprotective

effects that helps against inflammation of the nerves, thus reducing neuropathy (neuropathy is a term complication for diabetes and is caused by an injury to the nerves outside the central nervous system) by activating the receptors in the body and brain.

Cannabis helps to relieve muscle spasm and abdominal pain. Cannabis have vasodilator properties which helps to keep blood vessels open and improve circulation. Cannabis helps to lower blood pressure, and i.e. by substitution of butter with hemp seed butter and oil in cooking, benefits the heart and arterial health in general, and finally can cannabis help diabetics with "restless leg syndrome" so the quality of sleep improves.

## **Cancer**

As previously mentioned cannabinoids promotes homeostasis at all levels of biological life. Since cancer definitely must be said to be diametrically opposite of homeostasis and as is homeostasis is the absence of illness at the same time, then it must be clear to everyone that everything that promote homeostasis is instrumental in curing any ailment and of course, including cancer.

We all know about cancer, probably know some who have been ill or died as a result of cancer, but what is cancer? This is perhaps in its proper place, to have a common perspective, before we continue with the explanation of how cannabis can cure this pervasive disease.

Cancer is not one but many different diseases. In fact there are hundreds of various cancer diseases, which are named after the place in the body where they occur. Cancer begins in the cells. We have about 50 trillion (50,000,000,000,000) cells which together form the body. Cell life is predetermined. When a cell dies, it gets replaced by a new cell. New cells are formed by the cell division; in this way wounds heal, blood, skin and mucous membranes are restored and the entire organism function. Each cell keeps an eye on and is in equilibrium with neighbouring cells.

The cells are social and listening to your body's signals. When there is an error in a cell, it will first try to repair itself by means of special repair enzymes. If the cell cannot repair itself, it is programmed to destroy itself. It is said that it commits suicide (apoptosis).

Opposite healthy cells one can say that cancer cells are "asocial", they no longer listen to the body's signals. They do not commit suicide even if an error occurs. Instead, the cancer cells divide themselves so many times, that with plenty more of them, they can be formed to become cancerous nodes.

Error in a cell can occur by itself or because of outside influences. But there must be many changes for cancer can occur. The cell is working hard to prevent it turning into a cancer cell.

But why do we still get cancer? - when now the body is equipped with an endocannabinoid system, whose purpose it is to maintain homeostasis and make sure to send the signal to "unstable" cells to commit suicide. The answer is not simple and so anyway. Of course there are many factors that come into play, but certain generalizations can with good reasonably be drawn.

### **Psychological and physiological stress and clinical cannabinoid deficiency (CECD Clinical EndoCannabinoid Deficiency)**

By prolonged psychological stress follows a long series of physiological side-effects, such as: A higher concentration of norepinephrine in the blood, the signalling substance which among others contributes to cardiovascular disease and similar. Furthermore a change in our breathing to becoming too shallow and short, which is means that we are walking around in a constant lack of oxygen which obviously neither is healthy.

An in-depth review of the consequences by shallow breathing can be found in the book: "Breathing: The Master Key to Self Healing by Dr. MD. Andrew Weil.

By physiological stress, is meant the constant load we expose to our biological organism, through our environmental surroundings- just from exhaust gases, Fossil fuel-absorbing machines, tobacco-smoke, synthetic additives in food and cosmetics products and microwave ovens that decidedly destroys the nutrients in food, to the absorbing artificial electro-magnetic fields created by our wireless society. Everything is instrumental in stressing our organism to a greater or lesser extent.

Our body is designed to deal with stressful situations, psychological as well as physiological and inherent in the body are different mechanisms and enzymes that in the best possible way is trying to deal with "pollution"-but like any other container, it gets overloaded if we just continue pour on.

Another consequence of our lifestyle is that due to lack of physical activity, wrong nutrition and ban on cannabis, we end up overloading and undermining the endocannabinoid system.

### **And here we are at the heart of the matter**

When the endocannabinoid system no longer has the energy to cope with its tasks, which involves monitoring and disseminating information between the cells of the body and its various systems, things go in gridlock and ends up with disease.

With the knowledge of cause and effect, as well as knowledge of the new research, which shows that cannabis has the property that may prevent the onset of disease- and even completely curing our dear organism, then we need to spread the knowledge about the body's cannabionid system and why cannabis is the most effective and natural medicine we in the future should consume.

### **Afterword**

With this article, you can help spread the knowledge so we can take care of ourselves best as possible, and as many people as possible can achieve good health. Do you know of people who need help for their health situation? Share this summary with them.

Today, it is possible to find Cannabis products on the market that can help for the restoration of a sound

health. Please be aware of quality and producer.

After this article was written, several manufacturers are surfaced on the market- for more information and for even legally buy the organic and well-documented Cannabis oil as drops, please feel free to contact me at the following email.

At the present time (2017) we recommend an European manufacturer of organic CBD oil, with sales online, on the European market.

Please fill out contact form on link below - and press send for further information.

**Kind regards**

**Katrine Høyer**

**[www.flow4you.net/contact.html](http://www.flow4you.net/contact.html)**

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## References

Glossary:

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### Read also

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### Or go on Google or YouTube and search on and find more information on your own.

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Delta9-Tetrahydrocannabinol inhibits epithelial growth factor-induced lung cancer cell migration in vitro as well as its growth and metastasis in vivo. <http://www.ncbi.nlm.nih.gov/pubmed/17621270>

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Clinical endocannabinoid deficiency (CECD): can this concept explain therapeutic benefits of cannabis in migraine, fibromyalgia, irritable bowel syndrome and other treatment-resistant conditions?  
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## **American Association for Cancer Research**

Go to: <http://aacrjournals.org/>

Search for: Delta-9 Tetrahydrocannabinol inhibits growth and metastasis of lung cancer.

## **British Journal of Cancer**

A pilot clinical study of Delta-9-tetrahydrocannabinol in patients with recurrent glioblastoma multiforme

<http://www.nature.com/bjc/journal/v95/n2/full/6603236a.html>

## **National Cancer Institute at the National Institute of Health**

Cannabis and Cannabinoids (PDQ®)

<https://www.cancer.gov/about-cancer/treatment/cam/hp/cannabis-pdq>

- bemærk at det er en .GOV side

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Endocannabinoid signal in the gut controls dietary fat intake

<http://www.pnas.org/content/108/31/12904>

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[http://en.wikipedia.org/wiki/Bone\\_metabolism](http://en.wikipedia.org/wiki/Bone_metabolism)

[http://en.wikipedia.org/wiki/Endocannabinoid\\_system](http://en.wikipedia.org/wiki/Endocannabinoid_system)

[http://en.wikipedia.org/wiki/Cannabinoid\\_receptor](http://en.wikipedia.org/wiki/Cannabinoid_receptor)

<http://en.wikipedia.org/wiki/Cannabinoid>

[http://en.wikipedia.org/wiki/Retrograde\\_signaling\\_in\\_LTP](http://en.wikipedia.org/wiki/Retrograde_signaling_in_LTP)

## **NORML.org**

NORML's mission is to influence public opinion, sufficient to legalize responsible use of cannabis for adults. NORML is working to promote knowledge and true information regarding cannabis/hemp plant and its many uses, medical, industrial and rekreationelt.

<http://norml.org/>

## **Blogs & medias**

Marijuana Cuts Lung Cancer Tumor Growth In Half, Study Shows

<http://www.sciencedaily.com/releases/2007/04/070417193338.htm>

Cannabis destroys cancer cells

<http://www.labnews.co.uk/news/cannabis-destroys-cancer-cells/>

Active Ingredient in Marijuana Kills Brain Cancer Cells

<http://health.usnews.com/health-news/family-health/cancer/articles/2009/04/01/active-ingredient-in-marijuana-kills-brain-cancer>

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