



The CBD Phenomenon: So Much Potential



Dr. Kate Thomsen and Silky

- It was found in the tomb of a shaman buried 3000 years ago in Northern China.
- It was found in her pouch and may have been used to treat painful metastatic breast cancer symptoms in the Ice Princess, a 2500 year old mummy unearthed from permafrost in Russia in 1993.
- Queen Victoria used it to alleviate menstrual cramps; George Washington used it to alleviate tooth pain; Traces of it were found in clay smoking pipes in Shakespeare's garden.
- At the turn of the 20th century, it was a common ingredient in many remedies made by manufacturers like Eli Lilly, Parke Davis, Wyeth, Sharpe and Dohme. It was listed in the US Pharmacopoeia.

What is it? Cannabis – the marijuana plant! This magical plant contains over 400 chemical compounds and has been used medicinally since possibly 2700 BC. Currently we know just over 100 compounds in marijuana that have biological and pharmacological activity.

Cannabis has always been of interest to the medical community. In a 2014 survey most doctors say that it has medical value and should be an option for patients. The American Medical Association was the only group opposing the 1937 Marihuana Tax Act which began the course towards prohibition of cannabis. The head of the Federal Narcotics Bureau was more afraid of the company that marijuana was keeping at the time (black Americans and Mexican workers) and the potential for increased crime. Characterized as a racist and prohibitionist, he had marijuana removed from the US Pharmacopoeia in 1942 even though in that same year, the LaGuardia Commission found that marijuana use did not lead to increased crime.

Researchers were able to analyze some constituents of cannabis in 1940 but the legal status of the plant created hurdles to U.S. research and low interest.

Raphael Mechoulam, an Israeli researcher known as the father of cannabidiol chemistry, isolated the chemical structure of 2 major bioactive compounds in the plant, Cannabidiol in 1963 and THC in 1964. In 1988 Allyn Howlett identified the CB1 receptor. Receptors are how cells get messages about what to do. The CB1 Receptor acts like a "lock" in the cell membrane that fits the "keys" cannabidiol and THC resulting in a cell response. While the cannabidiol molecules have many effects, THC is the mind altering chemical in cannabis – giving the "high". THC is the only compound in cannabis that has that effect.

Dr. Mechoulam asked why humans would have receptors to the compounds in the cannabis plant and, in 1992, he discovered a human synthesized cannabinoid molecule which he called Anandamide (after the Sanskrit word for bliss). He later discovered a second human cannabinoid, 2 A-G. It turns out that all animal species (including sponges) have a system of Endocannabinoid receptors. CB1 receptors are perhaps the most abundant receptor in brain cells and are found in high concentrations in the hippocampus (where we form memory), the cerebellum (which controls movement), and in the frontal cortex (where we think). A second receptor the CB2 Receptor was also discovered. This receptor is found mostly on the immune cells circulating in the body, but also in skin, bone, liver, nerve, and brain cells. The body makes its own cannabinoids (the endocannabinoids: anandamide and 2-AG) that fit these receptors.

The Endocannabinoid system has receptors all over the body – in all tissues and organs. The purpose of the system is to support homeostasis. When our bodies produce Anandamide and 2-AG, activating the CB receptors, the body balances its neurotransmitter release. This results in many diverse actions and effects such as relaxation, mood enhancement, sleep support, immune support, cognitive function, eating, easing of digestive motility, muscle control, and as well as controlling cell proliferation, inflammation, pain, eye pressure, vomiting, regulation of temperature, and reward behavior.

It turns out that many plant cannabidiol compounds from cannabis share a similar chemi-

cal structure to the human made endocannabinoids. The plant compounds do not act directly on the CB1 and CB2 receptors but they indirectly allow the endocannabinoids to have more prolonged effects. This action may be particularly helpful in people with "Endocannabinoid Deficiency Syndrome" – a condition in which, it is hypothesized, people unable to make or use sufficient endocannabinoids receive higher benefit from plant cannabinoids.

Unfortunately, this medicinal wonder, cannabis as marijuana – containing significant amounts of THC, was classified a Schedule 1 drug under the 1970s Controlled Substances Act. The definition of a Schedule 1 drug is that it has high potential for abuse and has no accepted medical use – both of which have proven to be far from the truth. Other schedule 1 drugs include heroin, LSD and GHB (the date rape drug). This totally inappropriate classification has kept a major medicine, used all throughout history, out of the hands of researchers, healthcare providers and patients for the past 70 years.

Products made from plant cannabidiols, with the exception of the psychoactive compound THC, are now in widespread use. These CBD oils are still obtained from cannabis, but from a strain grown as a crop plant used to produce industrial hemp. Unlike marijuana, hemp has little potential to produce high-content THC when pollinated. Thus the CBD oil now sold in health food stores is referred to as hemp-derived CBD oil. The sales and use of CBD (cannabidiols) from medicinally grown industrial hemp has skyrocketed. CBD oil is available in capsules, drops, sprays, topical creams, concentrates in syringes, vape oil and other options. It will only have traces of THC in it (less than 0.3%) and will not produce a "high". Research, however, on CBD oil is mostly derived from in vitro or animal studies. There are very few research studies on the effects of CBD in humans. The reported benefits from CBD oil include reduction of: anxiety, inflammation, seizures, ischemia, psychosis, nausea, vomiting and pain. It appears that the addition of some THC to the CBD oils are additive to these effects. However the legal status of marijuana is an obstacle to research and to the clinical use of canna-

Kate Thomsen MD, MPH

INTEGRATIVE AND HOLISTIC HEALTH AND WELLNESS

So you want to try CBD?

It seems to be everywhere. How do you know that a small company isn't making it in tubs in their basement? How do you know the plant wasn't sprayed with pesticides? How do you know the inert ingredients are safe? How do you know if you are buying a quality product – giving you the dose you paid for? How do you know it was processed in a safe way?

Read the label/go to the website:

- Is the product derived from a cannabis plant (hemp derived?); what other ingredients are on the label?
- Where was it grown? Grown organically?
- Where was it processed? In a facility using cGMP (current Good Manufacturing Practices)?
- Does the facility use CO2 extraction (best) or solvent (butane) extraction to extract the oils? Is it a "cold" process or is heat used (heat can degrade some ingredients)?
- Is the product tested for cannabinoid content, pesticides, heavy metals, contaminants and solvents?
- Is the final product sent to a third party laboratory to verify concentration, quality and safety? Is there a certificate of analysis you can see?
- Dose matters as well and doses are all over the place; doses required to have an effect vary among individuals.
- With oral preparations, it is recommended to start with a dose low, increasing gradually to the desired effect



Office of Dr. Kate Thomsen

252 West Delaware Ave.

Pennington, NJ 08534

609-818-9700

WWW.DRKATETHOMSEN.COM

Additional articles on holistic health topics can be found on the website

bis and its derivatives as medicine. Nonetheless, CBD without THC still has an amazing repertoire of actions!!! CBD has been found to be extremely effective, extremely safe, and with few, if any side effects. Some people notice sleepiness at higher doses.

Hopefully soon we will be seeing more research and more availability of the marijuana extracts. They are already available in medical marijuana and legalized recreational marijuana states. These medicines will carry differing amounts of CBD and THC and research is needed to be able to differentiate how they can be optimized for various conditions. Research, although limited, already shows usefulness for pain control, neuropathy, spasticity, improving sleep, reduction in opioid use, cancer treatment and prevention, reduction of seizures, and most chemotherapy side effects (weight loss, loss of appetite, anxiety, pain, depression, nausea and vomiting, insomnia...) among others.

There have been no reported deaths from overdose of marijuana. The addictive potential and minor withdrawal syndrome is less than or equal to that of caffeine. 800,000 persons are incarcerated every year for cannabis possession. Our ignorance of the benefits and risks of this much maligned herb is keeping a valuable medicine out of our reach. At least some people are beginning to experience her benefits in the medical marijuana legal states.

Dr. Kate Thomsen's office for holistic health care is located in Pennington, NJ. She is board certified in Family Medicine, certified in Integrative/Holistic Medicine, and an Institute for Functional Medicine Certified Practitioner. She has been practicing Functional Medicine for over 15 years. For more information see www.drkatethomsen.com or call the office at 609-818-9700.