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CANNABINOID CHRONICLES

Medical Cannabis News and Information

Epileptic Seizures and Cannabis

Epilepsy is a group of chronic, often progressive, neurological diseases characterized by recurrent seizures. It is sometimes known as a seizure disorder. Epileptic seizures are the result of excessive and abnormal cortical nerve cell activity in the brain.

In about 70% of epilepsy cases, the cause is unknown. For the rest, the cause may be one of a number of reasons such as head injury, lack of oxygen at birth, brain tumour, poor brain development, genetic factors, and/or infection, for example. There is no known cure. Some children with epilepsy may outgrow their condition with age.

There are more than 20 types of epileptic seizures which can vary in frequency, from occasional to hundreds a day, and severity, from a strange, fleeting sensation to unconsciousness and convulsions (tonic-clonic seizure, formerly grand mal, is the most common).

Treatment for epilepsy focuses on reducing or eliminating seizures, primarily by antiepileptic drugs, surgery and/or diet. However, 30% of epilepsies do not respond to present drug treatments. Of the 65 million people on the planet with epilepsy, roughly 20 million find no relief from pharmaceuticals--this is where cannabis may be able to help.

Cannabis has been used for centuries to treat epilepsies; one of the earliest references is from 1800 BC in Sumeria. The use of cannabis tapered off in the early 1900's with prohibition and pharmaceuticals, but it has experienced a resurgence due to the discovery of the endo-cannabinoid system and various potential anti-convulsive phytocannabinoids (i.e. CBD, THCV, and CBDV).

Early research into cannabis as an anti-convulsive discovered that THC could sometimes cause seizures; as a result, focus shifted to other cannabinoids. THCV in animal and cell models of epilepsies produces

contradictory results, and a promising animal study with CBDV could result in clinical trials soon (but these two cannabinoids are harder to source). Cannabigerol (CBG) may also exhibit anti-seizure properties.

CBD, a non-psychoactive cannabinoid, has been found to greatly reduce seizures resulting from a severe form of intractable childhood epilepsy called Dravet Syndrome. Largely by trial and error because there have been very few clinical trials, parents have discovered that high-CBD/low-THC strains, such as Cannatonic or Charlotte's Web, have dramatically reduced seizure rates and improved the child's quality of life.

The recent (re)discovery of cannabinoids, especially CBD, has parents turning to oral, topical or sublingual cannabis forms as a possible treatment for epilepsies in their children. Largely unavailable legally, many families are risking their own safety in the search to find it.

GW Pharmaceuticals are presently doing trials with a CBD-based formulation (Epidiolex) that targets Lennox-Gastaut syndrome, a rare type of childhood epilepsy.

Source: Backes, Michael (2014). *Cannabis Pharmacy - The Practical Guide to Medical Marijuana*. NY, NY: Black Dog & Leventhal Pub.
http://www.bcepilepsy.com/publications_and_resources/FAQs.aspx
[http://www.gwpharm.com/Clinical Use.aspx](http://www.gwpharm.com/Clinical%20Use.aspx)

Image: <http://epilepsyontario.org/about-epilepsy/what-is-epilepsy/>



International Association for Cannabinoid Medicines (IACM) Bulletin

Research presented at the Cannabinoid Conference 2015

IACM and the European Workshop on Cannabinoid Research held the Cannabinoid Conference 2015 from September 17 to 19 in Sestri Levante, Italy.

The full abstract is available as a download:

<http://cannabinoidconference2015.org/media/2015/abstractbook.pdf>

Below are a few excerpts:

Gertsch et al. presented research results on novel peptide cannabinoid receptor ligands, which they call pepcans. These peptides bind to CB1 or CB2 receptors. In their new research they investigated the effect of pepcans on CB2 receptors and the context of their peripheral release in physiological and pathophysiological (joining of pathology and physiology) conditions (page 17).

Manzoni et al. presented research results on how dietary PUFA (Poly-Unsaturated-Fatty-Acids) modify behaviour and synaptic activity in the neuronal circuits controlling emotion and cognition by influencing endocannabinoids: bad food, bad mood (page 20).

Finn et al. showed that pharmacological inhibition of endocannabinoid degradation enhances fear-induced pain reduction. It is well-known that in rats acute stress and fear suppress pain through the phenomenon of stress/fear-induced pain reduction, while chronic anxiety and depression are often associated with enhanced pain perception/hyperalgesia (abnormally heightened sensitivity to pain) (page 21).

Desprez et al. presented research results on CB1 receptor, present in brain mitochondria (mtCB1). Their study shows that mtCB1 receptors in the hippocampus are required for cannabinoid-induced memory impairment (page 24).

Baker et al. synthesized a novel compound, similar to a cyclic anandamide (endogenous cannabinoid neurotransmitter), called VSN16R. This compound was shown to be safe and effective in animal models of spasticity and healthy human volunteers (page 38).

Oláh et al. showed that fatty acid amide hydrolase inhibitors, which increase the concentration of endocannabinoids, exert anti-acne effects on human sebocytes, cells which secrete sebum (oily or waxy secretion of the sebaceous glands) (page 40).

Jadoon et al. showed that cannabidiol (CBD) decreases resting blood pressure and the blood pressure response to stress in healthy volunteers (page 55).

Milz and Grotenhermen presented a case series of 30 patients with attention deficit / hyper activity disorder, who were approved the use of cannabis flowers by the German government between 2012 and 2014, because no other treatment was as effective as cannabis (pg 85).

Minoru Arakaki showed that a 1.0% cannabidiol (CBD) ointment was effective in intractable alopecia areata in a case-report. Obvious hair growth was observed within a month. Alopecia areata is an autoimmune disease in which hair is lost from some or all areas of the body in round patches (page 129).

Animal: CBD inhibits seizures caused by cocaine

In a study with mice, CBD protected against seizures in a model of cocaine intoxication. These effects were associated with a reduced glutamate release. Authors wrote that “CBD should be further investigated as a strategy for alleviating psychostimulant toxicity.” Glutamate is a neurotransmitter, which may be over-activated after brain damage and causes further damage itself.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26283212>

Animal: Endocannabinoids reduce inflammation in Alzheimer's disease

In a mouse model of Alzheimer's disease, inhibition of endocannabinoid degradation by FAAH improved memory and this effect was not mediated by the CB1 receptor. In addition, mice lacking FAAH showed reduced levels of soluble amyloid levels and signs of reduced brain inflammation.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26362942>

The genetics of hemp are more similar to cannabis indica

Scientists demonstrated that cannabis strain names often do not reflect a meaningful genetic identity. They also provide evidence that hemp is genetically more similar to cannabis indica type cannabis than to cannabis sativa strains. Dalhousie University, Truro, Canada.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26308334>

Human: THCV may be useful in obesity

The effects of a single oral dose of THCV (Tetrahydrocannabivarin) were investigated in 20 healthy volunteers. This natural cannabinoid is an antagonist (blocker) at the CB1 receptor and thus may reduce appetite. Researchers found an influence of THCV on the activity of nerves in brain regions, which are known to be altered in obesity.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26362774>

Human: Reduced sperm count in regular cannabis users

Regular cannabis smoking more than once per week was associated with a 28% lower sperm concentration in a study with 1,215 young Danish men aged 18-28 years. Cannabis smokers also had higher levels of testosterone.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26283092>

For more info visit: www.cannabis-med.org

Cannabis May Affect Brain Development of Schizophrenia-Prone Adolescents

Dr. Paus, professor of psychology and psychiatry at the University of Toronto, has co-authored a study linking the use of cannabis among schizophrenia-prone adolescents to structural changes in the brain. The study examines almost 1,600 subjects: prior to 16 years of age, some had used cannabis and some had not; some had a high risk of schizophrenia and some had a low risk, based on polygenic testing.

The goal was to find the effect of cannabis use on the development of the cerebral cortex, which plays an important role in perception, memory, language, and consciousness in general. Among male subjects who had a high risk of developing schizophrenia, those who used cannabis during adolescence developed significantly thinner cerebral cortices than those who didn't, and the more often a subject used cannabis, the more pronounced the effect was. But males with a low risk of schizophrenia saw no change to their cerebral development as a result of cannabis use, and females at either high or low risk were likewise unaffected.

Paus is quick to point out that the study doesn't prove any sort of cause-and-effect relationship but the thinning is most pronounced in areas of the cortex with more cannabinoid receptors, so there is some evidence that cannabis itself is at fault. More studies are needed.

Source: <http://thevarsity.ca/2015/09/13/u-of-t-professor-links-marijuana-schizophrenia-and-brain-development/>

Conroy Clarifies 150 Gram Limit

John Conroy has posted a clarification on his website regarding the 150 gram possession limit that has been imposed on MMAR exemptees.

According to Conroy, the limit only applies to Authorized to Possess (ATP) holders or patients and not to Designated Growers moving cannabis to a storage site or to a patient if the patient has the storage site.

Source: <http://www.johnconroy.com/mmar.htm>



Five Highlights from ICRS 2015

The International Cannabinoid Research Society (ICRS) is a "non-political, non-religious organization dedicated to scientific research in all fields of the cannabinoids". Their 25th annual symposium in Nova Scotia featured a wide variety of papers on the subject. Below are five studies.

1. ***Your Endocannabinoid System Could Impact Your Metabolic Health:*** It's early, but findings with a dual-target CB1 receptor antagonist suggest that naturally occurring compounds may be capable of influencing the endocannabinoid system to improve obesity, metabolic syndrome, abdominal/visceral fat, and carbohydrate intolerance.

2. ***Different Cannabis Compounds May Affect CB1 Receptors Differently:*** Compounds within cannabis may affect the CB1 receptor differently than THC. These compounds can bind to the receptor at an alternate site, or locations away from the main receptor "keyhole" to affect the intensity, duration, or character of the biological effect downstream of that receptor. In other words, they allow for more nuanced responses that emphasize some effects (e.g., anti-inflammatory, anti-pain, etc.), while avoiding other adverse side effects (e.g., psychoactivity, anxiety, paranoia, etc.).


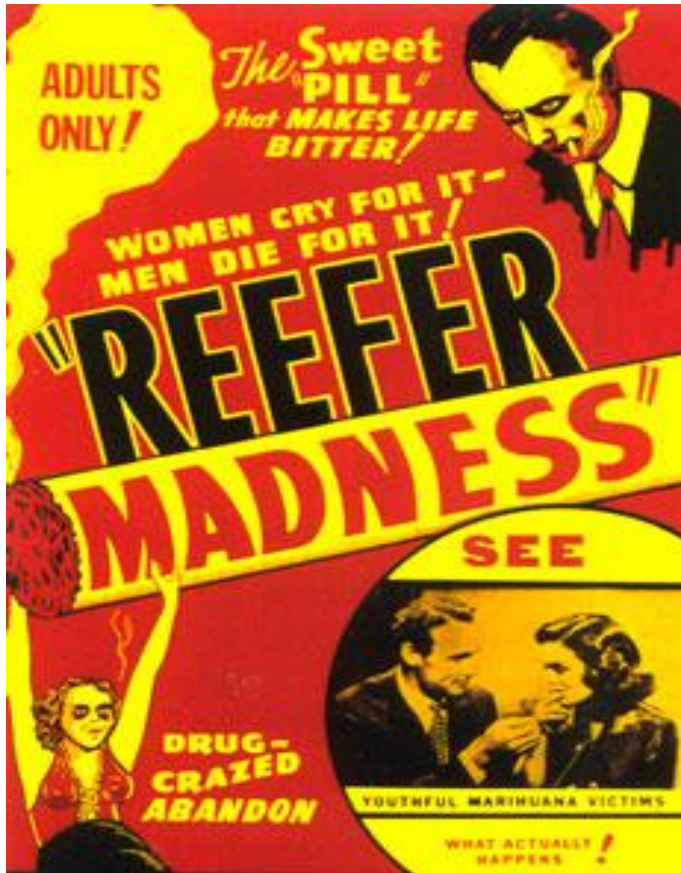
3. ***CBD May Have Anti-Psychotic Properties:*** CBD has emerged as having good therapeutic potential for anxiety, paranoia, and hallucinations. A study from the University of Western Ontario presented novel findings that further support the anti-psychotic properties of CBD, including some of the underlying, molecular signaling mechanisms within specific parts of the brain.

4. ***CBD Could Also Prove Beneficial for Various Neurodegenerative Disorders:*** CBD is a potential therapeutic agent for a number of neurodegenerative disorders, including Alzheimer's dementia. CBD exerts anti-inflammatory and neuroprotective effects on the toxic beta-amyloid plaques and tau proteins cultured brain cells. This new data was carried over into an animal model, showing that CBD pre-treatment was able to protect and restore the long-term potentiation deficits (LTP) critical to memory function within the hippocampus of the brain.

5. ***CBG May Minimize Muscle Loss from Various Diseases:*** A group from the University of Reading, Berkshire, UK presented data on how CBG (cannabigerol) was able to mitigate the muscle wasting typical of cancer anorexia-cachexia syndrome that occurs in up to 80% of advanced cancer patients.

Source: <http://icrs.co/>
<http://www.leafly.com/news/health>

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One MD's Suggestions for Medical Cannabis and Health System

David Cassaret, a palliative care physician and director of hospice and palliative care at Penn Medicine, Philadelphia, has discovered that many people with serious illnesses turn to medical cannabis because they're not getting the caring and comprehensive treatment they need for symptoms like pain or nausea or anxiety. One arthritis patient told him that using medical cannabis put her in control - when to medicate or not, how much, what form.

Cassaret witnesses daily his patients suffering and the extreme lengths to which they've gone to manage their symptoms and control their lives, including stockpiling drugs and sourcing black market opioids. It seems to him that many of his physician colleagues haven't considered the possibility that patients are turning to medical cannabis because the health care system has failed them. His colleagues typically view medical cannabis with "detached bemusement", while also claiming that they don't have enough time during a 15 minute visit to give patients with chronic illnesses the time that they need.

In the effort to get the mainstream health system to catch up to reality, Cassaret has three suggestions:

"First, we should give patients a chance to learn from one another. In marijuana clinics and dispensaries, I've seen as much advice and support offered by patients as I have by physicians."

"Second, if physicians can't spend more time with patients - and, in general, they can't - we should give patients more time with other office staff members."

"Third, we should give patients more ability to manage their treatment."

According to Cassaret, these are changes that any clinic could start making today.

Source: <http://www.mapinc.org/drugnews/v15/n423/a10.html>

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DrugSense
www.drugsense.org

**BC Coalition of People
With Disabilities**
1-800-663-1278

Health Canada
<http://www.hc-sc.gc.ca/dhp-mps/marihuana/index-eng.php>

Drug Policy Alliance
www.drugpolicy.org

Media Awareness Project
www.mapinc.org

**Together Against Poverty
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302-895 Fort Street, Victoria
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"Human beings, who are almost unique in having the ability to learn from the experience of others, are also remarkable for their apparent disinclination to do so."

-- Douglas Adams, writer (1952 - 2001)