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CANNABINOID CHRONICLES

Medical Cannabis News and Information

Traumatic Brain Injury (TBI) and Medical Cannabis

Traumatic brain injury (TBI) is damage to the brain due to a bump, blow, jolt or head injury that can cause severe and often chronic symptoms. These symptoms can be cognitive, behavioral, movement related, speech and visual impairing, mood altering, involve painful headaches, and even cause gastrointestinal issues. Children and older adults are particularly susceptible to traumatic brain injury.

Minor traumatic brain injuries, such as concussions, sometimes cause only temporary dysfunction, while serious traumatic brain injury can cause permanent dysfunction or even death. Long-term damage often comes from bruising, tissue tearing, bleeding or similar injuries inside the brain, with continued damage to the brain even after the initial event.

The immediate and ongoing treatment options often include a variety of therapies which may include medications, surgery and rehabilitation. Conventional medications include diuretics (eliminate brain fluid), anti-seizure medications and coma-inducing drugs.

There are three general mechanisms that damage the brain in the period after the trauma, and it's thought that THC and CBD can protect against each: an increase in excitatory brain chemicals, such as glutamate; an increase in free radicals, which cause damage to brain cells by damaging DNA, impairing the cell's machinery, and even causing cell death; an increase in brain inflammation.

These processes can cause neural death even after the patient is stabilized, creating much more damage than the initial injury. The primary cannabinoids in cannabis, THC and CBD, interact with the endocannabinoid receptors in the body, and may keep the body from releasing cytokines, which cause inflammation, after the injury. The CB_1 and CB_2 receptors can facilitate anti-oxidant effects, they can be anti-inflammatory, and they are powerful regulators of glutamate release, Cannabinoids may encourage the body to release minocycline to minimize swelling and neurological impairment.

Anecdotally, many patients and their families report success using cannabis for persistent TBI symptoms. Thus far, however, there aren't any notable clinical trials demonstrating the efficacy of cannabis to treat ongoing symptoms. Nonetheless, there is some evidence that at least lends support to speculation that cannabis-derived treatments may be beneficial.

Many of the endocannabinoid receptors in our body are found in the brain. These receptors play an important role in managing inflammation and can also protect the brain, a feature referred to as "neuroprotective". A 2014 study conducted in California of 446 patients of traumatic brain injury, those who had exposure to Delta-9 THC suffered lower death rates as opposed to those who didn't. People who tested positive for THC were about 80% less likely to die, compared to people with negative THC tests.

Professor Yosef Sarne from the Tel Aviv University also discovered in 2013 that cannabis can fight long-term brain damage when THC is administered after the injury, or even shortly before. The findings revealed that giving just a small amount of THC, 1-7 days before or 1-3 days

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Image: https://cannabis.net/drive/1000/3743_6fkt_braininjury.jpg

Human: Pain patients often substitute opioids with cannabis

In a survey of 2032 patients who use cannabis for therapeutic purposes, opioids were often substituted with cannabis. According to the study by US and Canadian scientists, 21 illnesses were treated with cannabis and pain syndromes accounted for 42.4%. They focused on the treatment of 505 headache patients, who mostly (88%) fulfilled criteria of migraine.

Most headache patients preferred hybrid strains, that is strains with both sativa and indica characteristics. The most preferred strain had high concentrations of THC and low concentrations of CBD. It contains high concentrations of the terpenes beta-caryophyllene and beta-myrcene, which have anti-inflammatory and analgesic properties.

Source: https://www.ncbi.nlm.nih.gov/pubmed/29797104

Human: Social norms around the medical use of cannabis remain unfavourable for many users in Canada

Despite the fact that the medical use of cannabis is legal in Canada for more than 10 years, a survey with 276 patients who use cannabis for therapeutic purposes showed that there are still problems with acceptance. Only 38% perceived their doctor being supportive, while support from the family and from friends (66.3%) was much higher.

Human: CBD improves seizure frequency in patients with Lennox-Gastaut syndrome in large clinical study

In a placebo-controlled study with 225 patients suffering from Lennox-Gastaut syndrome, cannabidiol (CBD) reduced seizure frequency. Scientists from 30 US and European centres published these results in the *New England Journal of Medicine*.

Authors concluded, that "among children and adults with the Lennox-Gastaut syndrome, the addition of cannabidiol at a dose of 10 mg or 20 mg per kilogram per day to a conventional antiepileptic regimen resulted in greater reductions in the frequency of drop seizures than placebo."

Source: https://www.ncbi.nlm.nih.gov/pubmed/29768152

Human: Cannabinoids may be useful in sleep disorders according to a review

According to a review, cannabinoids may be effective in some parasomnias. Parasomnias are a kind of sleep disorders characterised by abnormal movements, behaviours, perceptions, emotions and dreams, for example bruxism.

Sleep Medicine and Epilepsy Unit, IRCCS Mondino Foundation, Pavia, Italy.

Source: https://www.ncbi.nlm.nih.gov/pubmed/29869076

Most read articles in Cannabis and Cannabinoid Research

- Cannabis as a Substitute for Opioid-Based Pain Medication: Patient Self-Report

https://www.liebertpub.com/doi/full/10.1089/can.2017.0012

- The Cannabis Sativa Versus Cannabis Indica Debate: An Interview with Ethan Russo, MD

https://www.liebertpub.com/doi/full/10.1089/can.2015.29003.ebr

- Clinical Endocannabinoid Deficiency Reconsidered: Current Research Supports the Theory in Migraine, Fibromyalgia, Irritable Bowel, and Other Treatment-Resistant Syndromes

https://online.liebertpub.com/doi/pdfplus/10.1089/can.2016.0009

- Cannabis Roots: A Traditional Therapy with Future Potential for Treating Inflammation and Pain

https://www.liebertpub.com/doi/full/10.1089/can.2017.0028

- An Update on Safety and Side Effects of Cannabidiol: A Review of Clinical Data and Relevant Animal Studies

https://online.liebertpub.com/doi/full/10.1089/can.2016.0034

- The Use of Cannabis for Headache Disorders

https://www.liebertpub.com/doi/abs/10.1089/can.2016.0033

- Cannabis and the Opioid Crisis

https://www.liebertpub.com/doi/10.1089/can.2018.29011.rtl

Human: External use of CBD improves symptoms of severe skin disease in 3 children

Three children with epidermolysis bullosa profited from a treatment with CBD. Epidermolysis bullosa is a rare blistering skin disorder that is challenging to manage because skin fragility and repeated wound healing cause itching, pain, limited mobility, and recurrent infections. Researchers at Stanford University's School of Medicine and at West Virginia University's Department of Dermatology reported on the topical use of CBD in a six-month-old boy, a three-year-old girl, and a 10-year-old boy. All 3 experienced "dramatic benefits" including faster wound healing, less blistering, and amelioration of pain with cannabidiol use. One patient was weaned completely off oral opioids.

Source: https://www.ncbi.nlm.nih.gov/pubmed/29786144

Human: Time of cannabis use onset has no effect on cognitive performance in psychosis

In a study with 349 patients with a first episode of psychosis, of whom 38.7% used cannabis, the drug had no influence on cognition. Of them, 53 started cannabis use early (before the age of 16) and 82 started later. Patients were followed for 3 years. Authors wrote there were no "differences between the early-onset group and the other two groups in long-term cognitive performance, even if they kept consuming cannabis during the first three years of disease progression."

Source: https://www.ncbi.nlm.nih.gov/pubmed/29861266

Most Common Qualifying Conditions for Medical Cannabis in US

A majority of American states (29 out of 50) have adopted medical cannabis laws that permit patients to access cannabinoid-based medicine legally. Each state has a list of approved medical conditions to allow access; some are restrictive, e.g. CBD-only, while others are far more comprehensive.

The most common qualifying conditions for medical cannabis are:

Epilepsy and Seizure Disorders - Cannabis has become widely recognized for its anti-seizure properties. Cannabidiol (CBD) has been found to significantly reduce seizure frequency by as much as 42%, according to a 2018 study.

Cancer - While research is still exploring the ways cannabis may treat cancer itself, most states now acknowledge its ability to abate symptoms relating to cancer and chemotherapy, including pain, nausea, and appetite loss.

Multiple Sclerosis (MS) - Cannabis has been found to alleviate many symptoms associated with MS, including pain, insomnia, inflammation, muscle spasms, abdominal discomfort, and depression.

Glaucoma - Glaucoma is an eye condition that can lead to permanent damage in the eye if left untreated. THC has been found to be effective in reducing intraocular pressure over the short term but tolerance develops over time; cannabis is not yet widely favoured by ophthalmologists.

HIV/AIDS - Some of the earliest and most effective medical cannabis advocacy in the US was rooted in its ability to treat HIV/AIDS symptoms. Many states have approved the condition for HIV/AIDS patients suffering symptoms like appetite loss, nausea, and fatigue.

Neurodegenerative Disease - Medical cannabis has become widely approved for neurodegenerative diseases such as ALS, Alzheimer's, Parkinson's, and Huntington's. Cannabis can help restore quality of life by improving cognition and mobility, relieving spasticity and rigid muscles, and more.

Pain - Although there are several different types of pain, many are approved by states as a qualifying condition. Cannabis affects each type of pain uniquely, and many doctors and patients have found that cannabis products containing both THC and CBD (e.g. whole-plant extraction) tend to be most effective.

Nausea - Nausea is a commonly approved condition for medical cannabis, although there are nuances in its definition from state to state. THC in particular is known to relieve nausea and vomiting. The first synthetic versions of THC, nabilone and dronabinol, were prescribed as anti-emetic drugs.

Cachexia/Wasting Syndrome - Cachexia, or "wasting syndrome," is a condition that typically accompanies cancer and HIV/AIDs, and is characterized by appetite and weight loss along with weakness and fatigue. Cannabis - especially THC-rich varieties - has the potential to alleviate these symptoms.

Post-Traumatic Stress Disorder (PTSD) - PTSD is an anxiety disorder that is often expressed in panic episodes and hyper-vigilance, in addition to mood and sleep disturbances. In the right dose, and most often with high levels of CBD, cannabis can ease PTSD-related anxiety.

Sources: www.leafly.com/news/cannabis-101/most-common-qualifying-conditions-for-medical-cannabis

Child's Suffering May Change Rules

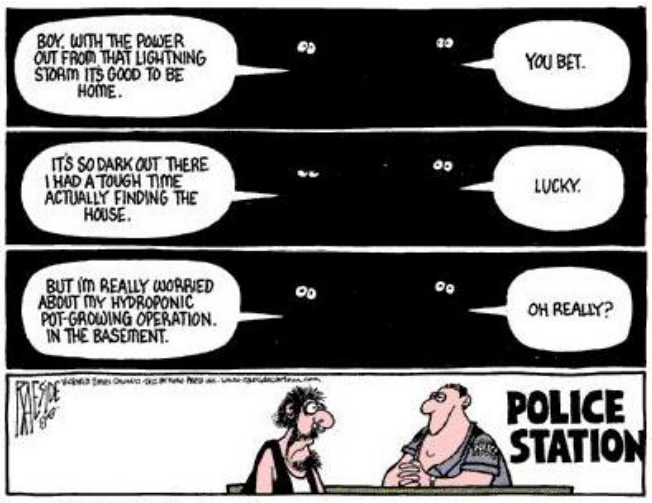
The UK government is facing a serious backlash over its initial decision to confiscate and withhold a THC-based cannabinoid medicine from 12-year-old Billy Caldwell. The cannabis oil, purchased in Canada and "openly smuggled" into the UK, has reduced his seizures from as many as 100 per day to going 300 days without any.

Billy's mother, Charlotte, was detained at Heathrow Airport in London in June after she publicly announced her plans to bring back six-months worth of THC oil to counter her son's seizures. She has stated unequivocally that she will go back to Canada to get more oil since her son's life is at stake.

The UK's position is that THC has no medical benefit, despite a plethora of evidence to the contrary. In 2016, the Medicines and Healthcare Products Regulatory Agency issued an opinion that products containing CBD used for medical purposes are medicine, while medicines containing THC remain illegal.

The government eventually did return some of Billy's medicine; however, the majority may never be given back. The government's initial refusal, and then its change in position, has prompted renewed debate on legislation regarding cannabinoid-based medicines.

Sources: https://www.theguardian.com/society/2018/jun/17/mother-of-boy-whose-cannabis-oil-was-seized-pushes-for-legalisation



TBI & Medical Cannabis *from page 1...*

after the patient sustained a trauma, sets in place the biochemical functions that the body needs to protect the important brain cells while conserving cognitive function.

Another Israel study by R. Mechoulam (2007) points to research that demonstrates "…the [endocannabinoid] system…has the ability to [positively] affect the functional outcome after TBI by a variety of mechanisms."

A 2015 article that appeared in *Neurotherapeutics* states that inflammation is the main cause of various neuropsychiatric problems and long-term brain damage that happens after a person experiences brain trauma. Low doses of THC can be anti-inflammatory, but high-doses may increase inflammation, highlighting the importance of proper dosing.

As we continue to learn more about THC and other cannabinoids to treat traumatic brain injury, many physicians believe CBD can be a safe and effective treatment. CBD offers many beneficial properties, including neuroprotective, anti-inflammatory and anti-anxiety effects; as discovered by Japanese researchers, CBD may have stronger anti-oxidant properties as compared to THC.

Cannabis also has other benefits that reduce some of the symptoms of traumatic brain injury, including decreased nausea, improvements in depression, increased appetite, improved mood, and better sleep.

Using cannabis for traumatic brain injury may help minimize the damage to retain more skills and cognitive functioning for improved quality of life. Cannabis may also make the brain more resilient to the harmful effects of chronic stress and the aging process.

Sources:

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"It [freedom] rings bells to remind humanity that the most precious gifts in life - like children and love and time - must never be taken for granted."

-- Aberjhani, US historian, columnist, novelist, poet, and editor