



The endocannabinoid system (ECS) is a collection of cell receptors and corresponding molecules in the human body. The ECS is responsible for regulating and maintaining many key functions in the human body, like mood, pain, and sleep. When the ECS is in balance, you are in balance. Cannabidiol (CBD) is one of the many cannabinoids found in industrial hemp plants that supplement the Endocannabinoid System and that can play a key role in obtaining optimal health and performance. Unlike THC, CBD is non-psychoactive and legal in all 50 states. The primary mechanism of CBD is to increase anandamide, a cannabinoid that occurs naturally in the body.

Properties found in research:	Conditions CBD may help with:
<ul style="list-style-type: none"> <li>• Anxiolytic (anti-anxiety)</li> <li>• Anti-depressant</li> <li>• Anti-psychotic</li> <li>• Anti-inflammatory</li> <li>• Analgesic (Pain reliever)</li> <li>• Neuroprotective</li> <li>• Antioxidant</li> <li>• Anti-fibrosis</li> <li>• Anti-convulsant</li> <li>• Anti-emetic (anti-nausea)</li> <li>• Antibacterial</li> <li>• Stimulates bone growth</li> <li>• Anti-tumor</li> </ul>	<ul style="list-style-type: none"> <li>• Anxiety and Stress</li> <li>• Pain &amp; Inflammation</li> <li>• Depressive Symptoms</li> <li>• Cognitive Impairment &amp; Emotional Processing</li> <li>• Autism Spectrum Disorders</li> <li>• Substance Abuse</li> <li>• Traumatic Brain Injury</li> <li>• Epilepsy</li> <li>• Gastrointestinal Disorders</li> <li>• Autoimmune Disorders</li> <li>• Cancer and treatment related symptoms</li> <li>• Insomnia and sleep disturbances</li> <li>• Psoriasis</li> </ul>

### **Anxiety Disorders**

- [CBD decreased anxiety rapidly and in a sustained manner in patients suffering from anxiety or poor sleep.](#)
- [CBD administration reduced cannabis withdrawal, anxiety and dissociative symptoms](#)
- [CBD reduces anxiety in Social Anxiety Disorder, related to its effects on activity in limbic and paralimbic brain areas](#)
- [A single dose of CBD had a rapid onset of therapeutic effect in patients with SAD associated with public speaking.](#)
- [Administration of oral CBD in addition to routine psychiatric care was associated with reduced symptoms in adults with PTSD. CBD also appeared to offer relief in a subset of patients who reported frequent nightmares as a symptom of their PTSD.](#)
- [CBD significantly reduced social anxiety in teens](#)
- [A deficit in the endocannabinoid function is consistent with all major symptom dimensions of PTSD](#)

### **Depressive Symptoms**

- [CBD reduced depressive- and psychotic-like symptoms and improved attentional switching, verbal learning, and memory](#)

- [As part of CBD's ability to control the cerebral neurotransmission of serotonin and norepinephrine and its active binding to 5HT-1 A receptors, CBD is thought to also have an effect on depression.](#) In addition, CBD stimulates the synaptic plasticity and neurogenesis which also plays a role in the development and treatment of depression.
- [Patients with a history of depression who have previously been on traditional treatment with SSRIs experienced a significant improvement in their depressive symptoms with CBD.](#)

### **Pain & Arthritis**

- [CBD improved neuropathic pain and comorbid mood disorders.](#)
- [CBD has anti-inflammatory effects and works on the endocannabinoid and pain-sensing systems to relieve pain.](#)
- [Topical CBD applications relieve pain and inflammation associated with arthritis with few side effects.](#)
- [Cannabidiol had promising results in controlling the pain and concomitant mood disorder.](#)

### **Memory & Cognition**

- [CBD increases cerebral blood flow to key areas involved in memory processing](#)
- [A two-week course of high doses of CBD helps restore the function of two proteins key to reducing the accumulation of beta-amyloid plaque, a hallmark of Alzheimer's disease, and improves cognition in an experimental model of early onset familial Alzheimer](#)
- [CBD administration can attenuate the social interaction and cognitive deficits](#)
- [CBD restores cognitive function after Traumatic Brain Injury](#)

### **Sleep:**

- [CBD has therapeutic potential for insomnia and REM sleep and excessive daytime sleepiness](#)
- [CBD has potential therapeutic benefit in common sleep disorders, such as insomnia, sleep disordered breathing, and restless legs syndrome](#)
- [CBD for treatment of insomnia in patients with post-traumatic stress disorder \(PTSD\) showed decreased sleep disturbances](#)
- [Anxiety and sleep improved for most patients, and these improvements were sustained over time](#)

### **Cardiovascular Disease and Diabetes**

- [Positive effects of CBD have been observed in experimental models of heart diseases](#) (myocardial infarction, cardiomyopathy, myocarditis), stroke, neonatal hypoxic ischemic encephalopathy, sepsis-related encephalitis, cardiovascular complications of diabetes, and ischemia/reperfusion injuries of liver and kidneys. In these pathological conditions CBD decreased organ damage and dysfunction, oxidative and nitrative stress, inflammatory processes and apoptosis, among others.
- Due to its antioxidative, anti-inflammatory, and vasculo-, cardio- and neuroprotective properties CBD can mitigate cardiovascular complications of diabetes
- [CBD improved high glucose-induced disruption of endothelial barrier function.](#)
- [Treatment with cannabidiol might be beneficial in diabetic retinopathy which is characterized by increased vascular permeability and neurotoxicity.](#)
- [CBD eliminated the adverse effects of hyperglycaemia by reducing oxidative and nitrative stress, NF-κB activation and cell apoptosis](#)
- [CBD exerts beneficial immunomodulatory actions in the liver, pancreas and adipose tissue of DIO prediabetic mice with NAFLD, thus protecting tissues.](#)
- [In the cardiovascular system, CBD can help to modulate vasorelaxation and myocardial contraction, and it is a promising therapy for chronic conditions, such heart failure, with few adverse effects or contraindications.](#)

- [CBD has the promising potential as a therapeutic agent and might be effective in alleviating the symptoms of insulin resistance, type 2 diabetes and metabolic syndrome.](#)

### **Neurodegenerative Disorders**

- [CBD is considered a multimodal drug for the treatment of a range of neurodegenerative disorders \(Alzheimer's disease, epilepsy, multiple sclerosis\), and various cancer types, including neoplasms of the neural system.](#)
- [CBD ability to reduce inflammation-associated neurodegeneration and its antioxidant properties, lack of psychoactivity and a broad range of potentially beneficial effects indicates that this drug could be a useful new approach to treat several neuropsychiatric disorders](#)
- [In case reports of traumatic brain injuries, CBD has been found to reduce brain damage after cerebral trauma by improving the metabolic activity](#)
- [Multiple Sclerosis: Cannabidiol Reduces Spasticity, Pain, Inflammation, Fatigue, and Depression](#)
- [CBD exerts protective effects in an in vitro model of Parkinson's disease activating AKT/mTOR pathway](#)
- [Long-term cannabidiol treatment prevents the development of social recognition memory deficits in Alzheimer's disease transgenic mice](#)

### **Schizophrenia & Autism Spectrum**

- [CBD resulted in lower levels of positive psychotic symptoms and were more likely to be rated as improved by the treating clinician.](#) Patients who received CBD also showed greater improvements in cognitive performance and in overall functioning. CBD was well tolerated, and rates of adverse events were similar between the CBD and placebo groups.
- [Patients with schizophrenia were followed over a 4-week period and received either amisulpride or CBD. Both patient groups improved similarly with some superiority in improvement of the negative symptoms in the CBD group](#)
- [Results point to CBD's beneficial potential for the progression of Schizophrenia and Autism Spectrum disorders](#)

### **Immune Disorders:**

- [Data overwhelmingly support the notion that CBD is immune suppressive and that the mechanisms involve direct suppression of activation of various immune cell types, induction of apoptosis, and promotion of regulatory cells,](#) which, in turn, control other immune cell targets.
- [CBD downregulates pro-inflammatory and pro-fibrotic chemokines/cytokines](#)

### **Gastrointestinal Problems**

- [CBD indicates a potential for the treatment of IBS-associated dysmotility, particularly for patients with the diarrhea predominant \(IBS-D\) or the mixed bowel habits \(IBS-M\) forms of the disease](#)
- [CBD resulted in a dose-related amelioration of disease parameters, reduction of structural damage and contention of inflammation-associated up-regulation of different cytokines, chemokines and markers of oxidative stress](#)
- [CBD accelerates oral ulcer healing](#)

### **Cancer**

- [CBD initiates cell death and make glioblastoma cells more sensitive to radiation, without affecting healthy cells](#)
- [CBD significantly reduced breast cancer cell invasion and proliferation.](#)
- [Cannabinoids, such as CBD and THC, might be useful adjuncts for the treatment of pancreatic cancer.](#)
- [CBD might help reduce nausea and vomiting induced by chemotherapy](#)

### **Substance Abuse**

- [A 2019 systematic review of preclinical and human studies suggested that CBD might help attenuate alcohol consumption and protect against alcohol-related brain and liver damage](#)

- [CBD significantly reduced the number of cigarettes smoked by ~40% during treatment.](#)
- [Cannabidiol, a nonpsychotropic component of cannabis, inhibits cue-induced heroin seeking and normalizes discrete mesolimbic neuronal disturbances](#)

### **Antimicrobial**

- [CBD exhibited a strong antimicrobial effect against Gram-positive strains and could serve as an alternative drug for tackling MRSA.](#)

### **Athletic Performance:**

- [CBD may exert a number of physiological, biochemical, and psychological effects with the potential to benefit athletes, which includes robust anti-inflammatory, neuroprotective and analgesic effects.](#) CBD may protect against gastrointestinal damage associated with inflammation and promote healing of traumatic skeletal injuries. CBD data indicates anxiolytic effects in “stress-inducing” situations and in individuals with anxiety disorders. Case reports indicate that CBD improves sleep

### **Psoriasis**

- [CBD & CBG inhibit keratinocyte proliferation, and therefore support a potential role for cannabinoids in the treatment of psoriasis.](#)

### **COVID**

- [\(CBD\), a compound produced by the cannabis plant, inhibits SARS-CoV-2 infection.](#)