

# Clinical use of cannabidiol in mental disorders

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## Introducing Cannabidiol

- Non-psychoactive phytocannabinoids abundant in cannabis extracts
- High affinity for a range of receptors: CB1, CB2, GPR55, TRPV and PPAR $\gamma$
- Multiple therapeutic effects: neuroprotective, anti-epileptic, anxiolytic, antipsychotic, anti-inflammatory, analgesic and anti-cancer properties, may also be used to treat or prevent COVID-19 and its complications

## Clinical medication – Schizophrenia

- First-line drugs for Schizophrenia: D2 antagonists
- 1995 Clinical Test: Up to 1,500 mg of CBD taken daily for 4 weeks improves overall psychotic symptoms (Zuardi, AW,1995)
- 2014 Clinical Test: Schizophrenia patients treated with 600-800 mg of CBD per day showed significant clinical improvement (Hallak JEC ,2014)
- CBD demonstrates efficacy in improving neurocognitive function in young and acute schizophrenia patients

## Clinical medication – Anxiety

- The ability of CBD to inhibit AEA inactivation and the interaction between CBD and 5-HT1A
- CBD (600 mg) pretreatment significantly reduces anxiety, cognitive impairment, and discomfort with speech performance(Bergamaschi MM,2011)
- The response was inverted, 300 mg was the top, but 25-175 mg/day also benefited 79.2% of patients and lasted for three months.(Shannon S,2019)

## Clinical medication – Epilepsy

- Receptors and channels associated with epilepsy have high affinity, including transient receptor potential vanilloid (TRPV), T-type Ca<sup>2+</sup> channels (depolarization increases neuronal excitability), two serotonin receptors (5-HT1A and 5-HT2A), opioid receptors and GPR55. TRPV1 ion channel, involved in regulating the control of seizures and epilepsy by affecting the release of glutamate and regulating Ca<sup>2+</sup> concentration, resulting in changes in neuronal activity
- Oral CBD doses of 10 or 20 mg/kg/day for 14 weeks reduced seizure frequency(Devinsky O,2018)
- 20 mg/kg/day (maximum dose) is also indicated for drug-resistant seizures in DS patients(Devinsky O ,2017)



## Current clinical medications

**Epidiolex®:** Approved by the U.S. Food and Drug Administration (FDA) in 2018 and the European Medicines Agency (EMA) in 2019 as an add-on treatment for rare epilepsy(oral/has many side effects/most serious side effects It's liver damage )

**Sativex®:** is an oral spray containing CBD and delta-9 THC in a 1:1 ratio. It was approved by the EMA in October 2021 and is approved for use in several countries including the UK, European Union (EU) and Canada. Treating Multiple Sclerosis

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