### ****HOW CBD WORKS FOR Migraine…..?****

# Clinical endocannabinoid deficiency (CECD): can this concept explain therapeutic benefits of cannabis in migraine, fibromyalgia, irritable bowel syndrome and other treatment-resistant conditions?

[Russo EB](https://www.ncbi.nlm.nih.gov/pubmed/?term=Russo%20EB%5BAuthor%5D&cauthor=true&cauthor_uid=18404144)1.

### [Author information](https://www.ncbi.nlm.nih.gov/pubmed/18404144)

### Abstract

#### OBJECTIVES:

This study examines the concept of clinical endocannabinoid deficiency (CECD), and the prospect that it could underlie the pathophysiology of migraine, fibromyalgia, irritable bowel syndrome, and other functional conditions alleviated by clinical cannabis.

#### METHODS:

Available literature was reviewed, and literature searches pursued via the National Library of Medicine database and other resources.

#### RESULTS:

Migraine has numerous relationships to endocannabinoid function. Anandamide (AEA) potentiates 5-HT1A and inhibits 5-HT2A receptors supporting therapeutic efficacy in acute and preventive migraine treatment. Cannabinoids also demonstrate dopamine-blocking and anti-inflammatory effects. AEA is tonically active in the periaqueductal gray matter, a migraine generator. THC modulates glutamatergic neurotransmission via NMDA receptors. Fibromyalgia is now conceived as a central sensitization state with secondary hyperalgesia. Cannabinoids have similarly demonstrated the ability to block spinal, peripheral and gastrointestinal mechanisms that promote pain in headache, fibromyalgia, IBS and related disorders. The past and potential clinical utility of cannabis-based medicines in their treatment is discussed, as are further suggestions for experimental investigation of CECD via CSF examination and neuro-imaging.

#### CONCLUSION:

Migraine, fibromyalgia, IBS and related conditions display common clinical, biochemical and pathophysiological patterns that suggest an underlying clinical endocannabinoid deficiency that may be suitably treated with cannabinoid medicines.

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* [Clinical endocannabinoid deficiency (CECD): can this concept explain therapeutic benefits of cannabis in migraine, fibromyalgia, irritable bowel syndrome and other treatment-resistant conditions?](https://www.ncbi.nlm.nih.gov/pubmed/15159679) [Neuro Endocrinol Lett. 2004]

# The endocannabinoid system and migraine.

[Greco R](https://www.ncbi.nlm.nih.gov/pubmed/?term=Greco%20R%5BAuthor%5D&cauthor=true&cauthor_uid=20353780)1, [Gasperi V](https://www.ncbi.nlm.nih.gov/pubmed/?term=Gasperi%20V%5BAuthor%5D&cauthor=true&cauthor_uid=20353780), [Maccarrone M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Maccarrone%20M%5BAuthor%5D&cauthor=true&cauthor_uid=20353780), [Tassorelli C](https://www.ncbi.nlm.nih.gov/pubmed/?term=Tassorelli%20C%5BAuthor%5D&cauthor=true&cauthor_uid=20353780).

### [Author information](https://www.ncbi.nlm.nih.gov/pubmed/20353780)

### Abstract

The recently discovered endocannabinoid system (ECS), which includes endocannabinoids and the proteins that metabolize and bind them, has been implicated in multiple regulatory functions both in health and disease. Several studies have suggested that ECS is centrally and peripherally involved in the processing of pain signals. This finding is corroborated by the evidence that endocannabinoids inhibit, through a cannabinoid type-1 receptor (CB1R)-dependent retrograde mechanism, the release of neurotransmitters controlling nociceptive inputs and that the levels of these lipids are high in those regions (such as sensory terminals, skin, dorsal root ganglia) known to be involved in transmission and modulation of pain signals. In this review we shall describe experimental and clinical data that, intriguingly, demonstrate the link between endocannabinoids and migraine, a neurovascular disorder characterized by recurrent episodic headaches and caused by abnormal processing of sensory information due to peripheral and/or central sensitization. Although the exact ECS-dependent mechanisms underlying migraine are not fully understood, the available results strongly suggest that activation of ECS could represent a promising therapeutical tool for reducing both the physiological and inflammatory components of pain that are likely involved in migraine attacks.

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