Practitioner & business name

Address

Phone number

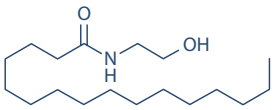
Email

Website

PEA: A Natural Approach to Pain Relief

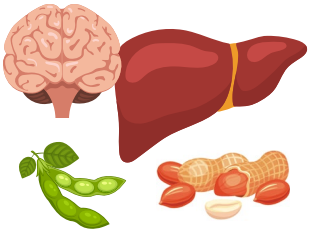
An estimated 126 million (55.7% of) American adults report experiencing some type of bodily discomfort in the previous three months.[1] Sound familiar? Minor pain can lead to sleeplessness, decreased activity, and mood changes, ultimately having a negative impact on wellbeing and quality of life. As mild pain relief options are limited, many people are considering alternative approaches.

What is palmitoylethanolamide (PEA)?



Simply put, PEA is a compound the body makes to cope with bodily discomfort. A lipid that occurs naturally in animals and plants such as soy and peanut meal, PEA has been studied for over 50 years for its anti-inflammatory properties as well as its role in immune system activity.[2-6]

Where does PEA come from?



PEA is present in low levels in the human body.[7] It is naturally produced in the body in organs and body fluids including the liver, muscle, central nervous system, and breast milk, as a biological and immune response repair mechanism.[8,9] In addition, PEA can be found in many plants and foods, such as soybeans, egg yolk, and peanuts.[9]

The body synthesizes PEA from palmitic acid, the most common fatty acid in animals and a component of many foodstuffs such as soy lecithin, soybean, peanuts, etc.[5]

What does PEA do in the body?

PEA is involved in a number of metabolic functions in the body, as well as maintaining a balance of factors that keep cells healthy.[5] A significant number of preclinical and clinical studies suggest its analgesic, neuroprotective, and anti-inflammatory effects.[8,9]

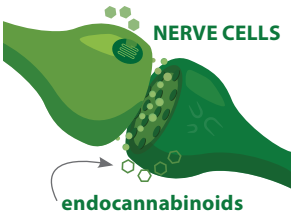
PEA has been shown to:

- Support bodily comfort and thus increase subjective measures of quality of life
- Support neurological health by supporting healthy mood, cognitive functions, and motor function
- Support the healthy function of immune cells[8,9]

In a preclinical study, it was found that it's possible to prolong the presence of PEA in the body by combining supplemental PEA with organic full-spectrum hemp extract.[10]

In addition to its anti-inflammatory effects, PEA binds to selective neuron and immune cell receptors, inhibiting pain-related signaling.[11] PEA also plays a supporting role in the body's endocannabinoid system (ECS).[12-14]

What is the ECS?



The ECS is a complex regulatory system involved in many aspects of physiology, including a healthy stress response, the immune response, food intake and appetite regulation, and neurological health.[15] The ECS consists of receptors, metabolic enzymes, and endogenous cannabinoids (known as endocannabinoids).[15] Endocannabinoids are "messengers," produced and released on demand from the brain and peripheral tissues and activate their targets only when and where needed.[16]

How does hemp extract impact the ECS?

The scientific evidence on supporting the function of the ECS is growing, particularly with respect to supporting the ECS with phytocannabinoids and terpenes, which are found in full-spectrum hemp oil extracts. For example, in people seeking mood or cognitive support, a high dose of CBD has been shown to be effective in clinical studies.[17] Research has further indicated a potential synergy between phytocannabinoids and terpenes, another group of compounds found in plants.[18] β-caryophyllene, one of the known terpenes found in many plants and spices such as pepper and cloves, exerts antioxidant effects through activation of the CB2 receptor, as well as support for immune response.[19]

What is the difference between full-spectrum hemp oil and CBD isolate?

While some CBD oil products are made with a pure isolated concentration of CBD that does not contain other phytocannabinoids, full-spectrum hemp oil is extracted from aerial plant parts (stalk, stems, seeds, and flower) that contains a range of the beneficial phytocannabinoids and terpenes. It has been suggested that phytocannabinoids and terpenes work together to influence each other and have synergistic effects on the ECS.

Is there synergy between PEA and full-spectrum hemp oil?

A study conducted in an animal model utilizing both a full-spectrum hemp oil extract and PEA indicated that PEA alone showed a dose-dependent effect in reducing acute and chronic pain. Surprisingly, the hemp oil extract strongly enhanced the analgesic effects of PEA such that the combination of the two compounds exerted greater-than-additive alleviation of pain-related behaviors in both models of pain. Further investigations showed that this synergism was partially supported by hemp oil extract's extending the life of PEA in the blood circulation and therefore prolonging its actions.[10]

Are there any side effects associated with PEA? Can it be taken with other pain relievers?

PEA has been the subject of numerous clinical studies performed on thousands of people worldwide, with results that support its clinical potential and safety. In fact, in several case series and clinical studies, PEA was used alone or with standard pain relievers. To date, no side effects have been reported.[7,20]

Why should I take PEA?

If your practitioner has recommended you try a PEA supplement, it may be because you would benefit from a natural approach to pain relief. Minor pain can have a long-term detrimental effect on mood, wellbeing, and quality of life, but many people may prefer to reduce the use of pharmaceutical pain relief options such as nonsteroidal anti-inflammatory drugs (NSAIDs), which can increase health risks when used long-term.[21,22] PEA has been shown to be a safe, effective approach to addressing minor pain.

References:

1. Nahin RL. Estimates of pain prevalence and severity in adults: United States, 2012. *J Pain.* 2015;16(8):769-780.
2. Beggiato S et al. Palmitoylethanolamide (PEA) as a potential therapeutic agent in Alzheimer's disease. *Front Pharmacol.* 2019;10:821.
3. PubChem, U.S. National Library of Medicine, National Center for Biotechnology Information. Palmitoylethanolamide (compound). https://pubchem.ncbi.nlm.nih.gov/compound/4671. Accessed September 20, 2019.
4. Passavanti MB et al. Clinical applications of palmitoylethanolamide in pain management: protocol for a scoping review. *Syst Rev.* 2019;8(9).
5. Hesselink JM et al. The potential benefits of palmitoylethanolamide in palliation: a qualitative systematic review. *Int J Inflamm.* 2019;2013(9).
6. Hesselink JMK. Increasing the degrees of freedom for treating painful diabetic neuropathy. *J Pain Res.* 2013;6:625–634.
7. Hansen HS. Effect of diet on tissue levels of palmitoylethanolamide. *CNS Neurol Disord.* 2013;12(1):17–25.
8. Paladini A et al. Palmitoylethanolamide, a special food for medical purposes, in the treatment of chronic pain: a pooled data meta-analysis. *Pain Physician.* 2016;19(2):11-24.
9. Gabrielsson L et al. Palmitoylethanolamide for the treatment of pain: pharmacokinetics, safety and efficacy. *Br J Clin Pharmacol.* 2016;82(4):932–942.
10. Tagne AM et al. Palmitoylethanolamide and hemp oil extract exert synergistic anti-nociceptive effects in mouse models of acute and chronic pain. *Pharmacol Res.* 2021;167:105545.
11. Lo Verme J et al. The nuclear receptor peroxisome proliferator-activated receptor-alpha mediates the anti-inflammatory actions of palmitoylethanolamide. *Mol Pharmacol.* 2005;67(1):15-19.
12. Iannotti FA et al. Endocannabinoids and endocannabinoid-related mediators: targets, metabolism and role in neurological disorders. *Prog Lipid Res.* 2016;62:107-128.
13. Petrosino S et al. The pharmacology of palmitoylethanolamide and first data on the therapeutic efficacy of some of its new formulations. *Br J Pharmacol.* 2017;174(11):1349-1365.
14. Petrosino S et al. The anti-inflammatory mediator palmitoylethanolamide enhances the levels of 2-arachidonoyl-glycerol and potentiates its actions at TRPV1 cation channels. *Br J Pharmacol.* 2016;173(7):1154-1162.
15. Aizpurua-Olaizola O et al. Targeting the endocannabinoid system: future therapeutic strategies. *Drug Discov Today.* 2017;22(1):105-110.
16. Di Marzo V et al. The endocannabinoid system and its therapeutic exploitation. *Nat Rev Drug Discov.* 2004;3(9):771-784.
17. Bergamaschi MM et al. Cannabidiol reduces the anxiety induced by simulated public speaking in treatment-naïve social phobia patients. *Neuropsychopharmacol.* 2011;36(6):1219-1226.
18. Andre CM et al. Cannabis sativa: The plant of the thousand and one molecules. *Front Plant Sci.* 2016;7:19.
19. Askari VR et al. The protective effects of β-caryophyllene on LPS-induced primary microglia M1/M2 imbalance: A mechanistic evaluation. *Life Sci.* 2019;219:40-73.
20. Hesselink JMK et al. Therapeutic utility of palmitoylethanolamide in the treatment of neuropathic pain associated with various pathological conditions: a case series. *J Pain Res.* 2012;5:437–442.
21. Marcum et al. Recognizing the risks of chronic nonsteroidal anti-inflammatory drug use in older adults. *Ann Longerm Care.* 2010;18(9):24-27.
22. McCrae et al. Long-term adverse effects of paracetamol - a review. *Br J Clin Pharmacol.* 2018;84(10):2218-2230.

Metagenics Institute