

NAUSEA/VOMITING



Nausea is an aversive experience that often precedes vomiting but is distinct from it. Vomiting itself is the forceful expulsion of gastric contents, primarily as a protective function to remove ingested materials.

The brain centers that control nausea and vomiting are well understood and represent a chemoreceptor 'trigger' zone that, when stimulated, leads to nausea and vomiting. The trigger zone is populated with CB1 receptors, dopamine D2 receptors, serotonin 5-HT3 receptors, and opioid receptors, among others. Legacy anti-nausea medications work by interacting with the D2 receptors, while current medications target 5-HT3 receptors.

Anticipatory nausea is a separate phenomenon typically observed in cancer patients. The association between the feeling of nausea and chemotherapy treatments becomes such that the nausea begins to occur before treatment even begins. Anticipatory nausea develops in a large portion (a quarter to over half) of chemotherapy patients if acute nausea was not properly managed in the clinic. Compared to nausea from other sources, anticipatory nausea resists treatment from modern medications that block serotonin receptors.

Cannabinoid receptors are present throughout the GI tract as well as being highly expressed in the Central Nervous System, making them ideal targets for treating nausea and vomiting. Cannabis itself is one of the worlds' oldest known remedies for nausea and vomiting.

THC has been shown to be as effective in the clinic, if not more so, in significantly suppressing experiences of nausea when compared to older D2 treatments and is currently viewed as an effective adjunctive therapy to modern medications.

THC and CBD are known to treat anticipatory nausea and are some of the only known treatments for anticipatory nausea. More recently, the acid precursors THCA and CBDA have been found to treat both nausea and anticipatory nausea in animal models with very low doses.

THC and THCA are known to affect nausea through CB1 receptors. CBD and CBDA work through the serotonin (5HT) receptors instead, which allows for an additive layered effect.

TERPENES

Limonene displays known gastroprotective properties and in combination with its soothing taste and smell, might be an ideal component to look for in a botanical anti-nausea agent.

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Bountiful Farms Inc. | 200 Kenneth Welch Drive Lakeville, MA 02347 | 774-419-3803 | bountifulfarms.care