

# MEDICAL CANNABIS, A BROAD SPECTRUM OF EFFECTS

Cannabis medicines include a spectrum of products with varying effects and varying levels of psychotropic compounds. The composition of each product affects its therapeutic effects and risk profile.

## THC

Tetrahydrocannabinol (THC) is the compound linked to potential negative effects of cannabis, particularly delayed reactions, short-term memory impairment and mental health.

In contrast to the potential harms associated with it, however, THC also has benefits for a range of conditions such as:

- Chronic pain, particularly nerve pain and sensitisation disorders
- Nausea, especially for chemotherapy and HIV patients
- Spasticity, particularly in multiple sclerosis, but also in other conditions with involuntary movement or muscle contractions such as restless legs, Tourettes and Dystonia
- Insomnia, particularly when sleep is impaired by chronic pain.

THC has a range of other benefits that are well-researched or are only just emerging in the clinical data:

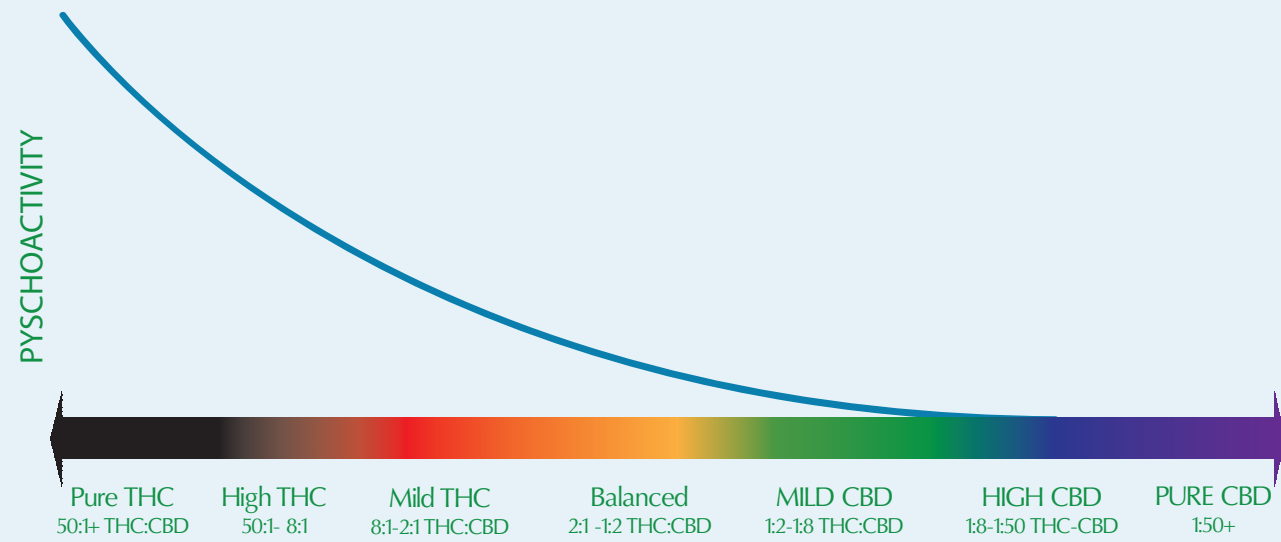
- Anti-pruritic (stops itching) – an opposite effect to opioids, and useful in treating people with skin disorders
- Anti-proliferative (cancer fighting)
- Reduced dreaming – a valuable tool for severe PTSD, for example
- Anxiolytic; in low doses, some patients find that THC effectively reduces anxiety.

## CBD

Cannabidiol (CBD) is the second most common cannabinoid and is undergoing significant clinical research due to its wide range of therapeutic effects and its lack of psychotropic effects.

Cannabidiol has been commercially developed as Epidiolex, with benefits shown in Phase 3 clinical trials in difficult-to-treat epilepsy syndromes Lennox-Gastaut and Dravet.

CBD has also been shown to have anxiolytic (anti-anxiety), anti-inflammatory, anti-proliferative and neuroprotective properties, with research demonstrating that it may hold promise in addiction treatment as well.



## Alphabet Soup

In addition to THC and CBD, there are a myriad of less well-known cannabinoids, some of which are beginning to be commercially developed. These include the abbreviations CBG, CBN, CBDV, CBC and THCV. These all exert their own unique effects, and most have no psychotropic effects. Some of them are found in higher quantities in certain strains of cannabis, leading to unique effects. For example, the well-known South African strains 'Swazi Gold' and 'Durban Poison' have a high content of THCV, which blocks the sedative properties of THC; as a result these strains are well-known in the patient community for the lack of drowsiness associated with them.

## Cannabinoids, Better Together.

The most intriguing effect of CBD is that it significantly reduces the psychotropic effects of THC, while preserving the medical benefits of THC. It is for this reason that Sativex was developed with a 'balanced' ratio of THC:CBD. Combining the two in equal measure essentially leads to 90% of the medical benefits of THC being preserved, while reducing the psychotropic effect by a similar amount. Trials of Sativex have consistently scored the "high" as less than 1/10, and this carries over to other 'balanced' THC/CBD products. However, different patients appear to benefit clinically from THC/CBD combinations in differing ratios. Therefore we recommend that cannabis products be available in a variety of cannabinoid ratios.

## The Entourage Effect.

The "entourage effect" refers to the way that the many different compounds in the cannabis plant interact to produce the overall effect in the human body. With cannabis, particularly inhaled cannabis, a wide range of effects can be experienced from different strains of the plant. This variation has two main causes: the minor cannabinoids and a second group of active ingredients, the terpenes. Many terpenes have been shown in pre-clinical research to have additional medical properties, such as analgesic, anti-inflammatory or anti-depressant qualities.

Terpenes are the chemicals that give cannabis strains different smells, which can range from pine to lemon to mango aromas. Terpenes are a reason that some strains have unique effects. Some can be particularly sedative; for example, the strain 'White Widow' and others are high in a terpene called myrcene.



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