

# MAYO CLINIC on Medical Marijuana

## Background

Marijuana, hemp, and cannabis are common names for plants of the genus *Cannabis*. The term hemp is often used for cannabis strains grown specifically for production of paper, rope, and cloth. Other cannabis strains are used to make recreational and medicinal drugs. The major difference between the main types of cannabis plants is the amount of the psychoactive compound tetrahydrocannabinol (THC) they contain.

Cannabis has been used medicinally for approximately 5,000 years. The most widely used components of the herb in traditional medicine are the seed and seed oil. *Cannabis sativa* is widely used recreationally (inhaled or taken by mouth) to achieve increased feelings of well-being.

Cannabis has been studied for the treatment of a number of conditions, including eczema, epilepsy, chronic pain, insomnia, and symptoms of **multiple sclerosis**. The most significant benefits have been found in the treatment of chronic pain and symptoms of multiple sclerosis.

The two most studied cannabinoid compounds of *Cannabis sativa* are the psychoactive tetrahydrocannabinol (THC) and the nonpsychoactive cannabidiol (CBD).

## Chronic pain

Cannabinoids have been reported to reduce chronic pain associated with a variety of conditions. Cannabinoids have also been used in patients for whom other pain relief medications are not working. The active components in cannabis exert their effects on the central nervous system and immune cells. Cannabis is approved in some European countries and Canada. In the United States, it is an investigational drug for pain relief in cancer patients.

## Multiple sclerosis (symptoms)

Research suggests that cannabinoids may improve some symptoms associated with multiple sclerosis (MS), specifically neuropathic pain, muscle spasms, and urinary symptoms.

## **Dosing**

For symptoms of multiple sclerosis, 2.5-10 milligrams of dronabinol (Marinol®) has been taken by mouth daily for three weeks. Capsules containing 15-30 milligrams of cannabis extract has been taken by mouth for 14 days. Two and one-half milligrams of tetrahydrocannabinol (THC), together with 0.9 milligrams of cannabidiol (CBD), has been taken by mouth. Cannabinoid-based Sativex® mouth spray has been used at a dose of 2.5-120 milligrams in divided doses. Eight sprays in three hours and up to 48 sprays in 24 hours have been used.

## **Side Effects and Warnings**

Cannabis may lower blood sugar levels. Caution is advised in patients with diabetes or hypoglycemia, and in those taking drugs, herbs, or supplements that affect blood sugar. Blood glucose levels may need to be monitored by a qualified healthcare professional, including a pharmacist, and medication adjustments may be necessary.

Cannabis may increase the risk of bleeding. Caution is advised in patients with bleeding disorders or those taking drugs that may increase the risk of bleeding. Dosing adjustments may be necessary.

Cannabis may cause low blood pressure. Caution is advised in patients taking herbs or supplements that lower blood pressure.

Drowsiness or sedation may occur. Use caution if driving or operating heavy machinery, if taking sedatives, barbiturates, or central nervous system depressants, or if consuming alcohol.

Cannabis may interfere with the way the body processes certain drugs, herbs, or supplements using the liver's cytochrome P450 enzyme system. As a result, the levels of these agents may change in the blood and may cause increased or decreased effects or potentially serious adverse reactions. Patients taking any medications should check the package insert and speak with a qualified healthcare professional, including a pharmacist, about possible interactions.

Use with caution in patients with liver disease, glaucoma, immune disorders, or a history of drug abuse or addictive behavior, or in patients taking agents for any of these conditions.

Use with caution in patients taking estrogen therapy, agents that may damage the liver, antipyrine, or p-glycoprotein-regulated drugs.

Avoid in individuals with asthma or byssinosis (lung disease).

Avoid inhalation or intravenous injection of cannabis.

Avoid use of cannabis products obtained illegally.

Avoid in patients who are pregnant or breastfeeding.

Avoid in patients with a known allergy or hypersensitivity to cannabis, cannabinoids, or plants of the Cannabaceae family.

[http://www.mayoclinic.com/health/marijuana/NS\\_patient-marijuana](http://www.mayoclinic.com/health/marijuana/NS_patient-marijuana)