

# **Cannabis (Marijuana): Psychoactive Properties, Addiction, Therapeutic Uses, and Toxicity**

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**Background and Objectives:** To analyze the existing literature on cannabis (marijuana) under several sub topics; history of use, addiction, mechanism of action, therapeutic uses, and adverse effects.

**Methods:** A comprehensive literature search was conducted. Data sources include original research articles, systematic reviews and meta- analysis, and web-based references such as Drug strategy monographs and Merck Index. Data bases such as PubMed and Cinhal was used. References were from 1979 -2016.

**Hypothesis:** Based on the available literature it can be hypothesized that despite the addictive properties and adverse effects, marijuana has a therapeutic potential and should be used with caution.

**Results:** The available literature on cannabis smoke was discussed under five major categories, which are history of use, addiction, mechanism of action, therapeutic uses, and adverse effects.

**Discussion and Conclusions:** Marijuana (preparations of the hemp plant, *cannabis sativa*), is usually consumed as a smoke. It is an addictive compound that has been consumed for medical ailments for generations. The mechanism of action of cannabis was not known until the recent discovery of the endocannabinoid system. Endocannabinoids are released from the post-synaptic neurons and act on the pre-synaptic neurons.  $\Delta$ -9 tetrahydrocannabinol (THC), the psychoactive component present in Cannabis behaves similar to endocannabinoids. In addition to psychoactive modulations, cannabis consumption leads to cognitive impairments. Despite its' medicinal and recreational value, due to its' addictive properties cannabis consumption has been banned by several countries. In US, recreational and therapeutic use of cannabis is recently allowed in some states.

**Scientific Significance:** Despite the psych activity associated with cannabis consumption, it can be used therapeutically for many diseases including epilepsy and to alleviate chronic neuropathic pain associated with many sicknesses. Cannabis also possesses anti-cancer properties. However, strict laws should be enforced to avoid its' abuse while allowing its' medicinal use.