

# Arguments For and Against the Medical Use of Marijuana

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## Abstract

The medical use of marijuana has incited much debate in recent years. Some research has shown that marijuana may help alleviate some of the side effects of disease treatments or the symptoms of some diseases themselves, e.g. AIDS, cancer and multiple sclerosis. All of the conventional treatments for these diseases have common side effects, including nausea, vomiting, pain and decreases in appetite. Various studies have sought to determine whether marijuana has any benefit in treating these debilitating side effects or whether marijuana can improve these patients' quality of life. Some findings indicate that marijuana should have a role in medical treatments, whereas, other findings indicate that the long term effects of marijuana use may carry other risks. The present paper reviews the relevant empirical literature and concludes that investigators have not yet determined whether marijuana is a safe, viable, effective medical treatment option.

## Introduction

*Cannabis sativa*, commonly known as marijuana, has been widely debated in recent headlines. Marijuana is currently classified as a Schedule I drug by the U.S. Food and Drug Administration. Schedule I drugs have, by definition, a high potential for abuse, no accepted medical use and are illegal in the United States (Meyer, 2004). Although illegal, 13 states have legalized marijuana for medicinal purposes (ProCon.org, 2009).

In 1985, the FDA approved the use of Marinol. Marinol contains the active ingredient dronabinol, which is a synthetic form of delta-9-tetrahydrocannabinol, commonly referred to as THC. This drug was approved for the relief of nausea and vomiting experienced by patients undergoing chemotherapy, who had not found relief with other antiemetic treatments. Marinol is classified as a Schedule III drug. Schedule III drugs have less potential for abuse than Schedule I or Schedule II. They are currently accepted for medical use in the United States and lead to moderate or low physical dependence and high psychological dependence (United States Department of Justice, 2002).

In March of 1999, the Institutes of Medicine (IOM) released a detailed report encouraging more research into the potential of marijuana for medical purposes. However, the IOM stressed that the inhaled forms of marijuana carry long term health issues and argued that further research should explore non-inhaled delivery methods that use isolated components of marijuana and its synthetic derivatives (Joy et al., 1999).

## Route of Administration

The route of administration of THC also evokes debate among researchers, clinicians and legislators. Some researchers propose that inhaled forms of dronabinol would have a better rate of absorption, as compared with the oral form (Solvay, 2008). Oral administration of a drug has the slowest onset of action. This is due to the time required for absorption and digestion of the drug. Dronabinol capsules are almost completely absorbed at 90-95% after a single dose; however, due to the first pass hepatic effect and the high lipid solubility, only 10-20% of the administered dose actually reaches circulation (Solvay, 1999). Peak plasma levels are not achieved until 60-120 minutes after ingestion. Conversely, following inhalation of cannabis smoke, THC can be detected in the plasma a few seconds following inhalation. Peak plasma levels are measurable in 3-10 minutes (Huestis, Henningfield & Cone, 1992).

Miller, ZumBrunnen & Brennan (2003) conducted a study that supports nebulized dronabinol have more rapid absorption than oral formulations. The pulmonary administration of dronabinol appeared to be safe and had a favorable pharmacokinetic profile (Miller et al., 2003). Miller, Meuwesen, ZumBrunnen & deVries (2005) tested a metered-dose inhaler form of dronabinol and found that it provided rapid pulmonary absorption with a safe pharmacokinetic and pharmacodynamic profile.

## States that have legalized marijuana

State	Year Passed	Possession Limit
Alaska	1998	1 oz usable; 6 plants (3 mature, 3 immature)
California	1996	8 oz usable; 18 plants (6 mature, 12 immature)
Colorado	2000	2 oz usable; 6 plants (3 mature, 3 immature)
Hawaii	2000	3 oz usable; 7 plants (3 mature, 4 immature)
Maine	1998	1.25 oz usable; 6 plants (3 mature, 3 immature)
Michigan	2008	2.5 oz usable; 12 plants
Montana	2004	1 oz usable; 6 plants
Nevada	2000	1 oz usable; 7 plants (3 mature, 4 immature)
New Mexico	2007	6 oz usable; 7 plants (4 mature, 3 immature)
Oregon	1998	24 oz usable; 24 plants (6 mature, 18 immature)
Rhode Island	2006	2.5 oz usable; 12 plants
Vermont	2004	2 oz usable; 9 plants (2 mature, 7 immature)
Washington	1998	24 oz usable; 15 plants

## Health Effects

A study conducted in 2001 by Dr. Donald Tashkin claims that smoked marijuana can cause severe airway injury, airway inflammation and harmful effects on the defense mechanisms in the lungs used to fight infections. To support Tashkin's claim, an additional study done by Dr. Guy Cabral (2001), suggested although more research needs to be done on marijuana's effects on immunosuppression, data he collected from cell culture studies proposes marijuana and other cannabinoids alter immune cell function.

Additional research has been conducted to find a correlation between marijuana smoking and cancer. Dr. Donald Tashkin and colleagues, although able to find that smoking marijuana causes cellular damage, were unable to find a statistically significant correlation between cannabis smoke and lung cancer (Hashibe et al., 2006). Furthermore, Melamede (2005) suggested that tobacco and cannabis smoke were not equally carcinogenic and there was no link between marijuana and cancer risk.

## Conclusion

In conclusion, research is revealing that marijuana may have a small spot in disease treatment. At the same time, research is revealing marijuana may carry long term health risks. It is here that the underlying debate concerning legalization was born. Although some may see the improvement in side effects of cancer, multiple sclerosis, glaucoma and the like, the long term effects may be more than one desires. However, some patients with these diseases are facing a terminal outcome, and long term effects are not their concern. This debate is far from over and research will continue for many years to come. More evidence needs to be discovered in which marijuana, carrying with it potential side effects itself, may have a role in the treatment options for some patients.

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