

# Dispelling the Gateway Theory

## What Science Says About Cannabis and Drug Addiction

**Summary:** Opponents of legal medical and adult-use cannabis often refer to cannabis as a “gateway drug” that increases the likelihood an individual will use harder substances, such as cocaine or heroin. Anti-cannabis advocates also argue that legalizing cannabis could lead to an increase in opioid abuse. However, **neither of these claims are supported by scientific evidence.**

Multiple studies by reputable organizations, such as the Institute of Medicine, have refuted the gateway theory, finding that cannabis use is not causally related to serious drug abuse.<sup>1</sup> Current research shows that the link between hard drug use and preceding cannabis use is better explained by environmental and sociological factors, and that **cannabis can be an effective tool for addressing opioid addiction.** This paper highlights current findings dispelling the gateway drug myth.

### The Truth about the Gateway Theory

The theory of cannabis as a gateway drug is largely the product of anti-cannabis propaganda during the War on Drugs. A key fallacy in the gateway theory argument is the conflation of correlation and causation. It is factual that many individuals who have used hard drugs have used cannabis first, but that does not mean that cannabis is the preliminary cause of hard drug usage. While cannabis is one of the most commonly-used substances in the world, federal survey data shows that only a small percentage of cannabis consumers go on to use hard drugs.

#### Research Does Not Support the Gateway Theory

According to the 2017 National Survey on Drug Use and Health, an estimated 26.0 million Americans reported using cannabis in the past month. Comparatively, only 2.2 million Americans reported using cocaine, and only 494,000 people reported using heroin.<sup>2</sup> In short, **many people who have used hard drugs have used cannabis, but the vast majority of people who have used cannabis do not use hard**

The gateway theory has been refuted multiple times in prominent academic studies, including the following:

- In a seminal 1999 study, the Institute of Medicine found that cannabis use does not appear to cause, or be the most serious predictor of serious drug abuse.<sup>3</sup>
- More recently, *The American Journal of Psychiatry* found that drug abuse is not determined by preceding use of cannabis, but rather a user’s individual tendencies and environmental circumstances. The environment, including a youth’s social group and exposure to drugs in the neighborhood, are key indicators of illicit drug use.<sup>4</sup> Shared characteristics among cannabis users, such as a tendency toward deviance or a risk-taking personality, explain why some individuals go on to use harder drugs.
- RAND’s Drug Policy Research Center suggests “that it is not marijuana use but individuals’ opportunities and unique propensities to use drugs that determine their risk of initiating hard drugs.”<sup>5</sup>

## An Alternative Explanation for the Gateway Theory

There is evidence that **the illegal status of cannabis can increase the likelihood of hard drug usage.**

Purchasing cannabis through illicit channels necessitates interaction with dealers who may have access to harder drugs. As the Netherlands began to liberalize cannabis laws in the 1970s, they made intentional efforts to separate the legal and illicit drug markets. Believing the gateway effect to be sociological, they aimed to keep soft drug users away from hard drug dealers. The goal was to minimize the exposure cannabis users had to hard drugs, and data compiled from the Dutch experience suggests this approach was effective.<sup>6</sup> This and other studies have led to a growing consensus within the research community that the gateway theory is unsupported.

## Cannabis and Opioids

Perhaps more damaging than the gateway drug myth are claims by cannabis opponents that legalization will increase opioid abuse. These claims are simply not supported by research. In fact, a growing body of evidence shows that cannabis can help those facing opioid addiction, and medical and adult-use cannabis legalization has been associated with a reduction in opioid prescriptions, opioid-related hospitalizations, and opioid-related deaths.

Current research makes it clear that **cannabis does not increase opioid abuse.**

- The National Academy of Science and Medicine released a study confirming there is substantial evidence that cannabis is an effective treatment for chronic pain in adults.<sup>7</sup> Evidence shows that individuals who use opioids see a 40 percent to 60 percent reduction in their opioid use after they are given access to cannabis.<sup>8</sup> Patients cited fewer adverse side effects when using cannabis and improvements in cognitive function and quality of life.
- A recent study of 841 individuals using prescription opioids found that 71 percent of the sample agreed that cannabis produced the same amount of pain-relief as opioid-based medication, 92 percent preferred cannabis to opioids, and 93 percent said they would be more likely to use cannabis if it was more readily available.<sup>9</sup>
- Research in the American Journal of Addiction suggests that opioid addicts who consumed cannabis purchased significantly lower amounts of opioids than those who did not consume cannabis.<sup>10</sup>

## Medical Cannabis Laws and Opioid Usage

**The adoption of medical cannabis laws has had a significant impact on reducing opioid usage as well as opioid-related hospitalizations and deaths.** A study examining Medicaid patients in the United States found that states with legal medical cannabis had a 5.88 percent lower rate of opioid prescriptions.<sup>11</sup> Another recent study found that states with legal medical cannabis experienced a 23 percent reduction in hospitalizations related to opioid abuse.<sup>12</sup> Finally the American Medical Association's *JAMA Internal Medicine* publication released a study highlighting how states that allow access to medical cannabis for the treatment of chronic pain and other conditions have an opioid overdose mortality rate 25 percent lower than states where medical cannabis is illegal.<sup>13</sup> This study suggests that the availability of medical cannabis, rather than contributing to America's opioid epidemic, actually reduces the growing number of deaths attributed to prescription pain medications.

## Adult-Use Cannabis Laws and Opioid Usage

New research suggests that adult-use cannabis legalization, in addition to medical cannabis, can decrease opioid usage and the rate of opioid-related deaths. One study published in the American Medical Association's *JAMA Internal Medicine* found that states with adult-use cannabis laws have a 6.38 percent lower rate of opioid prescriptions.<sup>14</sup> Another study found that Colorado's adoption of adult-use cannabis in 2012 resulted in a 6.5 percent reduction in opioid-related deaths.<sup>15</sup> This finding should be of great concern to policymakers in the midst of one of the worst public health crises in the United States. The public-health implications are far too important for lawmakers to ignore, therefore further research should be a critical priority.

## CBD

Several studies have found **positive findings regarding cannabidiol (CBD), a non-psychoactive constituent of cannabis, and its use as a therapeutic agent for opioid use disorders.** Research suggests that CBD interferes with brain reward mechanisms and can block the reward-facilitating effect of opioids.<sup>16</sup> Patients using medical cannabis to control chronic pain reported a 64 percent reduction in their use of traditional prescription pain medications.<sup>17</sup> This reduction of opioid use was also correlated with decreased medication side effects, indicating a potential health benefit to replacing opioids with cannabis.

Many traditional treatments for opioid-addiction cannot effectively block opiate cravings, but **CBD has been shown to inhibit heroin-seeking behaviors.** Animal studies have demonstrated that, in addition to reducing the rewarding effects and withdrawal symptoms of opioids, CBD directly reduces heroin-seeking behavior.<sup>18</sup> These findings are consistent with a pilot study completed with humans, where the positive therapeutic effects of CBD lasted up to a week after administration.<sup>19</sup>

## THC

**Due to the federal illegality of cannabis, it is incredibly difficult to conduct adequate scientific studies on the use of full spectrum cannabis to treat opioid addiction.** However, there is a growing amount of observational evidence that cannabis, particularly cannabis concentrates, may be effective in weaning individuals off a range of opioids and subsequently preventing relapse. Given the positive results of this initial research, policymakers should dedicate more funding to study the effects of THC as a treatment for opioid addiction.

## Endnotes

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