



# Cannabis Use Disorder

What is the relationship between cannabis legalization & cannabis use disorder?

## Frequent cannabis use may lead to Cannabis Use Disorder (CUD).

Two chemicals, delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) are the primary compounds of cannabis. THC specifically drives the reinforcing behaviors that lead to CUD. (Patel, 2022) The chances of developing CUD are increased when cannabis is used frequently or use begins in adolescence. (CDC, 2020)

CUD can cause withdrawal symptoms, psychosis (e.g., hallucinations, delirium), panic and anxiety, disturbance in sleep, and physiological and behavioral changes. At least two of the following symptoms must consistently occur in a 12 month period for the diagnosis of CUD:

1. Using large amounts of cannabis
2. Craving cannabis
3. Spending excess effort to obtain cannabis
4. Affecting daily obligations
5. Continuing use despite effect on obligations
6. Using during physically hazardous activities
7. Continuing use despite physiological issues
8. Increasing tolerance
9. Showing withdrawal symptoms after use
10. Failing to control use despite a desire to quit

It is difficult to study the health effects of cannabis because THC levels vary and have doubled

## Research Highlights

The American Psychological Association defines Cannabis Use Disorder as “a problematic pattern of cannabis use leading to clinically significant impairment or distress.”

Cannabis laws vary greatly between states. Increases in CUD remain low despite modest increases in cannabis use after recreational and medical cannabis legalization.

In Missouri, cannabis use disorder is less common than other substance use disorders, such as opioid use disorder and alcoholism.

on average from 2008 to 2017. (CDC, 2020)

- Commercial THC levels are much higher than what is studied given federal restrictions on research and cannabis-THC content.
- For more information, please read the Science Note [Cannabis Legalization](#).

## Cannabis use & CUD in Missouri

Roughly 1-in-10 cannabis users develop CUD. (CDC, 2020) About 15% of Missourians over 12 reported use of cannabis at least once in 2019, although cannabis use may be underreported. In Missouri, substance use disorders (SUD) from cannabis are lower than those for prescription opioid use, illicit drug use, and alcohol use (Figure 1). (SAMHSA, 2019)

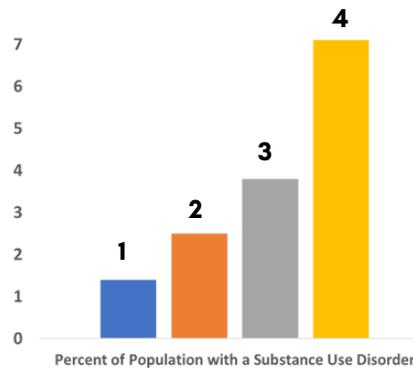
Between 2005–2014, admission into the Division of Behavioral Health Program for Substance Abuse declined for cannabis (20%) and cocaine users (80%), and increased for methamphetamine, heroin, and analgesic users (roughly doubling for each). (Missouri DMH, 2015)

**Table 1. Change in cannabis use and CUD after recreational legalization, by age.**

Age Group	Percent Increase in Cannabis Use after Recreational Legalization	Percent Increase of CUD after Recreational Legalization
12-17 years old	4.8% to 5.3%	2.2% to 2.7%
18-25 years old	13% to 14%	3.6% to 3.5%
Over 26 years old	5.6% to 7.1%	0.9% to 1.2%

**Table 2. Change in cannabis use after recreational legalization, by race.**

Demographic	Percent Increase in Cannabis Use in Population after Recreational Legalization
Latino	11.7% to 15.0%
White	16.6% to 19.4%
Black	14.8% to 15.8%
Other	14.8% to 18.5%



**Figure 1. Percent of Population with a SUD.**

Reported percentages of people in Missouri in 2019 with a SUD due to 1) cannabis use (1.4%, blue), 2) illicit drug use (2.5%, orange), 3) prescription pain medications (3.8%, gray), and 4) alcohol use (7.1%, yellow). Data from the U.S. DHHS

## Cannabis use may be connected to some mental health disorders.

The effect of cannabis use on mental health is difficult to determine due to differences in human genetics, THC-potency, use frequency, and age at first use. Established connections between cannabis use and mental health disorders include:

- genetics (NIDA, 2020)
- mental disorders in adolescence (McGee, 2000)
- cannabis use early in adolescence
- high frequency cannabis use (CDC, 2020)

However, cannabis use may also have therapeutic benefit in the treatment of anxiety, the effects of traumatic brain injury, and post-traumatic stress disorder (PTSD) symptoms. (National Academies of Science, 2017)

## Recreational and medical cannabis legalization is connected to small increases in cannabis use & CUD.

Given the recency of recreational cannabis laws, few studies have measured the effect of cannabis legalization on CUD.

In the earliest states to legalize recreational use (CO, WA, AL, & OR), one study found that self-reported cannabis use slightly increased in the 12 months after legalization. (JAMA, 2019)

Increases in CUD after recreational legalization, however, remained below 1% of the population for any age group (Table 1). Another study showed similar changes by race (Table 2). No increases in self-reported cannabis use were seen in the under 20 group in any demographic, which is below the legal recreational purchase age in any state. (JAMA, 2021)

States who legalized medical cannabis had a similar increase in CUD by 0.7% of the population between 1996-2012. (JAMA, 2017).

Less restrictive policies on high THC content and purchase frequency may increase the chance of CUD. For example, states like WA have seen a 5x increase in high-THC product use, and separate studies suggest these are the most likely concentrations to result in negative cognitive effects, psycho-motor impairment, CUD, and psychosis in users. States with medical cannabis laws have also seen a decrease in opioid deaths since legalization while seeing no effect on alcohol or tobacco use. (Smart, 2019)