**DrugFacts: Marijuana**

[www.drugabuse.gov](http://www.drugabuse.gov)

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**What is marijuana?**

Marijuana refers to the dried leaves, flowers, stems, and seeds from the hemp plant,*Cannabis sativa*. The plant contains the mind-altering chemical*delta-9-tetrahydrocannabinol* (THC) and other related compounds. Extracts with high amounts of THC can also be made from the cannabis plant.

Marijuana is the most commonly used illicit drug in the United States (SAMHSA, 2014). Its use is widespread among young people. According to a yearly survey of middle and high school students, rates of marijuana use have steadied in the past few years after several years of increase. However, the number of young people who believe marijuana use is risky is decreasing (Johnston, 2014). Legalization of marijuana for medical use or adult recreational use in a growing number of states may affect these views.

## How does marijuana affect the brain?

Marijuana has both short- and long-term effects on the brain.

When a person smokes marijuana, THC quickly passes from the lungs into the bloodstream. The blood carries the chemical to the brain and other organs throughout the body. The body absorbs THC more slowly when the person eats or drinks it. In that case, the user generally feels the effects after 30 minutes to 1 hour.

THC acts on specific brain cell receptors that ordinarily react to natural THC-like chemicals in the brain. These natural chemicals play a role in normal brain development and function.

Marijuana overactivates parts of the brain that contain the highest number of these receptors. This causes the "high" that users feel. Other effects include:

* altered senses (for example, seeing brighter colors)
* altered sense of time
* changes in mood
* impaired body movement
* difficulty with thinking and problem-solving
* impaired memory

### Long-term effects

Marijuana also affects brain development. When marijuana users begin using as teenagers, the drug may reduce thinking, memory, and learning functions and affect how the brain builds connections between the areas necessary for these functions.

Marijuana’s effects on these abilities may last a long time or even be permanent.

For example, a study showed that people who started smoking marijuana heavily in their teens and had an ongoing cannabis use disorder lost an average of eight IQ points between ages 13 and 38. The lost mental abilities did not fully return in those who quit marijuana as adults. Those who started smoking marijuana as adults did not show notable IQ declines (Meier, 2012).

## What are the other health effects of marijuana?

Marijuana use may have a wide range of effects, both physical and mental.

### Physical effects

* **Breathing problems.** Marijuana smoke irritates the lungs, and frequent marijuana smokers can have the same breathing problems that tobacco smokers have. These problems include daily cough and phlegm, more frequent lung illness, and a higher risk of lung infections. Researchers still do not know whether marijuana smokers have a higher risk for lung cancer.
* **Increased heart rate.** Marijuana raises heart rate for up to 3 hours after smoking. This effect may increase the chance of heart attack. Older people and those with heart problems may be at higher risk
* **Problems with child development during and after pregnancy.** Marijuana use during pregnancy is linked to increased risk of both brain and behavioral problems in babies. If a pregnant woman uses marijuana, the drug may affect certain developing parts of the fetus’s brain. Resulting challenges for the child may include problems with attention, memory, and problem-solving. Additionally, some research suggests that moderate amounts of THC are excreted into the breast milk of nursing mothers.

### Mental effects

Long-term marijuana use has been linked to mental illness in some users, such as:

* temporary hallucinations—sensations and images that seem real though they are not
* temporary paranoia—extreme and unreasonable distrust of others
* worsening symptoms in patients with schizophrenia (a severe mental disorder with symptoms such as hallucinations, paranoia, and disorganized thinking)

Marijuana use has also been linked to other mental health problems, such as:

* depression
* anxiety
* suicidal thoughts among teens

## Is marijuana addictive?

Contrary to common belief, marijuana can be addictive. Research suggests that about 1 in 11 users becomes addicted to marijuana (Anthony, 1994; Lopez-Quintero 2011).This number increases among those who start as teens (to about 17 percent, or 1 in 6) (Anthony, 2006) and among people who use marijuana daily (to 25-50 percent) (Hall & Pacula, 2003).