



CANNABIS AND THE DEVELOPING BRAIN

CANNABIS 101

Cannabis—also known as marijuana, pot, kush, and weed, among other names—is a psychoactive drug from the cannabis plant. Since November 2016, cannabis has been legal for nonmedical use in California for those ages 21 and over. With an increasing presence in our society, it's important to understand the effects of cannabis on the developing brain.

Cannabis Potency

Today, cannabis is much stronger than in past decades. Modern cannabis plants contain higher amounts of tetrahydrocannabinol (THC), the main psychoactive compound in the plant that gives users the sensation of feeling "high." The higher the THC content, the stronger the effects on your brain and behavior.

HEALTH RISKS FOR TEENS

THC and the Brain

The brain doesn't fully develop until you're in your mid-20s. THC is believed to affect the teen brain in the following ways:

- Problems with memory, learning, thinking clearly, and problem-solving²
- Poor school performance that jeopardizes professional and social achievements, and life satisfaction²
- Impaired coordination and reaction time²
- Increased risk of mental health problems like depression, anxiety, and psychosis^{1,2}

When THC enters the brain, it binds to receptors in the endocannabinoid system (the brain's natural system that regulates and creates a balance of body and brain functions). This prevents the brain from regulating things like memory, coordination/alertness, coping with stress, and managing anxiety.

THC is believed to affect the teen brain in the following ways:

- Heavy exposure to THC can reduce the production of dopamine (the chemical in the body responsible for allowing you to feel pleasure, satisfaction, and motivation), which can make you feel less motivated.^{2,3}
- THC can affect the part of the brain that forms memories.²
- THC may affect the part of the brain responsible for motor function and its development.²
- THC can affect the part of the brain responsible for emotional regulation, making anxiety and stress harder to manage.²



[Click here to learn more about cannabis health effects](#)

Sources

1. Substance Abuse and Mental Health Services Administration. (2020). *Key substance use and mental health indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. <https://www.samhsa.gov/data/release/2020-national-survey-drug-use-and-health-nsduh-releases>
2. Office of the Surgeon General. (2019). *U.S. Surgeon General's advisory: Marijuana use and the developing brain*. <https://www.hhs.gov/surgeongeneral/reports-and-publications/addiction-and-substance-misuse/advisory-on-marijuana-use-and-developing-brain/index.html>
3. Bloomfield, M. A., Ashok, A. H., Volkow, N. D., & Howes, O. D. (2016). The effects of Δ^9 -tetrahydrocannabinol on the dopamine system. *Nature*, 539(7629), 369–377. <https://doi.org/10.1038/nature20153>