

THE TEEN BRAIN AND MARIJUANA

The brain is not fully mature until a person's mid-20s.

During adolescence, the most advanced and complex areas of the brain – including the prefrontal cortex, which controls reasoning and impulses, as well as other areas responsible for physical coordination, regulating emotions and motivation – go through a major growth spurt. This period of development and fine-tuning makes teens especially vulnerable to the THC in marijuana, also known as cannabis.

Marijuana use can cause significant changes to the brain.

This means that if your teen regularly consumes marijuana (1-2 times per week), it can cause significant changes to the “wiring” of the brain, and the pathways that are still building connections. And marijuana today has much more THC than a decade ago. Those high levels of THC can alter how the adolescent brain develops. Consuming THC makes the brain more vulnerable to addiction, impulse control issues and even mental illness.



Marijuana use can intensify behavior challenges associated with adolescence.

- **Self-regulation** – difficulty holding back or controlling emotions
- **Reward and motivation** – a preference for high-excitement and low-effort activities
- **Poor planning and judgment** – minimize or not consider negative consequences
- **Impulse control** – more risky, impulsive behaviors, including experimenting with drugs and alcohol



Marijuana use has been associated with poorer academic performance and dropping out of school.^{1,2,3} Some teens believe that marijuana can help reduce issues with ADHD or anxiety, and improve their focus in school, but in truth adolescents who use marijuana may have a harder time learning and remembering.

Young people who use marijuana may be more likely to experience anxiety and depression. When using marijuana heavily (20 or more times a month), adolescents may lack motivation and energy, and lose interest in activities they used to enjoy. Heavy marijuana use can also make existing mental health conditions worse. This risk is amplified for adolescents with a family history of mental illness.^{3,4}



1. National Institute of Drug Abuse. What are marijuana's long-term effects on the brain? 2019; <https://www.drugabuse.gov/publications/research-reports/marijuana/what-are-marijuanas-long-term-effects-brain>.
2. Partnership for a Drug-Free Kids: <http://www.drugfree.org/> (accessed June 2015).
3. Volkow, ND, et al. Adverse health effects of marijuana use. *N. Engl. J. Med.* 2014 Jun; 370:2219-2227.
4. Meier MH, Caspi A, Ambler A, et al. Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proc. Natl. Acad. Sci. U. S. A.* 2012;109(40):E2657-64.

For more information, visit marijuana.dhss.alaska.gov