Marijuana addiction? [1]

Dear Alice,

For people who are addicted to smoking marijuana, is it a physical or psychological addiction?

— Weed wacker

Answer

Dear Weed wacker,

In a nutshell, both — maybe. In other words, there’s currently no clear diagnosis for marijuana addiction, but dependence from excessive use can manifest in both physiological and psychological symptoms. However, keep in mind that dependence to marijuana is actually fairly rare. In fact, there is a nine percent chance that a user will become dependent on marijuana at some point in their lifetime. This makes it pretty unlikely that marijuana use would cause dependence compared to most other drugs, even though it’s one of the most widely used in the world. That being said, the risk of dependence increases with the frequency of use in and other factors like age and genetics (more on that later). Whether the symptoms of dependence are more physiological or psychological can vary between individuals.

While the nature of dependence on marijuana isn’t completely understood yet, long-term marijuana use appears to affect the brain in ways that are similar to other addictive substances. Smoking or ingesting marijuana releases THC (tetrahydrocannabinol) which acts on areas of the brain that influence pleasure, memory, concentration, sensory and time perception, and coordinated movement — this is what produces a “high.” However, the more often a person uses, the more likely this high gets blunted, leading frequent users to smoke or ingest marijuana in increasingly higher doses — this is known as developing a tolerance. The more frequently people use and the higher the dose, the greater the chance someone has of developing dependence.

Beyond using the substance frequently, what else may play a role in dependence? The likelihood that someone becomes dependent on weed may be affected by factors such as age (younger users between 14 and 16 who have positive experiences with weed are more likely to become dependent) or a genetic predisposition [2] to addictive behavior. Other risk factors may include
mental health markers such as low self-esteem, low self-control, and poor coping-skills. In addition, socioeconomic factors could also play a role — research indicates that dependence is more likely among individuals with lower socioeconomic status or difficult financial situations.

In addition to the physiological symptoms of dependence (appetite change, nausea, weight loss, etc.), psychological dependence on cannabis results when the individual doesn’t feel “normal” or like they can’t get through their day unless they use. This is likely due to the fact that THC withdrawal changes the activity of nerve cells that house dopamine, (a neurotransmitter involved in pleasure, motivation, and reward). It can produce psychological effects including irritability, restlessness or trouble sleeping, fatigue, depressed mood, anger and aggression, and strange dreams. People who have developed psychological dependence may often miss school or work, stop putting effort into how they dress or groom themselves, or may have sudden behavioral changes (like being very secretive about their whereabouts).

All that said, how might a person know if they are dependent on marijuana? The World Health Organization (WHO) [3] identifies an individual as dependent to marijuana if they've used cannabis consistently and also exhibit at least three of the following criteria:

- They have a strong desire or a compulsion to use marijuana.
- They have difficulty controlling when they use, how often they use, or how much they use.
- When they can’t get their fix, they exhibit symptoms of physiological withdrawal such as appetite change, nausea or stomach pain, weight loss, shakiness, or sweating.
- They either lose interest in or neglect other pleasurable activities because of their marijuana use.
- They are fully aware of obvious negative consequences, but continue to use marijuana anyway.
- They develop a tolerance (the need to consume more and to achieve the desired feelings). Heavy users may sometimes need up to eight times the dose of infrequent users to achieve the same high.

It might be helpful to keep in mind that most people who use marijuana occasionally do not end up becoming dependent on it. Also, some folks use marijuana medicinally rather than recreationally — and in some places, marijuana is legally approved for recreational or medicinal use. While there isn’t a lot of evidence to support the use of marijuana in treating conditions such as anxiety, glaucoma, or Parkinson’s disease, it has been effectively used to control chronic pain in some people. Given that many prescription pain-killers can be extremely addictive and have very dangerous withdrawal effects (including death), the cannabis alternative might actually help reduce prescription drug abuse. However, more research is needed!

So, Weed wacker, dependence to marijuana is possible, but less common. And, a long-term use can result in physical or psychological dependence (or both), but the effects can vary between individuals. While there’s no medical treatment for marijuana dependence, working with a mental health provider in the form of cognitive behavioral therapy [4] or motivational incentives has been shown to help some people kick their habit. If you or someone you know has a concerning relationship with marijuana, it might be helpful to talk with a health care provider who can offer advice or refer you to resources that can help make that relationship a healthier one.
Related questions

Alcohol or marijuana: Which is safer? [7]
Moderate marijuana use and health effects? [8]
Eating marijuana [9]

Resources

Medical Services (Morningside) [10]
Counseling and Psychological Services (CPS) (Morningside) [11]
Columbia Health BASICS program (Morningside) [12]
Medical Services (CUIMC) [13]
Mental Health Services (CUIMC) [14]
Addiction Information & Management Strategies (AIMS) (CUIMC) [15]

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