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10/18/2021

I am writing to share my thoughts concerning cannabis availability through legalized dispensaries.

My name is Matt Green and I am the Clinical Director of Sameem Associates, Inc. located in Newton, MA. Our clinic is staffed by a multi-disciplinary team which include psychiatrists (MD's) Psychiatric Nurse Practitioners, licensed Psychologists (Ph.D's), licensed independent social workers (LICSW's) and licensed independent mental health counselors (LMHC's). Our private outpatient clinic has been in operation for 35 years treating patients with both "addictive disease" and psychiatric illnesses (dual-diagnosis patients). We are part of the fabric of the medical community in Greater Boston, and a training site for doctoral students in clinical psychology as well as psychiatric nurse practitioner interns.

I am not a politician, researcher, or clergy member. I am a clinician and provider who has been on the front line of addiction treatment working with patients for more than 35 years. The following are some basic facts concerning the risks and benefits of cannabis.

The Risks and Benefits of Cannabis

How any drug affects your brain is determined by many factors. ***Your age at the time of exposure is one of the most important.*** Other factors include the integrity of the blood-brain barrier and the maturity and efficiency of the liver and kidneys. These factors vary with normal aging.

No drug is always beneficial or always harmful. Cannabis is an excellent example of this.

Cannabis is the most widely used (previously) illicit substance. However, it is not the most harmful substance consumed by humans. The degree of danger of many substances depends upon how they interact with the brain. It is not possible to kill yourself with cannabis (unless purchased via the black market** which is now more prevalent due to dispensaries) in the way that it is possible to die from consuming too much alcohol. The reason is the distribution of receptors in the brain that respond to either alcohol or cannabis.

How do the risks and benefits of cannabis change during normal aging?

Prenatal cannabis:

It is still commonly used among pregnant women. A large longitudinal study tried to assess the consequences of cannabis use. They examined prenatal cannabis exposure prior to and after maternal knowledge of pregnancy. **Prenatal cannabis exposure was associated with increased incidence of psychopathology in the offspring, including attention deficits, thought disorders, social problems, and sleep disruptions ; these associations sometimes lasted into middle childhood.** Exposure after the mother had knowledge of pregnancy was associated with lower birth weight . The implications are clear: the prenatal brain is very vulnerable to the presence of cannabis.

Cannabis during adolescence:

Overall, the available evidence indicates that **the adolescent brain is still vulnerable to cannabinoids.** Essentially, cannabis alters the normal trajectory of brain maturation, although the consequences seem to be less severe than those of prenatal exposure. The combined evidence from numerous human and animal studies suggests that exposure to cannabis during adolescence has the potential to produce subtle, but lasting, alterations in brain function and behavior. The severity differs according to duration of use, age at first use and underlying genetic vulnerabilities that are more likely to appear during adolescence.

Cannabis in middle to old age:

Cannabis use is becoming more common in older people. The majority of users in this group, primarily between 50 and 60 years old, report their most common reason for turning to cannabis is for pain reduction due to illness or injury. Most patients report that although cannabis is not more effective, it has fewer unpleasant side effects than over-the-counter or prescription pain medications.

A recent study assessed the relationship between long-term medical cannabis use and cognitive function in a sample of middle-aged and older patients with chronic pain. Their results suggest that use of whole-plant medical cannabis does not have a negative impact on cognition in older patients.

Why do the effects of cannabis change with age?

The answer to this question remains unknown, but there is one fascinating potential mechanism that involves what is happening to the stem cells in your brain.

Early in life, the developing brain cannot tolerate manipulation of the cannabis receptors on its stem cells. If stem cells are exposed to cannabis, normal development of the brain is impaired and the consequences may last into adulthood. In contrast, later in life, cannabis may stimulate stem cell activity and protect the brain from inflammation.

Is Marijuana Addictive?

Marijuana can lead to the development of problematic use, also known as a marijuana use disorder. This can take the form of addiction in severe cases.

Recent data suggest that 30% of those who use marijuana may have some degree of marijuana use disorder. People who begin using marijuana before the age of 18 are four to seven times more likely to develop a marijuana use disorder than adults.

Marijuana use disorders are often associated with *dependence*—in which a person feels withdrawal symptoms when *not* taking the drug. Marijuana dependence occurs when the brain adapts to large amounts of the drug by reducing production of and sensitivity to its own endocannabinoid neurotransmitters.

Marijuana use disorder becomes addiction when the person cannot stop using the drug even though it interferes with many aspects of his or her life.

The major concern we have on a daily basis in our clinic is treating addiction. This is compounded by the fact that cannabis (marijuana) is legalized and it's availability through dispensaries has created a risk to all ages who use the substance but especially the adolescent population.

What we see at our clinic is that the availability has increased both in the legal marketplace as well as in the **“black market”. In the legal marketplace cannabis is readily available but because the prices for various quantities are high (due to sales tax etc.) it has increased the desire for individuals to purchase their doses from the “black market” at a reduced price.

This has created a higher risk situation for individuals purchasing ‘black market’ cannabis because the products are unregulated and frequently toxic adulterants are added to the product creating more hospitalizations and death.

We have several patients who have purchased marijuana from “black market” dealers laced with “Fentanyl”, an extremely powerful opiate, resulting in **accidental overdose deaths**. This phenomenon concerning adulterated “street drugs” is not new. I have seen it over decades throughout my career. What seems to be different now however, is that due to legalization, and more availability, the risks are higher for innocent victims who may not have any substance use disorder.

As has been the case for decades, better access to treatment, better supervision of our young people, more oversight of potential dangers concerning marijuana use, and de-stigmatizing both mental health problems and addiction are all necessary to improve our communities' vulnerability.

Thank you for your time and consideration,

Matt Green, Clinical Director, Sameem Associates, Inc.