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Cannabis: Things You Should Know

With the increased legalization and social acceptance of cannabis for both therapeutic and recreational purposes comes a flurry of ideas, opinions, and statements on the benefits of this plant.

However, with increased research the neuroscience is becoming increasingly clear that THC, one of two psychoactive elements of cannabis, is not simply a benign substance. And in the childhood, adolescent, and young adult developing brain, exposure to THC can have significant negative effects.

So before you use, or perhaps better while you are using, consider the following facts now established in the scientific literature:

1. ***Cannabidiol or CBD*** (one of two active ingredients in cannabis) ***in 4 FDA-approved formulations has been found effective in treating:***
 - Specific forms of epilepsy, including Dravet or Lennox-Gastaut Syndrome
 - In cancer and other seriously-ill patients, it has been effective to relieve nausea, vomiting, and to increase appetite. However, with these benefits come potential side effects of liver toxicity, possible neurotoxicity, and memory deficits

2. ***Delta-9 Tetrahydrocannabinol or THC*** (one of two active ingredients in cannabis) ***is not medicine, and it is not harmless—particularly for the developing brain (ages birth to 27 years).***
 - Significant risks include the following:
 - ✓ Psychosis
 - ✓ Reduced cognitive function
 - ✓ Depression and anxiety
 - ✓ Cannabis Hyperemesis Syndrome
 - ✓ Cardiovascular disease
 - 20-25% of users will develop Cannabis Use Disorder characterized by
 - ✓ Irritability and anger
 - ✓ Anxiety
 - ✓ Sleep difficulties
 - ✓ Digestive/GI difficulties
 - ✓ Cravings

3. ***In frequently-using adolescents, researchers have found that central nervous system alterations are many.***
 - Neural changes include the following:
 - ✓ “Down regulation” or reduction in the brains natural Cannabinoid receptors (CB1), which help us sort the important from the unimportant. When CB1 is over-active, ***everything*** is important. When CB1 is under-active, ***nothing*** is important. The “rebound effect” from heavy use includes loss of sense of priority, importance, and value, e.g. “What difference does it make if I go to school/work or not?”
 - ✓ Decreases in tissue volume in subcortical areas

- ✓ Changes in upper cortex thickness
- ✓ Altered neurodevelopment in brain regions important for cognitive control
- ✓ Disrupted executive functioning (prioritizing, problem-solving, critical thinking)
- ✓ Decreases in IQ or global cognitive skills and learning potential
- Functional changes include the following:
 - ✓ Reduced sensitivity to pleasure
 - ✓ Enhanced heroin and/or alcohol use as adults (all drugs are “gateway drugs”)
 - ✓ Impulsivity
 - ✓ Depression
 - ✓ Decreased probability of high school graduation
 - ✓ Increased risk of psychosis
 - ✓ Increased risk of suicide (x7 more likely)

4. *Consider this quote* (taken from Cannabis use in adolescents, narrative review and positive paper of the task force of the Austrian Society for Child and Adolescent Psychiatry, 2022, published in *Psychosomatics and Psychotherapy*, doi:10.1007/s40211-022-00424-1).

“While **occasional** recreational use of cannabis in **adults with completed brain maturation** and **no risk profile** for mental disorders is likely to be relatively harmless, early initiation of use with regular use and the increasingly available, highly potent cannabis varieties can lead to explicit and sometimes irreversible neurocognitive brain dysfunction.” (emphasis mine)

5. *Finally, a sad but interesting story.*

This story is an actual client, with some details altered to preserve confidentiality.

When Sarah first came to see me, I was immediately impressed with her engaging, charismatic personality as well as with her high IQ. Given her interest in studying psychology at the doctoral level, we seemed to have an immediate connection and a desire to work together on some symptoms she initially connected with military-related combat trauma and diagnosis of PTSD.

Sarah had served honorably in the U.S. Navy, had risen up the ranks quickly compared to her cohort, and achieved a position of authority and responsibility as a Captain. That advancement, however, had come at a very high price, as Sarah had been forced to compromise herself sexually under pressure from senior officers along her career path. She had also participated in combat in the Middle East as a FA/18 Super Hornet pilot. Combined with very abusive family of origin experiences, Sarah’s survival abilities and resiliency were amazing. But her symptoms of PTSD were text book and the diagnosis was indisputable. Since retiring from the USN she had increasingly been treating her symptoms of anxiety, over-reactivity, agitation, and intrusive thoughts by using cannabis. Initially I shrugged my shoulders: Which of my traumatized clients was NOT using cannabis in some form? It seemed that even if she was smoking frequently it was the least of her mental health difficulties.

Over time, Sarah disclosed some other aspects of her history, and information began to emerge that didn’t quite fit with PTSD alone. I found out that she had been psychiatrically

hospitalized on several occasions, usually with delusions and bizarre behavior that she had difficulties remembering or relating specifically. A meeting with her husband to gain some collateral information revealed that he had witnessed odd thinking, disorientation, and grandiosity as well as speech that seemed both random and rambling. Her behavior was strange enough to have frightened her children. He further disclosed that Sarah had been diagnosed with Schizoaffective Disorder, a nasty one-two combination of a cognitive disorder and a mood disorder that was in the Schizophrenia family. I had to re-think.

As we worked together to discover how to help, Sarah eventually revealed that she was using cannabis all day every day. She had experimented with various strains, including both Indica and Sativa, and was finding that Sativa in particular seemed to cause the most psychotic symptoms. Nevertheless, she believed that she could avoid hallucinations and delusions if she limited herself to Indica and stayed away from Sativa.

Her husband disagreed. Along with her psychiatrist, he believed that for whatever reason Sarah's brain was having increasing difficulties tolerating any strain of marijuana, and firmly believed that she needed to remain abstinent from all of it, if not for herself, then for the sake of her family, which was struggling mightily with the routine of in-and-out of the psychiatric hospital. Sarah, however, was convinced of the "benefits" of cannabis for managing anxiety. Because she was unwilling to try abstaining, eventually her husband took their two children and left.

Questions

1. In what ways has cannabis use helped me? Hurt me?

2. There's an old saying: "You don't get something for nothing." Another version: "There's no free lunch." Can you think of any ways in which the cost of your cannabis use versus the benefit you receive has become too high?