



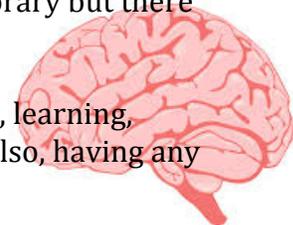
FACTS ABOUT CANNABIS

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THE BRAIN has about 86 billion neurons and close to 100 trillion connections. Neurons help brain cells talk to other brain cells through chemical messengers called neurotransmitters (such as dopamine, serotonin, glutamate, and compounds called endocannabinoids). These chemicals move across synapses. This brain communication sends messages to your body that make the body function.

The pre-frontal cortex of the brain conducts planning, thinking, coordinating, impulse control, wisdom and judgment. The pre-frontal cortex is not fully developed (wired) until about the age of 24 or 25. The hippocampus is a part of the brain that controls working memory. It has many cannabinoid receptors and is weakened during marijuana use. It is believed that memory problems from use of cannabis (marijuana) are temporary but there is evidence that chronic use can result in longer-term memory loss.

Along with memory, other impacts of cannabis on the brain include pleasure, learning, sensation, sense of time and space, coordination, movement, and appetite. Also, having any kind of smoke in the lungs is unhealthy and can be carcinogenic.



History: Prior to 1937 marijuana was sometimes prescribed as a medication. The Federal Government made marijuana illegal in 1937. As of 2015 it is still classified as a Schedule I drug. Schedule I drugs are deemed to have no medical benefit. As medical benefits of marijuana are increasingly studied this classification may change.

The potency of marijuana (percent of THC) has increased over time. The average potency in 1972 was about 1% and by 2013 about 13% with some strains as high as 35%.

THC = Tetrahydrocannabinol is one active ingredient in cannabis. The half-life of THC is about 30 days. THC is fat-soluble and stores in fatty areas of the body such as the brain, lungs, testes and ovaries. THC impacts several systems in the body and has a wide range of effects. THC creates the 'high' that people seek. Effects vary from person to person, with results usually lasting from two to four hours. For some people THC increases anxiety while for others the euphoria reduces anxiety. THC reduces inhibitory control, disruption in memory, and slower cognitive function.

For those with a predisposition for mental illness cannabis causes higher rates of mental illnesses such as schizophrenia particularly for those who begin use early. Cannabis use affects sperm and egg morphology and those planning pregnancy should not use cannabis in the months prior to conception.

“Munchies” is a common effect of marijuana use because THC affects the hippocampus, which regulates appetite. Some studies suggest that THC makes food taste better. A distorted sense of time while high is due to altered blood flow to the cerebellum.

ADDICTION? Marijuana is less addicting than many substances. About 10% to 15% of marijuana smokers become physically addicted. Apart from low levels of physical addiction there is evidence of psychological and social addiction. The earlier the use begins the higher the chance for addiction. Fatal overdose is virtually non-existent with marijuana.

Cannabis use causes the brain to stop producing natural cannabinoids. After discontinuing use it takes awhile for the brain to begin natural production. During this ‘down’ time a user is very vulnerable to use again to feel better.

Changes in an individual persons brain function, such as receptivity or cravings for chemicals, may be passed on to future children and generations.

KIDS & TEENS: Use prior to age 16 has greater impact than for those who begin smoking later. Early use has many affects on learning and cognition. Preliminary studies show that with the developing brain there are lower IQ’s later in life, slower at tasks, and higher risks of stroke. Negative impacts such as reduced coordination and reaction time are usually greater on new users than for later users. Use prior to the age of 25 when the pre-frontal cortex is developing appears to have more negative effects than use after the age of 25.

MEDICAL MARIJUANA



CBD = Cannabidiol is another active ingredient in cannabis. CBD is thought to have many medical applications including reducing nausea and seizures. New strains of marijuana have been created that are low in THC and high in CBD. CBD can decrease anxiety. Charlotte's Web is a strain of marijuana specifically for the use of seizures in small children and it contains larger amounts of CBD and very small amounts of THC.

There has not yet been enough thorough research to fully determine positive effects. Early research suggests that cannabis may help with nausea, seizures, Crohn’s disease, PTSD, cancer, epilepsy, multiple sclerosis, glaucoma, and chronic pain. Further research is needed to fully measure any benefits but in the U.S. there is not a lot of research being done on positive effects. More research on medical uses is being done in Israel and Europe than in the U.S. However, the U.S. government is now beginning a ten-year study tracking thousands of teens for potential harmful effects on the developing brain.

Sources: National Institute of Health, various university research studies.