

## **MARIJUANA EFFECTS ON ADOLESCENTS**

Marijuana, comes from the hemp plant *Cannabis Sativa*. Most people smoke the plant's dried leaves, flowers, stems, and seeds. But, marijuana (MJ) also can be mixed into food or brewed as a tea. The rate of addiction to MJ has risen significantly during the past two decades according to recent government studies. As many as 30% of today's teenagers are smoking MJ. Six percent of high school seniors say they use pot every day, which is triple the rate over the past decade. And, the MJ they smoke is much more potent than it was in the 1970s, with far higher levels of THC (tetrahydrocannabinol), the main mind-altering ingredient.

In the 1970s, the average MJ cigarette contained about 10 mg of THC; today a comparable cigarette contains 60-150 mg THC. Moreover, now even more potent forms of cannabis are available, "hashish", a dried resin, and "hash oil", a liquid extract; these potencies are highly variable since there is no regulation of the products by the FDA. The use of "Vape Pens", made specifically for hash oil use or adapted from e-cigarettes, results in inhalation of potentially very high concentrations of THC – the so-called "crack cocaine of MJ". In addition, the proliferation of marijuana edibles laced with extremely variable doses of MJ and not clearly labeled sets the stage for not only adolescent and adult intoxication but poisoning in young children.

We often hear that MJ isn't a dangerous drug. In reality, regular use of MJ in adolescents and young adults, currently the largest use age group, can cause acute and long-term problems. Studies show that when MJ users are intoxicated, their working memory is impaired, and they are more impulsive, less attentive, less motivated and slower to make decisions. The primary area of the brain that is harmed is the hippocampus, which is important for learning and memory. Research shows that regular MJ use before the age of 17 may lead to impairments in verbal intelligence even long after the drug is stopped. Verbal intelligence measures the ability to analyze information and solve problems using language. Additionally, MJ use in this age group has resulted in decreased high school and college enrollment and graduation and serious problems two to three decades later, such as decrease in IQ, increase in depression and incidence of developing schizophrenia, and increased likelihood of addiction. This long-term damage appears to be related to the fact that the brain is still developing until about age 25 and is therefore more sensitive to damage from drugs such as MJ and nicotine. A recent study shows that even causal MJ use in the young can cause discernible brain imaging abnormalities.

The active ingredients of MJ, cannabinoids, affect the brain's pleasure centers causing relaxation followed by excitation, but because these active drugs are fat-soluble (get into body fat), the relaxation extends for a prolonged time. When subsequent excitation (acting hyperactively) occurs, the teen does not relate it to using the drug. The same site that cannabinoids act on is the site that organizes the brain cells to coordinate with each other and with the body.

### **SUMMARY OF PROBLEMS RELATED TO ADOLESCENT MARIJUANA USE**

- 1) Early MJ users have less white matter in their brains and the total size of the brain is smaller. White matter affects how information is acquired and processed.

- 2) There are fewer connections from one brain cell to another resulting in slow thinking.
- 3) Early use may be associated with schizophrenia and other psychotic and anxiety disorders in later life.
- 4) Heavy and/or prolonged use leads to lower IQ's and serious memory disorders.

## **SIGNS OF USING MARIJUANA**

- Rapid heart rate
- Increased blood pressure
- Increased rate of breathing
- Red eyes
- Increased appetite
- Slower reaction time

These effects are reduced three or four hours after stopping drug use. However, MJ remains in the system for as long as a month after smoking. Thus, an individual may be impaired for several days to weeks after the high wears off.

## **PSYCHOLOGICAL EFFECTS OF MARIJUANA**

According to the National Institute on Drug Abuse, the main effects of MJ on mood vary and may include: euphoria - calmness - anxiety - paranoia

Other short-term psychological effects include: distorted sense of time - magical or "random" thinking - short-term memory loss - depression

When high doses of marijuana are used, usually when eaten in food or "vaped", users can experience: hallucinations - delusions - disorientation - psychosis

## **MARIJUANA USE IS A RISK FACTOR FOR THE FOLLOWING:**

- Poor school performance and dropout
- Risky sexual behavior resulting in disease transmission and/or teen pregnancy
- Aggression
- Psychosis
- Accidents causing death. Teens drive poorly even when not intoxicated. MJ stays in the urine for up to 3 weeks. If your teen has an accident and has MJ in the urine, he/she may be convicted of driving while intoxicated.

## **RESOURCES TO CONTACT & ADDITIONAL INFORMATION**

- Colorado Department of Education  
([www.cde.state.co.us/DropoutPrevention/Resources.htm](http://www.cde.state.co.us/DropoutPrevention/Resources.htm))
- WebMD - Substance Abuse and Addiction Health Center  
(<http://www.webmd.com/mental-health/marijuana-use-and-its-effects>)
- The Health Effects of Marijuana  
(<http://alcoholism.about.com/od/pot/a/effects-Lya.htm>)
- National Institute on Drug Abuse ([www.drugabuse.gov](http://www.drugabuse.gov))
- American Academy of Child & Adolescent Psychiatry – Facts For Families: Marijuana and Teens  
([http://www.aacap.org/cs/root/facts\\_for\\_families/marijuana\\_and\\_teens](http://www.aacap.org/cs/root/facts_for_families/marijuana_and_teens))