4

Marijuana Use Prevention

Adverse Health Effects of Marijuana Use

Background

There are a variety of adverse health effects that can result from marijuana use among college-age students, including risk of addiction, effects on brain development and function, risk of motor vehicle accidents, and difficulty with tobacco cessation.

A challenge of identifying marijuana-specific adverse health effects is the fact that it is often used in combination with other drugs including alcohol, tobacco and cocaine.

This document is part of a series designed to support Minnesota's Partnership For Success grantees working on marijuana use prevention on college campuses. More resources from this series can be found in the Toolbox at SUMN.org

Marijuana Effects

How a young person experiences the effects of marijuana depends on a number of factors, including their previous experience, attitude toward use, and mood during use; the potency, dose and administration of the marijuana used; and the social setting in which it is used.[1]

Adverse Health Effects

Increased risk of addiction and use of other substances

- Nine percent of those who experiment with marijuana will become addicted.[2]
- Compared to individuals who begin marijuana use as adults, those who begin in adolescence are two to four times more likely to have symptoms of cannabis dependence within two years of first use.[3]
- Marijuana use is associated with use of alcohol, tobacco and other illicit drugs.[1,4]
- Marijuana addiction has been linked to withdrawal symptoms such as irritability, mood and sleep difficulties, decreased appetite, restlessness, and other forms of physical discomfort. These symptoms can last up to two weeks after stopping use, making cessation difficult.[5]

Developed for the Minnesota Department of Human Services (DHS), Alcohol and Drug Abuse Division (ADAD) by EpiMachine, LLC. Funding provided by the Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Prevention through ADAD. Last revised June 2015.

4

Adverse Health Effects, *continued*

Academic performance

- Studies have shown an association between marijuana use and poor educational outcomes[4] (including poor grades and dropping out of school) during adolescence, particularly during the transition into adulthood; however, the causal relationship is unclear.[6] Additional pre-existing risk factors (e.g., peer influence) likely also play a role in educational outcomes.[6]

Increased risk of cancer, respiratory and cardiac disorders

- The extent to which marijuana use leads to lung cancer is unclear; however, there is limited evidence that links it to increased risk for an aggressive form of testicular cancer.[2]
- Marijuana smoking is associated with increased inflammation of the large airways, lung hyperinflation, chronic bronchitis, and respiratory infections and pneumonia, as compared to nonsmokers.[7,8] One study showed impaired immunological competence of the respiratory system in marijuana-only users, increasing their need for health services to treat respiratory infections.[1]
- Marijuana has been associated with vascular conditions that increase the risk of myocardial infraction, stroke and transient ischemic attacks during marijuana intoxication.[9]

Impaired cognitive function

- Adults who smoke marijuana regularly during adolescence have impaired neural connectivity that affects specific regions of the brain responsible for alertness, self-conscious awareness, learning and memory, executive function, habits and routines.[2,10,11]
- Frequent marijuana use in adolescence or young adulthood is associated with declines in IQ.[12]
- Imaging studies have shown chronic marijuana use may affect the structure and function of the brain in youth and adults who use.[13]

Increased risk of motor vehicle accidents/impaired driving

- Studies in laboratories and driving simulations have shown impairment in reaction time, information processing, perceptual-motor coordination, motor performance and tracking behavior after marijuana use.[1,14]
- One meta-analysis showed the risk of involvement in an accident increases by a factor of two when a person drives soon after using marijuana.[15]

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4

Adverse Health Effects, *continued*

Poor mental health

- While associations between marijuana use and other mental health problems including depression and personality disturbances exist, the causal relationship is unclear.[5]
- Studies have shown marijuana can produce anxiety, panic reactions and temporary psychotic symptoms in some users.[1,5]
- Some longitudinal studies have shown a link between marijuana use and later development of psychosis. Other factors that influenced this outcome include amount of drug use, drug potency and age of first use.[5]

Read the National Institute on Drug Abuse (NIH)'s research report on marijuana

Citations

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