

TerranearPMC Safety Share

Week of January 13, 2014 – Recreational Marijuana

On January 1, 2014, Colorado officially became the first state in the nation to finalize and adopt the rules for recreational marijuana sales. As of last month (December, 2013) there were 20 states, including the District of Columbia, that have laws allowing at least limited use of marijuana. With the advent of Colorado's new ruling, other states may not be far behind to legalize marijuana use for recreational purposes; especially if the new law shows significant benefits from an increased sales tax to support programs such as improved schools. Washington State has also voted to legalize recreational marijuana use (but so far has not publicized an effective date). Should this happen, it seems that the US will be on its way with adjusting its attitude towards marijuana and possibly other drugs for recreational use.

According to studies conducted in 2011, marijuana is the third most popular recreational drug in America behind only alcohol and tobacco, and is estimated that nearly 80 million Americans have used it on at least one occasion. Currently, some 20 million Americans have smoked marijuana in the past year, and more than 11 million do so regularly despite harsh laws against its use. While many people believe that marijuana is a gateway drug with extremely harmful side effects, the opposing view believes that this is a misconception, citing research over the past 50 years which indicates no harmful side effects, nor possibilities of health problems or death related incidents from recreational or medicinal marijuana use (however introducing any type of smoke into our fragile respiratory system cannot be healthy).

While marijuana use is most widely known as a recreational drug, its use for medicinal purposes has been used as far back as the 1970's where scientists first confirmed that the use of marijuana could be beneficial to patients who suffered from high blood pressure, depression and glaucoma. Today, many members of the medical community have recognized its ability to treat anorexia in appetite loss associated with AIDS and cancer chemotherapy induced nausea.

The active ingredient in marijuana is Tetrahydrocannabinol or simply, THC. First isolated in 1964, in its pure form, by Israeli scientists at the Hebrew University of Jerusalem, it is a glassy solid when cold, and becomes viscous and sticky if warmed. THC has a very low solubility in water, but good solubility in most organic solvents, specifically lipids and alcohols.

The pharmacological actions of THC focus on its effects mainly in the central nervous system and the immune system. The psychoactive effects of THC are primarily mediated its activation to bind, non-specifically, to a variety of receptors in the brain and body. Because THC does cause considerable chemical reactions within the central nervous system (CNS - brain and spinal cord) mental and physical sensations are prevalent effects. This is why, similar to alcohol, many people have developed a certain favorable opinion of its use.

Regardless of whether marijuana is legal for medicinal purposes or for recreational use, just like alcohol, coming to work impaired is still a violation of OSHA and corporate S&H policies. It is for the very reason that many people imbibe in such recreational activities (i.e. physical and mental sensations) that its use in the workplace remains prohibited. Specifically, one's sense of judgment through chemical alterations associated with the CNS is altered. Based on



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numerous studies performed on test subjects, the most dominant signs of marijuana impairment have been documented to be delayed decision-making, erratic cognitive function, diminished concentration, distortions in time, visual distance tracking, impaired memory, paranoia and drowsiness - Not appropriate qualities while operating heavy equipment or to perform scientific calculations or to even communicate specific information to coworkers!

THC enters the body's bloodstream rapidly after smoking marijuana. If marijuana is ingested, rather than smoked, it takes longer to be absorbed into the blood, usually from 20 minutes to an hour and a half. THC is detectable in the blood for a short time, usually a few hours, because it is rapidly metabolized into molecules known as metabolites. At least 80 different metabolites are formed from THC. These metabolites are stored in body fat (THC is lipid soluble) and are gradually eliminated from the body through feces and urine.

Because marijuana stays in the bloodstream for a short time, blood tests for marijuana are usually not used, except in the case of automobile accidents and some roadside sobriety check points. Blood or saliva tests can show a current intoxication, but, unlike blood alcohol concentration tests, they do not indicate a level of intoxication or impairment. On the other hand, urine tests for marijuana metabolites can only show recent use and not intoxication or impairment, because of the time required between smoking and the metabolites being eliminated in the urine. However, because many employers have a zero tolerance for drug use, most workplaces use urine tests for any recent use of drugs.

Some THC metabolites have an elimination half-life of 20 hours. However, some are stored in body fat and have a elimination half-life of 10 to 13 days. Most researchers agree that urine tests for marijuana can detect the presence of the drug in the body for up to 13 days. However, there is anecdotal evidence that the length of time that marijuana remains in the body is affected by how often the person smokes, how much he/she smokes and how long he/she has been smoking. Regular smokers have reported positive drug test results after 45 days while last use and heavy smokers have reported positive tests 90 days after quitting.

Although false positives are common for other substances, they are rare for marijuana due to the sophistication of today's tests. The laboratory first screens the sample with an immunoassay test, known as the EMIT or RIA. If positive results are returned, the sample is again screened with a gas chromatograph mass spectrometer (GCMS), which is much more accurate. That's why false positives are rare.

While today, there are no known substances that would cause a marijuana urine test to return a false positive, in the past, ibuprofen (sold over-the-counter as Advil, Motrin, Nuprin, etc.), would cause false marijuana positives. But today's tests have been adjusted to eliminate that problem.

**It takes less time to do things right than to explain why you did it
wrong** Henry Wadsworth Longfellow

