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INFORMATION FOR PROFESSIONALS

Cannabis (Marijuana)

Introduction

Cannabis is the general term used to describe marijuana, hashish, and hashish oil. Each of these substances is derived from the hemp plant, Cannabis sativa, which grows in almost any climate. Marijuana, hashish, and hashish oil all contain THC (delta-9-tetrahydrocannabinol), which is the major psychoactive chemical in cannabis products. The chemical components of cannabis are referred to as cannabinoids.

Cannabis does not fit into the usual classification of drug groups. It generally has depressant effects, yet it increases the user's heart rate like a stimulant. It can also produce hallucinations in large doses, but this is not a usual effect.

Although cannabinoids have potential therapeutic uses (analgesia, anti-nausea, muscle relaxation, decreased intraocular pressure for glaucoma), to date there are no clear advantages in using cannabinoids instead of conventional treatments. However, a cellular receptor that mediates the effects of cannabinoids has been identified, with two subtypes (CB1 and CB2). It is possible that agents could be developed with more selective activation of either the CB1 or CB2 receptors, and that these selective cannabinoids could be used in the treatment of diseases like multiple sclerosis.

Cannabis products are the most widely used illegal drugs. They deserve attention because they can seriously impair users' health and functioning in some situations.

Cannabis preparations

Marijuana ("pot," "grass," "weed," "ganja," "MJ")

Marijuana is the chopped-up flowering tops and leaves (usually including seeds and stems) of the cannabis plant. It ranges in colour from grey-green to greenish-brown, and in texture from a fine powder to a coarse substance resembling tea. Hydroponic marijuana is obtained from plants that have been grown in nutrient-enriched water, rather than in soil.

Marijuana is the weakest form of cannabis, and generally contains about one to five per cent THC. However, the sinsemilla growing technique can yield marijuana containing seven to 15 per cent THC, and rare samples containing more than 20 per cent THC have been reported. Marijuana is usually smoked in hand-rolled cigarettes (joints or reefers), in cigars (blunts), or in pipes.

For more information, contact your local AADAC office, or call **1-866-33AADAC**, or visit our website at **www.aadac.com**.

AADAC Alberta Alcohol and Drug Abuse Commission
An Agency of the Government of Alberta

 ISBN 0-7785-0096-9

Hashish ("hash")

Hashish is the dried sticky resin of the cannabis plant. It comes in solid pieces ranging in colour from light brown to black, and in texture from dry and hard to soft and crumbly.

Hashish sold in North America generally contains two to 20 per cent THC. It is usually smoked in a pipe, water pipe (bong) or cigarette with tobacco or marijuana.

Hash oil ("oil," "honey oil")

Obtained by purifying hashish with a solvent, hash oil is a thick greenish-black or reddish-brown oil. The THC concentration is generally 10 to 20 per cent, but can be more than 60 per cent. Hash oil is usually dropped onto a tobacco cigarette or rubbed into tobacco and smoked.

Cannabis products can also be eaten, usually when cooked into food such as brownies or cookies. Eating cannabis products is less efficient than smoking them because there is incomplete absorption from the intestine.

Drug effects

The effect of any drug depends on the amount, how it is taken, what the user expects, previous exposure of the body to this and other drugs, the setting or location, the user's mental state and other drugs being used. A user can experience the effects of cannabis even in doses of THC as low as two to three milligrams. For an occasional user, a brief, pleasurable "high" can result. A regular heavy user, on the other hand, may smoke five or more 500 mg joints (each containing five mg or more of THC) per day. The effects of smoking are felt within a few minutes, take about one hour to develop fully, and last two to four hours. However, performance of complex tasks may be impaired for as long as 24 hours. When cannabis is eaten, the effects appear more gradually, last longer and are more difficult for the user to control than when it is smoked.

In general, there is no meaningful correlation between blood THC concentrations and impairment. Cannabinoids are distributed into body fat; therefore, low levels of cannabinoids can be excreted into the bloodstream and ultimately into the urine for several days after even a single dose.

Effects of short-term use

The most common effect of cannabis use is the "high," a sensation similar to mild alcohol intoxication. The user experiencing a high feels calm, relaxed and talkative, and sensory perception seems enhanced. Colours may appear brighter and sound may seem more distinct. The user may misjudge the passage of time so that minutes seem like hours. Appetite often increases, especially for sweets.

The physical effects of cannabis use include rapid heartbeat, red eyes, and dry mouth and throat. The increased heart rate and effects on blood pressure can be dangerous in people who are older, or who have heart disease or high blood pressure.

Cannabis use impairs perception, judgment, balance, motor co-ordination and reaction times. It makes driving or operating machinery particularly dangerous. Recent driving tests have found that definite, dose-related impairment occurs with marijuana use, presumably because of impairment in attentional processes (tracking behaviour) and perceptual abilities. However, the impairment of driving behaviour by cannabis is less than predicted from laboratory testing. Drivers are aware of perceived impairment, and compensate by slowing down and driving more cautiously. Thus, drivers using cannabis tend to underestimate their driving ability. This contrasts with drivers using alcohol, who tend to overestimate their driving performance due to alcohol-induced impairment of judgment. It is important to acknowledge that such compensation is not possible when driving events are unexpected, or when continuous attention is required. There is no clear evidence that cannabis use plays a role in causing car accidents because, once again in contrast with alcohol, there is little correlation between the blood THC concentration and the degree of impairment. In addition, many marijuana users drink alcohol at the same time, making it difficult to establish a specific link between cannabis use and road accidents. Driving under the combined influence of cannabis and alcohol is particularly risky, because both drugs affect motor co-ordination. The effects of the two drugs

are additive (the combined effect is no greater than the sum of their separately measured individual effects).

Memory, attention span and learning are impaired while the user is intoxicated. The more cannabis is used, the longer these effects may last. Cannabis use during the school years can cause significant problems for students.

Some cannabis users withdraw from others, or experience fearfulness and anxiety. Panic, terror or paranoia may occur at high doses. Very large doses can produce effects similar to those of LSD and other hallucinogens. A toxic psychosis with hallucinations, paranoid delusions, disorientation and severe agitation can also occur. People with psychiatric illness tend to be more prone to such reactions.

Effects of long-term use

Smoking cannabis damages the lungs and contributes to respiratory problems like chronic coughing and lung infections. The levels of tar, carbon monoxide, hydrogen cyanide and nitrosamines in cannabis are similar to those in tobacco. Heavy marijuana smokers have lung damage similar to the kind that precedes the development of lung cancer in tobacco smokers. There are also reports suggesting that people who smoke both marijuana and tobacco may develop lung, neck and head cancers at an earlier age than those who smoke only tobacco.

Heavy marijuana use can lead to anxiety, personality disturbances and depression. It may bring out schizophrenia in people vulnerable to it, and may cause relapses in those who have schizophrenia.

Long-term users are less able to focus attention and filter out irrelevant information. These problems are subtle, but may last for years after use has stopped.

Long-term cannabis use is sometimes associated with lack of ambition and motivation, and reduced communication and social skills. Apathetic individuals may be attracted to cannabis use, and chronic intoxication can reinforce these tendencies.

People who use drugs to avoid dealing with difficulties generally make their problems worse. When young people frequently use mood-altering substances, they often fail to learn many of the normal lessons of maturing. They may not learn how to handle their own emotions, how to take on responsibilities, and how to make thoughtful and considered decisions. The substance becomes an emotional crutch, even if it is not physically addicting.

Pregnancy and breastfeeding

Women who use cannabis regularly during pregnancy have increased risk for premature delivery and low-birth-weight infants. Children exposed to cannabis prenatally may have mild withdrawal symptoms at birth, and subtle behaviour and learning problems as they get older. Women who are breastfeeding should avoid using cannabis, as concentrated THC is passed on to the baby through breast milk.

Tolerance, dependence and withdrawal

Regular heavy users of cannabis develop tolerance (that is, a need for more drug to produce the same effect). Heavy, long-term use of cannabis can cause dependence. The user experiences cravings for the mood-altering effects of the drug, and withdrawal occurs if drug use is abruptly stopped. Symptoms, which usually last less than a week, include troubled sleep, irritability, sweating, anxiety, upset stomach and loss of appetite. Withdrawal may increase drug-seeking behaviour and contribute to continued drug use.

Although not as severe, the tolerance and dependence caused by heavy cannabis use are similar to those caused by heavy alcohol use. Heavy users often require considerable support, and possibly admission to a detoxification centre, to overcome their dependence on cannabis.

Who uses cannabis?

The use of cannabis in Canada is not restricted to any particular geographical region or part of society. Cannabis users are found in all age groups and at all education and income levels.

A 2002 survey of Alberta students (grades seven to twelve) found that 28 per cent had used marijuana at least once in the 12 months before the study; seven per cent had used it frequently (once or more per day).

According to a 1998 study, twenty-nine per cent of Canadian university students had used cannabis in the previous year.

In Canada's Alcohol and Other Drugs Survey (conducted in 1994), 7.4 per cent of Canadians and 8.4 per cent of Albertans aged 15 or over reported using marijuana in the preceding year. More Canadian men (10 per cent) than women (4.9 per cent) reported using it.

Among AADAC clients receiving treatment services in 2003/2004, 19 per cent of adults (18 years and older) and 28 per cent of adolescents (less than 18 years old) reported cannabis as their drug of concern in the previous year.

Cannabis and the law

Cannabinoids can be detected in urine tests of casual users for one to seven days after use, and in chronic users for one to four weeks.

Under Canada's Controlled Drugs and Substances Act, the maximum penalty for first-time possession of cannabis (less than 30 grams of marijuana or one gram of hashish) is a $1,000 fine and/or six months in prison, and a permanent court record. For larger amounts or a second offence, the maximum penalties are $2,000 and/or 12 months in prison, and a permanent criminal record. Trafficking, producing, importing or exporting cannabis can result in life imprisonment.

Criminal records, including discharges, can affect job prospects in a number of professions, including government jobs requiring security checks, and positions for licensed workers such as security guards, real estate agents and veterinarians.

Statistics Canada has reported that cannabis offences accounted for three quarters of drug-related incidents in 2002, of which the majority (72%) were possession offences. This cannabis offence rate has risen approximately 80% from 1992 to 2002.

In February 2004, the federal government tabled Bill C-10 in the House of Commons. This bill would amend the Contraventions Act and the Controlled Drugs and Substances Act, decriminalizing the possession of cannabis (15 grams or less), increasing fines for repeat offenders, and imposing harsher jail sentences for illicit growers. Decriminalization does not mean the removal of criminal sanctions. Cannabis would remain an illegal drug. The bill died on the Order Paper when Parliament was adjourned in May 2004.

ADDITIONAL READING:

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