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Marijuana

The present generation of young people cannot remember when marijuana was an exotic weed with an aura of mythical power and mysterious danger. Although still illegal, it has become a commonplace part of the American social scene, used regularly by millions and occasionally by millions more. A realistic view of this drug is now both more important and easier to achieve.

The use of marijuana reached a high point in the late 1970s and early 1980s, and has been declining ever since. In a 1978 survey, 37 percent of high school seniors said they had smoked marijuana in the last 30 days, and 11 percent said they used it daily. By 1986 the number who said they had smoked it in the last 30 days had fallen to 23 percent—lower than in 1975—and the proportion of daily users had dropped steadily to 4 percent. The trend among people aged 18 to 25 is similar. On the other hand, more people over 25 may be using marijuana occasionally, and young people are still experimenting with it. In 1969, 20 percent of high school seniors had used marijuana at least once; in 1979, 60 percent had; and in 1985, 54 percent. The attitudes expressed in surveys show why habitual marijuana use is in decline. In 1978, 65 percent of high school students said they disapproved of it; in 1985, 85 percent disapproved. In 1978, 35 percent said it was very risky, and in 1985, 70 percent said it was.

The main active ingredient of marijuana is delta-9-tetrahydrocannabinol (THC), one of more than 60 related chemicals found in the resin that covers the flowers and top leaves of the cannabis (hemp) plant. The leaves and flowers can be ground up in drinks or food, but more often they are dried and smoked in a cigarette or pipe. The pure resin, known as hashish, can also be smoked, eaten, or drunk. New breeding and cultivation techniques have raised the THC content of marijuana smoked in the United States as much as ten times over the last 20 years, from an average of 0.4 percent to 4 percent. Some varieties now contain as much as 10 percent.

The effects last two to four hours when marijuana is smoked and five to twelve hours when it is taken by mouth. Although the intoxication varies with psychological set and social setting, the most common response is a calm, mildly euphoric state in which time slows and sensitivity to sights, sounds, and touch is enhanced. The smoker may feel exhilaration or hilarity and notice a rapid flow of ideas with a reduction in short-term memory. Images sometimes appear before closed eyes; visual perception and body image may undergo subtle changes. It is dangerous to operate complex machinery, including automobiles, under the influence of marijuana, because it slows reaction time and impairs attention and coordination. This impairment persists for at least several hours after the feeling of intoxication has passed.

The main physiological effects of cannabis are increased appetite, a faster heartbeat, and slightly bloodshot eyes. Although the increased heart rate

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could be a problem for people with cardiovascular disease, dangerous physical reactions to marijuana are almost unknown. Like many other drugs, it produces a toxic delirium when taken at very high doses, especially by mouth. The symptoms are confusion, agitation, disorientation, loss of coordination, and often hallucinations; the delirium ends when the drug passes out of the body. No human being is known to have died of an overdose. By extrapolation from animal experiments, the ratio of lethal to effective (intoxicating) dose is estimated to be on the order of thousands to one.

Anxiety Reactions

The most common disturbing reaction to marijuana is acute anxiety, sometimes accompanied by paranoid thoughts. The user becomes fearful of dying or going insane, and may read hostility or ridicule into the gestures and words of companions. Mounting anxiety may lead to panic. The most likely victim of this reaction is an inexperienced user inadvertently taking a high dose in an unpleasant or unfamiliar setting. The best way to handle the anxiety and paranoia is calming support and reassurance. The reaction is not a psychosis; there are no hallucinations, and reassurance would not be effective without an ability to test the reality of thoughts and perceptions. Some authorities also refer to a cannabis delusional disorder with feelings of persecution or jealousy. Whether or not this is distinguishable from the anxiety reaction, the treatment is the same—reassurance and waiting for the drug effect to fade.

The anxiety reaction or delusional disorder is a milder version of the frightening LSD experience known as a bad trip. A truly nightmarish experience is rare under the influence of cannabis, because it is less potent than hallucinogenic or psychedelic drugs and the user is better able to control its effects. Use of LSD and other psychedelic drugs is often followed by flashbacks—the recurrence of emotions and perceptions originally experienced under the influence of the drug. They usually last only a few seconds and are not necessarily disturbing, but sometimes they become a persistent problem, which has been labelled post-hallucinogen perception disorder. Marijuana smoking may precipitate flashbacks in psychedelic drug users; a few reports suggest that marijuana flashbacks also occur without the previous use of psychedelic drugs.

Some observers, mainly in India and North Africa, have reported a cannabis psychosis caused mainly by long-term heavy use of the drug. It is described as a prolonged psychotic reaction with symptoms that include delusions, hallucinations, inappropriate emotions, and disordered thinking. In the descriptions, this psychosis is usually difficult to distinguish from acute schizophrenia, manic states, panic reactions, and other conditions. The reaction is rarely reported in the United States. Given the many millions of marijuana smokers in this country, the evidence for it would probably be less equivocal if it occurred with any regularity. Some people may suffer a psychotic reaction to cannabis because they are vulnerable to psychosis under any stress or after any change in consciousness or body image. For example, marijuana smoking probably increases the danger of relapse in schizophrenic patients (although any effect of this kind must be distinguished from a desperate attempt at self-medication because symptoms of schizophrenia are already returning).

Long-Term Effects

In recent years the psychological and physical effects of long-term use have caused the most concern. Studies are often conflicting and permit various views of marijuana's possible harmfulness. This complicates the task of presenting an objective statement about the issue.

One of the first questions asked about any drug is whether it is addictive or produces dependence. This question is hard to answer because the terms 'addiction' and 'dependence' have no agreed-upon definitions. Two recognized signs of addiction are tolerance and withdrawal symptoms; these are rarely a serious problem for marijuana users. In the early stages, they actually become more sensitive to the desired effects. After continued heavy use, some tolerance to both physiological and psychological effects develops, although it seems to vary considerably among individuals. Almost no one reports an urgent need to increase the dose to recapture the original sensation. What is called behavioral tolerance may be partly a matter of learning to compensate for the effects of high doses, and may explain why farm workers in some Third World countries are able to do heavy physical labor while smoking a great deal of marijuana.

A mild withdrawal reaction also occurs in animal experiments and apparently in some human beings who take high doses for a long time. The symptoms are anxiety, insomnia, tremors, and chills, lasting for a day or two. It is unclear how common this reaction is; in a Jamaican study, heavy ganja (marijuana) users did not report abstinence symptoms when withdrawn from the drug. In any case, there is little evidence that the withdrawal reaction ordinarily presents serious problems to marijuana users or causes them to go on taking the drug.

In a more important sense, dependence means an unhealthy and often unwanted preoccupation with a drug to the exclusion of most other things. People suffering from drug dependence find that they are

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constantly thinking about the drug, or intoxicated, or recovering from its effects. The habit impairs their mental and physical health and hurts their work, family life, and friendships. They often know that they are using too much and repeatedly make unsuccessful attempts to cut down or stop. These problems seem to afflict proportionately fewer marijuana smokers than users of alcohol, tobacco, heroin, or cocaine. Even heavy users in places like Jamaica and Costa Rica do not seem to be dependent in this damaging sense.

Cause or Effect

It is often difficult to distinguish between drug use as a cause of problems and drug use as an effect; this is especially true in the case of marijuana. Most people who develop a dependency on marijuana would also be likely to develop other dependencies because of anxiety, depression, or feelings of inadequacy. The original condition is likely to matter more than the attempt to relieve it by means of the drug. The troubled teenager who smokes cannabis throughout the school day certainly has a problem, and excessive use of marijuana may be one of its symptoms.

The idea has persisted that in the long run smoking marijuana causes some sort of mental or emotional deterioration. In three major studies conducted in Jamaica, Costa Rica, and Greece, researchers have compared heavy long-term cannabis users with non-users and found no evidence of intellectual or neurological damage, no changes in personality, and no loss of the will to work or participate in society. The Costa Rican study showed no difference between heavy users (seven or more marijuana cigarettes a day) and lighter users (six or fewer cigarettes a day). Experiments in the United States show no effects of fairly heavy marijuana use on learning, perception, or motivation over periods as long as a year.

On the other side are clinical reports of a personality change called the amotivational syndrome. Its symptoms are said to be passivity, aimlessness, apathy, uncommunicativeness, and lack of ambition. Some proposed explanations are hormone changes, brain damage, sedation, and depression. Since the amotivational syndrome does not seem to occur in Greek or Caribbean farm laborers, some writers suggest that it affects only skilled and educated people who need to do more complex thinking.

The problem of distinguishing causes from symptoms is particularly acute here. Heavy drug users in our society are often bored, depressed, and listless, or alienated, cynical, and rebellious. Sometimes the drugs cause these states of mind and sometimes they result from personality characteristics that lead to drug abuse. Drug abuse can be an excuse for failure or a form of self-medication. Because of these complications and the absence of confirmation from controlled studies, the existence of an amotivational syndrome caused by cannabis use has to be regarded as unproven.

Stepping Stone Hypothesis

Much attention has also been devoted to the idea that marijuana smoking leads to the use of opiates and other illicit drugs: the stepping stone hypothesis. In this country, almost everyone who uses any other illicit drug has smoked marijuana first, just as almost everyone who smokes marijuana has drunk alcohol first. Anyone who uses any given drug is more likely to be interested in others, for some of the same reasons. People who use illicit drugs, in particular, are somewhat more likely to find themselves in company where other illicit drugs are available. None of this proves that using one drug leads to or causes the use of another. Most marijuana smokers do not use heroin or cocaine, just as most alcohol drinkers do not use marijuana. The metaphor of a stepping stone suggests that if no one smoked marijuana it would be more difficult for anyone to develop an interest in opiates or cocaine. There is no convincing evidence for or against this. What is clear is that at many times and places marijuana has been used without these drugs, or these drugs have been used without marijuana.

It is hard to generalize about abuse or define specific treatments, because the problems associated with marijuana are so vague, and cause and effect so hard to determine. Marijuana smokers may be using the drug to demonstrate rebelliousness, cope with anxiety, or medicate themselves for early symptoms of mental illness. People with serious problems who have been smoking marijuana heavily should be persuaded to stop so that their problems can be more effectively dealt with by psychotherapy or other means.

Health Hazards

Most recent research on the health hazards of marijuana concerns its long-term effects on the body. Studies have examined the brain, the immune system, the reproductive system, and the lungs. Suggestions of long-term damage come almost exclusively from animal experiments and other laboratory work. Observations of marijuana users and the Caribbean, Greek, and other studies reveal little disease or organic pathology associated with the drug.

For example, there are several reports of damaged brain cells and changes in brain-wave readings in monkeys smoking marijuana, but neurological and neuropsychological tests in Greece, Jamaica, and Costa Rica found no evidence of functional brain damage. Damage to white blood cells has also been observed in the laboratory, but again, its practical importance is unclear. Whatever temporary changes marijuana may produce in the immune system, they have not been found to increase the danger of

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infectious disease or cancer. If there were significant damage, we might expect to find a higher rate of these diseases among young people beginning in the 1960s, when marijuana first became popular. There is no evidence of that.

The effects of marijuana on the reproductive system are a more complicated issue. In men, a single dose of THC lowers sperm count and the level of testosterone and other hormones. Tolerance to this effect apparently develops; in the Costa Rican study, marijuana smokers and controls had the same testosterone levels. Although the smokers in that study began using marijuana at an average age of 15, it had not affected their masculine development. There is no evidence that the changes in sperm count and testosterone produced by marijuana affect sexual performance or fertility.

In animal experiments THC has also been reported to lower levels of female hormones and disturb the menstrual cycle. When monkeys, rats, and mice are exposed during pregnancy to amounts of THC equivalent to a heavy human smoker's dose, stillbirths and decreased birth weight are sometimes reported in their offspring. There are also reports of low birth weight, prematurity, and even a condition resembling the fetal alcohol syndrome in some children of women who smoke marijuana heavily during pregnancy. The significance of these reports is unclear because controls are lacking and other circumstances make it hard to attribute causes. To be safe, pregnant and nursing women should follow the standard conservative recommendation to avoid all drugs, including cannabis, that are not absolutely necessary.

A well-confirmed danger of long-term heavy marijuana use is its effect on the lungs. Smoking narrows and inflames air passages and reduces breathing capacity; damage to bronchial cells has been observed in hashish smokers. Possible harmful effects include bronchitis, emphysema, and lung cancer. Marijuana smoke contains the same carcinogens as tobacco smoke, usually in somewhat higher concentrations. Marijuana is also inhaled more deeply and held in the lungs longer, which increases the danger. On the other hand, almost no one smokes 20 marijuana cigarettes a day. Higher THC content in marijuana may reduce the danger of respiratory damage, because less smoking is required for the desired effect. This is true only as long as no significant tolerance develops, and as long as users do not try to get a proportionately more intense effect from a stronger form of the drug.

For further reading

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INSIGHTS

Assessing Allegations of Child Sexual Abuse

By Diane H. Schetky, MD and Elissa P. Benedek, MD

Heightened public and professional concern has led to overreporting of suspected child sexual abuse. According to the American Humane Association, 60 percent of such reports are unsubstantiated. Some of these are probably valid cases dropped for lack of evidence or because a child is too young to testify. Since sexual abuse of very young children usually does not involve penetration of orifices, physical evidence is often lacking, and it may also be difficult for a young child to describe such experiences accurately and repeatedly. Other cases are not prosecuted because the law chooses to disregard evidence obtained by highly coercive or suggestive techniques. In perhaps 5 to 30 percent of cases, however, unsubstantiated allegations occur because malicious or well-meaning persons have misinterpreted physical symptoms or behavior that has other causes.

Types of Unfounded Allegations

1. Charges of abuse sometimes arise in divorce cases when there are disputes about custody or visitation rights. The mother may anxiously misinterpret things the father has done while physically caring for their child. Less often a mother vindictively fabricates allegations to punish her former husband or exclude him from the child's life. Children who hear such charges repeated often enough may come to believe them and doubt their own perceptions.

2. A child occasionally makes a false allegation. In rare cases a child's fantasizing about sexual rela-