Strategies for Breaking Marijuana Dependence

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As cultural attitudes and workplace policies shift, and new information emerges about the untoward social and physiological side effects of marijuana abuse, more and more people appear to be deciding to stop smoking marijuana. Many factors seem to be involved, including the increasingly widespread use of urinalysis in the workplace, which can reveal to the unsuspecting user that marijuana is indeed a dependence-producing drug. The introduction of policies permitting drug screens motivates workers who are able to stop smoking to do so, in order to protect their jobs. Others decide to stop in response to pressure from significant others. Increasingly, those who find that they cannot stop smoking on their own are seeking help from treatment facilities. Since the early 1980's, more clients have been presenting at drug treatment facilities asking for help primarily for marijuana dependence (Tennant 1986b).

Users with other primary drug preferences, who are expected (by treatment personnel) to give up the use of all intoxicants, provide thought-provoking reports. For example, many who initially seek treatment for cocaine dependence state that giving up marijuana is in some ways more difficult, partly because it has been a part of their lives for a much longer time and is interwoven in ways that they did not recognize.

These clients comprise a large group who have been observed by clinicians in inpatient and outpatient settings. Observing their changes as they move into the later stages of recovery has piqued interest because of some of the unanticipated changes in cognitive processing and emotional expression that unfold over time.

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There are a variety of other reasons why people are questioning their marijuana use. Some who have been smoking 15 to 20 years begin to be alarmed at the consequences to their respiratory systems, as they suffer more frequent and severe ailments. Adult children of alcoholics painfully take inventory of their own alcohol and other drug use, and begin to opt for abstinence. Parents of adolescents with obviously damaging alcohol and/or other drug problems conclude that their own modelling is relevant and reexamine their involvement with this so-called harmless drug, which many have been smoking since the 1960's. These are some of the subgroups who are beginning to change their beliefs and practices.

Some present because they feel that long-term use of the drug causes them difficulty in expressing emotions like anger, and experiencing feelings intimacy and closeness with their partner. Still others present with a sense of dissatisfaction in achieving life goals, especially in the area of career. Many of these people appear functional and even successful in the outside world, but in their internal experience they do not feel that they measure up to their original hopes and plans for their lives. Chronic users often describe a mild boredom, lack of zest, or a low-level depression that they rarely connect to their use of marijuana, but which dissipates when they become abstinent. These patterns, which are visible in the treatment situation, are the subject of increasing discussion among clinicians, but little is known about how pervasive they are among marijuana smokers as a whole.

Marijuana has a complex chemistry, and consists of 400 known chemicals (Verebey, Gold, & Mulé 1986); 60 of which are cannabinoids. Marijuana breaks down into

2,000 chemicals when smoked (DuPont 1984), and this complexity does not facilitate a simple explanation for marijuana's mechanisms of action, which is why it may be some time before its long-range effects are understood. Cohen (1986) indicated that early research was done on samples with a potency of one to two percent tetrahydrocannabinol (THC). Some of the marijuana that exists today (e.g., the sinsemilla that is grown in northern California) may range from seven to 15 percent THC, which is roughly equivalent to the hashish on which research was conducted in the 1960's (Tennant 1986b). Hence the first group of studies (e.g., Grinspoon & Bakalar 1981; National Commission on Marijuana and Drug Abuse 1972) suggested that marijuana was relatively benign. Later studies utilized increased potency and improved methodology (Cohen 1985). Marijuana research techniques have developed to a point where new data may yield a better understanding of this drug during the next few years.

TREATMENT OF MARIJUANA DEPENDENCE

For the purposes of this article, marijuana dependence exists when someone is using regularly and cannot stop once they choose to. Since the drug's metabolites are stored in the body for long periods of time, resumption of use within the first 90 days of abstinence raises questions about dependence. This article is written from the perspective of helping those who want to stop, for whatever reason, and find it difficult to do so.

Management of withdrawal phenomena plays a key role in the treatment process for marijuana dependence, because improving retention is the key to improving treatment outcome (Craig 1985; De Leon 1984). It appears that those who engage in recovery-related activities over a period of time show improvement across a wide range of treatment modalities. The most dropouts occur during the first 30 days of treatment, when withdrawal phenomena are most intense. Although other factors certainly play a role, easing the stresses and discomforts of the withdrawal period increases the likelihood of the client remaining in treatment and provides a way to build a therapeutic alliance. The skilled clinician uses this opportunity to build a relationship with the client while discouraging the common conviction that the most difficult work of recovery is over once the client is fully detoxified from drugs.

Very few specific strategies have evolved for the management of marijuana withdrawal. The most effective approaches will ultimately derive from a full understanding of the pharmacokinetics of marijuana and the subjective and behavioral correlates. However, clinicians today must operate despite the crudeness of the map. Pharmacological adjuncts are available for alcohol, opiates, and cocaine withdrawal, but not specifically for marijuana. The present article will describe current propositions about withdrawal, review behavioral and other psychological strategies, and comment on how pharmacological adjuncts might prove useful. When possible, strategies that are specifically (or potentially) useful for marijuana will be described. In addition, a number of nonspecific strategies will be described that are generally used by clinicians working in the alcohol and other drug dependence treatment arena.

The Withdrawal Process

Education about the effects of drugs and the recovery process is a key part of treatment (Zweben 1986). Informing the client about the withdrawal process (e.g., what s/he may usually expect, known hazard points, and the time frame within which discomfort is likely to abate) provides reassurance and a good basis for problem solving to meet the expected challenges. For the purposes of this article, the withdrawal process includes both the phenomena associated with clearing the drug from the body, and those associated with the body's reconstituting to a normal, or pre-drug, state. This latter phase can be quite prolonged, a feature that can be emphasized to clients who become overconfident and are then tempted to terminate their efforts prematurely. Also, many clients interpret their cravings as a sign of failure or lack of motivation.

Information on the lengthy withdrawal process can be reassuring, and encourages clients to plan ways to cope with it.

Along with information, a sense of hope can be planted that reinforces the sense of reward that abstinence brings. This sets up a positive reinforcement loop in which the client builds hope upon success upon hope, a loop that grows as it spirals back up on itself through the weeks and months of abstinence. This is important because some clinicians doing long-term work are beginning to suspect that the *full* flowering of the benefits of abstinence does not occur until 15 to 18 months into recovery. There are many signposts along the way, some of which are subtle, and the therapist can share observations with the client about such improvements. For example, the client's ability to concentrate on a theme for a period of time or sustain concentration when doing visualizations or meditations within the treatment session usually increases with abstinence. Some clients report tackling more difficult reading material or developing increased self-discipline or being less accident prone once they are abstinent for six months or more. The source of such changes is difficult to systematically assess, but the growing number of such reports certainly indicates the need for further investigation. For the client currently in treatment, the sense of hope and positive expectations are especially critical when facing a protracted period of withdrawal.

Everything that is known about marijuana can be useful to the clinician, who weaves the information into the ongoing therapeutic process. In the absence of well-substantiated data, clinicians must draw on their observations and analyses of what clients regularly describe. Researchers, in turn, can draw on the clinician's precise description of behaviour to track down the basic mechanisms involved.

Characteristics of Marijuana and the Withdrawal Process

The THC in marijuana is fat soluble, which helps it to penetrate biological membranes, to arrive at its sites of action quickly, and then be stored for long periods of time in lipid tissues (Verebey, Gold & Mulé 1986). Inasmuch as the human body has a water-based disposal system that operates via blood, perspiration, urine and faeces, excretion of THC is less efficient than for certain other drugs, such as alcohol and cocaine. Indeed, THC is retained in organs with a high fat content, such as the brain, liver and reproductive organs (Dupont 1984). Because of the slow speed with which it clears the body, urine monitoring on a weekly basis is considered sufficient, with detectable concentrations often present for a month (Verebey, Gold & Mulé 1986; Swatek 1984). Since the long period of withdrawal is not well understood or widely recognized by users, many individuals stop for a week or more and then conclude that they are no longer dependent.

According to Tennant (1986a), significant withdrawal symptoms may not set in for a week or more. Tennant focuses on the plasma life of THC as a key factor in describing the characteristics of marijuana withdrawal. The plasma life is the amount of time it takes for the drug to leave the bloodstream—contrasted with the subsequent point at which the metabolite is no longer measurable in the urine—and is of central importance because it is closely related to use patterns as well as the subjective experience of withdrawal. For example, the plasma life of nicotine determines the frequency with which smokers crave a cigarette.

A second major point in Tennant's work (1986a) is that the manner in which marijuana is metabolized in the body results in withdrawal effects that may be delayed by a week or more. According to his description of the metabolism and pharmacokinetics of marijuana, certain metabolites produce the *high* (significant plasma concentrations for two to six hours); then breakdown products occur that appear to sustain the dependence while producing little or no euphoria (plasma concentrations evident for at least 48 to 72 hours). Thus, Tennant suggested that THC breaks down into components that are addicting, but devoid of subjective effects. The experience of *coming down* is related to the initial conversion of THC, and is noted by the user. However, if mild flu-like symptoms occur a week or more later, they may not be seen as

connected to marijuana use because the user may not identify them as withdrawal phenomena. Hence the addiction cycle can perpetuate itself for long periods of time, while the user maintains the conviction that s/he is not drug dependent.

MARIJUANA AND THE ENDOGENOUS OPIOID (ENDORPHIN)SYSTEM

Due to the prevalence of marijuana of increasing potency, observers are investigating the similarity between marijuana and opioid dependence. Tennant (1986a) reviewed animal studies in which investigators noted an opioid-like withdrawal syndrome when THC was discontinued. The most common signs observed were diarrhea, teeth chattering, wet-dog shakes, salivation, drooping the upper eyelid (ptosis), piloerection (hair standing on end), yawning, and increased activity. Later, human studies (Jones, Benowitz & Bachman 1976) were consistent with these other reports. Tennant also cited animal studies in which the narcotic antagonist naloxone produced withdrawal symptoms. Kumar, Patel and Millard (1984) showed that THC depletes endogenous opioid peptides in rats, suggesting that marijuana dependence and withdrawal may involve the endogenous opioid system. This suggest that some of what is useful for opiate and alcohol withdrawal may be helpful for marijuana withdrawal as well.

Pharmacological Adjuncts

Blum and Trachtenberg (1986) have formulated a nutritional supplement, SAAVE™ that consists of amino acid precursors of dopamine and serotonin, and is intended to speed the normalization of brain chemistry in alcoholics. Early reports indicate that this product is effective in reducing craving, anxiety, hostility, irritability, insomnia and depressions, and in the long run enhances the recovery of the malfunctioning endorphin system. Blum outlined three ways that alcoholism develops (Blum & Topel 1986; Blum & Trachtenberg 1986), one of which is through a genetically based deficiency of internal opiates. Blum's formulation is intended to restore normal functioning to alcoholics, but is quite possibly beneficial to that subgroup of adult children of alcoholics (ACAs) who share the genetic anomaly, though they may not drink or show signs of alcoholism. Anecdotal reports from ACAs using SAAVE™ suggest that they experience an improved sense of well-being. To the extent that marijuana may interact with the endogenous opioid system, it may be useful for marijuana users as well, if there is reason to think that they are ACAs. Preliminary clinical observations suggest that this is certainly worth systematic study.

l-Tryptophan has been regularly used in drug dependence treatment programs to help patients cope with the insomnia that is characteristic of withdrawal from any abused drugs. Although Wesson (1987) is currently the only person studying the systematic application of *l*-tryptophan, other researchers have suggested that it is indeed helpful to those with sleep disturbances, without impairing performance (Spinweber 1987; Schneider-Helmert & Spinweber 1986; Hartmann 1982-83; Hartmann 1977). *l*-Tryptophan is thought to be of value because it is a precursor of serotonin and hence would influence behavioural changes in the direction of improved sleep, diminished craving, and less depression (Blum & Trachtenberg 1986; Young, Chouinard & Annable 1981). A major unresolved question is how much *l*-tryptophan is actually absorbed by the body, and practitioners suggest that it be taken in conjunction with high carbohydrate loading (e.g., with a sweet drink, such as fruit juice) to facilitate utilization.

Tennant (1986a) commented that there is currently no recognized medical withdrawal regimen for marijuana dependence, and he and others have noted that patients who do not receive short-term withdrawal medication tend to drop out of treatment more frequently. In this respect, amino acid supplements may be a useful compromise.

IMPROVING PHYSICAL WELL-BEING

Exercise

The consensus among many practising clinicians is that exercise is usually seen by clients as being very helpful. Inpatient chemical dependence treatment programs often include it

as part of the daily regimen, and outpatient therapists encourage it as well. Clients report that regular exercise reduces drug hunger and seems to level out their moods. To the observing clinician, it appears to normalize the body chemistry more rapidly. Its efficacy may also be related to the fact that exercise gives the client something specific to do, and hence a nonchemical means of modifying feeling states.

What is usually recommended is regular aerobic exercise; no less than 30 minutes, at least four days a week. Aerobic exercise involves accelerating the heart rate to 75 to 80 percent of age-predicted maximums (a workable approximation can be obtained by subtracting the client's age from 185) for 15 to 20 minutes. It is important that the client add on time to warm up and cool down.

Clients are urged to list the types of exercise they engage in, and to schedule times in their appointment books and calendars for exercising. If the client's choice of exercise requires a gym or pool, s/he is asked to check schedules while making the exercise plan. Structure and specificity is especially important to clients who are trying to detoxify, as they tend to have difficulty being consistent even under the best of circumstances.

Clinician's have noted an interesting phenomenon reported by clients who have been abusing phencyclidine (PCP) or marijuana. With both of these drugs, vigorous exercise *may* result in the release of metabolites into the bloodstream, causing the client to feel high. In the case of PCP, psychotic behaviour characteristic of the intoxicated state may be manifest. This latter phenomenon has been observed by clinicians in residential programs, who have more opportunity to observe it closely. Smith (1987) has suggested that this phenomenon may be an instance of subacute intoxication, in which release of the metabolites from the fatty tissues cause a low level of intoxication, but the relationship between this and subjective effects has not been systematically studied. In any case, if a client experiences this phenomenon, s/he can be reassured that it is usually transitory and of manageable intensity.

Eating Patterns

Counsellors need to be attentive to the client's eating patterns, as it is common for clients who are detoxifying to unthinkingly adopt eating patterns that simulate the rushes and crashes of drug use. Others simply eat erratically, exacerbating the possibilities of irritability and depression. Still others substitute addictive eating patterns for those previously used with drugs. Counsellors should inquire about eating patterns whenever the client complains of unusual discomfort or extreme mood variability during the detoxification period.

Clearing the Lungs

There are several approaches that can be utilized by the therapist both for assessment and treatment, one of which is to focus on pulmonary congestion. Postural drainage, a technique used to clear the lungs after surgery, can be easily taught in the office. It requires a second person for implementation, and hence is generally practised by couples. The recovering person is instructed to lie on his/her stomach, positioned so that the trunk and head are lower than the lower body, in order to facilitate drainage by gravity of material trapped in the lower and middle lung lobes. The partner then begins to gently tap on the middle of the back, gradually working in an upward direction toward the upper back for several moments. This produces the release of old material that has been trapped in the lowest mid-pulmonary lobes for some time. It not only increases the profusion of oxygen to the lower lungs, but also demonstrates to the patient the kind of insidious long-term physical side effects of smoking marijuana (and/or tobacco). As a result, this procedure can break through a level of deep denial concerning the seriousness of the effect of marijuana on the respiratory system. It is a therapeutically positive procedure because it engages the partners in a specific task as participants in the treatment process.

BEHAVIORAL STRATEGIES

There are many ways in which client efforts can reduce hazards and discomforts.

Relapse prevention tools can be introduced even while the client is in the detoxification stage, and indeed are necessary to break the addiction cycle. Many of these involve identifying the triggers and stressors that contribute to drug abuse, and developing new coping patterns—several of which are described below. In addition, a number of authors have written about them at great length (Gorski 1986; Marlatt & Gordon 1985; Zackon, MacAuliffe & Chi'en 1985).

The Behavioural Risk Scale

The Behavioural Risk Scale (BRS) is a useful relapse avoidance tool that can be taught quickly to patients in the office (O'Connell 1985). It is useful for two reasons. First, any method that the patient can use mentally to buy time, even a few seconds or minutes, is a valuable commodity in recovery. A person who is pausing to consider the risk of a given factor for possible relapse decreases the temptation to act on impulse with every passing second. Clients can be reminded that cravings will pass (usually within a few minutes) and should be encouraged to use this tool to increase the amount of time between the presentation of the idea of using and actual use, should it eventually occur. Second, the control over the use of the tool is in the hands of the patient and not the therapist or anyone else. Hence the initiative and participation of the patient in the treatment process by the use of the scale is a positive factor in and of itself.

The BRS is a 10-point number scale on which the patient imagines that 1 represents abstinence (no risk) and 10 represents a slip or relapse. The client then mentally places on the scale the people, things, events, places and moods that are potential relapse factors. Any factor that ranks 5 or above is too risky and must be addressed. Combinations of factors can increase risk, and as the client is faced with a situation (either mental or actual)s/he is asked to imagine an intervention that would reduce the risk to below 5 on the scale. The therapist can easily teach this technique in one session and the patient can use it whenever s/he chooses. Many individuals successfully use this scale to avoid or reduce risky situations.

Urinalysis

Insomnia

Sleep disturbance is a common feature of withdrawal from all psychoactive substances. Uncomfortable in its own right, insomnia may be a loaded issue for people with charged memories of it from childhood, jail or other sources. Many clients report using marijuana as sedation for sleep and greatly fear the effects of stopping. The following suggestions can be offered to people who anticipate problems with insomnia: (1) Go to bed at the same time every night, and get up at a regular time, no matter how little sleep you actually get. (2) Do not nap. (3) Do not consume caffeine after 6:00 p.m.—significant amounts may be found not only in coffee, but in black teas, Coca Cola®, Pepsi® and chocolate. Also avoid cigarette smoking at night, because nicotine is a stimulant. (4) Engaging in regular aerobic exercise, preferably at the same time of day, appears to help normalize sleep patterns, and (5) Calcium and *l*-tryptophan (both of which are found in milk) are nature's pacifiers and may calm and relax the client. A glass of warm milk at night works well for many. Others may prefer to take *l*-tryptophan (available from health food stores) in doses of 500 to 1,500 mg (taken along with high carbohydrate loading) for sleep dysfunction. Clients taking SAAVE™ should be reminded that it contains *l*-tryptophan, hence caution must be exercised if more is to be added.

Other psychological strategies, such as the use of relaxation tapes or exercises, may be employed. Some clients need to be reminded to avoid initiating a difficult discussion with their spouse or children before bedtime, and to reduce stimulation in general. Often clients will initially resist these behavioral interventions because they seem like a lot more work than taking a pill. They need to be informed that sleep medications tend to disrupt the normal sleep cycle, so that the sleep thus obtained is not the most refreshing. Though the measures recommended above may take several days to a week to help, they do tend to be effective if the client is able to maintain them. Intransigent sleep disturbances of long duration may yield to exploration of anxiety sources that may be operating, or it may indicate the need for a more thorough psychodiagnostic workup.

The civil liberties controversies

surrounding the issue of urine testing have coloured public attitudes so that many do not recognize what an enormously valuable clinical tool it can be. Inasmuch as most drug abusers have repeatedly lied to the people they are most intimately involved with, rebuilding trust in relationships is a major task in recovery. Typically, the partner or spouse becomes anxious an mistrustful whenever the user is irritable, distracted or withdrawn; that is, when s/he manifest behaviour that is typical of early recovery, particularly the detoxification period. Clients are very sensitive to accusations, tacit or overt, and are often angry and discouraged at being mistrusted even when doing well. The client's insistence on being trusted *now* is met with apprehension on the part of others, who still may be recovering form the shock of what they discovered once the clouds of denial were lifted. This source of interpersonal tension may persist for many months, even years, as relationships are repaired.

Urinalysis is often welcomed in such circumstances by parents and adolescents as well as couples who view it as a chance for the user to restore credibility. When viewed as a way to document successful abstinence, it is greeted with enormous relief by those seeking to solidify the basis for trust. Clients for whom urinalysis is not mandated by an employer or the criminal justice system often voluntarily enter a urine monitoring program to remove the question of abstinence as a source of tension from their intimate relationships. In this situation, the client can be told to give a urine only if drug free; or otherwise voluntarily inform the counsellor (and any others previously agreed on) that a slip has occurred. The user often reports that a regular urinalysis strengthens his/her support structure. Clients often report that monitoring makes the option to use less acceptable, and thus it provides an obstacle to impulsive use.

12-Step Programs

Twelve-step programs are an enormous asset to people in recovery, offering a wide range of resources at no cost. Introducing the client to such programs and helping him/her to make productive use of them on an ongoing basis can be seen as one of the key activities of the clinician (Zweben 1987). Unfortunately, primary marijuana users have been among the hardest to connect with these programs, because the more subtle effects of marijuana abuse seem to impede all but the highly sophisticated from making a strong identification. Because the adverse effects are more gradual and less dramatic than some other drugs, individuals may feel that the groups do not hear "their story." However, in the spring of 1987, 12-Step groups for marijuana abusers started to emerge. As of early 1988, there were five such meetings of Marijuana Addicts Anonymous (MAA) in the San Francisco Bay Area, and there are probably meetings now appearing in other communities.

CONCLUSION

Marijuana dependence, though less dramatic in its effects, is certainly a phenomenon to be taken seriously. Because THC is lipophilic, traces may remain in the tissues for a long period of time, with effects that remain to be examined systematically. Although this article focuses mainly on the initial period of breaking the dependence cycle, the marijuana abuser can expect that this dependence is not easily ended, and a sustained effort will be required. Hopefully, the next decade of research will clarify the pharmacokinetics of marijuana so that even more specific approaches can be devised.

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