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need to Know

The Facts On Marijuana

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December 2010

Several jurisdictions in the U.S. have taken steps toward decriminalizing marijuana possession for personal use or when recommended by a physician for medicinal purposes. Other jurisdictions have pending ballot initiatives or legislative bills proposing such changes in the law.

The Board of Directors of the National Association of Drug Court Professionals (NADCP) has determined that it is essential for Drug Court practitioners to be fully and objectively informed about the effects of marijuana on their participants and the public at-large. This document briefly reviews the scientific evidence concerning the effects of marijuana.

Incarceration for Marijuana Possession

It is exceedingly rare to be incarcerated in the U.S. for the use or possession of marijuana. According to the National Center on Addiction & Substance Abuse at Columbia University (CASA, 2010), less than 1 percent (0.9%) of jail and prison inmates in the U.S. were incarcerated for marijuana possession as their sole offense.

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Excluding jail detainees who may be held pending booking or release on bond, the rates are even lower. Prison inmates sentenced for marijuana possession account for 0.7 percent of state prisoners and 0.8 percent of federal prisoners (see Table). And, considering that many of those prisoners pled down from more serious charges, the true incarceration rate for marijuana possession can only be described as negligible.

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	State Prisoners	Federal Prisoners
Marijuana offence only	**1.6%**	**N.R.**
Marijuana possession only	**0.7%**	**0.8%**
First-time marijuana possession	**0.3%**	**N.R.**

Source: Office of National Drug Control Policy, Who's Really in Prison for Marijuana? [NCJ #204299] (citing BJS, 1999, Substance abuse and treatment, state and federal prisoners, 1997 [NCJ #172871]; U.S. Sentencing Commission, 2001 Sourcebook of Federal Sentencing Statistics). N.R. = not reported.

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Addiction Potential

By the early 1990's, the scientific community had concluded from rigorous laboratory and epidemiological studies that marijuana is physiologically and psychologically addictive. Every drug of abuse has what is called a dependence liability, which refers to the statistical probability that a person who uses that drug for nonmedical purposes will develop a compulsive addiction. Based upon several nationwide epidemiological studies, marijuana's dependence liability has been reliably determined to be 8 to 10 percent (Anthony et al., 1994; Brook et al., 2008; Budney & Moore, 2002; Kandel et al., 1997; Munsey, 2010; Wagner & Anthony, 2002). This means that one out of every 10 to 12 people who use marijuana will become addicted to the drug.

Importantly, the dependence liability of any drug increases with more frequent usage. Individuals who have used marijuana at least five times have a 20 to 30 percent likelihood of becoming addicted to the drug, and those who use it regularly have a 40 percent likelihood of becoming addicted (Budney & Moore, 2002).

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The hallmark feature of physical addiction is the experience of uncomfortable or painful withdrawal symptoms whenever levels of the substance decline in the bloodstream. This is, in part, what drives addicts to continue abusing drugs or alcohol despite suffering severe negative medical, legal and interpersonal consequences. Carefully controlled, rigorous laboratory studies have proven beyond further dispute that marijuana addiction is associated with a clinically significant withdrawal syndrome. When marijuana-addicted individuals stop using the drug, they experience symptoms of irritability, anger, cravings, decreased appetite, insomnia, interpersonal hypersensitivity, yawning and/or fatigue (Budney et al., 2001; Preuss et al., 2010). In fact, the features and severity of the marijuana withdrawal syndrome are virtually indistinguishable from those of nicotine (cigarette) withdrawal.

A second hallmark feature of addiction is psychosocial dysfunction resulting from repeated use of the substance. The most commonly diagnosed symptoms of psychosocial dysfunction among marijuana addicts include persistent procrastination, bad or guilty feelings, low productivity, low self-confidence, interpersonal or family conflicts, memory problems and financial difficulties (Budney & Moore, 2002; NIDA, 2005). This constellation of symptoms has been collectively referred to as an "amotivational syndrome" (e.g., Hubbard et al., 1999) because marijuana abusers tend to be characteristically languid and often achieve considerably below their true intellectual potentials.

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Based on this substantial body of empirical research, the American Psychiatric Association (APA) has long recognized cannabis dependence as a valid and reliable psychiatric disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM). The DSM is the official psychiatric diagnostic classification system in the U.S. A diagnosis of cannabis dependence has been continuously included in the 3rd and 4th editions of the DSM since 1980 (APA, 1980, 1987, 1994, 2000). In the soon-to-be published 5th edition of the DSM, a cannabis withdrawal syndrome will now also be officially recognized as part of the diagnostic criteria for cannabis dependence.

THE FACTS ON MARIJUANA

Medical Harm

In many respects, smoked marijuana has the potential to be as, or more, harmful than cigarettes. Although marijuana does not contain nicotine, it does contain 50 to 70 percent more carcinogenic compounds, including tar, than cigarettes (NIDA, 2005; Hubbard et al., 1999). Marijuana also produces high levels of a particular enzyme which converts certain hydrocarbons into their carcinogenic or malignant forms (NIDA, 2005).

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Although gram for gram, marijuana smoke is clearly more carcinogenic than cigarette smoke, it is difficult to predict whether actual incidence rates of induced cancers are likely to be as high as they are for cigarettes. On one hand, cannabis smokers tend to use the drug on fewer occasions than cigarette smokers. On the other hand, they typically inhale larger amounts of the drug per occasion, hold the smoke in their lungs for longer intervals of time, and are unlikely to employ filters. This makes it difficult to compare the predicted magnitudes of the harms. The best estimate from the National Institutes of Health (NIH) is that a person who smokes five marijuana cigarettes per week is likely to be inhaling as many cancer-causing chemicals as one who smokes a full pack of cigarettes every day.[1]

A person's risk of a heart attack is increased four-fold during the first hour after smoking marijuana.

Like nicotine, cannabis increases heart rate, alters blood pressure, can induce tachycardia (rapid or irregular heartbeat), increases myocardial (heart) stress, decreases oxygen levels in the circulatory system, and exacerbates angina (Hubbard et al., 1999). As a result, a person's risk of a heart attack is increased four-fold during the first hour after smoking marijuana (NIDA, 2005).

There is no question that regular marijuana use is associated with a wide spectrum of chronic respiratory ailments. A nationally representative study of 6,728 adults found heavy marijuana use to be substantially associated with chronic bronchitis, coughing on most days, wheezing, abnormal chest sounds and increased phlegm (Moore et al., 2005).

Marijuana has undisputed negative effects on cognitive functioning, including memory, learning and motor coordination. These negative effects persist long after the period of acute intoxication, averaging approximately 30 days of residual cognitive impairment (Bolla et al., 2002; NIDA, 2005; Pope et al., 2001). This means that individuals are apt to wrongly believe they are capable of performing critical tasks, such as driving a car, operating heavy machinery, caring for children or solving work-related intellectual problems, when in fact they may be performing in the mildly to moderately impaired range of functioning.

Like any drug, marijuana's negative health effects tend to be most pronounced in elderly persons, individuals with chronic medical illnesses, and those with compromised immune systems. This is of particular concern given that marijuana is being specifically touted for "medicinal" use

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by elderly patients, cancer patients, and those with immunodeficiency syndromes such as HIV/AIDS (e.g., Munsey, 2010). Rather than benefiting such individuals, marijuana has the serious potential to further suppress or compromise their immune systems and exacerbate the disease process (NIDA, 2005).

Medicinal Effects

Marijuana is a "Schedule I" drug according to the Drug Enforcement Administration (DEA), meaning it has a high abuse potential and no recognized medical indication. However, the Food and Drug Administration (FDA) has approved a particular ingredient within marijuana (THC) in a non-smoked form for certain medical indications, such as for treatment of nausea, vomiting and poor appetite. Recent studies have also supported its use in treating chronic neuropathic pain (e.g., Munsey, 2010).

[1] See U.S. Dept. of Justice, Drug Enforcement Administration, Exposing the myth of medical marijuana: The facts. Available at http://www.justice.gov/dea/ongoing/marijuanap.html.

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To date, research indicates that oral THC (when administered at adequate doses) is as effective as smoked marijuana in achieving these therapeutic effects (e.g., Munsey, 2010). Anecdotal testimonials are the only evidence favoring smoked marijuana over oral THC for therapeutic purposes. Further research is called for to determine whether other compounds within marijuana might have medicinal properties as well, but at this juncture any such indications are purely experimental and speculative.

Regardless, smoked marijuana could no more be considered a "medication" than cigarettes or alcohol. Although cigarettes and alcohol have undeniable effects that many people may find palliative (such as alleviating short-term stress), they are very "dirty" drugs. This means they contain dozens, if not hundreds, of other physiologically active compounds which are irrelevant to their palliative effects and may actually work at cross-purposes against those effects. For example, many people believe alcohol and nicotine lower their stress level, but in fact these drugs are proven to increase anxiety, lower stress tolerance and exacerbate insomnia over the longer term. These drugs are also associated with a host of serious medical conditions, including cancer, heart disease, liver disease and respiratory illnesses. For these reasons, physicians would rarely, if ever, "prescribe" or recommend these drugs to treat a medical condition.

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More research is needed to isolate the potential therapeutic effects of specific compounds within marijuana, and to determine how to administer those compounds in a manner that is medically safe and does not threaten to cause heart, lung and other diseases. Administering the "dirty" form of the drug would never be a legitimate medical end-goal.

Impact on Crime

Two recent meta-analyses (advanced statistical procedures) have concluded that marijuana use during adolescence or young adulthood significantly predicts later involvement in criminal activity and criminal arrests (Bennett et al., 2008; Pedersen & Skardhamar, 2010). The risk of criminal involvement was determined to be between 1.5 and 3.0 times greater for cannabis users than for non-users.

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By far the greatest influence was on drug-possession offenses. However, cannabis use was also found to predict a wider range of criminal activity, including involvement in any type of criminal offense; and any type of drug-related offense, including drug dealing, manufacturing and smuggling (Pedersen & Skardhamar, 2010).[2] The results suggest that, all else being equal, cannabis users are at a statistically increased risk for associating with antisocial individuals, engaging in illegal conduct, and eventually getting a criminal record.

Recommendations to Drug Courts

Marijuana is an intoxicating and addictive drug that poses serious medical risks akin to those of nicotine and alcohol. Although some physicians may consider it to have palliative indications, no national or regional medical or scientific organization recognizes marijuana as a medicine in its raw or smoked form.

If marijuana becomes decriminalized or legalized in a given jurisdiction, this does not necessarily require Drug Court practitioners to abide its usage

[2] In one meta-analysis, when all drug-related offenses were excluded from the analysis, the effects on other types of non-drug crimes were no longer statistically significant. This does not mean, however, that cannabis use did not predict non-drug offenses. The likely explanation is that the frequency of non-drug-related offending in the sample was too low to mathematically detect statistical relationships (Farrington, 2010). In other words, removing all drug-related offenses from consideration might have "cut the deck too narrowly" to permit further meaningful analyses.

by their participants. The courts have long recognized restrictions on the use of a legal intoxicating substance (i.e., alcohol) to be a reasonable condition of bond or probation where the offender has a history of illicit drug involvement.[3] If there is a rational basis for believing cannabis use could threaten public safety or prevent the offender from returning to court for adjudication, appellate courts are likely to uphold such restrictions in the Drug Court context.

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Individuals who possess a letter from a physician and/or a valid state-issued ID card for marijuana present a more challenging issue, but one that is probably also not insurmountable. Under such circumstances, the judge might subpoena the physician to testify or respond to written inquiries about the medical justification for the recommendation. In addition, the court may be authorized by the rules of evidence or rules of criminal procedure to engage an independent medical expert to review the case and offer a medical recommendation or opinion. Having a Board-certified addiction psychiatrist on hand to advise the Drug Court judge may provide probative evidence about whether marijuana use is medically necessary or indicated.[4]

It remains an open question what degree of deference appellate courts are likely to give to the conclusions of a treating physician. In the absence of clear precedent, the best course of action is to develop a factual record and make a particularized decision in each case about the medical necessity for the use of marijuana and the rationale for restricting marijuana usage during the term of criminal justice supervision.

If judges make these decisions based on a reasonable interpretation of medical evidence presented by qualified experts, it seems unlikely that Drug Courts — which were specifically designed to treat seriously addicted individuals — could not restrict access to an intoxicating and addictive drug as a condition of criminal justice supervision.

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[3] See, e.g., People v. Beal, 70 Cal.Rptr.2d 80 (Cal. Ct. App. 1997) (concluding alcohol use may lead to future criminality where probationer has history of substance abuse and was convicted of drug-related offense); Martell v. County Court, 854 P.2d 1327 (Colo. Ct. App. 1992) (holding condition of bail may require defendant to refrain from alcohol or drugs and submit to drug or alcohol testing); State v. Magnuson, 606 N.W. 2d 536 (Wis. 2000); People v. Carbajal, 10 Cal.4th 1114, 43 Cal.Rptr.2d 681, 899 P.2d 67 (1995) (holding probation conditions may regulate conduct that is not itself criminal, so long as the conditions are reasonably related to the crime or risk of future criminality).

[4] See People v. Beaty, 181 Cal.App.4th 644, 105 Cal.Rptr.3d 76 (2010) (holding restrictions on medical marijuana by probationers must be reasonably related to specific offense and based upon medical evidence).

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It takes innovation, teamwork and strong judicial leadership to achieve success when addressing drug-using offenders in a community. That's why since 1994 the National Association of Drug Court Professionals (NADCP) has worked tirelessly at the national, state and local level to create and enhance Drug Courts, which use a combination of accountability and treatment to compel and support drug-using offenders to change their lives.

Now an international movement, Drug Courts are the shining example of what works in the justice system. Today, there are over 2,500 Drug Courts operating in the U.S., and another thirteen countries have implemented the model. Drug Courts are widely applied to adult criminal cases, juvenile delinquency and truancy cases, and family court cases involving parents at risk of losing custody of their children due to substance abuse.

Drug Court improves communities by successfully getting offenders clean and sober and stopping drug-related crime, reuniting broken families, intervening with juveniles before they embark on a debilitating life of addiction and crime, and reducing impaired driving.

In the 20 years since the first Drug Court was founded in Miami/Dade County, Florida, more research has been published on the effects of Drug Courts than on virtually all other criminal justice programs combined. The scientific community has put Drug Courts under a microscope and concluded that Drug Courts significantly reduce drug abuse and crime and do so at far less expense than any other justice strategy.

Such success has empowered NADCP to champion new generations of the Drug Court model. These include Veterans Treatment Courts, Reentry Courts, and Mental Health Courts, among others. Veterans Treatment Courts, for example, link critical services and provide the structure needed for veterans who are involved in the justice system due to substance abuse or mental illness to resume life after combat. Reentry Courts assist individuals leaving our nation's jails and prisons to succeed on probation or parole and avoid a recurrence of drug abuse and crime. And Mental Health Courts monitor those with mental illness who find their way into the justice system, many times only because of their illness.

Today, the award-winning NADCP is the premier national membership, training, and advocacy organization for the Drug Court model, representing over 27,000 multi-disciplinary justice professionals and community leaders. NADCP hosts the largest annual training conference on drugs and crime in the nation and provides 130 training and technical assistance events each year through its professional service branches, the **National Drug Court Institute,** the **National Center for DWI Courts** and **Justice for Vets: The National Veterans Treatment Court Clearinghouse.** NADCP publishes numerous scholastic and practitioner publications critical to the growth and fidelity of the Drug Court model and works tirelessly in the media, on Capitol Hill, and in state legislatures to improve the response of the American justice system to substance-abusing and mentally ill offenders through policy, legislation, and appropriations.

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