

# DRUG POLICY ALLIANCE

Reason. Compassion. Justice.

## Marijuana and Health

Marijuana prohibition persists, in large part, because of out-dated, hyperbolic “Reefer Madness” claims about health impacts. The truth is that marijuana is considerably less dangerous than either alcohol or cigarettes. It’s far less addictive, and typically consumed in much smaller amounts. It lacks alcohol’s powerful association with violence, accidents and reckless sexual behavior. And it’s impossible to die of a marijuana overdose. A small proportion of marijuana consumers do become addicted; however marijuana addiction is very treatable. Taken medicinally, marijuana is effective at addressing a wide variety of serious symptoms, including nausea, vomiting, and wasting diseases.

Marijuana is a widely consumed product in the United States. What is sold and consumed is of widely varying quality and may have high levels of potentially dangerous pesticides or adulterants. DPA advocates the adoption of regulatory frameworks to control potency, protect against dangerous additives or pesticides, and provide for consumer education through labeling. Proper regulation could control this product from field, to cultivation, to preparation, to package, to distribution – protecting the consumer and reducing the availability to minors. Marijuana prohibition provides no such protections.

### Health Effects

Doctors and medical researchers agree that marijuana is far less harmful than alcohol or tobacco<sup>1</sup>, which the Centers for Disease Control & Prevention estimate to have each contributed to more deaths than all illicit drugs combined<sup>2</sup>. Existing knowledge on the long-term health effects of marijuana include the following:

- **Lungs:** Marijuana smokers can have similar respiratory problems as tobacco smokers, including daily cough and phlegm production, more frequent acute chest illness, and a heightened risk of lung infection. However, a 2006 study funded by the National Institute on Drug Abuse found that smoking marijuana, even regularly and heavily, does not lead to lung cancer<sup>3</sup>. Researchers at UCLA and UCSF determined that THC, marijuana’s main psychoactive ingredient, has an anti-tumor effect<sup>4</sup>.
- **Heart:** A 2001 study observed that smoking marijuana was a “rare trigger” of acute myocardial infarction. The study concluded that the “risk of myocardial infarction onset was elevated almost 5-fold in the hour after smoking marijuana and persisted... The heightened risk seemed to decline rapidly and was not significantly elevated beyond the first hour.”<sup>5</sup>
- **Brain:** A 2003 meta-analysis failed to reveal a “substantial, systematic effect of long-term, regular cannabis consumption on the neurocognitive functioning of users who were not acutely intoxicated.”<sup>6</sup>
- **Mental Health:** In 2007 researchers studied the effects of THC on users suffering from depression and found that moderate doses had an antidepressant effect, but that heavy doses could exacerbate a patient’s depression<sup>7</sup>. Studies in 2003 and 2007 concluded that marijuana does not appear to be causally related to schizophrenia, but that its use may precipitate disorders in people vulnerable to developing psychoses.<sup>8</sup> A 2008 study found doubt that marijuana is a sole cause of psychosis<sup>9</sup>.

“[Marijuana is] one of the safest therapeutically active substances known to man.... In strict medical terms, marijuana is far safer than many foods we commonly consume.”  
**DEA Administrative Law Judge, 1988**

“[Marijuana’s] adverse effects ... are within the range of effects tolerated for other medications.”  
**U.S. National Academy of Sciences, Institute of Medicine, 1997**

### Dependency

While some marijuana users do become addicted to the drug, the risk of becoming physically and psychologically dependent on marijuana is mild compared to most other drugs including alcohol and tobacco<sup>10</sup>. Increases in admission to drug treatment programs are largely driven by the criminal justice system.

- According to a federal Institute of Medicine study in 1999, “few marijuana users become dependent on it...and marijuana dependence appears to be less severe than dependence on other drugs.” The report states that fewer than 10% of those who try marijuana ever meet the clinical criteria for dependence, while 32% of tobacco users and 15% of alcohol users do.<sup>11</sup>

- According to federal data, marijuana treatment admissions referred by the criminal justice system rose from 48% in 1992 to 58% in 2006. Just 45% of marijuana admissions met the Diagnostic and Statistical Manual of Mental Disorders criteria for marijuana dependence. More than a third hadn't used marijuana in the 30 days prior to admission for treatment.<sup>12</sup>
- Marijuana is not a "gateway drug." What the gateway theory presents as a causal explanation is a statistic association between common and uncommon drugs. Marijuana is the most popular illegal drug in the United States. Therefore, people who have used less popular drugs such as heroin, cocaine, and LSD, are likely to have also used marijuana. Most marijuana users never use any other illegal drug.<sup>13</sup>
- Research suggests that marijuana may, in fact, aid some in recovery from addictions to alcohol and other drugs. Confirming earlier findings, one recent study of medical marijuana patients found that some "have been engaging in substitution by using [marijuana] as an alternative to alcohol, prescription and illicit drugs."<sup>14</sup> The top two reasons listed by participants as reasons for substituting marijuana were "less adverse side effects" (65%) and "better symptom management." (57.4%).
- Marijuana penalties have little, if any, impact on rates of use. The Academy of Sciences, Institute of Medicine concluded that "There is little evidence that decriminalization of marijuana use necessarily leads to a substantial increase in marijuana use."<sup>15</sup>

## Potency

Although marijuana potency may have increased somewhat in recent decades, claims about enormous increases in potency are vastly overstated and not supported by evidence. Nonetheless, potency is not related to risks of dependence or health impacts.

- According to the federal government's own data, the average THC in domestically grown marijuana – which comprises the bulk of the US market – is less than 5%, a figure that has remained unchanged for nearly a decade. In the 1980s, by comparison, the THC content averaged around 3%.<sup>16</sup>
- Regardless of potency, THC is virtually non-toxic to healthy cells or organs, and is incapable of causing a fatal overdose. Currently, doctors may legally prescribe Marinol, an FDA-approved pill that contains 100% THC. The Food and Drug Administration found THC to be safe and effective for the treatment of nausea, vomiting, and wasting diseases.
- When consumers encounter unusually strong varieties of marijuana, they adjust their use accordingly and smoke less.<sup>17</sup>

## Medical Benefits

Thirteen states, home to 72 million Americans, have adopted laws allowing the medical use of marijuana to treat AIDS, cancer, glaucoma, multiple sclerosis, and other ailments. Although research into the potential for medicinal uses of marijuana/THC has been stymied in the US due to the drug's Schedule I status, global scientific research is successfully identifying a growing list of benefits.

- The Food and Drug Administration has found THC to be safe and effective for the treatment of nausea, vomiting, and wasting diseases.
- Organizations that have endorsed medical access to marijuana include the American Public Health Association, American Nurses Association, AIDS Action Council, Leukemia & Lymphoma Society, American Academy of HIV Medicine, Lymphoma Foundation of America, National Association of People with AIDS, and the state medical associations of New York, California, and Rhode Island.
- In 2009, the American Medical Association adopted a resolution calling for the government to review its classification of marijuana, in order to ease more research into the medicinal uses of marijuana.<sup>18</sup>
- The federal government itself cultivates and supplies marijuana to a handful of patients through its "compassionate-use investigative new drug program," which was established in 1978 but closed to new patients in 1992.

<sup>1</sup> Nutt, David. 2007. Development of a Rational Scale to Assess the Harm of Drugs of Potential Misuse. *The Lancet*. 396: 2007, 1047-53 and Hall, Wayne and Robin Room and Susan Bondy. 1995. A Comparative Appraisal of the Health and Psychological Consequences of Alcohol, Cannabis, Nicotine and Opiate Use. World Health Organization. August 28, 1995.

<sup>2</sup> Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. 2006. Smoking & Tobacco Use Fact Sheet: Tobacco-related mortality (updated September 2006). Updated September, 2006.

<sup>3</sup> Hashibe, Mia, Hal Morgenstern, Yan Cui, Donald Tashkin, Zuo-Feng Zhang, Wendy Cozen, Thomas M. Mack, and Sander Greenland. 2006. Marijuana Use and the Risk of Lung and Upper Aerodigestive Tract Cancers: Results of a Population-Based Case-Control Study. *Cancer Epidemiology Biomarkers & Prevention*. Vol. 15 (October): 1829-1834.

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- <sup>4</sup> San Francisco Bay Guardian, "THE DRUG ISSUE: Marijuana decriminalization moves forward on several fronts," 9/19/09
- <sup>5</sup> Mittleman, Murray A., Rebecca A. Lewis, Malcolm Maclure, Jane B. Sherwood, and James E. Muller. 2001. Triggering Myocardial Infarction by Marijuana. *Circulation* 103, no. 23 (June 12): 2805-2809.
- <sup>6</sup> Grant, Igor, Raul Gonzales, Catherine L. Carey, Loki Natarajan and Tanya Wolfson. 2003. Non-Acute (Residual) Neurocognitive Effects of Cannabis Use: A Meta-Analytic Study. *Journal of the International Neuropsychological Society*. Vol. 9, 679-689.
- <sup>7</sup> Bambico, Francis Rodriguez, Noam Katz, Guy Debonnel, and Gabriella Gobbi. 2007. Cannabinoids Elicit Antidepressant-Like Behavior and Activate Serotonergic Neurons through the Medial Prefrontal Cortex. *Journal of Neuroscience* 27, no. 43 (October 24): 11700-11711. doi:10.1523/JNEUROSCI.1636-07.2007.
- <sup>8</sup> Degenhardt, L, Hall, W and Lynskey, M. 2003. Testing Hypotheses About the Relationship Between Cannabis Use and Psychosis. *Drug and Alcohol Dependence*, 71 1: 37-48. July 20 and Boydell, J. et al. 2007. A Comparison of Symptoms and Family History in Schizophrenia With and Without Prior Cannabis Use: Implications for the Concept of Cannabis Psychosis. *Schizophrenia Research*.
- <sup>9</sup> Van Dam, Nicholas T., Mitch Earleywine and Greg DiGiacomo. 2008. Polydrug Use, Cannabis, and Psychosis-Like Symptoms. *Human Psychopharmacology* 2008; 23: 475-485.
- <sup>10</sup> Nutt, David. 2007
- <sup>11</sup> U.S. National Academy of Sciences, Institute of Medicine, *Marijuana and Medicine: Assessing the Science Base* (Washington, D.C., 1999).
- <sup>12</sup> U.S. Dept. of Health and Human Services, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS), 2006
- <sup>13</sup> Morral, Andrew R.; McCaffrey, Daniel F. and Susan M. Paddock. "Reassessing the marijuana gateway effect." *Addiction* 97.12 (2002): 1493-504.
- <sup>14</sup> Reiman, Amanda. "Cannabis as a substitute for alcohol and other drugs," *Harm Reduction Journal* 2009 6:35.
- <sup>15</sup> National Academy of Sciences, Institute of Medicine (IOM). 1999. *Marijuana and Medicine: Assessing the Science Base*. National Academy Press: Washington, D.C., 102.
- <sup>16</sup> ElSohly, et al., "Potency Trends of Delta9-THC and Other Cannabinoids in Confiscated Marijuana from 1980-1997," *Journal of Forensic Sciences* 45 (2000): 24-30.
- <sup>17</sup> Heishman SJ, Stitzer ML, Yingling JE, 1989. Effects of tetrahydrocannabinol content on marijuana smoking behavior, subjective reports, and performance. Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21224.
- <sup>18</sup> American Medical Association, Board Of Trustees and Council Reports – Recommendations, page 14, <http://www.ama-assn.org/assets/meeting/mm/i-09-statements-recommendations.pdf>