

May 4, 1981

THE MARIJUANA EPIDEMIC

I get a sick feeling in the pit of my stomach when I hear talk of marijuana being safe. Marijuana is a very powerful agent which is affecting the body in many ways. What the full range of these consequences is going to be, we can only guess at this point. But from what we already know, I have no doubt that they are going to be horrendous.¹

Dr. Robert DuPont
Former Director of the
National Institute on Drug
Abuse.

INTRODUCTION

Marijuana smoking has reached epidemic proportions in the United States. Some sixteen million Americans are now regular users; and among high school seniors, about one in ten are daily smokers -- averaging 3½ joints a day.

The extent of current marijuana consumption raises many important concerns. While use of the drug is widespread throughout the world, for instance, only in the United States is it so prevalent among young people of all classes that an entire generation is affected. In other countries, the smoking of marijuana is not usually found throughout the entire society -- generally use is confined to certain religious groups or classes. Only in this country does it involve the whole culture.

¹ Washington Post, July 30, 1978.

The most frightening aspect of the widespread use of the drug is that the overwhelming majority of smokers have no knowledge of the demonstrated medical effects of marijuana. Most regard it as completely harmless, or at least as no worse than alcohol or tobacco. During the 1960s, when the drug became common in America, reliable scientific evidence was sparse. Marijuana seemed harmless enough to most people, and the very expression of doubt by experts was all too often discounted as deriving from opposition to the political and social attitudes of the users.

This absence of hard evidence regarding the consequences of the drug caused many scientists and legislators to take a liberal view of marijuana usage -- how could one condone alcohol and tobacco and then condemn marijuana? But in the last ten years, the climate has changed. Many detailed studies have been published on the medical aspects of the drug, and a body of scientific literature has been assembled which was unavailable only ten years ago. The National Institute on Drug Abuse (NIDA), a division of the Department of Health and Human Services, has taken the lead in sponsoring over a thousand tests, employing sophisticated procedures to control dosage, strength, etc., consistent with patterns of social usage. Other organizations have funded similar research projects.

It took sixty years of studies to establish a strong correlation between tobacco smoking and a number of serious diseases. Yet the results of experiments carried out in the last decade already suggest a strong relationship between the use of drugs and several medical disorders. Marijuana appears to impair memory, learning performance, motivation and may permanently damage brain tissue. It would also seem to have damaging effects on the lung, reproductive organs and the immunity system.

The powerful evidence now available has caused many experts to revise their position from one of indifference to one of great concern. Dr. Robert DuPont, quoted above, is a case in point. In various senior governmental positions, he did much to soften attitudes towards the use of marijuana -- indeed he was often cited in the literature of the decriminalization lobby. But now, as president of the American Council on Marijuana, he is in the forefront of a campaign to end the consensus that marijuana is no worse than many other drugs taken for pleasure. That belief, he says, "is a disaster and I feel very badly to have contributed to [it]."² Like so many of those who have changed their minds in light of the evidence, Dr. DuPont is particularly anxious about the long-term consequences of marijuana smoking on the current school population.

² "Reading, Writing and Reefer," NBC News Report, broadcast December 10, 1978.

This Backgrounder will review the scientific evidence which has led to the dramatic change of heart by so many people. It will then examine the policy options available to deal with the situation.

THE GROWING USE OF MARIJUANA

What is Marijuana?

Marijuana (also known as pot or grass) comes from the plant Cannabis Sativa (Indian hemp or hashish), which has been cultivated for hundreds of years as a source of rope. The principal psychoactive, or mind-altering, ingredient of marijuana is a substance known scientifically as delta-9-tetrahydrocannabinol (or THC), although several hundred other chemicals with various effects are also present.

An intake of between five and ten milligrams of THC into the bloodstream is usually sufficient to induce intoxication -- a "high." In the 1960s, when the drug was becoming fashionable, most of the marijuana smoked in this country was of domestic origin. At that time, most American marijuana had a rather low THC content (0.2 percent to 1 percent), and so a 1 gram joint might contain in the region of 2-10 milligrams of THC. By 1970, however, Mexican marijuana with an average THC of between 1.5 percent and 2 percent, had begun to dominate the market. By the end of the 1970s, Jamaican and Colombian varieties, with concentrations of 3 percent to 4 percent THC began to enter the country in increasing quantities. In addition, liquid hashish, with a concentration of 30 percent to 90 percent THC, began to appear. At a potency rate of 50 percent THC, an ounce of this oil is sufficient to intoxicate one thousand people. In 1974 alone, 369 pounds were seized by federal agents.³

The rise in potency of marijuana available in the United States is central to any discussion of the medical impact of the drug. The early, inconclusive studies carried out in this country were based on the low-potency marijuana then being consumed. But now we are dealing with far stronger varieties, and the studies using these strains of marijuana are far from inconclusive.

Usage of Marijuana

Twenty years ago, marijuana was hardly used in this country. Only in the late 1960s did the drug become widely used, and not until the mid-1970s did it become commonplace. The increase in use has been dramatic by any measure. The most recent major study on usage was conducted by the National Institute on Drug

³ J. N. Jenson, Testimony before the Senate Subcommittee on Internal Security, May 1975, ref. 81, pp. 431-450.

Abuse, using a national sample carefully broken down by age and other characteristics.⁴ As Table I indicates, this study found that 68 percent of young adults in 1979 had tried marijuana, compared with only 4 percent in 1962. Among 12- to 17-year-olds, the proportion had grown over the same period from just 1 percent to 31 percent. Even among 12- to 13-year-olds in 1979, the study showed 8 percent had been introduced to the drug. When NIDA examined current users (those who had used the drug within the last month), the pattern illustrated by Table II emerged. As the figures indicate, widespread use now occurs among children of high school age and 40 percent of the college-aged population are current users.

Among those who reported current use of the drug, the NIDA study found that about two-thirds of young adults and one-half of older adults and youths have used marijuana five or more times in the last month. Of our high school seniors, some 10 percent were found to be daily users, consuming an average of 3½ marijuana joints every day. Not only has the proportion of daily users doubled among high school seniors since 1975, but it now exceeds the number who use alcohol on a daily basis (stable at about 6 percent since 1975).

When one remembers that the potency of the average marijuana joint has increased many fold in the last ten years, it becomes clear that we are dealing with a staggering increase in the consumption of THC, particularly among the student population. In the 1960s, the medical implications of marijuana use were of direct concern only to a small number of people, and the dangers of heavy chronic use to an even smaller group. But today, the drug is so widespread that the medical evidence is important for the entire population.

The volume and market value of the marijuana trade now makes it a major industry. According to the Wall Street Journal even domestically produced marijuana rivals some leading farm crops. In California, the value of production may soon pass the \$1 billion grape industry -- the state's number one farm commodity. In Hawaii, the level of marijuana production and sales may exceed the islands' largest business, the \$300 million sugar industry.⁵ The Federal Drug Enforcement Administration (DEA) estimates that domestically produced marijuana now accounts for up to 20 percent of the value of the entire trade. The American growers have specialized in recent years on developing very high grade varieties, by selective breeding. The most potent California strains

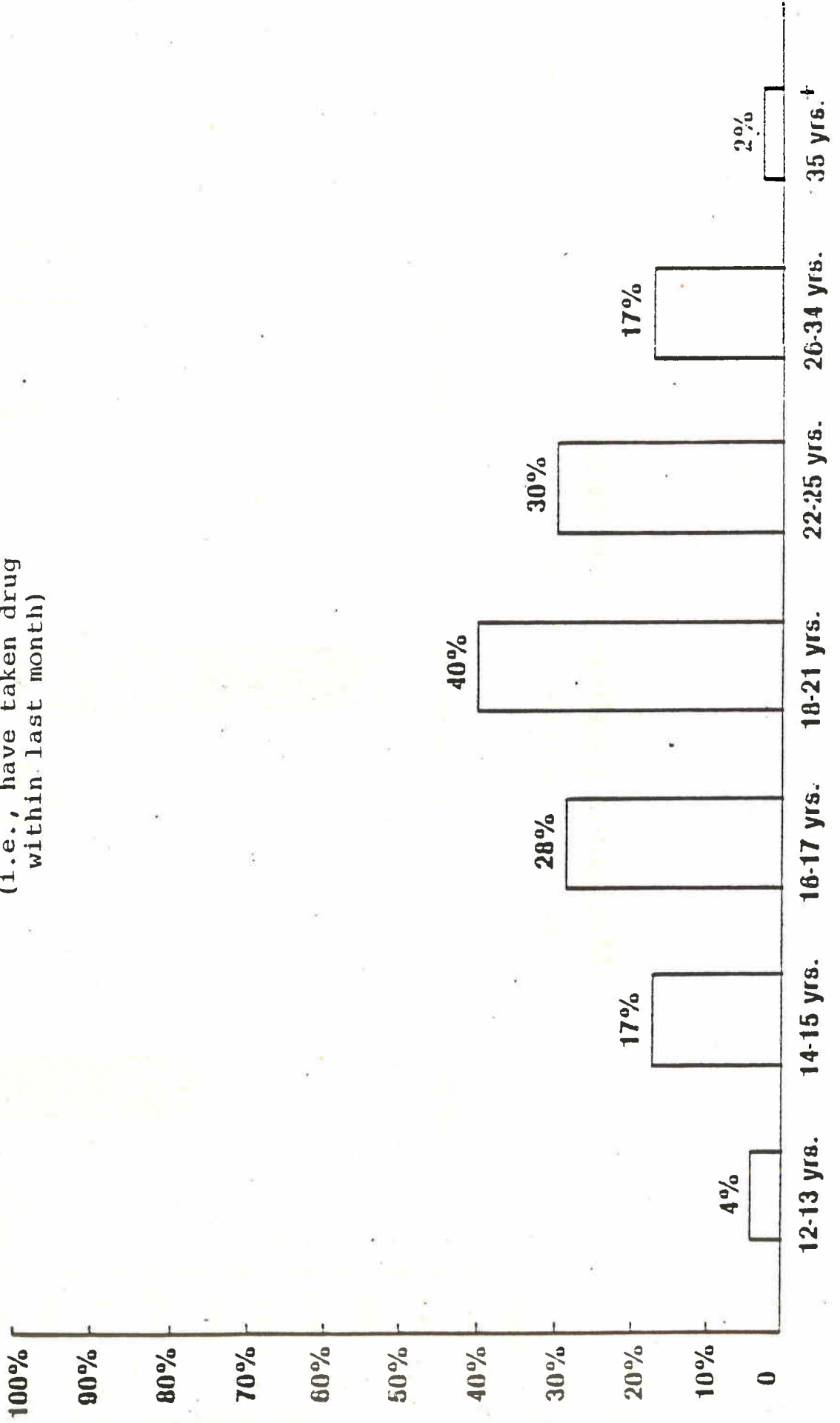
⁴ National Institute for Drug Abuse, National Survey on Drug Abuse: Main Findings 1979 (Rockville, Maryland: NIDA, 1980).

⁵ Wall Street Journal, August 4, 1980.

TABLE II

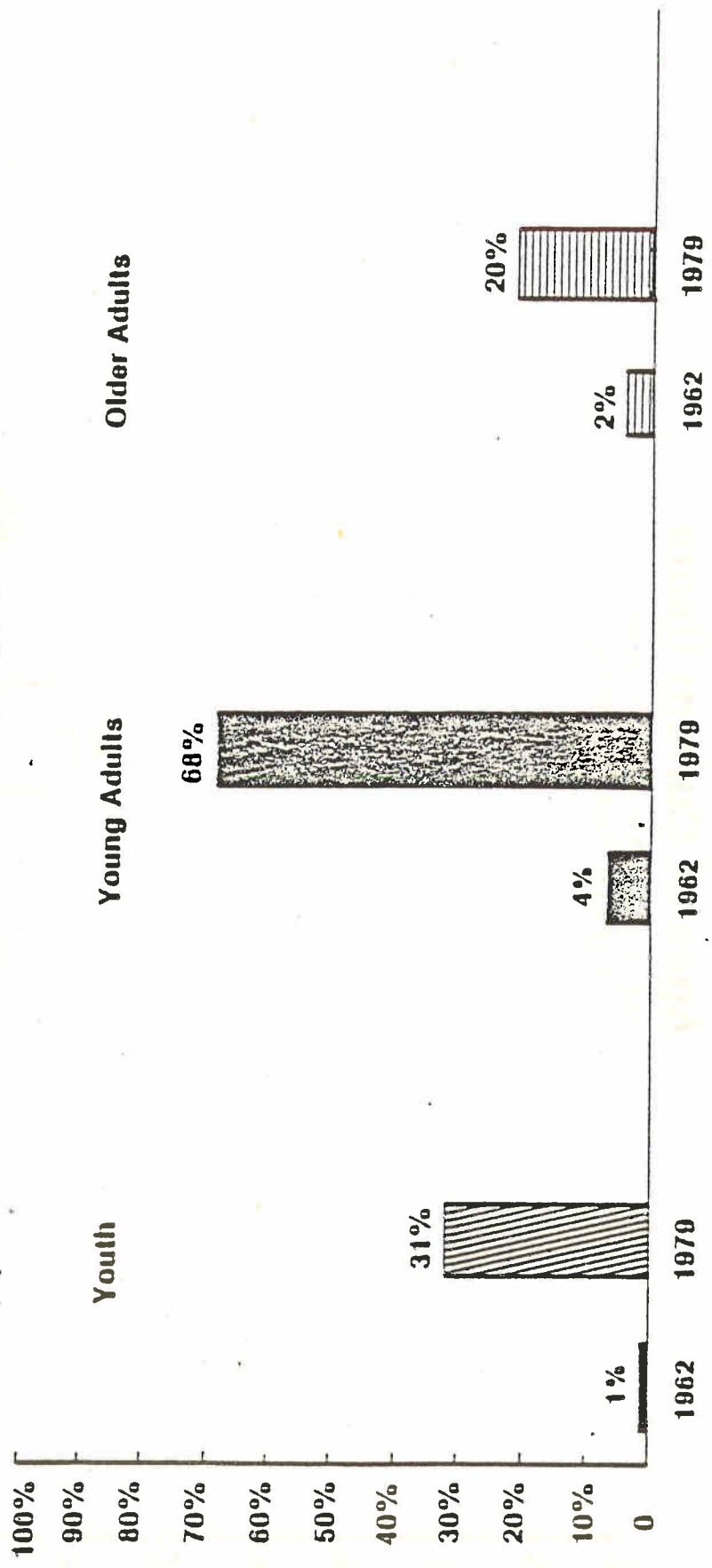
Marijuana 1979 Ages of Current Users

(i.e., have taken drug
within last month)



Source: A Drug Retrospective.

TABLE I
Marijuana Lifetime Prevalence
 (i.e., have tried marijuana)



Source: A Drug Retrospective (NIDA, 1980).

Note: Youth: persons 12-17 years old
 Young Adults: persons 18-25 years old
 Older Adults: persons 26 years and older
 40% of young adults who have tried the drug reported that they had done so at least 100 times

can contain as much as 6 percent pure THC. A single plant, on a three-foot diameter plot, can yield \$1,000 -- a moderate-sized garden will produce \$100,000 worth of the drug.⁶ The size of the total American trade, including imports, can only be determined roughly, but it has been estimated that the amount of marijuana coming into this country every year is between ten and twenty thousand tons, with a street value in the region of \$20 billion.⁷

The 1970s also saw the rapid growth of what has now become a multi-million dollar industry providing drug-related paraphernalia, magazines and books. Publications such as High Times (which boasts a readership of four million), carry in-depth articles on the use of drugs and legal issues, and are full of glossy advertisements for drug equipment. High Times even provides full listings of the prevailing market prices for many drugs, much as the Wall Street Journal carries the latest stock market quotations.

While the commercial return available on marijuana has been a major contributor to its ready availability, there are other important factors behind the growth in usage. In the late 1960s and early 1970s, the drug was an integral part of the non-conformist lifestyle in universities and elsewhere. The attempt by "authority" to stamp out marijuana consumption, or even discourage it, was seen as an attack on the alternative lifestyle, and the illegality of the drug was quite probably a significant stimulus to its consumption. This mood of resistance was only encouraged by exaggerated claims (on the basis of then available evidence) regarding the health dangers connected with marijuana.

In all probability the most important cause of the explosion in use has been simple ignorance. If, as most people believe, the drug is fairly harmless, then why not use it if it is pleasant? As we shall see in this study, nothing could be further from the truth, but survey after survey shows that while the dangers of alcohol and tobacco are widely appreciated, those associated with marijuana are not.⁸

THE SCIENTIFIC EVIDENCE

General Considerations

Before we examine the evidence regarding the effects of marijuana on the body, it is important to put this evidence in its historical perspective. The early American studies on marijuana, such as they were, were unsatisfactory for several reasons.

⁶ Washington Post, February 15, 1981.

⁷ 20,000 tons would be sufficient to make approximately 13 billion joints.

⁸ See, for instance, L. D. Johnston, J. G. Bachman, and P. M. O'Malley, Drug Use Among High School Students, 1975-1977 (Rockville, Maryland: NIDA, 1977).

