



Substance Abuse and The American Adolescent

A Report by the Commission on Substance
Abuse Among America's Adolescents

August 1997

Funded by: Carnegie Corporation of New York
Primerica Financial Services
The Robert Wood Johnson Foundation

Foreword

In 1994, the CASA Commission on Substance Abuse at Colleges and Universities issued its report, *Rethinking Rites of Passage: Substance Abuse on America's Campuses*. That Commission found alcohol to be the most widely abused substance among college students. Its findings that binge drinking was up sharply on college campuses and that the number of college women who were drinking just to get drunk had tripled from 1977 to 1993 shocked many Americans. Many colleges and universities adopted Commission recommendations to end the practice of open kegs, to require that wherever alcohol is served, trained servers be used and non-alcoholic beverages also be available, to provide alcohol education, prevention and treatment programs for students, and to establish smoke-free campuses.

In the course of the College Commission's hearings and deliberations, several university presidents and deans of students pointed out that college freshman arrive with drinking and drug attitudes and practices developed in high school. As a result of their comments, our consultation with high school teachers and administrators and the increase in teen smoking, binge drinking and drug use, we decided to create a CASA Commission on Substance Abuse Among America's Adolescents.

We are fortunate to have Reverend Edward A. (Monk) Malloy, President of Notre Dame University, chair this Adolescent Commission as he had chaired the College Commission. We are also fortunate to have so many distinguished and concerned Americans--several of whom served on the College Commission--serve for the past two years as members.

The findings in the report of this distinguished Commission should set off alarms for every American parent and every middle and high school teacher, counselor and administrator.

Even if we hold or slightly reduce drug use among teens, with the increase in the teen population we will begin the next Millennium with more American adolescents using drugs. And they will be using those drugs at younger ages. Particularly disturbing is the finding that the percentage of 12- to 17-year-olds who know someone using drugs like heroin, cocaine and LSD has jumped from 39 percent in 1996 to 56 percent in 1997. Among 12-year-olds, the increase was even greater, more than doubling from 10.6 percent to 23.5 percent. These findings come from CASA's 1997 *National Survey of American Attitudes on Substance Abuse III: Teens and Their Parents, Teachers and Principals*, which will be released on September 8, 1997.

And drugs are not the main problem. As with college students, the most widespread and serious substance abuse among high school students involves alcohol--notably beer. Far more high school students injure themselves in auto and other accidents as a result of drinking too much than as a result of using drugs, and many set the stage for addiction to alcohol and other drugs in later life as a result of drinking as teens.

This is profoundly troubling news, especially when measured against what I believe to be the most important finding of CASA's intensive research over the past five years: an individual who reaches age 21 without smoking, using drugs or abusing alcohol is virtually certain never to do so. This means that American adolescents and their families hold the key to a drug-free America.

On behalf of the Board of Directors of CASA and our staff of professionals, I want to express appreciation to the members of the Commission for their hard work and dedication. The report they have produced deserves the attention of every American who cares about our children and teens. Its practical recommendations provide a guide to parents, middle and high school teachers, counselors and principals, doctors and nurses, clergy members, government and every adult who cares, as they help our teens negotiate the difficult adolescent years without smoking, using drugs or abusing alcohol.

The work of this Commission was made possible by generous grants of Carnegie Corporation of New York, Primerica Financial Services and The Robert Wood Johnson Foundation.

I want especially to express our gratitude to my friend, colleague and inspiration of many years, David A. Hamburg, M.D., the recently retired president of Carnegie Corporation, to whom this report is dedicated. This is the first report of CASA's Adolescent Studies Center which his vision and the generosity of Carnegie Corporation led us to establish.

I also want to offer a special word of thanks to Joseph J. Plumeri, Chairman and Chief Executive Officer of Primerica Financial Services and the PFS Personal Financial Analysts for providing funds to establish and maintain at CASA the PFS Family Studies Center.

Joseph A. Califano, Jr.

I.
Introduction
and
Executive Summary

This report, *Substance Abuse and The American Adolescent*, looks at the current state of substance abuse among American teens and what those who influence the attitudes, activities and conduct of adolescents can do to reduce this dangerous behavior.

A combination of factors makes substance abuse a more serious problem to American adolescents than ever before in our history. Never have so many substances of potential abuse been so widely available to young teens. Not surprisingly with such ready availability, from 1992 to 1996, teen substance use involving nicotine, marijuana, amphetamines, other illicit drugs like cocaine, heroin and acid and inhalants has been rising. Binge drinking has also begun to increase, particularly among younger teens. Marijuana use among teens has doubled in the past three years, and the pot they're smoking is far more potent than that of the 1960s.

If drug use among teenagers continues at current rates or even if such use is slightly reduced, America will enter the new Millennium with more teenagers using drugs, since the number of adolescents is rising and continues to rise through the early years of the next century. The number of teens age 12 to 17 will increase from 20.1 million to 23.6 million between 1990 and the year 2000, rising to 25 million by 2010.¹

Teens report that they have little or no trouble obtaining beer and other alcohol. Sting operations using 12-year-olds consistently reveal how easily they can buy cigarettes. Many teens can get marijuana within a day; some say they can get it within a couple of hours.

More than 70 percent of 15- to 17-year-olds report that drugs are used, sold and kept at their schools. The same proportion of parents of teenagers agree. With adults taking billions of mood altering pills each year, for most teens drugs are as close as their parents' medicine cabinet. Thanks to hundreds of products, from Reddi Wip and shaving cream to motor oil additives and spray cleaners, young adolescents can find an inhalant high in the kitchen cupboard, under the kitchen sink and on the garage shelf.

However measured--by average age, median age, proportion of 12-year-olds (and younger) using substances from beer and cigarettes to marijuana, pills and even heroin--the age of initiation of substance use has never been lower. Music, movies, television and fashion--where teens find out what's cool and chic to mimic--glamorize smoking, drinking and even some drug use, particularly marijuana smoking and, in many fashion ads, heroin. Too many baby boomer parents, survivors of pot smoking in their twenties and college years, send their kids mixed messages about substance abuse. These messages not only confuse teens; worse still, they sometimes signal that inhalant highs, binge drinking, smoking pot and puffing cigarettes are acceptable rites of passage for American adolescents. Unfortunately, many teens fail to make safe passage through such rites.

Over its history, America has been through cycles of drug and alcohol use and abuse. But never before have American adolescents been asked to grow up amid such a combustible and dangerous mix of substance abuse conditions--increased use and abuse by their peers, experimentation and abuse at younger ages, the widespread availability of all kinds of drugs to children and teens, the cultural glamorization of cigarettes, alcohol and drugs, drug-ridden public and private high schools. These conditions flourish in a time of serious

concern about the quality of family life, deteriorating public education (particularly in urban centers) and weakening moral values.

The increased teen use of cigarettes, marijuana and alcohol is troubling in and of itself. Indeed, Dr. Alan Leshner, director of the National Institute on Drug Abuse, estimates that each year more than 100,000 individuals seek treatment for their marijuana dependence. Most of them are teens. But such use may also signal an increased likelihood of use of other drugs like heroin and cocaine. In October 1994, CASA reported on its extensive statistical analysis demonstrating the greater likelihood that 12- to 17-year-olds who smoked, drank and used marijuana would use cocaine. That study did not isolate use of these gateway substances from other problem behavior such as violence, crime, truancy or sexual promiscuity. As a result, that study was not able to measure the relationship of smoking, drinking and marijuana use in and of themselves, to use of harder drugs.

In this report, for the first time, CASA has been able to isolate smoking, drinking or using marijuana from other problem syndromes.* When smoking, drinking and using marijuana are isolated from other problem behaviors, the statistical relationships are powerful:

- Among 12- to 17-year-olds with no other problem behaviors, those who report drinking alcohol and smoking cigarettes at least once in the past month are 30 times likelier to smoke marijuana than those who report neither smoking nor drinking alcohol.

* CASA is continuing to work in this area to control for each problem behavior separately.

- Compared to teens who report using none of the three gateway drugs (cigarettes, alcohol and marijuana) in the past month, teens who have used all three are almost 17 times likelier to have used a harder drug like cocaine, heroin or acid.
- Teenage boys who report using cigarettes, alcohol and marijuana at least once in the past month are 29 times likelier to have used a harder drug like cocaine, heroin or acid than boys who report using none of these gateway substances.
- Teenage girls who report using cigarettes, alcohol and marijuana at least once in the past month are 11 times likelier to have used a harder drug like cocaine, heroin or acid than girls who report using none of these gateway substances.

These relationships are only statistical. But they are far more compelling than the initial findings in the first Surgeon General's Report On Smoking and Health that those who smoked cigarettes were nine to ten times likelier to get lung cancer than those who didn't, and the early Framingham heart study findings that individuals with high cholesterol were two to four times likelier to have heart attacks.

Moreover, recent scientific studies here and in Europe have found that marijuana, nicotine and alcohol produce similar kinds of changes in brain chemistry as cocaine, heroin and amphetamines do. All these drugs affect dopamine levels through common pathways in the brain: one pathway is responsible for the high and another pathway for the anxiety brought on by withdrawal.²

The increase in marijuana use over the past several years has been accompanied by a smaller but significant increase in adolescent use of drugs like heroin, cocaine and acid. Each year, CASA conducts a national survey of attitudes toward substance abuse. This year's survey, which will be released on September 8 in Washington, D.C., also included middle and high school teachers as part of CASA's effort to assess the attitudes of those who influence our teens. One finding of the survey is so pertinent to the Commission's work that CASA is releasing it early as part of this report: the percentage of 12- to 17-year-olds who have a friend or classmate who uses drugs like cocaine, heroin or acid has risen by more than 40 percent in the last year.

In 1996, 12- to 17-year-olds were asked if they had a friend or classmate who used drugs like cocaine, heroin or acid: 39 percent knew friends or classmates who used such drugs. In the 1997 survey to be released on September 8, 56 percent know a friend or classmate who uses cocaine, heroin or acid. Among 12-year-olds, the increase was even greater, more than doubling from 10.6 percent to 23.5 percent.³

Our nation need not accept the widespread availability of nicotine, alcohol and drugs among teens and we recommend some actions to help curb that availability. Efforts to interdict drugs at our borders can be more effective. Mayor Rudolph Guiliani and local police, working with federal and state law enforcement agencies, have cut drug availability and crime in New York City; other cities can mount similar efforts. Reducing availability of cigarettes, alcohol and drugs is essential.⁴

Nevertheless, we must recognize that in a free society, such substances are likely to be available to any teen who wants to get them. Let's face it: every American 12- to

17-year-old--and some children much younger--will be called upon to make a conscious choice whether to smoke, drink or use drugs before they graduate from high school. And American teens will face that choice in situations where the substances are immediately at hand and being used by their peers.

That's why it is critical to put a premium on helping teens develop the skill and will to say no and to not want to use drugs. That responsibility falls squarely on those who have the greatest influence on adolescents: parents, teachers, peers, clergy, doctors, and the trend- setting entertainment, fashion and advertising industries.

In the final section of this report, we make specific suggestions for fulfilling such responsibilities. We have devised quizzes for parents, teachers, clergy, entertainment and fashion industry artists and executives. If they ask themselves the questions, they can take a measure of how well they are fulfilling their responsibility to help America's adolescents safely navigate the danger zone teen years without relying on dangerous substances.

How teens deal with substance use and abuse will be determined in the first instance in their homes, schools and communities, among their peers and in their extra-curricular and religious activities and leisure pursuits. The responsibility that parents, teachers and others who influence what teens do and how they act cannot be overstated. But there are important roles for government. At every level, government has a critical obligation to promote the public health, to deliver messages about substance abuse and addiction clearly and persuasively. The National Institutes of Health bear key responsibility to step up research in addiction and adolescence. Our Commission asks the nation and government leaders to commit themselves to developing techniques that will motivate teens to pursue healthy

lifestyles and stay away from nicotine, alcohol and drugs that can harm and addict them. It's time for America to make a major research investment in its adolescents and the greatest threat they face.

The good news is that most teens do not regularly smoke or use illicit drugs or abuse alcohol. Unfortunately, a significant number do. We hope this report and our recommendations for action by those who most influence teen conduct will help reduce that number.

CHAPTER I.

REFERENCES

¹ SADAC analysis of U.S. Census Bureau statistics, Population projections of the United States by age, sex, race, and Hispanic origin: 1995 to 2050. Retrieved from the World Wide Web, 7/22/97, http://www.census.gov/population/projections/nation/nasrh/nat_proj_doc.txt; U.S. population estimates by age, sex, race, and Hispanic origin: 1980 to 1996. Retrieved from the World Wide Web, 7/22/97, <http://www.census.gov/population/estimates/nation/natdoc.txt>.

² Blakeslee, S. (1997, June 27). Brain studies tie marijuana to other drugs. The New York Times, p. 16, col. 4.

³ In 1995, the CASA survey asked a similar question, but with slightly different wording. It showed that 17 percent of teens had at least one friend within their circle who currently used LSD, cocaine or heroin. The precise wording of each question and the responses are listed below:

1995: Thinking now about your own circle of friends, how many of them currently use LSD, cocaine or heroin--none, less than half, more than half, all of them?

82% NONE
13% LESS THAN HALF
4% MORE THAN HALF
0% ALL OF THEM
1% DON'T KNOW/NO RESPONSE [DO NOT READ]

1996: Do you know a friend or classmate who has used harder drugs like acid, cocaine, or heroin? Do you know this person fairly well, or not too well?

26% YES, KNOW SOMEONE FAIRLY WELL
13% YES, KNOW SOMEONE NOT WELL
61% NO
1% DON'T KNOW/NO RESPONSE

1997: Do you know a friend or classmate who has used illegal drugs like acid, cocaine, or heroin? Do you know this person fairly well, or not too well?

37% YES, KNOW SOMEONE FAIRLY WELL
19% YES, KNOW SOMEONE NOT WELL
43% NO
1% DON'T KNOW/REFUSED

⁴ Jonnes, J. (1996). Hep-cats, narcs, and pipe dreams: A history of America's romance with illegal drugs. New York, NY: Scribner.

II.

Adolescence:

The Danger Zone Years for Substance Abuse

The hope for a drug-free America rests with America's adolescents and those who influence their attitudes and activities.

In five years of intensive research, The National Center on Addiction and Substance Abuse at Columbia University (CASA) has found that an individual who makes it through age 21 without smoking, using drugs or abusing alcohol is virtually certain never to do so. There will of course be exceptions--often stemming from tragedies such as the loss of a child or spouse, perhaps from latent genetic characteristics. But it is during the teen years that the overwhelming majority of Americans make the decisions that will determine whether they have lives free of substance abuse and addiction.

The Carnegie Corporation of New York's landmark report, *Great Transitions: Preparing Adolescents for a New Century*, marks adolescence as the "crucially formative phase [that] can shape an individual's life course and thus the future of a whole society." Nowhere does that statement resonate with greater force than with respect to substance abuse and addiction.

That is why this Commission applauds the Clinton Administration's decision this year to make teenagers the focus of the national drug control strategy and to expand the goals of the strategy to include educating teens to reject alcohol and tobacco, as well as illegal drugs. The critical importance of adolescence also explains why the Commission finds so disturbing the recent, often sharp increases in substance use and abuse among American

adolescents.* Since 1992, daily smoking has been rising among teens. Use of marijuana, which had declined steadily from 1979 until 1991, has since jumped sharply. The percentage of 8th graders who have tried crack, powder cocaine or heroin, though small, has been creeping up since 1991. Beer and other alcohol continue to be the substances teens use most: in 1996, 55 percent of 8th graders, 72 percent of 10th graders, and four out of five 12th graders (79 percent) said they had tried alcohol. Inhalants, though often overlooked in discussions of adolescent substance abuse, are easily accessible to teens and are used particularly by younger adolescents and in poor neighborhoods. In 1996, more than 20 percent of 8th graders said they had used an inhalant at some point during their life. Steroid use continues to be a problem, particularly among male athletes such as football players and wrestlers, but also among other adolescent males.

Of even more concern is that youngsters are using and abusing substances at earlier and earlier ages. According to the University of Michigan's *Monitoring the Future Study*, “[t]he peak ages for initiation of cigarette smoking appear to be in the sixth and seventh grades (24 percent)--or between ages 11 and 12--but with a considerable number initiating smoking even earlier. In fact, 17 % of the 1995 eighth grade respondents reported having their first cigarette by fifth grade.”¹ More young teens are smoking and using marijuana and inhalants: between 1992 and 1996, the proportion of 8th graders who reported smoking during the past 30 days jumped by more than a third, from 15.5 percent to 21 percent; during the same four-year period, the proportion of 8th graders who said they had used marijuana

* Unless otherwise noted, in this report statistics regarding levels of teen substance use are from Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human

during or before 7th grade rose from 7.7 percent to 12.7 percent, while the proportion of 8th graders who reported using inhalants during or before 7th grade grew from 14.5 percent to 17.7 percent.² The average age of first marijuana use has also dropped. In 1963, the mean age of individuals who tried marijuana for the first time was 24.2. By 1979, the mean age had dropped to 17.6 and in 1994, the average age of individuals trying marijuana for the first time was 16.3. Between 1990 and 1994, for first alcohol use, the average age fell from 16.5 years to 15.9 years; for daily cigarette use, from 18.9 years to 16.8 years.³

The 1996 survey of 9- to 12-year olds conducted by The Partnership for a Drug-Free America reflects this increased use of drugs at younger ages. It shows that from 1995 to 1996, the proportion of 9- to 12-year-olds trying marijuana doubled from two to four percent and from 1993 to 1996, the proportion who tried cocaine rose from two to three percent. Significantly, more of these children were offered drugs in 1996 than in 1993. And these 9- to 12-year-olds are less likely than their predecessors to believe that "using drugs is dangerous" and less likely to say they "don't want to hang around people who use drugs."⁴ All of this signals big trouble ahead as these pre-teens move into their adolescent years, unless their attitudes change.

Teenage girls are smoking, drinking and using drugs at the same early ages as teenage boys and with comparable frequency.

If drug use among teenagers continues at recent rates or even if such use is slightly reduced, America will enter the new Millennium with more teenagers using drugs, since the number of adolescents is rising and continues to rise throughout the early years of the

Services, University of Michigan and Institute for Social Research (1996, December 2). *Monitoring the Future*.

next century. The number of teens age 12 to 17 will increase from 20.1 million to 23.6 million between 1990 and the year 2000, rising to 25 million by 2010.⁵

Several factors present today lead us to be concerned about the persistence of adolescent drug use. The 9- to 12-year old tracking survey of The Partnership for a Drug-Free America reveals sharp increases in marijuana and other drug use among this age group and a decline in the group's sense that using drugs is risky.⁶ The University of Michigan's *Monitoring the Future Study* reflects a decline in teens' perception of risk of using drugs. CASA's 1997 survey reveals an enormous jump--from 39 percent in 1996 to 56 percent in 1997--in the proportion of teens with friends and classmates using drugs like cocaine, heroin and acid. Marijuana is more widely available to teens than ever before and most of it is more potent than it was 20 years ago. There are far more drugs, particularly pills and inhalants, available today. Smoking is up among teens, as is binge drinking, both associated with the likelihood of drug use.

However effective the efforts of national and local law enforcement in interdicting illegal drugs at the border and arresting drug dealers, a wide variety of substances are likely to be available to American adolescents. As a society we have had little success in keeping cigarettes and alcohol out of the hands of 12- to 17-year-olds even though it is illegal for them to purchase these products. In focus groups and responses to surveys conducted by CASA, older teens make it clear that they can get their hands on marijuana in a matter of hours or at most a day. Drugs are so widely available in and around most high schools that the term drug-free school has become an oxymoron in America. Numerous household and

(unpublished data).

automotive products contain chemicals that teens may inhale in order to get high. This means that both outside and inside teenagers' homes and schools, alcohol, tobacco, illegal drugs and inhalants are easily accessible to teenagers looking for a high.

Taken together, the rising substance use among America's teens, the younger ages at which such use begins, the closing of the gender gap between boys and girls and the ready availability of so many substances constitutes a profound threat to American adolescents. And they know it. CASA's surveys consistently reveal that 12- to 17-year-olds consider drugs the biggest problem they face.

This report examines the nature of that threat, the influences that have brought it about and what parents, schools, churches, communities, the entertainment, fashion and advertising industries, the medical profession and government can and should do to help protect teens.

It is time for adults to stop asking what's gone wrong with America's teens and instead begin asking what adults can do to help adolescents negotiate the treacherous rapids of alcohol, nicotine and illicit drugs into which we have tossed them. Unless adults take more responsibility, we will deny millions of adolescents the chance to develop their talents to the fullest, confine hundreds of thousands to lives of addiction, crime and poor mental and physical health, and condemn thousands to death during their teen years from drug overdoses, alcohol poisoning, violence and accidents.

What Is Adolescence?

There is no standard definition of adolescence. For purposes of this report, we have selected the years from 12 through 17. Most people identify age 12 as the beginning of adolescence because this is typically when children begin to undergo physical and developmental changes associated with puberty. Because the legal system generally recognizes 18-year-olds as adults, the seventeenth year is often viewed as the end of adolescence. There are more than 20 million adolescents between the ages of 12 and 17, and extensive and reliable data are available for those years. The 1995 and 1996 surveys of The National Center on Addiction and Substance Abuse at Columbia University focus on those years, as does the National Household Survey on Drug Abuse of the National Institute on Drug Abuse. The *Monitoring the Future Study* of the University of Michigan surveys students in their schools and categorizes them according to grade level: 8th, 10th and 12th graders, largely 12- to 17-year-olds.

As we will discuss, there are distinct differences among adolescents of varying ages. The sharpness of these differences becomes apparent when the attitudes of 12- and 13-year-olds are compared with those of 16- and 17-year-olds, with ages 14 and 15 as a time of transition.

Adolescence is a time of significant physical, intellectual, emotional and social change. The experiences of younger teens are quite different from those of older teens and the experiences of boys differ from those of girls. These distinctions are especially important as they relate to the choices teens make about smoking, drinking and using drugs.

- *Physical Changes.* A central feature of adolescence, puberty is a series of biological changes that physically transform a child into a reproductively

mature adult. These changes which take about four years are the hallmark of early adolescence, with girls beginning the process about a year and a half earlier than boys. A boy's image of his own body normally improves as physical maturation occurs. Many girls experience a conflict between the normal processes of puberty and the high value society places on being thin.

Particularly for girls who mature at early ages, this conflict can set the stage for low self-esteem, substance abuse and eating disorders.

- *Intellectual Changes.* Adolescents concentrate on learning, discover how to think logically, grapple with abstract concepts, and come to understand consequences of behavior. But during times of stress--for example when teens feel pressured to join in drug use with peers--emotions may prevail over logic and judgment.⁷ Teens tend to have a sense of immortality and invulnerability that makes them think they can use attractive but dangerous substances with impunity.⁸
- *Social and Emotional Changes.* Adolescents think about how they compare to other teens and to images of adulthood they see in their families and communities and through the fashion, music and entertainment industries. This can be affirming or debilitating depending on the comparisons the teens draw. Early adolescence often involves a decline in self-esteem, particularly for girls, possibly making them more susceptible to substance abuse, depression, suicide, and delinquent behavior.⁹ As teens become less inclined to conform to the opinions of parents, they increasingly conform to

those of their peers. A teen associating with a peer group whose members use dangerous substances, is more likely to do the same.¹⁰

Many teens begin to experiment with sex when they are emotionally immature.¹¹

Substance use can both increase the likelihood and lower the age of such experimentation and hike the likelihood of adverse health and even life-threatening consequences.

American adolescents are many people. They are girls and boys. Successful students and dropouts. Rich, middle-class and poor. White, African-American, Hispanic, Asian-American, Native American, and all kinds of ethnic and racial mixtures. Protestant, Catholic, Jewish, Muslim, agnostic, atheist. They grow up with both biological parents or step-parents, single parents or aunts, uncles or grandmothers, in adoptive homes or foster care. Intellectual, physical and emotional maturity can vary widely, even among adolescents of the same age and background.

For all teens, substance use and abuse presents serious hazards. It can interfere with their ability to learn, their social, intellectual and physical development, and in the most tragic cases it can lead to serious accidents and even death. For this reason, it is important to look at the impact of each of the dangerous substances on adolescents.

CHAPTER II.

REFERENCES

- ¹ Johnston, L., O'Malley, P.M., Bachman, J.G and National Institute on Drug Abuse (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994. Volume I: Secondary school students; Volume 2: College students and young adults. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institute of Health, National Institute on Drug Abuse.
- ² Johnston, L.D., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse and University of Michigan, I.f.S.R. (1993). National survey results on drug use from the Monitoring the future study, 1975-1992. Volume I: Secondary school students. Rockville, MD: National Institute on Drug Abuse, U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health.
- ³ Office of Applied Studies, Substance Abuse and Mental Health Services Administration (1996, August). Preliminary estimates from the 1995 National Household Survey on Drug Abuse. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.
- ⁴ Partnership for a Drug-Free America (1997). 1996 Partnership Attitude Tracking Study. New York: Partnership for a Drug-Free America.
- ⁵ SADAC analysis of U.S. Census Bureau statistics.
- ⁶ Partnership for a Drug-Free America (1997). 1996 Partnership Attitude Tracking Study. New York: Partnership for a Drug-Free America.
- ⁷ Crockett, L.J. and Petersen, A.C. (1993). Adolescent development: Health risks and opportunities for health promotion. In S.G. Millstein, A.C. Petersen and E.O. Nightingale (Eds.), Promoting the health of adolescents: New directions for the twenty-first century (pp. 13-37). New York: Oxford University Press.
- ⁸ Caissy, G.A. (1994). Early Adolescence: Understanding the 10 to 15 year old. New York: Plenum Press; Keating, D.P. (1990). Adolescent thinking. In S.S. Feldman and G.R. Elliott (Eds.), At the threshold: The developing adolescent (pp. 54-89). Cambridge, MA: Harvard University Press.
- ⁹ Caissy, G.A. (1994). Early Adolescence: Understanding the 10 to 15 year old. New York: Plenum Press.
- ¹⁰ Beman, D.S. (1995). Risk factors leading to adolescent substance abuse. Adolescence, 30(117), 201-208.
- ¹¹ Brooks-Gunn, J. and Paikoff, R.L. (1993). "Sex is a gamble, kissing is a game": Adolescent sexuality and health promotion. In S.G. Millstein, A.C. Petersen and E.O. Nightingale (Eds.), Promoting the health of adolescents: New directions for the twenty-first century (pp. 180-208). New York: Oxford University Press.

III.

Adolescence and Alcohol, Tobacco and Other Drugs:

A Dangerous Mix

Adolescent experimentation with cigarettes, illegal drugs and other dangerous substances, which declined during the 1980s, has been rising in the 1990s.

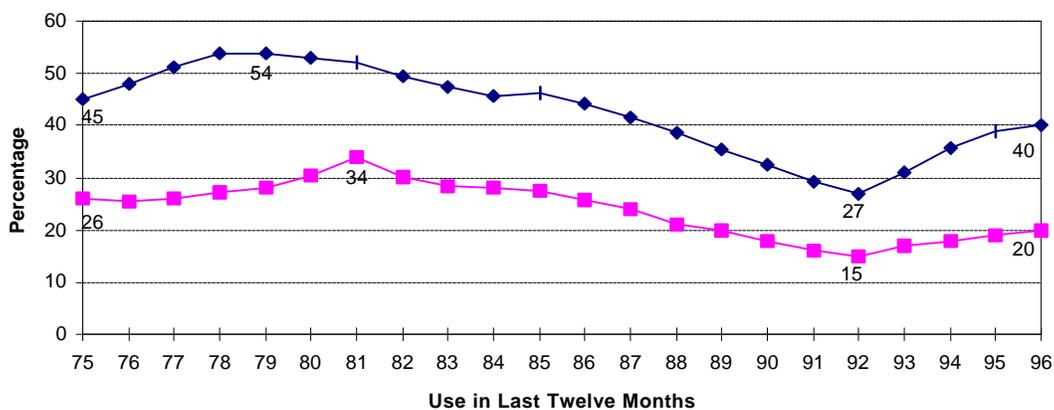
Alcohol is the drug of choice among teenagers, the one they use and abuse most frequently. The percentages of teens who have tried alcohol have remained steadily high since 1990 and the percentage of 8th graders who are binge drinking seems to be increasing. At the same time, teen use of marijuana (lifetime, annual, past month, and daily use) has shown a marked increase among 8th, 10th, and 12th graders. In other areas as well, illicit drug use has shown some disturbing trends. Overall, from 1992 to 1996, the percentage of 12th graders using any illicit drug in the past year rose from 27 percent to more than 40 percent; the percentage who had used any illicit drug other than marijuana within the past year climbed from 15 to nearly 20 percent.

Use of Dangerous Substances Interferes With Adolescent Growth and Development

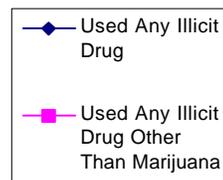
Use of alcohol, tobacco and illicit drugs, particularly in early and mid-adolescence, interferes with the physical, intellectual and emotional development of adolescents.¹ Even experimental use increases the chances of accidents, illness and death.²

Teen abuse of alcohol and drugs can impair judgment, coordination and motor skills and inhibit short term memory and ability to concentrate at a time when adolescents most need these skills, when they are learning in school.

Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders



Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use which is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers.



Source: 1996 Monitoring the Future Study; University of Michigan

Over the long run, drug and alcohol use impairs intellectual development. Scientific research suggests that adolescent substance use may alter the behavior of neurotransmitters in the brain.⁴ With greater long-term use, the risk of cancer, liver disease, heart disease, and other life threatening and debilitating conditions increases.

"Marijuana has really messed up my mind, because it makes it hard for me to remember something. if you want to become something in life, don't use it. If you don't want to become anything, go right ahead."

--Robert. Age 20 (smoked his first joint at 13)³

As a teen's drug use increases, social relationships with family members and friends may deteriorate.⁵ Drinking and smoking marijuana engage a teen with peer groups that

are more likely to become involved with drugs like cocaine and heroin.⁶ Because drug use and drunk driving are illegal activities and because of the strong links between drug use and increased criminal behavior, use of alcohol, marijuana or other illicit drugs may put a teen into the juvenile justice system, which in turn may tilt the teen toward more criminal activity.⁷ Certain drugs may also trigger aggressive behavior and schizophrenic-like symptoms.⁸

The Earlier and More Often the Teen Uses, the Greater the Risk and Progression of Drug Use

For many teens, a progression towards using increasingly dangerous substances starts with cigarettes and alcohol, moves to marijuana, and then on to other illicit drugs such as cocaine, heroin and acid.⁹ When teens first use tobacco and alcohol, no one can predict who among them will go on to use marijuana. Most don't. For teens who use tobacco, alcohol and marijuana, no one can predict who will go on to use other illicit drugs. Most don't. But, adolescents who play with the fire of nicotine, alcohol and marijuana increase their risk of getting burned by the flames of acid, cocaine and heroin.

In 1994, The National Center on Addiction and Substance Abuse at Columbia University published a report, *Cigarettes, Alcohol, Marijuana: Gateways to Illicit Drug Use*, which analyzed the relationship of use of cigarettes, alcohol and marijuana to use of other illicit drugs. From its examination of available data, surveys of teens and responses from focus groups, CASA has uncovered strong statistical relationships between the use of cigarettes, alcohol and marijuana and the subsequent use of cocaine.

Two important conclusions came out of this work:

- The earlier a teen starts using cigarettes, alcohol and marijuana, the greater the likelihood that teen will use other illicit drugs.
- The more frequently a teen uses cigarettes, alcohol and marijuana, the greater the likelihood that teen will use other drugs.

For these reasons, alcohol and tobacco are often referred to as gateways to marijuana use and alcohol, tobacco and marijuana are referred to as gateway drugs to other illicit drug use. A number of theories have been offered in an effort to explain why this statistical relationship exists.

The 1994 CASA study analyzed data from the National Household Survey on Drug Abuse (NHSDA) of the National Institute on Drug Abuse and concluded that regardless of gender, race or ethnicity, the probability of illicit drug use was considerably higher for those who had used a gateway drug as a child. CASA's findings were consistent with a number of other studies. Work by Kandel and Yamaguchi, for instance, indicates that most cocaine users begin their drug use with cigarettes or alcohol and then progress to marijuana before moving on to cocaine. Their work also suggests that adolescent cocaine users begin using gateway drugs an average of two years earlier than those adolescents who do not use cocaine. Ellickson, Hays, and Bell found evidence that weekly smoking may precede the initial use of hard drugs and that marijuana use accompanies hard drug use. Welte and Barnes, as well as other researchers, have argued that cigarettes play a larger role as a gateway drug for women than men.¹⁰

In this report, using the Centers for Disease Control and Prevention's (CDC) data from the 1995 Youth Risk Behavior Survey of 10,900 9th to 12th graders, for the first time, CASA has analyzed the statistical relationship between use of gateway substances and use of other illicit drugs, controlling for a variety of other risk factors such as fighting, carrying a weapon, attempting suicide, having multiple sexual partners, driving drunk. The findings reveal a stunning statistical link between smoking, drinking and using pot--in and of themselves--and the use of harder drugs.

Among teens who did display some of these other risk behaviors, the probability of marijuana use was influenced by these behaviors. Nevertheless, looking at these risk factors independently (holding all others constant), alcohol and cigarette use demonstrated a more powerful statistical relationship to marijuana use than any of these other behaviors. For instance, among kids who reported being in three or more fights in the previous year, those who reported having smoked a cigarette in the past month were five times more likely to have reported using marijuana than those who reported fighting but not smoking.

These are the stunning findings of statistical correlation:

- Among 12- to 17-year-olds who report no other problem behaviors, those who report drinking alcohol and smoking cigarettes at least once in the past month are 30 times more likely to have also smoked marijuana than those who report neither smoking nor drinking alcohol. These correlations are more pronounced for girls than boys: for girls, 36 times likelier; for boys, 27 times likelier.

- Among 12- to 17-year-olds who report no other problem behaviors, those who report using all three gateway drugs (cigarettes, alcohol, marijuana) in the past month are almost 17 times likelier to have used a harder drug like cocaine. Here, the relationship of gateway drug use to use of other illicit drugs is stronger for boys than girls. Teenage boys who report using all three substances (cigarettes, alcohol, marijuana) at least once in the past 30 days are 29 times more likely to have used a harder drug than boys who report using none of these substances. Teenage girls who report using all three substances are 11 times more likely to have used a harder drug.

These relationships between use of gateway substances and other illegal drug use are more potent than early statistical relationships found between smoking and lung cancer (nine to ten times likelier in the 1964 Surgeon General's report) and between high cholesterol and heart disease (two to four times likelier in the early phases of the Framingham Heart Study).

While these data demonstrate only statistical (not causal) correlations, neuroscience research may help to explain the relationship between use of alcohol, cigarettes and marijuana and use of harder drugs. Two recently released studies suggest a biomedical basis for the link between use of alcohol and use of marijuana, as well as between use of marijuana and use of drugs like cocaine and heroin. Research by Gaetano DiChiara of the University of Cagliari in Italy and his colleagues indicates that THC (delta-9-tetrahydrocannabinol, the primary psychoactive ingredient in marijuana) may trigger the brain's reward system to release dopamine, a chemical which gives users the sensation of

pleasure. It is dopamine and the brain's reward system which researchers have suggested make drugs like heroin and cocaine so addictive. Gaetano DiChiara suggests that marijuana may prime the brain to seek substances like heroin that act in a similar way.¹¹ Earlier studies demonstrated that nicotine and cocaine have a similar impact on dopamine levels in the brain.¹²

Up until this time, researchers have disagreed on whether marijuana was physically addictive. Studies have suggested psychological dependence, but because cannabis stays in the body for so long after use, physical dependence has been a matter of debate. In another recent study conducted by Koob and Weiss and published in *Science* magazine, however, researchers used an antagonist to induce immediate cannabis withdrawal in rats. The rats exhibited symptoms of emotional stress and anxiety like those associated with withdrawal from cocaine, alcohol and opiates. According to *Science*, "the results, experts say, provide the first neurochemical basis for a marijuana withdrawal syndrome, and one with a strong emotional component that is shared by other abused drugs." Koob and Weiss believe that the stress and anxiety brought on by marijuana withdrawal might nudge a user toward harder drugs.¹³ These two studies suggest that marijuana operates on the brain in a manner similar to alcohol, cocaine and heroin, both to induce pleasure during use and to cause anxiety following cessation in use.

The statistical link between smoking, drinking and using marijuana and harder drug use, as well as these recent scientific findings, make a compelling case for additional biomedical research. Historical trends, combined with the knowledge of the gateway phenomenon which suggests that increases in marijuana use may well foreshadow future increases in the use of harder drugs, add urgency to that need. With additional neuroscience

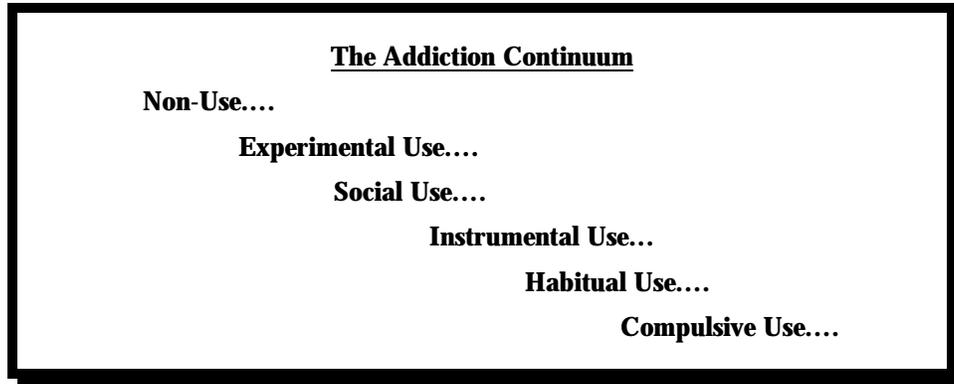
research, we may be able to understand the links between use of all these drugs and be better equipped to prevent addiction and treat those individuals who fall prey to it.

The Addiction Continuum

No teen who experiments with tobacco, alcohol or drugs expects to become addicted. With the exception of crack cocaine users, most teens who experiment do not get hooked. For an increasing number, however, experimentation progresses to more regular use. Initial use may be motivated by curiosity, thrill seeking or peer pressure. Eager to appear cool and be one of the group, a teen may begin using dangerous substances socially as a way to be accepted by peers.

Teens using drugs or alcohol quickly learn that particular substances can produce certain pleasurable effects. Many then use alcohol, marijuana or other illicit drugs to feel good, to relieve stress or cope with difficult situations. This type of use is considered "instrumental:" teens are intentionally using certain substances to manipulate their emotions and behavior.

These teens are in dangerous territory. From here, it's a short step to habitual use and then into the stage of compulsive use or addiction. No clear line separates these final stages of addiction where substance use becomes the predominant means of recreation and coping. Former interests drop away. New friends who use substances replace old ones who don't. Activities center on getting and using drugs. Teens in these later stages of the addiction continuum continue to use drugs and alcohol despite negative legal, social, physical, and academic consequences.¹⁴



In the "compulsive" or final stage of addiction, teens lose control over their substance use. The addicted teen is preoccupied with getting drunk or high. Mood altering substances control the teen's life. The teen becomes isolated from family and friends.¹⁵

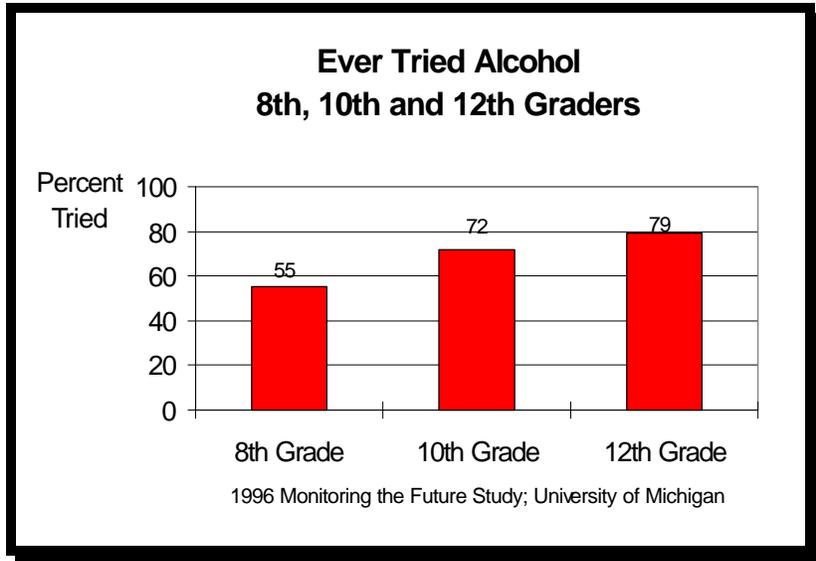
The Substances Teens Use

Teens are using a wide range of dangerous substances: alcohol, tobacco, marijuana, LSD, amphetamines and methamphetamine, cocaine and crack, heroin, inhalants, steroids, and a variety of prescription and over-the-counter drugs.

Alcohol: The Substance Teens Most Widely Abuse

In 1996, more than 79 percent of 12th graders, 72 percent of 10th graders and 55 percent of 8th graders said they had tried alcohol. These are by far the highest rates of use associated with any dangerous substance. Peer disapproval is lower for drinking than for any other substance use.¹⁶ The alcohol teens are most likely to drink is beer, followed by wine coolers.

Teens do not use alcohol in the same patterns as adults. While adolescents do not drink as often as adults, they are more likely to consume greater quantities when they do drink. Nearly 27 percent



of 8th graders admit having been drunk. More than half (50.8 percent) of 12th graders have used alcohol in the past 30 days. The same proportion have engaged at least once in binge drinking and have gotten sick from drinking. Thirty percent have passed out as a result of drinking.¹⁷

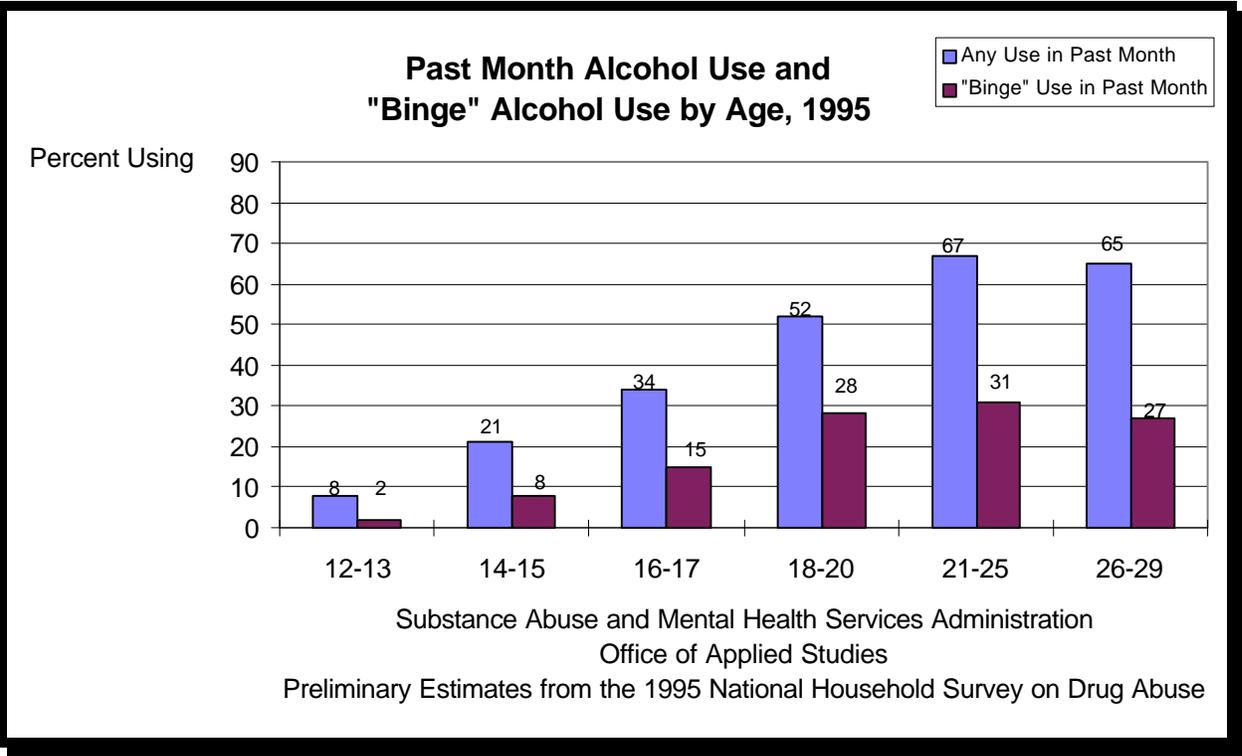
How Alcohol Affects Teens. Alcoholic beverages contain ethyl alcohol, an intoxicating liquid produced by yeast fermentation of certain carbohydrates. After an initial high, alcohol has a depressing, sedating effect on the body. Small amounts of alcohol produce mild mood altering effects including a lessening of anxiety and inhibitions. Larger quantities slow down thought and judgment, impair coordination, blur vision, slur speech, and cause teens to stagger, lose balance or fall asleep. Extremely excessive amounts result in stupor, unconsciousness and even death due to a decrease in the brain's ability to control breathing. Sudden death can also occur in adolescent alcoholics as a result of alcohol's effect on heart rhythm.¹⁸

The biggest threat that alcohol poses for teens may be in risky behaviors that often accompany drinking. Inexperienced drinkers, a group includes most adolescents, have less tolerance for alcohol. Their drinking can result in injury or even death from motor vehicle or other accidents. Thirty-two percent of high school seniors admit driving while intoxicated. Teens account for only 13 percent of licensed drivers, but they are responsible for 25 percent of alcohol-related fatal motor vehicle accidents.¹⁹

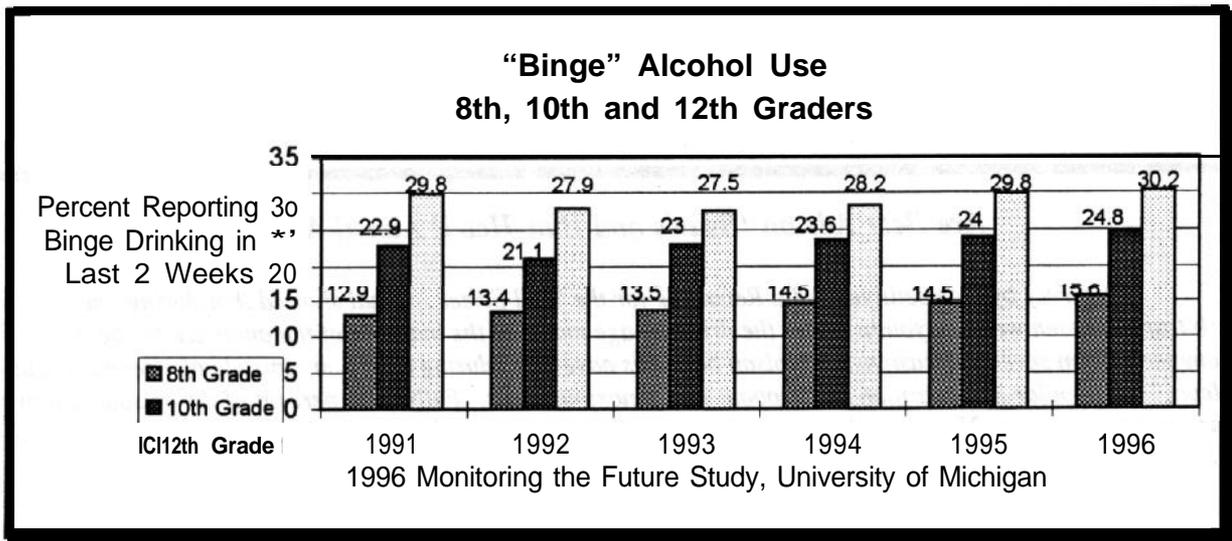
Early and risky sexual activity, teen pregnancy, suicide attempts and violence are also associated with teen alcohol abuse, as are problems with family, friends, school and the law. Fifteen percent of seniors report missing school or work because of drinking and 31 percent admit drinking before or during school.²⁰

Many teens use alcohol with other substances. A third use alcohol with marijuana; ten percent with stimulants such as amphetamines; four percent with depressants such as barbiturates.²¹ Marijuana decreases the activity of the nausea center in the brain which functions as a warning to stop drinking. Alcohol in combination with other sedatives multiplies effects which can lead to death by sedating the brain centers governing breathing.

History of Alcohol Use Among Teens. The social use of alcohol among adults--for purposes of conviviality and relaxation--makes alcohol both easily available and alluring to teens. Alcohol is also used for many religious and ceremonial purposes in America. Many families introduce alcohol consumption, often in the form of diluted wine, to children at celebrations such as religious holidays and weddings. This supervised, family use of alcohol is not our concern in this report.



By the 8th grade, some 55 percent of America's youth have tried alcohol at sometime in their lives, 26 percent have had a drink in the past month, and one percent are daily drinkers. The proportion of 12th graders who have used alcohol in the past 30 days peaked in 1978 and 1980 at about 72 percent and declined gradually to about 50 percent where it has stayed in recent years. But binge drinking--having five or more drinks at one sitting within the last two weeks--among 12th graders hit a low point of 27.5 percent in 1993 and climbed back to 30.2 percent in 1996. Among 8th graders, binge drinking rose from 12.9 percent in 1991 to 15.6 percent in 1996.



Availability of Alcohol to Teens. More than 75 percent of 8th graders and 90 percent of 10th graders find alcohol easy to obtain.” In most cases teens get alcohol from young adults or from older peers. In some cases, they get it from their parents--either with or without their permission. Some teens purchase it directly. In many areas, teens can buy fake photo IDs to use in bars or stores that sell alcoholic beverages.= In New York City in 1996, 16 out of 20 Upper West Side bars surveyed served an underage reporter and 13 didn’t even ask for identification. 24

Messages We Send Teens About Alcohol. Teens witness extensive alcohol use and abuse by adults. Drinking is often portrayed glamorously in movies and television advertisements. Seagram has begun advertising hard liquor on television. Among 5th and 6th graders, TV beer advertising has been related to positive feelings about drinking. In a 1994 study, 80 percent of 12-year-olds could identify Spuds McKenzie with Budweiser beer. Recently, some beer companies have faced allegations of marketing their products directly to

teens. In an apparent response to this negative publicity, Anheuser-Busch pulled their ads from MTV.²⁵

Are Beer Ads on 'Beavis and Butt-Head' Aimed At Kids?

"A survey by Competitive Media Reporting for the Wall Street Journal showed that during one arbitrarily chosen week ... youths under the drinking age made up the majority of the audience for beer commercials on several occasions. ... Molson beer was advertised during a 10 p.m. episode of "Beavis & Butt-Head," the popular MTV cartoon series about two obnoxious teens. Fully 69% percent of the episode's viewers that night were under 21.... Also that week, Anheuser-Busch ran an add for its Budweiser brand just after 8:30 p.m. on BET during music-video programming when 70 percent of the audience was under 21."

Wall Street Journal, January 6, 1997²⁶

The collective impact of these messages has helped keep alcohol use rates high among teens and consumption of larger quantities seems to be increasing, particularly among younger teens. Underage drinkers are a \$10 billion market for the beer and alcohol industry and disapproval of alcohol use appears to be declining among 8th and 10th graders.²⁸

Alcopops, new lemonade flavored drinks containing 4.5% alcohol, are being introduced into the U.S. Marketed with cartoonish labels and names like Two Dogs Lemon Brew, and Yellow Belly Lemon Ale, they target a younger market... "They taste like lemonade. That's why we drink them."²⁷

--Alison, 16-years-old

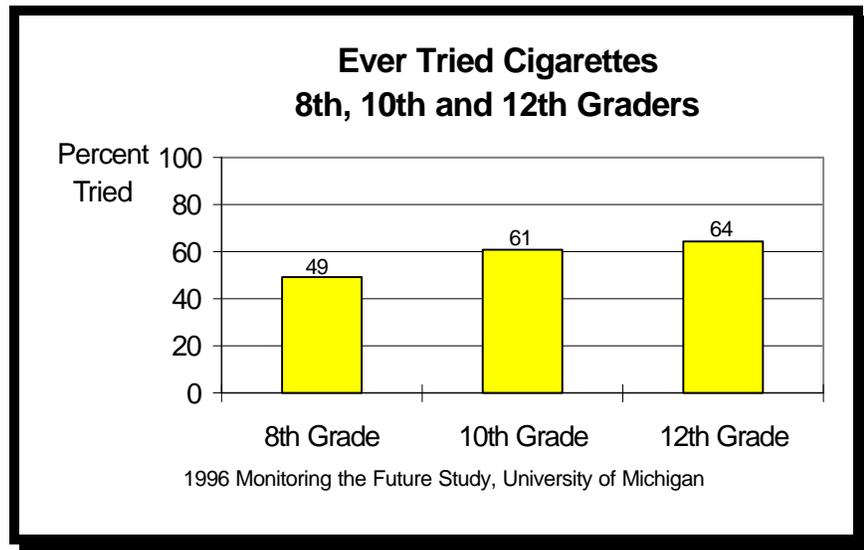
Tobacco

Each day 3,000 children become regular smokers.²⁹ In 1996, about 64 percent of 12th graders, 61 percent of 10th graders and 49 percent of 8th graders had tried cigarettes; nearly 30 percent of 12th graders, 27 percent of 10th graders and 20 percent of 8th graders had also tried smokeless tobacco. Each year minors in the United States consume almost one

billion packs of cigarettes and smokeless tobacco products, yielding close to one-quarter of a billion dollars in profits for tobacco companies.³⁰

How Tobacco Affects Teens. The addictive ingredient in tobacco is nicotine, a poisonous organic compound derived from the tobacco plant. Cigarette smoke contains thousands of other compounds, many of them carcinogenic and harmful.³¹

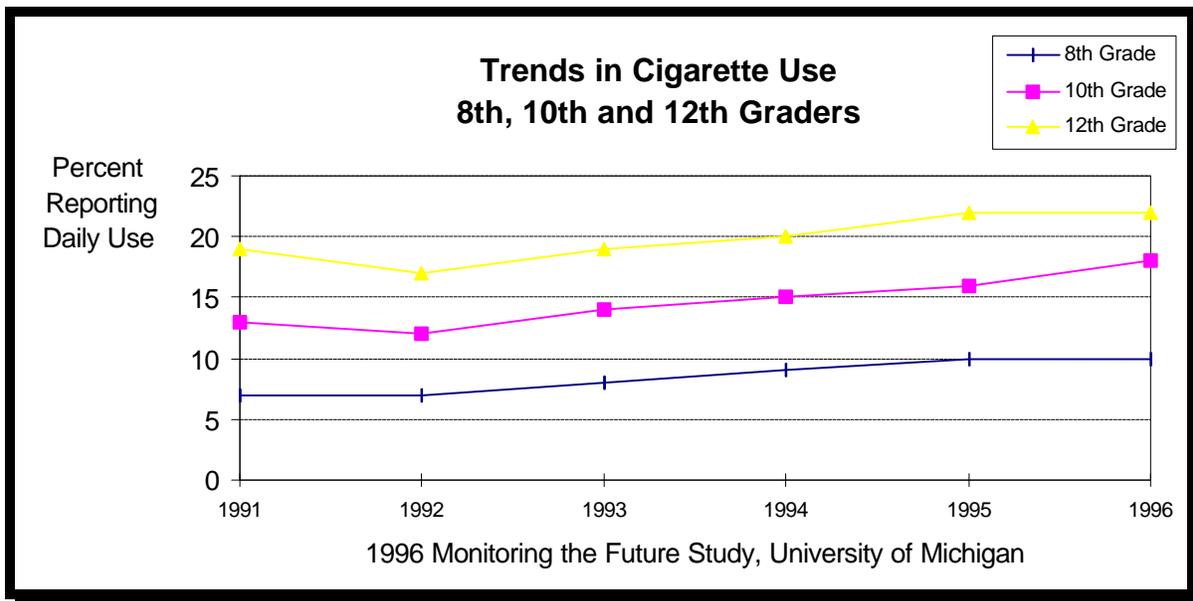
Smokeless tobacco, which teens call dip, spit or chew, also causes cancer. Smokeless tobacco is highly addictive and teens who use smokeless tobacco often become cigarette smokers.³²



Inhaling cigarette smoke is the fastest and most intense way of carrying nicotine to the brain. This fact helps to explain the extraordinarily addictive power of cigarettes.³³ One of every three youths who become addicted to nicotine will eventually die as a result of smoking.³⁴ Those who start smoking at a young age are more likely to become severely addicted to nicotine and to be heavy smokers as adults.³⁵

History of Tobacco Use Among Teens. From 1977 to 1992, daily smoking among 12th graders had declined from 28.8 percent to 17.2 percent. Since then it has risen, reaching 22 percent in 1996. Cigarette smoking among younger teens has been rising for the

past five years: between 1991 and 1996 the proportion of 8th graders who had smoked a cigarette rose from 44 percent to 49 percent; the proportion of 10th graders, from 55 percent to 61 percent. Regular smoking is up sharply among 8th grade girls, from 13 percent in 1991 to 21 percent in 1996. In 1996, a higher percentage of 8th grade girls smoked than boys. Teen smoking rates are higher among whites than blacks and Hispanics.



Teens who start smoking don't expect to get hooked. In one study, daily smokers in high school were asked if they thought they would be smoking five years later. Only five percent said yes, but some 75 percent were smoking seven to nine years later.³⁶ Two out of three teen smokers say they want to quit and 70 percent say they would not start if they had the choice to make again.³⁷ Seventy-seven percent of teens report they have tried to quit at least once.³⁸ No more than 1.5 percent are successful during adolescence.³⁹

Now, more than ever, teens are aware of the immediate and long term consequences of smoking.⁴¹ But, the popular culture displays smoking as cool, sexy, professional, and the chic thing to do. These images, displayed on the Internet, in tobacco company advertising and in the movies, along with a sense of invulnerability, lead teens to ignore the dangers they know.

Sample Web Sites Promoting Tobacco Use⁴⁰

Smokers Guide to Cool Smoking -- which provides detailed instructions on smoking techniques such as French inhaling, shotgunning, smoke bubbles, smoke rings and various lighter tricks.

Smokey's Cafe -- a chat room "where smoking isn't only permitted, its required!" including topics such as "Vote for your favorite smoking movie." and "Increasing your smoking addiction."

The Smoker's Home Page -- "For the TRUE Smokers -- to provide resources, facts and other fun stuff related to the great pastime of smoking."

Availability of Tobacco to Teens. Though sale of tobacco to children under 18 is illegal, 77 percent of 13- and 14-year olds report that it is easy to obtain cigarettes.⁴² According to one study, 42 percent buy cigarettes from a store, more often than not a small store. Twenty-six percent are given cigarettes by someone else. Four percent get them from vending machines and five percent steal them.⁴³

Messages We Send Teens About Tobacco. Teen smokers most often choose brands that have the largest advertising budgets targeted to adolescents. Advertising by companies like Marlboro and Newport appeal to a teen's need to be more grown up. Many advertisements portray attractive young models who appear healthy, independent and socially successful-- and who smoke. Camel advertisements, for more almost a decade, used the cartoon character Joe Camel to appeal to teens: the proportion of smokers under 18 who chose Camels jumped from 0.5 percent to 32.8 percent from 1988 to 1991.⁴⁵ The impact of these advertising campaigns on teens is significant.⁴⁶ In

Proposed Federal Rules Aimed At Restricting Youths' Access to Tobacco Products⁴⁴

- *Vending machines banned except in places where people under 18 can't go.*
- *Kiddie packs, loosies and free samples banned.*
- *Billboards within 1,000 feet of schools and playgrounds banned.*
- *Other ads limited to black and white unless in areas where children cannot go.*
- *Brand name sponsorship of sporting or other events banned.*
- *Brand names on hats, T-shirts, gym bags and other products banned.*
- *Photo ID required for proof of age to purchase tobacco products.*

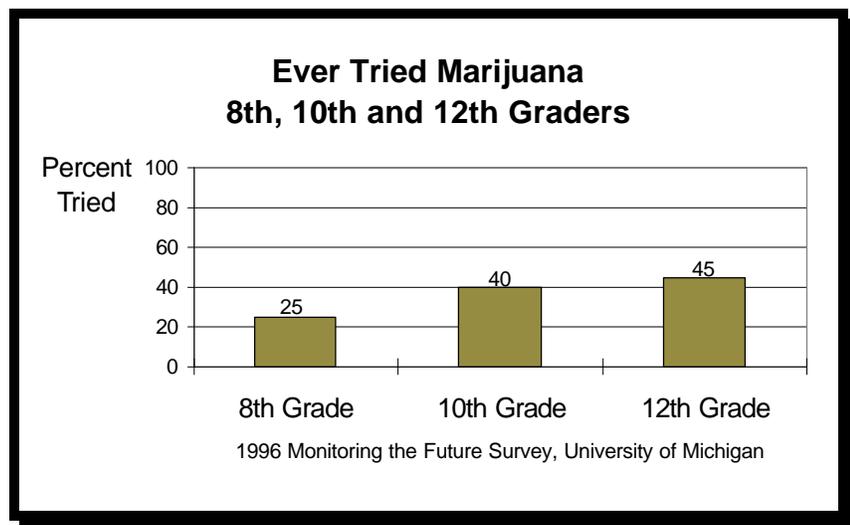
a 1986 study, suburban 7th and 8th graders exposed to substantial cigarette advertising were up to twice as likely to smoke than those with little such exposure.⁴⁷

Cigarette smoking in adults almost always starts with experimentation in adolescence.⁴⁸ The tobacco companies, well aware of this, sought to maintain their sales by soliciting new users from among children and teenagers, particularly women, Hispanics and blacks.⁴⁹ Tobacco company documents reveal that in the early 1970s tobacco companies researched the smoking habits of children as young as 14.⁵⁰

Other ways tobacco companies appeal to youth have included distribution of a wide range of specialty items, such as clothing and goods with the cigarette name and logo, in exchange for purchasing their cigarettes. The likelihood of experimenting with smoking was 2.2 times higher among those who owned promotional items and 2.8 times higher among those who received mail directly from a tobacco company. To curb tobacco use among teens, the Clinton administration has recently proposed new restrictions on sale and advertisement and in a tentative settlement agreement with state attorney generals and plaintiffs' lawyers, cigarette companies have agreed to curb such activities.⁵¹

Marijuana: Mixed Messages

In 1996, 45 percent of 12th graders, 40 percent of 10th graders and 25 percent of 8th graders had used marijuana at some point in their lives.



Marijuana is by far the illicit drug most frequently used by American teenagers.

How Marijuana Affects Teens. Marijuana, also known as pot or grass, is the name for the dried leaves and flowering tops of the *cannabis sativa plant*, which grows throughout the world both as a weed and in cultivated crops.⁵² The primary psychoactive

ingredient in marijuana is THC (delta-9-tetrahydrocannabinol), but the marijuana plant also contains more than 60 related compounds (called cannabinoids) and more than 400 different chemicals.⁵³ In combination, some of these compounds may intensify or alter the effects of others. The interaction of these substances and their influence on the brain and body are not well understood.

Marijuana is most often smoked, though it is sometimes taken orally.⁵⁴ The leaves can be baked into food or the primary ingredient, THC, can be taken in tablet form. THC tablets are a Schedule II prescribable drug, used as an anti-nauseant and appetite enhancer for cancer and AIDS patients.⁵⁵

Smoking is the most potent means of administration. About 50 percent of cannabinoids from a marijuana cigarette enter the lungs and are absorbed into the body.⁵⁶ Within a few minutes of inhaling, marijuana users experience the first noticeable effects, an increased pulse rate and reddened eyes (caused by blood vessels in the eye expanding). Other early reactions include dry mouth, decreased muscle strength, increased appetite, some loss of coordination and sense of balance, and slower reaction times. Intoxication proceeds in two phases: an initial euphoria or high and then a period of drowsiness.⁵⁷

Effects vary considerably from one user to the next and even for the same user on different occasions. A number of factors influence individual experiences, including extent of prior use, expectations or mood of the user and social setting.⁵⁸ Certain reactions are typical, however: an altered sense of time, an impaired ability to distinguish sounds, visual distortions, difficulty thinking and concentrating, and dream-like states.⁵⁹

Adolescent marijuana use can interfere with short-term memory and ability to concentrate and maintain attention, and thus school performance, as well as with emotional and social development.⁶⁰ If teenagers come to rely on marijuana as a mechanism for coping with school, family or other tensions, they may not develop the skills they will need to deal with future crises or problems or to make decisions that confront them as young adults.

Although marijuana was thought to produce primarily psychological dependence, evidence from recent animal studies suggest marijuana may produce physical dependence as well.⁶¹

Regular marijuana smokers may suffer many respiratory ailments that afflict tobacco smokers: daily cough and phlegm, symptoms of chronic bronchitis, more frequent chest colds, abnormal functioning of lungs and airways, and damaged lung tissue.⁶² Because the marijuana users inhale deeply and hold their breath to absorb as much THC as possible, marijuana cigarettes leave more residue--tar--in lungs than tobacco cigarettes.⁶³ Smoking five or more joint per week appears to produce the same lung diseases--bronchitis, emphysema and bronchial asthma--and potential cancer risk as smoking a full pack of cigarettes daily.⁶⁴

History of Teen Marijuana Use. By 1979, marijuana use in America had peaked and begun a gradual steady decline which lasted until 1991, when the percentage of adolescents smoking marijuana stopped declining and began rising. The rate of current use is still below its 1979 peak of 14.2 percent, but it more than doubled from 1992 to 1995 (3.4 percent to 8.2 percent).⁶⁵ This increased use has been across the board, "evident among both boys and girls; among whites, blacks and Hispanics; in all four geographic regions; and, in metropolitan and non-metropolitan areas."⁶⁶ While 16 percent of teenagers have tried marijuana, only eight percent are current users.⁶⁷ However, teens who continue using

marijuana seem to smoke it frequently. In 1995, almost one out of every 20 high school seniors smoked marijuana on a daily basis.⁶⁸

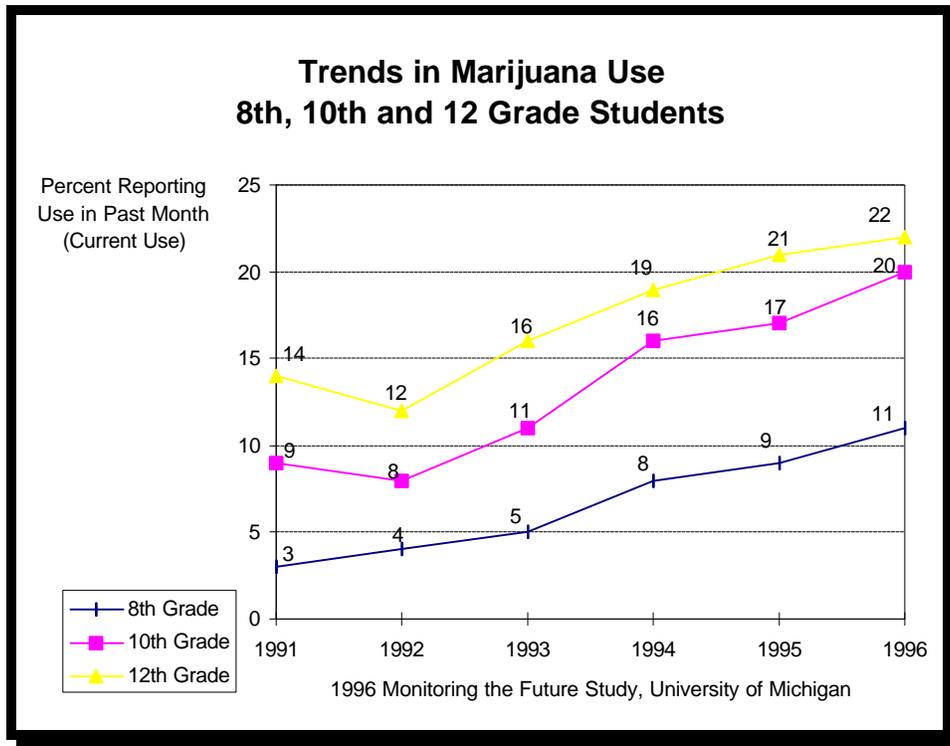
A higher percentage of young men than of young women smoke marijuana. Among 12- to 17-year-olds, whites smoke at a slightly higher rate than blacks and Hispanics. The percentage of 12- to 17-year-olds who smoke pot is lowest in the South and highest in the Northeast region of the country.

Americans are beginning to use marijuana at younger and younger ages. In 1963, the mean age of individuals who tried marijuana for the first time was 24.2. By 1979, the mean age had dropped to 17.6.⁶⁹ According to the most recent estimate from the National Household Survey on Drug Abuse, the average age of individuals trying marijuana for the first time has fallen to 16.3 years.⁷⁰ But this is an average. In 1996, about one in four 8th graders (23 percent), generally 14-year-olds, had tried marijuana.

Availability of Marijuana to Teens. Sixty-eight percent of 17-year-olds say that they can buy marijuana within a day; 47 percent of 14-year-olds say the same thing. More than 60 percent of 17-year-olds have friends who use marijuana. Most 17-year-olds (58 percent) have been solicited to buy it, as have one-third of the 14-year-olds. Many 17-year-olds (42 percent) find marijuana easier to buy than beer or cigarettes.⁷¹

A major reason for the increasing acceptability of marijuana among teens may be the ambivalence of baby boomer parents who used marijuana in their youth and now are productive adults, their reluctance to discuss marijuana use with their children or to urge their children not to use drugs for fear of appearing hypocritical or because they don't perceive much danger in use.

Almost half of parents expect their own kids to use an illegal drug. Sixty-five percent of baby boomers who at some point in their life used marijuana regularly think their children will use illegal drugs; only 29 percent of those who never used marijuana consider it inevitable that their kids will use illegal drugs.⁷²



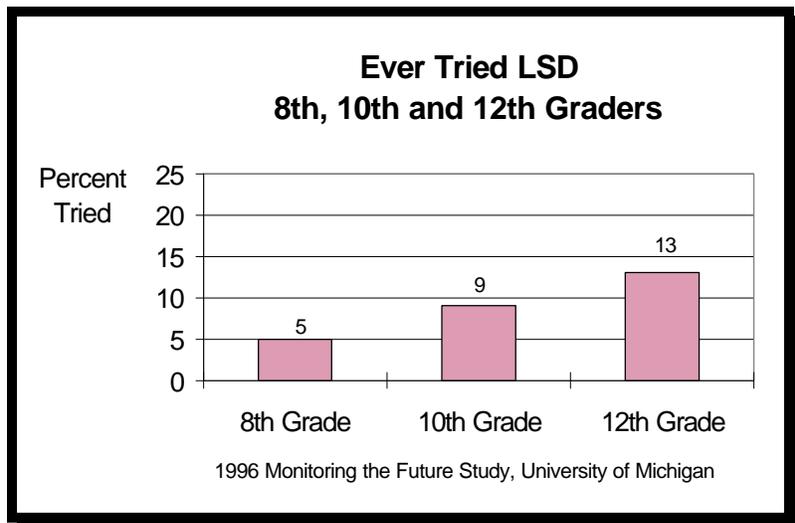
Messages We Send Teens About Marijuana. Teen perceptions of risks associated with marijuana use rose steadily from 1978 to 1991. Since then, they have dropped sharply. In 1995, only 60 percent of 12th graders believed that people who smoke marijuana regularly put themselves at great risk (about 70 percent of 10th graders and 73 percent of 8th graders believe the same).⁷³

Student's disapproval of marijuana use has also fallen. In 1991, 92 percent of 8th graders said they would disapprove of someone who smoked marijuana regularly. In 1996, this number was down to 83 percent.⁷⁴

The Partnership for a Drug-Free America survey tracking attitudes of 9- to 12-year-olds reveals a sharp decline among these pre-teens in their perceptions of risk and disapproval of use of marijuana.⁷⁵

LSD: Leary's Legacy Lives

Out of fashion among adolescents since the 1970s, LSD (lysergic acid diethylamide) is back again. In 1996, 13 percent of 12th graders, nine percent of 10th graders and five percent of 8th graders had tried LSD.



Twelfth graders' use has surpassed its previous peak (11 percent in 1975).⁷⁶

How Does LSD Affect Teens? LSD, also called acid, blotter acid, fry, LSD-25 or windowpane, is a semisynthetic drug produced from ergot, a fungus which grows as a parasite on rye wheat.⁷⁷ It excites the central nervous system, resulting in bizarre alterations in perception, feelings and behavior. Mood changes can range from euphoria to depression.

LSD is classified as an hallucinogen like PCP (phencyclidine, angel dust), but it does not produce hallucinations. LSD greatly enhances sensory perceptions and is therefore more appropriately referred to as a psychedelic. It is used by teens to alter consciousness, extremely enhance sensory perceptions and stimulate a mixing of senses (e.g., seeing music, hearing colors).⁷⁸

LSD is not physically addictive like nicotine, cocaine and heroin, but it can have serious negative effects. Users may experience rapid heart rate, anxiety, distorted sensory perceptions, confusion, difficulty in differentiating oneself from the environment, rapid mood swings, an unusual sense of power that can lead to dangerous behavior, psychotic episodes, acute panic reactions, flashbacks, and possibly psychosis and brain damage.⁷⁹

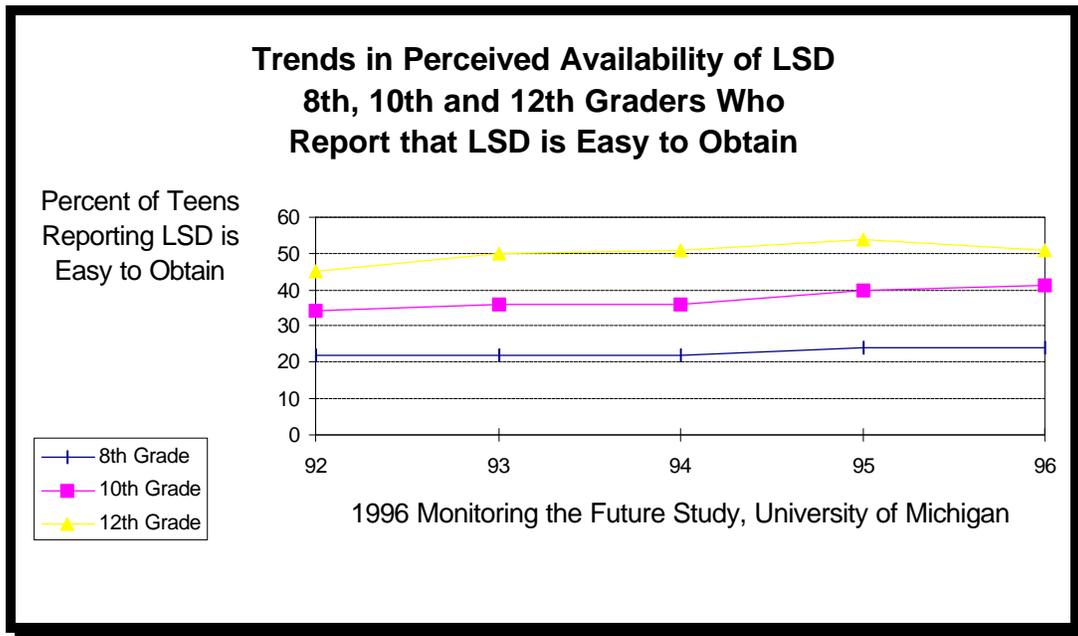
Teens under the influence of LSD may exhibit the following symptoms: wide-eyed with dilated pupils, higher than normal body temperature, sweating, restlessness, loss of appetite, sleeplessness, uncontrollable laughing and strong reaction to any stimulus. Signs of LSD overdose are usually extreme anxiety and panic.⁸⁰

History of LSD Use Among Teens. Timothy Leary, counterculture leader of the 1960s, did more than any other person to encourage LSD use among the nation's young. His slogan, "Turn on, tune in, drop out," contributed to the hippie rebellion and the Haight-Ashbury counterculture movement in San Francisco. As LSD use increased, tragic adverse reactions, such as suicides, schizophrenic breaks and irreversible cognitive impairments, were documented.⁸¹

LSD use among teens declined from 1975 through 1986. Since then, teen use has been rising.⁸² From 1991 to 1996, the proportion of 12th graders who have ever tried

LSD increased from nine to 13 percent; among 8th graders, from three percent to five percent; and among 10th graders, from six percent to nine percent.

Availability of LSD To Teens. A dose of LSD sells for about five dollars. The common form is blotter LSD--doses of the drug deposited on small pieces of paper decorated with images designed to appeal to teens and pre-teens, such as Beavis and Butt-Head, Mickey Mouse, Bart Simpson, zodiac symbols, peace symbols, and teddy bears.⁸³ Most 12th graders say that LSD is easy to obtain. More than a third of 10th graders and almost a quarter of 8th graders and say the same thing.⁸⁴



Perceptions of harm associated with LSD use have been declining since 1993, and these declines have been greatest among 8th graders. In 1996, only 37 percent of surveyed 8th graders saw any great risk in trying LSD.⁸⁵

Amphetamines, Methamphetamine and Ecstasy (MDMA)

Amphetamine is a unique chemical, however, the word "amphetamines" is often used to refer to a variety of stimulants ranging from over-the-counter appetite suppressants and prescription pills for treating weight loss to synthetic methamphetamine, an illegal and highly psychologically addictive street drug. While the chemical make-up of these substances differs, all stimulate the central nervous system with varying intensity.⁸⁶

Although the term "amphetamines" is sometimes used more broadly, here we limit our discussion to drugs directly related to the chemical amphetamine. The psychoactive effects of amphetamines are like those of cocaine--alertness, euphoria, appetite suppression, though often with psychotic symptoms--but last much longer. Amphetamine and methamphetamine are related chemicals with similar effects, methamphetamine produces a more potent rush and euphoria. Recently, particularly in the Western United States, methamphetamine use seems to be rising. Ecstasy, an analog of methamphetamine, is also used by some teens.

Amphetamines

Adolescents use amphetamines to stay awake longer to study, reduce their appetite in order to lose weight, and improve their performance during athletic competitions. More than 15 percent of 12th graders have tried amphetamines.

How Amphetamines Affect Teens. Amphetamines mimic the body's own adrenal response to emergency or stress, increasing alertness and vigor, improving physical performance and suppressing appetite.

Amphetamines may be administered orally, injected or sniffed. The psychoactive effects of amphetamines are essentially indistinguishable from those of cocaine. In laboratory tests, cocaine and potent amphetamines are the only two drugs that animals, if permitted, will self-administer until death.⁸⁷ However, unlike cocaine which deteriorates in the bloodstream and results in a high lasting only 20 minutes, amphetamine highs may extend for up to six hours.

The size of the dose, how it is administered, the user's degree of tolerance and mindset determine psychological and physiological responses to the drug. Physiological effects following a moderate dose include increased blood pressure, pulse and respiration rate, elevated blood sugar and depression of appetite lasting for approximately three to four hours. Although moderate amphetamine users may experience increased wakefulness and energy, the drug may also lead to irritability, insomnia, blurred vision, anxiety, nerve cell damage and nausea. Large doses, especially through IV injection, can produce a state of schizophrenic-like psychosis characterized by hallucinations, delusions and paranoia.

As the drug wears off, users often crash, experiencing severe mental depression and fatigue. Anxiety about this crash may contribute to psychological dependence which, oftentimes even after low doses, is a major danger in both non-medical and medical use of amphetamines.⁸⁸ Heightened feelings of excitement and grandiosity and extreme fatigue from not sleeping make amphetamine abusers particularly accident-prone.

Since amphetamines reduce cravings for food, they are the principal ingredient in most diet pills. However, unless the dose is continuously raised, their effect (and the accompanying stimulation) usually ends after approximately two weeks.

History of Amphetamine Use Among Teens. Unwittingly, researchers may have contributed to amphetamine abuse among American youth when they began to investigate the effects of amphetamines on psychomotor abilities in college students during the 1930s. As a result of these studies, many students realized that the drugs could help them perform on exams and avoid sleep. Word spread rapidly and by 1937, *Time* magazine warned of the dangers of the amphetamine Benzedrine and described its increasing use by students cramming for final exams. In the late 1960s, hippies used amphetamines to heighten the intensity of LSD experiences.⁸⁹

Annual use of amphetamines among 12th graders peaked at 26 percent in 1981, and then fell to seven percent in 1992. Since 1992, however, this proportion has risen to ten percent. In 1996, five percent of 8th graders and six percent of 10th graders had used amphetamines in the past month.

Availability of Amphetamines To Teens. Amphetamines are the most widely available illicit substances after marijuana.⁹⁰ In 1996, one-third of 8th graders, almost one-half of 10th graders and 59 percent of 12th graders reported that amphetamines were easy or very easy to obtain.⁹¹

Messages We Send Teens About Amphetamines. The slogan, "Speed Kills," has gained currency in recent years.⁹² The proportion of high school seniors attributing great risk to regular use of amphetamines (67 percent) is substantial. However, this ratio is not as large as the percentage (nearly 90 percent) acknowledging the risks of crack, cocaine powder and heroin. Thirty-one percent of 12th graders believe that experimental amphetamine use is risky, 94 percent disapprove of regular amphetamine use.⁹³

Methamphetamine

Methamphetamine is a stimulant which affects the central nervous system. It is derived from ephedrine or pseudoephedrine (synthetic form of ephedrine), common ingredients in cold and asthma medications like Sudafed or Actifed. Methamphetamine, a relative of amphetamine, produces effects similar to those of cocaine; however, as with amphetamines, the impact of methamphetamine is more potent and longer lasting. In 1996, four percent of 12th graders had tried methamphetamine.

How Methamphetamine Affects Teens. Methamphetamine, also known as speed, crank, meth, zip, go-fast, cristy, chalk, crystal meth, crystal tea, glass, L.A., quartz or ice, is produced in powder or crystal form and can be snorted, smoked, ingested orally or injected intravenously. Smoking or injecting methamphetamine produces an effect in five to ten seconds. Snorting the drug usually produces an effect in about three to five minutes; oral ingestion within 15 to 20 minutes.⁹⁴

Methamphetamine creates euphoria, a heightened sense of awareness and a sensation of invulnerability. If the drug is smoked, the initial, intense euphoria or "flash" lasts only a few minutes, but lesser effects will persist for the next eight to 24 hours.

Methamphetamine induces wakefulness and insomnia, increases physical activity and decreases appetite. It also produces confusion, anxiety, aggression, irritability, and hypothermia.

Because of its stimulant effect, methamphetamine can cause increases in blood pressure and heart rate, heart attacks, strokes, convulsions and coma.⁹⁵

Methamphetamine users have also been known to display a variety of psychiatric symptoms, including paranoia, hallucinations, and repetitive behavior patterns, as well as severe aggressive out-bursts and psychotic behavior.⁹⁶

Methamphetamine can be highly addictive; the intensity of the euphoria entices reuse.⁹⁷ As use continues, some tolerance for the drug seems to develop so larger doses are required to maintain the same effect. Some users, referred to as speed freaks, inject large doses of methamphetamine and display numerous antisocial behaviors including paranoia, hostility and aggression.

Although the state of euphoria induced by methamphetamine is intense, as the effects wear off users experience deep depression and fatigue. Some users try to counteract this crash by drinking alcohol, but because alcohol is a depressant, it actually increases the depression and fatigue.⁹⁸

History of Methamphetamine Use Among Teens. College students began using legally manufactured tablets of methamphetamine during the 1950s. Though the government tightened controls on prescriptions, illegal street production of synthetic methamphetamine continued. Since the late 1980s, methamphetamine use has grown on the West coast and in the Southwest. It may be moving east: law enforcement officials in the Midwest say that, "locally made methamphetamine...has become the small-town Midwest's drug of choice." In 1992, the Federal Drug Enforcement Administration closed six methamphetamine laboratories in a region encompassing Missouri, Kansas, Iowa, Nebraska, South Dakota and southern Illinois; in 1996, it closed 303. From 1992 to 1994, methamphetamine deaths rose nationally

by 145 percent; in Los Angeles, such deaths jumped from 68 to 219; in Phoenix, from 20 to 122.⁹⁹

Availability of Methamphetamine To Teens. Almost 27 percent of 12th graders find "ice" easy to obtain, up from 24 percent in 1990. Methamphetamine is more available in the West and Southwest than other parts of the country.¹⁰⁰ In 1996, 4.4 percent of high school seniors reported having used methamphetamines at least once in their lifetime, up from 2.7 percent in 1990. Methamphetamines are available illegally on the street for \$10 to \$30 a dose.¹⁰¹

Ecstasy (MDMA)

A disturbing trend among high school students is the use of the designer drug Ecstasy (also known as XTC, X or Adam), the common name for MDMA, an analog of methamphetamine.¹⁰² In 1996, 6.1 percent of 12th graders, 5.6 percent of 10th graders and 3.4 percent of 8th graders had tried MDMA.

How Ecstasy Affects Teens. MDMA (3,4-methylenedioxy-methamphetamine) acts like a stimulant but also produces psychedelic and occasionally hallucinogenic responses. It produces euphoria, heightens sensation and lasts for four to six hours. It is reputed to create a sense of well-being. MDMA can also cause insomnia, anxiety, confusion, depression, paranoia, nausea, muscle tension, teeth-clenching, chills, sweating, fainting, increased heart rate and blood pressure, and possibly brain damage by destroying nerve endings.¹⁰³ MDMA is ingested orally in tablet or capsule form.

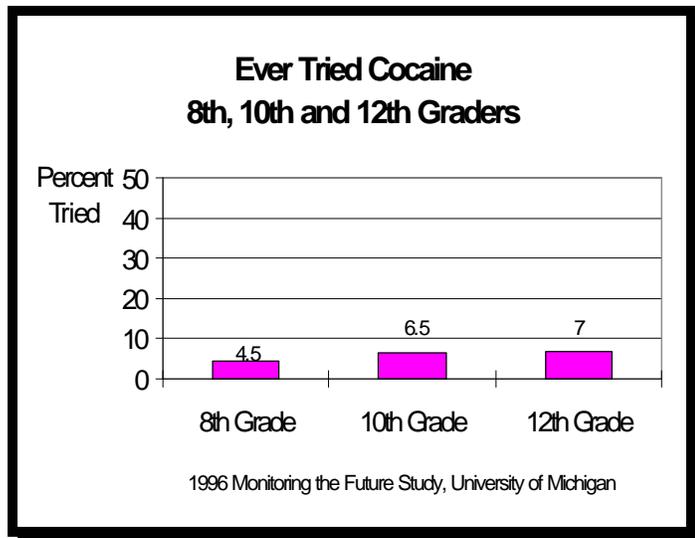
History of Ecstasy Use Among Teens. MDMA was originally developed by Merck & Company early in the century to be marketed as an appetite suppressant. It did not come into recreational use until the late 1970s and early 1980s. MDMA was not classified as an illegal drug until 1986.¹⁰⁴

MDMA remains a popular drug among high school and college students, especially in big cities where it is used in night clubs and at “raves”--underground, all-night dance parties.¹⁰⁵

Availability of Ecstasy to Teens. In 1996, almost 37 percent of 12th graders found it fairly easy or very easy to obtain MDMA, compared to 22 percent of in 1990.¹⁰⁶ MDMA sells for \$10 to \$20 a capsule.¹⁰⁷

Cocaine and Crack: Disapproval Declining

In 1996, seven percent of 12th graders, 6.5 percent of 10th graders and 4.5 percent of 8th graders admitted trying cocaine. Crack cocaine made its debut in 1981.¹⁰⁸ By 1996, three percent of students at all three grade levels had experimented with crack cocaine.



How Cocaine and Crack Affect Teens. Cocaine is a central nervous system stimulant derived from leaves of the coca shrub. It can be used medicinally as a local

anesthetic. It comes in the form of a white, bitter-tasting, crystalline powder, but is often diluted (cut) with other substances, such as lactose, amphetamines or PCP.¹⁰⁹ When sniffed, injected or smoked, cocaine produces a feeling of euphoria, characterized by hyperstimulation, excitement and a sense of mental clarity.¹¹⁰

The duration and intensity of cocaine's effects vary depending on how it is consumed: the faster the drug enters the system, the more intense, but briefer the high. When snorted, cocaine's effects begin in several minutes and last 15 to 30 minutes. Injecting or smoking produces a high more quickly, but the most intense euphoria lasts only a few minutes.¹¹¹ Within an hour after experiencing the high, intense anxiety, depression, confusion and aggressiveness often set in.¹¹²

Cocaine users quickly develop a tolerance that requires larger amounts to achieve almost, but never quite the same euphoria achieved from their initial high.¹¹³ Cocaine is more rapidly and intensely addicting when smoked or injected than when snorted.

Cocaine suppresses appetite and increases temperature, heart rate and blood pressure.¹¹⁴ Cocaine users often exhibit dilated pupils, chronic sore throats, nosebleeds, runny noses, and profuse sweating.¹¹⁵ Prolonged use can result in weight loss, epileptic seizures, and (if snorted) nasal ulcers and perforation of the nasal system. A cocaine overdose can cause tremors, delirium, coma, cardiac and respiratory arrest, and death.¹¹⁶

Regular cocaine users may experience suicidal impulses, chronic sleep problems, and loss of interest and motivation in school and other activities.¹¹⁷ Long-term cocaine users can also develop a vicious form of paranoia that worsens until they "feel that enemies are all about, forming malevolent plots, [and] the only defense is to retaliate."¹¹⁸

Withdrawal from cocaine after physical dependence can lead to crashing, a deep depression that often drives the addict back to the drug. Users quickly develop a very strong psychological dependence on the drug.¹¹⁹

Crack, the most potent form of cocaine, is made by combining cocaine with baking soda and water and then heating the mixture to produce a small rock. The name "crack" comes from the crackling noise of the rock when it is smoked.¹²⁰ The high from crack is more intense and more immediate than the high from other forms of cocaine.¹²¹ Users stay high for up to half an hour. Everything true about cocaine is true about crack, but even more so. Crack users are more likely to get hooked faster, overdose and exhibit aggressive paranoia.¹²²

Adolescent experimentation is particularly troubling because addiction to cocaine, especially crack, can happen quickly. The experience is so intense that users want more.¹²³ Ten percent of experimental cocaine users are estimated to become hard-core users. Any user, even fit teens trying the drug, can fall prey to sudden death. Taking cocaine in combination with alcohol increases the likelihood of sudden death.¹²⁴

History of Cocaine and Crack Use Among Teens. Cocaine became a chic drug from the late 1970s to the mid-1980s.¹²⁵ In 1985, cocaine use among 12th graders peaked at 17 percent. The percentage of 12th graders trying cocaine decreased steadily to 5.9 percent in 1994.¹²⁶ Since then, such cocaine use has increased to 7.1 percent in 1996. Similarly, the proportion of 12th graders experimenting with crack, first reported in 1987 to be 5.4 percent, decreased to 2.6 percent in 1992. By 1996, it had inched up to 3.3 percent.

Regular teen use of cocaine follows roughly the same pattern as experimental use. The highest proportion of 12th graders regularly using cocaine was 13.1 percent in 1985, dipping to 3.1 percent in 1992, and rising to 4.9 percent in 1996. Regular crack use among 12th graders, first measured as 4.1 percent in 1986, dropped to 1.5 percent in 1991 and slowly climbed to 2.1 percent in 1995 and 1996.

Availability of Cocaine and Crack To Teens. In 1996, 27 percent of 8th graders, 37 percent of 10th graders and 44 percent of 12th graders said that it was easy to get powder cocaine, slightly up from the previous year. Twenty-eight percent of 8th graders, 36 percent of 10th graders and 41 percent of 12th graders reported that they could easily obtain crack.¹²⁷

Cocaine is the most expensive illicit substance, but in recent years, its price has decreased enough for it to be accessible by teens.¹²⁸ Crack, although the most potent form of the substance, is the cheapest kind of cocaine to buy, well within the reach of teens.¹²⁹

Messages We Send Teens About Cocaine and Crack. Cocaine often makes the headlines through the overdoses of celebrities and sports heroes, like River Phoenix and basketball star Reggie Lewis. At the same time, shows like *Miami Vice* in the '80s glamorized the world of cocaine dealing, associating it with a fast and cool lifestyle.¹³⁰

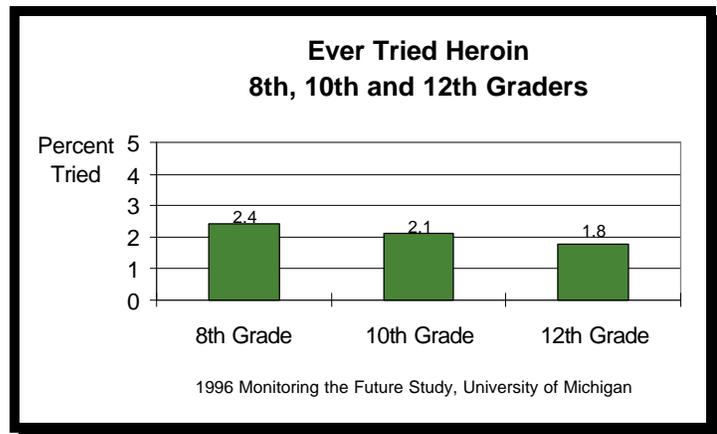
The introduction of crack into American society in the early to mid-1980s tarnished the allure of powder cocaine. As *Time* magazine put it at the height of the crack epidemic: "Cocaine, the glamour dust of the late '70s--fast, clean, fun!--has been boiled down to hard and mean little pellets of crack, giver of euphoria, taker of lives."¹³¹ In response to

this perception of harm, cocaine lost its image as a glamour drug, replaced instead with unpleasant association with crack babies and paranoid addicts.

But without constant exposure to the message of harm, disapproval of cocaine and crack among youths is declining. In 1988, 87 percent of high school seniors disapproved of even trying cocaine once.¹³² Their younger siblings, however, do not share this view. Less than half of 8th graders in 1996 considered trying cocaine once or twice harmful.¹³³ From 1991 to 1996, cocaine use among 8th graders nearly doubled, from 2.3 percent to 4.5 percent.

Heroin: Tragic Hip

In 1996, approximately two percent of 8th, 10th and 12th graders had tried heroin. While this makes heroin one of the less-tried drugs among adolescents, its use among teens is increasing.



How Heroin Affects Teens. Heroin, also known as smack, junk, horse, henry, H, dope and black tar, is a synthetically manufactured opiate-based drug used to achieve a state of euphoria. The main active ingredient is morphine, which affects the central nervous system, influencing perception of pain, altering moods and triggering physical and psychological addiction.

Injected heroin rapidly reaches the brain creating a euphoric rush comparable to sexual orgasm. This rush is followed by a high--a floating away feeling of elevated mood, increased self-esteem and physical insensitivity to pain which lasts two to four hours. The rush is not as intense with oral administration or snorting. Recently, however, snorting heroin has increased due in part to the availability of high quality heroin at low prices.¹³⁴

Chronic heroin users develop a tolerance which requires increasing amounts of the drug to create the same high. Heroin is highly addictive and can quickly become the focal point of an adolescent's life, impairing normal physical and psychological development.¹³⁶

I walked down this block every day and I never noticed that store. I never noticed the children playing hopscotch. On heroin, it was like I was going through life with the lights out and the volume turned all the way down.

*--Zoe Fleischauer,
fashion model
who began using
heroin at 17¹³⁵*

Problems associated with heroin addiction include lung infections, liver dysfunction, neurological disorder and risk of HIV and other infections from dirty or used needles. Heroin addicts are more likely than other teens to die as the result of suicide or violence. Death from overdosing is not uncommon among addicts.¹³⁷

Heroin withdrawal symptoms are brutal, though not life-threatening. Withdrawal begins 12 hours after the last dose, peaks at one and one-half to three days and is mostly over after five to seven days. Withdrawal includes intense abdominal cramps, muscle spasms (thus the expression, "kicking the habit"), goose flesh (thus the expression, "quitting cold turkey"), hot and cold flashes, diarrhea, nausea, vomiting and insomnia. Lingering

symptoms, however, can persist for months and prompt relapse. Without the drug, the heroin addict becomes anxious, hyperactive, emotionally depressed and hypersensitive to pain.¹³⁸

History of Heroin Use

Among Teens. Since 1991 the adolescent use of heroin has doubled. In 1996, 1.8 percent of 12th graders, 2.1 percent of 10th graders and 2.4 percent of 8th graders had tried heroin. Though numbers available are limited and their statistical significance uncertain, heroin appears to be the only illicit substance used by more 8th graders than 10th or 12th graders in 1996.¹⁴⁰

We're certainly seeing an increase in the number of people getting into trouble with hard drugs, particularly heroin....Heroin had gotten a bad name because you had to shoot it. It was associated with AIDS. But now it's so potent that kids can sniff it or smoke it and get high. There are going to be more overdose deaths, we feel sure.

Heroin is 10 times as potent as it was just a few years ago--and cheaper by more than half.

*--Dr. Robert Millman
Director of Drug Treatment
at New York Hospital-
Cornell Medical Center¹³⁹*

Teens are likelier to snort heroin, rather than inject it. Some mistakenly believe snorting heroin is non-addictive.¹⁴² Not only is such use of heroin addictive in and of itself,

most snorters move to injecting heroin.

Models don't have tracks on their arms; it's more common to snort it. And when I did shoot up, I'd do it between my toes or fingers. Nobody sees it there.

*--Zoe Fleischauer,
fashion model
who began using
heroin at 17¹⁴¹*

Availability of Heroin to Teens.

In 1996, more than one-fourth of 8th graders reported that heroin was readily available to them.¹⁴³ Heroin is more available in high schools in big eastern cities like New York

than it is in other regions.¹⁴⁴ Currently, heroin sells for as little as \$10 a dose and is more potent than ever.¹⁴⁵

Messages We Send Teens About Heroin. The "heroin chic" image has been embodied in high fashion through the use of emaciated, despondent, sunken-eyed, pale-skinned young models. These models have been displayed in shady circumstances--a deserted park, an unfinished basement--in postures of apathy and helplessness. These images--offered to the public as examples of beauty, sexiness, and stylishness--trickle into the consciousness of our most impressionable adolescents. In 1997, President Bill Clinton attacked the fashion industry for its exploitation of "heroin chic" and its impact on America's teens. Ninety percent of high school seniors attribute great risk to regular heroin use.¹⁴⁶

Inhalants: The Hit in the House

Since 1975, it is estimated the number of high school seniors who have ever used inhalants has stayed between 15 and 20 percent, with five percent to ten percent of seniors admitting inhalant use during the previous year.¹⁴⁷ Because so many substances fall under the category of inhalants, frequency and trend data about inhalant abuse has been the least reliable substance abuse information.

How Inhalants Affect Teens. Inhalant abuse, also called solvent abuse, volatile substance abuse, sniffing and huffing, is the intentional inhalation of a volatile substance in order to reach a state of euphoria. The sniffed substances rapidly produce a pleasurable intoxication. Inhalants are cheap, easily available and convenient to use. Fumes are usually inhaled either directly from a canister, inside a plastic bag or from a rag soaked in a solvent.

Inhalants are classified into volatile solvents, nitrites and anesthetics:

- Volatile solvents are either gas (such as butane gas fumes) or liquids (like gasoline or paint thinner) that vaporize at room temperature. The solvent, toluene, is found in many paints, lacquers, glues, inks and cleaning fluids, and is implicated frequently in inhalant-abuse deaths and injuries. In addition to these solvents, virtually all pressurized aerosol products (including hair spray, air fresheners, spray paints, shaving creams and dessert topping sprays or whippets) with volatile hydrocarbon propellants are subject to abuse.
- Nitrites, often called poppers, locker room, or rush, may be found in room deodorizers. Historically, nitrites have been used by certain populations, primarily gay men, to enhance sexual experience and are not widely used among young adults.
- Anesthetics' active ingredient is nitrous oxide, a colorless, odorless, sweet-tasting gas used by doctors and dentists as a general anesthesia. Also known as laughing gas, nitrous oxide often provokes giggling and laughter. Anecdotal evidence suggests that teens buy nitrous oxide on the street in large balloons.¹⁴⁸

With the exception of nitrites, inhalants are central nervous system depressants which slow down the body's functioning. Since most solvents are fat-soluble, they pass quickly into the central nervous system, slackening both breathing and heart rate. The immediate effects of inhalation mirror the early classic stages of anesthesia and alcohol

inebriation. Initially, the user is stimulated, uninhibited and likely to engage in impulsive and potentially dangerous behavior. Speech becomes slurred and gait staggered. Euphoria, often accompanied by hallucinations, is followed by drowsiness and sleep, especially after repeated cycles of inhalation. Regular use of inhalants leads to tolerance and increasingly larger quantities are needed to attain the same high. Although physiological dependence is rare, psychological dependence or craving is common.¹⁴⁹

Inhaling volatile substances destroys brain cells, impairing intelligence and memory. Inhaling nitrous oxide depletes the body of oxygen and may lead

*Young people are dying from causes related to volatile substance abuse. For most of them, death came after spraying butane gas from lighter refill cans into their mouths in search of a quick high. Others died from sniffing a variety of glues and paint thinners.*¹⁵⁰

to death. Chronic abuse damages the central nervous system, can lead to dementia and cerebellar dysfunction, and can damage lungs and kidneys.

Even first-time, healthy users may experience "sudden sniffing death" resulting from heart arrhythmias or suffocation. Few statistics measure the frequency of these deaths. In one study of deaths attributed to inhalants, 22 percent of the users who died had no history of prior inhalant use.¹⁵¹ Suffocation by plastic (caused by inhaling concentrated fumes from plastic bags resulting in a loss of consciousness and oxygen supply) has been found the leading cause of death among solvent sniffers.¹⁵²

History of Inhalant Use Among Teens. Since the 1950s, American children and adolescents have sniffed glue, particularly in remote areas where access to alcohol and illicit drugs was limited.¹⁵³ Inhalant use is sometimes described as "a little kid's way of doing drugs" since children as young as six may experiment with inhalants in products commonly found in

the home. The peak age for inhalant use is around 14 and 15, and often precedes alcohol and tobacco use.¹⁵⁴

In 1996, 17 percent of 12th graders, 19 percent of 10th graders and 21 percent of 8th graders admitted trying inhalants at some point in their lives. The 1988 National Household Survey found that the inhalant choice among 12- to 17-year-olds was gasoline, with glue the second most commonly abused inhalant.¹⁵⁵ Although inhalant abuse permeates all socioeconomic and ethnic backgrounds, the problem is more concentrated among the poor, Hispanic and Native-American children and adolescents.¹⁵⁶ Some studies have classified inhalants as gateway drugs prior to a teen's initiation to marijuana or harder drugs.¹⁵⁷

Availability of Inhalants To Teens. Inhalants are the easiest form of drugs for teenagers to get. There are some 1,400 products, many available at home in garages, medicine cabinets and kitchens, that can be easily abused.¹⁵⁸ Furthermore, the sale of most inhalable products cannot be regulated like alcohol and tobacco.

Messages We Send Teens About Inhalants. Fifty-nine percent of eighth graders and 53 percent of tenth graders say using inhalants once or twice poses little or no danger.¹⁵⁹ Aside from some public health efforts in the Southwest, there has been little systematic effort to educate parents and teens about the dangers of inhalant abuse.

Steroids

In 1996, two percent of 12th, 10th and 8th graders admitted steroid use. Although 90 percent of all adolescents say they disapprove of steroids, up to 500,000 high school males use steroids to improve their physical strength.

How Steroids Affect Teens. Anabolic steroids are derivatives of testosterone, the principal male sex hormone. Steroids are messenger molecules that tell the body to manufacture a short-term energy restorer (creatinine phosphate and protein) which helps an individual build more muscle.¹⁶⁰

A wide variety of steroids are produced. These can be taken orally or through injection. Users commonly take steroids in cycles lasting from four to 18 weeks, followed by a break.¹⁶¹

Steroids taken orally have short life spans. Injected steroids, which go directly into the bloodstream and are faster acting, have longer life spans lasting 17 days. They must be administered, however, with huge syringes that are inserted one and one-half to two inches into the muscle of the thigh or buttock.¹⁶² Users often take more than one type of steroid at a time, called "stacking."¹⁶³

Adolescents who use steroids bulk up quickly and dramatically.¹⁶⁴ Many teenagers use them to gain an edge in competitive sports.¹⁶⁵ They also increase the user's energy level and sexual desire.¹⁶⁶ Continued steroid use can cause acne, trembling, swelling of feet or ankles, bad breath, aching joints and an increased chance of injury to tendons, ligaments and muscles. More serious effects include a reduction in HDL (the good cholesterol), high blood pressure, liver damage and cancers, suppression of white blood cells,

increased risk of acquiring viral infections, changes in the clotting mechanism of the blood and how the body processes sugar, and jaundice from liver dysfunction.¹⁶⁷ For young users, steroid use can stunt growth, closing off of the ends of bones prior to full maturity.¹⁶⁸

Steroid users can exhibit wide mood swings. A "roid rage" describes the period when a user's behavior is highly irrational and aggressive.¹⁶⁹ Users may also suffer from paranoid jealousy, extreme irritability, delusions and impaired judgment stemming from feelings of invincibility.

Among males, large doses of anabolic steroids can lead the body to shut down the healthy functioning of the reproductive system, including shrinking of testicles, reduced sperm count and even sterility.¹⁷⁰ Women who take anabolic steroids may experience baldness, excessive growth of facial hair, hoarse voice, decreased breast size, changes in menstrual cycle and increased aggressiveness and appetite.¹⁷¹

Adolescents who use anabolic steroids have been found to be more likely to use other illicit drugs.¹⁷²

Users can quickly form a psychological dependence with steroids. During the required break in steroid use, the users' bodies shrink up and athletic performance suffers. This often causes the teen to panic and return to even greater steroid use.¹⁷³

History of Steroid Use Among Teens. Ninety-five percent of anabolic steroid users are male.¹⁷⁴ Adolescents use steroids mainly to increase their strength (64 percent) and size (50 percent).¹⁷⁵ Not surprisingly, 65 percent of steroid users are athletes. Personal appearance was cited by 26 percent of high school age steroid users as their primary motive for steroid use.¹⁷⁶

Availability of Steroids To Teens. Sixty percent of steroid use is through the black market, including contacts at gyms and schools. Twenty-one percent of teen users report that a health professional is their primary source.¹⁷⁷

Messages We Send Teens About Steroids. Increased steroid use among teens has been attributed to the new male image portrayed in advertisements and magazines.¹⁷⁹ "To young people constantly bombarded by images of Adonis-like bodies and powerful athletes signing multi-million dollar contracts, steroids can look like a magic elixir."¹⁸⁰

Seventy-eight percent of youngsters have heard of anabolic steroids, but...only 49 percent have had someone explain the adverse effects to them.

*--Michael Gray, PhD
Head of Health and
Physical Education
Department,
Northern Kentucky University¹⁷⁸*

Anabolic steroid use is prohibited by all amateur and professional sports organizations worldwide, and has been banned by The International Olympic Committee for over two decades.¹⁸¹

Prescriptions and Over-the-Counter Drugs

The extent of teen use and abuse of prescription drugs is largely unknown. In 1996, seven percent of 12th and 10th graders and five percent of 8th graders had tried tranquilizers.

Ritalin. Ritalin is the brand name for methylphenidate, a prescription amphetamine which has been hailed as a wonder drug for treating children with Attention Deficit/Hyperactive Disorder (ADHD). Dubbed on the street as Vitamin R, R-Ball or the smart drug, Ritalin acts as a neurotransmitter by releasing dopamine and serotonin. Teens

either crush Ritalin and snort it like cocaine or cook and inject it like methamphetamine. The drug produces a euphoric high and many teens believe that it allows them to study better and party harder. The effects last for a few hours, after which the user may feel depressed and isolated. Ritalin can be addictive, especially in doses larger than used to treat ADHD. In large amounts, it can cause tremors, seizures, hypertension, psychosis, even strokes. Several deaths have been attributed to Ritalin abuse. According to the Drug Enforcement Administration, emergency room admissions attributed to methylphenidate approached 1,200 in 1994, up slightly from previous years.¹⁸² At present, Ritalin abuse is confined primarily to white, upper-middle class communities.

Benzodiazepines. Benzodiazepines are prescription tranquilizers. They are abused orally either alone or in combination with alcohol. Addiction to benzodiazepines is usually associated with polydrug use and adolescents may use them to mitigate the unpleasant side effects of other non-medical drugs. Life-threatening benzodiazepines overdoses are rare.

Flunitrazepam, marketed under the brand name of Rohypnol and known on the street as roofies or roaches, is among those benzodiazepines which induce muscle relaxation, short-term amnesia and deep sleep. As an anti-anxiety agent, Rohypnol is ten times more potent than Valium and can cause disorientation, confusion and a sense of out-of-body levitation.¹⁸³ Recently, Rohypnol has been implicated in a number of rape cases. In some instances, male teens have slipped the sedative into girls' drinks and then sexually assaulted the unconscious victims. Generally, the girls cannot remember the episode the following day.

Rohypnol first surfaced in Dade County, Florida in 1989 and abuse is concentrated in parts of Texas and Florida, usually smuggled from Mexico where it can be

legally bought in pharmacies. In Florida, Rohypnol has found a market among teenagers who use it at nightclubs and schools. Preliminary research indicates Rohypnol is taken primarily by users of other drugs.

Dextromethorphan. Dextromethorphan (DM) is the main cough suppressant ingredient in numerous over-the-counter preparations. At standard dosage, DM has an opiate-like cough suppression property without the traditional opiate effects on the central nervous system. However, in large concentrations (four to 20 ounces daily), DM produces PCP-like effects including bizarre and hyperactive behavior as well as hallucinations.¹⁸⁴

Gravol. Gravol, the trade name for dimenhydrinate tablets, is another over-the-counter preparation recently discovered by teens which offers an inexpensive high. Gravol is classified as an antihistamine and can also be used to prevent nausea. Users who crush and snort the drug or add it to a joint may experience drowsiness, hallucinations and euphoria. Regular use can lead to tolerance and dependence.¹⁸⁵

Other Over-the-Counter Drugs. A broad range of cold pills which contain the popular decongestant pseudoephedrine, for example Sudafed can be converted into methamphetamine.

Herbal Ecstasy (deliberately misspelled). Unlike over-the-counter medicines, the herb, ma huang or ephedra, has been marketed as a "safe, legal and FDA approved" alternative to illicit drugs like Ecstasy and methamphetamines. Sold under brand names like "Herbal Ecstasy," "Cloud 9" and "Ultimate Xphoria," the product may contain ma huang, exported from China, its components, ephedrine and pseudoephedrine, or synthetic forms made in labs. Herbal Ecstasy promises euphoria, heightened sexual feelings, tingling, and a

happy buzz without the side effects associated with illegal drugs. The Internet is the main advertising medium for marketers. In 1996, the FDA reported 395 adverse reactions and 15 deaths possibly linked to ephedrine use since 1993.¹⁸⁶ The pharmacological effects of ephedrine are the same whether it is natural or synthetic--too much may cause irregular heartbeat, heart attack, stroke, psychosis and even death.

Availability of Prescription and Over-the-Counter Drugs To Teens. These drugs are readily available to teens. Ritalin is cheap and accessible, costing \$1.00 to \$5.00 per pill.¹⁸⁷ In Florida, Rohypnol can be purchased for no more than \$5.00 per pill.¹⁸⁸

Messages We Send Teens About Prescription and Over-the-Counter Drugs. Ritalin can be a valuable medication for youngsters with Attention Deficit Hyperactivity Disorder. As with any other potent drug, however, it can also be abused. Since Ritalin is legal, many adolescents do not appreciate the harm in snorting it or consuming larger than therapeutic dosages. In 1996, in response to reports of abuse, the primary manufacturer of Ritalin mounted a campaign to educate parents on responsibly monitoring the medication of their children.

Herbal Ecstasy is sold in health food and music stores as well as head shops. Ads on the Internet have described Herbal Ecstasy as "a carefully formulated and thoroughly tested organic alternative to actual MDMA or Ecstasy."¹⁸⁹

We as adults have been brought up on drugs. You get sniffles, you take drugs. You don't get sniffles, you take drugs. It's mindboggling what people's medicine cabinets look like. You take drugs to make yourself feel better.

*--Parents in Drug Abuse Focus Group
April 10, 1996
CASA and Luntz Research Companies*

In 1996, the Food and Drug Administration issued a public health warning on the dangerous

potential side effects of the herb. Nevertheless, many adolescents see the drug as natural and therefore safe.

Polydrug Use: A Whole More Dangerous Than the Sum of the Parts

Adolescents often combine two or more drugs that have similar effects in order to obtain a more intense high or combine drugs with opposite features in order to moderate unpleasant side effects or withdrawal symptoms.¹⁹⁰ One common combination is heroin and cocaine (known as speed balls). Teens claim they experience a more intense high by using these drugs together and heroin, which is longer acting, helps them deal with anxiety and irritability that generally occurs as the cocaine high wears off. Polydrug use is often part of the progression from use to abuse. Adolescents who use illicit drugs commonly use alcohol along with them.

The Demographics of Teen Substance Use

While substance use is an issue for all adolescents, patterns may be related to age, gender, racial and ethnic background and geographic region.

Age Makes a Difference

In general, younger teens use illicit drugs less than older teens. However, younger adolescents do use alcohol, tobacco, marijuana and inhalants--gateway substances that they perceive to be less risky and are easier to acquire than other substances. Most drug abusers report that they began using such gateway substances before age 14.¹⁹¹ Alcohol, tobacco and marijuana are also the substances most likely to be used by older teens; most teens

who use steroids, LSD, cocaine and amphetamines do not begin use of these substances until 9th grade.¹⁹²

A noticeable change in patterns of drug use occurs between middle school and high school--at about age 14 through 15. As teens go from 12 and 13 to 16 and 17, their proximity to dangerous substances increases and their antipathy to such substances decreases. Drugs become perceived as more benign, less of a "big deal;" they are ubiquitous, easier to get; there is less fear of using drugs, more peer pressure to use them and such use often comes to be regarded as normal.

The Closing of the Gender Gap

CASA's 1996 report, *Substance Abuse and The American Woman*, found that among teenagers, the gender gap in smoking, drinking and drug use has largely disappeared.¹⁹³ Girls and boys are often indistinguishable in their rates of alcohol and drug use. Since 1975, adolescent girls have been equally or more likely than boys to smoke.¹⁹⁴ Today, girls and boys are just as likely to be current daily smokers (21 percent vs. 22 percent among 12th graders) or to have never smoked (37 percent vs. 36 percent among 12th graders). Boys and girls are also equally likely to quit smoking.¹⁹⁵

Adolescent girls and boys are also almost as likely to be current drinkers (47 percent vs. 56 percent among 12th graders).¹⁹⁶ Though girls are still less likely than boys to binge drink, the gap has narrowed since 1975. Twelfth grade girls are less likely than boys to binge on beer (20 percent vs. 37 percent) and hard liquor (16 percent vs. 25 percent), but equally likely to binge on wine (6 percent).¹⁹⁷

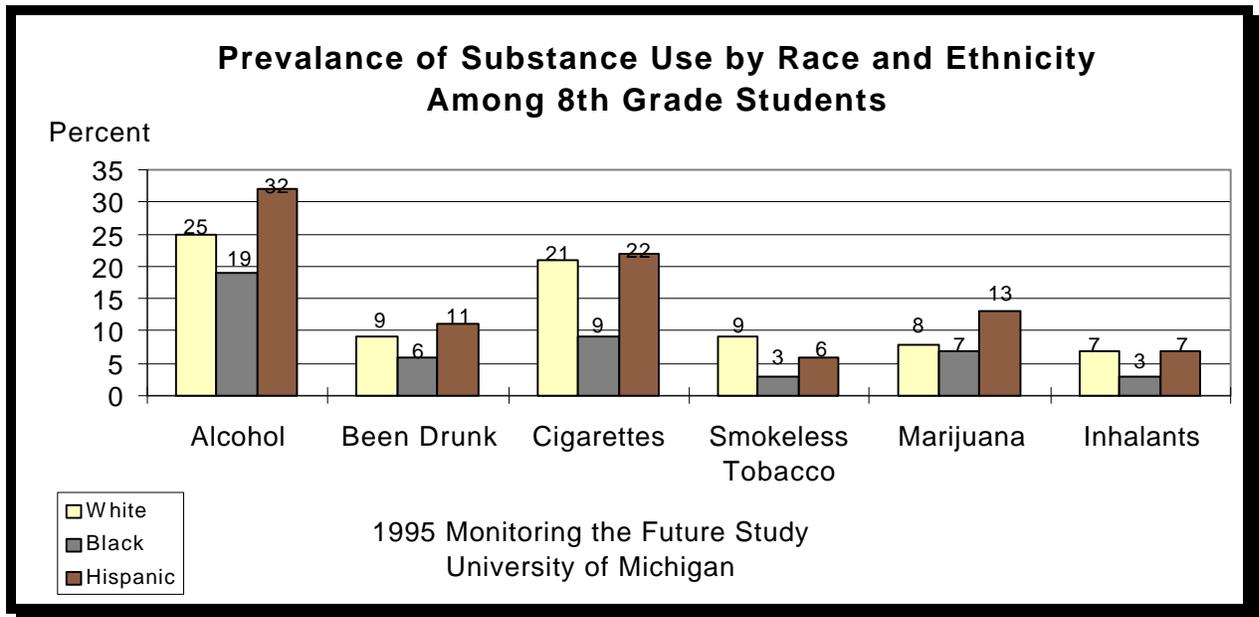
The gap between girls' and boys' illicit drug use has closed in the last 30 years, but boys are still more likely to become regular users.¹⁹⁸ Girls are almost as likely as boys to have used illicit drugs other than marijuana (17 percent vs. 21 percent).

Experimentation at young ages is a concern for all adolescents, but it is most ominous for girls.¹⁹⁹ In older generations, women were more likely to try their first cigarette, drink or illicit drug at a later age than men. This is one reason women were less likely to become regular users; they started when they were more mature and less vulnerable to the temptation and pressure to smoke and get high or drunk.²⁰⁰ But over the last 30 years, this protective factor has vanished. Girls and boys are now wading into drugs, alcohol and tobacco at the same early ages.

Teen boys and girls exhibit different symptoms of substance abuse. Boys tend to be outer-directed, displaying symptoms such as drunk driving, fighting and truancy. Girls are likelier to be inner-directed, displaying anxiety, depression and lack of self-esteem as signals of substance abuse. Girls who abuse drugs are more likely to have suffered sexual abuse than boys. The rate of substance abuse among boys and girls is becoming increasingly similar. Women become intoxicated more quickly than men and addicted more rapidly than men. Tragically, girls who are high on alcohol and drugs increase their risk of being raped and most teen pregnancy occurs when one or both teens are high or drunk.²⁰¹

Race and Ethnicity

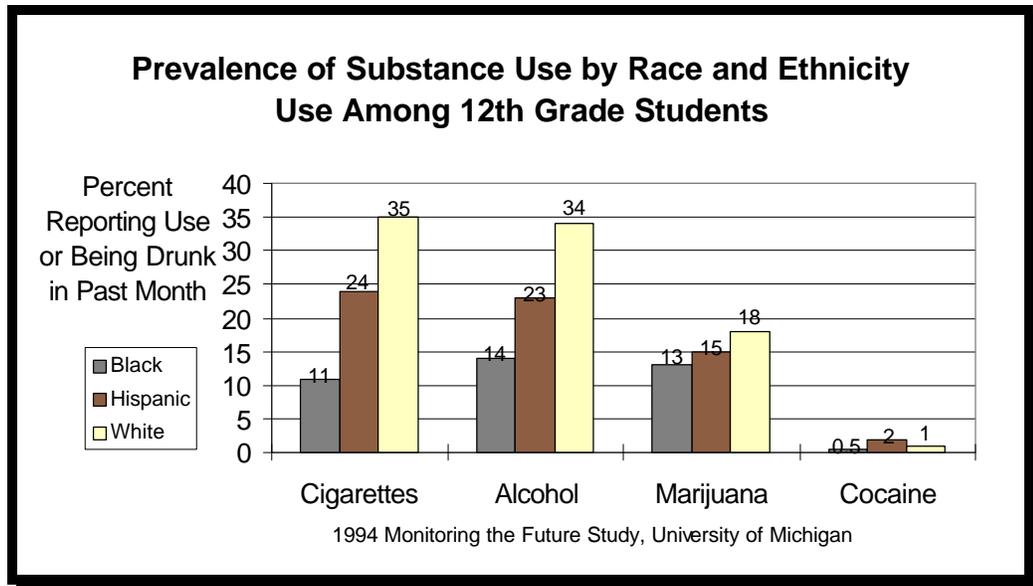
Different ethnic and racial groups show different patterns of initiation and use of various substances. Hispanic 12- to 15-years olds report the highest lifetime and past month use of all drugs. Forty-two percent of Hispanic males have been offered or sold illegal drugs on school property. Only 29 percent of white non-Hispanic males and 20 percent of black non-Hispanic males report similar experiences.²⁰²



By 12th grade, white students have the highest rate of use for almost all substances except cocaine, crack and steroids. Hispanics report the highest rates of use for cocaine, crack and steroids.²⁰³

The highest rate of cigarette use on school property is among white teens. White teens start smoking two years earlier than black teens--age 12 for whites compared to age 14 for blacks.²⁰⁴ Black teens show the lowest percentages of substance use regardless of

gender or age, though these figures may be skewed because of higher school dropout rates of blacks and the failure of surveys to account adequately for dropouts.²⁰⁵



Blacks also tend to be slightly older when they initiate alcohol and marijuana use.²⁰⁶ Black teens are more affected by their perception of immediate negative consequences of substance use than white students and by their expectation of punishment for drug use.²⁰⁷ Since 1992, however, African-American teens have narrowed the gap in marijuana use.²⁰⁸

Geography

The use of particular substances varies by geography, but no area is immune. For the most part, illicit drug use tends to be highest among 12th graders in the Northeast. However, marijuana use is somewhat higher among young teens in the West, where 18 percent of 8th graders admitted trying marijuana. The West also ranked first in LSD use for 8th graders, and for cocaine, crack and methamphetamine use among 12th graders. The South had

the highest teen rates of use for heroin, barbiturates and tranquilizers. The Northeast and North Central regions had highest daily smoking and alcohol use.²⁰⁹

In 1995, there were only minor differences in overall patterns of substance use across large metropolitan, smaller metropolitan, and non metropolitan areas.* Annual use of marijuana, inhalants, and LSD is higher in large metropolitan areas. Teens living in smaller metropolitan areas use marijuana at double the rate of teens in non-metropolitan areas--16 percent compared to eight percent.²¹⁰ The highest rate of annual marijuana use was reported by younger teens living in smaller metropolitan areas. In 1995, smoking was significantly higher in all age groups among non-metropolitan area teenagers.²¹¹ Among 12th graders, the highest rates of use for alcohol, smokeless tobacco, steroids and stimulants occur in non-metropolitan areas. Cocaine, crack and heroin are most widely used among 12th graders in smaller metropolitan areas.

* *Monitoring the Future* divides data by three population densities: Large Metropolitan Areas which are the 28 largest Metropolitan Statistical Areas in the 1990 Census; Smaller Metropolitan Areas which are the remaining Metropolitan Statistical Areas; and Non-Metropolitan Areas which are not designated as metropolitan in the 1990 Census. Suburban areas may be included in each of these categories.

CHAPTER III.

REFERENCES

¹ Steinberg, L. and Levine, A. (1990). You and your adolescent: A parents guide for ages 10-20. New York: Harper & Row.

- ² Nowinski, J. (1990). Substance Abuse in Adolescents and Young Adults. New York: W.W. Norton & Company.
- ³ Wren, C. (1996, October 10). Teen-agers find drugs easy to obtain and warnings easy to ignore. The New York Times, A:20.
- ⁴ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ⁵ Farrell, A.D., Danish, S.J. and Howard, C.W. (1992). Relationship between drug use and other problem behaviors in urban adolescents. Journal of Consulting and Clinical Psychology, 60(5), 705-712.
- ⁶ Beman, D.S. (1995). Risk factors leading to adolescent substance abuse. Adolescence, 30(117), 201-208.
- ⁷ Greenbaum, S. (1994). Drugs, delinquency, and other data. Juvenile Justice, 2(1), 2-8; Newcomb, M.D. (1995). Identifying high-risk youth: Prevalence and patterns of adolescent drug abuse. In E. Rahdert and D. Czechowicz (Eds.), Adolescent drug abuse: Clinical assessment and therapeutic interventions (pp. 7-38). Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Drug Abuse; Huizinga, D., Loefer, R. and Thornberry, T.P. (1994). Urban delinquency and substance abuse, initial findings: Research summary. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
- ⁸ National Institute on Drug Abuse. (1995, January). PCP (phencyclidine). NIDA Capsules, (CAP 14), 1-2; Texas Prevention Partnership (1995). Inhalants: The silent epidemic. Austin, TX: Texas Prevention Partnership.
- ⁹ Kandel, D.B., Kazuo, Y. and Chen, K. (1992). Stages of progression in drug involvement from adolescence to adulthood: Further evidence for the gateway theory. Journal of Studies on Alcohol, 53(5), 447-457; Kandel, D. and Yamaguchi, K. From beer to crack: Developmental patterns of drug involvement. American Journal of Public Health, 83(6), 851-855; Brooks, A.M. (1993). Gateway drugs. Current Health, 19(5), 6-11; Ellickson, P.L., Hays, R.D. and Bell, R.M. (1992). Stepping through the drug use sequence: Longitudinal scalogram analysis of initiation and regular use. Journal of Abnormal Psychology, 101(3), 441-451; Torabi, M.R., Bailey, W.J. and Majd-Jabbari, M. (1993). Cigarette smoking as a predictor of alcohol and other drug use by children and adolescents: Evidence of the "gateway drug effect". Journal of School Health, 63(7), 302-306.
- ¹⁰ Kandel, D. and Yamaguchi, K. From beer to crack: Developmental patterns of drug involvement. American Journal of Public Health, 83(6), 851-855; Ellickson, P.L., Hays, R.D. and Bell, R.M. (1992). Stepping through the drug use sequence: Longitudinal scalogram analysis of initiation and regular use. Journal of Abnormal Psychology, 101(3), 441-451; Welte, J.W. and Barnes, G.M. (1987). Youthful smoking: Patterns and relationships to alcohol and other drug use. Journal of Adolescence, 10(4), 327-340.
- ¹¹ Tanda, G., Pontieri, F.E. and DiChiara, G. (1997, June 27). Cannabinoid and heroine activation of mesolimbic dopamine transmission by common u1 opioid receptor mechanism. Science, 276, 2048-2050; deFonseca, F.R., Carrera, M.R.A., Navarro, M., Koob, G.F. and Weiss, F. (1997, June 27). Activation of corticotropin-releasing factor in limbic system during cannabinoid withdrawal. Science, 276, 2050-2054;
- ¹² Nowinski, J. (1990). Substance Abuse in Adolescents and Young Adults. New York: W.W. Norton & Company.
- ¹³ Kandel, D.B., Wu, P. and Davies, M. (1994). Maternal smoking during pregnancy and smoking by adolescent daughters. American Journal of Public Health, 84(9), 1407-1413; Cohen, S. (1984). Recent developments in the abuse of cocaine. Bulletin on Narcotics, 36(2), 3-14.
- ¹⁴ Wickelgren, I. (1997, June 27). Marijuana: Harder than thought. Science, 276, 1967-1968.
- ¹⁵ Nowinski, J. (1990). Substance Abuse in Adolescents and Young Adults. New York: W.W. Norton & Company.
- ¹⁶ Nowinski, J. (1990). Substance Abuse in Adolescents and Young Adults. New York: W.W. Norton & Company.
- ¹⁷ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ¹⁸ Ellickson, P., McGuigan, K.A., Adams, V., Bell, R.M. and Hays, R.D. (1996). Teenagers and alcohol misuse in the United States: By any definition, it's a big problem. Addiction, 91(10), 1489-1503.
- ¹⁹ Hofman, F.G. (1975). A handbook on drug and alcohol abuse: The biomedical aspects. New York: Oxford University Press.

- ¹⁹ Ellickson, P., McGuigan, K.A., Adams, V., Bell, R.M. and Hays, R.D. (1996). Teenagers and alcohol misuse in the United States: By any definition, it's a big problem. Addiction, 91(10), 1489-1503.
- ²⁰ Ellickson, P., McGuigan, K.A., Adams, V., Bell, R.M. and Hays, R.D. (1996). Teenagers and alcohol misuse in the United States: By any definition, it's a big problem. Addiction, 91(10), 1489-1503.
- ²¹ Ellickson, P., McGuigan, K.A., Adams, V., Bell, R.M. and Hays, R.D. (1996). Teenagers and alcohol misuse in the United States: By any definition, it's a big problem. Addiction, 91(10), 1489-1503.
- ²² Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ²³ Gill, J. (1995, November 2). Fake Ids. Retrieved from the World Wide Web: http://www-TCS/95_96_/news/copy/10_30/IDs1.html: The Santa Clara Bronco Buzz.
- ²⁴ Adelman, J. (1996, August 16). The baby boozers. Manhattan Spirit, p. 12, 13.
- ²⁵ Horovitz, B. (1996, December 24). Brewer to stop ads on MTV. USA Today, A1; Trickle of TV liquor ads may increase. (1997, June 2). Wall Street Journal, B:5; Ingersol, B. (1996, November 27). FTC opens investigation of TV alcohol advertising. Wall Street Journal, A:3, A:6; Grube, J.W. and Wallack, L. (1994). Television beer advertising and drinking knowledge, beliefs, and intentions among school children. American Journal of Public Health, 84(2), 254-259.
- ²⁶ Beatty, S.J. (1997, January 6). Are beer ads on 'Beavis and Butt-Head' aimed at kids? Wall Street Journal, B1, col. 3.
- ²⁷ Leonhardt, D. and Dawley, H. (1996). A little booze for the kiddies? Business Week, 158.
- ²⁸ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ²⁹ Pierce, J.P., Fiore, M.C., Novotny, T.E., Hatziaandreu, E.J. and Davis, R.M. (1989). Trends in cigarette smoking in the United States: Projections to the year 2000. JAMA, 261(1), 61-65.
- ³⁰ DiFranza, J.R. and Tye, J.B. (1990). Who profits from tobacco sales to children? JAMA, 263(20), 2784-2787.
- ³¹ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ³² U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (1994). Preventing tobacco use among young people: A report of the Surgeon General. Washington, DC: U.S. Department of health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- ³³ Jonnes, J. (1996). Hep-cats, narcs, and pipe dreams: A history of America's romance with illegal drugs. New York, NY: Scribner.
- ³⁴ Protecting youth from tobacco addiction: Restricting access and appeal of tobacco products to children and adolescents: Information resource and referral guide. (1995, October). Atlanta, GA: Centers for Disease Control and Prevention, Office on Smoking and Health.
- ³⁵ U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (1994). Preventing tobacco use among young people: A report of the Surgeon General. Washington, DC: U.S. Department of health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- ³⁶ U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (1994). Preventing tobacco use among young people: A report of the Surgeon General. Washington, DC: U.S. Department of health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

- ³⁷ U.S. Food and Drug Administration. (1996). Regulations restricting the sale and distribution of cigarettes and smokeless tobacco to protect children and adolescents. Rockville, MD: Department of Health and Human Services, U.S. Food and Drug Administration.
- ³⁸ U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (1994). Preventing tobacco use among young people: A report of the Surgeon General. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- ³⁹ Kaufman, N. (1994, February). Smoking and young women: The physician's role in stopping an equal opportunity killer. JAMA, 271(8), 629-630.
- ⁴⁰ Center for Media Education. (1997). Alcohol & tobacco on the web: New threats to youth. Washington, DC: Center for Media Education.
- ⁴¹ U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (1994). Preventing tobacco use among young people: A report of the Surgeon General. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- ⁴² Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ⁴³ Pearson, C.M. (1996). Tobacco use: Tennessee youths at risk. Tennessee Medicine, 89(8), 299-300.
- ⁴⁴ Foerstel, K. (1996, August 14). Prez unleashes fed regs to smoke out nico-teens. New York Post, 6.
- ⁴⁵ DiFranza, J.R., Richards, J.W., Paulman, P.M., Wolg-Gillespie, N., Flecher, C. Jaffe, R.D. and Murray, D. (1991). RJR Nabisco's cartoon camel promotes Camel cigarettes to children. JAMA, 266(22), 3149-3153.
- ⁴⁶ Pollay, R.W., Siddarth, S., Siegel, M., Haddix, A., Merritt, R.K., Giovino, G.A. and Eriksen, M.P. The last straw? Cigarette advertising and realized market shares among youths and adults, 1979-1993. Journal of Marketing, 60, 1-16
- ⁴⁷ Botvin, G.J., Goldberg, C.J., Botvin, E.M. and Dusenbury, L. (1993). Smoking behavior of adolescents exposed to cigarette advertising. Public Health Reports, 108(2), 217-224.
- ⁴⁸ Russell, C. (1995, July 11). Do you know what your kids are doing: A new survey highlights dangerous teen habits. Washington Post, Z10.
- ⁴⁹ Burrows, D.S. (1996, July 12). RJR secret strategic research report: Feb. 29, 1984. In K. Featherly (Ed.), Secret RJR tobacco study's online. Retrieved from the World Wide Web, 2/4/97: <http://www.wcco.com/archive/1996/Jul/news: WCCO Channel 4000 News>.
- ⁵⁰ U.S. Food and Drug Administration. (1996). Regulations restricting the sale and distribution of cigarettes and smokeless tobacco to protect children and adolescents. Rockville, MD: Department of Health and Human Services, U.S. Food and Drug Administration.
- ⁵¹ Schooler, C., Feighery, E. and Flora, J.A. (1996). Seventh graders' self-reported exposure to cigarette marketing and its relationship to their smoking behavior. American Journal of Public Health, 86(9), 1216-1221.
- ⁵² Gold, M.S. (1989). Marijuana. New York: Plenum.
- ⁵³ Nahas, G.G. and Latour, C. (Eds.). (1993). Cannabis: Physiopathology, epidemiology, detection: From the proceedings of the Second International Symposium, organized by the National Academy of Medicine, with the assistance of the City of Paris, April 8-9, 1992. Boca Raton: CRC Press.
- ⁵⁴ National Institute on Drug Abuse. (1996). NIDA Notes. Vol. 11(2). Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse.
- ⁵⁵ Leavitt, F. (1995). Drugs and behavior. (3rd ed). Thousand Oaks, CA: Sage.
- ⁵⁶ Leavitt, F. (1995). Drugs and behavior. (3rd ed). Thousand Oaks, CA: Sage.

- ⁵⁷ National Institute on Drug Abuse. (1995). National conference on marijuana use: Prevention, treatment, and research: Conference summary. Retrieved from the World Wide Web, 7/23/97: <http://www.NIDA.NID.gov>: National Institute on Drug Abuse.
- ⁵⁸ National Institute on Drug Abuse. (1995). Marijuana: Facts for teens. Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse.
- ⁵⁹ National Institute on Drug Abuse. (1995). National conference on marijuana use: Prevention, treatment, and research: Conference summary. Retrieved from the World Wide Web, 7/23/97: <http://www.NIDA.NID.gov>: National Institute on Drug Abuse.
- ⁶⁰ National Institute on Drug Abuse. (1996). NIDA Notes. Vol. 11(2). Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse.
- ⁶¹ National Institute on Drug Abuse. (1995). National conference on marijuana use: Prevention, treatment, and research: Conference summary. Retrieved from the World Wide Web, 7/23/97: <http://www.NIDA.NID.gov>: National Institute on Drug Abuse.
- ⁶² National Institute on Drug Abuse. (1996). NIDA Notes. Vol. 11(2). Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse.
- ⁶³ Schwartz, R.H. (1987). Marijuana: An overview. Chemical Dependency, 34(2), 305-307.
- ⁶⁴ National Institute on Drug Abuse. (1995). Marijuana: Facts for teens. Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse.
- ⁶⁵ Office of Applied Studies and Substance Abuse and Mental Health Services Administration. (1996, August). Preliminary estimates from the 1995 National Household Survey on Drug Abuse. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.
- ⁶⁶ National Institute on Drug Abuse. (1995). National conference on marijuana use: Prevention, treatment, and research: Conference summary. Retrieved from the World Wide Web, 7/23/97: <http://www.NIDA.NID.gov>: National Institute on Drug Abuse.
- ⁶⁷ Office of Applied Studies and Substance Abuse and Mental Health Services Administration. (1996, August). Preliminary estimates from the 1995 National Household Survey on Drug Abuse. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.
- ⁶⁸ Office of Applied Studies and Substance Abuse and Mental Health Services Administration. (1996, August). Preliminary estimates from the 1995 National Household Survey on Drug Abuse. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.
- ⁶⁹ Office of Applied Studies and Substance Abuse and Mental Health Services Administration. (1996, August). Preliminary estimates from the 1995 National Household Survey on Drug Abuse. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.
- ⁷⁰ U.S. Department of Health and Human Services, Public Health Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (1994). National Household Survey on Drug Abuse: Main findings 1994. Rockville, MD: U.S. Department of Health and Human Services, Public Health Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies.
- ⁷¹ Luntz Research Companies and The National Center on Addiction and Substance Abuse (CASA) at Columbia University. (1996). National survey of American attitudes on substance abuse II: Teens and their parents. New York: National Center on Addiction and Substance Abuse (CASA) at Columbia University.
- ⁷² Luntz Research Companies and The National Center on Addiction and Substance Abuse (CASA) at Columbia University. (1996). National survey of American attitudes on substance abuse II: Teens and their parents. New York: National Center on Addiction and Substance Abuse (CASA) at Columbia University.
- ⁷³ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ⁷⁴ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).

- ⁷⁵ Partnership for a Drug-Free America. (1997). 1996 Partnership Attitude Tracking Study. New York: Partnership for a Drug-Free America.
- ⁷⁶ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse and University of Michigan Institute for Social Research. (1996). National survey results on drug use from Monitoring the Future study, 1975-1995: Volume 1, Secondary school students. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Drug Abuse.
- ⁷⁷ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ⁷⁸ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ⁷⁹ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ⁸⁰ Millman, R.B. and Botvin, G.J. (1992). Substance use, abuse, and dependence. In M.D. Levine, W.B. Carey, A.C. Crocker (Eds.), Developmental-behavioral pediatrics (pp. 451-467). Philadelphia, PA: W.B. Saunders Company.
- ⁸¹ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ⁸² Office of Applied Studies and Substance Abuse and Mental Health Services Administration. (1996, August). Preliminary estimates from the 1995 National Household Survey on Drug Abuse. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.
- ⁸³ Morelock, J.L. (1995). Drugs in high school, the disturbing truth. St. Petersburg, FL: Guideline Publishing.
- ⁸⁴ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ⁸⁵ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ⁸⁶ Morgan, J.P. (1981). Amphetamine. J.H. Lowinson and P. Ruiz (Eds.), Substance abuse: Clinical problems and perspectives. (pp. 167-185). Baltimore: Williams & Wilkins; Hofmann, F.G. and Hofmann, A.D. (1975). A handbook on drug and alcohol abuse: The biomedical aspects. New York: Oxford University Press.
- ⁸⁷ Partnership for a Drug-Free America. (1997, June 9). Drug-free resource net: FAQs: Amphetamines. Retrieved from the World Wide Web: http://www.drugfreeamerica.org/amphetamine_faqs2.html: Partnership for a Drug-Free America.
- ⁸⁸ Partnership for a Drug-Free America. (1997, June 9). Drug-free resource net: FAQs: Amphetamines. Retrieved from the World Wide Web: http://www.drugfreeamerica.org/amphetamine_faqs2.html: Partnership for a Drug-Free America.
- ⁸⁹ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ⁹⁰ Johnston, L., O'Malley, P. M., Bachman, J. G. and National Institute on Drug Abuse. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994. Volume 1 Secondary school students; Volume 2: College students and young adults. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institute of Health, National Institute on Drug Abuse.
- ⁹¹ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ⁹² Canadian Government Commission of Inquiry. (1997, July 8). The non-medical use of drugs: Interim report of the Canadian Government Commission of Inquiry. Retrieved from the World Wide Web: <http://206.61.184.43/schaffer/library/studies/ledain/NONMED1.HTM>: Schaffer Library of Drug Policy.
- ⁹³ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ⁹⁴ National Institute on Drug Abuse. (1996, November). NIDA notes. Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse.
- ⁹⁵ National Institute on Drug Abuse. (1996, November). NIDA notes. Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse; Drug and Poison

- Information Center. (1997, May 29). Freebase methamphetamine: Ice. Cincinnati, OH: Retrieved from the World Wide Web: <http://ovchin.uc.edu/htdocs/hopeline/ice.html>.
- ⁹⁶ National Institute on Drug Abuse. (1996, November). NIDA notes. Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse; Friend, T. (1996, July 17). An escalating drug war: Methamphetamine labs deeply rooted in USA, Mexico. USA Today, 1D.
- ⁹⁷ National Institute on Drug Abuse. (1996, November). NIDA notes. Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse.
- ⁹⁸ Wren, C.S. (1996, February 14). Sharp rise in use of methamphetamines generate concern. New York Times, A16.
- ⁹⁹ Wren, C.S. (1996, February 14). Sharp rise in use of methamphetamines generate concern. New York Times, A16.
- ¹⁰⁰ National Institute on Drug Abuse. (1996, November). NIDA notes. Rockville, MD: Health and Human Services Department, National Institute of Health, National Institute on Drug Abuse.
- ¹⁰¹ Wren, C.S. (1997, July 8). The illegal home business: "Speed" manufacture. New York Times, A8.
- ¹⁰² Morelock, J.L. (1995). Drugs in high school, the disturbing truth. St. Petersburg, FL: Guideline Publishing.
- ¹⁰³ Mathias, R. (1996, November). Like methamphetamine, 'ecstasy' may cause long-term brain damage. NIDA Notes, 11(5), 7, 18.
- ¹⁰⁴ Inciardi, J.A. (1992). The war on drugs II: The continuing epic of heroin, cocaine, crack, crime, AIDS, and public policy. Mountain View, CA: Mayfield.
- ¹⁰⁵ Inciardi, J.A. (1992). The war on drugs II: The continuing epic of heroin, cocaine, crack, crime, AIDS, and public policy. Mountain View, CA: Mayfield.
- ¹⁰⁶ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ¹⁰⁷ Morelock, J.L. (1995). Drugs in high school, the disturbing truth. St. Petersburg, FL: Guideline Publishing.
- ¹⁰⁸ Morelock, J.L. (1995). Drugs in high school, the disturbing truth. St. Petersburg, FL: Guideline Publishing.
- ¹⁰⁹ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ¹¹⁰ National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.
- ¹¹¹ National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.
- ¹¹² People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ¹¹³ National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.
- ¹¹⁴ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books; National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.
- ¹¹⁵ National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.
- ¹¹⁶ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished; Berkow, R. and Fletcher, A.J. (Eds.). (1992). The merck manual of diagnosis and therapy. Rahway, NJ: Merck Research Laboratories.
- ¹¹⁷ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ¹¹⁸ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ¹¹⁹ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished; Nash, M. (1997, May 5). Addicted: Why do people get hooked? Mounting evidence points to a powerful brain chemical called dopamine. Time, 149(18), 69-76.
- ¹²⁰ National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.
- ¹²¹ Ringwalt, C.L. and Palmer, J.H. (1989). Cocaine and crack users compared. Adolescence, 24(96), 851-859; Cohen, S. (1984). Recent developments in the abuse of cocaine. Bulletin on Narcotica, 36(2), 3-14.
- ¹²² Ringwalt, C.L. and Palmer, J.H. (1989). Cocaine and crack users compared. Adolescence, 24(96), 851-859; National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.
- ¹²³ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ¹²⁴ National Institute on Drug Abuse. (1995, January). Cocaine Abuse. NIDA Capsules, (CAP05), 1-4.

- ¹²⁵ Bachman, J.G., Johnston, L.D. and O'Malley, P.M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. Journal of Health and Social Behavior, 31(2), 173-184.
- ¹²⁶ Bachman, J.G., Johnston, L.D. and O'Malley, P.M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. Journal of Health and Social Behavior, 31(2), 173-184.
- ¹²⁷ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ¹²⁸ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ¹²⁹ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ¹³⁰ Thomas, E. (1986, September 15). America's crusade: What is behind the latest war on drugs. Time, 128, 60.
- ¹³¹ Thomas, E. (1986, September 15). America's crusade: What is behind the latest war on drugs. Time, 128, 60.
- ¹³² Ringwalt, C.L. and Palmer, J.H. (1989). Cocaine and crack users compared. Adolescence, 24(96), 851-859.
- ¹³³ Luntz Research Companies and The National Center on Addiction and Substance Abuse (CASA) at Columbia University. (1996). National survey of American attitudes on substance abuse II: Teens and their parents. New York: National Center on Addiction and Substance Abuse (CASA) at Columbia University.
- ¹³⁴ Flores, I. (1996, October 9). Heroin has its deadly hooks in teens across the nation. USA Today, 4A.
- ¹³⁵ Konigsberg, E. (1996). A model addiction. Allure, July, 90-95.
- ¹³⁶ Millman, R.B. and Botvin, G.J. (1992). Substance use, abuse, and dependence. In M.D. Levine, W.B. Carey, A.C. Crocker (Eds.), Developmental-behavioral pediatrics (pp. 451-467). Philadelphia, PA: W.B. Saunders Company.
- ¹³⁷ Jaffee, J.H. (1992). Opiates: Clinical aspects. In J.H. Lowinson, P. Ruiz, R.B. Millman and J.G. Langrod (Eds.), Substance abuse: A comprehensive textbook, 2nd ed. (pp. 186-194). Baltimore, MD: Williams & Wilkins.
- ¹³⁸ Jaffe, J.H. (1992). Opiates: Clinical aspects. In J.H. Lowinson, P. Ruiz, R.B. Millman and J.G. Langrod (Eds.), Substance abuse: A comprehensive textbook, 2nd ed. (pp. 186-194). Baltimore, MD: Williams & Wilkins; Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ¹³⁹ Smith, K. (1996, August 21). Experts: Where is gov't on epidemic? The New York Post, 1-3.
- ¹⁴⁰ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ¹⁴¹ Konigsberg, E. (1996). A model addiction. Allure, July, 90-95.
- ¹⁴² Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse and University of Michigan Institute for Social Research. (1996). National survey results on drug use from Monitoring the Future study, 1975-1995: Volume 1: Secondary school students. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Drug Abuse.
- ¹⁴³ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ¹⁴⁴ Morelock, J.L. (1995). Drugs in high school, the disturbing truth. St. Petersburg, FL: Guideline Publishing.
- ¹⁴⁵ Flores, I. (1996, October 9). Heroin has its deadly hooks in teens across the nation. USA Today, 4A.
- ¹⁴⁶ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ¹⁴⁷ Committee on Substance Abuse and Committee on Native American Child Health. (1996). Inhalant abuse. Pediatrics, 97(3), 420-423.

- ¹⁴⁸ National Institute on Drug Abuse. (1994). Inhalant abuse: Its dangers are nothing to sniff at. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Drug Abuse.
- ¹⁴⁹ Gorny, S.W. (1994). Inhalant abuse as an adolescent drug problem: An overview. Child and Youth Care Forum, 23(3), 161-175; Pociluyko, P.J. (1995, March 2). Inhalant abuse. Substance Abuse Letter, 8.
- ¹⁵⁰ How many more will die? (1993). New Scientist, 137(1859), 3.
- ¹⁵¹ Committee on Substance Abuse and Committee on Native American Child Health. (1996). Inhalant abuse. Pediatrics, 97(3), 420-423.
- ¹⁵² Gorny, S.W. (1994). Inhalant abuse as an adolescent drug problem: An overview. Child and Youth Care Forum, 23(3), 161-175.
- ¹⁵³ Caputo, R.A. (1993). Volatile substance misuse in children and youth: A consideration of theories. International Journal of the Addictions, 28(10), 1015-1032.
- ¹⁵⁴ Elias, M. (1996, March 13). 'Dangerous' rise in inhalant abuse: A call to fight with anti-drug education. USA Today, 9D.
- ¹⁵⁵ Gorny, S.W. (1994). Inhalant abuse as an adolescent drug problem: An overview. Child and Youth Care Forum, 23(3), 161-175.
- ¹⁵⁶ Committee on Substance Abuse and Committee on Native American Child Health. (1996). Inhalant abuse. Pediatrics, 97(3), 420-423.
- ¹⁵⁷ Elias, M. (1996, March 13). 'Dangerous' rise in inhalant abuse: A call to fight with anti-drug education. USA Today, 9D.
- ¹⁵⁸ National Families in Action. (1995, Fall). Drug abuse update: Inhalants. Atlanta, GA: National Families in Action.
- ¹⁵⁹ Johnston, L., O'Malley, P.M., Bachman, J.G., National Institute on Drug Abuse, U.S. Department of Health and Human Services, University of Michigan and Institute for Social Research. (1996, December 2). Monitoring the future. (unpublished data).
- ¹⁶⁰ Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁶¹ Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁶² Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁶³ Rozin, S. (1995, June 19). Steroids: A spreading peril. Business Week, 138-141.
- ¹⁶⁴ Berkow, R. and Fletcher, A.J. (Eds.). (1992). The merck manual of diagnosis and therapy. Rahway, NJ: Merck Research Laboratories.
- ¹⁶⁵ People Reaching Out. (1996). Students reaching out manual 1996-97. Unpublished.
- ¹⁶⁶ Berkow, R. and Fletcher, A.J. (Eds.). (1992). The merck manual of diagnosis and therapy. Rahway, NJ: Merck Research Laboratories.
- ¹⁶⁷ Berkow, R. and Fletcher, A.J. (Eds.). (1992). The merck manual of diagnosis and therapy. Rahway, NJ: Merck Research Laboratories; Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁶⁸ Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁶⁹ Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁷⁰ NCADI. Anabolic steroids: A threat to mind and body. Retrieved from the World Wide Web, 5/16/97: <http://www.health.org/pubs/nidarr/st5.htm>: NIDA Research Report Series.
- ¹⁷¹ Berkow, R. and Fletcher, A.J. (Eds.). (1992). The merck manual of diagnosis and therapy. Rahway, NJ: Merck Research Laboratories.
- ¹⁷² Durant, R.H., Ashworth, C.S., Newman, C. and Rickert, V.I. (1994). Stability of the relationships between anabolic steroid use and multiple use among adolescents. Journal of Adolescent Health, 15(2), 111-116.

- ¹⁷³ Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁷⁴ Berkow, R. and Fletcher, A.J. (Eds.). (1992). The merck manual of diagnosis and therapy. Rahway, NJ: Merck Research Laboratories.
- ¹⁷⁵ Yesalis, C.E. (1993). Incidence of anabolic steroid use: A discussion of methodological issues. In C.E. Yesalis (Ed.), Anabolic steroids in sport and exercise (pp. 49-69). Champaign, IL: Human Kinetics Publishers.
- ¹⁷⁶ Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁷⁷ Yesalis, C.E. (1993). Incidence of anabolic steroid use: A discussion of methodological issues. In C.E. Yesalis (Ed.), Anabolic steroids in sport and exercise (pp. 49-69). Champaign, IL: Human Kinetics Publishers; Berkow, R. and Fletcher, A.J. (Eds.). (1992). The merck manual of diagnosis and therapy. Rahway, NJ: Merck Research Laboratories.
- ¹⁷⁸ Cowart, V.S. (1990). Blunting "steroid epidemic" requires alternatives, innovative education. JAMA, 264(13), 1856-1857.
- ¹⁷⁹ Brown, G.V. (1995). An abridged report on anabolic steroids. Retrieved from the World Wide Web, 5/16/97: <http://freeway.net/~shack/steroid.htm#effects>: Geoffrey V. Brown.
- ¹⁸⁰ Rozin, S. (1995, June 19). Steroids: A spreading peril. Business Week, 138-141.
- ¹⁸¹ Yesalis, C.E. (1993). Incidence of anabolic steroid use: A discussion of methodological issues. In C.E. Yesalis (Ed.), Anabolic steroids in sport and exercise (pp. 49-69). Champaign, IL: Human Kinetics Publishers.
- ¹⁸² Stepp, L.S. (1996, February 5). Out of the cabinet, into the schools. Washington Post, A1, A6.
- ¹⁸³ Schmidt, I. (1996). Rohypnol: The pill to nowhere. Street News, 3rd Issue, 24.
- ¹⁸⁴ Darboe, M.N. (1996). Abuse of dextromethorphan-based cough syrup as a substitute for licit and illicit drugs: A theoretical framework. Adolescence, 31(121), 239-245.
- ¹⁸⁵ Dubey, A. (1995). Young people abusing Graval for "cheap high". Addiction News for Professionals, 24(1), 10.
- ¹⁸⁶ Burros, M. and Jay, S. (1996, April 10). Concern grows over herb that promises a legal high. New York Times, p. C1, C6.
- ¹⁸⁷ Friedman, S. (1996, February 26). New private school craze: Kids snort their Ritalin. The New York Observer, 1.
- ¹⁸⁸ Navarro, M. (1995, December 9). In South, drug abusers turn to a smuggled sedative. New York Times, p. 6.
- ¹⁸⁹ Burros, M. and Jay, S. (1996, April 10). Concern grows over herb that promises a legal high. New York Times, p. C1, C6.
- ¹⁹⁰ Segal, B. (1991). Adolescent initiation into drug-taking behavior: Comparisons over a 5 year interval. International Journal of the Addictions, 26(3), 267-279.
- ¹⁹¹ Kopstein, A.N. and National Institute on Drug Abuse. (1995). Drug use among racial/ethnic minorities. Washington, DC: CSR, Inc.
- ¹⁹² Johnston, L., O'Malley, P. M., Bachman, J. G. and National Institute on Drug Abuse. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994. Volume 1 Secondary school students; Volume 2: College students and young adults. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institute of Health, National Institute on Drug Abuse.
- ¹⁹³ The National Center on Addiction and Substance Abuse at Columbia University. (1996). Substance Abuse and The American Woman. New York: CASA.
- ¹⁹⁴ Gilpin, E.A., Lee, L., Evans, N. and Pierce, J.P. (1994). Smoking initiation rates in adults and minors: United States, 1944-1988. American Journal of Epidemiology, 140(6), 535-543.
- ¹⁹⁵ Johnston, L.D., O'Malley, P.M., Bachman, J.G. and National Institute on Drug Abuse. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994, volume I. Rockville, MD: National Institute on Drug Abuse.
- ¹⁹⁶ Windle, M. (1991). Alcohol use and abuse: Some findings from the National Adolescent Student Health Survey. Alcohol, Health and Research World, 15(1), 5-10; Wechsler, H. and McFadden, M. (1976). Sex differences in adolescent alcohol and drug use: A disappearing phenomenon. Journal of Studies on Alcohol,

37(9), 1291-1301; Johnston, L.D., O'Malley, P.M. and Bachman, J.G. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994, volume I. Rockville, MD: National Institute on Drug Abuse.

¹⁹⁷ Johnston, L.D., O'Malley, P.M. and Bachman, J.G. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994, volume I. Rockville, MD: National Institute on Drug Abuse; Thompson, K.M. and Wilsnack, R.W. (1984). Drinking and drinking related problems among female adolescents: Patterns and influences. In S.C. Wilsnack and L.J. Beckman (Eds.), Alcohol problems in women: Antecedents, consequences and interventions (pp. 37-65). New York: Guilford Press.

¹⁹⁸ Johnston, L.D., O'Malley, P.M. and Bachman, J.G. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994, volume I. Rockville, MD: National Institute on Drug Abuse; Robins, L.N. and Pryzbeck, T.R. (1985). Age of onset of drug use as a factor in drug use and other disorders. In C.L. Jones and R.J. Battjes (Eds.), Etiology of drug abuse: Implications for prevention, NIDA monograph 56 (pp. 178-192). Rockville, MD: National Institute on Drug Abuse; Kaestner, E., Frank, B., Marel, R. and Schmediler, J. (1986). Substance use among females in New York State: Catching up with the males. Advances in Alcohol and Substance Abuse, 5(3), 29-49; Wechsler, H. and McFadden, M. (1976). Sex differences in adolescent alcohol and drug use: A disappearing phenomenon. Journal of Studies on Alcohol, 37(9), 1291-1301.

¹⁹⁹ Windle, M. (1991). Alcohol use and abuse: Some findings from the National Adolescent Student Health Survey. Alcohol Health and Research World, 15(1), 5-10; Robins, L.N. and Pryzbeck, T.R. (1985). Age of onset of drug use as a factor in drug use and other disorders. In C.L. Jones and R.J. Battjes (Eds.), Etiology of drug abuse: Implications for prevention, NIDA monograph 56 (pp. 178-192). Rockville, MD: National Institute on Drug Abuse.

²⁰⁰ Bodinger-de Uriarte, C. and Austin, G. (1991). Substance use among adolescent females. Portland, OR: Northwest Regional Educational Laboratory.

²⁰¹ The National Center on Addiction and Substance Abuse at Columbia University. (1996). Substance Abuse and The American Woman. New York: CASA.

²⁰² Blacks and Hispanics are more likely to be clustered by schools so that the sampling error of differences between ethnic groups is higher than differences for other demographic variables like sex or college plans. Still, Monitoring the Future picks up these same patterns for Hispanic males age 15 and younger when combining the 1993 and 1994 surveys; Kopstein, A.N. and National Institute on Drug Abuse. (1995). Drug use among racial/ethnic minorities. Washington, DC: CSR.

²⁰³ Johnston, L., O'Malley, P. M., Bachman, J. G. and National Institute on Drug Abuse. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994. Volume 1 Secondary school students; Volume 2: College students and young adults. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institute of Health, National Institute on Drug Abuse.

²⁰⁴ Kopstein, A.N. and National Institute on Drug Abuse. (1995). Drug use among racial/ethnic minorities. Washington, DC: CSR, Inc.

²⁰⁵ Kopstein, A.N. and National Institute on Drug Abuse. (1995). Drug use among racial/ethnic minorities. Washington, DC: CSR, Inc.

²⁰⁶ Kopstein, A.N. and National Institute on Drug Abuse. (1995). Drug use among racial/ethnic minorities. Washington, DC: CSR, Inc.

²⁰⁷ Gillmore, M. R., Catalano, R. F., Morrison, D. M., Wells, E. A., Iritani, B. and Hawkins, J. D. (1990). Racial differences in acceptability and availability of drugs and early initiation of substance use. American Journal of Drug and Alcohol Abuse, 16(3/4), 185-206.

²⁰⁸ Johnston, L., O'Malley, P. M., Bachman, J. G. and National Institute on Drug Abuse. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994. Volume 1 Secondary school students; Volume 2: College students and young adults. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institute of Health, National Institute on Drug Abuse.

²⁰⁹ Johnston, L., O'Malley, P. M., Bachman, J. G. and National Institute on Drug Abuse. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994. Volume 1 Secondary school students; Volume 2: College students and young adults. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institute of Health, National Institute on Drug Abuse.

²¹⁰ Johnston, L., O'Malley, P. M., Bachman, J. G. and National Institute on Drug Abuse. (1995). National survey results on drug use from the Monitoring the Future Study, 1975-1994. Volume 1 Secondary school students; Volume 2: College students and young adults. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institute of Health, National Institute on Drug Abuse.

²¹¹ U.S. Department of Health and Human Services. (1995, December 15). Monitoring the future: Annual survey shows increases in tobacco and drug use by youth. Press Release.

IV.

Factors Increasing and Decreasing the Risk of Adolescent Substance Abuse

Before graduating from high school, every teen in America must choose whether to smoke, drink or use drugs. By 12th grade, most teens drink and many binge drink; a quarter of them use marijuana and other drugs; 20 percent are daily smokers, and ten percent use illicit drugs like cocaine, heroin and LSD.*

Why do so many adolescents use drugs? CASA asks teens this question in its nationwide annual surveys.¹ The reasons differ with age. Only 15 percent of 12-year-olds say the main reason is because drugs relieve stress or make them feel good. Most 12-year-olds say teens use drugs to act cool or because they want to do what their friends do. But by age 17, almost half (45 percent) say the main reason adolescents use drugs is to feel good or relieve boredom, while the proportion who cite acting cool falls to ten percent. These answers are revealing. They suggest that there is a threshold age--around 14 or 15 as teens make the transition into high school--when teen perceptions and patterns of drug use change. While most early adolescents who use drugs appear to be experimenting or engaging in occasional social use, such older adolescents do so to achieve a desired psychological effect, a troublesome sign that they are moving up the addiction continuum.

* Because of overlap, these percentages cannot be added.

In struggling to determine why teens use addictive substances, social scientists put forth various theories involving teens and their families, peers, schools and communities.² From the Adolescent Commission's examination of this work and CASA's surveys and experience with demonstration programs in cities across the nation,

"Kids use drugs to forget. So they don't have to think about the stuff that's really too much for them... Sometimes you feel like you can't talk to anybody... that maybe [using drugs] will at least help you at least talk to yourself or understand what's going on."

*--Melissa, age 17,
Los Angeles, CA*

we have identified factors that increase or decrease the risk of adolescent smoking, drinking and using drugs. CASA's effort to identify such traits is a work in progress, but far enough along to help teens and their families.

In reviewing these characteristics, it is important to keep in mind that teen substance abuse does not occur in isolation. It is often a manifestation of fundamental problems involving family, social environment, individual physical or emotional needs and developmental difficulty in making the crucial transition into adulthood.³

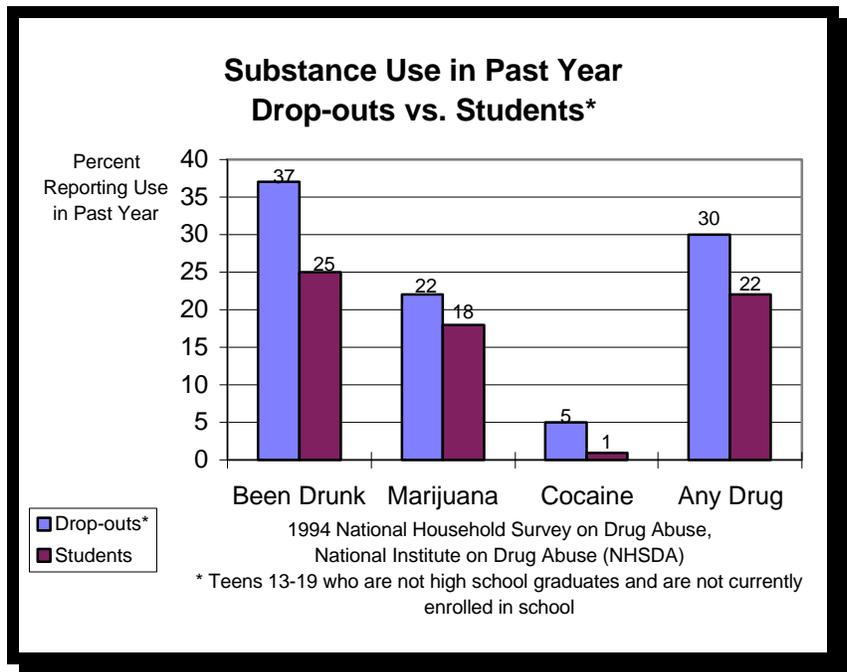
Risk Factors For Teen Substance Abuse

Adolescents who develop drug or alcohol problems usually exhibit other signs of trouble as well. These signals often occur before substance abuse begins and increase the statistical odds that a teen will develop a substance abuse problem--whether or not they cause the substance abuse directly. More than 70 risk factors for substance abuse have been identified in various studies.⁴ These risk factors (or signals of risk) can be grouped into those related to the teen, the teen's family and the community in which the teen lives.

Teens Themselves

Poor School Performance. Adolescents who do not perform well academically and who are not strongly connected to school are more likely to be involved in substance abuse.⁵ Whether academic achievement is measured objectively by a student's grades or by the student's own perception of position in class, poor school achievement is associated with substance abuse problems. Students who view themselves as in the bottom of the class are almost four times likelier to use marijuana frequently than those who see themselves as high achievers.*⁶

Dropouts are much more likely to use drugs like cocaine, drink alcohol and smoke marijuana than those who remain in school.⁷ They are one and one-half times as likely to be drunk in the past year and five times likelier to have used cocaine in the past year than teens who remain in school.⁸



* Frequent use is defined as more than twice in the past month.

Violence

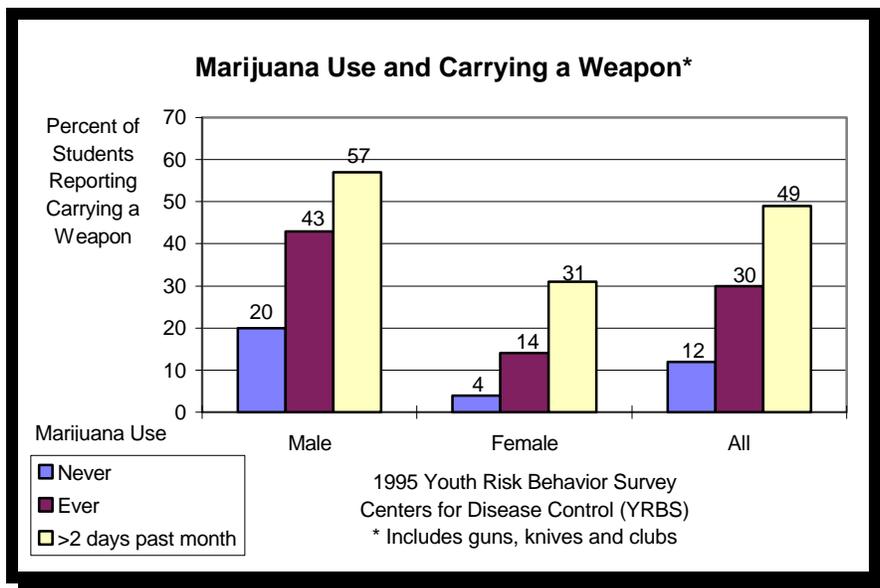
and Delinquency.

Delinquent behaviors such as fighting, carrying a weapon, or getting into trouble in school or with the law, are associated with substance abuse.⁹

Students who have used

marijuana in the past month are four times more likely to have carried a gun than those who have never used marijuana.¹⁰ Between one-fifth and two-thirds of adolescents who enter the criminal justice system each year have an alcohol or other drug disorder.¹¹ CASA's study, *Substance Abuse and Urban America: Its Impact on an American City, New York*, found that at the end of 1993, the New York State Division for Youth and the city's Department of Juvenile Justice had more than 2,500 city adolescents under age 16 in custody--60 percent of whom abused and/or dealt drugs and alcohol.¹² There is a consistent progression from childhood delinquent behaviors to later adolescent alcohol and drug use and alcoholism in adulthood.¹³

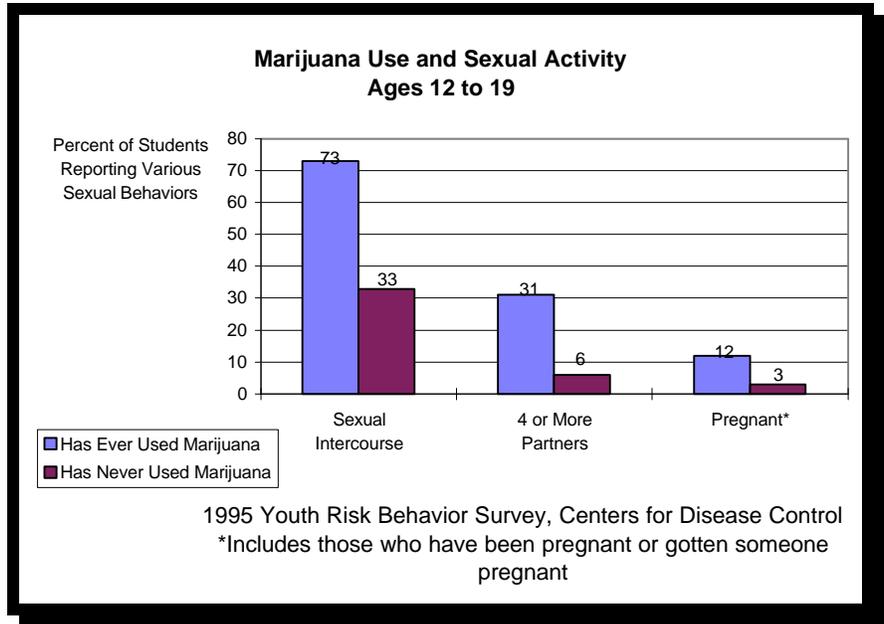
Sexual Promiscuity. Another group of behavioral characteristics associated with substance abuse involves sexual activity at a young age, unprotected sex and teen pregnancy. Seventy-one percent of teenagers become sexually active by age 18. The average age of first intercourse for boys is 16 and for girls is 17, but nine percent of 12-year-olds have already had intercourse as have 23 percent of 14-year-olds.¹⁴ Almost two-thirds of students who have been



drinking recently are sexually active (64 percent), nearly twice as many as among students who have never tried alcohol (35 percent).

Similarly, students who have used marijuana are more than twice as likely

to have sexual intercourse than those who have never used marijuana (73 percent vs. 33 percent).¹⁵



Adolescents who use and abuse alcohol and marijuana are more likely to be sexually active and to not use protective devices.¹⁶ Teens who have used marijuana are four times more likely to have been pregnant or to have gotten someone pregnant than teens who have never smoked pot (12 percent vs. three percent).¹⁷

Peer Influences. One of the best predictors of a teen's likelihood of abusing substances is whether or not the teen's peers use drugs. Peer attitudes and behaviors can reinforce a teen's inclination to use or not use drugs. In some cases, adolescents may seek out peers whose attitudes and behaviors mirror their own.¹⁸

Teens' perceptions about their peers are also important. Adolescents sometimes overestimate drug use among their friends. This causes some to believe that drinking and drug use are more common than they actually are.¹⁹ When teens start to believe that "everyone is

doing it," substance use seems normal, the associated risks appear minimal and they are more likely to use substances themselves.

Families

Tolerance of Substance Use and

Abuse. Family tolerance of substance use and abuse increases a teen's risk for using dangerous substances. This tolerance can take many forms, ranging from substance abuse and addiction of parents to parental messages of ambiguity about the harm of substance use.

Children who grow up in families with a history of parental alcohol or drug abuse are twice as likely to drink and nearly four times more likely to use illicit drugs as children from families without a history of drug or alcohol abuse.²¹ Parental cigarette smoking

If it's just you and your best friend, you're not going to be embarrassed if you tell them no, but if you get all these people around that you look up to and they're all telling you to do something, you're going to be a lot more likely to say yes because they'll make you look stupid."

*-- Bonnie, 9th grade,
Raleigh, NC*

Teens, Substance Abuse and Sexual Activity²⁰

- *Boys under 15 who use marijuana monthly are twice as likely to have had sex.*
- *Boys under 15 who use alcohol monthly are three times as likely to have had sex--girls are four times as likely.*
- *Girls under 15 who use marijuana and alcohol monthly are five times as likely to have had sex.*
- *Teens who use cocaine or illicit drugs are most likely to have reported combinations of promiscuous sexual behaviors, such as less condom use and four or more sex partners.*

increases the odds that teens will smoke.²²

Parents' attitudes may be as important as their behaviors. Teens of parents who are permissive about teens' use of alcohol and illegal drugs are more likely to drink and abuse drugs. When alcohol is

easily accessible and available in the family setting, children are more likely to use it.²³

CASA's 1996 *National Survey of American Attitudes on Substance Abuse II: Teens and Their Parents* uncovered a relationship between teen marijuana use and the ambivalence of many baby boomer parents about such drug use.

Inadequate Parental

Guidance. Parents who do not monitor their children's activities have teens who are more likely to use substances.²⁴ One out of four

Our schools won the football championship. Our parents threw a big keg party. The kids were serving the beer."

*-- Maureen,
San Rafael, CA*

boys who use drugs feel they receive too little parental supervision.²⁵ Parents who fail emotionally to support their children or who do not actively disapprove of problem behavior are likelier to have children with alcohol or drug problems.²⁶

Family Conflict and Poor Bonding. High levels of family conflict and poor family bonding are associated with a variety of destructive adolescent behaviors including

I think I have a bond with my Mom. But it's more like she's a roommate and just gives me money...It's not like we don't care about each other, but I've always been independent. I just do whatever I want and we talk once in awhile."

--Chris, High School Student, CA

substance abuse.²⁷ Child abuse, either physical or sexual, is also often associated with illicit drug use.²⁸ Girls and boys of any socioeconomic level who experience abuse are more likely to engage in deviant behavior including drug use.²⁹ CASA's report, *Substance Abuse and The American*

Woman, indicates that childhood sexual abuse plays a particularly powerful role among female alcoholics.³⁰

Communities

Poverty and Disposable Income. Adolescents living in poverty are much more widely exposed to substance abuse in their communities. In these communities, poor children are less likely to have available the support and treatment systems of the affluent. CASA's report *Substance Abuse and The American Woman* found that almost half (45.6 percent) of adult women with household incomes of \$75,000 or more have tried an illegal drug at least once, but only 1.9 percent are regular users. In contrast, only 27.6 percent of adult women with household incomes of less than \$15,000 have ever tried an illegal drug, but 4.6 percent are regular users. Thus, the affluent woman has one chance in 15 of getting hooked while the odds for a low income woman are one in six.³¹

Quality of Neighborhood. In neighborhoods where families do not become friendly neighbors, where parents do not look out for each other's children and where children do not feel connected to their community, teens are more vulnerable to substance abuse.³² It does

"There isn't a sense of community. If they see a child doing something wrong, they aren't going to stop that child, they probably aren't going to speak to the parent, and so the kid is going to get away with it."

-- Mother of a teen substance user, NY

not matter whether the community is rich or poor, affluent suburban or poverty-stricken urban ghetto; disconnected communities of any socio-economic level can increase a child's risk.

As the Carnegie Council concluded in its final report on adolescent development, "for most young adolescents, the feeling of belonging to a community that offers mutual aid and a sense of common purpose, whether it is found in their families, schools,

neighborhoods, houses of worship, or youth organizations, has been greatly compromised," and has exposed our children to a wide range of problems including substance abuse.³³

Images From Popular Culture. The entertainment industry, the media, the Internet, the fashion industry--our popular culture--play a role in affecting adolescent substance abuse.³⁴ There is no question that television, movies, music and the media often convey images that normalize and even glamorize substance use and abuse. Popular movie and television heroes smoke or drink; some music celebrates the virtues of marijuana and other drug use; and widespread advertisements link alcohol and tobacco use with good times, beauty, popularity and success; heroin chic has marked fashion layouts in magazines. There is relatively little counter-advertising that emphasizes the dangers of alcohol and drug use. The Partnership for a Drug-Free America limits its ads to an anti-illicit drug message and it has faced increasing difficulty in getting TV networks and stations to carry them. The pro-use messages encourage teen use and reinforce tendencies to imitate that already exist among some children.³⁵

Physiological and Other Links to Substance Abuse

Genetic Predisposition. Some children may be genetically predisposed to alcoholism and addictive disorders, though the mechanism through which this occurs is not yet clear.³⁶ For example, children of an alcoholic parent even if adopted soon after birth and raised in a non-alcoholic environment are more likely to become alcoholics themselves.³⁷ Identical twins, who have the same genes, are more likely to both become alcoholics than fraternal twins, who (like any two siblings) share only half their genes.³⁸ These and other

studies suggest that regardless of the family or community environment in which a child is raised, some are genetically at greater risk of substance abuse than others. There are seven million children under the age of 18 who are children of alcoholics.³⁹

Developmental Disorders. Several disorders, such as Attention Deficit Hyperactivity Disorder (ADHD), are associated with a higher incidence of substance abuse among teens. ADHD is a neurological disorder that appears to result from a lack of certain chemical messengers in the brain, leading to inattention, overarousal, impulsivity and poor motor development.⁴⁰

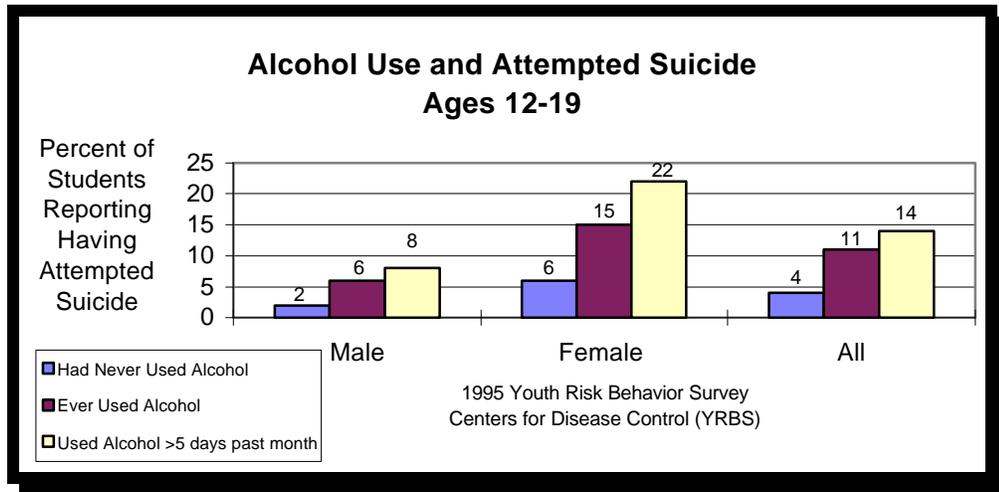
Learning disabilities--problems in receiving and processing information in children of average or above average intelligence--may increase the likelihood of adolescent substance abuse.⁴¹ Learning disabilities include dyslexia; difficulties in reading, writing, speaking, and math; comprehending language and concepts like space and time; and faulty memory and coordination.

Psychological Disorders. Depression and substance abuse often go hand-in-hand.⁴² Substance abuse is linked to suicide.⁴³ Female high school students who have used alcohol often (more than five times) in the past month are more than three times likelier to have attempted suicide than those who have never had a drink.⁴⁴

Anorexia and bulimia are often associated with alcohol problems among adolescent girls. Many women with eating disorders have at some point used amphetamine combinations to suppress their appetites and date their involvement with other substances to that time. Some anorexics report being drawn to cocaine because it suppresses their appetite.⁴⁵

The glamorization of thinness and its association with drug use can be seen in the emaciated heroin chic look among fashion models.⁴⁶

Teens who are highly concerned with weight control are also more likely to smoke cigarettes. Girls who smoke are three times as likely to be very concerned about their weight than girls who never smoked.⁴⁷



Early Puberty. Early onset of puberty is associated with a younger age of initiation for smoking and drinking. This is of concern since the younger children are when they begin to use alcohol or tobacco, the more likely they are to go on to other drugs. Early puberty appears to pose more of a risk of substance abuse among girls than among boys.⁴⁸

Characteristics That Protect Teens

There is no cocoon to seal adolescents from addictive substances. It is important to stop illegal drugs at our borders and to make illegal substances less accessible to teens through domestic law enforcement. But our free nation must face the fact that cigarettes, alcohol, illicit drugs like marijuana, inhalants, pills, steroids, and even cocaine, acid and

heroin are likely to be available to any teen who wants to get them. Since there is no silver bullet to protect teens, it is important to identify factors that make it less likely they will abuse substances. These factors include: characteristics of teens themselves and characteristics of their families, schools, religious organizations and communities.⁴⁹ These characteristics are mutually supportive: healthy teen personality traits often derive from their families, religious environment and schools.⁵⁰

Teens Themselves

Identifying characteristics that reduce the risk a teen will smoke, use drugs or abuse alcohol is a work in progress. In 1995 and 1996, CASA's *National Survey of American Attitudes on Substance Abuse II: Teens and Their Parents*, identified several such factors.

These are teens:

- With parents who are actively involved in their lives.
- With an active religious or spiritual life.
- Who are optimistic about their personal futures.
- Who view marijuana as dangerous.
- Who recognize that substance use is a choice that they will be required to make.
- Who view drug use not only as bad for their health, but also as morally wrong.
- Who are academically engaged, involved in school and performing at or close to their level of ability.

- who have hope for the future that their lives will be at least as good as their parents' lives.

The more of these qualities adolescents exhibit, the less likely they are to abuse alcohol or use tobacco, illicit drugs or other dangerous substances.⁵¹

Teens who resist dangerous substances also tend to have:

- Good social and verbal skills, a sense of humor and a relaxed temperament.
- Problem-solving skills, including the ability to think abstractly, reflect on situations and find alternate solutions for problems.
- Strong sense of identity, including the ability to act independently, resist peer pressure, say no to early or unprotected sex, and avoid dangerous situations.
- Sense of purpose, with ability to set realistic personal goals and keep things in perspective under stress.⁵²

Families

Families who help teens resist the use of dangerous substances exhibit several key characteristics:

Caring and Support. The importance of caring and support begins during infancy. Young children who form a strong attachment with their primary caregiver and maintain it are more resilient and better able to resist pressures to use drugs.⁵³ Attachment, warmth, open support and communication are critical elements of stability for teens as they explore adult roles and make choices about smoking, using drugs and abusing alcohol.⁵⁴

High Yet Realistic Expectations. During adolescence, high yet realistic parental expectations can protect teens from engaging in dangerous behaviors.⁵⁵ High expectations relate to completing school, finding a good career, contributing to society, being happy and drug free and learning responsible use of alcohol. Realistic expectations have to do with matching personal abilities and interests to achievements.

Opportunities for Participation. Family life can provide many opportunities for teens to explore increasingly more adult roles in a protected environment. Parents increase the chances that their teens won't abuse dangerous substances when they are involved in the lives of their children and show children that they are important members of the family, by talking to them about current, community and school events, asking their opinions, including them in more adult conversations and social activities, having them assume certain responsibilities around the house.⁵⁷

Effective Discipline.

As children mature through the teenage years, parents should establish clearly defined limits while at the same time encouraging the development and independence of their children.⁵⁸

Parents should also closely monitor their teenagers' behavior and activities and play an important role in defining safe and acceptable behavior.⁵⁹

***Teenagers Sneaking Out: Fun and Games or Tragedy Waiting To Happen?*⁵⁶**

From upscale suburbs to inner-city neighborhoods, teenagers have engaged in the timeless adventure of sneaking out of their homes at night...Some sneak out for a romantic meeting or to hang out with older kids. Others to drink or fit in with the crowd.

But, those who habitually sneak out often come from homes where rules aren't strongly enforced. "They control their parents because they don't feel the word 'no' in the household is of significance....These kids are telling their parents, basically, 'To hell with the rules. I'll do what I want'....The parents are totally inept to say 'no' or too busy to say 'no' and want somebody else to fix the problem."

Schools

The role of schools in protecting teens is not limited to teaching health promotion programs. Indeed, the basic nature and quality of the school environment appear to have more impact on kids than individual, narrowly tailored drug prevention programs.

Caring and Support. A school environment that is low in conflict, where students and teachers are committed to learning and where teachers are actively involved in the overall development of the child, appears to do more to protect adolescents from dangerous behaviors than any individual substance abuse prevention program. Caring and supportive relationships among peers in school are also important. Peer pressure toward positive behavior and caring school friends are factors in developing the skill and will to say no to dangerous substances.⁶⁰

High Yet Realistic Expectations. Schools that establish an atmosphere of high expectations, reduce academic failure and increase the percentage of adolescents who go on to college, reduce the likelihood of substance abuse. Setting standards of behavior which include zero tolerance for alcohol, drug and tobacco use sends clear signals to teens about appropriate behavior and can reinforce messages received at home. Schools that establish a strong academic emphasis and high student participation in extra-curricular activities reduce the likelihood of substance abuse among their teens.⁶¹

Teen Involvement and Participation. Schools that provide teens opportunities to participate in problem-solving, decision-making, planning, goal-setting and helping others--both in the classroom and in other school-sponsored activities--help reduce the risk of substance abuse.

Communities

Communities can take significant steps to limit the availability of dangerous substances to teens. These steps include strict enforcement of laws governing distribution, sale and possession of drugs and alcohol to teens and of laws related to purchasing alcohol and cigarettes, drug use and drunk driving, as well as support for increased taxes on alcohol and tobacco. Local policing practices can set a tone in a community of zero tolerance for teen substance abuse. Community coalitions can send and reinforce similar messages. CADCA, the national Community Anti-Drug Coalitions of America can help communities organize to help their teens.

Religion

Individuals with deeply held religious beliefs are less likely to be substance users or abusers.⁶² Teens who have an active religious life are less likely to drink, smoke or use illicit drugs.⁶³ CASA's 1996 *National Survey of American Attitudes on Substance Abuse II: Teens and Their Parents* found a strong relationship between adolescents' spirituality and their resistance to substance use.⁶⁴ Teens who believe religion is not important are twice as likely to have used marijuana frequently in the past month.⁶⁵

Involvement with religious and spiritual organizations provides a connection with groups that have social norms discouraging substance use. In this way, religion plays a key role in defining and nourishing positive social values among adolescents.

Religion is often a family-centered activity which can reinforce the closeness between parent and child, doubling the protective benefits. Religious affiliation and attendance

at services can also influence a teenager's choice of friends, providing a social group that helps teens internalize drug-free values and protects them from negative influences. Finally, religion creates a structure of support and hope for individuals, and may provide a place to turn to in time of crisis.⁶⁶

CHAPTER IV.

REFERENCES

¹ Luntz Research Companies and National Center on Addiction and Substance Abuse (CASA) at Columbia University. (1996). National survey of American attitudes on substance abuse II: Teens and their parents. New

York: National Center on Addiction and Substance Abuse (CASA) at Columbia University; Center on Addiction and Substance Abuse (CASA) at Columbia University and Luntz Research Companies. (1995). National Survey of American Attitudes on Substance Abuse. New York: Center on Addiction and Substance Abuse (CASA) at Columbia University.

² Akers, R.L., Krohn, M.D., Lanza-Kaduce, L. and Radosevich, M. (1979). Social learning and deviant behavior: A specific test of general theory. American Sociological Review, 44, 636-655; Brook, J.S., Brook, D.W., Whiteman, M. and Cohen, P. (1990). The psychosocial etiology of adolescent drug use: A family interactional approach. Genetic, Social, and General Psychology Monographs, 116(2), 111-267; Jessor, R. and Jessor, S.L. (1977). Problem behavior and psychosocial development: A longitudinal study of youth. New York: Academic Press; Kandel, D.B., Kessler, R.C. and Margulies, R.Z. (1973). Adolescent marijuana use: Role of parents and peers. Science, 181, 1067-1070; Kandel, D.B., Kessler, R.C. and Margulies, R.Z. (1978). Antecedents of adolescent initiation into stages of drug use: A developmental analysis. In D.B. Kandel (Ed.), Longitudinal research on drug use: Empirical findings and methodological issues. Washington, DC: Hemisphere Publishing; Kandel, D.B. (1980). Drug and drinking behavior among youth. Annual Review of Sociology, 6, 235-285; Szapocznik, J. and Coatsworth, J.D. (1996). Structural ecosystems theory: An ecodevelopmental framework for organizing risk and protection for drug abuse. Unpublished paper; Center for Children and Families and The National Center on Addiction and Substance Abuse (CASA) at Columbia University. (1997). Promoting healthy adolescence: youth development frameworks and programs. Unpublished paper.

³ Szapocznik, J. and Coatsworth, J.D. (1996). Structural ecosystems theory: An ecodevelopmental framework for organizing risk and protection for drug abuse. Unpublished paper.

⁴ Swan, N. (1995). Early childhood behavior and temperament predict later substance use. NIDA Notes, 10(1), 13-18.

⁵ Bucholz, K.K. (1990). A review of correlates of alcohol use and alcohol problems in adolescence. Recent Developments in Alcoholism, 8, 111-123.

⁶ SADAC analysis of U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Youth risk behavior survey, 1991 [3 1/2 in. IBM ASCII Format] computer disc. Springfield, VA: NTIS.

⁷ U.S. Department of Education (1994, September 14). High school dropout rates decline over two decades. Retrieved from the World Wide Web, 2/4/97, <http://www.ed.gov/Press Release/09-1994/drop.html>: U.S. Department of Education.

⁸ SADAC analysis of U.S. Department of Health and Human Services, Health Services Administration, Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (1996). National Household Survey on Drug Abuse: 1994-A and 1994-B public use files: SAS transport file format [CDROM]. Chicago, IL: National Opinion Research Center at the University of Chicago.

⁹ Yoshikawa, H. (1994). Prevention as cumulative protection: Effects of early family support and education on chronic delinquency and its risks. Psychological Bulletin, 115(1), 28-54

¹⁰ SADAC analysis of U.S. Department of Health and Human Services, Center for Disease Control and Prevention. (1995). National school-based Youth Risk Behavior Survey (YRBS), 1995 (for microcomputers): Datafile on diskette [Diskette]. Springfield, VA: U.S. Department of Commerce, Technology Administration, National Technical Information Service.

¹¹ McLellan, T. and Dembo, R. (1993). Screening and assessment of alcohol- and other drug-abusing adolescents. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Administration, Center for Substance Abuse Treatment.

¹² Center on Addiction and Substance Abuse. (1996). Substance abuse and urban America: Its impact on an American city, New York. New York: Center on Addiction and Substance Abuse at Columbia University.

¹³ White, H.R. (1992). Early problem behavior and later drug problems. Journal of Research in Crime and Delinquency, 29(4), 412-429.

¹⁴ Children's Defense Fund. (1997). The state of America's children: Yearbook 1997. Washington, DC: Children's Defense Fund.

¹⁵ SADAC analysis of U.S. Department of Health and Human Services, Center for Disease Control and Prevention. (1995). National school-based Youth Risk Behavior Survey (YRBS), 1995 (for microcomputers): Datafile on

diskette [Diskette]. Springfield, VA: U.S. Department of Commerce, Technology Administration, National Technical Information Service.

¹⁶ Mott, F.L. and Haurin, R.J. (1988). Linkages between sexual activity and alcohol and drug use among American adolescents. Family Planning Perspectives, 20(3), 128-137.

¹⁷ SADAC analysis of U.S. Department of Health and Human Services, Center for Disease Control and Prevention. (1995). National school-based Youth Risk Behavior Survey (YRBS), 1995 (for microcomputers): Datafile on diskette [Diskette]. Springfield, VA: U.S. Department of Commerce, Technology Administration, National Technical Information Service.

¹⁸ Steinberg, L., Fletcher, A. and Darling, N. (1994). Parental monitoring and peer influences on adolescent substance use. Pediatrics, 93(6), 1060-1064.

¹⁹ Greenbaum, S. (1989). Youth and drug abuse-breaking the chain. USA Today, 1989 (2534), 45-47.

²⁰ Mott, F.L. and Haurin, R.J. (1988). Linkages between sexual activity and alcohol and drug use among American adolescents. Family Planning Perspectives, 20(3), 128-137; Hingson, R., Strunin, L. and Berlin, B. (1990). Acquired immunodeficiency syndrome transmission: Changes in knowledge and behaviors among teenagers, Massachusetts statewide surveys, 1986 to 1988. Pediatrics, 85(1), 24-29; Hingson, R.W., Strunin, L., Berlin, B.M. and Heeren, T. (1990). Beliefs about AIDS, use of alcohol and drugs and unprotected sex among Massachusetts adolescents. American Journal of Public Health, 80(3), 295-299.

²¹ Chassin, L., Rogosch, F. and Barrera, M. (1991). Substance use and symptomatology among adolescent children of alcoholics. Journal of Abnormal Psychology, 100(4), 449-463.

²² Hawkins, J.D., Catalano, R.F., and Miller, J.Y. (1992). Risk and Protective Factors for Alcohol and Other Drug Problems in Adolescence and Early Adulthood: Implications for Substance Abuse Prevention. Psychological Bulletin, 112 (1), 64-105.

²³ Luntz Research Companies and National Center on Addiction and Substance Abuse (CASA) at Columbia University. (1996). National survey of American attitudes on substance abuse II: Teens and their parents. New York: National Center on Addiction and Substance Abuse (CASA) at Columbia University.

²⁴ Barnes, G.M. and Farrell, M.P. (1992). Parental support and control as predictors of adolescent drinking, delinquency, and related problem behaviors. Journal of Marriage and the Family, 54(4), 763-776; Brown, B.B, Mounts, N., Lamborn, S.D. and Steinberg, L. (1993). Parenting practices and peer group affiliation in adolescence. Child Development, 64(2), 467-482; Chilcoat, H.D. and Anthony, J.C. (1996). Impact of parent monitoring on initiation of drug use through late childhood. Journal of the American Academy of Child and Adolescent Psychiatry, 35(1), 91-100; Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. British Journal of Psychiatry, 147, 598-611; Steinberg, L., Fletcher, A. and Darling, N. (1994). Parental monitoring and peer influences on adolescent substance use. Pediatrics, 93(6), 1060-1064; Szapocznik, J. and Coatsworth, J.D. (1996). Structural ecosystems theory: An ecodevelopmental framework for organizing risk and protection for drug abuse. Unpublished paper.

²⁵ SADAC analysis of Bachman, J.G., Johnson, L.D., O'Malley, P.M. and University of Michigan, Survey Research Center. (1996). Monitoring the future: A continuing study of the lifestyles and values of youth, 1994 [Computer File]. Ann Arbor, MI: Inter-University Consortium for Political and Social Research.

²⁶ Nurco, D.N. and Lerner, M. (1996). Vulnerability to narcotic addiction: Family structure and functioning. Journal of Drug Issues, 26(4), 1007-1025.

²⁷ Barnes, G.M. and Farrell, M.P. (1992). Parental support and control as predictors of adolescent drinking, delinquency, and related problem behaviors. Journal of Marriage and the Family, 54(4), 763-776.

²⁸ Dembo, R., Dertke, M., Borders, S., Washburn, M. and Schmeidler, J. (1988). The relationship between physical and sexual abuse and tobacco, alcohol, and illicit drug use among youths in a juvenile detention center. International Journal of the Addictions, 23(4), 351-378.

²⁹ Dembo, R., Williams, L., Wothke, W., Schmeidler, J. and Brown, C.H. (1992). The role of family factors, physical abuse, and sexual victimization experiences in high risk youths' alcohol and other drug use and delinquency: A longitudinal model. Violence and Victims, 7(3), 245-266.

³⁰ The National Center on Addiction and Substance Abuse at Columbia University. (1996). Substance Abuse and the American Woman, page 32.

- ³¹ The National Center on Addiction and Substance Abuse at Columbia University. (1996). Substance Abuse and the American woman. New York: The National Center on Addiction and Substance Abuse at Columbia University.
- ³² Carnegie Council on Adolescent Development. (1995). Great transitions: Preparing adolescents for a new century. New York: Carnegie Corporation of New York.
- ³³ Carnegie Council on Adolescent Development. (1995). Great transitions: Preparing adolescents for a new century. New York: Carnegie Corporation of New York.
- ³⁴ Grube, J.W. (1993). Alcohol portrayals and alcohol advertising on television: Content and effects children and adolescents. Alcohol Health and Research World, 17(1), 61-66; Botvin, G.J., Goldberg, C.J., Botvin, E.M. and Dusenbury, L. (1993). Smoking behavior of adolescents exposed to cigarette advertising. Public Health Reports, 108(2), 217-224.
- ³⁵ Strasburger, V.C. (1995). Adolescents and the media: Medical and psychological impact. Thousand Oaks, CA: Sage Publications.
- ³⁶ Snyder, S.H. (1989). Drugs and the brain. New York: Scientific American Books.
- ³⁷ Heath, A.C. (1995). Genetic influences on alcoholism risk: A review of adoption and twin studies. Alcohol Health and Research World, 19(3), 166-171.
- ³⁸ Kendler, K., Heath, A., Neale, M., Kesler, R. and Eaves, L. (1992). A population-based twin study of alcoholism in women. Journal of the American Medical Association, 268, 1877-1882; Heath, A. (1995). Genetic influences on alcoholism risk: A review of adoption and twin studies. Alcohol Health and Research World, 19(3), 166-171.
- ³⁹ Knight, S.M., Vail-Smith, K. and Barnes, A.M. (1992). Children of alcoholics in the classroom: A survey of teacher perceptions and training needs. Journal of School Health, 62(8), 367-371.
- ⁴⁰ Hawkins, J.D., Catalano, R.F. and Miller, J.Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. Psychological Bulletin, 112(1), 64-105.
- ⁴¹ Kress, J.S. and Elias, M.J. (1993). Substance abuse prevention in special education populations: Review and recommendations. Journal of Special Education, 27(1), 35-51.
- ⁴² Bailey, G.W. (1989). Current perspectives on substance abuse in youth. Journal of the American Academy of Child and Adolescent Psychiatry, 28(2), 151-162.
- ⁴³ Bayatpour, M., Wells, R.D. and Holford, S. (1992). Physical and sexual abuse as predictors of substance use and suicide among pregnant teenagers. Journal of Adolescent Health, 13(1), 128-132; Garrison, C.Z., McKeown, R.E., Valois, R.F. and Vincent, M.L. (1993). Aggression, substance abuse, and suicidal behaviors in high school students. American Journal of Public Health, 83(2), 179-184.
- ⁴⁴ SADAC analysis of U.S. Department of Health and Human Services, Center for Disease Control and Prevention. (1995). National school-based Youth Risk Behavior Survey (YRBS), 1995 (for microcomputers): Datafile on diskette [Diskette]. Springfield, VA: U.S. Department of Commerce, Technology Administration, National Technical Information Service.
- ⁴⁵ Zweben, J.E. (1987). Eating disorders and substance abuse. Journal of Psychoactive Drugs, 19(2), 181-192.
- ⁴⁶ Spindler, A.M. (1997, May 20). A death tarnishes fashion's "heroin look". New York Times, A1.
- ⁴⁷ Evans, N., Gilpin, E., Farkas, A.J., Shenassa, E. and Pierce, J.P. (1995). Adolescents' perceptions of their peers' health norms. American Journal of Public Health, 85(8), 1064-1069; French, S.A., Perry, C.L., Leon, G.R. and Fulkerson, J.A. (1994). Weight concerns, dieting behavior, and smoking initiation among adolescents: A prospective study. American Journal of Public Health, 84(11), 1818-1820.
- ⁴⁸ Hansen, W.B. (1988). Effective school-based approaches to drug abuse prevention: Programs that address modifiable predictors of drug use, such as how to cope with peer pressure, have greater potential than earlier ones that mainly imparted information. Educational Leadership, 45(9), 9-14; Wilson, D.M., Killen, J.D., Hayward, C., Robinson, T.N., Hammer, L.D., Kraemer, H.C., Varady, A. and Taylor, C.B. (1994). Timing and rate of sexual maturation and the onset of cigarette and alcohol use among teenage girls. Archives of Pediatric and Adolescent Medicine, 148(8), 789-795.
- ⁴⁹ Benard, B. (1991). Fostering resiliency in kids: Protective factors in the family, school, and community. Position paper.

- ⁵⁰ Szapocznik, J. and Coatsworth, J.D. (1996). Structural ecosystems theory: An ecodevelopmental framework for organizing risk and protection for drug abuse. Unpublished paper.
- ⁵¹ Benard, B. (1987). Protective factor research: What we can learn from resilient children. Prevention Forum, 7(3), 3-10.
- ⁵² Bernard, B. (1991). Fostering resiliency in kids: Protective factors in the family, school, and community. Position paper.
- ⁵³ Cowen, E.L., Wyman, P.A., Work, W.C. and Parker, G.R. (1990). The Rochester child resilience project: Overview and summary of first year findings. Development and Psychopathology, 2(2), 193-212; Brook, J.S., Book, D.W., Whiteman, M. and Cohen, P. (1990). The psychosocial etiology of adolescent drug use: A family interactional approach. Genetic, Social, and General Psychology Monographs, 116(2), 111-267.
- ⁵⁴ Volk, R. J. and Lewis, R. A. (1990, March). Directions for the impact of intervention-prompted changes in family functioning on adolescent licit and illicit drug use. Paper presented at the Biennial Meeting of the Society for Research on Adolescence (Atlanta, GA).
- ⁵⁵ Garmezy, N. (1985). Stress-resistant children: The search for protective factors. In J. E. Stevenson (Ed.), Recent research in developmental psychopathology (pp. 213-233). New York: Pergamon Press.
- ⁵⁶ Wright, J. (1995, October 31). Teenagers, sneaking out: Fun & games or tragedy waiting to happen? Washington Post, B5.
- ⁵⁷ Benard, B. (1991). Fostering resiliency in kids: Protective factors in the family, school, and community. Position paper.
- ⁵⁸ Lamborn, S. D., Mounts, N. S., Steinberg, L. and Dornbusch, S. M. (1990). Patters of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. Madison, WI: National Center on Effective Secondary Schools.
- ⁵⁹ Barnes, G. and Farrell, M. (1992). Parental support and control as predictors of adolescent drinking, delinquency, and related problem behaviors. Journal of Marriage and the Family, 54, 763-776; The National Center on Addiction and Substance Abuse at Columbia University and Luntz Research Companies. (1995). National survey of American attitudes on substance abuse. New York: CASA; Radziszewska, B., Richardson, J. L., Dent, C. W. and Flay, B. R. (1996). Parenting style and adolescent depressive symptoms, smoking, and academic achievement: Ethnic, gender, and SES differences. Journal of Behavioral Medicine, 19(3), 289-305.
- ⁶⁰ Benard, B. (1991). Fostering resiliency in kids: Protective factors in the family, school, and community. Position paper.
- ⁶¹ Benard, B. (1991). Fostering resiliency in kids: Protective factors in the family, school, and community. Position paper.
- ⁶² Cochran, J. K. and Akers, R. L. (1989). Beyond hellfire: An exploration of the variable effects of religiosity on adolescent marijuana and alcohol use. Journal of Research in Crime and Delinquency, 26(3), 198-225.
- ⁶³ Benson, P. (1992). "Religion and Substance Use" in Schumaker, J.F. (Ed.) Religion and Mental Health (pp. 211-220). New York: Oxford University Press.
- ⁶⁴ The National Center on Addiction and Substance Abuse at Columbia University and Luntz Research Companies. (1995). National survey of American attitudes on substance abuse. New York: CASA.
- ⁶⁵ SADAC analysis of Bachman, J.G., Johnson, L.D., O'Malley, P.M. and University of Michigan, Survey Research Center. (1996). Monitoring the future: A continuing study of the lifestyles and values of youth, 1994 [Computer File]. Ann Arbor, MI: Inter-University Consortium for Political and Social Research.
- ⁶⁶ Thomas, D.L., Carver, C., Gullotta, T.P., Adams, G.R. and Montemayor, R. (Eds.) (1990). Religion and adolescent social competence. In Developing Social Competency in Adolescence. (pp. 195-213). Newbury Park, CA: Sage Publications; Black, H. (1988). Binding the wounds: The religious response to teenage drug/alcohol abuse. Adolescent Counselor, 1(3), 27-28, 45-46.

V.

Prevention and Treatment

Prevention

Substance abuse prevention is most effective when it comes from the family and extended family of school, church and neighborhood. The wide range of programs by public health authorities, police and responsible media like the Partnership for a Drug-Free America, are likely to be most effective when they supplement what goes on in the family and extended family of an adolescent. They are less effective when they try to compensate for failures of parents, schools, churches and communities.

Education is not prevention, as the ineffective staying power of early education programs which inform teens about the dangers of substance abuse demonstrates. Many teens know well the dangers of cigarettes, for example, but smoke anyway. Providing information helps, but it is not enough.

Comprehensive Community Programs

Recognition of the importance of doing more than informing teens about the dangers of substance abuse has prompted a movement toward more comprehensive prevention approaches, which attempt to address a broader range of adolescent needs and seek to involve the family and the school as well as other sectors of the community. Unfortunately, few of these programs have been rigorously evaluated.

Many prevention programs strive to build and maintain teenagers' skills so that they can cope successfully with the stresses that mark the adolescent years. Those that appear more effective are the most comprehensive and combine a variety of techniques and

approaches to provide adolescents with a consistent and coordinated message that is clearly against substance use.¹

Peer Programs

These programs recognize the critical impact of teen peer groups. While some peer groups encourage teens to use substances, a peer group of teens who do not use drugs and hold similar positive values creates an atmosphere which helps prevent teens from initiating drug use.² Prevention programs incorporating peer leaders have found that these leaders quickly become role models and, by gaining credibility among fellow students, are able to set a non-use example.³ Through role-playing, this approach can help teens learn how to resist pressure to use addictive substances.

Life Skills Training

These programs attempt to teach adolescents personal and social skills, including how to handle their own thoughts and feelings about addictive substances and how to act and react in many different challenging situations. Life skills

"Last year the kids in a life skills program selected to work for Habitat for Humanity. The kids themselves raised \$27,000 for the down payment[by] going to local businesses, teachers, corporate sponsorships and school boards. They coordinated a schedule and worked every weekend building the house. And now they have this big wonderful house as an example of what they've accomplished."

--Leslie, Austin, TX

programs often incorporate healthy alternatives to substance abuse, such as community service activities, after-school sports programs and outdoor adventure weekends. They offer opportunities for teens to develop supportive relations with adult mentors and peers. This combination of activities is designed to help teens acquire greater self-assurance and control and reduce anxiety and stress that may make substance use alluring. One of the best known

such programs with a successful track record is the Life Skills Training Program designed by Gilbert J. Botvin and his associates at the Institute for Prevention Research at Cornell University Medical College.⁴

Parenting Programs

These programs help parents help their teens. They teach parents how to monitor a child's whereabouts, establish reasonable expectations and set specific rules that help children understand and internalize acceptable behavior.⁵ These programs often require parents and children to work together and improve parent-child communication. They often include parent groups which give parents a forum to discuss their prevention efforts, offer extra support to parents of high risk children, and reinforce parents in establishing family policies regarding alcohol, tobacco and drug use.⁶

Community Programs

Community partnerships link existing community services in order to improve the quality of life for everyone in the community.⁷ In some states, local medical societies and bar associations work together to set up substance abuse hotlines and other services for troubled teens. Community partnerships may involve businesses or Big Brother/Big Sister type programs. The success of these endeavors usually depends on the degree to which participating agencies work together to create an environment that bolsters prevention messages.

Comprehensive community-based programs include a wider set of participating service providers than community partnerships and are usually organized in a formal network of services for teens and their families. These programs try to change substance use behavior

patterns throughout the entire community. They supplement school prevention programs and make special efforts to reach drop-outs.

Some comprehensive community-based programs incorporate job-training. Many include mentoring to increase the time adolescents spend with caring adults and good role models. Some mentoring programs have shown improvements in academic performance, high school completion and relations with parents--all factors linked to substance abuse.⁸ Many comprehensive community-based programs also use local media and law enforcement personnel to create a healthier and more supportive climate for adolescents.

Where adolescents are in need of more serious interventions, comprehensive community-based programs provide a much needed bridge to group or individual counseling and intensive treatment.

PROFILE OF A COMPREHENSIVE COMMUNITY-BASED PROGRAM

Children at Risk (CAR)

Striving Together To Achieve Rewarding Tomorrows (START)

Children at Risk (CAR) is a CASA research and demonstration program designed to help children at high risk of abusing substances grow up to be drug free, law abiding citizens, and to reduce crime in the neighborhoods where they live. It is based on this premise: in order to improve the lives of high-risk youth, we must undertake an aggressive and comprehensive campaign to improve not only their personal lives, but the lives of their families, schools and neighborhoods as well. From 1992 through 1995, CAR demonstration sites operated in Austin, Bridgeport, Memphis, Savannah and two other cities. Today, CAR continues in three of those cities--Austin, Bridgeport, and Savannah--supported entirely by public funds secured by those communities.

CAR is making a difference. Follow up interviews with CAR youth one year after the end of the program indicate that they were less likely to be using gateway or harder drugs or to be engaged in drug sales, compared to youth in the control group.

CAR programs:

- Target to a specific neighborhood, school, children and families;
- Provide under one umbrella comprehensive services including case management, family services, education services, after-school and summer activities, mentoring, incentives, and community policing and enhanced law enforcement;
- Closely coordinate the police, teachers, health and social service workers and mentors, who provide these services;
- Use services that are locally developed and locally driven.

CAR is a partnership among a local lead agency, a target school, and a police district. Case managers recruit the most difficult, most troubled children and bring together all services required to prevent substance abuse and crime among those children and their families. These services are designed to support the needs of individual children, their siblings and parents and the larger neighborhood in which they live. Including the police is a notable feature of CAR. Community police officers get to know individual CAR children, work closely with case managers in resolving problems in CAR families and provide enhanced security in CAR neighborhoods.

Because CAR has shown promising results and because the original communities believed the program helped them, CASA developed a second generation of CAR, called Striving Together to Achieve Rewarding Tomorrows (START). START sites are now operating in New York, Philadelphia, Tampa and two neighborhoods in Los Angeles.

CASA's efforts in developing these programs and working with each local community have been funded by the Annie E. Casey, Ford, Prudential, Rockefeller and American Express Foundations, the Pew Charitable Trusts, the Ronald McDonald Children's Charities, United Technologies Corporation and the U.S. Department of Justice.

Media, Entertainment, Fashion and Advertising Industries

Positive media messages can be a powerful plus in preventing substance abuse among America's teens. Their effect appears strongest among early adolescents who have not yet started using alcohol, tobacco or drugs. However, even teens who have begun to use substances report a deterrent impact in viewing anti-substance announcements.⁹

In the mid-1980s, as Americans became greatly concerned about illegal drug use, the Partnership for a Drug-Free America initiated an extensive public service campaign. In part because of this campaign and earlier and persistent public messages against substance use articulated by First Lady Nancy Reagan and others, drug use reached a low point in 1991. The Partnership approach combined national public service announcements, anti-drug commercials and other media advertisements with locally televised parent education media specials and local attention to dangerous behaviors specific to individual communities. These messages have been limited to illegal drugs and have not addressed smoking and alcohol abuse. In recent years, fewer anti-drug messages have been broadcast.¹⁰

Depictions of substance abuse on television, in movies and music videos, on the Internet, in advertising and in the fashion industry, often glamorize smoking, drinking and using drugs. They are important in shaping teenagers' assumptions about the role and impact of tobacco, alcohol and drugs. Reports by the Surgeon General and the Institute of Medicine conclude that "advertising and labeling play a significant and important contributing role in a young person's decision to use cigarettes or smokeless tobacco products."¹¹ A study by the National Institute on Alcohol Abuse and Alcoholism states that "the key question is no longer whether advertising influences drinking, but what degree of impact occurs."¹²

Today, anti-substance messages are often lost in the pro-substance messages inherent in much of film, music, daily programming and Web sites. The use of alcohol,

tobacco and drugs occurs once every 14 minutes during prime time television drama, and this use is depicted as virtually risk free. On television, 98 percent of drinkers, 93 percent of smokers and 83 percent of illegal drug users experience no negative consequences of their alcohol, tobacco or drug use.¹³ Rap lyrics and music videos are full of rhapsodic depictions of drug use, such as Cypress Hill's "Hits from the Bong" and The Alkaholics' "Mary Jane."¹⁴ Many magazines have published photographs of fashion models promoting the emaciated heroin chic look.¹⁵

The tobacco and alcohol industries clearly understand the power of advertising to influence teens. The tobacco industry spends more than \$6 billion annually on advertising, promotions and marketing. Tobacco industry documents reveal cigarette manufacturers' awareness of the need to attract young smokers since most smokers get hooked before age 18.¹⁶ A survey commissioned by the *Wall Street Journal* found that beer ads often run during programs where viewers are largely under 21.¹⁷

In an attempt to limit teens' exposure to such positive depictions, the federal government is seeking new regulations on tobacco advertising on billboards near schools, in magazines like *Vogue*, *Sports Illustrated* and *Rolling Stone* that have large numbers of readers who are minors, and in store windows. It is also seeking to ban brand-name sponsorships of sporting or entertainment events and giveaways of tobacco logo products.¹⁸ The Clinton Administration is seeking funds to mount a national campaign to dissuade teens from experimenting with marijuana and other drugs through prime-time anti-drug commercials; it hopes to persuade the media and businesses to match the government's investment.¹⁹

Messages must be sophisticated. They must be targeted differently to girls and boys and to younger and older adolescents. The media and entertainment industries can help

by delivering more effectively messages to teens regarding the dangers of using any drug, including alcohol, marijuana, LSD, heroin, cocaine, amphetamines, methamphetamines, steroids, inhalants and, particularly for young girls, cigarettes.

Law Enforcement As Prevention

The Safe and Drug-Free Schools and Communities Act funds prevention programs and engages local police as active partners in enforcing laws and teaching prevention. Schools are required by federal law to be free of drugs, alcohol, firearms and violence, yet they are not. Drug-Free School Zones and Safe Passage Zones theoretically create zero tolerance for illegal drug use, trafficking and violent crime for a 1,000 foot perimeter around the school, yet much drug trade occurs in the school and on school grounds as does much youth violence. CASA's 1996 *National Survey of American Attitudes on Substance Abuse II: Teens and Their Parents* shows that more than 70 percent of 15- to 17-year-olds and an equal proportion of parents say drugs are kept, used and sold at schools the teens attend.

Federal law makes possession of illicit substances a crime. The FDA and most states prohibit sale of tobacco products to individuals under age 18. All states prohibit sale of alcohol to individuals under age 21. In surveying ten states, this Commission found a wide divergence of emphasis and penalties. In some communities, stores can be fined as little as \$25 dollars for selling tobacco to minors; in others, violators are given community service; in

Florida a violator can be incarcerated for up to 60 days.* Most states do not prohibit the possession or consumption of tobacco by minors.

In order to improve compliance with laws related to sale of tobacco products to minors, the federal government requires states to enforce these laws through inspections and sting operations. States risk losing federal Substance Abuse Block Grant funds if such laws are not aggressively enforced. The federal government is trying to curb tobacco use by minors by banning tobacco vending machines and requiring photo ID for proof of age for tobacco sales.²⁰ These efforts are not likely to result in significant decreases in teen smoking because only a small percentage of teens obtain cigarettes from vending machines and fake photo IDs are easy and inexpensive to obtain.²¹

Some legal strategies that have proved to be successful in preventing alcohol abuse and related problems among older teens are:²²

- Raising the Minimum Legal Drinking Age (MLDA). Raising the MLDA has been found to result in reduced alcohol consumption among those under 21 and reduced traffic crashes and fatalities. A nationwide study found that raising the MLDA resulted in a significant decline in single-vehicle nighttime fatal crashes (those most likely to involve alcohol) among drivers under 21.
- Zero tolerance laws. The National Highway Systems Act provides incentives for all states to set maximum blood alcohol concentration (BAC) limits for drivers under 21 to 0.02 percent or lower beginning October 1,

* The states surveyed were California, Florida, Illinois, Massachusetts, Michigan, Missouri, New York, North

1998. The first 12 states enacting these laws have found a 20 percent reduction in the proportion of single-vehicle nighttime fatal crashes among driver under 21, compared with nearby states that did not pass zero tolerance laws.

- Other BAC laws. As of October of 1996, 14 states had lowered BAC limits from 0.10 to 0.08 percent for all drivers to reduce alcohol-related fatal motor vehicle crashes. One study found that states which lowered the limit saw a 16 percent decline in crashes involving fatally injured drivers whose BAC's were over 0.08 percent.
- Administrative License Revocation Laws. By October 1996, 38 states had adopted laws permitting the withdrawal of driving privileges without court action for driving with a BAC over the legal limit. These laws have been associated with a five to nine percent drop in nighttime fatal crashes.
- Server Liability. Some evidence suggests that laws which hold alcohol servers liable for injuries and deaths from traffic crashes following the irresponsible selling and serving of alcohol may be linked to a decrease in fatal crashes.
- Increased alcohol taxes. Increased beer prices lead to reductions in the level and frequency of drinking among youth, lower traffic crash fatality rates among young drivers and reduced incidence of some types of crime.²³

Treatment

More than 100,000 children under the age of 18 are admitted to publicly funded treatment programs each year.²⁴ The number of children receiving treatment in privately funded programs is unknown. The number of adolescents in need of treatment is also not known.

There is no standard definition of the level of adolescent substance use at which treatment becomes necessary. The Diagnostic and Statistical Manual-IV produced by the American Psychiatric Association provides guidelines for the diagnosis of Substance Use Disorders in adults, but no formal scientific criteria have been designed specifically for diagnosing teens.

To be diagnosed with a Substance Dependence Disorder, an adult must meet three of the following seven criteria at some time during a 12-month period:

- Tolerance;
- Withdrawal;
- Substance taken in larger amounts or over a longer time period than was intended;
- Persistent desire or unsuccessful efforts to cut down or control substance use;
- Great deal of time spent in activities to obtain or use the substance, or to recover from its effects;
- Important social, occupational, or recreational activities given up or reduced because of substance use;

- Substance use continues despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or worsened by the substance.

Teen treatment needs differ from those of adults in several respects. Many teens who've moved beyond experimental use of addictive substances have a problem that requires treatment, but one that is not yet severe enough to meet criteria for a formal adult diagnosis of dependence. Teens typically require treatment for more gateway substances, like cigarettes, alcohol and marijuana, and are less likely than adults to use injectable drugs. Treatment of coexisting disorders, such as depression or attention deficit hyperactivity disorder (ADHD), is especially important in the treatment of adolescents because teen substance abuse is often linked to such underlying problems. Teens also may need special guidance and support in the essential processes of adolescent development, such as help with emotional and social development as substance use may have slowed the normal acquisition of these skills.²⁵ For these reasons, and in order to protect teens from exposure to adults whose substance abuse is usually more advanced, the better treatment programs usually try to separate adolescent clients from adults. They also incorporate family therapy as a central element of treatment since most adolescents continue to be influenced by and dependent upon their families.²⁶

Treatment programs are generally grouped into two categories: intervention and outpatient services which allow the adolescent to remain within the family environment and inpatient or residential treatment which include round-the-clock care.

Outpatient Programs

Early interventions and outpatient programs try to help adolescents in their own communities and in as normal a setting as possible.²⁸ They are attractive alternatives in the context of managed care because they are the least expensive options.²⁹ These services can be provided on an individual basis by a professional therapist, in a group setting, or within a structured program. Family involvement is often included. Sometimes these services include alternative schooling for the teen. These services are also used to follow up residential or inpatient care, providing the recovering adolescent with extra support and services after more structured treatment.³⁰

Early intervention and outpatient programs include school-based student assistance programs, individual and family therapy, after-school programs, and day treatment (the most intensive form of non-residential care). Day treatment programs provide services for adolescents for most of the day, but permit them to go home at night. They include in-house schooling and remedial educational services, as well as afternoon activities and treatment both

CAGE Questionnaire²⁷

"Have you ever felt you ought to Cut down on drinking?"

"Have people Annoyed you by criticizing your drinking?"

"Have you ever felt bad or Guilty about your drinking?"

"Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (Eye-opener)?"

One "yes" response should raise suspicions of alcohol abuse. More than one "yes" response should be considered a strong indication that alcohol abuse exists.

on an individual and group level. They allow the adolescent to focus on recovery and change outside the regular school and leisure environment, but remain within the teen's own family.

Inpatient Programs

Inpatient or residential programs remove the adolescent from the family and community environment. This treatment is for children with significant problems who must be completely removed from their environment for recovery to occur. Continuing outpatient services after the residential program is completed helps the child readjust to the family and community environment and provides support and encouragement for dealing with the inevitable stresses.

Inpatient programs include: detoxification for adolescents whose alcohol and drug problems require medical monitoring and treatment for withdrawal; the Minnesota model, a 28-day group-oriented program based on the 12-step Alcoholics Anonymous recovery program; Therapeutic communities (TCs), which offer long-term, intensive treatment environments where teens live for six to 24 months; military-style boot camps, with rigorous, discipline-oriented programs which use physical stamina-building techniques to enforce a drug-free lifestyle (widely used for adolescents involved in the juvenile justice system); and inpatient hospital care for teens who have other conditions that complicate their substance abuse, such as pregnant or HIV-positive adolescents, or those who are suicidal or have other serious psychiatric disorders. Hospital-based services are usually short-term programs after which adolescents are referred to other residential care or intensive outpatient services.³¹

Pharmacological Approaches

In recent years, as a result of significant advances in the field of neuroscience and in understanding addiction, we have seen new pharmacological treatments emerging for adults, currently including treatments for tobacco, heroin and alcohol addiction. These include transdermal patches, gum, inhalers and nasal spray for nicotine replacement therapy; methadone, LAAM and naltrexone for opiate dependence; and naltrexone, disulfiram and various sedatives and anti-seizure agents for alcohol addiction and detoxification. None of these agents, however, has been approved for use with adolescents except on an experimental basis.³² No effective pharmacological treatment has yet been discovered for cocaine, although a number of drugs as well as a potential vaccine are undergoing tests in the United States.

The goals of pharmacological treatment are to increase the holding power of outpatient treatment and thus reduce costs, create a window of opportunity during which patients can receive psychosocial intervention to decrease the risk of relapse, cure withdrawal or overdose and serve as long-term management agents. The emergence of new pharmacological treatments combined with the impact of managed care on more traditional treatments may mean that more treatment of substance abuse will be provided for teens in general medicine facilities by family practitioners, pediatricians and other primary care physicians.³³

What Do We Know About Who Succeeds In Treatment?

Treatment Completion

While treatment of substance abuse among adults has been studied, far less research has been undertaken in the field of adolescent treatment. It is difficult to identify which teens will be successful in treatment and why; however, studies have tried to measure abstinence at various checkpoints during and after treatment. An indicator of future adolescent abstinence from substance use is completion of the treatment program. Regardless of the type or length of the program, teens who stay the course with their treatment are more likely to remain abstinent than those who drop out.³⁴

Gender Differences

Girls and boys use different substances at different rates for different reasons. It comes as no surprise that girls and boys also differ in treatment. Boys in treatment show more acting out, delinquency and school problems. Girls are more likely to have low self-esteem, be depressed and potentially suicidal. Girls are also more likely to describe family problems and to have experienced sexual abuse.³⁵ Girls appear to do better in treatment than boys, perhaps because of their greater willingness to admit and discuss their problems in treatment.³⁶

Family Therapy and Multiple Services

Family therapy has been found to be effective in adolescent substance abuse treatment and is often vital to adolescent recovery.³⁷ Its effectiveness may be due to factors such as demonstrating to the adolescent that his or her family wants to help, improving family

communication and showing the adolescent ways to solve problems without resorting to drug use. Programs serving adults which offer their clients multiple services seem to have better outcomes because they help the recovering person address a variety of life issues. This finding is likely to apply to adolescents as well.³⁸

The Impact of Managed Care

Regulations and funding mechanisms for alcohol and drug abuse treatment have separated alcohol and drug treatment from mainstream medicine. Most public sector drug treatment is funded through block grants to states rather than through the federal health care budget but managed care is reshaping the practice of addiction medicine.³⁹

Managed care has denied inpatient drug treatment to many patients. Detoxification is often the only inpatient alcohol or drug treatment benefit covered by most managed care plans. Subsequent residential treatment is not usually covered. This approach does not recognize that treatment of substance abuse and addiction requires long term emotional and social interventions, and some period of separation from the people, places and things that are associated with the addiction, as well as immediate, short term medical help. This may be especially true for adolescents who live in dysfunctional families or find themselves in difficult school or community situations.

CHAPTER V.

REFERENCES

- ¹ Kumpfer, K.L. (1991). Children and adolescents and drug and alcohol abuse and addiction: Review of prevention strategies. In N.S. Miller (Ed.), Comprehensive handbook on drug and alcohol addiction (pp. 1033-1060). New York: Marcel Dekker.
- ² Bailey, S.L. and Hubbard, R.L. (1990). Developmental variation in the context of marijuana initiation among adolescents. Journal of Health and Social Behavior, 31(3), 58-70; Bahr, S.J., Hawks, R.D. and Wang, G. (1993). Family and religious influences on adolescent substance abuse. Youth and Society, 24(4), 443-465.
- ³ Perry, C.L. (1989). Prevention of alcohol use and abuse in adolescence: Teacher- vs. peer-led intervention. Crisis, 10(1), 52-61; Forman, S.G. and Linney, J.A. (1991). School-based social and personal coping skills training. In L. Donohew, H.E. Sypher and W.J. Bukoski (Eds.), Persuasive communication and drug abuse prevention (pp. 263-282). Hillsdale, NJ: Lawrence Erlbaum.
- ⁴ Sloboda, Z., David, S.L. and National Institute on Drug Abuse. (1997). Preventing drug use among children and adolescents: A research-based guide. U.S. Department of Health and Human Services, National Institute of Health, National Institute on Drug Abuse.
- ⁵ Steinberg, L., Fletcher, A. and Darling, N. (1994). Parental monitoring and peer influences on adolescent substance use. Pediatrics, 93(6), 1060-1064.
- ⁶ Marcus, C. (1989). The parent's movement: An American grassroots phenomenon. S. Einstein (Ed.), Drug and alcohol use: Issues and factors (pp. 133-138). New York: Plenum Press.
- ⁷ Coles, C. and Salzman, P. (1994). Building for the future. New Designs for Youth Development, 11(3), 37-41.
- ⁸ Harrell, A.V., Cavanagh, S.E., Harmon, M.A., Koper, C.S. and Sridharan, S. (1997). Impact of the Children at Risk Program: Comprehensive final report: Volume I. Washington, DC: The Urban Institute.
- ⁹ Reis, E.C., Duggan, A.K., Adger, H. and DeAngelis, C. (1994). The impact of anti-drug advertising: Perceptions of middle and high school students. Archives of Pediatrics and Adolescent Medicine, 148(12), 1262-1268.
- ¹⁰ Backer, T.E. (1995). Mass media. In R.H. Coombs and D.M. Ziedonis (Eds.), Handbook on drug abuse prevention: A comprehensive strategy to prevent the abuse of alcohol and other drugs (pp. 249-263). Boston: Allyn and Bacon.
- ¹¹ U.S. Food and Drug Administration. (1996). Regulations restricting the sale and distribution of cigarettes and smokeless tobacco products to protect children and adolescents. Rockville, MD: Department of Health and Human Services, U.S. Food and Drug Administration.
- ¹² Martin, S.E. and Mail, P.D. (1995). The effects of the mass media on the use and abuse of alcohol. Bethesda, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism (NIAAA).
- ¹³ Gerbner, G. and Ozyegin, N. Drugs in media entertainment. Unpublished research paper.
- ¹⁴ Cypress Hill. (1997). Hits from the bong. www.citenet.com/users/ctsj1160/cypress.htm: The Funky Cypress Hill Shit. Retrieved August 1, 1997 from the World Wide Web: <http://www.citenet.com/users/ctsj1160/cypress.htm>; Alkoholiks. (1997). Mary Jane. www.cu-muc.de/hiphop/lyrics/alkohol/21_over/maryjane.txt: Alkoholiks. Retrieved from the World Wide Web: http://www.cu-muc.de/hiphop/lyrics/alkohol/21_over/maryjane.txt.
- ¹⁵ Spindler, A.M. (1997, May 20). A death tarnishes fashion's 'heroin look'. New York Times, A:1.

- ¹⁶ U.S. Food and Drug Administration. (1996). Regulations restricting the sale and distribution of cigarettes and smokeless tobacco products to protect children and adolescents. Rockville, MD: Department of Health and Human Services, U.S. Food and Drug Administration.
- ¹⁷ Beatty, S.G. (1997, January 6). Are beer ads on 'Beavis and Butt-Head' aimed at kids? Wall Street Journal, B:1, Col. 3.
- ¹⁸ Noah, T. (1996, August 26). Clinton's tobacco rule restricts ads in media deemed accessible to minors. Wall Street Journal, p. B:2; Foerstel, K. (1996, August 14). Prez unleashes fed regs to smoke out nico-teens. New York Post, 6.
- ¹⁹ Wren, C.S. (1997, February 14). Clinton wants anti-drug ads for youths. New York Times, A:27.
- ²⁰ Foerstel, K. (1996, August 14). Prez unleashes fed regs to smoke out nico-teens. New York Post, 6.
- ²¹ Forster, J.L., Hourigan, M. and McGovern, P. (1992). Availability of cigarettes to underage youth in three communities. Prevention Medicine, 21(3), 321-328; Adelman, J. (1996, August 16). The baby boozers. Manhattan Spirit, p. 12, 13.
- ²² National Institute on Alcohol Abuse and Alcoholism. (1996, October). Preventing alcohol abuse and related problems. Alcohol Alert, 34.
- ²³ Cook, P.J. and Moore, M.J. (1992). Economic perspectives on reducing alcohol-related violence. In S.E. Martin (Ed.), National Institute of Alcohol Abuse and Alcoholism: Alcohol and interpersonal violence: Fostering multidisciplinary perspectives: Research Monograph 24 (pp. 193-212). Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism; Coate, D. and Grossman, M. (1988). Effects of alcoholic beverage prices and legal drinking ages on youth alcohol use. Journal of Law and Economics, 31, 145-171; Saffer, H. and Grossman, M. (1987). Beer taxes, the legal drinking age, and youth motor vehicle fatalities. Journal of Legal Studies, 16, 351-374; Ruhm, C.J. (1996). Alcohol policies and highway vehicle fatalities. Journal of Health Economics, 15, 435-545.
- ²⁴ Rugabar, C., National Association of State Alcohol and Drug Abuse Directors. (July 3, 1997). Personal communication.
- ²⁵ Bukstein, O.G. (1994). Treatment of adolescent alcohol abuse and dependence. Alcohol Health and Research World, 18(4), 296-301.
- ²⁶ Coombs, R.H. and Ziedonis, D. (1995). Handbook on drug abuse prevention: A comprehensive strategy to prevent the abuse of alcohol and other drugs. Boston: Allyn & Bacon.
- ²⁷ Ewing, J.A. (1984). Detecting alcoholism: The CAGE questionnaire. JAMA, 252(14), 1905-1907.
- ²⁸ Kaminer, Y. (1994). Adolescent substance abuse. In M. Galanter and H.D. Kleber (Eds.), Textbook of substance abuse treatment (pp. 415-438). Washington, DC: American Psychiatric Press.
- ²⁹ Wesson, D.R. and Ling, W. (1996). Addiction medicine. JAMA, 275(23), 1792-1793.
- ³⁰ Bukstein, O.G. (1994). Treatment of adolescent alcohol abuse and dependence. Alcohol Health and Research World, 18(4), 296-301.
- ³¹ Bukstein, O.G. (1994). Treatment of adolescent alcohol abuse and dependence. Alcohol Health and Research World, 18(4), 296-301.
- ³² Kleber, H.K. Professor of Psychiatry and Director, Division on Substance Abuse, Columbia University, College of Physicians and Surgeons, New York State Psychiatric Institute; and Executive Vice President and Medical Director, The National Center on Addiction and Substance Abuse at Columbia University. Personal presentation.
- ³³ Wesson, D.R. and Ling, W. (1996). Addiction medicine. JAMA, 275(23), 1792-1793.
- ³⁴ Knapp, J.E., Templer, D.I., Cannon, W.G. and Dobson, S. (1991). Variables associated with success in an adolescent drug treatment program. Adolescence, 26(102), 305-317.
- ³⁵ Kaminer, Y. and Frances, R. (1991). Inpatient treatment of adolescents with psychiatric and substance abuse disorders. Hospital and Community Psychiatry, 42(9), 894-896; Toray, T., Coughlin, C. Vuchinich, S. and Patricelli, P. (1991). Gender differences associated with adolescent substance abuse comparisons and implications for treatment. Family Relations, 40, 338-344.

³⁶ Annis, H. and Davis, C.S. (1991). Drug use by adolescents: Identification, assessment, and intervention. Toronto: Alcoholism and Drug Addiction Research Foundation.

³⁷ Bukstein, O.G. (1994). Treatment of adolescent alcohol abuse and dependence. Alcohol Health and Research World, 18(4), 296-301.

³⁸ Coombs, R.H. and Ziedonis, D. (1995). Handbook on drug abuse prevention: A comprehensive strategy to prevent the abuse of alcohol and other drugs. Boston: Allyn & Bacon.

³⁹ Wesson, D.R. and Ling, W. (1996). Addiction medicine. JAMA, 275(23), 1792-1793.

VI.

Next Steps

Helping children through adolescence and into adulthood is a tough job, one that many parents, schools, churches and other individuals and organizations work hard at, more often than not with success. But the need to help adolescents cope with the dizzying array of dangerous and addictive substances readily available to them is often overlooked until a teen is in trouble. Reaching teens before serious trouble arises is especially important because, as this report documents, children are using tobacco, alcohol and illegal drugs at increasingly early ages. The recent rise in drug use by young teens requires special attention from all the adults (and institutions) who work with teens.

In an effort to support parents and others in their efforts to nurture adolescents of all ages, we offer some suggestions for parents, schools, religious institutions, the entertainment and fashion industry, the medical community and the government. Some of these recommendations directly target substance abuse. Others involve broader efforts to reduce factors that place teens at risk for substance abuse. Most of these recommendations are not complicated or expensive; above all, they require a shift in attention, attitude and time--sometimes the most difficult of all changes to make.

For Parents

Parents don't always appreciate the influence they have on their children during the teen years. Study after study confirms that the most important factor in protecting children from many types of risky behavior is the consistent care and support of an adult throughout the child's life, including the teen years. Teens whose parents are closely involved in their lives,

who monitor their children's behavior and set reasonable limits and who offer love and support to their children are less at risk for substance abuse.

Spend time with your teen. Survey research by CASA and others shows that families that eat meals together, participate in joint activities, and spend time at home together protect their teens from substance abuse. Finding time for family activities has become tougher now that more parents are single and more married parents both work. But it is well worth the effort. Parents who spend time with their children and are supportive of them reduce the odds that their teens will become involved with addictive substances.

Talk with your teen about tobacco, alcohol and drugs. One conversation isn't enough. Parents should begin talking to children about substance abuse before they reach their teens, and parents should continue the conversations throughout the teen years as opportunities occur and pressures to experiment with addictive substances mount. Parents need to make their opposition to teen use of addictive substances clear, and teens need to be invited to talk to parents about their own feelings about alcohol, tobacco and drugs.

Set limits and enforce them. Setting rules, making sure your teen knows what those rules are and consistently enforcing them has been shown to be an effective way to protect teens from substance abuse. It's important to make sure that teens know the consequences for violating rules and know that an adult who cares about them is watching their behavior. Creating an atmosphere where your teen knows that adults are watching what they do because the adults care about them is strongly linked to protecting children from substance abuse. Parents should do all they can to keep their teens in school; the rate of substance abuse among school dropouts is markedly higher. Get to know your teen's friends as well as the

friends' parents, and monitor their comings and goings. Be aware of products in your home that teens can abuse.

An active religious life as a family reduces the risk of teen substance abuse. Research shows that teens who have an active religious life are less likely to use or abuse tobacco, alcohol or drugs. Teaching and discussing religious or spiritual principles and moral values can help a teen develop his or her sense of ethics and morality. Going to church, mosque or synagogue with your teen is a way to spend time together and forge a connection with a community that promotes a strong anti-substance use message.

Be a good role model.

The most important role models for teens are their parents. Examine your own behavior and attitudes toward alcohol, tobacco and drugs and recognize that what you do is usually a more powerful message than what you say.

Quiz For Parents

Have you....????

- Attended a recent sporting event or other extra-curricular activity your teen is involved in?
- Helped your teen with homework?
- Had dinner with your teen most evenings during the past week?
- Had a conversation with your teen about tobacco, alcohol and drug use during the past month?
- Established and enforced a reasonable curfew for your teen?
- Attended religious services or shared another spiritual activity with your teen during the past month?
- Ever had too much to drink in front of your teen?
- Identified any sudden behavioral changes that could be warning signs of substance abuse in your teen during the past year--such as apathy or aggression among boys or anxiety or depression among girls?
- Made sure that the parties your teen attends are adult-supervised and drug-free?
- Ever allowed your teen to host a party in your home while you were away or to serve alcohol to underage friends?
- Met your teen's teachers and attended PTSO meetings?

Identify dangerous behaviors and seek professional help. Watch for warning signs of substance abuse--changes in habits, friends, school performance, family interaction. Boys may become more aggressive or more apathetic; girls depressed or anxious. If you suspect that your teen has become involved in substance use, intervene immediately. Talk with your teen. If use persists, get professional help promptly from a doctor or a psychological counselor who understands the nature of addiction and what to do about it.

Assume an active role in your teen's school. Parents can play a major role in helping to make their teens' schools drug free. Parents should know what kinds of drug education programs are taught and what tobacco, alcohol and drug policies are in place. They should demand that their teens' schools be drug free and find ways to help make sure they get and stay that way. Parents should also do all they can to insist that schools engage their teens in academics and extra-curricular activities.

Assure adult supervision of teenage parties. Join with other parents and parent, teacher and student organizations (PTSOs) to discourage the use of alcohol, tobacco and drugs at the parties teens attend. Agree that you will monitor all parties at your home, and make sure a parent will be present to monitor parties your teen attends at friends' homes.

For Teachers and Schools

School is where teens choose most of their friends and make fundamental academic and social decisions. Schools already do a lot for teens, but when it comes to tobacco, alcohol and drugs, they can do more.

Engage and challenge all children. Research has repeatedly demonstrated that engagement in school is one of the major factors that protects teens from substance abuse.

Schools should strive to reach out to all students, to set high academic standards for all students, to give all students the support they need to achieve, and to keep students involved. If we reduce the number of dropouts, we will reduce the number of teens using drugs.

Provide opportunities for youth activities that don't involve dangerous substances, including youth development activities. Prevention research demonstrates the importance of youth development activities that connect teens to responsible adults through events that don't involve dangerous substances. Schools can reach out to community-based youth development organizations for help in sponsoring academic, social and athletic events that do not involve substance use. Schools can also take

steps to discourage teens from drinking or using drugs before or outside school-sponsored events, especially at junior and senior proms. And schools can encourage groups like Students Against Drunk Drivers.

Train teachers, coaches, counselors and administrators. School personnel should know how to recognize signs of substance abuse and how to intervene when they see those signs.

Quiz for Teachers and Schools

Have you....????

- Ö Reached out in the past month to a student losing interest in school or failing to achieve to the best of his or her ability?
- Ö Talked to a recent school dropout and his parents to encourage a return to school?
- Ö Taken steps to discourage students from drinking or using drugs before or outside of the prom and other school events?
- Ö Trained teachers and other school personnel to recognize signs of substance abuse and intervene appropriately?
- Ö Adopted an effective smoking, drinking and drug prevention program for students?
- Ö Put policies in place to help make your school drug-free?
- Ö Smoked in front of students?
- Ö Met with parents of students?

Adopt effective prevention programs. Every school should offer an in-school cigarette, alcohol and drug prevention program that has been shown through research to be effective in educating teens about the risks of using addictive substances and about the nature of addiction. It is important to have programs that deal with all substances and not just illegal drugs.

Strive to make schools drug free. An essential part of the prevention message is to show teens that we care enough about them to make their schools substance free. Many schools are experimenting with closed campuses, random drug testing of athletes, and use of police dogs to sniff lockers. These actions are not sufficient by themselves. But, in combination with the measures recommended above, they can form part of a larger set of messages and expectations that schools send teens. An attitude of zero tolerance should prevail.

For the Religious Community

Religious organizations have historically sent clear messages against substance abuse. They can do even more today to promote this message, among teens.

Make substance abuse education a regular part of youth groups. The religious community already has a wonderful vehicle to reach out to teens: youth groups. Leaders of youth groups should take advantage of this opportunity to teach teens about substance abuse and to provide them with a supportive forum in which to discuss the pressures and temptations to use alcohol, tobacco and drugs.

Educate clergy members about substance abuse and addiction. Religious institutions should make sure that their clergy know the basics of substance abuse and addiction so that they can identify its signs and intervene effectively.

Educate lay members about substance abuse and addiction. Churches, synagogues and mosques can educate their congregations, particularly parents, to identify warning signs of substance abuse and take action.

Reach out to teens who use alcohol, tobacco and drugs.

Reaching out to troubled youth has long been an important mission of religious institutions. By seeking out youngsters who are experimenting with addictive substances, churches, synagogues and mosques can expand this role and help bring such youngsters into their religious communities.

Provide support for families coping with substance abuse.

Religious organizations, by becoming educated about the nature of addiction, can provide counseling to families suffering from substance abuse. They can refer family members to professional services in the community and can sponsor self-help recovery groups.

Quiz For Religious Organizations

Have you....????

Discussed substance abuse at least once in the past three months during youth group meetings?

Held at least one training session during the past year to inform your clergy about substance abuse and addiction?

Offered educational programs about substance abuse and addiction to your lay members at least once during the past year?

Reached out to a teenager you believed to be using alcohol, tobacco or drugs during the past month?

Provided support for a family coping with substance abuse during the past month?

Formed an Alateen chapter for interested teens?

Given a sermon about substance abuse in the past year?

Consider forming an Alateen chapter. Religious institutions should also be open to the idea of sponsoring Alateen chapters for teens with family members who abuse alcohol or drugs.

For the Entertainment, Advertising and Fashion Industries

The entertainment media--TV, film, radio and music-- and the fashion and advertising industries can do more than any other institutions to deglamorize the use of alcohol, tobacco and drugs. Some segments of these industries are already responding to this concern, but more needs to be done.

Avoid glamorizing tobacco, alcohol and drugs. Don't feature models with the wasted, heroin chic look or lyrics that romanticize drug use.

Don't portray tobacco, alcohol and drug use gratuitously. Avoid casual depictions of smoking, drinking and drug use.

When smoking or drinking or drugging isn't an essential element of a plot or a character, eliminate it.

Show negative as well as positive consequences of use. When tobacco, alcohol and drug use is depicted, it should be realistic, including illustrations of results of abuse, from

Quiz for the Entertainment, Advertising and Fashion Industries

Have you....????

Decided not to run ads, music videos, TV dramas or movies that glamorize addictive substances?

Eliminated gratuitous portraits of tobacco, alcohol and drug use?

Illustrated the real and negative consequences of substance abuse at least once during the past month?

Promoted a positive substance-abuse related message, such as a scene in which someone serves as a designated driver or turns down a third drink, during the past month?

Considered how you would want your teen son or daughter to see substances portrayed?

heart and lung disease among smokers to drunk driving accidents and overdoses among youngsters.

Promote positive messages. The entertainment industry can do much to encourage responsible behavior. For example, movies and television can depict responsible alcohol use, and disc jockeys and the recording industry can work to counteract messages that promote or glamorize drug use in music.

For Doctors and Nurses

The role of the medical community is not limited to specialists in substance abuse and addiction. Other specialists and general practitioners can also contribute.

Make addictive substances a topic for adolescents' regular checkups. Since so many adolescents experiment with addictive substances, primary care physicians should bring the subject up during regular checkups so that adolescents feel comfortable discussing their own substance use, and physicians should be sensitive to the symptoms of teen substance abuse.

Look for signs of substance abuse during specialized exams. A variety of signs of substance abuse can be identified by specialists, who should be prepared to discuss them with patients. Dentists, for example, can often identify smoking and cocaine abuse. Ophthalmologists can often recognize marijuana, cocaine and heroin use. Dermatologists can also recognize some signs of substance abuse, such as injection marks.

Tailor treatment programs for adolescents. Most treatment programs for adolescents were originally designed for adults. Adolescents have special needs, including schooling, intervention with their families and concurrent psychiatric care for problems that

may underlie substance abuse. Teenagers are also in the midst of physical, intellectual, social and emotional development. All these factors must be considered and incorporated into adolescent treatment.

For Government

Increase investments in research. Our nation invests billions in research on conditions such as cancer, cardiovascular disease and AIDS. In 1996 we spent \$6 billion on cancer, cardiovascular disease and AIDS research.¹ We spent about ten percent of that amount on research on substance abuse and addiction, the largest cause and exacerbator of those three diseases. We need to invest at least one billion dollars a year in such research. Our nation has made major strides in moving diseases out of the closet of shame and into the fresh air of science. Substance abuse and addiction research should be the next giant step in this direction.

Research on adolescence--development, motivation, psychology and neurology--should also be stepped up. Prevention and treatment programs should be rigorously evaluated. Several evaluations suggest that the hundreds of millions of dollars spent on the Drug-Free Schools Act programs have little impact.² Targeted investments should be made in those programs that show the greatest promise. We need to greatly improve effectiveness of treatment for adolescents.

Substantially increase taxes on beer. How much beer teens consume is influenced by its price. Increases in beer taxes have been demonstrated to reduce the level and frequency with which teens drink beer and to reduce fatal traffic accidents among young drivers.³

Make treatment more available to teens who need it. While the number of adolescents who need treatment is unknown, data from the 1994 National Household Survey on Drug Abuse suggest that the number of teens who use addictive substances regularly far exceeds the number likely to be receiving treatment. The data show that 1.2 million teens binge drink at least twice a month; 949,000 teens smoke at least six cigarettes daily; 180,300 teens use marijuana at least three or four times a week and 36,800 teens use cocaine at least weekly.⁴ In total, 1.9 million teens--8.6 percent--engage in one or more of these behaviors.* Against this need, in 1994 only 105,000 teens received publicly funded treatment and an unknown number received private treatment.

Toughen laws regarding teen alcohol and drug use while driving. States that have reduced the allowable blood alcohol concentration for drivers under 21--instituting so-called zero tolerance laws--have seen reductions in single-vehicle nighttime crashes involving young drivers. If all states reduced the allowable blood alcohol concentration for young drivers to .02 or lower, at least 375 fatal nighttime single vehicle crashes would be prevented each year.⁵ Similar provisions should be considered for young drivers found to have used other intoxicating substances, such as smoking marijuana just before or while driving. Teens caught driving while intoxicated or high should have their licenses revoked for at least six months.

Enact and enforce server liability laws. Laws that hold alcohol servers liable for injuries and deaths from accidents following sale or provision of alcohol to a minor could be an effective vehicle to reduce sales of alcohol to minors.

* The total number of teens who smoke, binge drink, use marijuana and use cocaine cannot be added because the categories overlap.

Enact stiffer penalties for sale of cigarettes to minors. The legal sanctions associated with sale of tobacco to minors should be at least as stiff as those for sales of alcohol to minors, including fines and business license suspension or revocation for repeat offenders.

Require teens arrested for crimes related to alcohol and drug use to participate in treatment programs. Teens arrested for non-violent crimes that involve alcohol or drug use or obtaining money for alcohol or drugs should be given and treatment options. Teens who have committed violent crimes linked to alcohol or drugs should be required to participate in treatment during and after incarceration.

Eliminate drug bazaars in poor urban areas like Southeast D.C. or South Central L.A. that would be shut down immediately in affluent areas like Georgetown or Beverly Hills. The experience of New York City in reducing its crime rate suggests that problem-oriented community policing is an important factor in reducing drug-related crime in all sections of a city. The presence of more neighborhood beat officers on the streets appears to send a strong message that the drug trade will not be tolerated.

Curb alcohol advertising on television. Since alcohol advertising appears to increase teenage drinking, we should restrict ads on television shows with substantial numbers of child or teenage viewers and urge all hard liquor distillers to reinstitute their voluntary ban on television advertising.

Institute a new generation of substance-abuse related public service announcements. Because perceived harm and substance use are so closely related, because the use of dangerous substances for teens has been increasing, and because previous campaigns have been associated with declines in substance use, it is time to institute a new generation of public service announcements making teens aware of the negative consequences of substance

use. The President's 1998 budget request for \$175 million for a national anti-drug advertising campaign directed toward teens--now under consideration by Congress--deserves support. This campaign should include attention to alcohol and tobacco, as well as marijuana, inhalants, LSD, heroin and cocaine, and should target younger teens as well as older adolescents.

Ban tobacco from school grounds. To help foster drug-free schools, states and school districts should prohibit smoking anywhere on school grounds by adults as well as students.

Impose a \$2.00 a pack tax on cigarettes. Studies indicate a strong correlation between high cigarette taxes and reduced consumption among youth. The National Bureau of Economic Research estimates that a \$2.00 a pack tax on cigarettes would reduce teen smoking by 70 percent.⁶ While restrictions on advertising such as those in the proposed tobacco industry settlement are worth pursuing, the most effective way to reduce teen smoking is by raising cigarette taxes. Reducing smoking would have a salutary impact on reducing marijuana use.

Strengthening the Proposed Tobacco Settlement

In their recent talks, the attorneys general of several states and the tobacco industry have proposed to settle the states' legal claims for tobacco-related health care costs. Although the proposed settlement includes some important provisions, they are not sufficient to address tobacco's biggest threat: the 3,000 new children who take up smoking each day. The industry's agreement to ban vending machines, drop billboard advertising, take cartoon characters and beautiful people out of ads and restrict tobacco use in public places and most workplaces is worth little because local laws and public demand are already imposing these changes.

Now it is up to Congress and the President to determine whether there should be a settlement and, if so, what its provisions should be. At a minimum, the current proposal should be strengthened in the following ways:

Preserve full regulatory authority of the FDA. The Food and Drug Administration should retain the power to regulate nicotine as a drug now and in the future. Although a federal court in North Carolina has upheld President Clinton's assertion of that power, the proposed settlement would curb that authority until 2009. This restriction is especially troublesome given the addictive power of nicotine and recent scientific advances in our understanding of the impact of nicotine on the brain.

Increase the penalties if teen smoking is not reduced. The proposed settlement establishes penalties on tobacco companies of up to a maximum of \$2 billion per year if teen tobacco use is not reduced by 30 percent in five years, 50 percent in seven years and 60 percent in ten years. The following modifications should be adopted as recommended by the Advisory Committee on Tobacco Policy and Public Health, established by a bipartisan group

of members of Congress and chaired by former Surgeon General C. Everett Koop and former FDA Commissioner David A. Kessler:

- The penalties should be structured so that failure to meet the targets directly reduces total revenue and affects total shareholder value;
- The penalties should not be arbitrarily limited or capped;
- Additional non-financial penalties (such as the required use of plain packaging without color or logos) should be imposed for failure to meet the targets;
- Penalties should be assessed on a company-by-company basis;
- Similar targets and penalties should be established for smokeless tobacco and other tobacco products.⁷

Allow class action suits and punitive damages. The settlement proposal would ban both. Such a ban which would effectively grant the tobacco industry immunity from any future liability since the high costs of litigation against the tobacco industry would prevent all but the most affluent individuals from suing. Plaintiffs' lawyers will not take on individual cases where only compensatory damages are available. This is one of the reasons why the American Trial Lawyers Association has opposed the settlement.

Conclusion

America has experienced cycles of drug use over the past century. During these cycles, drug use eventually peaks and then begins to decline. Presently, the nation is going through a cycle of increases in drug use among our adolescents comparable to its experience during the late 1960s and 1970s.

This recent surge in teen drug use is unusually close to the last one. It stems from many factors: the ambivalence of many baby boomer parents about marijuana and the resignation of many such parents to marijuana use and binge drinking by their children; the glamorization of smoking, drinking and drug use in much of American music, film, television and fashion, lending an aura of normalization to such activity; the decline in perception of risk of drug use by many teens, in part because they have not personally witnessed the damage drugs can do (as many of their predecessors did in the 1980s); the easy availability of all kinds of substances--beer, wine coolers, cigarettes, pills, inhalants, marijuana, and for many teens, cocaine, heroin and acid; and the devastating pockets of drug-infested urban poverty.

The recommendations in this report are designed to reverse the current trend. We believe that they can go a long way toward avoiding a situation where America starts the new Millennium with adolescents using drugs in even greater numbers than today.

We do need to make a much more substantial investment in basic biomedical research and in research to learn how better to prevent and treat substance abuse among teens. But we are not faced with a question of not knowing what to do in order to turn this tide of substance abuse around. Rather, we face this challenge: whether we adults--especially parents, teachers, clergy, sports, movie and rock music stars whose whim can start a teen fad, the entertainment and fashion industries which give so many adolescents a sense of what's chic--will roll up our sleeves and help our teens develop the values, will and skill to say no to smoking, drugs and alcohol abuse.

CHAPTER VI.

REFERENCES

- ¹ National Heart, Lung and Blood Institute (1996). Fiscal year 1996 budget overview. In L.a.B.I. National Heart NHLBI FY 1996 fact book (pp. 57-69). Bethesda, MD: National Institutes of Health, National Heart, Lung, and Blood Institute; Department of Health and Human Services (1997, July 11). The HHS fiscal year 1998 budget. Retrieved from the World Wide Web: <http://www.os.dhhs.gov/progorg/asmb/budget/#98budget>: Department of Health and Human Services; National Institutes of Health, National Cancer Institute (1997). Cancer research funding. Retrieved from the World Wide Web: <gopher://gopher.nih.gov:70/ORO-3797-/clin/cancernet/facts/nci/Cancer%20Research%20Funding>: National Institutes of Health, National Cancer Institute; National Institutes of Health, National Cancer Institute (1997). Fiscal Year 1996 Budget. Retrieved from the World Wide Web: <http://www.nci.nih.gov>: National Institutes of Health, National Cancer Institute; National Institutes of Health (1997). National Institutes of Health: Summary of appropriations. Retrieved from the World Wide Web: <http://www.nih.gov/Budget98/SUMICD.HTM>: National Institutes of Health.
- ² Drug Strategies (1996). Keeping score: What we are getting for our federal drug control dollars: 1996. Washington, DC: Drug Strategies; Making the grade: A guide to school drug prevention programs (1996). Washington, DC: Drug Strategies; U.S. Office of National Drug Control Policy (1996). The National drug control strategy: 1996. Washington, DC: U.S. Office of National Drug Control Policy, Executive Office of the President; Drug Strategies (1996); Justice Research and Statistics Association. (1995). State and local conference on violent crime and drug abuse: Reinforcing government and community partnerships. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Assistance; Bureau of Justice Assistance. (1995). BJA fact sheet: D.A.R.E. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Assistance.
- ³ Cook, P.J. and Moore, M.J. (1992). Economic perspectives on reducing alcohol-related violence. In S.E. Martin (Ed.), National Institute of Alcohol Abuse and Alcoholism: Alcohol and interpersonal violence: Fostering multidisciplinary perspectives: Research Monograph 24 (pp. 193-212). Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism; Coate, D. and Grossman, M. (1988). Effects of alcoholic beverage prices and legal drinking ages on youth alcohol use. Journal of Law and Economics, 31, 145-171; Saffer, H. and Grossman, M. (1987). Beer taxes, the legal drinking age, and youth motor vehicle fatalities. Journal of Legal Studies, 16, 351-374; Ruhm, C.J. (1996). Alcohol policies and highway vehicle fatalities. Journal of Health Economics, 15, 435-545.
- ⁴ SADAC analysis of Health Services Administration, Substance Abuse and Mental Health Services Administration, Office of Applied Studies, U.S. Department of Health and Human Services. (1996). National Household Survey on Drug Abuse: 1994-A and 1994-B public use files: SAS transport file format [CDROM]. Chicago, IL: National Opinion Research Center at the University of Chicago.
- ⁵ Hingson, R., Heeren, T. and Winter, M. (1994). Lower legal blood alcohol limits for young drivers. Public Health Reports, 109(6), 738-744.
- ⁶ France, M. and Carey, J. (1997, May 12). Tobacco: Don't jump at this deal. Business Week, 110-112; Chaloupka, F.J., Wechsler, H. and National Bureau of Economic Research (1995). Price, tobacco control policies and smoking among young adults. Cambridge, MA: National Bureau of Economic Research.
- ⁷ The Advisory Committee on Tobacco Policy and Public Health, Koop Everett, C. and Kessler, D.A. (1997). Final Report of the Advisory Committee on Tobacco Policy and Public Health. Washington, DC: The Advisory Committee on Tobacco Policy and Public Health.

Board of Directors

Lee C. Bollinger

President of Columbia University

Ursula M. Burns

President of Xerox Corporation

Columba Bush

Former First Lady of Florida

Joseph A. Califano, Jr.

Chairman and President of CASA

Kenneth I. Chenault

Chairman and CEO
of American Express Company

Jamie Lee Curtis

James Dimon

Chairman and CEO of JPMorgan Chase & Co.

Peter R. Dolan

Victor F. Ganz

President and CEO of the Hearst Corporation

Donald R. Keough

Chairman of the Board of Allen and
Company Incorporated
(Former President of The Coca-Cola Company)

David A. Kessler, M.D.

Alan I. Leshner, Ph.D.

CEO, Executive Publisher, Science, American
Association for the Advancement of Science

Rev. Edward A. Malloy, CSC

President Emeritus of the University of Notre Dame

Doug Morris

Chairman and CEO of Universal Music Group

Manuel T. Pacheco, Ph.D.

President Emeritus of the University of Arizona and
the University of Missouri System

Joseph J. Plumeri II

Chairman and CEO of
Willis Group Holdings, Limited

Jim Ramstad

Member of Congress (R-MN)

Shari E. Redstone

President of National Amusements, Inc.

E. John Rosenwald, Jr.

Vice Chairman of Bear, Stearns & Co. Inc.

Michael I. Roth

Chairman and Chief Executive Officer of
The Interpublic Group of Companies, Inc.

Michael P. Schulhof

CEO and General Partner
GTI Group LLC

Louis W. Sullivan, M.D.

President Emeritus of Morehouse School of
Medicine

John J. Sweeney

President of AFL-CIO

Michael A. Wiener

Founder and Chairman Emeritus of Infinity
Broadcasting Corporation

Directors Emeritus

James E. Burke (1992-1997)

Mary Fisher (1996-2005)

Betty Ford (1992-1998)

Douglas A. Fraser (1992-2003)

Barbara C. Jordan (1992-1996)

Leo-Arthur Kelmenson (1998-2006)

LaSalle D. Leffall, Jr., M.D., F.A.C.S. (1992-2001)

Nancy Reagan (1995-2000)

Linda Johnson Rice (1992-1996)

George Rupp (1993-2002)

Michael I. Sovern (1992-1993)

Frank G. Wells (1992-1994)