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Study Web site: www.monitoringthefuture.org

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EDITORS: Results of this year's Monitoring the Future survey are being released jointly by the National Institute on Drug Abuse, which sponsors the study, and the University of Michigan, which designed and conducted the study, at a news conference to be held at the National Press Club in Washington, D.C. Participating will be the director of the White House Office of National Drug Control Policy (ONDCP), John Walters; the administrator of the Drug Enforcement Administration (DEA), Karen Tandy; the director of the National Institute on Drug Abuse (NIDA), Nora Volkow; and the principal investigator of the study, Lloyd Johnston. For further information, contact Johnston, at (734) 763-5043.

Teen drug use down but progress halts among youngest teens

ANN ARBOR, Mich.----The proportion of older teens who use illicit drugs continued to decline in 2005, according to the latest national survey in the Monitoring the Future series, the fourth consecutive year of decline among the nation's 10th- and 12th-grade students. However, the long-term improvements that had been occurring among 8th graders since 1996 appear to have halted this year.

The use of ***marijuana*** and ***illicit drugs other than marijuana*** (taken as a group) showed very modest continuing declines this year among 10th- and 12th-grade students, although none of these one-year decreases reached statistical significance.

"What is significant is that the use of these substances has declined substantially since the recent peak levels reached in the mid-1990s," said Lloyd Johnston, the study's principal investigator. "Generally, the proportional declines since then have been greatest among the 8th graders and least among the 12th graders, despite the fact that 8th graders show no further improvement this year."

Overall, the use of ***any illicit drug*** in the 12 months prior to the survey is down by more than a third among 8th graders since 1996, the recent peak year for that grade. It is down by just under a quarter among 10th graders but by only about 10 percent among 12th graders. Tenth and 12th

graders reached their recent peaks in 1997. ***Marijuana***—by far the most widely used of the illicit drugs—is down by similar proportions.

"We believe that the greater proportional declines in previous years in the lower grades are now being 'echoed' in the upper grades, as those younger adolescents age and enter the upper grades," Johnston said. "This phenomenon is called a cohort effect, wherein a particular class cohort or birth cohort continues to have a lower, or higher, rate of use than other cohorts as it ages."

In 2005, the proportions ever having tried ***any illicit drug*** in their lifetime are 21 percent, 38 percent, and 50 percent in grades 8, 10, and 12, respectively. In other words, exactly half of the students today have tried an illicit drug by the time they finish high school. The proportions indicating any use of an illicit drug during the 12 months immediately preceding the survey (annual prevalence rates) are 16 percent, 30 percent, and 38 percent in grades 8, 10, and 12.

"These are not what you would call low rates of drug use by any means," Johnston said. "There remains plenty of room for improvement."

The annual prevalence rates for using ***any illicit drug other than marijuana*** are 8 percent, 13 percent, and 20 percent in grades 8, 10, and 12, respectively. These rates are down some from the peak levels in the mid-1990s—by about four-tenths among 8th graders, and three-tenths among 10th graders, but by less than one-tenth among the 12th graders.

The Monitoring the Future (MTF) study surveys nationally representative samples of about 50,000 8th-, 10th-, and 12th-grade students each year in about 400 public and private secondary schools. MTF now spans a 30-year interval, having been launched in 1975. It has been funded by the National Institute on Drug Abuse (NIDA), one of the National Institutes of Health, under a series of investigator-initiated, competitive research grants made to the University of Michigan.

The authors of the forthcoming report on the 2005 findings are the lead investigators on the study—Lloyd Johnston, Patrick O'Malley, Jerald Bachman, and John Schulenberg. All are social or developmental psychologists and are research professors at U-M's Institute for Social Research.

The attached tables and figures show that usage rates for many drugs have declined by appreciable proportions since their peaks, most of which occurred in the mid- to late 1990s. The tables and figures also show that many drugs have shown significant declines in use during the current decade.

However, 2005 is marked by more limited declines. This year there are no statistically significant changes in prevalence for ***any illicit drug***, ***marijuana***, ***any illicit drug other than marijuana*** taken as a class, ***inhalants***, ***hallucinogens*** taken as a class, ***crack cocaine***, ***powder cocaine***, ***heroin***, ***narcotics other than heroin***, ***sedatives***, ***tranquilizers***, ***Ritalin***, and some others.

Nevertheless, while the declines this year have not always been statistically significant, several substances, including some just listed, do continue longer-term gradual declines into 2005. In

some cases, though, these further improvements are confined to the upper grades and are no longer observable in 8th grade, a worrisome trend given the cohort effect noted above.

Drugs showing some continuing decline in use

Marijuana—by far the most widely used of the illicit drugs—continued a pattern of very modest decline in the upper grades, a decline that has been ongoing since 2001. As was true in each of the last several years, these one-year declines did not reach statistical significance.

Since the recent peak year of 1996, there has been a one-third decline in the annual prevalence of marijuana use among 8th graders, from 18.3 percent to 12.2 percent in 2005, but none of that decrease occurred this year. Tenth and 12th graders showed more modest declines of one-quarter and one-eighth, mostly because their use held steady from 1997 to 2001 before beginning to decline again.

In the previous two years, there had been an increase in the proportion of students seeing marijuana use as dangerous; and this change in beliefs may well explain some of the recent gradual decline in use. However, this increase in perceived risk continued into 2005 only among 12th graders. Similarly, personal disapproval of marijuana use continued to increase some in the upper grades this year but leveled among 8th graders.

The proportion of students saying that it would be easy for them to get marijuana, if they wanted some, continued to decline gradually this year in the upper grades, but, as with use, showed no further decline among the 8th graders.

Among the other drugs showing modest declines this year are ***amphetamines***, ***methamphetamine***, ***steroids***, and ***alcohol***. All of these drugs showed statistically significant declines this year in one or more grades. Three so-called "club drugs"—***ketamine***, ***Rohypnol***, and ***GHB***—also showed an ongoing pattern of decline this year, but only GHB showed a statistically significant decline. Finally, ***tranquilizers*** and ***ecstasy*** showed evidence of continuing declines in just one or two grades, though they were not statistically significant.

Amphetamines are prescription-controlled stimulants. Their use had been declining for some years in the lower grades, and since 2002 in grade 12. The 8th graders showed no further decline in their use of amphetamines this year, but their use is now down by nearly half from what it was in the recent peak year of 1996. The upper grades did show some further decline this year, in particular the 12th grade where the decline in 2005 is significant. Only the 12th graders are asked how risky it is to use amphetamines and whether they disapprove of their use. They have shown a fairly steady increase in both perceived risk and disapproval associated with this class of drugs in recent years, which likely helps to explain their declining use of amphetamines since 2002.

Methamphetamine, or "meth," use has been included in the study since 1999 and since then has shown a substantial decline in all three grades. Annual prevalences in 2005 were 1.8 percent, 2.9 percent, and 2.5 percent. "We are aware that the pattern of declining meth use among adolescents seems to be inconsistent with recent press reports of a growing meth epidemic," Johnston said. "But if use is spreading, it does not seem to be doing so in this segment of the population. Of

course, it is possible that use is increasing among high school dropouts, who are not captured in the survey, and among young adults."

The study's follow-up samples of young adult high school graduates, for example, showed the rate of methamphetamine use holding steady from 1999 through 2004, not declining as has been happening among secondary school students. (The 2005 results on the young adult group are not yet available.)

Steroids, or anabolic steroids, are taken primarily by males, mostly to enhance physique or athletic performance. Steroid use had been declining from recent peak levels since 2000 in the case of 8th graders, since 2002 among 10th graders, and now since 2004 among 12th graders. The 12th graders exhibited a highly significant decline this year of 1.1 percentage points, falling to 1.5 percent annual prevalence. However, there was little further decline this year in the lower grades, which already had dropped on the order of four-tenths in their annual prevalence rates. The staggered pattern of declines across the grades suggests that a cohort effect (described above) is working its way up the age spectrum. This year's drop among 12th graders would be consistent with that interpretation, said the investigators.

Three so-called club drugs—***ketamine***, ***Rohypnol***, and ***GHB***—have each shown a pattern of declining use that for the most part continued this year. They all have shown considerable proportional declines in use since recent peaks, with none of them now having an annual prevalence rate in any grade higher than 1.6 percent, and most having a considerably lower rate. Rohypnol and GHB are commonly known as "date rape drugs" because they can induce amnesia of events that occurred while under the influence. The only statistically significant decline observed among them this year was for GHB use among 12th graders. Ketamine showed small declines in all three grades, and Rohypnol in two of the three grades.

The use of ***tranquilizers*** steadily increased for nearly a decade, from 1992 to about 2000 among 10th and 12th graders, then declined. This year there was some further small, and not statistically significant, decline. Thus, the decade-long upward march in tranquilizer use in the upper grades has ended and some modest downward trending has been occurring. Use among 8th graders has been much lower, started declining after 1996, and has changed very little since 1998. Interestingly, *perceived availability* of tranquilizers has been in a long-term decline in all grades, even during the decade of increasing use.

Ecstasy use had been in a pattern of sharp increase among American adolescents through 2001, making its turnaround after 2001 particularly important. Over the next two years, annual prevalence fell by more than half among both 10th and 12th graders as they came to see use as more dangerous. In 2004, the decline decelerated considerably, with only small and non-significant decreases in all three grades. In 2005, only the 12th grade showed any further decrease (a drop of 0.9 percentage points, not statistically significant), suggesting that the decline is about over. Annual prevalence rates are at 1.7 percent, 2.6 percent, and 3.0 percent in grades 8, 10, and 12, about a half to two-thirds below what they were in 2001.

Alcohol also exhibited declines in use this year, as is discussed in a separate section below.

Illicit drugs holding steady in 2005

Many classes of drugs showed little or no systematic change this year, though in most cases they have shown some decline in recent years and are, therefore, below their recent peak levels of use—sometimes substantially below.

The use of ***LSD*** by adolescents had been in decline since recent peak levels were attained in all three grades in 1996. Since 2003, there has been little further change, with usage rates remaining at historically low levels. Annual prevalence in 2005 is far below peak levels reached in 1996, having fallen by between two-thirds and four-fifths.

The *perceived risk* associated with LSD use has generally not moved in a way that would explain the considerable downturn in use, because perceived risk has *fallen* considerably since the early 1990s, not risen as would normally be expected. *Disapproval* has not generally moved in a way that would explain the decline in use, either. But the change in perceived availability since 2001—a considerable drop—might well explain the decline in use since then. "Our concern about this drug is that a new generation of young people, particularly the 8th graders, do not see LSD as dangerous," Johnston said. "This leaves them vulnerable to a possible new epidemic of use at some time in the future if easy availability returns."

Hallucinogens other than LSD, taken as a class, have shown a slight downward drift since the recent peak year of 2001. The annual prevalence rates in 2005 are fairly low, standing at 2 percent, 3.5 percent, and 5 percent in grades 8, 10, and 12. The primary drug used in this class is psilocybin, also known as magic mushrooms or "shrooms." *Perceived availability* of these drugs, measured only among seniors, has remained fairly steady in recent years, though there was a significant decline of 4.4 percentage points observed this year. Perceived risk and disapproval are not measured for this class of drugs.

The use of ***ice*** or ***crystal methamphetamine*** is measured only in 12th grade. This particular form of methamphetamine is down by about one-quarter from its recent peak, but it has shown no further decline since 2003. There has been a slight increase in *perceived risk* over the past two years for this drug but little systematic change in *perceived availability*.

In general, there has been little systematic change in use of ***crack cocaine*** or ***powder cocaine*** in the past four years. *Perceived risk* and *disapproval* have also been fairly steady. *Availability* has shown generally downward trends since about 1996, though there were no further declines in 2005.

No appreciable change in ***heroin*** use was observed in either 2004 or 2005 at any grade level on any prevalence measure. Current use levels are on the order of one-half to two-thirds what they were at their recent peaks. However, little further improvement has been observed in the last three years. Annual prevalence rates for heroin use are between 0.8 percent and 0.9 percent in all three grades in 2005. There was no appreciable change in *perceived risk* or *disapproval* either, with the exception of some drop in perceived risk at 12th grade. There has been some modest decline in *perceived availability* over the past five years or so.

Only 12th-grade data are reported for ***narcotics other than heroin***, the use of which had been rising steadily for a decade, between 1992 and 2002. Since 2002 there is little evidence of any systematic change in the prevalence of use. “That makes this one of the few classes of drugs in which we have not seen improvement, after a substantial rise in use,” Johnston said. While the general class has shown no recent change, two important specific drugs within this general class have shown signs of change recently, OxyContin and Vicodin. OxyContin use is discussed below under drugs increasing in use.

Vicodin (hydrocodone) is a synthetic narcotic drug used primarily for pain control. Its use was first measured in 2002 with a single question asking about use in the past year. Use peaked in all grades in 2003 and has shown modest declines since, but there was no systematic change in use this year.

Illicit drugs showing signs of increasing use

The only drugs showing a pattern of increase this year are ***sedatives***, ***OxyContin***, and ***inhalants***; even for these drugs, the increases are modest and confined in each case to one grade.

Sedatives (including barbiturates) are, like tranquilizers, a class of psychotherapeutic drugs that act as central nervous system depressants. Also like tranquilizers, sedatives showed a decade-long rise in use at 12th grade (the only grade for which the use of this drug is reported) before leveling in 2003. However, use resumed its rise after 2003 with nonsignificant increases in both 2004 (+0.5 percent) and 2005 (+0.7 percent), resulting in the highest rate of annual prevalence observed since 1991 among 12th graders (7.2 percent).

OxyContin falls into the general class of narcotics other than heroin and within the more specific subclass of oxycodone. It is a powerful analgesic used for pain control. A question about its use was added to the study for the first time in 2002 because of widespread concern about its increased abuse. While none of the observed changes in 2003 was statistically significant at the individual grade level, this drug showed increase in annual prevalence in all three grades. In 2004, while there was no further increase (or change) in the two lower grades, at 12th grade annual prevalence rose further—from 4.5 percent in 2003 to 5.0 percent in 2004—again, a nonstatistically significant increase. (This compares with 4.0 percent in 2002.) In 2005, there again was little change in the two lower grades but a 0.6 percentage point increase in 12th grade, making the increase at 12th grade from 2002 to 2005 statistically significant.

OxyContin use in the prior 12 months is now reported by 5.5 percent of 12th graders, 3.2 percent of 10th graders (down 0.3 percent from last year, not significant), and 1.8 percent of 8th graders; its use has risen by almost 40 percent among 12th graders since 2002. “Considering the addictive potential of this drug, these are disturbingly high rates of use,” observed Johnston, “contrasting with an annual prevalence of less than one percent in all three grades for heroin, for instance.”

Given the different trajectories for this drug in the lower grades, it is relevant to note that through 2004, OxyContin use also was rising among college students and young adults generally—two other populations covered by the study—which gives the investigators greater confidence that

the increased use observed among 12th graders is real. The 2005 results on those two additional populations are not yet available.

Use of ***inhalants*** has consistently been highest among 8th graders—a reversal of the usual pattern of use across grades. The investigators believe that this is true because most of these substances are legal to buy and possess, are readily accessible in the home, and are either inexpensive or free. That makes them attractive and accessible to younger teens.

After a long and substantial decline in the use of inhalants by 8th graders (annual prevalence fell by four-tenths, from 12.8 percent in 1995 to 7.7 percent in 2002), a significant increase (to 8.7 percent) was reported in 2003 among 8th graders (but not in the upper grades); in 2004 all three grades showed some increase in annual prevalence, the largest of which was in the 8th grade again, though no increase was statistically significant. In 2005 there was no further increase in the two lower grades, but some further increase (+0.9 percent, not significant) did occur in grade 12. This may well reflect a cohort effect making its way up the age spectrum, according to the investigators.

The *perceived dangers* of inhalant use have declined among both 8th and 10th graders (the only ones asked this question) over the last four years now, quite possibly explaining the reversal in usage trends. “This fact continues to suggest the need for greater attention to this class of drugs in media messages and in-school programming,” Johnston said.

Disapproval of inhalant use has slipped a bit in 8th grade but not in 10th grade in recent years.

Overview

“The story this year is certainly more complicated than usual,” Johnston said. “Different patterns of change have emerged at different grade levels, largely, we believe, because of the emergence of cohort effects. The younger teens, who were the first to show declines in the use of many drugs and who have shown the greatest declines overall, are no longer showing much improvement.

“This year, it is the 12th graders who are showing the most improvement, as those earlier classes of 8th graders move up in age and become the 12th graders. Up until now there had been only modest improvements in 12th grade, but I expect there to be further improvements as a result of still more of these new lower-using cohorts entering 12th grade.

“As for specific drugs, the high rates of use that have developed over a period of years for certain types of psychotherapeutic drugs like sedatives, tranquilizers, and narcotic pain killers are troubling.”

While ***tranquilizer*** use appears to have crested, it has not declined much yet; and ***sedative*** use among teens is at peak levels and still rising gradually. After a decade-long rise, the use of ***narcotics other than heroin*** has remained at peak levels for several years, and the use of ***OxyContin***, specifically, has continued to grow among 12th graders. “It is difficult to say why

these drugs, all of which are central nervous system depressants, have gained favor," Johnston said.

The annual prevalence rates for these drugs among 12th graders shows that their use is still far from the norm: 9 percent for narcotics other than heroin, 7.2 percent for sedatives, 6.8 percent for tranquilizers, and 5.5 percent for OxyContin. In 2005, the proportions using at least one of these three classes of drugs (sedatives, tranquilizers, or narcotic drugs other than heroin) at some time in the past 12 months are 6.9 percent, 11.4 percent, and 13.9 percent in grades 8, 10, and 12, respectively.

Alcohol trends

The use of alcoholic beverages has generally been in decline among American teens for the last several years, and that decline continued in all three grades in 2005. There are a number of measures of alcohol use in the Monitoring the Future study, including measures of (a) any alcohol use in lifetime, past 12 months, and past 30 days; (b) self-reported drunkenness in those same three prevalence periods; (c) consuming five or more drinks in a row on one or more occasions in the prior two weeks, sometimes called binge drinking; and (d) daily use in the prior 30 days. There are also some beverage-specific questions.

The ***30-day prevalence of alcohol use*** among teens generally rose some in the early 1990s, along with illicit drug use, and then started to gradually decline in the late 1990s, again somewhat in parallel with illicit drug use. However, both the earlier rise and later declines were more gradual for alcohol than for illicit drug use.

Among 8th graders, 30-day prevalence has now declined by 35 percent since its peak level in 1996; but for 10th and 12th graders the proportional declines from recent peaks are considerably less—down by 19 percent since 2000, and down by 11 percent since 1997, respectively. In 2005 one-sixth (17 percent) of the 8th graders indicated drinking once or more in the prior 30 days, as did a third (33 percent) of the 10th graders, and nearly half (47 percent) of the 12th graders. This makes alcohol the most widely used of all the drugs encompassed in the study.

In 2005 nearly ***all prevalence measures*** showed some decline at all grade levels, with a number of those one-year declines reaching statistical significance. The single exception was for ***daily use***, which showed little change this year in any grade. Self-reported ***drunkenness*** also showed some decline across the board this year with the exception of daily drunkeness, which showed little change. Despite some decline in 2005, the prevalence of drunkenness actually has declined rather little over the past couple of years.

The prevalence of having five or more drinks in a row at least once in the prior two weeks—often called "***binge drinking***"—continued a longer-term gradual decline in 2005, with about a one-percentage-point drop (nonstatistically significant) in all three grades. However, over the past couple of years there has only been a modest decline in the lower grades, and none in 12th grade.

There has been a gradual rise in the past few years at all grade levels in *perceived risk* and *disapproval* for having ***five or more drinks each weekend***—the most common form of binge drinking.

Perceived availability of ***alcohol*** has been declining steadily among 8th graders since 1997 and has declined a bit among 10th graders since 2001. (Over 90 percent of 12th graders report that alcohol is readily available, and that has not changed in recent years.)

The 30-day prevalence of ***beer*** consumption declined in recent years (though no year reached statistical significance, and it held fairly steady over the past two years), whereas that for ***hard liquor*** consumption has continued to hold relatively steady since the mid-1990s.

While the prevalence rate for beer has fallen from recent peaks by between 19 percent and 32 percent, the prevalence of hard liquor consumption has fallen among 12th graders (the only ones asked about their hard liquor use) by only 2 percent. The advent of advertising liquor on television, particularly on cable channels, and more aggressive ad campaigns for hard liquor may help to explain its relative gains against beer.

Past 30-day prevalence of the use of ***flavored alcoholic beverages*** (sometimes called alcopops or malternatives) showed a nonsignificant decline in all three grades in 2005. Overall, use of this class of beverages does not seem to be expanding rapidly, as some had feared when the study first introduced questions about their use in 2003.

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Monitoring the Future has been funded under a series of competing, investigator-initiated research grants from the National Institute on Drug Abuse. Surveys of nationally representative samples of American high school seniors were begun in 1975, making the class of 2005 the 31st such class surveyed. Surveys of 8th and 10th graders were added to the design in 1991, making the 2005 nationally representative samples the 15th such classes surveyed. The sample sizes in 2005 are 17,258 8th graders in 146 schools, 16,711 10th graders in 127 schools, and 15,378 12th graders in 129 schools, for a total of 49,347 students in 402 secondary schools. The samples are drawn separately at each grade level to be representative of students in that grade in public and private secondary schools across the coterminous United States. Schools are selected with probability proportionate to their estimated class size.

The findings summarized here will be published in the forthcoming volume: Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2006). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2005.* (NIH Publication No. [yet to be assigned].) Bethesda MD: National Institute on Drug Abuse.