MONITORING THE FUTURE

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Monitoring the Future Study Annual Report

National Survey Results on Drug Use, 1975–2025: Overview and key findings for secondary school students

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50 YEARS
1974–2024

MONITORING THE FUTURE
NATIONAL SURVEY RESULTS ON DRUG USE, 1975–2025: OVERVIEW AND KEY FINDINGS FOR SECONDARY SCHOOL STUDENTS

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Abbreviated Content

Click on any item below to go directly to that page.

Detailed Content

Click on any item below to go directly to that page.

List of Tables and Figures

Click on any item below to go directly to that page.

CHAPTER 1 – Introduction

Substance use is a leading cause of preventable morbidity and mortality; it is in large part why, among 17 high-income nations, people in the United States have the highest probability of dying by age 50.[1,2,3] Substance use is also an important contributor to many social problems including domestic violence, violence more generally, criminal behavior, suicide, and more—and it is typically initiated during adolescence. It warrants our sustained attention.

Monitoring the Future (MTF) is designed to provide scientifically reliable information on trends, drivers, and consequences of substance use among U.S. youth and adults. It is an investigator-initiated study that originated with, and is conducted by, teams of researchers at the University of Michigan's Institute for Social Research. Since its onset in 1975, MTF has been funded continuously by the National Institute on Drug Abuse—one of the National Institutes of Health—under a series of peer reviewed, competitive research grants. The 2025 survey, reported here, is the 51st consecutive national survey of 12th grade students and the 35th national survey of 8th and 10th grade students (who were added to the study in 1991).

MTF conducts ongoing national surveys of both adolescents and adults in the United States. It provides the nation with a vital window into the important but often hidden problem behaviors of use of illegal drugs, alcohol, tobacco, and prescription drugs used nonmedically. For five decades, MTF has helped provide a clearer view of the changing topography of these problem behaviors among adolescents and adults, a better understanding of the dynamic factors that drive some of these behaviors, and a better understanding of some of their consequences. It has also provided policymakers, government agencies, public health professionals, and nongovernmental organizations in the field some practical approaches for intervening.

A widespread epidemic of illicit drug use emerged in the 1960s among U.S. youth, and since then dramatic changes have occurred in the use of nearly all types of illicit drugs as well as alcohol and tobacco. These changes include the emergence of new policies such as the legalization of recreational cannabis use, the Master Tobacco Settlement of 1998, and the Tobacco 21 laws. Many new substances have emerged over the life of the survey, including hemp-derived psychoactive drugs such as Delta-8, flavored cannabis solutions for vaping, tobacco pouches (e.g., "Zyn"), and drugs taken for performance enhancement. New devices and methods for taking drugs, such as vaporizers, provide novel ways to use substances and use them in new

[1] Case, A., & Deaton, A. (2015). Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century. *Proceedings of the National Academy of Sciences, 112*(49), 15078–15083.

[2] Murphy, S. L., Kochanek, K. D., Xu, J., & Arias, E. (2023). Mortality in the United States, 2023. NCHS Data Brief, No. 521, Hyattsville, MD: National Center for Health Statistics.

[3] Esser, M. B., Leung, G., Sherk, A., Bohm, M. K., Liu, Y. Lu, H., & Naimi, T. S. (2022). Estimated deaths attributable to excessive alcohol use among US adults aged 20 to 64 years, 2015 to 2019. *JAMA Network Open, 5*(11), e2239485.

combinations. Unfortunately, the number of new substances added to the list over the years substantially outnumbers the number removed because so many substances remain in active use. Throughout these many changes, substance use among the nation's youth has remained a major concern for parents, educators, health professionals, law enforcement, and policymakers, largely because substance misuse is one of the largest and yet most preventable causes of morbidity and mortality during and after adolescence.

The MTF annual reports are a key vehicle for disseminating MTF's epidemiological findings. In addition to this annual report, the series includes a separate, annual report that presents prevalence and trends among U.S. adults now ages 19 to 65, including both college students and their high-school graduate age peers who are not attending college (scheduled for publication in July). These reports, along with MTF press releases, are available on the project website at www.monitoringthefuture.org.

Content Areas Covered

Two of the major topics included in the present annual report are (a) the *prevalence and frequency* of use of a great many substances, both licit and illicit, among U.S. secondary school students in 8th, 10th, and 12th grades and (b) *historical trends* in substance use by students in these grades. Distinctions are made among important subgroups in these populations based on demographics, college plans, region of the country, population density, and parent education. MTF has demonstrated that key attitudes and beliefs about substance use are important determinants of usage trends, in particular perceived risk and disapproval associated with use of the various substances tracked by the survey. Thus, these measures also are tracked over time, as are students' perceptions of certain relevant aspects of the social environment—in particular, perceived availability of each substance, peer norms about their use, and use by friends. Data on grade of first use, noncontinuation of use, trends in use when in lower grades (based on retrospective reports), and intensity of use are also reported here.

Drug Classes

Table 1-1 lists all the substances that have been included in the school surveys, as well as the first year included and, in some cases, the year dropped due to low prevalence. In the years since its inception, many new categories of substances have been added to the MTF surveys—in many but not all cases in all three grades. Relatively fewer substances have been dropped due to their reaching very low prevalence.

The large number of substances added over the years illustrates the dynamic and multidimensional nature of the country's drug problems. As time passes and new trends develop, additional drugs will be added to the study's coverage; occasionally ones that fall to very low prevalence levels are dropped (such as bath salts, "look-alike" pseudo-amphetamines, kreteks,

bidis, PCP, and Provigil). It is important, given this rapidly shifting variety of drugs, that information be gathered and reported relatively quickly to inform legislators, regulatory agencies, scientists, health care professionals, parents, and educators about the extent to which newer drugs are making inroads in the youth population and what subgroups are proving most vulnerable.

Much of the information reported here deals with nonmedical use of controlled substances. The major exceptions are alcohol, vaping nicotine, cigarettes, other tobacco products such as nicotine pouches, psychoactive drugs derived from hemp (such as Delta-8), inhalants, creatine, and cough and cold medicines.

In addition to reporting substance use prevalence, we also focus attention on substance use at high frequency levels. This is done to help differentiate levels of magnitude, or extent, of substance involvement. While there is no scientific or public consensus on what levels or patterns of use constitute misuse, there is a general agreement that higher levels of use are more likely to have detrimental effects for the person who uses and for society. We have indirect measures of dosage per occasion by asking respondents about the duration and intensity of highs they usually experience with each type of substance. These items have shown some interesting trends over the years, detailed in Chapter 7.

Attitudes, Beliefs, and Early Experiences

Separate sections or whole chapters are devoted to the following issues related to a number of substances:

- grade of first use,
- noncontinuation of use,
- respondents' own attitudes and beliefs about specific substances,
- degree and duration of the highs attained,
- perceptions of availability of the substances, and
- perceptions of attitudes and behaviors of others in the social environment related to the use of various substances.

Some of these variables have proven to be very important in explaining changes in use, as we discuss in detail in Chapter 8.

Over the Counter Substances

Included in this annual report are trends in the use of nonprescription stimulants, including cough medicines, and the performance-enhancing substances of anabolic steroids, androstenedione (andro), and creatine.

Cumulative Lifetime Daily Cannabis Use

Also included are trend results from a set of questions about cumulative lifetime cannabis use at a daily or near-daily level. These questions were added to enable us to develop a more complete individual history of daily use over a period of years.

Trends in Use of Specific Alcoholic Beverages

Twelfth grade data are reported for a wide spectrum of substances, including beer, liquor, wine, and flavored alcoholic beverages. Results on these various substances are discussed in Chapter 4 and Chapter 5.

Prescription Drugs

MTF documents trends in nonmedical use of prescription drugs. Since 2008, Chapter 4 and Chapter 5 also contain estimates of the proportion of 12th grade students who use *any* prescription drug nonmedically; these estimates can be made only for 12th graders because estimates of use of prescription sleeping medications and prescription opioids are not reported for students in the lower grades due to concerns about the validity of their reports of these substances.

Synopses of Other MTF Publications

Chapter 10 contains short synopses of other MTF publications produced during the past year (journal articles, chapters, occasional papers, etc.). References to the full documents are provided, and many are available on the MTF website.

Appendices

Appendix A addresses the issue of whether students who are absent or who have dropped out of school affect MTF results and, if so, to what extent. For illustrative purposes, the appendix provides estimates of prevalence and trends adjusted for these missing segments of the population for cannabis, cocaine, any illicit substance use, and alcohol.

Appendix B gives the definitions of the various demographic subgroups discussed in the annual report.

Appendix C provides trends since 1991 in substance use for the *three grades combined*, as well as the absolute decline and the proportional decline in the prevalence of each substance since the most recent *peak* level. Such tables are helpful in getting a quick read on the trends. By combining the three grades, however, much of the meaningful detail available from grade-specific estimates is lost, including evidence of cohort effects.

Appendix D presents substance use trends in tabular format from 1991 to 2025 with one-year, five-year, low-current, and peak-current significance tests. With these tables, MTF publishes

prevalence trends for all substances in a single document for the historical record. This appendix provides a complementary way to view and search the MTF prevalence results presented in Chapter 5, which is organized around external links to substance-specific tables and graphs. The prevalence tables and figures are also accessible in an interactive format through the MTF data dashboards.

In 2017 and earlier, Appendix C reported information on how to take into account the complex sample design in order to calculate confidence intervals for point estimates and how to calculate statistics that test the statistical significance of changes over time or of differences between subgroups. This appendix is no longer necessary with the opening of MTF's secure remote portal at the National Addiction and Health Data Archive Program, which now allows researchers to compute such statistics directly using MTF weights and clustering variables (after completing an application process that includes a signed pledge to protect the confidentiality of the data). Interested readers may refer to Appendix C of the earlier annual reports for the information it provides about design effects and how their computational influence varies by substance. They are listed under Results > Annual Reports on the study website: www.monitoringthefuture.org.

Purposes and Rationale for This Research

Perhaps no social problem has proven more clearly appropriate for and in need of the application of systematic research and reporting than substance misuse. Substance use behaviors are often hidden from public view, can change rapidly and frequently, and are of great importance to the wellbeing of the nation. Many legislative and programmatic interventions have been aimed at these behaviors, such as the current opioid crisis, as well as past increases in adolescent smoking and illicit drug use that we reported in the 1970s and again in the 1990s as a relapse in the drug epidemic unfolded.

Young people are often at the leading edge of social change, and this has been particularly true of substance use. MTF documented that the relapse in the drug epidemic in the early 1990s initially occurred almost exclusively among adolescents. Adolescents and adults in their 20s fall into the age groups at highest risk for illicit substance use. Moreover, use that begins in adolescence sometimes continues well into adulthood. This is indicated in the cohort effects that we report for a number of substances (and even in some attitudes and beliefs about them). The original epidemic of illicit substance use in the 1960s began on the nation's college campuses and then spread downward in age. By way of contrast, MTF has shown that the relapse phase in the 1990s first manifested itself among secondary school students and then started moving upward in age as those cohorts matured.

One purpose of MTF is to develop an accurate description of these important changes as they are unfolding. An accurate picture of the basic size and contours of the substance use problem among youth in the U.S. is a prerequisite for informed public debate and policymaking. In the absence of

reliable *prevalence* data, substantial misconceptions can develop and resources can be misallocated. In the absence of reliable *trend* data, early detection and localization of emerging problems are more difficult and societal responses more lagged. For example, MTF provided early evidence that cigarette smoking among U.S. adolescents was rising sharply in the early 1990s, which helped stimulate and support some extremely important policy initiatives that culminated in the tobacco settlement between the tobacco industry and the states. MTF documented and described the sharp rise and subsequent decline in ecstasy use and earlier in cocaine use, illustrating the important role that *perceived risk* played in these changes, as it has also done for a number of other substances in the past. MTF also helped draw attention to the rise in steroid and androstenedione use among adolescents in the late 1990s, resulting in legislative and regulatory action. It exposed a rise in the use of prescription opioids, stimulating an initiative at the White House Office of National Drug Control Policy aimed at reducing nonmedical use. More recently, MTF has become a key source of information on vaping, and MTF results are cited by the FDA in its recent regulations prohibiting all flavoring of vaping cartridges except tobacco and menthol. In addition to enabling early detection and localization of problems, valid trend data make assessments of the impact of major historical and policy-induced events much less conjectural.

The accurate empirical comparison of subgroup differences has challenged conventional wisdom in some important ways. Accurately characterizing not only differences but also differential changes among subgroups has been an important scientific contribution from MTF. For example, dramatic racial/ethnic differences in cigarette smoking emerged during the life of the study—differences that were almost nonexistent when MTF began in 1975. Further, the misinformed assumption by some that Black students have higher levels of cigarette use than White students has been disconfirmed since the beginning of the study, which shows lower levels of use for Black students in most years, though these differences have been narrowing in recent years as overall use of many substances declined, thus leaving less room for differences.

MTF also monitors a number of factors—peer norms regarding drugs, beliefs about the dangers of substance use, and perceived availability—that help explain the historical changes observed in substance use. Monitoring these factors has made it possible to examine a central policy issue in this nation's efforts to reduce substance use—namely, the relative importance of supply versus demand factors in bringing about some of the observed declines and increases in substance use.[4]

In addition to accurately assessing prevalence and testing explanations of their causes, the integrated MTF study of adolescents and adults has a substantial number of other important research objectives that are addressed in our other publications. These include (a) assessing the long-term impact of historical events such as the COVID-19 pandemic on population levels of

[4] Other major studies have adapted many of these measures including the National Survey on Drug Use and Health (NSDUH) and the European school surveys of substance use in nearly forty European countries (ESPAD), which is largely modeled after MTF.

substance use; (b) helping to determine which young people are at greatest risk for developing various short and long term patterns of substance use; (c) gaining a better understanding of the lifestyles and value orientations associated with various patterns of substance use and monitoring how subgroup differences shift over time; (d) determining the immediate and more general aspects of the social environment associated with substance use; (e) determining how major transitions in the social environment (e.g., entry into military service, civilian employment, college, work, unemployment) or in social roles (e.g., marriage, parenthood) affect changes in substance use; (f) determining the life course trajectories and comorbidity of the various drug-using behaviors from early adolescence through later adulthood and distinguishing such age effects from cohort and period effects; (g) determining the effects of policies such as cannabis legalization, the long term effects of the Master Tobacco Settlement Agreement of 1998, and Tobacco 21 legislation on various types of substance use; and (h) examining possible consequences of using various substances. Readers interested in publications dealing with any of these topics can visit the MTF website at www.monitoringthefuture.org.

The differentiation of age, period, and cohort effects in the use of various substances has been a particularly important contribution of MTF and one for which the study's cohort-sequential research design is especially well suited.

Our efforts over the years and going into the future cover both the epidemiology and etiology of substance use and related risk behaviors. Including both sets of efforts within the same large-scale study—and keeping measurement consistent across historical and developmental time—allows us to provide the nation with scientifically reliable, nationally representative estimates of historical trends of substance use, as well as the developmental trends and possible causes, correlates, and consequences of substance use and other risk behaviors from adolescence through adulthood.

TABLE 1-1

Added and Deleted Prevalence of Use Questions

for 8th, 10th, and 12th Graders

Drug Name	Year in which added	Grades in which added			Year in which dropped	Grades in which dropped		
		8th	10th	12th		8th	10th	12th
Inhalants	1976			X	2025 [h]			X
Hallucinogens	1976			X	2025 [h]			X
	1991	X	X		2025 [h]	X	X	
LSD	1976			X	2025 [h]			X
	1991	X	X		2025 [h]	X	X	
Cocaine	1976			X	2025 [h]			X
	1991	X	X		2025 [h]	X	X	
PCP	1979			X	2014 [c]			X
Stay-Awake Pills	1982			X	2025 [h]	X	X	X
Smokeless Tobacco [a]	1986, 1992			X	1990			X
Crack [b]	1986–1987, 1990			X	2024 [j]	X	X	X
Heroin	1976			X	2025 [h]			X
	1991	X	X		2025 [h]	X	X	
Steroids	1989			X	2025 [h]	X	X	X
Crystal Methamphetamine (Ice)	1990			X	2025 [h]	X	X	X
Been Drunk	1991			X				
Ecstasy (MDMA)	1996	X	X	X	2025 [h]	X	X	X
Rohypnol	1996			X	2002 [h]			X
	1996	X	X		2025 [h]	X	X	
Methamphetamine	1999	X	X	X	2025 [h]	X	X	X
GHB	2000	X	X	X	2012 [i]	X	X	
Ketamine	2000	X	X	X	2012 [i]	X	X	
Androstenedione	2001	X	X	X	2016 [i]	X	X	
Creatine	2001	X	X	X				
Ritalin	2001	X	X	X				
OxyContin	2002	X	X	X				
Vicodin	2002	X	X	X				
Flavored Alcoholic	2003			X				
Beverages (Alcopops) [d]	2004	X	X					
ADHD Stimulant-type drug—prescribed	2005	X	X	X				
ADHD Non-stimulant-type drug—prescribed	2005	X	X	X				
Any Prescription Drug—not prescribed [e]	2005			X				
10+ drinks in a row in past two weeks	2005			X				
	2016	X	X					
15+ drinks in a row in past two weeks	2005			X				
Over-the-counter Cough/Cold Medicines	2006	X	X	X				
Adderall	2009	X	X	X				
Tobacco using a Hookah	2010, 2016			X				
	2016	X	X					
Small Cigars	2010			X				
Energy Drinks	2010	X	X	X				
Energy Shots	2010	X	X	X				
Snus	2011			X				
	2012	X	X					
Large Cigars	2014	X	X	X				
Flavored Little Cigars	2014	X	X	X				
Regular Little Cigars	2014	X	X	X				

(Table continued on next page.)

TABLE 1-1 (cont.)
Added and Deleted Prevalence of Use Questions
for 8th, 10th, and 12th Graders

	Year in which added	Grades in which added			Year in which dropped	Grades in which dropped		
		8th	10th	12th		8th	10th	12th
Vaping Nicotine	2017	X	X	X				
Vaping Cannabis	2017	X	X	X				
Vaping Just Flavoring	2017	X	X	X				
Cannabis Under a Doctor's Orders	2017	X	X	X				
Fentanyl	2020	X	X	X				
CBD	2023	X	X	X				
Nicotine Pouches	2023	X	X	X				
Cannabis Products made from Hemp	2025	X	X	X				
Prescription Weight Loss Drugs--not prescribed	2025	X	X	X				
Prescription Weight Loss Drugs Under Direction of a Medical Professional	2025	X	X	X				
Metatine	2025	X	X	X				
Methaqualone	1975			X	1990/2013			X
Nitrites	1979			X	2010			X
Provigil	2009			X	2012			X
Bidis	2000	X	X		2006	X	X	
	2000			X	2011			X
Kreteks	2001	X	X		2006	X	X	
	2001			X	2015			X
Electronic Vaporizors	2015	X	X	X	2017	X	X	X
Look-Alikes	1982			X	2018			X
Bath Salts (synthetic stimulants)	2012	X	X	X	2019	X	X	X
Powdered Alcohol	2016	X	X	X	2020	X	X	X
Heroin With a Needle	1995	X	X	X	2022	X	X	X
Heroin Without a Needle	1995	X	X	X	2022	X	X	X
JUUL	2019	X	X	X	2022	X	X	X
Salvia	2009			X	2023			X
	2010	X	X		2023	X	X	
Synthetic Marijuana [g]	2011			X	2023	X	X	X
Dissolvable Tobacco Products	2011			X	2023			X
	2012	X	X		2023	X	X	
Nonprescription Diet Pills	1982			X	2023			X
Cocaine other than Crack	1987			X	2024	X	X	X
Delta-8	2023			X	2025			X
	2024	X	X		2025	X	X	
Alcohol Beverages containing Caffeine [f]	2011	X	X	X	2025	X	X	X

Source. The Monitoring the Future study, the University of Michigan.

Note. All prescription-type drugs listed refer to use without a doctor's orders, unless otherwise noted.

[a]Smokeless tobacco was added to one questionnaire form in 1986, dropped in 1990, then added to a different questionnaire form in 1992.

[b]A question on annual use of crack was added to a single form in 1986. The standard triplet questions (lifetime, annual, and 30-day use) were added to two forms in 1987 and to all forms in 1990.

[c]For 12th grade only: Lifetime and 30-day prevalence of use questions were dropped in 2002. A question on annual use remains in the study.

[d]For 12th grade only: A question on annual use of Alcopops was added to a single form in 2003. In 2004 it was replaced by the standard triplet questions (lifetime, annual, and 30-day use) about use of flavored alcoholic beverages.

[e]For 12th grade only: The use of any prescription drug includes use of any of the following: prescription stimulant medications (amphetamines), prescription sleeping medications (sedatives), prescription opioid medications, or prescription anti-anxiety medications (tranquilizers) …without a doctor telling you to use them.

[f]For all grades: In 2012 the alcoholic beverages containing caffeine question text was changed. See text for details.

[g]For all grades: Questions on the annual use of synthetic marijuana were added to the survey in the year specified in the table.

[h]Lifetime and 30-day prevalence of use questions were dropped. A question on annual use remains in the study.

[i]Only 8th and 10th grade questions were dropped from the study.

CHAPTER 2 – Overview of Key Findings in 2025

MTF, now having completed its 51st year of data collection, has become one of the nation's most relied upon scientific sources of valid information on trends in use of licit and illicit psychoactive drugs by U.S. adolescents, college students, young adults, and adults up to age 65. During the last five decades, the study has tracked and reported on the use of an ever-growing array of such substances in these populations of adolescents and adults.

The MTF annual reports are one of the primary mechanisms through which the epidemiological findings are reported. Findings from the inception of the study in 1975 through 2025 are included—the results of 51 national in-school surveys and 49 national follow-up surveys.

MTF has conducted in-school surveys of nationally representative samples of (a) 12th grade students each year since 1975 and (b) 8th and 10th grade students each year since 1991. In addition, beginning with the class of 1976, the study has conducted follow-up surveys of representative subsamples of the respondents from each previously participating 12th grade class. These follow-up surveys now continue well into adulthood, currently up to age 65. This annual report focuses on the results from the in-school surveys of 8th, 10th, and 12th grade students; a companion report on the panel study results[5] focuses on the follow-up surveys from ages 19 to 65.

MTF is designed to detect age, period, and cohort effects in substance use and related attitudes. Age effects are similar changes at similar ages seen across multiple class cohorts; they are common during adolescence. An example of an age effect is that levels of substance use generally increase as adolescents age, a finding seen in all MTF cohorts and in all historical periods. Period effects are changes that affect multiple age groups simultaneously (in this case, all three grades under study—8, 10, and 12). An example of a period effect is the marked decrease in adolescent substance use during the pandemic onset and the associated social distancing policies from 2020 to 2021, a decrease that occurred in all grades. Cohort effects are substance use behaviors or attitudes that distinguish a class cohort from others that came before or after them and are maintained as the cohort ages. An example of a cohort effect is that youth cohorts in the late 1990s had increased levels of cigarette smoking compared to the cohorts that came before and after them, and their elevated levels persisted as they aged.

Below, we summarize key findings for use of various substances by U.S. 8th, 10th, and 12th graders in 2025, and full details for all substance use trends follow in Chapter 5. In addition,

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[5] Patrick, M. E., Miech, R. A., Johnston, L. D., & O'Malley, P. M. (2025). Monitoring the Future Panel Study annual report: National data on substance use among adults ages 19 to 65, 1976–2024. Monitoring the Future Monograph Series. Ann Arbor, MI: Institute for Social Research, University of Michigan. Prior year versions are available on the MTF website. An updated version of this report that includes data from 2025—as well as results from respondents age 65—will be available on the MTF website in mid-August.

the text below also refers to analyses for all three grades combined. These grade-combined results will appear in this report's Appendix C when the full report is released in the summer of 2026.

Table 2-1 presents the demographic distribution of the 2025 sample. In response to the question "What is your sex?" in all grades about half reported "female" and about half reported "male". The percent of students who reported that they planned to attend a four-year college in the future was 82% in 8th grade, 80% in 10th grade, and 73% in 12th grade. In all grades, most students lived in the South, followed by the West, the Midwest, and then the Northeast. In all grades, 6% to 7% of students attended schools in rural areas. In 8th through 12th grades, the percentage attending schools in urban areas ranged from 30% to 33%, and the percentage attending schools in suburban areas ranged from 60% to 64%. Between 57% and 59% of students in the three grades reported that at least one of their parents had a college degree. About 15% of students identified as Black or African American across the three grades; the percentage Hispanic was highest in 8th grade at 41% and decreased to 34% and 29% in 10th and 12th grade, respectively, while the percentage who identified as White increased with grade level, at 29% in 8th grade, 37% in 10th grade, and 43% in 12th grade.

The survey results divide cleanly into the time periods before and after the onset of the COVID-19 pandemic. All surveys in 2020 were completed before March 15, when national social distancing policies were enacted and data collection was halted due to pandemic concerns. Consequently, results from 2020 and previous years are pre-pandemic, while results from 2021 and later took place after the onset of the pandemic and the associated national response.

Executive Summary

Drug Abstention At Record Levels in 2025, Further Increasing the Substantial Gains That Took Place During the Pandemic

Abstention from substance use is indicated by no use of alcohol, cannabis, or nicotine by vaping or by cigarettes. In 2025, it continued to climb to historic high levels in 8th and 10th grade, although the one-year increases from 2024 were not statistically significant. The percentage of students who did not use these drugs during the past 30 days in 2025 was a record high 91% in 8th grade in 2025 (compared to 69% when first tracked in 1991), and a record high 82% in 10th grade (compared to 51% when first tracked in 1991). In 12th grade, the 66% level of past 30-day abstention in 2025 was one percentage point lower than the record high of 67% set the previous year (the difference was not statistically significant) and compares to 24% when first tracked in 1976.

Lifetime abstention followed the same trends at past 30-day abstention, although at lower overall levels. In 8th grade, the level of lifetime abstention was 73% in 2025, which compares to 25% in 1991. In 10th grade, the levels were 61% in 2025 and 13% in 1991. In 12th grade, they were 41% in 2025 and 5% in 1976. The one-year differences in lifetime abstention from 2024 to 2025 were not statistically significant.

Whether the lowered levels of abstention after the pandemic would be long lasting has been a question with substantial policy and research implications. It is possible that the factors that disrupted and lowered drug use during the pandemic from 2020 to 2021 resulted in permanent change. This could occur if the pandemic disrupted both school/community peer groups that encourage substance use as well as the processes by which these groups perpetuate themselves by recruiting new members. Alternatively, substance use could have quickly rebounded to pre-pandemic levels when students returned to school buildings in 2022 and afterwards, if pre-pandemic patterns of social interaction and drug use rapidly re-established. The 2025 results indicate that the lowered levels of student abstention after the pandemic onset are lasting and, in fact, continue to drop even further.

Use of Nicotine Pouches (e.g., "Zyn") Continues Its Upward Trend Among High School Students in 2025

Nicotine pouches are small, white pouches that contain nicotine that users place in their mouth. They are different from other smokeless tobacco products such as snus, dip, or chew because they do not contain any ground tobacco leaf. Use is readily concealable because users do not expectorate juice.

In 2025, lifetime use increased in all grades, although not significantly. From 2024 to 2025, it increased from 7% to 10% in 12th grade, from 4% to 5% in 10th grade, and from 0.8% to 1.4% in 8th grade.

Nicotine pouches have generated much media attention amid concerns that adolescent use may grow rapidly, often drawing comparisons to the rise of nicotine vaping from 2017 to 2019. As of 2025, prevalence remains relatively low at 7% in 12th grade for past 12-month use (which compares to 20% for nicotine vaping). Similar oral nicotine products have made substantial inroads among students in the past (e.g., smokeless tobacco reached a lifetime prevalence of 32% in the early 1990s), suggesting that prevalence of nicotine pouch use has a potentially high ceiling.

Three Most Common Substances Used by Students in 2025 Show No Sign of Post-Pandemic Rebound

Alcohol use, cannabis use, and nicotine vaping trended downward in 2025 in 12th grade, in 10th grade, and in 8th grade for past 12-month use, although none of these one-year declines were statistically significant.

For alcohol, the downward trend in all three grades was not statistically significant but continued a long standing decline that began in the late 1990s, more than two decades ago. The percentage of students who used any alcohol in the past 12 months in 2025 was 41% in 12th grade (compared to 75% in 1997), 24% in 10th grade (compared to 65% in 1997), and 11% in 8th grade (compared to 46% in 1997). These overall declines are evident in specific survey questions that ask about use of beer, wine, and liquor.

For cannabis, lowered levels of use are a more recent development. In all grades, the percentage that used marijuana in the past 12 months hovered within a tight window of just a few percentage points in the twenty years from 2000 to 2020. The results in 2021, the first year measured after the pandemic onset, showed that large and substantial declines in cannabis use took place in all grades. In 12th and 10th grades, these declines have since continued, and past 12-month use in 2025 was at its lowest level in the past three decades, at 26% and 16%, respectively. In 8th grade, the percentage in 2025 was 8%, where it has hovered for the past four years after dropping from a pre-pandemic level of 11% in 2020.

For nicotine vaping, the downward trending from 2024 to 2025, although not statistically significant, continues a 180-degree turn centered at the pandemic onset. Prior to the pandemic, use levels surged from 2017 to 2019 and then held steady in 2020. Large declines took place during the pandemic and have since continued to the point where the 2025 levels for past 12-month use are close to where they started in 2017, the first year that questions on nicotine vaping were included on the survey. Specifically, in 2025 past 12-month use was 20% in 12th grade (compared to 35% in 2020 and 19% in 2017), 14% in 10th grade (compared to 31% in 2020 and 16% in 2017), and 9% in 8th grade (compared to 17% in 2020 and 10% in 2017).

Adolescent Use of Cocaine and Heroin Increase

Heroin use in the past 12 months significantly increased in all three grades from 2024 to 2025. In 8th grade, the increase was from 0.2% to 0.5%, in 10th grade from 0.1% to 0.5%, and in 12th grade from 0.2% to 0.9%.

Cocaine use also increased, and these increases were statistically significant in 8th and 12th grades. In 8th grade, the increase was from 0.2% to 0.6%, in 10th grade from 0.5% to 0.7% (increase not statistically significant), and in 12th grade from 0.9% to 1.4%.

While use of these highly addictive drugs remains low—with prevalence less than 2% in all grades—the increases are concerning and warrant close monitoring.

TABLE 2-1

Demographic Distribution of MTF Sample

8th, 10th, and 12th Graders, 2025

	Grade		
	8th	10th	12th
Sex			
Male	49.9	50.1	50.6
Female	50.1	49.9	49.4
College Plans			
None or under 4 years	17.9	20.4	26.8
Complete 4-year degree [a]	82.1	79.6	73.2
Region			
Northeast	16.2	16.7	17.0
Midwest	20.5	20.5	21.6
South	39.4	39.2	37.5
West	23.9	23.6	23.9
Population Density at School Location			
Urban	33.3	31.4	30.1
Suburban/Town	60.0	61.9	63.8
Rural	6.7	6.7	6.1
Parental Education			
No parent has college degree	42.1	41.4	42.8
Any parent has college degree	57.9	58.6	57.2
Race/Ethnicity			
Hispanic [b]	41.4	34.2	29.0
Non-Hispanic			
American Indian or Alaska Native	0.6	0.9	0.5
Asian American	3.3	4.8	4.8
Black or African American	17.4	14.5	14.9
Middle Eastern	0.9	1.0	0.8
Native Hawaiian or Pacific Islander	0.3	0.4	0.2
White	28.9	36.9	43.3
Marked More than One Race [d]	7.2	7.3	6.5

[a]Respondents who indicate they “definitely will” or “probably will” graduate from a four-year college program.

[b]Hispanic indicated by students who marked the response "Mexican American or Chicano," "Cuban American," "Puerto Rican," or "Other Hispanic or Latino."

[d]Students who marked more than one non-Hispanic category.

CHAPTER 3 – Study Design and Procedures

MTF incorporates several survey designs into one study, yielding analytic power beyond the sum of its component parts. The components include cross-sectional studies, repeated cross-sectional studies, and panel studies of individual cohorts and sets of cohorts. In this chapter, we discuss the research design for the nationally representative, annually repeated cross-sectional studies of 8th, 10th, and 12th grade students. For details on the research design and results of the panels, see the MTF Longitudinal Panel annual report on adults ages 19 to 65.[6]

Sampling Procedures

Each spring, the project has surveyed separate, U.S. nationally representative samples of 8th, 10th, and 12th grade students across the contiguous United States. These surveys have been ongoing since 1991 for 8th and 10th grade students and since 1975 for 12th grade students. All three grades are sampled independently, with no school representing more than one grade, resulting in three separate and independent, nationally representative samples each year.

MTF currently uses a two-stage stratified random sampling procedure[7] as follows:

Stage 1: Schools

In each grade schools are randomly drawn from 70 grade-specific strata. These strata group each school in the contiguous 48 U.S. states on the basis of its (a) location in one of the nine U.S. Census Divisions; (b) size, categorized as large, medium, or small (cutoffs listed below); and (c) urbanicity, defined as rural, suburban, or urban, using the National Center for Educational Statistics criteria.

In each grade, up to six schools are randomly drawn from within each of these 70 strata, with more schools allocated for selection in strata with larger numbers of total students. Each school in a stratum has an equal selection probability, which is the number of schools selected divided by the total number of schools in the stratum.

Stage 2: Students

The second stage is selection of students at the target grade within each selected school. The usual procedure is to include all of them in the data collection when feasible. In some cases, a subset of students is selected either by randomly sampling classrooms or by some other random method that is convenient for the school and judged to be unbiased. In this stage,

[6] Patrick, M. E., Miech, R. A., Johnston, L. D., & O'Malley, P. M. (2025). Monitoring the Future Panel Study annual report: National data on substance use among adults ages 19 to 65, 1976–2024. Monitoring the Future Monograph Series. Ann Arbor, MI: Institute for Social Research, University of Michigan.

[7] Kish, L. (1965). *Survey sampling*. Wiley.

students are assigned a selection probability accordingly; e.g., students in schools where all students are selected have a selection probability of one, and students in schools where a random half is selected have a selection probability of 0.5.

A sample weight is assigned to each participant that is based on the inverse of the multiple of the two selection probabilities from these two stages. Analyses of samples using this design produce nationally representative estimates and correct standard errors when using statistical algorithms that take into account this sampling weight as well as the clustering of students within schools and by strata.

The Three-Stage Stratified Sampling Design From 1975–2023

Prior to 2024, MTF used a three-stage stratified random sampling procedure that started with random selection of geographic areas. The contiguous U.S. was divided into about 100 geographic strata defined on the basis of wide ranging geographical coverage and urbanicity, per the University of Michigan's Survey Research Center (SRC) national sample design (78 strata in 1975–1985, 84 in 1986–1993, and 108 in 1994–2023). A subarea within each stratum was selected and assigned a selection probability proportionate to its size in the stratum. Schools were then selected within the randomly selected subarea, with school selection probability proportionate to the size of the target grade.[8] The third stage was student selection, which used the same procedure described above for the current, two-stage sampling design. The probability weight for each student in the three-stage design was defined as the inverse of the multiple of the three selection probabilities from these three stages.

The three-stage sampling design served MTF well but had become dated. The groupings of 3,000+ U.S. counties that made up the 108 strata used from 1994 to 2023 were based on the 1990 census and the definition of metropolitan statistical areas (MSAs) at that time. Updating the number of strata and/or the boundaries that define them is a challenge because the criteria to qualify as a MSA changed after 1990. In addition, strata sizes were defined on the basis of household counts, and not on the more directly-relevant number of 8th, 10th, and 12th grade students. MTF worked with the professional sampling statisticians at SRC for a period of three years to develop the current, two-stage sampling procedure implemented in 2024.

Number of Years in the MTF Study

Each school is initially invited to participate for two years, and starting in 2024 at the end of the second year, each school is invited to participate for one additional year. Almost all participating schools continue for a second and third year, and substitute schools are randomly selected from the sampling frame for the few that do not. Participation is staggered so that about one-third of the

[8] Kish, L. (1965). *Survey sampling* (p. 220). Wiley.

sample is newly recruited each year, while the rest of the sample continues into its second or third year. Prior to 2024, school participation was for a two-year, staggered period so that half of the schools were newly recruited each year.

Post-Stratification

Starting in 2020, to address the smaller sample size in that year as a result of the COVID-19 pandemic and associated greater variability, the analyses were additionally weighted by region of the country (West, Midwest, Northeast, and South) and, within each region, by metropolitan/non-metropolitan status. The purpose of this weighting is to ensure that the impact of these two factors on the analysis results is proportional to their size in the nation. Substance use levels and other demographics did not inform the sampling weights. This same weighting procedure was used for the 8th and 10th grade students. This post-stratification weighting was continued in all subsequent years for all three grades.

School Size

Schools with less than 25 students in 10th and 12th grade, and less than 20 students in 8th grade, are excluded from the sampling frame. In each grade, this exclusion omits less than 3% of total students nationally. Cutoffs for small, medium, and large schools vary by grade. For public schools, the 12th grade cutoffs are 25–75, 76–200, and 201+, respectively. For 10th grade, the cutoffs are 25–75, 76–225, and 226+, respectively; and for 8th grade, they are 20–65, 66–175, and 176+. For private schools, only two school sizes are used for sampling, with cutoffs of 25–60 and 61+ in both 12th and 10th grade and 20–35 and 36+ in 8th grade.

School Recruiting Procedures and Survey Administration

Early during the fall semester, a letter inviting participation is sent by MTF to the principal of each randomly selected school. The letter and accompanying materials describe the study. The letter also explains what participation would mean for the school, and it indicates that we will be calling within a few days to answer questions and determine their intention. A staff member follows up with a telephone call, deals with any questions or problems (as is often necessary), and makes arrangements to contact and seek permission from any other school officials that are required (such as at the school district).

Securing the cooperation of selected schools is often a long and arduous process. No school is an isolated unit; each is part of a larger local school district or system. Frequently, approval for a school's participation in the survey is required from a school or district official in addition to the principal of the selected school. In some cases, this is the superintendent or, particularly in the larger systems, an official (or review committee) whose approval is required for all external research conducted in the system. Further complicating the process is the considerable variation

in local rules governing research conducted in schools. State legislatures, school boards, teacher associations, and parent associations all may have a voice in whether a school participates.

The standard procedure for recruiting a school involves an initial telephone contact with the principal after he or she has received a letter of invitation. If a school refuses, the refusal often occurs at this point. The reasons most commonly given are objections to using student time for surveys, over-participation in surveys that year, or some temporary crisis or disruption in the system that year (e.g., mandatory testing, a teacher strike, budgetary difficulties, a disruptive event). Other less commonly given reasons include disapproval due to survey content and concerns about adverse parental reaction to a survey dealing with social issues. If refusals occur at higher levels, such as the school district, the reasons given tend to be the same as those listed above.

Once the project staff member obtains the school's agreement to participate, he or she makes arrangements by phone or email for selecting a random sample of students in the grade in question (when the school is large) and for administering the questionnaires. An SRC representative is assigned to carry out the administration, and a specific date for the survey is mutually agreed upon.

Pre-Administration Arrangements

The SRC representative communicates with the participating school about two weeks before the actual administration date to meet the teachers whose classes will be affected. The representative provides a brochure describing the study, a brief set of guidelines about the questionnaire administration, and a supply of flyers to be distributed to the students a week to 10 days before the questionnaire administration. The guidelines to the teachers provide a suggested announcement to students when distributing the flyers.

The students' first acquaintance with the study usually comes via parents because two weeks prior to the administration date, a first-class letter is sent to the parents of each sampled student, along with an informational flyer about the study. These materials make clear that participation in the study is voluntary. (The project provides all necessary materials for this mailing, including postage, but the schools provide parents' names and addresses, usually on labels that are applied by and at the school.) Those parents choosing not to have their child participate in the study are asked to sign a form included at the bottom of the letter, and return it to a specified person at the school (a procedure termed "active parental *dissent*"). Some schools require that parental consent be obtained in writing before students can participate ("active parental *consent*"). In all cases, the project follows the school's requirements.

Later, when teachers announce the study in the classroom, they distribute additional copies of the informational flyer to the students. The teachers are asked to stress that the questionnaires used in the survey are not tests and that there are no right or wrong answers. The flyer tells students that they will be invited to participate in the study, points out that their participation is strictly voluntary,

and stresses confidentiality (including a reference to the fact that the Monitoring the Future project's grant of confidentiality from the Department of Justice allows us to protect their answers). The flyer also presents positive reasons for participation (e.g., the topics are interesting, the data will be important, and results will be widely distributed).

Questionnaire Administration

The local representatives of the SRC and their assistants conduct the questionnaire administration in each school, following standardized procedures detailed in a project instruction manual. The questionnaire administrations take place in classrooms during normal class periods whenever possible; however, circumstances in some schools require the use of larger group administrations. Teachers are asked only to introduce the SRC staff members, provide enrollment and attendance information, and remain present in order to help guarantee an orderly atmosphere for the survey. Teachers are urged to avoid walking around the room, lest students feel that their answers might be observed.

The actual process of completing the questionnaires is quite straightforward. Participants fill out a web-based questionnaire on their personal electronic device (in rare cases when students do not have personal electronic devices, MTF provides electronic tablets for students to complete the survey). Prior to 2019, students received sharpened pencils to mark their answers on paper surveys. Most participants can finish within a 45-minute class period; for those who cannot, an effort is made to provide a few minutes of additional time.

Questionnaire Organization and Format

Electronic Survey Mode

MTF uses an electronic questionnaire format. Students in 8th, 10th, and 12th grades complete a web-based questionnaire on their own electronic devices during class time since 2021. In both 2019 and 2020, students also completed an electronic questionnaire that was connected to the internet, although they completed the survey on electronic tablets that MTF brought to schools. It is no longer necessary for MTF to bring tablets to schools because practically all schools now have internet access, and almost all students have electronic devices to complete the MTF questionnaires. In rare cases when these resources are not available at a school, MTF brings electronic devices for students, as well as a mobile server to collect their survey responses.

Multiple Questionnaire Forms

The school surveys presently use multiple questionnaire forms, with four forms in 8th and 10th grade and six forms in 12th grade; follow-up survey at ages 19–30 use forms matched to the form the student completed in 12th grade. The use of multiple forms is made possible by the large number of students we survey each year and allows us to include many more questions than can be

covered in a single questionnaire requiring only one class period to complete. Keeping the survey administration within a single class period minimizes the disruption of the school's schedule and encourages a higher proportion of schools to participate. In addition, a 45- to 50-minute-long questionnaire has a better chance of maintaining participant involvement than a longer one.

The use of multiple forms adds complexity at the analysis stage. Because not all variables in the study are measured on the same set of participants, not all can be included in the same multivariable analyses. However, we believe this problem is limited. We made extensive efforts during the initial questionnaire design to minimize this problem by: (a) including questions on the most common drugs in all questionnaire forms, (b) including the most obvious control or moderating variables in all questionnaire forms (these include measures of demographic and family background characteristics, plus certain measures of school and work status), and (c) including in the same questionnaire factors that we believed *a priori* should be examined together.

We will not review here the differences in questionnaire content from one form to another; the complete content of the school surveys for 8th and 10th grade students is presented here, for 12th grade students here.

Number of Questionnaire Forms by Grade

The 12th grade questionnaires consisted of five forms from 1975 to 1988, and then six forms in 1989 and the years thereafter. The sixth form was added to extend the number of variables that appeared together on the same form, and thereby facilitated analysis of their association. Prior to 1989, some questions such as perceived risk of harm and availability of drugs appeared on only one form. The sixth form was specifically designed to include questions such as these with other form-limited questions, as well as the core drug questions.

The 8th and 10th grade questionnaires have fewer forms (four) than the 12th grade questionnaires (six). The primary consideration leading to fewer forms was the large amount of material judged essential for inclusion in all forms, leaving rather little space for form-specific items. Our decision for fewer questionnaire items, coupled with the need to cover all of our basic measures of drug use and demographic material, left us with less space available for other material. It was also the case that some question sets were deemed most appropriate for the older students, given that their greater maturity may result in more reasoned and informed answers.

Two forms comprised the 8th and 10th grade questionnaire from 1991 to 1996. In 1997, we decided that it was important to increase coverage of tobacco-related behaviors, in light of the major changes occurring in the nation regarding youth and tobacco. Accordingly, because the two existing forms were already too long for added material, we created two new forms. The strategy was to add the new tobacco-related material (questions about ease of access to cigarettes, brand smoked, etc.) to each of the new forms, retaining most but not all of the original material from each of the original forms. Each of the two original (unchanged) forms was administered to a random

one-third of participants from 1997 on, while each of the two new forms was administered to one-sixth. Thus, the new material related to tobacco was available from one-third (one-sixth times two) of the sample, while original material was available from the entire sample (in the case of material that was retained in all forms), or from one-third (in the case of material that was retained in one of the original forms but not included in the new forms).

Questionnaire Length and Difficulty by Grade

Nearly all of the items used in the original 8th and 10th grade questionnaire forms were selected (usually unchanged) from among the much larger set of items in the 12th grade forms. In general, most of the monitored variables having to do with drugs (own use, friends' use, perceived risks, disapproval, perceived availability, etc.) are included (representing a bit more than half of the total questionnaire space), along with most of the background variables and measures of educational and employment experiences. Coverage of the other monitored variables, for reasons discussed above, is considerably more limited in the 8th and 10th grade forms.

We recognized that some students in 8th grade (and, to a lesser extent, 10th grade) would be more limited than 12th grade students in their reading skills and thus would require questionnaires a bit shorter and with lower difficulty levels. We aimed for 10–20% less questionnaire material (i.e., 10–20% fewer items) in the 8th and 10th grade questionnaires than in the 12th grade questionnaires. We also decided that some items in the 12th grade surveys that asked relatively complex questions would be above the difficulty level of some 8th and 10th grade readers and thus did not consider those questions for inclusion.

Procedures for Assuring Voluntary Participation and Protection of Confidentiality

Any study that relies on voluntary reporting of drug use must have procedures to guarantee the confidentiality of such reports. Participants should adequately understand these procedures so that they are comfortable providing honest answers and so that the voluntary nature of their participation is clear.

The flyers about the project distributed in the weeks before its administration emphasize confidentiality and voluntary participation. These themes are also noted in the oral instructions at the start of the actual questionnaire administration. Each participating student is instructed to read the preamble to the questionnaire, which stresses the importance and value of the study, notes that answers will be kept strictly confidential, and makes this further statement about voluntary participation: "This study is completely voluntary. If there is any question you or your parents would find objectionable for any reason, just leave it blank." The instructions to 12th grade students then point out that in a few months all participants will receive a mailed summary of nationwide results and that after a year some students will get a follow-up questionnaire.

The cover message explains that these are the reasons for asking that name and address be written on a special form that 12th grade students receive in class and hand in separately. The information on this form and student answers are linked by encrypted numbers that can only be matched by use of a special computer file at the University of Michigan.

All of the above procedures are designed to fully protect the rights of the research subjects. These procedures are carefully reviewed each year and approved by the relevant University of Michigan Institutional Review Board.

Transition From Paper-and-Pencil to Electronic Questionnaires

2019 Estimates

MTF conducted a randomized controlled experiment in 2019, in which a randomly selected half of schools administered the student surveys with electronic tablets connected to the internet and the other half with traditional paper-and-pencil questionnaires. The use of two different modes in 2019 raised the possibility that differences in 2019 estimates in comparison to other years may have stemmed in part from survey mode effects. We examined this possibility in detail, and for drug prevalence estimates, we found no evidence of mode effects.[9] Consequently, for all 2019 drug prevalence estimates, we report results from the pooled sample of paper-and-pencil and electronic tablet responses.

2020 Estimates

In-school data collection in 2020 was halted on March 15, 2020 as a result of the COVID-19 pandemic. This halt resulted in a sample size about one-quarter the size of a typical data collection. The 2020 in-school data collection was also unique because it was the first year all students recorded their answers on electronic tablets, which MTF brought to the schools. (The previous year a randomly selected half of schools used electronic tablets.)

Detailed analyses of the 2020 results indicated that the curtailed MTF 2020 sample did not differ significantly from the nationally representative results from previous years in terms of sociodemographics and prevalence of use of substances that had stable prevalence in recent years.[10]

2021 Estimates and Beyond

[9] Miech, R. A., Couper, M. P., Heeringa, S. G., & Patrick, M. E. (2020). The impact of survey mode on US national estimates of adolescent drug prevalence: Results from a randomized controlled study. *Addiction, 116*(5), 1144–1151.

[10] Miech, R. A., Leventhal, A., Johnston, L., O'Malley, P. M., Patrick, M. E., & Barrington-Trimis, J. (2021). Trends in Use and Perceptions of Nicotine Vaping Among US Youth From 2017 to 2020. *JAMA Pediatrics, 175*(2), 185–190.

The year 2021 was the first full school year affected by the COVID-19 pandemic and its associated social distancing policies. Anticipating that many students would be schooling remotely, MTF switched to an online questionnaire that students completed on their own electronic devices, either at school or at home (if schooling remotely).

Because the pandemic came on suddenly and unexpectedly, it was not possible for MTF to conduct a randomized-controlled test of the web-survey mode in comparison to electronic tablets. For two reasons we expect that such a test would have shown little to no differences in drug prevalence across the two modes, given that they are similar and both involve electronic devices connected to the internet. First, a 2019 MTF experiment that tested a much more substantial mode difference found no significant effect on drug prevalence estimates. In the 2019 administration, MTF surveyed a randomly selected half of the schools using electronic tablets and the other half using paper-and-pencil questionnaires and found no mode differences in drug use prevalence.[11] Second, 2021 trends were similar in analyses that used all participants and in analyses that restricted the analysis pool to the 46% of students who had all their classes in their school building, which suggests that at-home and in-school administrations produced similar results (analyses not shown here). Consequently, in this report we directly compare drug prevalence estimates in 2022 and 2021 with previous years.

However, we cannot rule out possible mode effects for some of the attitude and belief estimates after 2020. Consequently, we do not directly compare these results from 2022 and later years with results from 2020 and beforehand. We note that our cautiousness in comparing to previous years does not necessarily mean that the results are not comparable, but only that comparability is not known at this point.

Representativeness and Sample Accuracy

MTF uses rigorous scientific sampling procedures so that its results are nationally representative. This means that every year the estimates MTF produces based on its sample of 25,000 to 50,000 8th, 10th, and 12th graders are the same as we would obtain if we had surveyed all ~12 million of them, give or take a few percentage points. This sampling approach allows MTF to quickly and accurately produce national data to track trends in teen drug use, identify new substances gaining popularity among adolescents, and assess how well policies and programs are working to prevent youth drug use.

Three primary criteria are central to evaluating the national representativeness of the MTF sample. The first is the geographic spread of the MTF schools across the contiguous United States. If their distribution were systematically incomplete—such that schools from particular regions were

[11] Miech, R. A., Couper, M. P., Heeringa, S. G., & Patrick, M. E. (2021). The impact of survey mode on US national estimates of adolescent drug prevalence: results from a randomized controlled study. *Addiction*, *116*(5), 1144–1151.

consistently omitted—the resulting sample could not adequately represent the U.S. student population.

Table 3-2 summarizes the geographic spread of MTF schools by survey year. The analysis is based on MTF's stratified multistage sampling design, which partitions all eligible U.S. schools into 70 primary sampling strata distributed across the country (the number of strata differed in earlier years, as noted in the table). In principle, each survey year would include at least one surveyed school within each stratum, thereby indicating wide spread across the United States.

As shown in the table, in virtually all years more than 95 percent of the MTF strata contained at least one participating school. The principal exception to the wide coverage occurred in 2020, when field operations were suspended prematurely due to the COVID-19 pandemic. These findings indicate that MTF achieved an excellent level of geographic coverage, satisfying a necessary—though not by itself sufficient—condition for national representativeness of the school-based sample.

A second criterion for the MTF sample to be representative is that replacement schools do not bias the MTF estimates. Replacement schools are selected by the MTF sampling statistician to substitute for any of the original, randomly selected schools that declined to participate in the MTF survey. Importantly, the decision to participate is made by principals or other school administrators—not by students—so school-level nonparticipation does not reflect student self-selection. Each replacement school is chosen to be in close geographic proximity to the original school and to match on demographic characteristics. Bias would be introduced if estimates derived from replacement schools were substantially higher or lower than those from the originally selected schools.

Analyses show little evidence of such bias. Differences in substance use prevalence between the set of participating original schools and the set of participating replacement schools are minimal. For the combined years 2022–2025, when pandemic-related social distancing policies do not complicate comparisons, prevalence estimates for the three most commonly used substances were highly similar across the two groups of schools. For past 12-month use, prevalence in original versus replacement schools was 29% versus 28% for alcohol, 18% versus 17% for cannabis, and 17% versus 16% for nicotine vaping, and none of these differences were statistically significant. Earlier versions of this annual report also document similarly small differences between original and replacement schools in prior years.

A third criterion for MTF sample to be representative is high student response rates, which reduce the potential for nonresponse bias. Table 3-1 documents high student response rate levels for each year of the survey by grade since 1975. In 2025, completed questionnaires were obtained from 86% of all sampled students in 8th grade, 81% in 10th grade, and 77% in 12th grade.

Students who did not show up to school on the day of the survey, referred to as "absenteeism", account for most of the nonresponse. Because students with fairly high rates of absenteeism also report above average rates of drug use, some degree of bias is introduced into the prevalence estimates by missing the absentees. Much of that bias could be corrected through the use of special weighting based on the self-reported absentee rates of the students who did respond; however, we decided not to use such a weighting procedure because the bias in overall drug use estimates is quite small, whereas the necessary weighting procedures would have introduced greater sampling variance in the estimates. Appendix A in this report illustrates the changes in trend and prevalence estimates that would result if corrections for absentees had been included.

Sampling Accuracy of the Estimates

Confidence intervals (95%) are provided in Chapter 4 for lifetime, 12-month, 30-day, and daily prevalence of use for 8th, 10th, and 12th grade students. For example, lifetime prevalence of cannabis use for 12th graders could theoretically vary by up to ± 2.8 percentage points. The interpretation of this 95% confidence interval is that if we took a large number of samples of this size from the universe of all schools containing 12th graders in the contiguous United States, 95 times out of 100 the sample would yield a result that would be less than 2.8 percentage points divergent from the result we would get from a comparable massive survey of *all* ~4.4 million 12th graders in *all* schools. Confidence intervals for the other prevalence periods (last 12 months, last 30 days, and current daily use) are generally smaller than those for lifetime use. In general, confidence intervals for 8th and 10th graders are very similar to those observed for 12th graders. Some drugs that are measured on only one or two questionnaire forms will have larger confidence intervals because they are based on smaller sample sizes.

In 2020, as a result of the smaller sample size, these confidence intervals were wider than they had been in previous years, when confidence intervals averaged ± 1.4% for lifetime prevalence across a wide variety of drug classes. Because of these larger confidence intervals in 2020, the minimum change in prevalence from 2019 to 2020 that was detectable as statistically significant was larger in 2020 than it was in earlier years.

In 2021 and subsequent years sample sizes, and consequently confidence intervals, were relatively closer to their typical size.

The Appendix C of this annual report published in 2017 and earlier years reported information on how to calculate confidence intervals for point estimates and how to calculate statistics that test the significance of changes over time or of differences between subgroups. This appendix is no longer necessary with the opening of MTF's remote portal at the National Addiction and Health Data Archive Program, which now allows researchers to compute such statistics directly using MTF weights and clustering variables. Interested readers may refer to earlier publications of this

annual report for the information it provides about design effects and how their computational influence varies by substance (e.g., see Appendix C here).

Validity of Measures of Self-Reported Drug Use

Are sensitive behaviors such as drug use honestly reported? Like most studies dealing with sensitive behaviors, we have no direct, totally objective validation of the present measures; however, the considerable amount of existing inferential evidence strongly suggests that the MTF self-report questions produce largely valid data. Here we briefly summarize this evidence.[12]

First, using a three-wave panel design, we established that the various measures of self-reported drug use have a high degree of reliability—a necessary condition for validity.[13] In essence, respondents were highly consistent in their self-reported behaviors from modal ages 18 to 22. Second, we found a high degree of consistency among logically related measures of use within the same questionnaire administration. Third, the proportion of 12th graders reporting some illicit drug use has reached two-thirds of all respondents in peak years and over 80% in some follow-up years, constituting *prima facie* evidence that the degree of underreporting must be very limited. Fourth, 12th graders' reports of use by their unnamed friends—about whom they would presumably have considerably less reason to conceal information about use—have been highly consistent with self-reported use in the aggregate, both in terms of prevalence and trends in prevalence, as discussed in Chapter 9. Fifth, we have found self-reported drug use to relate in consistent and expected ways based on theory to a number of other attitudes, behaviors, beliefs, and social situations—strong evidence of "construct validity". Sixth, the missing data levels for the self-reported use questions are only very slightly higher than for the preceding nonsensitive questions, in spite of explicit instructions to respondents immediately preceding the drug section to leave blank those questions they feel they cannot answer honestly. Seventh, an examination of consistency in reporting of lifetime use conducted on the longitudinal panels of graduating seniors found quite low levels of recanting of earlier reported use of the illegal drugs.[14] There was a higher level of recanting for the prescription drugs, suggesting that adolescents may actually overestimate their use of some drugs because of misinformation about definitions but that this knowledge improves as they get older.

[12] A more complete discussion may be found in: Johnston, L. D. & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Kozel, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85 1402). Washington, DC: U.S. Government Printing Office; Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975–1983* (DHHS (ADM) 85 1374). Washington, DC: U.S. Government Printing Office; Wallace, J. M., Jr., & Bachman, J. G. (1993). Validity of self-reports in student-based studies on minority populations: Issues and concerns. In M. de LaRosa (Ed.), *Drug abuse among minority youth: Advances in research and methodology* (NIDA Research Monograph No. 130). Rockville, MD: National Institute on Drug Abuse.

[13] O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions, 18*, 805–824.

[14] Johnston, L. D. & O'Malley, P. M. (1997). The recanting of earlier reported drug use by young adults. In L. Harrison (Ed.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (NIDA Research Monograph No. 167, pp. 59–80). Rockville, MD: National Institute on Drug Abuse.

Finally, the great majority of respondents, when asked, say they would answer such questions honestly if they are or were users.[15]

As an additional step to assure the validity of the data, we check for logical inconsistencies in the answers to the triplet of questions about use of each drug (i.e., lifetime, annual, and 30-day use), and if a respondent exceeds a maximum number of inconsistencies across the set of drug use questions, his or her record is deleted from the data set. Similarly, we check for improbably high rates of use of multiple drugs and delete such cases, assuming that the respondents are not taking the task seriously. Fortunately, very few cases (< 3%) have to be eliminated for these reasons.

This is not to argue that self-reported measures of drug use are necessarily valid in all studies. In MTF, we have gone to great lengths to create a situation and set of procedures in which respondents recognize that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. The evidence suggests that a high level of validity has been obtained. Nevertheless, insofar as any remaining reporting bias exists, we believe it to be in the direction of underreporting. Thus, with the possible exception of prescription drugs, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

Consistence and Measurement of Trends

MTF is designed to be sensitive to changes from one time period to another. A great strength of this study is that the measures and procedures have been standardized and applied consistently across many years. To the extent that any biases remain because of limits in school and/or student participation, and to the extent that there are systematic distortions (lack of validity) in the responses of some students, it seems very likely that such problems will exist in much the same proportions from one year to the next. In other words, biases in the survey estimates will tend to be consistent from one year to another, meaning that they should have very little effect on our measurement of trends. The smooth and consistent nature of most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.

[15] For a discussion of reliability and validity of student self-report measures of drug use like those used in MTF across varied cultural settings, see Johnston, L. D., Driessen, F. M. H. M., & Kokkevi, A. (1994). Surveying student drug misuse: A six-country pilot study. Strasbourg, France: Council of Europe.

TABLE 3-1

Sample Sizes and Response Rates

	Number of Public Schools				Number of Private Schools			Total Number of Schools				Total Number of Students				*Student Response Rate (%)*		
Grade:	**8th**	**10th**	**12th**		**8th**	**10th**	**12th**	**8th**	**10th**	**12th**	**Total**	**8th**	**10th**	**12th**	**Total**	***8th***	***10th***	***12th***
1975	—	—	111		—	—	14	—	—	125	—	—	—	15,791	—	—	—	*78*
1976	—	—	108		—	—	15	—	—	123	—	—	—	16,678	—	—	—	*77*
1977	—	—	108		—	—	16	—	—	124	—	—	—	18,436	—	—	—	*79*
1978	—	—	111		—	—	20	—	—	131	—	—	—	18,924	—	—	—	*83*
1979	—	—	111		—	—	20	—	—	131	—	—	—	16,662	—	—	—	*82*
1980	—	—	107		—	—	20	—	—	127	—	—	—	16,524	—	—	—	*82*
1981	—	—	109		—	—	19	—	—	128	—	—	—	18,267	—	—	—	*81*
1982	—	—	116		—	—	21	—	—	137	—	—	—	18,348	—	—	—	*83*
1983	—	—	112		—	—	22	—	—	134	—	—	—	16,947	—	—	—	*84*
1984	—	—	117		—	—	17	—	—	134	—	—	—	16,499	—	—	—	*83*
1985	—	—	115		—	—	17	—	—	132	—	—	—	16,502	—	—	—	*84*
1986	—	—	113		—	—	16	—	—	129	—	—	—	15,713	—	—	—	*83*
1987	—	—	117		—	—	18	—	—	135	—	—	—	16,843	—	—	—	*84*
1988	—	—	113		—	—	19	—	—	132	—	—	—	16,795	—	—	—	*83*
1989	—	—	111		—	—	22	—	—	133	—	—	—	17,142	—	—	—	*86*
1990	—	—	114		—	—	23	—	—	137	—	—	—	15,676	—	—	—	*86*
1991	131	107	117		31	14	19	162	121	136	419	17,844	14,996	15,483	48,323	*90*	*87*	*83*
1992	133	106	120		26	19	18	159	125	138	422	19,015	14,997	16,251	50,263	*90*	*88*	*84*
1993	126	111	121		30	17	18	156	128	139	423	18,820	15,516	16,763	51,099	*90*	*86*	*84*
1994	116	116	119		34	14	20	150	130	139	419	17,708	16,080	15,929	49,717	*89*	*88*	*84*
1995	118	117	120		34	22	24	152	139	144	435	17,929	17,285	15,876	51,090	*89*	*87*	*84*
1996	122	113	118		30	20	21	152	133	139	424	18,368	15,873	14,824	49,065	*91*	*87*	*83*
1997	125	113	125		27	18	21	152	131	146	429	19,066	15,778	15,963	50,807	*89*	*86*	*83*
1998	122	110	124		27	19	20	149	129	144	422	18,667	15,419	15,780	49,866	*88*	*87*	*82*
1999	120	117	124		30	23	19	150	140	143	433	17,287	13,885	14,056	45,228	*87*	*85*	*83*
2000	125	121	116		31	24	18	156	145	134	435	17,311	14,576	13,286	45,173	*89*	*86*	*83*
2001	125	117	117		28	20	17	153	137	134	424	16,756	14,286	13,304	44,346	*90*	*88*	*82*
2002	115	113	102		26	20	18	141	133	120	394	15,489	14,683	13,544	43,716	*91*	*85*	*83*
2003	117	109	103		24	20	19	141	129	122	392	17,023	16,244	15,200	48,467	*89*	*88*	*83*
2004	120	111	109		27	20	19	147	131	128	406	17,413	16,839	15,222	49,474	*89*	*88*	*82*
2005	119	107	108		27	20	21	146	127	129	402	17,258	16,711	15,378	49,347	*90*	*88*	*82*
2006	122	105	116		29	18	20	151	123	136	410	17,026	16,620	14,814	48,460	*91*	*88*	*83*
2007	119	103	111		32	17	21	151	120	132	403	16,495	16,398	15,132	48,025	*91*	*88*	*81*
2008	116	103	103		28	19	17	144	122	120	386	16,253	15,518	14,577	46,348	*90*	*88*	*79*
2009	119	102	106	#	26	17	19	145	119	125	389	15,509	16,320	14,268	46,097	*88*	*89*	*82*
2010	120	105	104	#	27	18	22	147	123	126	396	15,769	15,586	15,127	46,482	*88*	*87*	*85*
2011	117	105	110		28	21	19	145	126	129	400	16,496	15,382	14,855	46,733	*91*	*86*	*83*
2012	115	107	107		27	19	20	142	126	127	395	15,678	15,428	14,343	45,449	*91*	*87*	*83*
2013	116	103	106		27	17	20	143	120	126	389	15,233	13,262	13,180	41,675	*90*	*88*	*82*
2014	111	98	105		30	16	17	141	114	122	377	15,195	13,341	13,015	41,551	*90*	*88*	*82*

(Table continued on next page.)

TABLE 3-1 (cont.)

Sample Sizes and Response Rates

	Number of Public Schools			Number of Private Schools			Total Number of Schools				Total Number of Students				*Student Response Rate (%)*		
Grade:	**8th**	**10th**	**12th**	**8th**	**10th**	**12th**	**8th**	**10th**	**12th**	**Total**	**8th**	**10th**	**12th**	**Total**	***8th***	***10th***	***12th***
2015	111	102	101	30	18	20	141	120	121	382	15,015	16,147	13,730	44,892	*89*	*87*	*83*
2016	117	92	100	25	18	20	142	110	120	372	17,643	15,230	12,600	45,473	*90*	*88*	*80*
2017	109	89	105	22	17	18	131	106	123	360	16,010	14,171	13,522	43,703	*87*	*85*	*79*
2018	110	106	106	28	21	23	138	127	129	394	14,836	15,144	14,502	44,482	*89*	*86*	*81*
2019	114	104	108	29	22	20	143	126	128	397	14,223	14,595	13,713	42,531	*89*	*86*	*80*
2020	30	36	29	8	2	7	38	38	36	112	3,161	4,890	3,770	11,821	*88*	*89*	*79*
2021	91	84	82	30	16	16	121	100	98	319	11,446	11,792	9,022	32,260	*82*	*78*	*69*
2022	81	82	80	23	20	22	104	102	102	308	9,889	11,950	9,599	31,438	*86*	*84*	*75*
2023	59	61	65	17	15	18	76	76	83	235	6,240	8,494	7,584	22,318	*80*	*85*	*72*
2024	76	78	64	21	15	18	97	93	82	272	7,460	9,891	6,906	24,257	*89*	*85*	*76*
2025	74	73	73	22	13	15	96	86	88	270	7,409	9,108	7,209	23,726	*86*	*81*	*77*

MONITORING THE FUTURE

TABLE 3-2

Percentage of MTF Strata with at Least One School Surveyed by Year

Year	% MTF strata with at least one school surveyed	Year	% MTF strata with at least one school surveyed
1976	99	2001	100
1977	100	2002	100
1978	100	2003	100
1979	99	2004	100
1980	97	2005	99
1981	97	2006	99
1982	100	2007	100
1983	100	2008	98
1984	99	2009	100
1985	100	2010	100
1986	99	2011	98
1987	100	2012	99
1988	100	2013	97
1989	100	2014	97
1990	100	2015	99
1991	100	2016	99
1992	100	2017	100
1993	100	2018	99
1994	98	2019	98
1995	98	2020	63
1996	99	2021	94
1997	99	2022	95
1998	100	2023	81
1999	100	2024	99
2000	100	2025	94

Notes: The MTF nationally representative design divided the contiguous United States into 79 strata from 1975–1976, 75 strata from 1977–1985, 69 strata from 1986–1993, 139 strata in 1994 (a transition year that used strata from two designs), 108 from 1995 to 2023, and 70 from 2024 to 2025. In 2020, the MTF survey was cut short by the COVID-19 pandemic.

CHAPTER 4 – Drug Use in 2025: Current Prevalence by Demographic Groups (Forthcoming)

CHAPTER 5 – Trends in Substance Use

Documentation of historical and developmental change over the past five decades has been among the most important contributions of Monitoring the Future (MTF) to the fields of substance use research, policy, and prevention. This includes measurements of change in the levels of drug use, in the types of drugs being used, in the methods of using them, in the ages and characteristics of people using them, in related attitudes and beliefs about drug use, and in conditions surrounding use. Such information has significant implications for public policy—for needs assessment, agenda setting, policy formulation, and policy evaluation. More generally, it has implications for the current and future health of the nation. In this chapter, we review the many changes that have taken place over the past 51 years in substance use among the U.S. adolescent population.

Historical trend data are presented and discussed in this chapter for students in 8th, 10th, and 12th grades. Data for 12th graders come from 51 nationally representative surveys conducted between 1975 and 2025, while data for the 8th and 10th graders come from 35 nationally representative surveys conducted between 1991 and 2025. For a variety of substances, the use measures discussed include lifetime use, use during the past 12 months, use during the past 30 days, use on 20 or more occasions during the past 30 days (which we refer to as daily to near-daily use), and daily use.

Trends in Adolescent Drug Use Since the Covid-19 Pandemic

Many of the largest one-year declines ever recorded by the study took place across a wide variety of substances during the COVID-19 pandemic between 2020 and 2021. The survey results divide neatly into the time periods before and after the onset of the pandemic. All surveys in 2020 were completed before March 15, when national social distancing policies were enacted and data collection was halted due to pandemic concerns. Consequently, results from 2020 and previous years are pre-pandemic, while results from 2021 and afterwards took place after the onset of the pandemic and the associated national response.

Historic declines took place for the three most commonly used substances. Cannabis use in the past 12 months experienced its largest recorded decline in each of the three grades, with tracking since 1975 for 12th grade and tracking since 1991 for 8th and 10th grades. Nicotine vaping in the past 12 months also saw its largest recorded decline in all three grades, with tracking beginning in 2017. Similarly, alcohol use experienced its largest recorded decline in 12th grade (tracked since 1975) and in 10th grade (tracked since 1991) for past 12-month use.

We now have five waves of data since the pandemic onset, providing an opportunity to assess whether these declines have persisted or rebounded—a question of considerable importance for both policy and research. On the one hand, persistence of the declines would suggest that a delay in drug use initiation during adolescence can potentially lower substance use trajectories over a

lifetime. Delays in drug use initiation could work to prevent youth from joining drug-using peer groups and/or disrupt biological processes that foster addiction. Additionally, the pandemic may have disrupted peer groups that encourage drug use, as well as the processes by which these groups recruit new members and perpetuate themselves. On the other hand, drug use may have rebounded, either partially or in full, as the pandemic receded and social distancing restrictions were lifted.

The tables in this chapter show that the declines have persisted for almost all drugs; in fact, most have continued to decline further. Alcohol, cannabis, and nicotine vaping all decreased for past 12 month use from 2024 to 2025 in all grades (although these one-year declines were not statistically significant). These findings underscore the importance of future research to identify the intervening mechanisms that account both for these declines as well as for their persistence, with the ultimate goal to inform future policies or interventions that can substantially reduce or even eliminate youth drug use.

Three Major Themes in Drug Trends From 1975–2025

Below we present and discuss trends for each of the dozens of drugs surveilled by MTF. Throughout these discussions, we occasionally refer to and elaborate on three general, recurring themes that are apparent across numerous drugs. The first theme is the COVID-19 pandemic onset and the subsequent decline in adolescent drug use, as discussed immediately above.

The second theme is what we term the "1990s drug relapse", which was a rapid increase in prevalence for many drugs that started in the early 1990s. Prior to this period, prevalence levels of many drugs had reached a historical low after years of decline. The prevalence levels for many drugs today lie between the nadirs observed at the start of the 1990s and the peak of 1990s drug relapse. Drugs that do not follow this overall pattern, such as some forms of alcohol use and tobacco use, are important exceptions that we note and discuss below.

The third theme is cohort effects. We use the term cohort here to refer to youth born at roughly the same time who are grouped by grade level and experience history together as they age. A cohort effect is a drug trend that follows a cohort as it grows older. For example, if an upsurge in cigarette smoking occurs in a cohort that is in 8th grade, it is likely to be observed two years later when that cohort is in 10th grade and then again two years later when that cohort is in 12th grade.

A cohort-specific pattern of drug use can stem from factors such as cohort-specific attitudes towards perceived risk of drug use, changing peer norms about the acceptability of drug use, changes in legal status of a drug, and the addictiveness of the drugs that youth use. We have found that cohort effects are often present, and trends among the lower grades can foretell future changes in the higher grades. This has been the case especially during the onset of the drug relapse in the early 1990s.

Trends in Prevalence of Use, 1975–2025

Below, a bolded and underlined hyperlink appears for each drug and drug-use category assessed by the study, followed by a brief narrative outlining major trends in the drug's prevalence. Clicking on the hyperlink brings the reader to a drug-specific webpage that presents an array of drug-specific information. This includes the drug's prevalence levels for all years in both graphical and tabular formats, across all assessed reporting periods (e.g., lifetime use, past 12-month use, past 30-day use, and daily use when assessed), as well as an option to download all of the drug-specific prevalence data. Appendix D also presents tables with all drug prevalence information for each drug for readers who prefer such a format and/or readers without a working internet connection.

Abstainers

Abstainers are defined as students with no use of alcohol, cannabis, or nicotine. Use of nicotine is indicated by use of cigarettes or by vaping.

In 2025, abstention increased in 8th and 10th grade to record levels for both lifetime and 30-day use (sometimes referred to as "current" use), although the increases from 2024 to 2025 were not statistically significant. In 12th grade, both current and lifetime abstention were down one percentage point from last year's record highs, although these decreases were also not statistically significant.

The graph and table mark a discontinuity in trends in 2017, when questions on nicotine vaping were first added to the survey. Taking vaping into account in this year led to a slight decrease in abstention, and this decrease became larger in the following years as nicotine vaping surged in popularity in 2018 and 2019. As vaping levels have declined in recent years, the long-term upward trend in abstention has resumed.

The increases in abstention have been quite substantial over time. In 8th grade, lifetime abstention increased from 25% in 1991 (when first measured) to 73% in 2025, the highest level recorded. In 10th grade, the parallel numbers are 13% and 61%, which in 2025 is also the highest level ever recorded. In 12th grade, abstention increased from 5% in 1976 (when first recorded) to 41% in 2025, just below last year's record high of 42%. Similar trends were observed for past 30-day (current) abstention, though with higher prevalence. (Note: Trends for past 12-month abstention are shorter because questions about past 12-month cigarette use were first introduced in 2024.)

Adderall

Nonmedical use of the amphetamine Adderall in the past 12 months did not significantly change in 2025.

In 10th and 12th grade, use levels are near record lows. In 8th grade, prevalence levels have hovered between 1% and 3% over the life of the survey.

In all grades, past 12-month use levels are at 3% or below. In 12th grade, levels have declined considerably since the 8% level documented in 2015.

ADHD Either Type

MTF asks adolescents if they use prescription ADHD drugs per the prescription of a medical professional. These drugs come in two types: stimulant and non-stimulant.

Medical use of either stimulant or non-stimulant drugs to treat ADHD did not significantly change from 2024 to 2025 in any grade for either current or lifetime use.

In all three grades, prevalence levels dipped to record or near-record lows in 2020. This decrease did not persist and since then prevalence levels have rebounded.

ADHD Non-Stimulant

MTF asks adolescents if they use prescription ADHD drugs per the prescription of a medical professional. These drugs come in two types: stimulant and non-stimulant. Medical use of non-stimulant type drugs for the treatment of ADHD are sometimes prescribed when stimulants have proven ineffective or not well tolerated.

In 2025, lifetime medical use of these drugs was at a record low in 12th grade and near a record low in 10th and 8th grade, although for no grade did prevalence levels significantly change from 2024 to 2025.

Past 30-day (current) use levels also did not significantly change from 2024 to 2025 for any grade. Among 12th grade students, current use has not shown much consistent direction in recent years. In contrast, 10th and 8th grade students have experienced a downward trend in current use since first tracked in 2005, though with some fluctuations.

ADHD Stimulant

MTF asks adolescents if they use prescription ADHD drugs per the prescription of a medical professional. These drugs come in two types: stimulant and non-stimulant.

Medical use of stimulant drugs to treat ADHD was one of the few substances that increased in prevalence after the pandemic onset, in 2021 and 2022. By 2025, lifetime use has returned closer to their pre-pandemic levels at 7% in 8th grade, 8% in 10th grade, and 10% in 12th grade.

Past 30-day (current) use also increased after the pandemic onset, in 2021 and 2022. In 2025, these elevated levels have largely persisted, following a brief decline in 2023 and 2024. In 10th grade, an increase of one percentage point from 2024 to 2025 to 4% was statistically significant.

Alcohol

In 2025, alcohol use continued a long-term decline in all three grades for lifetime and past 12-month use. This trend also continued for past 30-day (current) use in 8th and 10th grade, although in 12th grade use increased by 0.6 of a percentage point. None of these one-year changes from 2024 to 2025 were statistically significant.

The long-term, overall decline has taken place since the year 2000 in all three grades. From 2000 to 2025, past 12-month prevalence has decreased from 73% to 41% in 12th grade, from 65% to 24% in 10th grade, and from 43% to 11% in 8th grade.

Unlike most other drugs, alcohol use showed only a modest increase during the 1990s relapse, exhibiting more of a pause in its long-term decline.

Binge drinking, defined as consuming five or more drinks in a row in the past two weeks, held steady from 2024 to 2025 in all three grades. These levels show a slow but steady long-term decline in which prevalence levels from 2000 to 2025 have fallen from 30% to 9% in 12th grade, from 24% to 2% in 10th grade, and from 12% to 1% in 8th grade. Extreme binge drinking of ten or more drinks in a row in the past two weeks has also declined substantially since first tracked (in 2005 in 12th grade and in 2016 in 10th and 8th grade).

Alcohol With Caffeine

Since first tracked in 2011, annual use of alcoholic beverages containing caffeine have declined substantially, by more than 50%, resulting in levels of 10% in 12th grade, 7% in 10th grade, and 6% in 8th grade in 2024.

These questions were removed from the survey in 2025 due to low prevalence and to make room for other content. They will be reintroduced in future surveys if concerns arise about renewed use.

Androstenedione

Androstenedione, a precursor to testosterone, is a performance-enhancing substance that was scheduled by the Drug Enforcement Administration early in 2005, making its sale and possession no longer legal.

In 12th grade, past 12-month prevalence was less than 1% in 2025 and lost the increase that took place earlier, when it surged to 1.9% in 2022 from 0.6% in 2021. The use level is now similar to pre-pandemic levels.

The sudden increase in use of androstenedione after the pandemic onset in 2021 was accompanied by an increase in use of creatine, which is another performance-enhancing substance (albeit a legal one). These increases suggest that many 12th graders turned to fitness and weightlifting as a response to the social distancing policies of the time. The return of

androstenedione to pre-pandemic levels in 2025 could potentially signal that the interest in fitness was temporary. But the increased level of creatine use has persisted, suggesting that the interest in fitness may have continued while the illegal use of androstenedione has fallen out of favor.

The survey stopped tracking this drug among 8th and 10th graders after 2014, when prevalence levels were less than 1% in these grades.

Any Illicit Drug

Any illicit drug use is a measure of the percentage of students who have engaged in use of at least one type of illicit drug (as defined at the bottom of this section). From 2024 to 2025, the percentages of students who had used any illicit drugs in the last 12 months did not significantly change.

Both lifetime and past 12-month use declined substantially during the pandemic onset from 2020 to 2021. The lowered levels for these reporting periods persisted in the following years.

A discontinuity in the trend for past 12-month use occurs between 2023 and 2024 due to updates in survey questions related to misuse of prescription stimulants, prescription opioids, prescription sleeping medications, and prescription anti-anxiety medications (for details on the text changes see Appendix E). However, these updates are expected to have little if any effect on the overall prevalence of the index, as students who misused these drugs likely also used other substances such as cannabis. Therefore, they would be coded for illicit drug use in both the previous and revised survey formats. Consistent with this expectation, prevalence levels remained largely unchanged between 2023 and 2024.

The time trend for lifetime use stops in 2023 because in 2024 and afterwards the survey only asked about past 12-month use for many of the rarer drugs, such as cocaine and heroin. These drugs typically have prevalence levels of 1% or less, and questions on lifetime and past 30-day use were removed to make room for new content. If concern arises that levels of any illicit drug use are increasing, then the questions on lifetime and past 30-day use will be reintroduced on the survey.

Trends for past 30-day use are similar to those for lifetime and past 12-month use, although in 12th grade a marked decline did not take place in 2021, the first year surveyed after the pandemic onset. As with lifetime use, trends for past 30-day use end in 2023.

Patterns from the late 1990s through 2011 suggest cohort effects were at play. Declines in past 12-month use started in a staggered fashion beginning in 1996 for 8th graders, 1997 for 10th graders, and 1999 for 12th graders. These declines also ended in a staggered fashion in 2007, 2008, and 2009, respectively. The declines were then followed by a series of staggered increases: between 2007 and 2010 among 8th graders, between 2008 and 2011 among 10th graders, and between 2009 and 2011 among 12th graders.

This pattern suggests that drug behavior and attitudes established in 8th grade can have long lasting consequences years later.

Prior to the 1990s, a period when Monitoring the Future surveys were limited to 12th grade students, their prevalence of lifetime use of any illicit drug peaked at 66% in 1981, the highest level ever recorded by the survey. In other words two-thirds of these 12th grade students had used one or more illicit drugs. From that year on, lifetime use declined steadily to a prevalence of 41% by 1992, which was the lowest level recorded by the survey until 2023, when it was 40%.

Use of any illicit drug in 12th grade is defined as any use of cannabis (use remains illegal for people under age 21), LSD, other hallucinogens, cocaine, or heroin; or any nonmedical use of prescription opioids, prescription stimulants, prescription sleeping medications, or prescription anti-anxiety medications. In 8th and 10th grades, the use of prescription opioids and prescription sleeping medications has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

Any Illicit Drug Including Inhalants

When inhalants are included in the index of illicit drug use, the percentages categorized as having used an illicit drug rise, especially for 8th graders.

These results follow a similar pattern seen for the index of any illicit drug use, with substantial, lasting declines since the pandemic onset in 2021. Both show little change from 2024 to 2025. As with the any illicit drug use index, time trends for this measure continue for past 12-month use in 2024 and 2025—with a disruption of the trend in 2024 because of updates to the survey text for some questions. Lifetime and past 30-day use trends end in 2023, the last year these reporting measures were included in the survey.

Use of any illicit drug including inhalants in 12th grade is defined as any use of inhalants, cannabis (which remains illegal at the federal level), LSD, other hallucinogens, cocaine, or heroin; or any nonmedical use of prescription opioids, prescription stimulants, prescription sleeping medications, and prescription anti-anxiety medications. In 8th and 10th grade, the use of prescription opioids and prescription sleeping medications has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

Any Illicit Drug Other Than Cannabis

From 2024 to 2025, the percentage of youth who had used any illicit drug other than cannabis in the last 12 months was little changed.

A discontinuity prevents direct comparison of these levels with previous years, as indicated by the gap on the graph. In 2024, prevalence increased abruptly across all grades due to updates in the

survey questions (for details see Appendix E). Specifically, the 2024–25 question on misuse of prescription sleeping medications replaced the previous version focused on "sedatives", resulting in a sharp increase of three percentage points in past 12-month use from a prevalence of 2% to 5% in 12th grade (both previous and updated versions of this question are not used in the 8th and 10th grade index; see last paragraph below). Similarly, the 2024–25 question on misuse of prescription anti-anxiety medications replaced the earlier question focused on "tranquilizers", increasing prevalence by two percentage points in past 12-month use from a level of 1% to 3% in all grades. The substantial increases in the index in 2024 suggest that a subset of students reported using these two drug types exclusively; if they had used additional illicit drugs, they would have been classified as positive on both the previous and updated indices.

In all grades, past 12-month use declined markedly during the pandemic from 2020 to 2021, rebounded very slightly in 2022, and then slightly declined in 2023. Lifetime, past 12-month use, and past 30-day use were at or near record lows in 2023 before the update to the survey questions. Use levels today would be expected to be at or near historic lows, after taking into account the increase in prevalence resulting from the changes to the survey working in 2024.

The proportion of students using illicit drugs other than cannabis had declined by more than half from 2001 to 2023, the last year of directly comparable estimates. The past 12-month levels in 2001 and 2023, respectively, were 22% and 7% in 12th grade, 18% and 5% in 10th grade, and 11% and 5% in 8th grade.

In the 1970s, most of the sudden rise in 12th graders' reported use resulted from the increasing popularity of cocaine between 1976 and 1979 and, then, to the increasing use of amphetamines (stimulants) between 1979 and 1981. Then from 1982 through 1992, there was a substantial decline in the use of any illicit drug other than marijuana among 12th graders.

Use of any illicit drug other than cannabis in 12th grade is defined as any use of LSD, other hallucinogens, cocaine, or heroin; or any nonmedical use of prescription opioids, prescription stimulants, prescription sleeping medications, or prescription anti-anxiety medications outside of a medical professional's orders. In 8th and 10th grade, the use of prescription opioids and prescription sleeping medications has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

Any Nicotine Use

In 2025, past 30-day nicotine use among 12th graders rose markedly, significantly increasing from 17% in 2024 to 22% in 2025. This overall rise reflected small, cumulative increases across multiple tobacco products rather than a dominant change in any single drug included in the index (see dashboards for the index drugs listed below).

The increase in 2025 among 12th graders marks an abrupt departure from an extended, overall decline since 2019, the year when the prevalence of nicotine vaping peaked in 12th grade. From 2019 to 2024, the prevalence of any nicotine use fell 17 percentage points, from 34% in 2019 to 17% in 2024. Future surveys will indicate whether the 2025 increase marks the start of a sustained increase or if it is temporary.

Prevalence of past 30-day nicotine use in 10th and 8th grades was little changed in 2025. In 10th grade, prevalence of any nicotine use has decreased from 24% in 2017 (when first measured) to 12% in 2025. In 8th grade, the corresponding numbers are 12% and 6%.

Any nicotine use is indicated by any use of any of the following: vaping nicotine, cigarettes, large cigars, nicotine pouches (added to the survey and index in 2023), flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

Any Nicotine Use Other Than Vaping

In 2025, past 30-day nicotine use other than vaping rose markedly amongst 12th grade students, increasing from 7% in 2024 to 12% in 2025. This overall rise reflected small, cumulative increases across multiple tobacco products rather than a dominant change in any single drug included in the index (see dashboards for the index drugs listed below).

In 10th and 8th grades, this index decreased slightly, although the decreases were not statistically significant.

The increase in 2025 among 12th graders marks an abrupt departure from an overall, extended decline since this measure was first tracked by the survey in 2017. Prevalence had fallen threefold from 21% in 2017 to 7% in 2024. Future surveys will indicate whether the 2025 increase marks the start of a sustained increase or if it is only temporary.

In 10th and 8th grades, the long-term decline in use continued in 2025. In 10th grade, use of any nicotine product other than vaping has gradually and steadily declined from 8% in 2017 to 4% in 2025, and in 8th grade the respective numbers are 6% and 2%.

Any nicotine use other than vaping is indicated by any use of any of the following: cigarettes, nicotine pouches (added to the survey and the index in 2023), large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

Any Prescription Drug

The percentage of 12th grade students who used any prescription drug without a doctor's orders did not change from 2024 to 2025 for lifetime, past 12-month, or past 30-day use.

The spike in prevalence in 2024 is an artifact of changes to survey methodology rather than a substantive shift in behavior. Specifically, the increase is primarily due to updates in the survey

questions related to prescription sleeping medications and for prescription tranquilizers. In 2024, an updated question on prescription sleeping medications replaced the previous version focused on "sedatives", resulting in a sharp increase of three percentage points in past 12-month use, from a prevalence of 2% to 5% in 12th grade. Similarly, in 2024 an updated question regarding prescription anti-anxiety medications replaced the earlier version focused on "tranquilizers", and increased past 12-month prevalence by two percentage points from a level of 1% to 3% in 12th grade. For more detailed information on the survey text update, see Appendix E.

Use dropped precipitously across all reporting intervals from 2020 (before the pandemic) to 2021 (during the pandemic and its associated social distancing policies). It then rebounded slightly in 2022 but continued a slow, long-term decline in 2023.

Over the duration of the survey past 12-month use has dropped considerably—from 17% in 2005 (when first assessed) to 4% in 2023. Levels today would be expected to be at or near historic lows, adjusting for the spike caused by changes to the survey wording in 2024.

The use of any prescription drug nonmedically is defined as any use of prescription simulants, prescription opioids, prescription sleeping medications, or prescription anti-anxiety medications "without a medical professional telling you to use them."

Bath Salts

Questions on "bath salts" (synthetic cathinones) were added to the survey in 2012 out of concern that these particularly toxic drugs would gain popularity among adolescents. As it turns out, annual prevalence has been low and never higher than 1.3% in any grade. In 2018, prevalence was 0.9% or less in all grades, and the survey questions were removed to make room for questions on other drugs. These questions will be added back to the survey in future years if a concern arises that adolescent use of bath salts is increasing.

Been Drunk

In 2025, prevalence of being drunk ever or in the past 12 months significantly decreased in 8th grade. It did not significantly change in 10th and 12th grade for any of the reporting intervals.

Being drunk has been in a long-term decline in all three grades for lifetime, past 12-month, and past 30-day measures, as has overall alcohol use. The declines in being drunk began first among 8th graders after 1996, then among 10th graders after 2000, and then among 12th graders after 2004, suggesting a cohort effect.

The survey text for this item reads "On how many occasions (if any) have you been drunk or very high from drinking alcoholic beverages?"

Beer

From 2024 to 2025, prevalence of beer drinking did not significantly change in any of the three grades for any of the reporting intervals.

In the long term, beer use has declined substantially in all grades. From 1991 to 2025, lifetime use decreased in 12th grade from 82% to 30%, in 10th grade from 74% to 19%, and in 8th grade from 59% to 11%. Similarly, large, long-term declines have also taken place for past 12-month and past 30-day use.

Trends in binge drinking of beer, defined as drinking five or more 12-ounce cans of beer in a row during the past two weeks, have followed the overall decline in beer use. The questions on binge drinking were discontinued in 2022 to make room for new content.

Bidis

A question about bidis, a type of flavored cigarette imported from India, was included in the MTF survey for the first time in 2000, with a single question asking about the frequency of use in the past year. Some observers had been concerned that bidis might become popular among U.S. youth, but that does not seem to have been the case. The 2010 proportion of 12th graders using bidis during the past year was only 1.4%. Thirty-day and daily use would be appreciably lower. Given the low prevalence levels, the question on bidis was dropped from 8th and 10th grade questionnaires in 2006 and from 12th grade questionnaires in 2011. These questions will be added back to the survey in future years if a concern arises that adolescent use of bidis is increasing.

Cannabis

From 2024 to 2025, prevalence of cannabis use did not significantly change in any of the three grades for lifetime, past 12-month, past 30-day, or daily use.

The substantial declines from 2020 to 2021 during the onset of the pandemic marked the first substantial change in cannabis prevalence in more than a decade; in the ten years previous to 2021, cannabis levels had hovered without any systematic trending. These lower levels have persisted in the following years and have not returned to pre-pandemic levels.

Levels of cannabis use today are considerably lower than the historic highs observed in the late 1970s, when more than half of 12th graders had used cannabis in the past 12 months. This high point marked the pinnacle of a rise in cannabis use from negligible levels before the 1960s.

Daily cannabis use, defined as use on 20 or more occasions in the past 30 days, edged upward (although not significantly) in 12th and 10th grades but held steady in 8th grade in 2025. In 12th and 10th grades, the 2025 levels remained at about 2021 levels, when they had dropped during the

pandemic-era social distancing policies. In 8th grade, prevalence has hovered between 0.2% and 2% since first tracked in 1991.

The prevalence of using cannabis daily for a month or more during one's lifetime is reported for 12th graders only. That prevalence was at 21% when first measured in 1982, declined sharply to just 8% by 1992, and rose back to 19% by 1997. This was then followed by a long gradual decline to 12% by 2018, before leveling. It stood at 10% in 2025, a statistically significant decline from the 2024 prevalence of 13.4%.

Cannabis Products Made From Hemp

Psychoactive substances similar to THC-9 found in cannabis can be derived from hemp. The U.S. Farm Bill of 2018 made marketing of these hemp-derived products legal at the federal level with no age restrictions, although many states have implemented their own regulations governing their sale.

In 2025, for the first time MTF asked about use of *any* hemp-derived psychoactive product with the question: "Have you used any cannabis products made from hemp like Delta-8, Delta-10, or HHC or a mix of these drugs to get high?" This differs from the 2024 question which asked solely about the product Delta-8.

Across all grades, past 12-month prevalence for the question on all hemp products was lower than the previous year's estimate that asked only about Delta-8, with the decreases in 10th and 12th grade being statistically significant. Among 12th graders, prevalence declined from 12% in 2024 (Delta-8 only) to 9% in 2025 (all hemp products). Corresponding estimates were 8% vs. 6% in 10th grade and 3% vs. 2% in 8th grade. These results suggest a decline in adolescent use of psychoactive hemp products from 2024 to 2025.

Cigarettes

Prevalence of cigarette use did not significantly change from 2024 to 2025 in any of the grades for any of the reporting intervals, which include lifetime, past 30-day, daily, and half-pack or more a day use. For all measures, use levels are at or near a historic low.

The intense public debate in the late 1990s over cigarette policies likely played an important role in bringing about the very substantial downturn in adolescent smoking that followed. MTF helped to give rise to that debate, as it publicly reported in the first half of the 1990s that the level of smoking cigarettes among U.S. adolescents was rising sharply—results that were widely covered in the national media. Other subsequent developments likely have contributed, including (a) increases in cigarette prices, brought about in part by the tobacco industry settlement with the states and by state-level taxing decisions; (b) substantially increased prevention activities, including antismoking ad campaigns in a number of states; (c) the removal of certain types of advertising

(including billboards) as well as the Joe Camel campaign nationwide; (d) the initiation of a national antismoking ad campaign by the American Legacy Foundation, which was created as a condition of the Tobacco Master Settlement Agreement of 1998; and (e) efforts by the Food and Drug Administration (FDA) and states to reduce youth access to cigarettes.

An important milestone occurred in 2009 with passage of the Family Smoking Prevention and Tobacco Control Act, which gave the FDA the authority to regulate the manufacturing, marketing, and sale of tobacco products. New efforts by the FDA have undoubtedly contributed to the continuing decline in use of cigarettes and their reported availability by 8th, 10th, and 12th graders.

In earlier years, efforts to reduce adolescent smoking did not meet with as much success. Between 1984 and 1992, smoking prevalence was little changed among 12th grade students despite increasingly restrictive legislation with regard to smoking debated and enacted at state and local levels, as well as prevention efforts made in many school systems. These results suggest that the successful reduction of adolescent smoking, as we have seen in recent decades, requires a concerted, national, multi-pronged effort.

During the 1990s, trends in cigarette smoking generally moved in concert across 8th, 10th, and 12th grades—and not in the usual, staggered pattern indicative of a cohort effect. The prevalence of current smoking began to rise among 8th and 10th graders after 1991 and among 12th graders after 1992, and until 1996 moved steadily upward in all three grades. In 1996, current smoking peaked in grades 8 and 10 and then peaked a year later among 12th graders. It is interesting that cigarettes, which normally reflect cohort differences, began to exhibit a secular trend in the same historical period that illicit drugs, which normally exhibit secular trends, began to show cohort effects.

Of particular importance is the fact that in all three grades in 2025, the prevalence of smoking half-a-pack or more per day is down from peak levels by more than 90% and is currently less than half a percentage point in all three grades. Over time, this dramatic decline in regular smoking should produce substantial improvements in the health and longevity of the population.

Cigarillos (Small Cigars)

The percentage of 12th grade students who used a cigarillo (also known as a small cigar) in the past 12 months was 5% in 2025. It is near a record low and compares to the 23% in 2010, when the tracking of this product first began.

Cocaine

Levels of past 12-month cocaine use increased in 8th, 10th, and 12th grade from 2024 to 2025, and these increases were statistically significant in 8th and 12th grade. Despite these increases, prevalence remained low, at 0.6%, 0.7%, and 1.4%, respectively.

Cocaine grew in popularity among 12th graders in the late 1970s, then plateaued at a high level of around 12% annual prevalence in the first half of the 1980s, when most drugs were falling, before plunging by about three quarters by 1991. This drug then followed the common pattern of an increase in use during the 1990s relapse before showing a period of decline since 2006. The increase had leveled out about three years earlier for 8th graders (in 1996) than for 12th graders (in 1999), evidence of a cohort effect.

The reduction of adolescent cocaine use to today's low levels is a success story given its considerable popularity in the 1980s, when past 12-month prevalence among 12th graders reached 13% (in 1985). Reasons for this steep decline in cocaine use—in particular the role of perceived risk—are discussed in Chapter 8 in this MTF report. Future surveys will clarify if the increases observed in 2025 mark the beginning of a resurgence in adolescent cocaine use or instead represent a short-term fluctuation.

Questions on past 30-day and lifetime use of cocaine were discontinued in 2025 to make room for other content. These questions will be reinstated in future surveys if concern arises about renewed use—for example, if the increase in past 12-month use observed this year persists into next year.

Cocaine Other Than Crack

Questions specifically on the use of cocaine other than "crack" were discontinued in 2024 as a result of low prevalence, with past 12-month use less than 1% in all grades in 2023. This question will be reintroduced in future surveys if concerns arise about renewed use.

In 2023, prevalence significantly declined for lifetime, past 12-month, and past 30-day use in 12th grade, continuing a downward trend after a nearly 50% drop from 2020 to 2021. Lifetime prevalence was 1% or less in all grades. At such low levels, there is little room for prevalence to fall further in future years.

Crack

In 2025, the prevalence of crack cocaine use in the last 12 months was 1% or less in 8th, 10th, and 12th grade. Use levels edged upward, although not significantly so, in 8th and 12th grade.

Questions on crack cocaine were first introduced into the survey in 1986, when information gathered routinely in MTF showed some indirect evidence of the rapid spread of crack cocaine. For example, we found that the proportion of all 12th graders reporting that they had ever smoked cocaine (as well as used it in the past year) more than doubled between 1983 and 1986, from 2.4% to 5.7%. In the same period, the proportion of those who said that they had both used cocaine during the prior year and at some time had been unable to stop using it when they tried doubled (from 0.4% to 0.8%). In addition, between 1984 and 1986, the proportion of 12th graders reporting daily use of cocaine also doubled (from 0.2% to 0.4%). We think it likely that the rapid advent of

crack use during this period was reflected in all of these changes, though we did not yet have a direct measure of its use.

Because prevalence for this drug has fallen so low in recent years, in 2024 MTF asked only about past 12-month prevalence and discontinued asking about lifetime and past 30-day use to make room for other content. Information for trends in these reporting intervals is presented in Appendix D of the MTF 2024 annual report, which reports trends up to 2023. These questions will be reintroduced into the survey in future years if concerns arise about renewed use.

Creatine

Creatine is not a hormone or a drug but a nutrient found in the skeletal muscle of most animals. It is used to reduce the recovery time of muscles, to increase muscle mass, and to thereby enhance performance for high-intensity, short-duration exercises. It is readily available over the counter, which undoubtedly helps to explain the substantial levels of use we have found among teens.

In 2025, past 12-month use continued the upward trend that began during the pandemic from 2020 to 2021. In all grades, 2025 levels are at the highest recorded since the project first began tracking use of this substance in 2001. Prevalence in 2025 was 15% in 12th grade, 12% in 10th grade, and 6% in 8th grade.

These results suggest that some adolescents may have developed a sustained interest in fitness and weightlifting during the pandemic's social distancing period.

Crystal Methamphetamine

Past 12-month prevalence of crystal methamphetamine use in 12th grade significantly increased in 2025, although it remains below 1% (0.9%).

Survey questions on lifetime and past 30-day prevalence were discontinued on the survey in 2025 as a result of low prevalence. These questions will be reintroduced in future surveys if concerns arise about renewed use; e.g. if past 12-month use continues to increase as it did in 2025.

Annual prevalence among 12th graders fell from 3.0% in 2002 to 0.2% in 2024 (before the increase in 2025).

Diet Pills

Survey questions on diet pills were discontinued in 2024 due to low prevalence. They will be reintroduced should concerns arise about renewed use. We suspect that today, the students who would have taken these drugs would instead use the new prescription diet medications, which are reported under the substance "prescription weight loss drugs", for which we ask about prescribed and non-prescribed use.

Use of diet pills, which are over-the-counter stimulants, were at the lowest level ever recorded by the survey in 2023 for lifetime, past 12-month, and past 30-day use.

The 1.1% level for past 12-month use in 2023 is substantially lower than the peak of 21% recorded in 1982, when diet pills were first included on the survey. After 1983, prevalence fell quickly over the next ten years to 8% in 1993; this was a particularly positive development because nearly all of these diet pills contained phenylpropanolamine, which the Food and Drug Administration has since determined has health risks for the user and in 2005 removed them from over-the-counter sale. Use stabilized through the mid-1990s at around 9.4%, rose after 1998 to reach 15.1% in 2002, and then declined to the low of 1.1% in 2023.

Dissolvable Tobacco

Questions on the use of dissolvable tobacco were added to the 12th grade in 2011 and to 8th and 10th grades in 2012. The annual prevalence levels since then have been variable but below 2% in all grades and all years. Questions on this substance were removed from the MTF questionnaire in 2023 in order to make room for new content. These questions will be added back in future surveys if concerns arise about renewed use.

Ecstasy (MDMA)

Prevalence of past 12-month MDMA use (street names "Molly" and "ecstasy") edged up slightly in all three grades in 2025, although none of the increases were statistically significant. Prevalence levels were 1.1% or less across the three grades.

Despite the upward trend, in 2025 levels were near the lowest recorded by the survey since this drug was first tracked in 1996.

The historical trend for MDMA follows a pattern somewhat different from most of the other drugs in that an increase did not occur until the late 1990s, and it peaked later than many drugs—in 2001. Obviously, there were some special circumstances for the use of this drug, including its popularity at raves followed by public concern about the dangers of its use. Since that time, its prevalence has gradually declined, although a short-lived upsurge took place in all grades around 2009–2010.

In 2014, some questionnaire forms in the survey included "Molly" as an example of MDMA, along with ecstasy, and the inclusion of this example appeared to make relatively little difference in the overall reporting of prevalence of MDMA. In 2015, the remaining forms were changed to also include "Molly" as an example in the questions about MDMA.

Trends in MDMA use are unique because the upswing in use in 1999 occurred first in the older grades. The 8th graders did not show this resurgence until a year later, in 2000. A different dynamic seemed to be at work for MDMA than for most other drugs during this historical period, because it appears that the increase in use rippled down the age scale rather than the reverse; this may be

because raves (which older teens would be more likely to attend) played an important role in its dispersion.

Survey questions on past 30-day and lifetime use of this drug were discontinued in 2025. They will be reintroduced if concerns arise about renewed use.

Energy Drinks or Shots

Energy drinks and energy shots contain high levels of caffeine. Trends in daily use of these products follow a U-shaped curve, with higher levels when the project first began tracking them in 2010, a steady decline until about the year 2015, and then a reversal as prevalence subsequently increased. This trend is driven mainly by use of energy drinks and not by use of energy shots, which have not systematically trended in the past decade. In 2025, daily prevalence continued to increase for all grades, although the increase was only statistically significant for the 10th grade.

Energy Drinks

Energy drinks usually contain high amounts of caffeine and include brands such as Red Bull and Monster. MTF asks about daily use of these drinks.

In 2025, prevalence of daily use of these products was at the highest level recorded by the survey in 10th and 12th grade, at 19% and 23%, respectively. In 10th grade, use significantly increased from 2024 to 2025. In 8th grade, the 17% level is near a record high, which was 19% when first measured in 2010.

Prevalence has followed a U-shaped curve, with higher levels when first tracked in 2010, a steady decline until about 2015, and then a subsequent reversal as prevalence increased thereafter.

Energy Shots

Energy "shots" usually come in 2 or 3 ounce containers and include brands such as 5-Hour Energy and Redline. MTF asks about daily use of energy shots.

Daily use of these substances has not systematically trended over the past decade. In all three grades, prevalence has hovered at around 3% to 4%. When first tracked, 8th grade students had the highest levels of use—at 7% in 2011—but by 2014 these levels had declined to 4% and have fluctuated around this level since. This lack of change in consumption of energy shots in recent years contrasts with the increase of use in energy drinks.

Fentanyl

In 2025, levels of fentanyl use were less than 1% for past 12-month use in all three grades.

Fentanyl is an opioid drug made in laboratories and has no natural ingredients. It is many times more potent than most other opioids, and even a small amount can cause a fatal overdose.

The low levels of use indicate that youth are avoiding use of this drug, at least its intentional use. Fentanyl has been implicated in many overdose deaths among people who used the drug unknowingly, when it had been laced into drugs such as heroin, cocaine, methamphetamine, and MDMA in order to produce a stronger high.

Flavored Alcoholic Beverages

In 2025, use of flavored alcoholic beverages (also known as "alcopops" or "malternatives") edged upward in all three grades for past 30-day, past 12-month, and lifetime use, although none of these increases were statistically significant. Despite the upward trend this year, use levels remained near record lows.

Use of these products has declined substantially over the past two decades. For example, from 2004 to 2025 past 30-day use declined in 8th grade from 15% to 2%, in 10th grade from 25% to 6%, and in 12th grade from 31% to 16%. These declines are consistent with a decline in adolescent use of alcohol overall in recent decades.

Flavored Little Cigars

Prevalence of flavored little cigars in the past 30 days changed little in 2025, thus sustaining the substantial decreases that took place in 2021 during the pandemic.

Overall, prevalence has declined markedly since this measure was added to the survey in 2014. Specifically, from 2014 to 2025 prevalence in 12th grade fell from 12% to 2%, in 10th grade from 7% to <1%, and in 8th grade from 4% to <1%.

GHB

GHB is an acronym for gamma-hydroxybutyric acid, a drug that became popular at "raves" in the 1990s. It can produce an euphoric effect and gained notoriety as a date rape drug because of its ability to cause amnesia.

Prevalence of past-12 month GHB use among 12th grade students has been below 1.5% for the past two decades and in 2025 stood at 0.3%. Since 2017, prevalence has hovered around 0.4%.

Hallucinogens

The percentage of 12th grade students using hallucinogens in the past 12 months has varied little between a narrow window of 4% and 5% over the past decade and in 2025 was 4%. In 10th grade, a drop in use during the pandemic in 2021 has persisted, and the prevalence of past 12-month use in 2025 was 2%. In 8th grade, declines in use have plateaued since around 2014, in part because prevalence has hovered at 1% since that time and has little room to fall further.

In 2024, the question text was modified to add "or psychedelic drugs" to the survey text, with the new question reading "On how many occasions (if any) have you used hallucinogens or psychedelic drugs (like PCP, mescaline, peyote, "shrooms" or psilocybin)." This change appears to have had little effect on prevalence estimates, which changed little in 2024 compared to 2023.

Hallucinogen use followed the typical pattern of an increase during the 1990s relapse, followed by a gradual but inconsistent decline in the following years. Annual hallucinogen use peaked in 1996, which is a few years earlier than the peak for most other drugs. Current levels of past 12-month hallucinogen use are less than half their peak in the 1990s.

The two components of the hallucinogens class, LSD and hallucinogens other than LSD (i.e. mescaline, peyote, psilocybin, and PCP), generally followed the same pattern until a sharp decline in LSD use emerged after 1999.

Questions on past 30-day and lifetime use were discontinued in 2025 in order to make room for new content. These questions will be reintroduced in future surveys if concerns arise about renewed use.

Hallucinogens Other Than LSD

Hallucinogens other than LSD include mescaline, peyote, and PCP as well as psilocybin, or "shrooms", which comprise a major component of this category. Use levels in 2025 did not significantly change in any of the three grades for lifetime, past 12-month, or past 30-day use.

In all grades, 2025 levels of past 12-month use are about half of what they were in 2001, the peak level they had reached after the 1990s drug relapse.

Prior to the 1990s relapse, use of hallucinogens other than LSD had declined precipitously in 12th grade from a record high of 9.4% in 1975 to a record low of 1.7% in 1992. During this time, hallucinogens received substantial, negative media attention about the potential dangers of use such as "bad trips" and flashbacks. The increase that began in the 1990s may in part stem from "generational forgetting", in which new youth cohorts have less exposure to people who have used the drug and media coverage subsides.

Heroin

In 2025, past 12-month heroin use significantly increased in 12th, 10th, and 8th grades, although prevalence was less than 1% in all grades.

Past 12-month use of heroin has always been relatively low, with prevalence never higher than 2% at any time in the survey for any grade. One unusual pattern specific to heroin is that the late 1990s mark the highest levels of use ever recorded in the study, whereas for most other drugs the all-time highs were set near the beginning of the 1980s. This trend was due in part to the advent of heroin use without a needle.

The increase in heroin use that occurred around 1995 was recognized fairly quickly and gave rise to some ameliorative actions, including an anti-heroin campaign by the Partnership for a Drug-Free America. An increasing number of deaths due to heroin use, including in the entertainment and fashion communities, also received widespread publicity. These factors may well explain the subsequent leveling in use after the near doubling of heroin prevalence that took place from 1991 to 1995.

MTF discontinued the survey questions on past 30-day and lifetime use of heroin in 2025 due to low prevalence and to make room for new content. These questions will be reintroduced to the survey in future years if concerns arise about renewed use.

Heroin With a Needle

The percentage of youth ever using heroin with a needle fell to near-zero levels in 2021 and was removed from the survey to make room for new content.

Heroin use with a needle among adolescents is exceedingly rare, and lifetime use was never higher than 2% when tracked between 1995 and 2021.

Heroin Without a Needle

The percentage of youth ever using heroin without a needle fell to near-zero levels in 2021 and was removed from the survey to make room for new content.

Inhalants

Prevalence of inhalant use significantly increased in 10th grade for past 12-month and past 30-day use. Despite these increases, prevalence is near record lows in all grades for past 12-month use.

Inhalants are unusual because their prevalence is consistently higher in the lower grades, a pattern not observed for any other drug. The use of inhalants at an early age may reflect the fact that many inhalants are cheap, readily available (often in the home), and legal to buy and possess. The decline in use with age likely reflects their coming to be seen as "kids' drugs", in addition to the fact that a number of other, more desirable drugs become more accessible to older adolescents, who also are more able to afford them.

The increase in prevalence of inhalants in all three grades at the start of the 1990s was a continuation of a trend that was observable far earlier among 12th grade students, when only they were being surveyed. The same was likely true among 8th and 10th graders, although our data on them cover only 1991 forward. The anti-inhalant campaign launched by the Partnership for a Drug-Free America in 1995 (partly in response to MTF results showing increasing use) may have played an important role in reversing this long-term trend. Increases in use that began around 2018 proved fleeting, and decreases in prevalence in 2020 and 2021 have returned levels to near record lows.

Prior to 2000, trends in inhalants were confounded by the use of amyl and butyl nitrites, and past MTF reports presented an additional 12th grade inhalant trend for measures without nitrites (e.g., see the 2014 MTF report for a detailed description). Since that time, youth's use of nitrites has fallen to very low levels and is no longer tracked by Monitoring the Future.

In 12th grade, questions on past 30-day and lifetime use were discontinued in 2025 due to low prevalence and to make room for new content. These questions will be reintroduced if concerns arise that use in 12th grade is increasing.

JUUL

Questions about use of the vaping device JUUL were not asked after 2022 because the FDA had removed them from the market at the time the 2022 survey was being prepared.

Prior to 2022, prevalence of the vaping device JUUL declined dramatically. Both past 12-month and past 30-day prevalence declined about 50% in just one year in all three grades from 2020 to 2021.

This decline likely stemmed from both national policies aimed at reducing nicotine vaping prevalence among adolescents, as well as the COVID-19 pandemic.

One policy to reduce tobacco use in general is the "Tobacco 21" law, which went into force on December 20, 2019. This law raised the age of sale for all tobacco products in the United States from 18 to 21. It is specifically designed to reduce adolescent access to vaping devices and other tobacco products.

In addition, in 2020 the FDA placed restrictions on flavoring of cartridge-based vaping systems and banned flavors popular among adolescents such as mint and fruit. These restrictions went into force on February 7, 2020, four days before the first school was surveyed in MTF that year. This ban likely has had a continuing effect.

At the same time, these large declines took place during the COVID-19 pandemic, when social distancing policies were implemented specifically to reduce social interactions outside of the home. These policies included school building closures, reductions and/or cancellations of after school group activities, and physical distancing policies requiring people to stay six feet from others. For many, these policies likely reduced adolescents' access to vaping devices and cartridges, as well as their opportunities to use them free from adult supervision.

All results from 2020 are from surveys completed before March 15, 2020, when national social distancing policies were implemented and the survey halted due to pandemic concerns.

JUUL has since reentered the market. MTF includes JUUL as a response category in a brand-of-device question asked of adolescents who report vaping nicotine. We will reintroduce stand-alone

questions specifically on JUUL to the survey if its use among adolescents increases substantially in the coming years.

Ketamine

Prevalence of past-12 month ketamine use among 12th grade students has been below 2% for the past decade and in 2025 stood at 1%. This "club drug" was added to the survey in 2000. It showed little change in its usage levels through 2002. Since then, use has declined in all grades. Because of the very low levels of use of this drug by 2011, questions about its use were dropped from the surveys of 8th and 10th graders.

Kreteks

A question about kreteks, a type of clove cigarette that was usually imported from Indonesia, was added in 2001 to the list of questions that ask only about past 12-month use.

Because the prevalence levels turned out to be low, this question was dropped in 2006 from the 8th and 10th grade questionnaires to make room for other questions. In 2014, only 1.6% of 12th graders reported any use of kreteks in the prior 12 months, and the question has not been included on the survey since then. These questions will be added back to the survey in future years if a concern arises that adolescent use of kreteks is making a comeback.

Large Cigars

Smoking large cigars, which has not been particularly common among secondary school students, edged slightly upward in all three grades for past 12-month use in 2025, although none of the increases were statistically significant.

Overall, levels of use in 2025 are markedly lower than they were in 2014, when this product was first tracked by the survey. During this time period, levels have dropped from 6% to 2% in 12th grade, from 4% to 1% in 10th grade, and from 2% to 0.3% in 8th grade.

It is worth noting that in 12th grade, a steep decline in use took place during the pandemic and its associated social distancing policies, from 5% in 2019 to 2% in 2021, and use has not rebounded since.

Liquor

Use of hard liquor is asked only of 12th grade students. In 2025, prevalence decreased, although not significantly, for the three reporting intervals of lifetime, past 12-month, and past 30-day use. With these decreases, prevalence levels were at the lowest recorded by the survey. Nevertheless, prevalence remains substantial, with one out of every six 12th graders reporting use of liquor in the past 30 days.

Prevalence today is much lower than when first measured in 1976. Lifetime use fell from 80% in 1976 to 34% in 2025, past 12-month use from 69% to 26%, and past 30-day use from 44% to 16%. A decline in liquor consumption among 12th graders actually began after about 1980 but was interrupted in the late 1990s by the relapse phase in the use of most drugs, including alcohol. After about 2002, the long-term decline in alcohol use resumed.

In 2022, MTF discontinued the question on binge drinking of liquor, defined as five or more mixed drinks or shots glasses of hard liquor in a row within the past two weeks, to make room for new content.

Look-Alike Pills

Look-alikes are one of two primary categories of nonprescription stimulants, alongside diet pills. They are pseudoamphetamines that were typically sold via mail order, unlike diet pills, which were available over the counter. From 1982 onward, the trend in the use of look-alikes mirrored the trend in illicit drug use during the same period. Annual prevalence dropped from 10.8% in 1982 to 5.2% in 1991. This was followed by a slight increase during the 1990s drug relapse, reaching 6.8% in 1995, before stabilizing and declining again after 2001, reaching a low of 1.5% in 2017. Monitoring of look-alike pill use was discontinued after 2017 to accommodate new questions on other drugs in the survey. The large decline in look-alike use was most pronounced among individuals who had used illicit drugs other than marijuana, who were the primary users of look-alikes.

LSD

In 2025, LSD prevalence significantly increased in 12th grade to 1.7% and increased, but not significantly so, in 10th or 8th grade. Use levels are currently low, even with the increase in 12th grade this year, and are near the lowest levels recorded by the survey.

LSD was one of the first drugs to decline at the start of the 1980s, almost surely due to increased information about its potential dangers. The subsequent increase in its use during the mid-1990s may reflect the effects of "generational forgetting"—that is, replacement cohorts knowing less than their predecessors about the potential dangers of LSD because they have had less exposure to the negative consequences of people using the drug.

We believe that the decline in use prior to 2002 might have resulted in part from a displacement of LSD by sharply rising use of MDMA (also known as "ecstasy" and more recently "Molly"). After 2001, when MDMA use itself began to decline, the sharp further decline in LSD use likely resulted from a sudden drop in the availability of LSD (discussed in Chapter 9), because attitudes generally have not moved in a way that could explain the fall in use, while perceived availability has.

In 2025, questions on past 30-day and lifetime use were dropped due to low prevalence and to make room for new content. These questions will be reintroduced in future surveys if concern arises about renewed use.

Medical Cannabis

Since 2017, the survey has included the question "Have you ever used 'medical marijuana;' that is, marijuana you used because a doctor told you to use it?" Prevalence has hovered between 1% and 4% in all years in all grades and has not systematically trended.

Metatine

Metatine is a synthetic analog of nicotine that may possess greater potency and addictive potential than nicotine itself. It is currently marketed under brands such as Spree Bar and is available to vape in flavors that appeal to youth. Regulation is particularly challenging because Metatine is not derived from tobacco and therefore may fall outside the scope of existing tobacco control policies.

In 2025, this substance has not made inroads among adolescents, with prevalence less than 1% in all grades for past 12-month use.

Methamphetamine

Use of methamphetamine has declined to near-zero prevalence over the past two decades, with lifetime use below 1% in 2025 in all grades. This marks a steep decline from 1999 lifetime prevalence levels (when they were first tracked), which were at 4.5%, 7.3%, and 8.2% in 8th, 10th, and 12th grades, respectively.

MTF discontinued questions in 2025 on lifetime and past 30-day use of methamphetamine due to low prevalence. These questions will be reintroduced in future surveys if concerns arise about renewed use.

Methaqualone

Use of methaqualone (brand name Quaalude) without a doctor's orders had a past 12-month prevalence among 12th graders of 0.4% in 2012, after which it was no longer included on the survey to make room for questions on other content. Previously, use of this drug rose sharply from 1978 until 1981. Starting in 1982, use began to decline, helping to account for the overall adjusted sedative index resuming its decline that year. Annual prevalence for methaqualone plummeted from 7.6% in 1981 to 0.2% by 1993; it then inched up a bit during the drug relapse phase in the 1990s to 1.1% in 1996, where it remained in 1999. By 2012, it was down to 0.4%, a tiny fraction of its peak level.

Nicotine Pouches

Nicotine pouches are small, white pouches that contain nicotine that users place in their mouth. Nicotine pouches are different from other smokeless tobacco products such as snus, dip, or chew because they do not contain any ground tobacco leaf. Use of nicotine pouches is readily concealable by adolescents because they do not require the user to expectorate juice.

In 2025, lifetime use increased in all grades, although not significantly. From 2024 to 2025, it increased from 7% to 10% in 12th grade, from 4% to 5% in 10th grade, and from 0.8% to 1.4% in 8th grade. Use in the past 12 months and past 30 days slightly increased for 8th and 12th graders and slightly decreased for 10th graders, although none of these changes were significant from 2024 to 2025.

Similar oral nicotine products have made substantial inroads among adolescents in the past (e.g., smokeless tobacco reached a lifetime prevalence of 32% in the early 1990s), suggesting a high potential ceiling for the prevalence of nicotine pouch use.

Nitrites

Amyl and butyl nitrites, one class of inhalants, became somewhat popular in the late 1970s, but their use was almost eliminated after that. The annual prevalence level among 12th grade students was 6.5% in 1979 but only 0.9% in 2009. Because of this decrease in use, and to allow for the addition of other questions, the questions on nitrite use have not been included in the study since 2010. These questions will be added back to the survey in future years if a concern arises that adolescent use of these nitrites is making a comeback.

When nitrites were included in the definition of inhalants, they masked the increase that was occurring in the use of other inhalants, because their use was declining at the same time that the use of the other inhalants was increasing.

Over the Counter Cough/Cold Medicine

There are a number of over-the-counter drugs that can be used to relieve symptoms from coughing or having a cold. Several of them, like Robitussin and Tylenol Cold + Cough, contain dextromethorphan (DXM). When taken in large doses, its side effects can mimic those of some illegal drugs, like hallucinations and sensory changes. Teens can use them for these purposes and risk a number of dangerous side effects.

Not all cough and cold medications contain DXM, of course, but because a number of them do, we track the more general class to get an indication of changes in DXM misuse. The survey questions asks students if they have taken nonprescription cough or cold medicines "to get high".

In 2025, past 12-month prevalence did not significantly trend. In 8th grade, the current level of 4.2% is toward the higher end of the range that varies from the low of 2% recorded in 2015 and the high of 4.6% recorded in 2020.

In 10th grade, a 2025 increase (which was not statistically significant) brought prevalence to 5.1%, which is near the 6% high recorded in 2009.

In 12th grade, prevalence edged upward to 3.1%, which is less than half of the 6.9% high recorded when the survey first started tracking this outcome in 2006.

Note that in recent years, the grades have tended to reverse the order of their prevalence levels, with the 8th and 10th graders tending to have higher prevalence than 12th graders. The only other class of drugs that currently shows such a pattern is inhalants, which also have high availability in the homes of younger adolescents.

OxyContin

In 2025, the percentage of youth who used the specific opioid OxyContin without a medical professional's orders in the past 12 months was little changed from 2024. Use levels are low at 1% or lower in all grades.

Use of OxyContin has declined overall since first tracked by the survey in 2002. Its prevalence began a long-term decline in 2009/2010 for 10th and 12th grade students and in 2013 for 8th grade students, resulting in record or near-record lows in recent years.

PCP

The prevalence of past-year PCP use is reported only for 12th grade students, and in 2025 it was 1.2%. Prevalence has not risen above 2% in over two decades.

PCP was first included in the survey in 1979, and its prevalence dropped rapidly thereafter, suggesting that it achieved a deserved reputation as a dangerous drug very quickly. Its use increased during the 1990s drug relapse, but its annual prevalence increased to a high of only 2.6% (in 1996). Since 2002, its use has remained low.

To make room for other content, the survey stopped tracking lifetime and past 30-day use of this low-prevalence drug in 2014 (for information on these outcomes see the 2013 annual report). These measures will be re-introduced into the survey if concern arises that this drug is making a comeback.

Powdered Alcohol

Powdered alcohol, as the name suggests, can be added to water to form an alcoholic drink. MTF began tracking the prevalence of this substance in 2016. The annual prevalence remained below 2% across all grades and years until the measure was discontinued in 2019. Although the U.S. Alcohol and Tobacco Tax and Trade Bureau approved labels for its sale under the brand name Palcohol in 2014, very few states have legalized the product. Questions about powdered alcohol will be reintroduced to the questionnaire if media reports or other sources indicate an increase in its use. The data collected from 2016 to 2019 provide a baseline assessment of its use when it was not widely available commercially.

Prescription Anti-Anxiety Medications

In 2025, the percentage of youth who used anti-anxiety medications without a doctor's orders declined in all three grades for lifetime, past 12-month, and past 30-day use. This decline was statistically significant only among 12th grade students for past 30-day use, which decreased from 2.3% in 2024 to 1.6% in 2025.

A discontinuity prevents direct comparison of current levels to estimates in 2023 and earlier, as indicated by the gap on the graph. In 2024, the estimate increased abruptly across all grades as an artifact of an update to the survey question text. Specifically, in 2024–25 a question on prescription anti-anxiety medications replaced the previous version focused on "tranquilizers", resulting in an upward adjustment to 3% in past 12-month use from a prevalence of 1% using the original question in all grades. For more detailed information on the survey text update, see Appendix E.

In 2021, the first survey year during the pandemic and its associated social distancing policies, use dropped sharply in all grades. Prevalence did not rebound in 2022 or 2023 when the policies were lifted. Levels today would be expected to be at or near historic lows, after adjusting for the increase caused by changes to the survey wording in 2024.

This question was previously updated in 2001, when Xanax was added as an example drug in this class. This addition led to a slight jump in prevalence that year, which is marked by a gap in the trend line from 2000 to 2001.

Among 12th and 10th grade students, use of these substances increased during the 1990s; the increase was sustained well into the 2000s, which is a trend typical for the general category of prescription medication misuse. Since the mid-2000s, use has gradually and steadily declined.

Prescription Opioids

Use of narcotics other than heroin without a doctor's orders is reported only for 12th grade students. Prevalence increased from 2024 to 2025 for past 12-month and past 30-day use, and this increase was statistically significant for past 30-day use. The slight decrease for lifetime use was not statistically significant. Prevalence in 2025 was low at 4% for lifetime use, 2% for past 12-month use, and 1% for past 30-day use.

A discontinuity prevents direct comparison of current levels to estimates in 2023 and earlier, as indicated by the gap on the graph. In 2024, prevalence adjusted upward as an artifact of an update to the survey question text. Specifically, in 2024–25 a question on prescription opioid medications replaced the previous version focused on "narcotics other than heroin". This methodological change by itself significantly increased the past 12-month use estimate by one percentage point and lifetime use by 2.5 percentage points. For more detailed information on the survey text update,

see Appendix E. Levels today would be expected to be at or near historic lows, after adjusting for the increase caused by changes to the survey wording in 2024.

Two patterns make trends in use of these drugs unique. First, peak use came during the 1990s relapse—and not during the 1980s as it did for so many other drugs—suggesting that its rise during the 1990s was more than just a return to drug use patterns of the past and instead represented the emergence of new, unique patterns of use for adolescents. Second, the peak established after the 1990s drug relapse stayed at a stubbornly high level for much longer than most illicit drugs. High levels of use during the 2000s raised concern that use of these types of prescription drugs had become endemic. However, the sharp declines that commenced around 2010 proved otherwise.

Because the question text on half of the questionnaire forms was updated in 2002 with the inclusion of additional examples of narcotics other than heroin (i.e., OxyContin, Vicodin, and Percocet), we obtained a higher reported level of use with the new version of the question that year (9.4%) than with the previous version of the question (7.0%). (When we make a significant change in the wording of a question, we often use this type of spliced design in which a random half of the respondents to the questionnaire forms containing the drug get the new version and others get the old version in the same year so that we can assess the impact of the wording change.)

Prescription Sleeping Medications

Use of prescription sleeping medications without a doctor's orders is reported only for 12th grade students. Prevalence was little changed from 2024 to 2025.

A discontinuity prevents direct comparison of current levels to estimates in 2023 and earlier, as indicated by the gap on the graph. In 2024, prevalence adjusted upward as an artifact of an update to the survey question text. Specifically, in 2024 and 2025 a question on prescription sleeping medications replaced the previous version focused on "sedatives". This methodological change by itself significantly increased past 30-day use by 2.6 percentage points, past 12-month use by 3.8 percentage points, and lifetime use by 7.6 percentage points in 2024. For more detailed information on the survey text update, see Appendix E.

Since the mid 2000s prevalence has steadily declined and levels today would be expected to be at or near historic lows, after adjusting for the increase caused by changes to the survey wording in 2024.

Prior to the mid 2000s, prevalence had increased during the 1990s drug and use stayed high until 2005, which is nearly a decade later than the decline seen for most other drugs. This pattern of sustained, high levels past the 1990s is found for misuse of many of the prescription drugs.

Prior to the increase in use in the 1990s, past 12-month use had declined very appreciably from its highest reading of 10.7% in 1975 to 2.8% in 1992.

Prescription Stimulants

The percentage of students who used prescription stimulant medications without a medical professional's orders changed little from 2024 to 2025, and past 12-month use was 4% or less in all grades.

A discontinuity prevents direct comparison of current levels to estimates in 2023 and earlier, as indicated by the gap on the graph. In 2024, prevalence was adjusted upward with an update to the survey question text. Specifically, in 2024 and 2025 a question on prescription stimulant medications replaced the previous version that focused on "amphetamines". This methodological change by itself significantly increased prevalence levels by up to three percentage points in 2024, with the largest increases in the younger grades. For more detailed information on the survey text update, see Appendix E.

Levels today would be expected to be at or near historic lows, after adjusting for the increase caused by changes to the survey wording in 2024.

Use of these substances increased during the 1990s; the increase was sustained well into the 2000s, which is a trend typical for the general category of prescription medication misuse. A general decline in use levels since the mid-2000s was interrupted by a four-year climb from 2009 to 2013, but then resumed.

Prescription Weight Loss Drugs (Not Prescribed)

Medications for weight loss, such as brand names Wegovy and Ozempic, are a new class of GLP-1 agonist drugs that medical professionals can prescribe to help patients lose weight and treat obesity. They are fundamentally different than over-the-counter "diet pills", which are stimulant products that MTF has asked about on past surveys.

In 2025, 2% of students in 8th, 10th, and 12th grades reported using these medications without a prescription from a medical professional.

Prescription Weight Loss Drugs (Prescribed)

Medications for weight loss, such as brand names Wegovy and Ozempic, are a new class of GLP-1 agonist drugs that doctors prescribe to help patients lose weight. They are fundamentally different than over-the-counter "diet pills," which are stimulant products that MTF has asked about on past surveys.

In 2025, 2%% of students in 8th, 10th, and 12th grades reported using these medications with a doctor's prescription for them.

Provigil

Questions on use of Provigil (a prescription stay-awake drug used for narcolepsy, shift work, etc.) were added to the 12th grade surveys in 2009. In 2011, 1.5% used this drug without a medical professional's orders in the past 12 months, suggesting that this drug had not made serious inroads among youth in terms of non-medically supervised use. Given the low use, questions on Provigil were no longer included on the survey starting in 2012. These questions will be added back to the survey in future years if a concern arises that adolescent use of Provigil is increasing.

Regular Small Cigars

Use of regular (unflavored) small cigars during the past 30 days did not significantly change in 2025 in any of the three grades. Prevalence has declined markedly overall since first tracked in 2014, and 2025 levels are at or near record lows, all below 1.4%.

Ritalin

The stimulant Ritalin is used to treat attention deficit hyperactivity disorder (ADHD). Prevalence of use without a doctor's orders in the last 12 months was less than 1% in all grades in 2025.

Prevalence has declined substantially since first tracked by the survey in 2001. From 2001 to 2025, it declined from 2.9% to 0.6% in 8th grade, from 4.8% to 0.7% in 10th grade, and from 5.1% to 0.8% in 12th grade.

Rohypnol

Rohypnol, a "club drug," was added to MTF in 1996.

In 2025, prevalence is less than 1% in all grades for past 12-month use. Questions on lifetime and past 30-day use were removed from the survey in 2025 because of low prevalence and to make room for other content. These questions will be reintroduced in future surveys if concern arises that use of this drug is increasing.

Salvia

Salvia is an herb with hallucinogenic properties, common to southern Mexico and Central and South Americas. Although it currently is not a drug regulated by the Controlled Substances Act, several states have passed legislation to regulate its use, as have several countries.

Prevalence of salvia use in the last 12 months stood at 0.8% in all grades in 2022. Use of this drug declined considerably since it was first measured in 2009, when prevalence among 12th grade students was 5.7%. Questions on this drug were discontinued after 2022 in order to make room for new content. These questions will be added back if concerns arise about renewed use.

Smokeless Tobacco

The percentage of 12th grade students who used smokeless tobacco during the past 30 days (also referred to as current use) has trended upward the past two years and in 2025 was 3.6%. In contrast, in 8th and 10th grade use has trended downward the past two years, and in 2025 prevalence was at record lows in these grades at 1% and 2%, respectively.

One possible explanation for trends in the past two years is that some students interpret the smokeless tobacco question to include nicotine pouch use, even though pouches are not listed as examples in the item wording. Supporting this interpretation, nicotine pouch use has risen among 12th graders over the past two years, while remaining steady in the lower grades.

Lifetime use was at or near record lows in 2025, at 7% in 12th grade, 5% in 10th grade, and 3% in 8th grade.

Daily use of smokeless tobacco was very low in 2025, at 1.2% or less in all grades.

Trends in smokeless tobacco stand out as very different from trends for adolescent use of other drugs. Unlike almost all other substances, use of smokeless tobacco did not increase during the 1990s relapse but actually declined for nearly 10 years, beginning around 1994. Further, smokeless tobacco is one of few substances for which prevalence increased after 2007, although this increase among 10th and 12th grade students was not lasting. Finally, the trends show little in the way of cohort effects, given that trends have moved in parallel and not in staggered fashion for all three grades. These results suggest that the factors leading to use of smokeless tobacco are much different from the drivers of use of other drugs.

Questions about the use of smokeless tobacco were first introduced in 1986, omitted in 1990 and 1991, and then reintroduced in 1992. Through 2010, the examples of smokeless tobacco provided in the question were snuff, plug, dipping tobacco, and chewing tobacco; because of new forms of smokeless tobacco entering the market, snus and dissolvable tobacco were added to the examples in 2011. The introduction and promotion of new smokeless products, including snus, may well have contributed to the increase in use seen in all grades that peaked around that time.

Snus

In 2025, prevalence of snus (rhymes with "goose") during the past 12 months significantly increased in 12th grade from 1.9% to 3.7%. In 8th and 10th grades, prevalence was little changed and in 2025 was 0.9% and 1.4%.

Snus is a variation on smokeless tobacco, as are some other dissolvable tobacco products, that literally dissolve in the mouth. Questions on snus were added to the 12th grade survey in 2011 and to the 8th and 10th grade surveys in 2012. Past year prevalence had been falling quite sharply in the

upper grades since the introduction of those questions. The upper grades have tended to have considerably higher levels of use—at least until 2018.

The increase in 12th grade prevalence from 2024 to 2025 may reflect students reporting nicotine pouch use in response to the snus question. The survey wording—"Use snus (a small packet of tobacco that is put in the mouth)"—could easily be interpreted by students as referring to nicotine pouches. The snus question has appeared on the survey unchanged since 2011 in 12th grade and since 2012 in 10th and 8th grades, but it will need to be updated given the emergence of nicotine pouches.

Stay Awake Pills

Use of stay-awake pills, which are over-the-counter stimulants, were near the lowest level ever recorded by the survey in 2025 for past 12-month use. The 2025 prevalence of 2.1% is more than twelve times lower than the peak level of 26% in 1988. Since then, prevalence of stay-awake pills has declined precipitously with only a slight, not statistically significant, rebound since the all-time low level of 0.8% in 2023.

Questions on past 30-day and lifetime use were discontinued in 2025 due to low prevalence and to make room for new content. These questions will be reintroduced in future surveys if concerns arise about renewed use.

Steroids

In 2025, past 12-month use of anabolic steroid use was 1.1% or lower in all grades. In general, lifetime, past 12-month, and past 30-day use have decreased, sometimes unevenly, since highs in the early 2000s.

Anabolic steroids, sometimes used for muscle development including in body building, were rendered illegal to purchase or sell without a prescription in the Anabolic Steroids Control Act of 1990. Prevalence of use fell among 12th graders for a couple of years thereafter but then increased some. Use for all grades peaked around 2002 and have since declined substantially.

In 2025, questions on past 30-day and lifetime use were removed from the questionnaire to make room for new content. These questions will be added back to the survey in future years if a concern arises that adolescent use of steroids is making a comeback.

Synthetic Cannabis

The percentage of students who used synthetic cannabis in the past 12 months was 3.2% or less in 2022, the last year the MTF questionnaire included questions on this substance. Questions on synthetic cannabis will be added back to the survey in future years if concerns arise about renewed use. A resurgence of use seems unlikely, given that students now have a range of widely available

cannabis products to choose from, including flavored cannabis solutions for vaping, as well as hemp-derived psychoactive products such as Delta-8.

Tobacco With Hookah

A hookah is a device used to inhale combustible tobacco and consists of a long, flexible tube through which users inhale tobacco smoke that has passed through water and is thereby cooled. In 2025, the percentage of 12th grade students who used a hookah in the past 12 months was 1.9%, which is the lowest level recorded by the survey since it was first tracked in 2010. Use increased from 2010 to 2014 but has been generally declining since, with 2025 prevalence about ten times lower than the high of 23% recorded in 2014.

Vaping Cannabis

Vaping is a relatively new mode for cannabis use. It differs from combustible use because vaping solutions come in a variety of flavors, vaping delivers a higher concentration of THC (the active psychoactive ingredient in cannabis), and vaping is more readily concealable because it does not produce the distinctive odor associated with combustible use.

In 2025, the percentage of students who reported vaping cannabis in the past 12 months continued a decline over the past few years; none of the one-year declines in the three grades were statistically significant.

Large increases in cannabis vaping in previous years were not accompanied by increases in overall cannabis use. These results suggest that cannabis vaping is not increasing the number of adolescent cannabis users. It could substitute for combustible cannabis use, it could serve as a way for cannabis users to avoid detection by adults because it is easier to conceal, and/or it could be a way for users to supplement their combustible cannabis use.

Vaping Flavored Cannabis

Vaping flavored cannabis in the past 12 months declined in all grades from 2024 to 2025, and the decline was statistically significant in 8th grade. There were no significant changes from 2024 to 2025 in vaping flavored cannabis in the past 30 days or lifetime.

Across all grades, since measurement began in 2021, past 12-month use has followed an inverted U-shaped trend: prevalence rose sharply from 2021 to a peak in 2023, then declined in 2024 and 2025 to levels comparable to those observed at baseline in 2021. The increasing use from 2021 to 2023 was unusual because use of almost all other substances by adolescents held steady or decreased during this time period.

Vaping Flavoring

The percentage of youth who report that they vaped just flavoring was at or near record lows in 2025 in all grades for lifetime, past 12-month, and past 30-day use. In all grades, past 12-month prevalence in 2025 was more than half of its peak level in 2018. Daily vaping of just flavoring was at or below 2% in all grades and did not significantly change from 2024 to 2025.

Practically all youth who report vaping just flavoring also report vaping nicotine (as indicated by very low prevalence in the Vape Flavoring Without Nicotine tables and graphs). Most adolescents who vape just flavoring are doing so as a supplement to their nicotine vaping and not as a substitute for it.

Vaping Flavoring Without Nicotine

In 2017, MTF started asking students if they vaped just flavoring. A substantial prevalence of this outcome could raise at least two potential scenarios. First, it could be possible that a portion of youth believed they were not vaping nicotine when in fact they were. Second, if students truly were vaping only flavoring, then the recent large increases in adolescent vaping may be less alarming than it at first appeared—to the extent that adolescents are not being exposed to the addictive chemical nicotine.

These two potential scenarios are not supported by the results. The finding that in 2025 less than 1% of students in all grades report vaping flavoring exclusively without nicotine in the past 30 days indicates that practically all students who report vaping just flavoring are also vaping nicotine.

Vaping Nicotine (E-cigarettes)

The percentage of students who vaped nicotine declined sharply from 2020 to 2021, coinciding with the onset of the pandemic, and continued to decrease in the subsequent years, after a very small rebound, for use in the past 12 months and lifetime. Vaping nicotine in the past 30 days edged upward in 2025, although not significantly so compared to 2024, in 10th and 12th grades.

Despite the recent declines in use, the prevalence of nicotine vaping by adolescents remains one of the highest among all substances. In 2025, its past 12-month prevalence level of 9% in 8th grade is second only to alcohol. Its prevalence of 20% in 12th grade and 14% in 10th grade ranks third behind alcohol and cannabis use. These high rankings largely reflect the steep surge in nicotine vaping between 2017 and 2019.

Vicodin

Use of the specific opioid drug Vicodin without a doctor's orders in the past 12 months was 1.1% or less in the three grades in 2025. These low levels are the result of a marked decline that

plateaued around 2020 from peaks before 2010 of 3% in 8th grade, 8% in 10th grade, and 11% in 12th grade.

While there was a large age difference in prevalence in earlier years, there remained practically none in 2025 as prevalence approached zero.

Wine

Wine consumption is asked only of 12th grade students.

In 2025, prevalence reached record lows for lifetime, past 12-month, and past 30-day use, although none of the one-year changes from 2024 to 2025 were statistically significant. These lows are the culmination of an overall decline that has persisted for two and a half decades. From 2000 to 2025, lifetime prevalence fell from 64% to 25%, past 12-month prevalence from 45% to 16%, and past 30-day prevalence from 16% to 6%.

In 1988, MTF added a question on wine coolers, which had the effect of sharply reducing self-reported wine use. (Up to that point many users of wine coolers likely reported such use under wine.) Prevalence of wine use rose somewhat during the 1990s drug relapse but continued a long-standing decline beginning in 2001.

Binge drinking with wine declined substantially in the late 1980s, suggesting that wine coolers accounted for reported wine binge drinking until wine coolers were separated into their own category. Questions on binge drinking with wine, defined as five or more 4-ounce glasses of wine in row during the last two weeks, were discontinued in 2022 to make room for new content.

CHAPTER 6 – Initiation and Noncontinuation: Prevalence and Trends (Forthcoming)

CHAPTER 7 – Intensity of Drug Use (Forthcoming)

CHAPTER 8 – Attitudes and Beliefs About Drug Use (Forthcoming)

CHAPTER 9 – The Social Context (Forthcoming)

CHAPTER 10 – Study Publications (Forthcoming)

Appendix A – Prevalence and Trend Estimates Adjusted for Absentees and Dropouts (Forthcoming)

Appendix B – Definition of Background and Demographic Subgroups (Forthcoming)

Appendix C – Trends in Drug Use for Three Grades Combined (Forthcoming)

Appendix D – Trend Tables for All Substances 1975–2025 (Forthcoming)

Appendix E – Updates to Survey Question Text on Prescription Drugs in 2024

In 2024, MTF updated the text for survey questions on prescription drugs. Periodic updates are necessary for long-running studies such as MTF, which has been conducted for more than fifty consecutive years. As new birth cohorts enter the survey, they may recognize drug types by different colloquial names or by brand names—such as OxyContin—that continually emerge and fade. Over time, the everyday language used to describe a drug can drift from the terminology used in the original survey items. In these instances, updating the questions ensures that MTF continues to capture drug use in terms familiar to today's youth and adults.

MTF convened an expert panel on October 10, 2023 to consider updating the text of the MTF survey questions on prescription drugs. The membership consisted of:

- **Richard Miech**, PhD, MPH, Principal Investigator of Monitoring the Future Main Study, Research Professor at the Institute for Social Research, University of Michigan
- **Megan Patrick**, PhD, Principal Investigator of Monitoring the Future Panel Study, Collegiate Research Professor at the Institute for Social Research, University of Michigan
- **Kathleen Stringer**, PharmD, Albert B. Prescott Collegiate Professor of Clinical and Translational Pharmacy, College of Pharmacy, and Professor of Internal Medicine, University of Michigan Medical School
- **Sean Esteban McCabe**, PhD, Carol J. Boyd Collegiate Professor and Director, Center for the Study of Drugs, Alcohol, Smoking and Health, Department of Health Behavior and Clinical Sciences, University of Michigan School of Nursing
- **Amy Bohnert**, PhD, MHS, Professor, Departments of Anesthesiology (primary), Psychiatry, and Epidemiology, University of Michigan Medical School
- **Kevin Boehnke**, PhD, Assistant Professor, Department of Anesthesiology, University of Michigan Medical School

This group reached a consensus decision that all of the questions on prescription drugs warranted an update. As detailed in this report, we first updated a randomly selected half of the prescription drug questions in 2024, with the plan to use the updated questions in all questionnaires in 2025 and future years.

Updates to question text may introduce discontinuity in trends. We expected that the updated questions would yield higher prevalence estimates because they use terms more familiar to adolescents. For example, we expected that the new terminology of "prescription anti-anxiety medications" would be more recognizable to adolescents who use these drugs than the original wording referring to "tranquilizers".

In 2024, MTF conducted a randomized controlled experiment to quantify the extent to which updates to survey questions, by themselves, independently increased or decreased prevalence estimates. All 8th-, 10th-, and 12th-grade surveys were randomized so that half of the students received the updated prescription drug question text and the other half received the unchanged text. (The surveys for those ages 19–65 were also similarly randomized; results are described in Table/Figure 91 in Patrick et al., 2025.) The difference in prevalence estimates between the two versions represents the size of the methodological artifact. This difference can then be used to adjust trends to account for the updates. For example, if the updated item yields an estimate four percentage points higher than the unchanged item, an adjusted trend could be derived by subtracting four percentage points from all years that used the updated item.

This appendix consists of five tables. Tables E-1 through E-4 present prevalence estimates for the updated and unchanged questions in 2024. Table E-5 presents the text for the updated and original questions for each of the four classes or prescription drugs assessed.

One final note: the MTF annual report on secondary school students that reports data to 2024 presents the estimates for the *unchanged* survey text in 2024, allowing direct comparison with previous years. The 2025 report presents estimates from the *updated* measures for both 2024 and 2025, allowing assessment of the degree of substantive change across the two years. Comparisons of 2024 and 2025 updated estimates with previous years requires adjustment, using the information provided in the following tables.

Table E-1: Prescription Stimulant Medications Prevalence Estimates in 2024, with Updated and Unchanged Text Wording (95% Confidence Intervals in Parentheses)

Grade and Reporting Interval	Updated Survey Text Wording	Unchanged Survey Text Wording
12th grade		
Lifetime	5.6 (4.5-6.9)*	4.3 (3.5-5.3)
Past 12-month	2.4 (1.9-3.1)	2.3 (1.6-3.1)
Past 30-day	1.2 (0.8-1.7)	1.2 (0.8-1.6)
10th grade		
Lifetime	6.2 (5.4-7.2)**	4.3 (3.6-5.0)
Past 12-month	3.5 (2.9-4.1)**	2.2 (1.7-2.9)
Past 30-day	2.1 (1.6-2.7)**	1.1 (0.7-1.5)
8th grade		
Lifetime	7.5(6.5-8.5)**	4.5(3.6-5.7)
Past 12-month	4.0(3.4-4.7)**	2.1(1.6-2.8)
Past 30-day	2.3(1.7-3.0)**	1.0(0.7-1.4)

*** Prevalence significantly higher for updated survey text version p<.05**

**** Prevalence significantly higher for updated survey text version p<.01**

Notes:

- **In 2024, a randomly selected half of students received the updated survey text wording, and the other half received the unchanged text.**
- **See Table E-5 for updated and unchanged survey question text.**

Table E-2: Prescription Opioid Medications Prevalence Estimates in 2024, with Updated and Unchanged Text Wording (95% Confidence Intervals in Parentheses)

Grade and Reporting Interval	Updated Survey Text Wording	Unchanged Survey Text Wording
12th grade		
Lifetime	4.1 (3.3-5.1)**	1.6 (1.1-2.5)
Past 12-month	1.6 (1.1-2.3)**	0.6 (0.3-1.0)
Past 30-day	0.5 (0.3-0.9)	0.3 (0.1-0.5)

**** Prevalence significantly higher for updated survey text version p<.01**

Notes:

- **In 2024, a randomly selected half of students received the updated survey text wording, and the other half received the unchanged text.**
- **See Table E-5 for updated and unchanged survey question text.**
- **Estimates for prescription opioid medications not reported in 8th and 10th grade due to uncertain validity of this measure among younger adolescents.**

Table E-3: Prescription Sleeping Medications Prevalence Estimates in 2024, with Updated and Unchanged Text Wording (95% Confidence Intervals in Parentheses)

Grade and Reporting Interval	Updated Survey Text Wording	Unchanged Survey Text Wording
12th grade		
Lifetime	8.9 (7.9-10.0)**	2.3 (1.8-3.0)
Past 12-month	4.8 (4.0-5.8)**	1.0 (0.7-1.5)
Past 30-day	2.8 (2.1-3.6)**	0.2 (0.1-0.5)

**** Prevalence significantly higher for updated survey text version p<.01**

Notes:

- **In 2024, a randomly selected half of students received the updated survey text wording, and the other half received the unchanged text.**
- **See Table E-5 for updated and unchanged survey question text.**
- **Estimates for prescription sleeping medications not reported in 8th and 10th grade due to uncertain validity of this measure among younger adolescents**.

Table E-4: Prescription Anti-Anxiety Medications Prevalence Estimates in 2024, with Unchanged and Updated Text Wording (95% Confidence Intervals in Parentheses)

Grade and Reporting Interval	Updated Survey Text Wording	Unchanged Survey Text Wording
12th grade		
Lifetime	6.2 (4.5-8.4)**	2.0 (1.6-2.6)
Past 12-month	3.5 (2.7-4.6)**	0.4 (0.2-0.7)
Past 30-day	2.3 (1.8-3.0)**	0.3 (0.1-0.6)
10th grade		
Lifetime	5.1 (4.1-6.2)**	1.9 (1.5-2.3)
Past 12-month	3.1 (2.5-3.8)**	0.8 (0.6-1.2)
Past 30-day	1.9 (1.4-2.5)**	0.3 (0.2-0.6)
8th grade		
Lifetime	5.3 (4.3-6.6)**	2.0 (1.5-2.6)
Past 12-month	3.0 (2.4-3.8)**	0.7 (0.5-1.1)
Past 30-day	2.0 (1.5-2.7)**	0.4 (0.3-0.7)

**** Prevalence significantly higher for updated survey text version p<.01**

Notes:

- **In 2024, a randomly selected half of students received the updated survey text wording, and the other half received the unchanged text.**
- **See Table E-5 for updated and unchanged survey question text.**

Table E-5: Updated and Unchanged Survey Question Text (continues)

Updated Question Text	Unchanged Question Text
Prescription stimulant medications	
Stimulant medications, sometimes called amphetamines, are prescribed by doctors to help people pay attention, to help people with ADHD, to address hyperactivity, and/or to help them stay awake. They include prescription medications like Adderall (amphetamine/dextroamphetamine), Ritalin (methylphenidate), Dexedrine (dextroamphetamine), and Vyvanse (lisdexamfetamine).	The next questions are about AMPHETAMINES and OTHER STIMULANT DRUGS, which are sometimes prescribed by doctors for people who have trouble paying attention, are hyperactive, have ADHD, or have trouble staying awake. Drugstores are not supposed to sell them without a prescription from a doctor. They are sometimes called: Uppers, Ups, Speed, Dexies, Pep Pills, Diet Pills, Meth or Crystal Meth. They include the following drugs: Dexedrine, Ritalin, Adderall, Concerta, Vyvanse, Methamphetamine. IN YOUR ANSWERS ABOUT AMPHETAMINES AND OTHER STIMULANT DRUGS, DO NOT INCLUDE ANY NONPRESCRIPTION OR OVER-THE-COUNTER DRUGS.
On how many occasions (if any) have you taken **prescription stimulant medications** on your own—that is, without a medical professional telling you to use them..."	On how many occasions (if any) have you taken **amphetamines or other prescription stimulant drugs** on your own—that is, without a doctor telling you to take them…"
Prescription opioid medications	
Opioid medications are prescribed by doctors to help relieve pain. They include prescription medications like OxyContin (oxycodone), Vicodin (hydrocodone), codeine, morphine, and fentanyl.	The next questions are about narcotics other than heroin, which are sometimes prescribed by doctors. Drugstores are not supposed to sell them without a prescription. These include: Methadone, Codeine, OxyContin, Percodan, Opium, Demerol, Percocet, Ultram, Morphine, Oxycodone, Tylox, Tramadol, Vicodin, Hydrocodone (Lortab, Lorcet, Norco), MS Contin, Suboxone.
On how many occasions (if any) have you taken ***prescription opioid medications*** on your own—that is, without a doctor telling you to take them..."	On how many occasions (if any) have you taken ***narcotics other than heroin*** on your own—that is, without a doctor telling you to take them..."

Table E-5: Updated and Unchanged Survey Question Text (continued)

Updated Question Text	Unchanged Question Text
Prescription sleeping medications	
Sleeping medications prescribed by doctors to help people sleep are sometimes called sedatives. They include prescription medications like Ambien (zolpidem), Lunesta (eszopiclone), and Sonata (zaleplon).	The next questions are about sedatives, including barbiturates, which doctors sometimes prescribe to help people relax or get to sleep. Drugstores are not supposed to sell them without a prescription. Sedatives are sometimes called Downs, or Downers. They include the following drugs: Phenobarbital, Ambien, Seconal, Lunesta, Dalmane, Sonata, Restoril, Intermezzo, Halcion, Zolpimist.
On how many occasions (if any) have you taken ***prescription sleeping medications*** on your own—that is, without a doctor telling you to take them..."	On how many occasions (if any) have you taken **sedatives** on your own—that is, without a doctor telling you to take them..."
Prescription anti-anxiety medications	
Anti-anxiety medications, which include tranquilizers, are prescribed by doctors to help calm people down. They include prescription medications like Ativan (lorazepam), Valium (diazepam), Xanax (alprazolam), and Klonopin (clonazepam).	The next questions are about tranquilizers, which doctors sometimes prescribe to calm people down, quiet their nerves, or relax their muscles. They include Librium, Valium, Xanax, Serax, Soma, Ativan, and Klonopin.
On how many occasions (if any) have you taken **prescription anti-anxiety medications** on your own—that is, without a doctor telling you to take them…"	On how many occasions (if any) have you taken **tranquilizers** on your own—that is, without a doctor telling you to take them…"