National Survey on Drug Use and Health

The NSDUH Report

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Characteristics of Recent Adolescent Inhalant Initiates

In Brief

- In 2002 to 2004, an average of 598,000 youths aged 12 to 17 per year reported that they initiated inhalant use in the 12 months prior to being surveyed
- The types of inhalants most frequently mentioned as having been used by recent initiates included glue, shoe polish, or toluene (30.3 percent); gasoline or lighter fluid (24.9 percent); nitrous oxide or "whippets" (24.9 percent); and spray paints (23.4 percent)
- Among recent inhalant initiates, 19.4 percent used inhalants on 13 or more days in the past year
- In 2002 to 2004, 59.7 percent of recent inhalant initiates aged 12 to 17 had used cigarettes prior to using inhalants, 67.6 percent had previously used alcohol, and 42.4 percent had previously used marijuana; 35.9 percent had used all three substances – cigarettes, alcohol, and marijuana – before they used inhalants

Inhalant use (i.e., the deliberate inhalation of volatile substances to induce a psychoactive or mind-altering effect) is a serious problem among adolescents. Research suggests that inhalants are the third most widely used class of illicit drugs among adolescents.[1] The National Survey on Drug Use and Health (NSDUH) asks respondents aged 12 or older questions related to their use of inhalants during their lifetime and in the past year. Inhalants are defined as "liquids, sprays, and gases that people sniff or inhale to get high or to make them feel good." The categories of inhalants asked about in the survey are (a) amyl nitrite, "poppers," locker room deodorizers, or "rush"; (b) correction fluid, degreaser, or cleaning fluid; (c) gasoline or lighter fluid; (d) glue, shoe polish, or toluene; (e) halothane, ether, or other anesthetics; (f) lacquer thinner or other paint solvents; (g) lighter gases, such as butane or propane; (h) nitrous oxide or "whippets"; (i) spray paints; and (j) other aerosol sprays. Respondents who used inhalants were asked when they first used them, and those whose age at first use was equal to or l year less than their current age were asked to indicate the month in which they initiated their use of inhalants. Respondents also were asked to indicate the number of days on which they used inhalants in the past year.

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This report focuses on youths aged 12 to 17 who initiated the use of inhalants in the 12 months prior to the survey.[2] All findings presented in this report are annual averages based on combined 2002, 2003, and 2004 NSDUH data.

Recent Inhalant Initiates

In 2002 to 2004, an average of 598,000 youths aged 12 to 17 per year reported that they initiated inhalant use in the 12 months prior to being surveyed. The rate of initiation did not change significantly between 2002 and 2004.

Demographic Characteristics of Recent Inhalant Initiates

In 2002 to 2004, approximately half of the youths who initiated inhalant use in the past year (as well as half of youths in general) were male (Table 1). Recent inhalant initiates were more likely to be aged 14 or 15 than youths in the general population (39.2 vs. 33.9 percent), and less likely to be aged 12 or 13 (30.0 vs. 33.5 percent). Whites were overrepresented among past year inhalant initiates when compared to the general population (70.1 vs. 62.2 percent), while blacks (7.3 vs. 14.9 percent) and Asians were underrepresented (2.1 vs. 4.0 percent). Additionally, recent inhalant initiates were more likely to be from families with incomes at 400 percent or more of the Federal poverty threshold than youths in the general population (32.7 vs. 29.4 percent) and less likely to be from families with incomes at 125 percent or less of the poverty threshold (18.5 vs. 22.3 percent).[3]

Types of Inhalants Used among Recent Initiates

The types of inhalants most frequently mentioned as having been used by past year inhalant initiates aged 12 to 17 included glue, shoe polish, or toluene (30.3 percent); gasoline or lighter fluid (24.9 percent); nitrous oxide or "whippets" (24.9 percent); and spray paints (23.4 percent) (Table 2).[4] The percentage of recent initiates who used aerosol sprays other than spray paints increased from 12.6 percent in 2002 to 23.8 percent in 2004.

Table 1. Demographic Characteristics of Recent Inhalant Initiates Aged 12 to 17 and All Respondents Aged 12 to 17: 2002, 2003, and 2004

Demographic Characteristics	Recent Inhalant Initiates (Percent)	General Population (Percent)
Gender		
Male	49.5	51.1
Female	50.5	48.9
Age Group		
12 or 13	30.0+	33.5
14 or 15	39.2+	33.9
16 or 17	30.8	32.6
Race/Ethnicity*		
White	70.1+	62.2
Black or African American	7.3+	14.9
Hispanic or Latino	17.6	16.3
American Indian or Alaska Native	0.6	0.7
Native Hawaiian or Other Pacific Islander	0.4	0.3
Asian	2.1+	4.0
Two or More Races, Non-Hispanic	2.0	1.6
County Type*		
Large Metropolitan	51.6	53.2
Small Metropolitan	31.2	29.7
Non-Metropolitan	17.2	17.1
Family Income Relative to Poverty Threshold		
Less Than 125 Percent	18.5+	22.3
125 to 199 Percent	15.1	16.3
200 to 399 Percent	33.8	32.0
400 Percent or Higher	32.7+	29.4

Table 2. Specific Types of Inhalants Used During the Past Year among Recent Inhalant Initiates Aged 12 to 17: 2002, 2003, and 2004

Type of Inhalant	Percent
Glue, shoe polish, or toluene	30.3
Gasoline or lighter fluid	24.9
Nitrous oxide or "whippets"	24.9
Spray paints	23.4
Correction fluid, degreaser, or cleaning fluid	18.4
Other aerosol sprays	18.0
Amyl nitrite, "poppers," locker room deodorizers, or "rush"	14.7
Lacquer thinner or other paint solvents	11.7
Lighter gases. such as butane or propane	9.4
Halothane, ether, or other anesthetics	3.4

Figure 1. Number of Days That Recent Inhalant Initiates Aged 12 to 17 Used Inhalants in the Past Year: 2002, 2003, and 2004

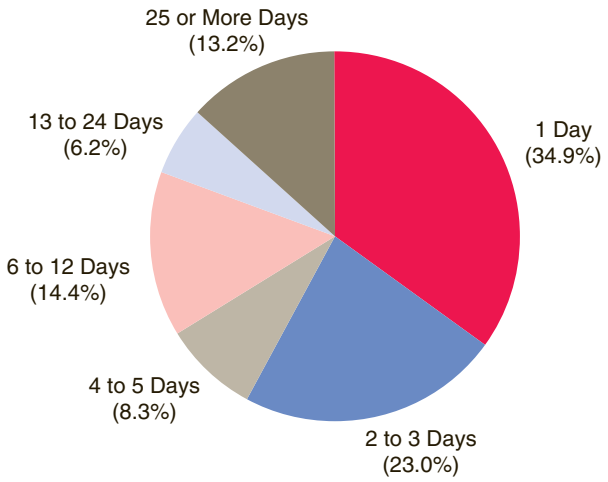
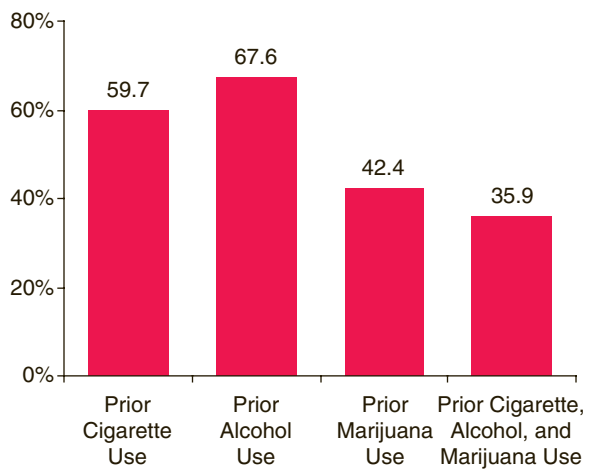


Figure 2. Percentages of Recent Inhalant Initiates Aged 12 to 17 Reporting Cigarette, Alcohol, and Marijuana Use Prior to Their Initiating Inhalant Use: 2002, 2003, and 2004



Frequency of Past Year Inhalant Use

Among youths aged 12 to 17 who were recent inhalant initiates, 34.9 percent used inhalants on 1 day in the past year, 23.0 percent used on 2 to 3 days, 8.3 percent used on 4 to 5 days, 14.4 percent used on 6 to 12 days, and 19.4 percent used on 13 or more days (Figure 1).

Prior Cigarette, Alcohol, and Marijuana Use by Recent Inhalant Initiates

In 2002 to 2004, 59.7 percent of past year inhalant initiates aged 12 to 17 had used cigarettes prior to using inhalants, 67.6 percent had previously used alcohol, and 42.4 percent had previously used marijuana.[5,6] An estimated 35.9 percent had used all three substances – cigarettes, alcohol, and marijuana – before they used inhalants (Figure 2). Nearly one fourth of recent initiates (23.2 percent) had not used cigarettes, alcohol, or marijuana prior to their first inhalant use.

End Notes

[1] Wu, L.T., Pilowsky, D.J., & Schlenger, W.E. (2004). Inhalant abuse and dependence among adolescents in the United States. *Journal of the American Academy of Child and Adolescent Psychiatry, 43*, 1206–1214.

[2] Respondents were aged 12 to 17 at the time of the survey. With initiation having occurred in the 12 months prior to the survey, some 12-year-old past year initiates represented in this report were 11 years old when they initiated inhalant use but had reached age 12 by the time of the survey. Youths who initiated inhalant use at 17 years of age, but who had turned 18 by the time of the survey were excluded from this analysis.

[3] The poverty threshold variable is based on the family income of the respondent expressed as a percentage of the Federal poverty threshold as published annually by the U.S. Census Bureau. It takes into account family size and the number of children in the household.

[4] Respondents could report more than one type of inhalant used. Therefore, percentages sum to more than 100 percent.

[5] Use of other substances prior to inhalant use was established by utilizing first-use measures that include age, year, month, and day of first use. In situations where all four measures were equal between inhalant use and use of the substance of interest, respondents were classified as not having used the substance of interest prior to inhalant use.

[6] It is important to note that not all persons who used cigarettes, alcohol, and marijuana in their lifetime also had initiated inhalant use.

Figure and Table Notes

Source: SAMHSA, 2002, 2003, and 2004 NSDUHs.

[*] Race/ethnicity categories are determined by combining the responses from two separate questions. For this report, respondents identifying themselves as Hispanic were assigned to the Hispanic group regardless of their racial identification. Respondents identifying themselves as non-Hispanic were grouped according to their racial identification. Thus, "white" refers to those identifying themselves as non-Hispanic and white.

[**] Large metropolitan areas have a population of 1 million or more. Small metropolitan areas have a population of fewer than 1 million. Non-metropolitan areas are outside metropolitan statistical areas (MSAs), as defined by the Office of Management and Budget.

[+] Differences between estimates for recent inhalant initiates and for the general population were statistically significant at $p<.05$.

Research findings from the SAMHSA 2002, 2003, and 2004 National Surveys on Drug Use and Health (NSDUHs)

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The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). Prior to 2002, this survey was called the National Household Survey on Drug Abuse (NHSDA). The 2002, 2003, and 2004 data are based on information obtained from 68,611 persons aged 12 to 17, of whom 1,655 were recent inhalant initiates. The survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

The NSDUH Report is prepared by the Office of Applied Studies (OAS), SAMHSA, and by RTI International in Research Triangle Park, North Carolina. (RTI International is a trade name of Research Triangle Institute.)

Information on NSDUH used in compiling data for this issue is available in the following publications:

Office of Applied Studies. (2005). *Results from the 2004 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 05-4062, NSDUH Series H-28). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Office of Applied Studies. (2004). *Results from the 2003 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 04-3964, NSDUH Series H-25). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Office of Applied Studies. (2003). *Results from the 2002 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 03-3836, NSDUH Series H-22). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Also available online: http://www.oas.samhsa.gov

Because of improvements and modifications to the 2002 NSDUH, estimates from the 2002, 2003, and 2004 surveys should not be compared with estimates from the 2001 or earlier versions of the survey to examine changes over time.

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