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FACT SHEET

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Inhalants

Background

The term "inhalants" refers to more than a thousand household and commercial products that can be abused by inhaling them through one's mouth or nose for an intoxicating effect. These products are composed of volatile solvents and substances commonly found in commercial adhesives, lighter fluids, cleaning solvents, and paint products. Their easy accessibility, low cost, and ease of concealment make inhalants one of the first substances abused.

Inhalant users can ingest substances in various ways that include inhaling directly from containers for products such as rubber cement or correction fluid, sniffing fumes from plastic bags held over the mouth and nose, or sniffing a cloth saturated with the substance. The substance may be inhaled directly from an aerosol can or out of an alternative container such as a balloon filled with nitrous oxide. Some volatile substances release intoxicating vapors when heated.

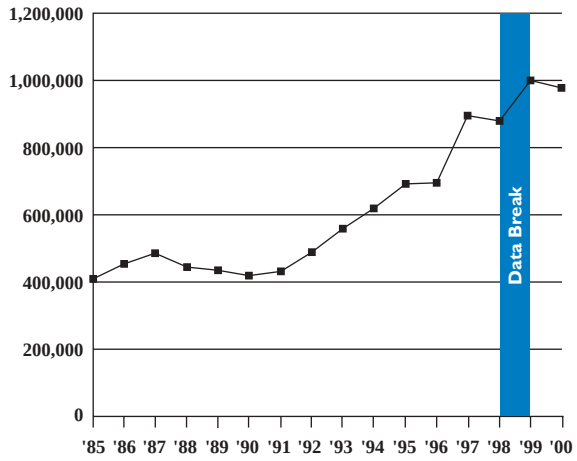
Prevalence Estimates

Typical first use of inhalants occurs between late childhood and early adolescence. According to the National Household Survey on Drug Abuse (NHSDA), there were an estimated 979,000 new inhalant users in 2000, up from 410,000 in 1985 (see figure 1). During 2001, more than 18 million (8.1%) persons ages 12 and older reported using an inhalant at least once in their lifetime (see table 1).

The 2002 Monitoring the Future Study from the University of Michigan reported that 7.7% of 8th graders, 5.8% of 10th graders, and 4.5% of 12th graders used inhalants in the past year (see table 2). The study also showed that 3.8% of 8th graders, 2.4% of 10th graders, and 1.5% of 12th graders used inhalants in the past month (see table 3).

This study also showed that in 2001, 2.8% of college students reported using inhalants in the past year and

Figure 1. Number of new inhalant users, 1985–2000



Source: National Household Survey on Drug Abuse.

Data break: Changes made to the design and execution of NHSDA in 1999 make the 1999 and 2000 data incomparable to previous years. However, the 1999 and 2000 data are comparable to each other.

Table 1. Percentage of people ages 12 and older reporting inhalant use, 1999–2001

	Past Month	Past Year	Lifetime
1999	0.3	0.9	7.8
2000	0.3	0.9	7.5
2001	0.2	0.9	8.1

Source: National Household Survey on Drug Abuse.

0.4% reported using inhalants in the 30 days before being surveyed. Of those young adults between the ages of 19 and 28, 1.7% reported using inhalants in the past year and 0.4% reported using inhalants in the 30 days before being surveyed.

According to the 2001 Youth Risk Behavior Surveillance Survey, 14.7% of high school students nationwide have sniffed glue, breathed the contents of aerosol spray cans, or inhaled paints or spray to get high at least once during their lifetime. Some 4.7% of high school students reported using inhalants in the 30 days preceding the survey.

Table 2. Percentage of students reporting past year inhalant use, 1996–2002

	1996	1997	1998	1999	2000	2001	2002
8th graders	12.2	11.8	11.1	10.3	9.4	9.1	7.7
10th graders	9.5	8.7	8.0	7.2	7.3	6.6	5.8
12th graders	7.6	6.7	6.2	5.6	5.9	4.5	4.5

Source: Monitoring the Future Study.

Table 3. Percentage of students reporting past month inhalant use, 1996–2002

	1996	1997	1998	1999	2000	2001	2002
8th graders	5.8	5.6	4.8	5.0	4.5	4.0	3.8
10th graders	3.3	3.0	2.9	2.6	2.6	2.4	2.4
12th graders	2.5	2.5	2.3	2.0	2.2	1.7	1.5

Source: Monitoring the Future Study.

Effects

The effects of inhalant use resemble alcohol inebriation. Upon inhalation, the body becomes starved of oxygen, forcing the heart to beat more rapidly in an attempt to increase blood flow to the brain. The user initially experiences stimulation, a loss of inhibition, and a distorted perception of reality and spatial relations. After a few minutes, the senses become depressed and a sense of lethargy arises as the body attempts to stabilize blood flow to the brain, usually referred to as a "head rush." Users can become intoxicated several times over a few hours because of a chemical's short-acting, rapid-onset effect. Many users also experience headaches, nausea, vomiting, slurred speech, loss of coordination, and wheezing.

Heavy or sustained use of inhalants can cause tolerance and physical withdrawal symptoms within several hours to a few days after use. Withdrawal symptoms may include sweating, rapid pulse, hand tremors, insomnia, nausea, vomiting, physical agitation, anxiety, hallucinations, and grand mal seizures.

Indicators of inhalant abuse include paint or stains on the body or clothing, spots or sores around the mouth, red or runny eyes and nose, chemical odor on the breath, a drunken or dazed appearance, loss of appetite, excitability, and/or irritability.

Commonly abused commercial products

Adhesives: Model airplane glue, rubber cement, household glue.

Aerosols: Spray paint, hair spray, air freshener, deodorant, fabric protector.

Anesthetics: Nitrous oxide, ether, chloroform.

Cleaning agents: Dry cleaning fluid, spot remover, degreaser.

Food products: Vegetable cooking spray, "whippets" (nitrous oxide).

Gases: Nitrous oxide, butane, propane, helium.

Solvents and gases: Nail polish remover, paint thinner, typing correction fluid and thinner, toxic markers, pure toluene, toluol, cigar lighter fluid, gasoline.

Source: National Inhalant Prevention Coalition.

Consequences of Use

There is a common link between inhalant abuse and problems in school such as failing grades, memory loss, learning problems, chronic absences, and general apathy. Inhalant users tend to be disruptive, deviant, or delinquent because of the early onset of use, the user's lack of physical and emotional maturation, and the physical consequences of extended use.

According to Drug Abuse Warning Network (DAWN) emergency department (ED) data, in 1994 there were 1,511 reported mentions of inhalants. This number increased to 2,225 in 1997 and sharply declined to 676 in 2001 (see table 4). Preliminary data for the first half of 2002 showed that there were 559 reported mentions of inhalants.

During 2001, approximately 47% of ED inhalant mentions were for people 35 years old or older. Unexpected reaction was cited in 41% of inhalant-related ED visits and was the most frequently mentioned reason for visiting the emergency department after using an inhalant.

Table 4. Emergency department mentions of inhalants, 1994–2001

1994	1995	1996	1997	1998	1999	2000	2001
1,511	1,036	1,313	2,225	2,211	1,162	1,522	676

Source: Drug Abuse Warning Network.

During 1999, 129 inhalant abuse deaths were reported to DAWN by 139 medical examiner facilities in 40 metropolitan areas across the United States. This was up from 103 inhalant abuse deaths in 1998.

DAWN's 2000 medical examiner report was redesigned from its previous format and presents only regional data without national totals. Out of the 43 metropolitan areas studied during 2000, only the cities of Dallas, Louisville, Oklahoma City, and St. Louis reported more than 4 mentions of inhalant drug-related deaths.

Treatment

According to the Treatment Episode Data Set, inhalants were reported as the primary substance of abuse in 1,251 (0.1%) admissions to treatment facilities in 2000. People admitted for inhalant abuse were generally under age 18 (44%), male (72%), and non-Hispanic White (66%). Twenty-eight percent of those admitted reported daily use of inhalants, and almost 26% admitted using inhalants by age 12.

Damage to body caused by inhalants

Acoustic nerve and muscle: Destruction of cells that relay sound to the brain may cause deafness.

Blood: The oxygen-carrying capacity of the blood can be inhibited.

Bone marrow: Components containing benzene have been shown to cause leukemia.

Brain: Damage is caused to the cerebral cortex and the cerebellum, resulting in personality changes, memory impairment, hallucinations, loss of coordination, and slurred speech.

Heart: Sudden Sniffing Death (SSD) Syndrome,* an unexpected disturbance in the heart's rhythm, may cause fatal cardiac arrhythmias (heart failure).

Kidneys: The kidney's ability to control the amount of acid in the blood may be impaired. Kidney stones may develop after use is terminated.

Liver: Gathering of fatty tissue may cause liver damage.

Lungs: Damaged lungs and impaired breathing occur with repeated use.

Muscle: Chronic use can lead to muscle wasting and reduced muscle tone and strength.

Peripheral nervous system: Damage to the nerves may result in numbness, tingling, and paralysis.

Skin: A severe rash around the nose and mouth, referred to as "glue sniffer's rash," may result.

* SSD Syndrome may result when a user deeply inhales a chemical for the effect of intoxication. This causes a decrease in available oxygen in the body. If the user becomes startled or engages in sudden physical activity, an increased flow of adrenaline from the brain to the heart induces cardiac arrest and death occurs within minutes.

Source: National Inhalant Prevention Coalition.

Legislation

Most of the common household and commercial products abused as inhalants are not regulated under the Controlled Substances Act. Consequently, many State legislatures have attempted to deter youth from abusing them by placing restrictions on their sale to minors.

According to the National Conference of State Legislatures, 38 States have adopted laws preventing the sale, use, and/or distribution of various products commonly abused as inhalants to minors. Some States have introduced fines, incarceration, or mandatory treatments for the sale, distribution, use, and/or possession of inhalable chemicals.

Street Terms

Street terms for inhalants

Air blast	Laughing gas (nitrous oxide)
Ames (amyl nitrite)	Medusa
Amys (amyl nitrite)	Moon gas
Bagging (using inhalants)	Oz
Bolt (isobutyl nitrite)	Pearls (amyl nitrite)
Boppers (amyl nitrite)	Poor man's pot
Buzz bomb (nitrous oxide)	Poppers (isobutyl nitrite)
Climax (isobutyl nitrite)	Quicksilver (isobutyl nitrite)
Discorama	Rush (isobutyl nitrite)
Glading (using inhalants)	Shoot the breeze (nitrous oxide)
Gluey (one who sniffs or inhales glue)	Snappers (isobutyl nitrite)
Hardware (isobutyl nitrite)	Snorting (using inhalants)
Hippie crack	Thrust (isobutyl nitrite)
Huff	Toncho (octane booster)
Huffing (sniffing an inhalant)	Whippets (nitrous oxide)
Kick	Whiteout (isobutyl nitrite)

Source: Drug Policy Information Clearinghouse.

Resources

National Inhalant Prevention Coalition.
www.inhalants.org

A Parents' Guide to Preventing Inhalant Abuse, Consumer Product Safety Commission, 1999.
www.cpsc.gov/cpscpub/pubs/389gph.html

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Youth Risk Behavior Surveillance System, 2001, June 2002. www.cdc.gov/nccdphp/dash/yrbs/index.htm

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National Drug Intelligence Center

Huffing: The Abuse of Inhalants, November 2001. www.usdoj.gov/ndic/pubs/708/708p.pdf

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National Conference of State Legislatures. Unpublished information on inhalant legislation through June 2000. Washington, D.C.

Texas Commission on Alcohol and Drug Abuse, *Inhalants: Just the Facts,* Austin, Texas, September 1997. www.tcada.state.tx.us/research/facts/inhalefacts.pdf

This fact sheet was prepared by Jennifer Lloyd of the ONDCP Drug Policy Information Clearinghouse. The data presented are as accurate as the sources from which they were drawn. Responsibility for data selection and presentation rests with the Clearinghouse staff. The Clearinghouse is funded by the White House Office of National Drug Control Policy to support drug control policy research. The Clearinghouse is a component of the National Criminal Justice Reference Service. For further information about the contents or sources used for the production of this fact sheet or about other drug policy issues, call:

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