

## LSD

LSD (lysergic acid diethylamide) is one of the major drugs making up the hallucinogen class. LSD was discovered in 1938 and is one of the most potent mood-changing chemicals. It is manufactured from lysergic acid, which is found in ergot, a fungus that grows on rye and other grains.

LSD, commonly referred to as "acid," is sold on the street in tablets, capsules, and, occasionally, liquid form. It is odorless, colorless, and has a slightly bitter taste and is usually taken by mouth. Often LSD is added to absorbent paper, such as blotter paper, and divided into small decorated squares, with each square representing one dose.

The Drug Enforcement Administration reports that the strength of LSD samples obtained currently from illicit sources ranges from 20 to 80 micrograms of LSD per dose. This is considerably less than the levels reported during the 1960s and early 1970s, when the dosage ranged from 100 to 200 micrograms, or higher, per unit.

### **Health Hazards** —————

The effects of LSD are unpredictable. They depend on the amount taken; the user's

personality, mood, and expectations; and the surroundings in which the drug is used. Usually, the user feels the first effects of the drug 30 to 90 minutes after taking it. The physical effects include dilated pupils, higher body temperature, increased heart rate and blood pressure, sweating, loss of appetite, sleeplessness, dry mouth, and tremors.

Sensations and feelings change much more dramatically than the physical signs. The user may feel several different emotions at once or swing rapidly from one emotion to another. If taken in a large enough dose, the drug produces delusions and visual hallucinations. The user's sense of time and self changes. Sensations may seem to "cross over," giving the user the feeling of hearing colors and seeing sounds. These changes can be frightening and can cause panic.

Users refer to their experience with LSD as a "trip" and to acute adverse reactions as a "bad trip." These experiences are long; typically they begin to clear after about 12 hours.

Some LSD users experience severe, terrifying thoughts and feelings, fear of losing control, fear of insanity and death, and despair while using LSD. Some fatal

accidents have occurred during states of LSD intoxication.

Many LSD users experience flashbacks, recurrence of certain aspects of a person's experience, without the user having taken the drug again. A flashback occurs suddenly, often without warning, and may occur within a few days or more than a year after LSD use. Flashbacks usually occur in people who use hallucinogens chronically or have an underlying mental disorder; however, otherwise healthy people who use LSD occasionally may also have flashbacks. Bad trips and flashbacks are only part of the risks of LSD use. LSD users may manifest persisting symptoms that resemble the symptoms of schizophrenia and depression. It is difficult to determine the extent and mechanism of the LSD involvement in these illnesses.

Most users of LSD voluntarily decrease or stop its use over time. LSD is not considered an addictive drug since it does not produce compulsive drug-seeking behavior, as do cocaine, amphetamine, heroin, alcohol, and nicotine. However, like many of the addictive drugs, LSD produces tolerance, so some users who take the drug repeatedly must take progressively higher doses to achieve the state of intoxication that they had previously achieved. This is an extremely dangerous practice, given the unpredictability of the drug. NIDA is funding studies that focus on the neurochemical and behavioral properties of LSD. This research will provide a greater

understanding of the mechanisms of action of the drug.

## **Extent of Use** \_\_\_\_\_

### **Monitoring the Future Study (MTF)\***

MTF assesses the extent and perceptions of drug use among 8th, 10th, and 12th grade students nationwide. LSD use\*\* declined among all three grades in 2003, with statistically significant drops occurring among 10th and 12th grade students for lifetime and past year use. (Also see the *InfoFacts* on High School and Youth Trends.) Perceived availability of LSD dropped significantly for 10th and 12th grade students from 2002 to 2003.

#### **LSD Use by Students, 2003: Monitoring the Future Study**

	<b>8th-Graders</b>	<b>10th-Graders</b>	<b>12th-Graders</b>
Lifetime	2.1%	3.5%	5.9%
Annual	1.3	1.7	1.9
30-day	0.6	0.6	0.6

### **National Survey on Drug Use and Health (NSDUH)\*\*\***

NSDUH is an annual survey of Americans age 12 and older. Data from 2002 to 2003 show decreases in past year use of LSD. In 2003, 24.4 million Americans reported using LSD at least once in their

lifetimes; almost 558,000 had used it in the past year, down significantly from 1 million past year users in 2002. The

majority of lifetime users were over 18; however, 0.6 percent of 12- to 17-year-olds used LSD in the past year.

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\* These data are from the 2003 Monitoring the Future Survey, funded by the National Institute on Drug Abuse, National Institutes of Health, DHHS, and conducted by the University of Michigan's Institute for Social Research. The survey has tracked 12th-graders' illicit drug use and related attitudes since 1975; in 1991, 8th- and 10th-graders were added to the study. The latest data are online at [www.drugabuse.gov](http://www.drugabuse.gov).

\*\* "Lifetime" refers to use at least once during a respondent's lifetime. "Past year" refers to an individual's drug use at least once during the year preceding their response to the survey. "Past month" refers to an individual's drug use at least once during the month preceding their response to the survey.

\*\*\* NSDUH (formerly known as the National Household Survey on Drug Abuse) is an annual survey of Americans age 12 and older conducted by the Substance Abuse and Mental Health Services Administration. Copies of the latest survey are available at [www.samhsa.gov](http://www.samhsa.gov) and from the National Clearinghouse for Alcohol and Drug Information at 1-800-729-6686.