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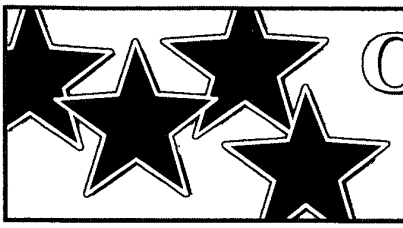

ONDCP
Drug Policy Information Clearinghouse
FACT SHEET

November 2003

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Methamphetamine

Background

Methamphetamine, a derivative of amphetamine, is a powerful stimulant that affects the central nervous system. Amphetamines were originally intended for use in nasal decongestants and bronchial inhalers and have limited medical applications, which include the treatment of narcolepsy, weight control, and attention deficit disorder. Methamphetamine can be smoked, snorted, orally ingested, and injected. It is accessible in many different forms and may be identified by color, which ranges from white to yellow to darker colors such as red and brown. Methamphetamine comes in a powder form that resembles granulated crystals and in a rock form known as "ice," which is the smokeable version of methamphetamine that came into use during the 1980s.

Effects

Methamphetamine use increases energy and alertness and decreases appetite. An intense rush is felt, almost instantaneously, when a user smokes or injects methamphetamine. Snorting methamphetamine affects the user in approximately 5 minutes, whereas oral ingestion takes about 20 minutes for the user to feel the effects. The intense rush and high felt from methamphetamine results from the release of high levels of dopamine into the section of the brain that controls the feeling of pleasure. The effects of methamphetamine can last up to 12 hours. Side effects include convulsions, dangerously high body temperature, stroke, cardiac arrhythmia, stomach cramps, and shaking.

Chronic use of methamphetamine can result in a tolerance for the drug. Consequently, users may try to intensify the desired effects by taking higher doses of the drug, taking it more frequently, or changing their method of ingestion. Some abusers, while refraining from eating and sleeping, will binge, also known as "run," on methamphetamine. During these binges, users will inject as much as a gram of methamphetamine every 2 to 3 hours over several days until they run out of the drug or are too dazed to continue use.

Chronic methamphetamine abuse can lead to psychotic behavior including intense paranoia, visual and auditory hallucinations, and out-of-control rages that can result in violent episodes. Chronic users at times develop sores on their bodies from scratching at "crank bugs," which describes the common delusion that bugs are crawling under the skin. Long-term use of methamphetamine may result in anxiety, insomnia, and addiction.

After methamphetamine use is stopped, several withdrawal symptoms can occur, including depression, anxiety, fatigue, paranoia, aggression, and an intense craving for the drug. Psychotic symptoms can sometimes persist for months or years after use has ceased.

Prevalence Estimates

According to the U.S. Department of Health and Human Services' *Results From the 2002 National Survey on Drug Use and Health: National Findings,* more than 12 million people age 12 and older (5.3%) reported that they had used methamphetamine at least once in their lifetime (see table 1). Of those surveyed, 597,000 persons age 12 and older (0.3%) reported past month use of methamphetamine.

Since 1999, methamphetamine has been included in the University of Michigan's Monitoring the Future survey questionnaire. Survey results indicate that annual methamphetamine use (use within the past year) by secondary school students in 1999 ranged from 3.2% among 8th graders, to 4.6% among 10th graders, to 4.7% among 12th graders (see table 2). In 2002, estimates of annual methamphetamine use ranged from

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2.2% among 8th graders, to 3.9% among 10th graders, to 3.6% among 12th graders.

The study also collected data on methamphetamine use by college students and young adults ages 19 to 28. During 1999, 3.3% of college students and 2.8% of young adults tried methamphetamine in the past year (see table 3). In 2002, annual use of methamphetamine declined to 1.2% for college students and 2.5% for young adults.

According to the Centers for Disease Control and Prevention's *Youth Risk Behavior Surveillance—United States, 2001* study, 9.8% of high school students had used methamphetamine within their lifetime. Overall, white (11.4%) and Hispanic (9.1%) students were more likely than black students (2.1%) to report lifetime methamphetamine use.

Regional Observations

The widespread availability of methamphetamine is illustrated by increasing numbers of methamphetamine seizures, arrests, indictments, and sentences. According to the National Drug Intelligence Center (NDIC), methamphetamine is widely available throughout the Pacific, Southwest, and West Central regions and is increasingly available in the Great Lakes and Southeast.

Similarly, the National Institute on Drug Abuse's Community Epidemiology Work Group (CEWG) reports that, in 2002, methamphetamine indicators remained highest in West Coast areas and parts of the Southwest, as well as Hawaii. Methamphetamine abuse is spreading in areas such as Atlanta, Chicago, Detroit, St. Louis, and Texas. Relatively low indicators were found in East Coast and Mid-Atlantic CEWG areas, although abuse is increasing.

According to the Arrestee Drug Abuse Monitoring Program sites, during 2002, methamphetamine use by adult arrestees was concentrated in the Western region of the United States. Out of 36 sites, the highest percentages of adult male arrestees testing positive for methamphetamine were located in Honolulu (44.8%), Sacramento (33.5%), San Diego (31.7%), and Phoenix (31.2%). Out of 23 sites, the highest percentages of adult female arrestees testing positive for methamphetamine were located in Honolulu (50%), San Jose (42.8%), Phoenix (41.7%), Salt Lake City (37.7%), and San Diego (36.8%).

According to *Pulse Check: Trends in Drug Abuse*, law enforcement agencies and epidemiologic/ethnographic sources surveyed in 2002 reported that methamphetamine availability increased in the following sites: Boston, Billings, Chicago, Columbia (South Carolina), Denver, Detroit, Honolulu, Los Angeles, Memphis,

Table 1. Percentage of lifetime methamphetamine use among U.S. population by age group, 2002

Age Group	Lifetime	Past Year	Past Month
12–17	1.5%	0.9%	0.3%
18–25	5.7	1.7	0.5
26 and older	5.7	0.4	0.2
Total population	5.3	0.7	0.3

Source: National Survey on Drug Use and Health.

Table 2. Percentage of methamphetamine use by secondary school students, by grade, 1999–2002

		Lifetime		
Grade	1999	2000	2001	2002
8th graders	4.5%	4.2%	4.4%	3.5%
10th graders	7.3	6.9	6.4	6.1
12th graders	8.2	7.9	6.9	6.7
		Annual		
Grade	1999	2000	2001	2002
8th graders	3.2%	2.5%	2.8%	2.2%
10th graders	4.6	4.0	3.7	3.9
12th graders	4.7	4.3	3.9	3.6
		Past 30 Days		
Grade	1999	2000	2001	2002
8th graders	1.1%	0.8%	1.3%	1.1%
10th graders	1.8	2.0	1.5	1.8
12th graders	1.7	1.9	1.5	1.7

Source: Monitoring the Future Study.

Miami, New York, and Sioux Falls (South Dakota). The remaining 12 Pulse Check sites reported stable methamphetamine availability. There were no reported decreases in availability.

Availability

Yaba, the Thai name for a tablet form of methamphetamine mixed with caffeine, is appearing in Asian communities in California. These tablets are popular in Southeast and East Asia where they are produced. The tablets are small enough to fit in the end of a drinking straw and are usually reddish-orange or green with various logos. There are indications that methamphetamine tablets are becoming more popular in the rave scene because their appearance is similar to club drugs such as Ecstasy.

Production and Trafficking

Methamphetamine trafficking and abuse have changed in the United States during the past 10 years. Mexican drug trafficking organizations have become the dominant manufacturing and distribution group in cities in the Midwest and the West. Methamphetamine production

Table 3. Percentage of methamphetamine use by college students and young adults, 1999–2002

	Lifetime				Annual				Past 30 Days			
Age Groups	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
College students	7.1%	5.1%	5.3%	5.0%	3.3%	1.6%	2.4%	1.2%	1.2%	0.2%	0.5%	0.2%
Young adults	8.8	9.3	9.0	9.1	2.8	2.5	2.8	2.5	0.8	0.7	1.0	1.0

Source: Monitoring the Future Study.

and abuse were previously controlled by independent laboratory operators, such as outlaw motorcycle gangs, which continue to operate but to a smaller extent. The Mexican criminal organizations are able to manufacture in excess of 10 pounds of methamphetamine in a 24-hour period, producing high-purity, low-cost methamphetamine.

Methamphetamine precursor chemicals usually include pseudoephedrine and ephedrine drug products. Mexican organizations sometimes use methylsulfonylmethane (MSM) to "cut" the methamphetamine in the production cycle. MSM is legitimately used as a dietary supplement for horses and humans. The supplement is readily available at feed/livestock stores and in health/nutrition stores. By adding MSM, the volume of methamphetamine produced is increased, which in turn increases the profits for the dealer.

Price and Purity

According to the Drug Enforcement Administration (DEA), during 2001, the price of methamphetamine ranged nationally from $3,500 to $23,000 per pound, $350 to $2,200 per ounce, and $20 to $300 per gram. The average purity of methamphetamine decreased from 71.9% in 1994 to 40.1% in 2001. International controls have reduced the availability of chemicals used to produce high-purity methamphetamine and may have contributed to the decrease in purity levels.

Enforcement

Arrests

From October 1, 2000, to September 30, 2001, there were 3,932 Federal drug arrests for amphetamine/methamphetamine, representing 12% of all Federal drug arrests.

Seizures

According to the Federal-wide Drug Seizure System (FDSS), 2,807 kilograms of methamphetamine were seized in 2001 by U.S. Federal law enforcement authorities, down from 3,373 kilograms in 2000. FDSS consolidates information about drug seizures made within the jurisdiction of the United States by DEA, the Federal Bureau of Investigation, and U.S. Customs and Border Protection, as well as maritime seizures made by the U.S. Coast Guard. FDSS eliminates duplicate reporting of seizures involving more than one Federal agency.

In addition, Federal authorities seized 301,697 Southeast Asian methamphetamine tablets in U.S. Postal Service facilities in Oakland, Los Angeles, and Honolulu in 2000, representing a 656% increase from the 1999 seizures of 39,917 tablets.

According to the El Paso Intelligence Center's National Clandestine Laboratory Seizure System, 8,290 methamphetamine labs were seized in 2001. In 2001, there were 303 "superlabs" with the capacity to produce 10 or more pounds of methamphetamine in one production cycle seized in the United States.

Adjudication

During FY 2001, 3,404 Federal drug offenders were convicted of committing an offense involving methamphetamine. Of those convicted of a Federal drug offense for methamphetamine, 59% were white, 35.2% were Hispanic, 4.2% were of another race, and 1.6% were black.

Corrections

In FY 2001, the average length of sentence received by Federal methamphetamine offenders was 88.5 months, compared with 115 months for crack cocaine offenders, 77 months for powder cocaine offenders, 63.4 months for heroin offenders, 38 months for marijuana offenders, and 41.1 months for other drug offenders.

Consequences of Use

Chronic methamphetamine abuse can result in inflammation of the heart lining and, for injecting drug users, damaged blood vessels and skin abscesses. Social and occupational connections progressively deteriorate for chronic methamphetamine users. Acute lead poisoning is another potential risk for methamphetamine abusers because of a common method of production that uses lead acetate as a reagent.

Medical consequences of methamphetamine use can include cardiovascular problems such as rapid heart rate, irregular heartbeat, increased blood pressure, and

Table 4. Number of emergency department methamphetamine mentions, 1995–2002

1995	1996	1997	1998	1999	2000	2001	2002
15,933	11,002	17,154	11,486	10,447	13,505	14,923	17,696

Source: Drug Abuse Warning Network.

stroke-producing damage to small blood vessels in the brain. Hyperthermia and convulsions can occur when a user overdoses and, if not treated immediately, can result in death. Research has shown that as much as 50% of the dopamine-producing cells in the brain can be damaged by prolonged exposure to relatively low levels of methamphetamine and that serotonin-containing nerve cells may be damaged even more extensively.

Methamphetamine abuse during pregnancy can cause prenatal complications such as increased rates of premature delivery and altered neonatal behavior patterns, such as abnormal reflexes and extreme irritability, and may be linked to congenital deformities. Methamphetamine abuse, particularly by those who inject the drug and share needles, can increase users' risks of contracting HIV/AIDS and hepatitis B and C.

During 1995, hospitals participating in the Drug Abuse Warning Network (DAWN) reported 15,933 mentions of methamphetamine (see table 4). A drug mention refers to a substance that was recorded (mentioned) during a drug-related visit to the emergency department (ED). By 1999, the number of methamphetamine ED mentions decreased to 10,447. This number increased to 17,696 in 2002.

In 2001, DAWN's mortality data for methamphetamine mentions to medical examiners remained concentrated in the Midwest and West regions of the United States. The metropolitan areas reporting the most methamphetamine mentions were Phoenix (122), San Diego (94), and Las Vegas (53). The East Coast area that reported the highest number of methamphetamine mentions was Long Island (49). Out of 42 metropolitan areas studied, 15 areas reported fewer than 5 methamphetamine mentions.

Treatment

According to the Treatment Episode Data Set, during 2000 methamphetamine treatment admissions accounted for 4.1% of total admissions or 66,052 admissions. Those admitted for methamphetamine/amphetamine were primarily white (79%) and male (53%). In 1994, there were half as many admissions for methamphetamine, 33,432 or about 2% of all admissions for treatment.

There are no pharmacological treatments for methamphetamine dependence. Antidepressant medications can be used to combat the depressive symptoms of withdrawal. The most effective treatment for methamphetamine addiction is cognitive behavioral interventions, which modify a patient's thinking, expectancies, and behavior while increasing coping skills to deal with life stressors.

Clandestine Laboratories

Methamphetamine can be easily manufactured in clandestine laboratories (meth labs) using ingredients purchased in local stores. Over-the-counter cold medicines containing ephedrine or pseudoephedrine and other materials are "cooked" in meth labs to make methamphetamine.

The manufacture of methamphetamine has a severe impact on the environment. The production of one pound of methamphetamine releases poisonous gas into the atmosphere and creates 5 to 7 pounds of toxic waste. Many laboratory operators dump the toxic waste down household drains, in fields and yards, or on rural roads.

Due to the creation of toxic waste at methamphetamine production sites, many first response personnel incur injury when dealing with the hazardous substances. The most common symptoms suffered by first responders when they raid meth labs are respiratory and eye irritations, headaches, dizziness, nausea, and shortness of breath.

Meth labs can be portable and so are easily dismantled, stored, or moved. This portability helps methamphetamine manufacturers avoid law enforcement authorities. Meth labs have been found in many different types of locations, including apartments, hotel rooms, rented storage spaces, and trucks. Methamphetamine labs have been known to be boobytrapped and lab operators are often well armed.

According to DEA, in 2001 there were 12,715 methamphetamine laboratory incidents reported in 46 States. The West Coast accounted for most of the laboratory incidents. On the East Coast, the following States reported the highest incident rates: Georgia (51), North Carolina (31), and Florida (29). Nationally, the highest rate of lab activity took place in Missouri, which reported 2,207 incidents. California and Washington also had high incident rates with 1,847 and 1,477, respectively.

Scheduling and Legislation

Methamphetamine is a Schedule II drug under the Controlled Substance Act of 1970. A Schedule II

Controlled Substance has high potential for abuse, is currently accepted for medical use in treatment in the United States, and may lead to severe psychological or physical dependence.

The chemicals that are used to produce methamphetamine also are controlled under the Comprehensive Methamphetamine Control Act of 1996 (MCA). This legislation broadened the restrictions on listed chemicals used in the production of methamphetamine, increased penalties for the trafficking and manufacturing of methamphetamine and listed chemicals, and expanded the controls of products containing the licit chemicals ephedrine, pseudoephedrine, and phenylpropanolamine (PPA).

The Methamphetamine Anti-Proliferation Act was passed in July 2000. The act strengthens sentencing guidelines and provides training for Federal and State law enforcement officers on methamphetamine investigations and the handling of the chemicals used in clandestine meth labs. It also puts in place controls on the distribution of the chemical ingredients used in methamphetamine production and expands substance abuse prevention efforts.

Street Terms

Street terms for methamphetamine	
Blue meth	Meth
Chicken feed	OZs
Cinnamon	Peanut butter
Crink	Sketch
Crystal meth	Spoosh
Desocsins	Stove top
Geep	Super ice
Granulated orange	Tick tick
Hot ice	Trash
Ice	Wash
Kaksonjae	Working man's cocaine
L.A. glass	Yellow barn
Lemon drop	Yellow powder

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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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