

METHAMPHETAMINE

(Trade Name: Desoxyn®; Street Names: Meth, Speed, Crystal, Glass, Ice, Crank, Yaba)

Introduction:

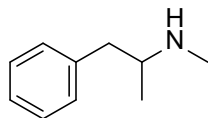
Methamphetamine is a highly addictive drug with potent central nervous system (CNS) stimulant properties. In the 1960s, methamphetamine pharmaceutical products were widely available and extensively diverted and abused. In 1971, methamphetamine was placed into schedule II of the Controlled Substance Act (CSA). This placement and the removal of methamphetamine injectable formulations from the U.S. market, combined with a better appreciation for methamphetamine's high abuse potential, led to a drastic reduction in the abuse of this drug. In the 1980s, however, a resurgence of methamphetamine abuse occurred. Currently, methamphetamine is considered a major drug of abuse.

Licit Uses:

Methamphetamine was originally used in nasal decongestants and bronchial inhalers; the levo isomer of methamphetamine is still utilized for these indications. Later, this drug was available in tablets and injectable formulations and used for weight control, depression, increased alertness, and sleep prevention. A broad segment of society used methamphetamine products for its stimulant effects. Today, only one product (i.e., Desoxyn) is currently marketed and available in 5 mg tablets. Desoxyn has very limited use in the treatment of obesity and attention deficit hyperactivity disorder. According to the IQVIA National Prescription Audit™, total prescriptions for methamphetamine dispensed in the United States were approximately 12,100 in 2015; 8,000 in 2021; and 1,800 in 2024.

Chemistry:

Methamphetamine is chemically similar to amphetamine. The chemical structure is shown below.



There are many ways to manufacture methamphetamine. The methods used are directly impacted by the availability of precursor chemicals and ease of synthesis. Drug traffickers are continually looking for loopholes in chemical control regulations and altering their methods of synthesis in order to continue their illegal activity. Phenylacetone (P2P) was the most widely used precursor in the synthesis of amphetamine/methamphetamine in the United States until 1980, when P2P was controlled in schedule II of the CSA. P2P was then replaced by ephedrine and pseudoephedrine as the most widely used precursors for methamphetamine production. In the late 1990s, the use of P2P increased in clandestine methamphetamine labs due to the increased controls on pseudoephedrine and ephedrine. Traffickers are currently using new precursors to P2P in efforts to circumvent international chemical controls. This trend continues today.

Pharmacology:

Methamphetamine is pharmacologically similar to amphetamine, although methamphetamine has more potent effects on the CNS that can last for 6 to 8 hours. Methamphetamine increases the release of the neurotransmitter dopamine, which stimulates brain cells, enhancing mood and energy.

Methamphetamine is abused for its stimulant and euphoric effects. It can be taken orally, snorted, smoked, and injected. Smoking or injecting methamphetamine results in intense euphoria and is often associated with binge use, large escalation in dose with rapid tissue tolerance, and high rates of addiction.

At low doses, methamphetamine produces effects such as increased wakefulness, increased physical activity, increased heart rate and blood pressure, decreased appetite, increased respiration and body temperature (hyperthermia), and euphoria. High-dose chronic use has been associated with irritability, tremors, convulsions, anxiety, paranoia, and neurotoxic effects that cause damage to neurons and blood vessels. Aggressive and violent behavior, often directed at spouses and children, poses a significant risk to those individuals in contact with methamphetamine addicts. Death has resulted from extreme anorexia, hyperthermia, convulsions, and cardiovascular collapse (including stroke and heart attacks).

Illicit Uses:

America's Poison Centers reported that human exposure cases involving methamphetamine decreased from 2020 to 2022. In 2020, methamphetamine was involved in 8,978 case mentions; 3,715 single exposures; and 230 deaths. In 2022, methamphetamine was involved in 7,600 case mentions; 3,162 single exposures; and 137 deaths.

The 2024 Monitoring the Future survey indicated that previous year prevalence of use was 0.1% for 8th graders, 0.2% for 10th graders, and 0.5% for 12th graders. In addition, use of methamphetamine declined over the past two decades; lifetime use was below 1% in 2024.

User Population:

The National Survey on Drug Use and Health indicated that in 2023, 16.1 million individuals (aged 12 and older) reported misusing methamphetamine at least once in their lifetime, and 2.6 million reported misuse within the previous year. In 2020, 15.4 million individuals reported lifetime misuse and 2.5 million reported misuse in the previous year.

Illicit Distribution:

Mexican drug trafficking organizations have become the primary manufacturers and distributors of methamphetamine to cities in the Midwest and West. These criminal organizations are able to supply large amounts of methamphetamine at high purity and low cost. Domestic independent laboratory operators also produce and distribute methamphetamine but usually on a smaller scale. Of particular concern is the toxic waste associated with these labs and the fact that many individuals, including children, are at risk of exposure to these toxic chemicals.

The Drug Enforcement Administration's National Forensic Laboratory Information System (NFLIS) Drug database collects scientifically verified data on drug items and cases submitted to and analyzed by participating federal, state, and local forensic drug laboratories. NFLIS-Drug received nearly 468,000 reports of methamphetamine in 2019, which declined to approximately 368,000 reports in 2022 and 262,000 in 2024 (reports still pending). Since 2017, methamphetamine has been the most reported drug to NFLIS-Drug.

Control Status:

Methamphetamine is controlled in schedule II of the CSA.