

Methamphetamine

Overview

Methamphetamines are powerful stimulants chemically related to amphetamines. Methamphetamines can be taken orally, smoked, injected, or snorted, and are available as a crystalline powder or in rock-like chunks. Smoking or injecting the drug creates a rapid reaction in the brain, causing a feeling of intense pleasure after use. After ingestion, methamphetamine causes the brain to increase the amount of the neurotransmitter dopamine.³ The rapid release of dopamine, combined with methamphetamine’s short “rush,” lead to high rates of substance use disorders (SUD) among users. Prolonged use of methamphetamine can change the structure of the brain as normal reactions to dopamine cease to function.⁴

Though primarily produced and used illicitly, a legal, Food and Drug Administration (FDA)-approved form of methamphetamine can be prescribed to treat attention deficit hyperactivity disorder (ADHD) or obesity.⁵ However, prescriptions are rare, and doses of the FDA-approved drug are much lower than illicit forms.⁵ Methamphetamine is classified as a Schedule II drug, and prescriptions cannot be automatically refilled.

According to the National Survey on Drug Use and Health (NSDUH), 1.6 million Americans used methamphetamine in 2021, a 45.5% increase from 2019, when 1.1 million individuals used methamphetamine. Those who use methamphetamine tend to be older, with 92% of people who used methamphetamine in 2021 being over the age of 26.² Additionally, the Centers for Disease Control and Prevention (CDC) reported that in 2021, 32,537 individuals died of a psychostimulant overdose, primarily methamphetamine.⁶ Death rates have been increasing steadily since 2014.⁶

Public Health Impact

Illicit methamphetamine use poses a significant threat to public health. Long-term methamphetamine use is associated with **anxiety, paranoia, confusion, psychosis, weight loss, dental problems, and skin sores caused by persistent scratching**. Methamphetamine use has also been linked to the spread of **HIV and Hepatitis B and C**, as users may share needles. Other health effects include increased wakefulness and physical activity, decreased appetite, increased respiration, rapid heart rate, irregular heart-beat, and increased body temperature.⁴

Overdose is a very serious risk for anyone who uses methamphetamine because the resulting acute cardiac distress and potential chronic medical events, including psychotic conditions, can be fatal. According to a study by the National Institute on Drug Abuse (NIDA), overdose deaths involving methamphetamine among people aged 18-64 in the United States nearly tripled from 2015 to 2019.⁷ Additionally, the researchers found that the number of overdose deaths involving psychostimulant drugs other than cocaine, which largely consisted of methamphetamine, rose 180% from 5,526 to 15,489 over that same period.⁷ Provisional CDC data for the 12-months ending in April 2023 reports 34,313 drug overdose deaths involving psychostimulants with a potential for misuse, the majority of which also involved methamphetamine.⁸

Methamphetamine Use: A Closer Look

Treatment Admissions: In 2020, 11.8% (167,722) of individuals admitted to treatment in the U.S. reported methamphetamines as their primary substance of use.¹

National Survey on Drug Use and Health (NSDUH) 2021 Data:

Past Month Use of Illicit Drugs, U.S. Population²

Illicit Drugs	Use % (estimate)
Marijuana	13% (36,363,000)
Opioids	1.0% (2,791,000)
Cocaine	0.7% (1,833,000)
Tranquilizers or Sedatives	0.5% (1,373,000)
Hallucinogens	0.8% (2,234,000)
Methamphetamine	0.6% (1,617,000)
Inhalants	0.3% (830,000)

Past Month Use, Methamphetamine By Age²

Age	Use % (estimate)
12-17	0.87% (14,000)
18-25	5.57% (90,000)
26-49	50.46% (816,000)
50 or older	43.1% (697,000)

Past Month Use, Methamphetamine By Gender, 12 and Older²

Gender	Use % (estimate)
Female	39.0% (630,000)
Male	61.0% (987,000)

Treatment Admissions, Methamphetamine/Amphetamines* By Race/Ethnicity, 12 and Older¹

Primary Race/Ethnicity	Use % (estimate)
White	77.0% (133,354)
Black	6.7% (11,643)
Asian	0.8% (1,429)
Am. Indian/AK Native	3.3% (5,788)
Native Hawaiian or Other Pacific Islander	0.7% (1,247)
Other	11.4% (19,669)
Hispanic	17.5% (30,453)

*Amphetamine admissions include admissions for both methamphetamine and amphetamine but are primarily for methamphetamine. Methamphetamine constitutes about 95% of combined methamphetamine/amphetamine admissions.

The risk of overdose death from methamphetamine use is compounded by the co-use, intentional or accidental, of methamphetamine with synthetic opioids, primarily heroin and illicitly manufactured fentanyl (IMF), due to the opposing impacts of the increased arousal from methamphetamine and sedation from opioids raising the risk of overdose.⁹ Provisional CDC data reports that 61.2% of methamphetamine overdose deaths in 2021 co-involved heroin or fentanyl- an all-time high.¹⁰ Compared to the 180% rise in overdose deaths involving psychostimulants other than cocaine from 2015 to 2019, overdose deaths involving psychostimulants other than cocaine **with opioids** increased 266% from 2,306 to 8,438 over that same period.⁷

The steady year-over-year rise in methamphetamine use poses a substantial public health risk. NIDA found that from 2015 to 2019, the number of people who reported using methamphetamine increased by 43% despite the 180% increase in overdose deaths involving methamphetamine.⁷ NIDA also found that the number of people who reported methamphetamine use and opioid misuse had an accompanying proportional increase of 24% from 2015 to 2019.⁷ Further, NIDA’s data shows that over that same four-year period, those reporting frequent methamphetamine use, defined as 100 days or more per year, rose by 66%.⁷ This increase was also seen in concurrent methamphetamine and cocaine use, with a 60% increase in use reported between 2015 and 2019.⁷

Methamphetamine Treatment

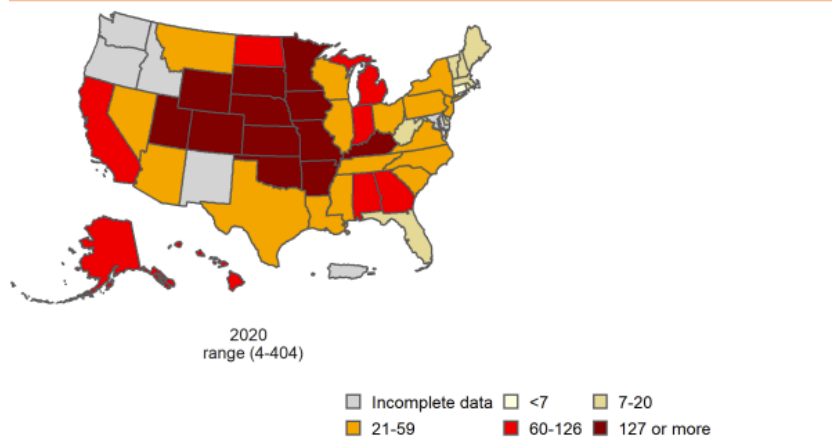
Although methamphetamine use can have devastating consequences, evidence-based treatment strategies exist to help individuals recover. NIDA identifies behavioral therapies, such as cognitive-behavioral therapy (CBT) and contingency management, as effective treatments for methamphetamine use disorders. Individuals in CBT learn to anticipate problems and enhance their self-control through the development of coping strategies, including the exploration of positive and negative consequences of substance use; self-awareness to recognize potential cravings; and, strategies to cope with those cravings.¹¹ Contingency management, an incentive-based intervention, involves giving individuals tangible rewards to reinforce positive behaviors, such as producing a negative drug test.¹² Additionally, individual and family education; a supportive therapeutic relationship; drug testing; and 12-step programs, are also useful in managing methamphetamine use.¹² All of these interventions are included in the manualized Matrix model.

No FDA-approved medication currently exists to treat methamphetamine use disorder. NIDA is conducting research on medications to treat methamphetamine and other stimulant use disorders. Medications are currently being tested that inhibit self-administration of methamphetamine, though no human trials have been conducted. Other studies are working on approaches that utilize the immune system to neutralize methamphetamine in the bloodstream before it reaches dopamine receptors. This approach includes vaccinating patients to produce antibodies that fight methamphetamine molecules. Research continues to progress in this area.¹²

Geographic Trends in Methamphetamine Use

Methamphetamine treatment admission rates were higher in 2010 than in 2020 in five States. However, 20 States experienced greater than a 100% increase in admission rates between 2010 and 2020. The West North Central region (IA, KS, MN, MO, NE, ND, SD) had the highest methamphetamine treatment admission rates in 2020 (211 per 100,000 population aged 12 and older), maintaining its position as the region of the U.S. with the highest methamphetamine treatment admission rates since it surpassed the Pacific region in 2014.¹

Primary methamphetamine admissions per 100,000 population aged 12 years and older



SOURCES: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.22.21. See Table 5.5b for population sources.

The Role of State Alcohol and Drug Agencies in Prevention, Treatment, and Recovery

State Alcohol and Drug Agency directors design, manage, and evaluate the publicly funded SUD prevention, treatment, and recovery system in each State. State Directors provide leadership by promoting standards of care, evidence-based services, and continuous quality improvement innovations. State Directors also ensure that public dollars are dedicated to programs that work through the use of performance data management and reporting, contract monitoring, corrective action planning, on-site reviews, and technical assistance.

Key Federal Programs and Agencies

SAMHSA's **Substance Use Prevention, Treatment, and Recovery Services (SUPTRS) Block Grant** is a formula grant awarded to every U.S. State and Territory. The SUPTRS Block Grant accounts for an estimated 52% of State Alcohol and Drug Agencies' expenditures on primary prevention.¹³ SUPTRS Block Grant funds enabled more than 1.5 million Americans to receive treatment services in 2022. In addition, more than 11.8 million Americans received SUPTRS Block Grant-funded prevention services in individual-based programs, and more than 370 million (duplicated count of persons) were served in population-based programs in 2022.¹⁴ In 2021, at discharge from block grant-funded programs, 50% of clients reported abstinence from illegal drug use, 77% were abstinent from alcohol use, 91% had stable housing, and 94% had no arrests during the prior 30 days.¹⁵ Congress appropriated \$2,008,079,000 for the SUPTRS Block Grant in FY 2023.¹⁶

The **State Opioid Response (SOR) Grant**, which is administered by SAMHSA and managed by the State Alcohol and Drug Agencies, is used to provide prevention, treatment, and recovery services for individuals with an opioid use disorder (OUD). Specifically, SOR aims to address the opioid crisis by increasing access to medication-assisted treatment (MAT), reducing unmet treatment need, and reducing opioid overdose related deaths. Beginning in FY 2023, services to address stimulant use—which includes methamphetamine use—became an allowable use of the SOR grants. Congress appropriated \$1.575 billion for SOR in FY 2023.¹⁶

SAMHSA's **Center for Substance Abuse Prevention (CSAP)** leads efforts to prevent substance use. CSAP's Strategic Prevention Framework - Partnerships for Success (SPF-PFS) Program provides funding for States to develop comprehensive statewide approaches to address SUD-related issues unique to that State. Congress appropriated \$237 million for CSAP in FY 2023.¹⁶

SAMHSA's **Center for Substance Abuse Treatment (CSAT)** works to improve and expand existing SUD treatment programs under the SUPTRS Block Grant. Congress appropriated \$574 million for CSAT in FY 2023.¹⁶

The **Office of National Drug Control Policy (ONDCP)** provides federal leadership on SUD prevention, treatment, and recovery policy. ONDCP also administers two grant programs: High Intensity Drug Trafficking Areas (HIDTA) and Drug-Free Communities (DFC). The HIDTA program assists federal, State, local, and tribal law enforcement that operate in areas determined to be critical drug trafficking regions of the United States. The DFC program provides grants to community coalitions to strengthen the infrastructure among local partners to create and sustain a reduction in local youth substance use and SUD. Congress appropriated \$471 million for ONDCP in FY 2023.¹⁶

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References

1. Center for Behavioral Health Statistics and Quality (CBHSQ), Substance Abuse and Mental Health Services Administration (SAMHSA). (2022). *Treatment Episode Data Set (TEDS) 2020. Admission to and Discharges from Publicly Funded Substance Use Treatment Facilities*. https://www.samhsa.gov/data/sites/default/files/reports/rpt38665/2020_TEDS%20Annual%20Report-508%20compliant_1182023_FINAL.pdf.
2. SAMHSA. (2022). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2021 National Survey on Drug Use and Health (NSDUH)*. <https://www.samhsa.gov/data/sites/default/files/reports/rpt39443/2021NSDUHFRRRev010323.pdf>.
3. National Institute on Drug Abuse (NIDA). (2019). *Methamphetamine DrugFacts*. <http://www.drugabuse.gov/publications/drugfacts/methamphetamine>.
4. NIDA. (2019). *What are the long-term effects of methamphetamine misuse?* <https://nida.nih.gov/publications/research-reports/methamphetamine/what-are-long-term-effects-methamphetamine-misuse>.
5. Food and Drug Administration (FDA). (2007). *Desoxyn: Methamphetamine Hydrochloride Tablets, USP*. http://www.accessdata.fda.gov/drugsatfda_docs/label/2007/005378s026lbl.pdf.
6. NIDA. (2023). *Drug Overdose Death Rates*. <https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates>.
7. Han, B, Compton, W. M., & Jones, C. M. (2021). Trends in Methamphetamine Use, Use Disorder, and Related Overdose Deaths Among Adults in the United States. *JAMA Psychiatry*, 78(12):1329-1342. <https://www.doi.org/10.1001/jamapsychiatry.2021.2588>.
8. CDC. (2023). *Provisional Drug Overdose Death Counts*. National Vital Statistics System. <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>.
9. Doyle, S. (2020). *Opioid Overdose Crisis Compounded by Polysubstance Use*. Pew Charitable Trusts. <https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2020/10/opioid-overdose-crisis-compounded-by-polysubstance-use#:~:text=Opioid%20use%20concurrent%20with%20the,either%20drug%20is%20used%20alone>.
10. CDC. (2023). *Multiple Cause of Death, 2021*. CDC Wide-ranging Online Data for Epidemiologic Research (WONDER). <https://wonder.cdc.gov/controller/datarequest/D157.jsessionid=F51210F6222767EF61C3796470B1>.
11. NIDA. (2018). *Principles of Drug Addiction Treatment: A Research-Based Guide (Third Edition)*. <https://nida.nih.gov/sites/default/files/675-principles-of-drug-addiction-treatment-a-research-based-guide-third-edition.pdf>.
12. NIDA. (2019). *What treatments are effective for people who misuse methamphetamine?* <https://nida.nih.gov/publications/research-reports/methamphetamine/what-treatments-are-effective-people-who-misuse-methamphetamine>.
13. SAMHSA. (2020). *Substance Use Prevention Treatment and Recovery Services (SUPTRS) Block Grant (BG) State Agency Reported Expenditures by Target Activity within Sources of Funds: 2020*. Web Block Grant Application System (WebBGAS). <https://bgas.samhsa.gov/Module/BGAS/Reports/ReportList?tempSession=a7a91c74-5f73-4305-86da-8cadc0bf850b&reportKey=1>.
14. SAMHSA. (2022). *Prevention Persons Served by Age Group and Gender – Individual Programs*. WebBGAS. <https://bgas.samhsa.gov/Module/BGAS/Page/Reports.aspx>.
15. SAMHSA. (2022). *Prevention Persons Served by Age Group and Gender – Population-Based Programs*. WebBGAS. <https://bgas.samhsa.gov/Module/BGAS/Page/Reports.aspx>.
16. SAMHSA. (2021). *Substance Use Prevention, Treatment, and Recovery Services Block Grant – Program Profile – National Outcome Measures (NOMs)*. <https://bgas.samhsa.gov/Module/BGAS/Page/Reports.aspx>.
16. Consolidated Appropriations Act, 2023, Public Law No. 117-328. (2022). <https://www.congress.gov/bill/117th-congress/house-bill/2617/text>.