

# Crystal Methamphetamine in the Community

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# What is (Crystal) Methamphetamine?

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Sourced from National Institute on Drug Abuse Advancing Addiction Science

# What is Crystal Methamphetamine?

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Methamphetamine is a powerful, highly addictive stimulant that affects the central nervous system (brain).

It is also known as meth, chalk, ice, and crystal, among many other terms.

It takes the form of a white, odorless, bitter-tasting crystalline powder that easily dissolves in water or alcohol.



# Crystal Methamphetamine

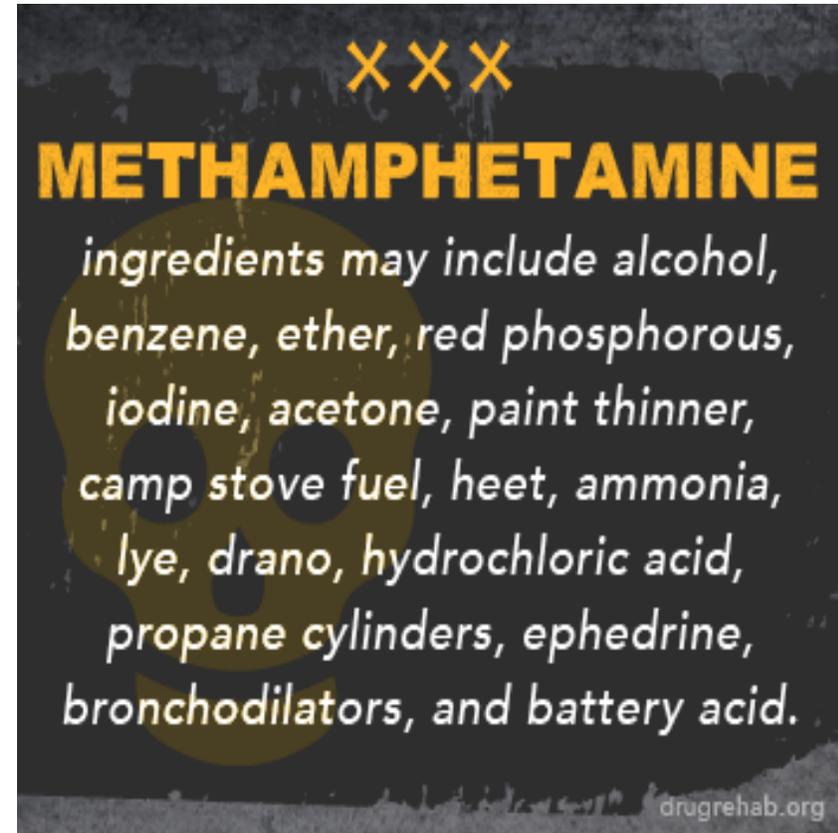
Methamphetamine was developed early in the 20th century from its parent drug, amphetamine, and was used originally in nasal decongestants and bronchial inhalers.

Like amphetamine, methamphetamine causes increased activity and talkativeness, decreased appetite, and a pleasurable sense of well-being or euphoria.

However, methamphetamine differs from amphetamine in that, at comparable doses, much greater amounts of the drug get into the brain, making it a more potent stimulant.

It also has longer-lasting and more harmful effects on the central nervous system.

These characteristics make it a drug with high potential for widespread abuse.



# Crystal Methamphetamine

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Methamphetamine has been classified by the U.S. Drug Enforcement Administration as a Schedule II stimulant, which makes it legally available only through a non-refillable prescription.

Medically it may be indicated for the treatment of attention deficit hyperactivity disorder (ADHD) and as a short-term component of weight-loss treatments, but these uses are limited and it is rarely prescribed; also, the prescribed doses are far lower than those typically abused.

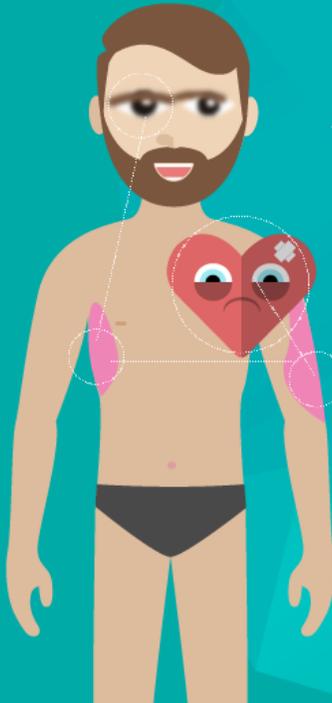


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Because it's such a potent drug it's hard for users to just abandon the drug



**METH IN THE BODY**

Depending on how much and for how long the person has been abusing meth it takes 2 to 10 days for meth to completely leave your body

- The person no longer feels the high
- It can still be detected if tested for

**THE EFFECTS**

Meth creates a dopamine rush in the brain, that's why it's so addictive. Long-term abuse of meth has disastrous effects on the body:

- Memory problems
- Aggressive behavior
- Severe Anxiety
- Hallucinations
- Paranoia
- Itchy skin
- Blurry vision
- High blood pressure

# Methamphetamine is a Controlled Medication

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So, if your children are telling you that it is a medication, they are partly correct.

Methamphetamines can be used at much lower doses to treat ADHD, for short term weight loss use, but at MUCH lower doses.

It is rarely prescribed for ADHD and weight loss.

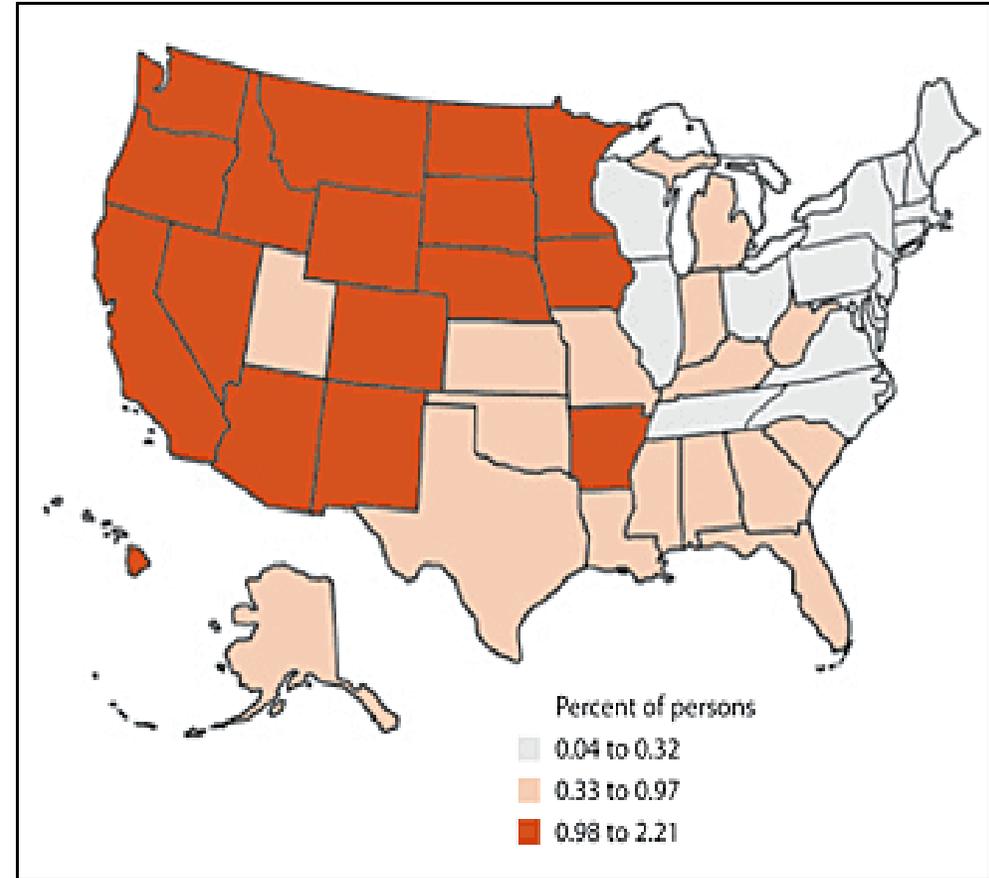


# Crystal Meth Use in the Southwest

While national trends are showing declines, methamphetamine abuse continues to exhibit regional variability.

The strongest effects are felt in the West and parts of the Midwest, according to the National Institute on Drug Abuse's (NIDA's) Community Epidemiology Work Group (CEWG), a network of researchers that provides information about the nature and patterns of drug abuse across the United States.

For example, in the first half of 2012, methamphetamine ranked first in drug-related treatment admissions in Hawaii and San Diego, second in San Francisco, and third in Denver and Phoenix.



# How is Methamphetamine Abused?

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Methamphetamine comes in several forms and can be smoked, inhaled (snorted), injected, or orally ingested.

The preferred method of abusing the drug varies by geographical region and has changed over time.

Smoking methamphetamine is currently the most common way of ingesting it, according to Community Epidemiology Work Group data.



# Various Forms of Methamphetamine

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Smoking or injecting methamphetamine puts the drug very quickly into the bloodstream and brain, causing an immediate, intense “rush” and amplifying the drug’s addiction potential and adverse health consequences.

The rush, or “flash,” lasts only a few minutes and is described as extremely pleasurable.

Snorting or oral ingestion produces euphoria—a high, but not an intense rush.

Snorting produces effects within 3 to 5 minutes, and oral ingestion produces effects within 15 to 20 minutes.



# Various Forms of Methamphetamine

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As with many stimulants, methamphetamine is most often abused in a “binge and crash” pattern.

Because the pleasurable effects of methamphetamine disappear even before the drug concentration in the blood falls significantly, users try to maintain the high by taking more of the drug.

In some cases, abusers indulge in a form of binging known as a “run,” foregoing food and sleep while continuing to take the drug for up to several days.



# How is Methamphetamine Different from other Stimulants, such as Cocaine?

The methamphetamine molecule is structurally similar to amphetamine and to the neurotransmitter dopamine, a brain chemical that plays an important role in the regulation of reward, but it is quite different from cocaine.

Although these stimulants have similar behavioral and physiological effects, there are some major differences in the basic mechanisms of how they work.

**Figure 1. Methamphetamine versus Cocaine**

<b>Methamphetamine</b>	<b>Cocaine</b>
Stimulant	Stimulant and local anesthetic
Man-made	Plant-derived
Smoking produces a long-lasting high	Smoking produces a brief high
50% of the drug is removed from the body in 12 hours	50% of the drug is removed from the body in 1 hour
Increases dopamine release and blocks dopamine re-uptake	Blocks dopamine re-uptake
Limited medical use for ADHD, narcolepsy, and weight loss	Limited medical use as a local anesthetic in some surgical procedures

# How is Methamphetamine Different from other Stimulants, such as Cocaine?

In contrast to cocaine, which is quickly removed from and almost completely metabolized in the body, methamphetamine has a much longer duration of action, and a larger percentage of the drug remains unchanged in the body.

Methamphetamine therefore remains in the brain longer, which ultimately leads to prolonged stimulant effects.

Although both methamphetamine and cocaine increase levels of dopamine, administration of methamphetamine in animal studies leads to much higher levels of dopamine, because nerve cells respond differently to the two drugs.

Cocaine prolongs dopamine actions in the brain by blocking the re-absorption (re-uptake) of the neurotransmitter by signaling nerve cells.

At low doses, methamphetamine also blocks the re-uptake of dopamine, but it also increases the release of dopamine, leading to much higher concentrations in the synapse (the gap between neurons), which can be toxic to nerve terminals.

**Figure 1. Methamphetamine versus Cocaine**

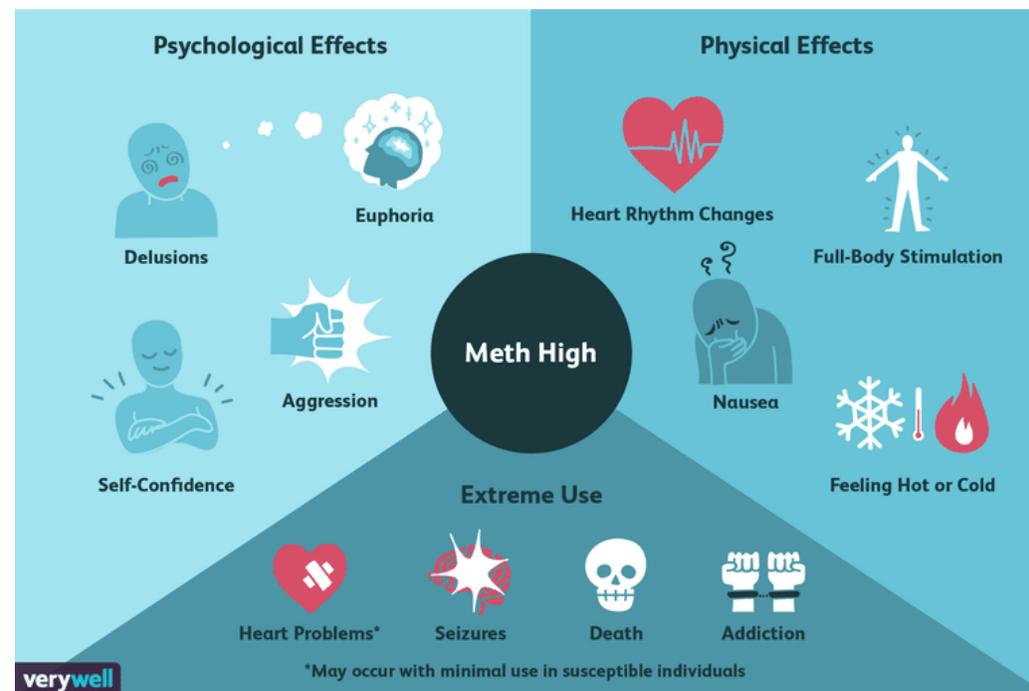
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# What are the Short-term Effects of Methamphetamine Abuse?

As a powerful stimulant, methamphetamine, even in small doses, can increase wakefulness and physical activity and decrease appetite.

Methamphetamine can also cause a variety of cardiovascular problems, including rapid heart rate, irregular heartbeat, and increased blood pressure.

Hyperthermia (elevated body temperature) and convulsions may occur with methamphetamine overdose, and if not treated immediately, can result in death.



# What are the Long-term Effects of Methamphetamine Abuse?

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Addiction and compulsive drug seeking behaviour

Tolerance which means that you need higher doses to achieve the same "high."

Extreme weight loss

Severe dental problems "meth mouth"

Intense itching, leading to skin sores from scratching

Anxiety

Confusion

Sleeping problems

Violent behavior

Paranoia: extreme distrust of others

Hallucinations: Sensations and images that seem real though they are not



# What are the Long-term Effects of Methamphetamine Abuse?

Continued meth use causes changes in the brain's dopamine system that are associated with reduced coordination and impaired verbal learning.

Chronic methamphetamine abusers may develop difficulty feeling any pleasure other than that provided by the drug, fueling further abuse.

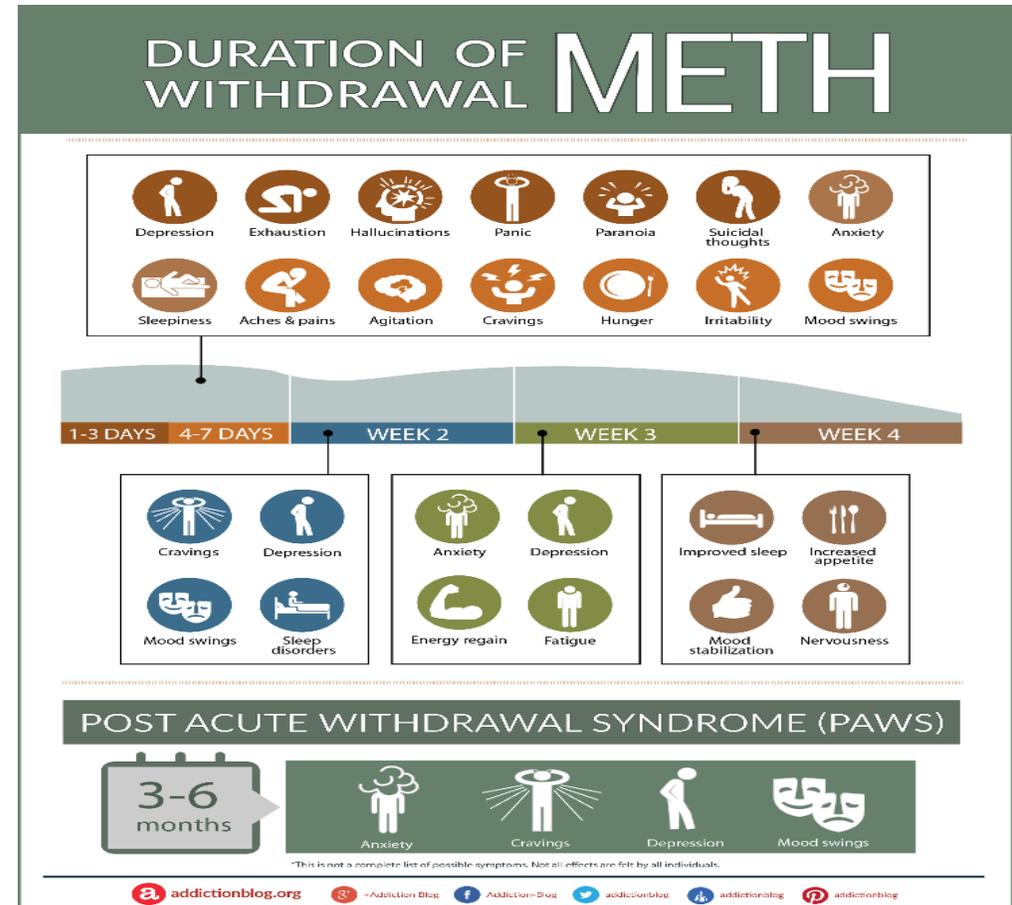
There is also emotional blunting and memory problems with prolonged meth use.

There may also be an increased risk of developing Parkinson's disease affecting movement.



# Symptoms of Meth Withdrawal

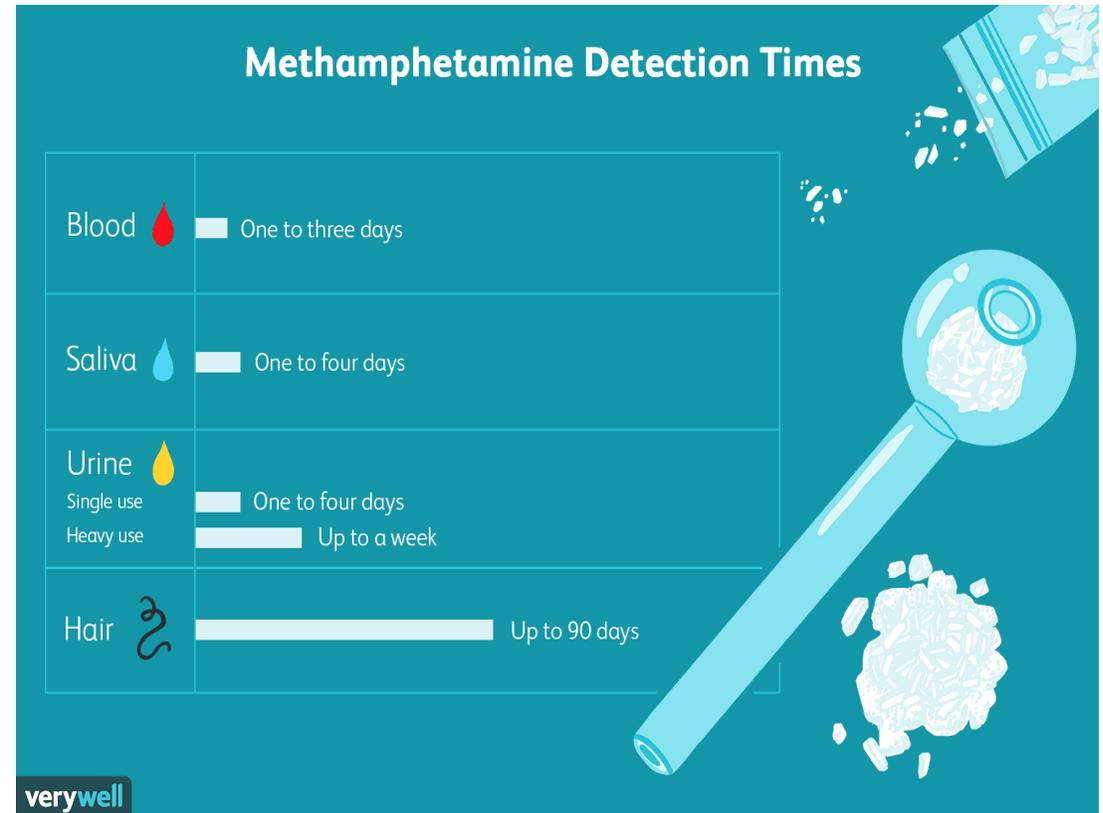
Symptoms of withdrawal include depression, exhaustion, fatigue, hallucinations, panic, paranoia, suicidal thoughts, anxiety, sleepiness, body aches, agitation, and an intense craving for the drug, intense hunger, irritability, mood swings.



# Are there Health Effects for Secondhand Exposure to Methamphetamine Smoke?

Researchers don't yet know whether people breathing in secondhand meth smoke can get high or have other health effects.

Researchers know that these people can test positive for meth after exposure to secondhand smoke.



# Can a Person Overdose on Meth?

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Yes, a person can overdose on meth.

An overdose occurs when the person uses too much of the drug and has a toxic reaction that can result in death.

Meth overdose can lead to stroke, heart attack, kidney failure.



# Closing Points

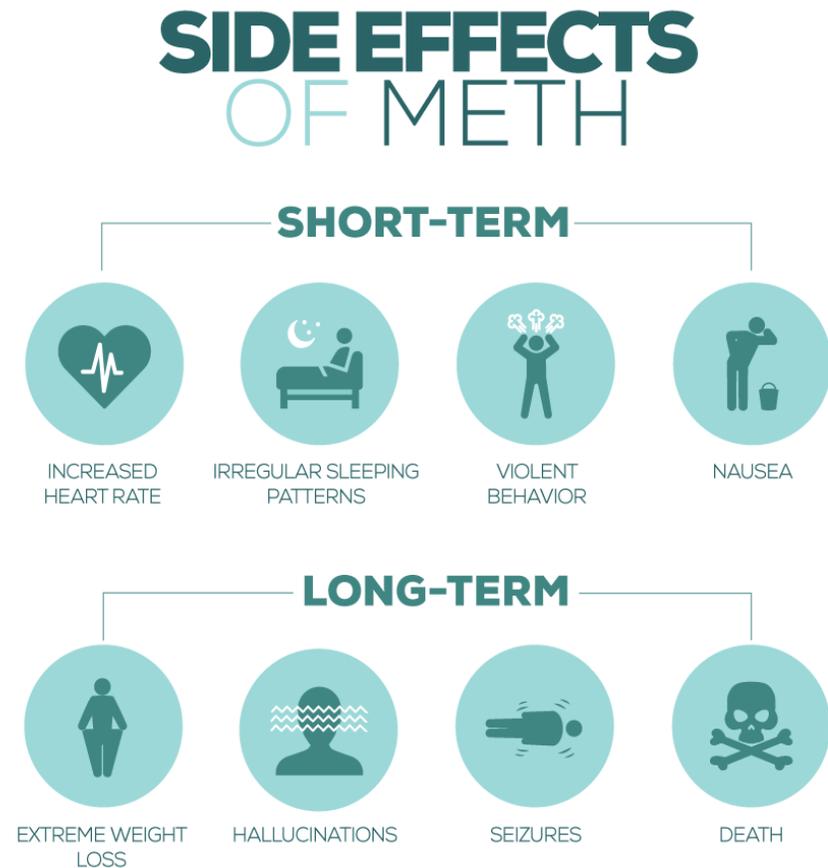
Methamphetamine is usually a white, bitter-tasting powder or a pill.

Crystal methamphetamine looks like glass fragments or shiny, bluish-white rocks.

Methamphetamine is a stimulant drug that is chemically similar to amphetamine (a drug used to treat ADHD and narcolepsy).

People can take methamphetamine by inhaling/smoking, swallowing, snorting, or injecting the drug.

Methamphetamine increases the amount of dopamine in the brain, which is involved in movement, motivation, and reinforcement of rewarding behaviors.



# Closing Points

Short-term health effects include increased wakefulness and physical activity, decreased appetite, and increased blood pressure and body temperature.

Long-term health effects include risk of contracting HIV and hepatitis; severe dental problems ("meth mouth"); intense itching, leading to skin sores from scratching; violent behavior; and paranoia.

Researchers don't yet know whether people breathing in secondhand methamphetamine smoke can get high or have other health effects.

## Short-term effects can include:

Increased attention and decreased fatigue

Increased activity

Decreased appetite

Euphoria and rush

Increased respiration

Hyperthermia

## Long-term effects can include:

Dependence and addiction psychosis

- paranoia
- hallucinations
- mood disturbances
- repetitive motor activity

Stroke

Weight loss

# Closing Points

A person can overdose on methamphetamine. Because methamphetamine overdose often leads to a stroke, heart attack, or organ problems, first responders and emergency room doctors try to treat the overdose by treating these conditions.

Methamphetamine is highly addictive. When people stop taking it, withdrawal symptoms can include anxiety, fatigue, severe depression, psychosis, and intense drug cravings.

The most effective treatments for methamphetamine addiction so far are behavioral therapies. There are currently no government-approved medications to treat methamphetamine addiction.

Drugs Involved in U.S. Overdose Deaths, 2000 to 2016

