



Heroin

Street names: Brown Sugar, Horse, Smack

EXPAND ALL

Revised July 2017

What is heroin?



Also known as: Black tar, H, Horse, Junk, Ska, and Smack

Heroin is a highly addictive drug made from morphine, a psychoactive (mind-altering) substance that is extracted from the resin of the seed pod of the opium poppy plant. Heroin's color and look depend on how it is made and what else it may be mixed with. It can be white or brown powder or a black, sticky substance called "black tar heroin."

Heroin is part of a class of drugs called *opioids*. Other opioids include some prescription pain relievers, such as codeine, oxycodone (OxyContin), and hydrocodone (e.g. Vicodin). These drugs are chemically similar to *endorphins*, which are opioid chemicals that the body makes naturally to relieve pain (such as after exercise).

Heroin use and overdose deaths have dramatically increased over the last decade. This increase is related to the growing number of people misusing [prescription opioid pain relievers](#) like OxyContin and Vicodin; many who become addicted to those drugs switch to heroin because it produces similar effects but is cheaper and easier to get.

In fact, nearly 80 percent of people who use heroin report having first misused prescription opioids. However, only a small portion of people who misuse pain relievers switch to heroin. Both heroin and opioid pill use can lead to addiction and overdose.

How Heroin is Used

Heroin is mixed with water and injected with a needle. It can also be sniffed, smoked, or snorted. Users sometimes combine it with other drugs, such as alcohol or cocaine (a “speedball”), which can be particularly dangerous and raise the risk of overdose.

To learn more about the different types of opioids, visit our Prescription [Opioids Drug Facts](#) page.

¹ Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. *CBHSQ Report. Trends in Heroin Use in the United States: 2002 to 2013*. Rockville, MD, April 2015. Available at: http://www.samhsa.gov/data/sites/default/files/report_1943/ShortReport-1943.html.

What happens to your brain when you use heroin?

When heroin enters the brain, it attaches to molecules on cells known as opioid receptors. These receptors are located in many areas of the brain and body, especially areas involved in the perception of pain and pleasure, as well as a part of the brain that regulates breathing.

Short-term effects of heroin include a rush of good feelings and clouded thinking. These effects can last for a few hours, and during this time people feel drowsy, and their heart rate

and breathing slow down. When the drug wears off, people experience a depressed mood and often crave the drug to regain the good feelings.

Regular heroin use changes the functioning of the brain. Using heroin repeatedly can result in:

- *tolerance*: more of the drug is needed to achieve the same “high”
- *dependence*: the need to continue use of the drug to avoid withdrawal symptoms
- *addiction*: a devastating brain disease where, without proper treatment, people have trouble stopping using drugs even when they really want to and even after it causes terrible consequences to their health and other parts of their lives. Because of changes to how the brain functions after repeated drug use, people that are addicted crave the drug just to feel “normal.”

Learn more about [how the brain works and what happens when a person uses drugs](#). And, check out how the brain responds to natural rewards and to drugs.

The Reward Circuit: How the Brain Responds to Nat...

What happens to your body when you use heroin?

Opioid receptors are located in the brain, the brain stem, down the spinal cord, and in the lungs and intestines. Thus, using heroin can result in a wide variety of physical problems related to breathing and other basic life functions, some of which may be very serious. In 2011, more than 250,000 visits to a hospital emergency department involved heroin.²

Heroin use can cause:

- dry mouth
- warm flushing skin
- heavy feeling arms and legs
- feeling sick to the stomach and throwing up
- severe itching
- clouded thinking
- going "on the nod," switching back and forth between being conscious and semi-conscious
- coma—a deep state of unconsciousness
- dangerously slowed (or even stopped) breathing that can lead to overdose death
- increased risk of HIV and hepatitis (a liver disease) through shared needles

Longer term effects can include:

- problems sleeping
- damage to the tissues inside the nose for people who sniff or snort it
- painful area of tissue filled with puss (an abscess)
- infection of the heart
- constipation and stomach cramping
- liver and kidney disease
- lung problems
- mental health problems, such as depression
- sexual problems for men
- changes in menstrual cycles for women

² Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. *The DAWN Report, Highlights of the 2011 Drug Abuse Warning Network (DAWN): Findings on Drug-Related Emergency Department Visits*. Rockville, MD, February 22, 2013. Available at: <http://media.samhsa.gov/data/2k13/DAWN127/sr127-DAWN-highlights.htm>.

Can you overdose or die if you use heroin?

Yes, because heroin slows and sometimes stops breathing, its use does kill people—called a fatal overdose. Deaths from drug overdoses have been increasing since the early 1990s, fueled by increases in misuse of prescription opioids and, more recently, by a surge in heroin use. Nearly 13,000 people died in 2015 from heroin overdoses, with alarming increases [among young people ages 15-24](#).⁵

Signs of a possible heroin overdose are:

- slow breathing
- blue lips and fingernails
- cold damp skin
- shaking
- vomiting or gurgling noise

People who are showing symptoms of overdose need urgent medical help. A drug called naloxone can be given to reverse the effects of heroin overdose and prevent death—but only if it is given in time. It is available in an easy-to-use nasal spray or autoinjector. It is often carried by emergency first responders, including police officers and EMTs. In some states, doctors can now prescribe naloxone in advance to people who use heroin or prescription opioids and to their family members, so that in the event of an overdose, it can be given right away without waiting for emergency personnel (who may not arrive in time). Read more about how [Naloxone Saves Lives](#).

⁵ Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database, released 2016. Available at <http://wonder.cdc.gov>.

What are the other risks of using heroin?

In addition to the effects of the drug itself, heroin bought on the street often contains a mix of substances, including the dangerous opioid called fentanyl. Some of these substances can be toxic and can clog the blood vessels leading to the lungs, liver, kidney, or brain. This can cause permanent damage to those organs.

Also, sharing drug injection equipment or engaging in risky behaviors can increase the risk of being exposed to diseases such as [HIV](#) and hepatitis.

Is heroin addictive?

Yes, heroin can be very [addictive](#). In 2015, about 591,000 people had a heroin use disorder. That means they had serious problems with the drug, including health issues, disability, and problems meeting responsibilities at work, school, or home. Of the people with heroin use disorder in 2015, 6,000 were teens and 155,000 were young adults.³

Heroin enters the brain quickly, causing a fast, intense high. Using heroin repeatedly can cause people to develop *tolerance* to the drug. This means they need to take more and more of it to get the same effect. Eventually they may need to keep taking the drug just to feel normal. It is estimated that about 23 percent of individuals who use heroin become addicted.⁴ For those who use heroin over and over again, addiction is more likely. Once a person becomes addicted to heroin, seeking and using the drug often becomes the main goal guiding their daily behavior.

When someone is addicted to heroin and stops using it, he or she may experience extremely uncomfortable and painful withdrawal symptoms, which is why it is so hard to quit. Those symptoms typically include:

- muscle and bone pain
- cold flashes with chills
- throwing up
- diarrhea
- trouble sleeping
- restlessness
- kicking movements

- strong craving for the drug

Fortunately, treatment can help an addicted person stop using and stay off heroin. Medicines can help with cravings that occur after quitting, helping a person to take control of their health and their lives.

³ Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. *Key Substance Use and Mental Health Indicators in the United States: Results from the 2015 National Survey on Drug Use and Health*. Rockville, MD, 2016. Available at: <https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR1-2015/NSDUH-FFR1-2015/NSDUH-FFR1-2015.pdf>.

⁴ Substance Abuse and Mental Health Services Administration. *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*. Rockville, MD, 2014. Available at <http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf> [PDF - 3.2MB].

How many teens use heroin?

Below is a chart showing the percentage of teens who use heroin.

Monitoring the Future Study: Trends in Prevalence of Heroin for 8th Graders, 10th Graders, and 12th Graders; 2016 (in percent)*

Drug	Time Period	8th Graders	10th Graders	12th Graders
Heroin	Lifetime	0.50	0.60	0.70
	Past Year	0.30	0.30	0.30
	Past Month	0.20	0.20	0.20

* Data in brackets indicate statistically significant change from the previous year.

For more statistics on teen drug use, see [NIDA's Monitoring the Future study](#).

What should I do if someone I know needs help?

If you see or hear about someone misusing opioids, talk to a coach, teacher, or other trusted adult.

If you, or a friend, are in crisis and need to speak with someone now, please call:

- **National Suicide Prevention Lifeline at 1-800-273-TALK** (they don't just talk about suicide—they cover a lot of issues and will help put you in touch with someone close by).

If you need information on treatment and where you can find it, you can call:

- **Substance Abuse Treatment Facility Locator at 1-800-662-HELP** or visit www.findtreatment.samhsa.gov.

For more information on how to help a friend or loved one, visit our [Have a Drug Problem, Need Help? page](#).

Where can I get more information?

Drug Facts

NIDA:

- [DrugFacts: Heroin](#)
- [Commonly Abused Drugs Chart](#)
- [Mind Over Matter Teaching Guide and Series: Opioids](#)
- [NIDA Notes Articles: Heroin](#)
- [Research Report Series: Heroin](#)

Statistics and Trends

NIDA:

- [DrugFacts: High School and Youth Trends](#)

Centers for Disease Control and Prevention

- [Youth Risk Behavior Surveillance System](#) (YRBSS)

Monitoring the Future (University of Michigan):

- [Monitoring the Future](#)

Substance Abuse and Mental Health Services Administration:

- [National Survey on Drug Use and Health](#)

This publication is available for your use and may be reproduced **in its entirety** without permission from NIDA. Citation of the source is appreciated, using the following language:
Source: National Institute on Drug Abuse; National Institutes of Health; U.S. Department of Health and Human Services.

Find NIDA for Teens on:



Site last updated September 05, 2017

NOTE: PDF documents require the free [Adobe Reader](#). Microsoft Word documents require the free [Microsoft Word Viewer](#). Flash content requires the free [Adobe Flash Player](#).

National Drug and Alcohol Facts Week and the **National Drug and Alcohol Facts Week** logo design are registered marks of the U.S. Department of Health and Human Services. SHATTER THE MYTHS & Design SM is a mark of the US Department of Health and Human Services.

NIH...Turning Discovery Into Health®

