



## What is heroin?

Heroin is an opioid drug made from morphine, a natural substance taken from the seed pod of the various opium poppy plants grown in Southeast and Southwest Asia, Mexico, and Colombia. Heroin can be a white or brown powder, or a black sticky substance known as black tar heroin. Other common names for heroin include *big H*, *horse*, *hell dust*, and *smack*.

## How do people use heroin?

People inject, sniff, snort, or smoke heroin. Some people mix heroin with crack cocaine, a practice called *speedballing*.

## What are the effects of heroin?

Heroin enters the brain rapidly and binds to opioid receptors on cells located in many areas, especially those involved in feelings of pain and pleasure and in controlling heart rate, sleeping, and breathing.

## Prescription Opioids and Heroin

Prescription opioid pain medicines such as OxyContin® and Vicodin® have effects similar to heroin. Research suggests that misuse of these drugs may open the door to heroin use. Nearly 80 percent of Americans using heroin (including those in treatment) reported misusing prescription opioids first.

While prescription opioid misuse is a risk factor for starting heroin use, only a small fraction of people who misuse pain relievers switch to heroin. According to a national survey, less than 4 percent of people who had misused prescription pain medicines started using heroin within 5 years. This suggests that prescription opioid misuse is just one factor leading to heroin use. Read more about this intertwined problem in the [\*Prescription Opioids and Heroin Research Report\*](#).

## Short-Term Effects

People who use heroin report feeling a "rush" (a surge of pleasure, or euphoria). However, there are other common effects, including:

- dry mouth
- warm flushing of the skin
- heavy feeling in the arms and legs
- nausea and vomiting
- severe itching
- clouded mental functioning
- going "on the nod," a back-and-forth state of being conscious and semiconscious

## Long-Term Effects

People who use heroin over the long term may develop:

- insomnia
- collapsed veins for people who inject the drug
- damaged tissue inside the nose for people who sniff or snort it
- infection of the heart lining and valves
- abscesses (swollen tissue filled with pus)
- constipation and stomach cramping
- liver and kidney disease
- lung complications, including pneumonia

- mental disorders such as depression and antisocial personality disorder
- sexual dysfunction for men
- irregular menstrual cycles for women

## Injection Drug Use, HIV, and Hepatitis

People who inject drugs such as heroin are at high risk of contracting the HIV and hepatitis C (HCV) virus. These diseases are transmitted through contact with blood or other bodily fluids, which can occur when sharing needles or other injection drug use equipment. HCV is the most common blood borne infection in the United States. HIV (and less often HCV) can also be contracted during unprotected sex, which drug use makes more likely.

## Other Potential Effects

Heroin often contains additives such as sugar, starch, or powdered milk that can clog blood vessels leading to the lungs, liver, kidneys, or brain, causing permanent damage. Also, sharing drug injection equipment and having impaired judgment from drug use can increase the risk of contracting infectious diseases such as HIV and hepatitis (see "Injection Drug Use, HIV, and Hepatitis").

## Can a person overdose on heroin?

Yes, a person can overdose on heroin. A heroin overdose occurs when a person uses enough of the drug to produce a life-threatening reaction or death. Heroin overdoses have increased in recent years.

When people overdose on heroin, their breathing often slows or stops. This can decrease the amount of oxygen that reaches the brain, a condition called *hypoxia*. Hypoxia can have short- and long-term mental effects and effects on the nervous system, including coma and permanent brain damage.

## How can a heroin overdose be treated?

Naloxone is a medicine that can treat an opioid overdose when given right away. It works by rapidly binding to opioid receptors and blocking the effects of heroin and other opioid drugs. Sometimes more than one dose may be needed to help a person start breathing again, which is why it's important to get the person to an emergency department or a doctor to receive additional support if needed. Read more in the Substance Abuse and Mental Health Services Administration's [Opioid Overdose Prevention Toolkit](#).

Naloxone is available as an injectable (needle) solution, a handheld auto-injector (EVZIO®), and a nasal spray (NARCAN® Nasal Spray). Friends, family, and others in the community can use the auto-injector and nasal spray versions of naloxone to save someone who is overdosing.

The rising number of opioid overdose deaths has led to an increase in public health efforts to make naloxone available to at-risk persons and their families, as well as first responders and others in the community. Some states have passed laws that allow pharmacists to dispense naloxone without a prescription from a person's personal doctor. Read more about naloxone on the [Naloxone webpage](#).

## Is heroin addictive?

Heroin is highly addictive. People who regularly use heroin often develop a tolerance, which means that they need higher and/or more frequent doses of the drug to get the desired effects. A *substance use disorder* (SUD) is when continued use of the drug causes issues, such as health problems and failure to meet responsibilities at work, school, or home. An SUD can range from mild to severe, the most severe form being addiction. Those who are addicted to heroin and stop using the drug abruptly may have severe withdrawal. Withdrawal symptoms—which can begin as early as a few hours after the drug was last taken—include:

- restlessness
- severe muscle and bone pain
- sleep problems

- diarrhea and vomiting
- cold flashes with goose bumps ("cold turkey")
- uncontrollable leg movements ("kicking the habit")
- severe heroin cravings

Researchers are studying the long-term effects of opioid addiction on the brain. Studies have shown some loss of the brain's white matter associated with heroin use, which may affect decision-making, behavior control, and responses to stressful situations.

## How is heroin addiction treated?

A range of treatments including medicines and behavioral therapies are effective in helping people stop heroin use. Individuals using heroin should be encouraged to speak with a professional to determine the best treatment approach.

Medicines include naltrexone, buprenorphine and methadone. Naltrexone works by blocking opioid receptors in the brain. VIVITROL is a non-addictive, once monthly naltrexone injectable that is proven to prevent relapse in opioid dependent patients when used with counseling following detoxification. Buprenorphine and methadone work by binding to the same opioid receptors in the brain as heroin and they assist in reducing cravings and withdrawal symptoms.

There are several levels of treatment options. Outpatient therapies for heroin addiction include cognitive behavioral therapy, contingency management, couples and family therapy, motivational interviewing, and a variety of other types of treatment. These treatment approaches are especially effective when used along with medicines. Drug detoxification (detox for short) is used to reduce or relieve withdrawal symptoms while helping an addicted individual adjust to living without drug use. Detox does not aim to treat addiction, but serves as an early step within a long-term treatment plan.

Inpatient or residential treatment can also be very effective, especially for those with severe heroin use. Again, speaking with a professional is the best way to determine a treatment approach.