

How Similar is Heroin to Prescription Opioids?

Heroin and prescription painkillers both belong to the class of substances known as **opioids**, which either resemble or are synthesized from opiate alkaloids contained in the opium poppy such as morphine¹.

Heroin

Heroin is a powerful, illegal, man-made drug that can be smoked, snorted, or dissolved and injected. It is bought and sold on the illicit market as a white or off-white powder and sometimes as a dark, sticky substance known as "black tar heroin."

Prescription Opioids

Prescription opioids are powerful, man-made synthetic or semi-synthetic drugs that can be swallowed, crushed and snorted, or dissolved and injected. They are frequently prescribed in pill form with carefully measured doses to treat a variety of chronic pain conditions.

How Addictive Are Opioids?

Opioids depress central nervous system activity by potentially mimicking endogenous opioids normally produced in the human body (e.g., endorphins, enkephalins)².

When opioid receptors are stimulated, a cascade of neurological effects begins, resulting in^{3,4}:

Analgesia

Decreased sensation of pain, muscle relaxation, and decreased anxiety.

Sedation

Drowsiness, lethargy, and mental relaxation.

Euphoria

A sense of well-being, contentment, and happiness.

These potent effects contribute to alarming rates of abuse:

IN 2015

828,000 people age 12 or older reported heroin use at some point during the year, while nearly **12.5 MILLION** reported prescription pain reliever use⁵.

IN 2014

OVERDOSE DEATHS due to heroin & prescription opioids were at their highest rates **SINCE 2001**⁶.

Prescription opioids caused nearly **2X** as many **OVERDOSE DEATHS** (18,893 compared to 10,574)⁶.

Opioid addiction potential depends on⁷:

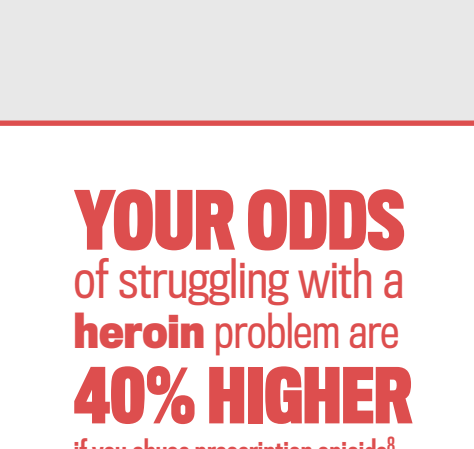
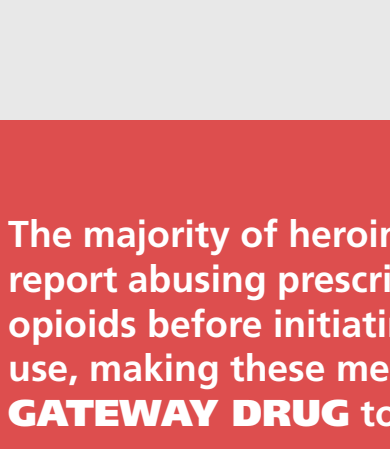
THE METHODS OF ABUSE

(different routes of administration used—smoked, injected, etc.).

THE DRUG'S ABILITY TO:

CROSS THE BLOOD-BRAIN BARRIER which influences the speed of onset effects.

ATTACH TO OPIOID RECEPTORS (i.e., opioid receptor binding affinity).



The majority of heroin users report abusing prescription opioids before initiating heroin use, making these medications a **GATEWAY DRUG** to heroin⁷.

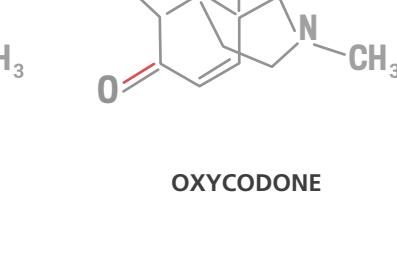
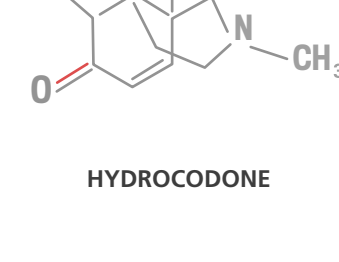
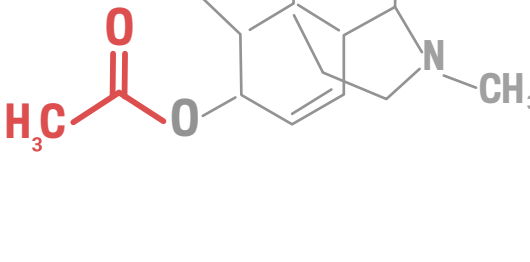
YOUR ODDS of struggling with a heroin problem are **40% HIGHER** if you abuse prescription opioids⁸.

Are Painkillers and Heroin that Similar?

Molecularly, heroin and prescription opioids are nearly **indistinguishable**.

HEROIN

PRESCRIPTION OPIOIDS



HYDROCODONE

OXYCODONE

Both substances bind to opioid receptors in the brain, using similar pharmacological mechanisms to induce their effects⁷.

Heroin and the huge variety of opioid painkillers will all vary somewhat with regards to both their subjective highs and their respective withdrawal syndromes, despite being molecularly and pharmacologically similar⁷.

Heroin Vs. Opioids

EFFECTS^{9,16}

	HEROIN	PRESCRIPTION OPIOIDS
Euphoria	✓	✓
Sleepiness	✓	✓
Respiratory Depression	✓	✓
Slow Heart Rate	✓	✓

METHODS OF USE

	HEROIN	PRESCRIPTION OPIOIDS
Inject	✓	✓
Snort	✓	✓
Swallow	✓	✓
Smoke	✓	✗

WITHDRAWAL^{10,11,17}

	HEROIN	PRESCRIPTION OPIOIDS
Onset	Within 12 hours of last use - Generally subsides within a week	Onset varies by opioid - May last up to one month
Anxiety	✓	✓
Muscle Aches	✓	✓
Insomnia	✓	✓
Sweating	✓	✓
Nausea	✓	✓
Vomiting	✓	✓

DANGERS^{11,12,13,14,15,16,17}

	HEROIN	PRESCRIPTION OPIOIDS
Overdose	✓	✓
Addiction	✓	✓
Brain Damage	✓	✓
Stopped Breathing	✓	✓
Stopped Heart	✓	✓
Blood-borne Viruses	✓	✓
Bacterial Infections	✓	✓
Hormonal Imbalance	✓	✗

Are Painkillers Even More Dangerous than Heroin?

Some opioid painkillers are many times more powerful than heroin^{21,22}.

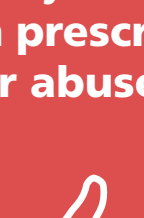
Some prescription opioids, such as hydromorphone, oxycodone, and fentanyl, have abuse potential that is equal to or even higher than heroin^{19,20}.

Fentanyl is up to **50X** MORE POTENT THAN HEROIN

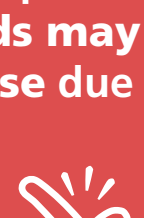
Carfentanyl is **100X** MORE POTENT THAN FENTANYL

Both of these substances have been found mixed with street heroin, resulting in widespread overdoses^{22,23}.

Ultimately, heroin and prescription opioids are very similar, though prescription opioids may put users at a higher risk for abuse and overdose due to:



Their perceived safety.



Ease of access.



Legal status.

Sources:

- Department of Health and Human Services. (2015). Opioids: The Prescription Drug & Heroin Overdose Epidemic.
- Holden, J. E., Jeong, Y., & Forrest, J. M. (2005). The endogenous opioid system and clinical pain management. *AACN Clinical Issues*, 16(3), 291-301.
- Abadinsky, H. (2014). Drug use and abuse: A comprehensive introduction, 8th edition. Belmont, CA: Wadsworth.
- Benjamin, R., Trescott, A. M., Datta, S., Buenaventura, R., Adlaka, R., Sehgal, N., Glaser, S. E., & Vallejo, R. (2008). Opioid complications and side effects. *Pain Physician*, 11, S105-S120.
- Center for Behavioral Health Statistics and Quality. (2016). Results from the 2015 National Survey on Drug Use and Health: Detailed Tables. Substance Abuse and Mental Health Services Administration, Rockville, MD.
- National Institute on Drug Abuse. (2015). Overdose Death Rates.
- Compton, W.M., Jones, C.M., & Baldwin, G.T. (2016). Relationship between nonmedical prescription-opioid use and heroin use. *The New England Journal of Medicine*, 374, 154-163.
- Centers for Disease Control and Prevention. (2015). Vital signs: demographic and substance use trends among heroin users — United States, 2002-2013. *MMWR Morbidity and Mortality Weekly Report*, 64, 719-25.
- National Institute on Drug Abuse. (2014). What are the medical complications of chronic heroin use?
- National Institute on Drug Abuse. (2014). What can be done for a heroin overdose?
- National Institute on Drug Abuse. (2014). What are the long-term effects of heroin use?
- National Institute on Drug Abuse. (2014). What are the possible consequences of opioid use and abuse?
- (was 9) Ternes, J.W. & O'Brien, C.P. (1990). The opioids: abuse liability and treatments for dependence. *Advances in Alcohol and Substance Abuse*, 9, 27-45.
- Comer, S.D., Sullivan, M.A., Whittington, R.A., Vosburg, S.K., & Kowalczyk, W.J. (2008). Abuse liability of prescription opioids compared to heroin in morphine-maintained heroin abusers. *Neuropsychopharmacology*, 33, 1179-1191.
- Drug Enforcement Administration. (2015). DEA Issues Nationwide Alert on Fentanyl as Threat to Health and Public Safety.
- Drug Enforcement Administration. (2016). DEA Issues Nationwide Alert on Fentanyl as Threat to Health and Public Safety.

Data collected and sourced by Recovery Brands, 2016

DrugAbuse.com