

Opioids

Opioids

are drugs like Opium, Morphin, Heroin, Methadone, Buprenorphine, Pentazocine and others.

Heroin is an opiate drug that is synthesized from morphine, a naturally occurring substance extracted from the **seed pod** of the Asian **opium poppy** plant.

Heroin usually appears as a white or brown powder or as a black sticky substance, known as “black tar heroin.”

Heroin



Epidemiology

How widespread is heroin abuse?

In 2009, 605,000 Americans age 12 and older had abused heroin at least once in the year prior to being surveyed. The NIDA-funded 2010 Monitoring the Future Study showed that 0.8% of 8th graders, 0.8% of 10th graders, and 0.9% of 12th graders had abused heroin at least once in the year prior to being surveyed.

In Germany it is assumed that about 120 000 people are opiate dependent, mortality rate: approx. 1500/year.

In Ethiopia so far opiates are **not a big problem??**; but this would change when **Ethiopia becomes wealthier???**.

Opiates and other drugs have been and are the source of armed conflicts and wars.

Heroin preparation



How is heroin is used

Inhaling

- Snort (sniff powder through nostrils)
- Sniff vapors (heroin – “chasing the dragon”)
- Smoke



Injecting

- Intravenous – into a vein (mainlining)
- Intramuscular –into a muscle
- Subcutaneous – “skin popping”

Injecting heroin usually involves dissolving the powder in tap water and heating in a spoon.



Heroin produces feelings

After an intravenous **injection** of heroin, users report feeling a surge of euphoria (**“rush”**) accompanied by dry mouth, a warm flushing of the skin, **heaviness of the extremities**, and clouded mental functioning.

Following this initial euphoria, the user goes “on the nod,” an alternately wakeful and drowsy state.

Users who **do not inject** the drug may **not experience the initial rush**, but other effects are the same.

With regular heroin use, tolerance develops, in which the user’s physiological (and psychological) response to the drug decreases, and more heroin is needed to achieve the same intensity of effect.

How Does Heroin Affect the Brain?

Heroin enters the brain, where it is converted to morphine and binds to receptors known as opioid receptors. These receptors are located in many areas of the brain (and in the body), especially those involved in the perception of **pain** and **in reward**. Opioid receptors are also located in the **brain stem**—important for automatic processes critical for life, such as breathing (respiration), blood pressure, and arousal. Heroin overdoses frequently involve a **suppression of respiration**.

How often is heroin used?

Typically, a heroin abuser may inject up to four times a day.

Intravenous injection provides the **greatest intensity and most rapid** onset of euphoria (7 to 8 seconds).

When heroin is sniffed or smoked, peak effects are usually felt within 10 to 15 minutes. Because heroin abusers **do not know** the actual strength of the drug or its **true contents**, they are at risk of overdose or **death**.

What is the risk of dependence with heroin?

Heroin users are at high risk for addiction—it is estimated that about 23 percent of individuals who use heroin become dependent on it.

Neural basis of reinforcing effects Opiate injection caused increased release of DA in NA. The reinforcing effects of opiates are produced by activation of neurons of the mesolimbic system and release of DA in the NA. However, opiates can reinforce behavior **independent of** their effects on the mesolimbic DA system

Adverse effects of heroin on health

Short-Term Effects

“Rush”

Depressed respiration

Clouded mental functioning

Nausea and vomiting

Suppression of pain

Spontaneous abortion

Adverse effects of heroin on health cont...

Long-Term Effects

Addiction

Infectious diseases, (eg. HIV/AIDS and hepatitis B and C

Collapsed veins

Bacterial infections

Abscesses

Infection of heart valves

Arthritis and other rheumatologic problems

Orofacial Problems

Withdrawal

Chronic use of heroin leads to physical dependence, a state in which the body has adapted to the presence of the drug.

If a dependent user reduces or stops use of the drug abruptly, he or she may experience severe symptoms of withdrawal.

These symptoms—which can begin as early as a few hours after the last drug administration—can include **restlessness, muscle and bone pain, insomnia, diarrhea and vomiting.**

Withdrawal cont...

Users also experience severe **craving** for the drug during withdrawal, which can precipitate continued abuse and/or relapse.

Major withdrawal symptoms peak between **48 and 72 hours** after the last dose of the drug and typically subside after about 1 week.

Some individuals, however, may show **persistent** withdrawal symptoms **for months**.

Heroin abuse during pregnancy

Heroin abuse during pregnancy, together with related factors like poor nutrition and inadequate prenatal care, has been associated with adverse consequences including low birthweight (smoking), an important risk factor for later developmental delay and **abortion**.

If the mother is regularly abusing the drug, the infant may be born physically dependent on heroin and could suffer from serious medical complications requiring hospitalization.

Treatment options

Heroin craving can persist years after drug cessation, particularly upon exposure to triggers such as stress or people, places, and things associated with drug use.

A range of treatments exist for heroin addiction, including medications and behavioural therapies.

Science has taught us that when medication treatment is combined with other supportive services, patients are often able to stop using heroin (or other opiates) and return to stable and productive lives.

Treatment options cont...

Treatment usually begins with medically assisted detoxification to help patients withdraw from the drug safely.

Medications such as [clonidine](#) and [buprenorphine](#) can be used to help minimize symptoms of withdrawal.

However, detoxification alone is not treatment and has not been shown to be effective in preventing relapse—it is merely the first step.

Medications help to prevent relapse

Methadone has been used for more than 30 years to treat heroin addiction. It is a synthetic opiate medication that binds to the same receptors as heroin; but when taken orally, it has a gradual onset of action and sustained effects, **reducing the desire** for other opioid drugs while preventing withdrawal symptoms.

Properly administered, methadone is not intoxicating or sedating, and its effects do not interfere with ordinary daily activities.

Methadone maintenance treatment is usually conducted in specialized opiate treatment programs.

The most effective methadone maintenance programs include individual and/or group counselling, as well as provision of or referral to other needed medical, psychological, and social services.

Buprenorphine

Buprenorphine is a more recently approved treatment for heroin addiction (and other opiates). Compared with methadone, buprenorphine produces **less risk for overdose** and withdrawal effects and produces a lower level of physical dependence, so patients who discontinue the medication generally have fewer withdrawal symptoms than those who stop taking methadone.

The development of buprenorphine and its authorized use in physicians' offices give opiate-addicted patients more medical options and extend the reach of addiction medication.

Its accessibility may even prompt attempts to obtain treatment earlier. However, not all patients respond to buprenorphine—some continue to require treatment with methadone.

Naltrexone

Naltrexone is approved for treating heroin addiction but has **not been widely utilized** due to poor patient compliance.

This medication **blocks opioids** from binding to their receptors and thus prevents an addicted individual from feeling the effects of the drug.

Naltrexone as a treatment for opioid addiction is usually prescribed in outpatient medical settings, although initiation of the treatment often begins after medical detoxification inpatient setting.

To prevent withdrawal symptoms, individuals must be medically detoxified and opioid-free for several days before taking naltrexone.

**What do you think on the importance of Medication
–VS psychosocial rehabilitation (PSR)?????**

There are many effective behavioural treatments available for drug addiction—usually in combination with medication.

These can be delivered in inpatient or outpatient settings.

Examples are

➤ Individual or group counselling; contingency

management, which uses a voucher-based system where patients earn “points” based on negative drug tests—these points can be exchanged for items that encourage healthy living; and

➤ Cognitive-behavioral therapy (CBT), designed to help modify a patient’s expectations and behaviours related to drug abuse, and to increase skills in coping with various life stressors.

STAY SAFE AND HOME