

Heroin

Heroin is an illegal narcotic substance derived from morphine, a naturally occurring substance that can be extracted from the seed pod of various types of poppy plants, particularly those found in East Asia. Highly addictive with potentially deadly consequences, heroin is considered the most abused opiate in the United States.

HISTORY AND LEGAL CONCERNS

Heroin was first produced in 1874 when the substance was extracted from the morphine of an Asian poppy plant. Commercially marketed in 1898 as a new pain reduction medication, heroin became widely used for medicinal purposes and was frequently prescribed by physicians unaware of its highly addictive and potentially deadly properties. In 1914 heroin became a controlled substance under the United States' Harrison Narcotic Act. Today heroin is considered a Schedule I Controlled Substance under the Controlled Substances Act, meaning that it has a high potential for abuse and is not currently accepted for medical use under any circumstance.

PHYSICAL EFFECTS

Heroin acts as a depressant on the central nervous system, relieving the user of pain as well as mental function, and slowing vital physical functions such as breathing and cardiac activity to dangerously slow rates. Heroin is used to achieve both a short term euphoria or "rush", as well as a long term peaceful semi-drowsy state known as "on the nod". During the initial rush, which can occur anywhere between 7-8 seconds and 10-15 minutes after exposure depending on the method of absorption, users report a warm flushed feeling accompanied by a dry mouth and general heaviness of extremities. Users may also experience nausea, vomiting, and severe itching. After the rush subsides the user's mental functioning will become clouded and s/he will go in and out of uncontrolled sleep for a period of several hours.

Over time, a chronic user may experience a host of medical complications such as scarred and/or collapsed veins, bacterial infections of the blood stream, blood vessels, and/or heart valves, abscesses or other soft-tissue infections, cellulites, liver or kidney disease, severe constipation, diseases of the lung such as chronic pneumonia and tuberculosis, as well as early onset arthritis or other rheumatic problems. In addition to the aforementioned medical complications associated with the chronic use of heroin, users of this illegal substance often face heroin-associated infections such as HIV/AIDS or hepatitis B and/or C, all of which can be contracted through the use of contaminated needles. Over time the chronic use of heroin can lead to permanent and irreversible neurochemical and molecular changes in the user's brain chemistry, altering the individual forever.

Heroin use during pregnancy can have serious and fatal effects on the fetus. Heroin use during pregnancy may result in miscarriage and/or premature delivery, with surviving infants facing a host of potential physical complications such as decreased cardiac and respiratory functioning. In addition, heroin exposure during pregnancy can significantly increase a newborn's risk of sudden infant death syndrome, commonly known as SIDS.

Due to the increased prevalence of HIV and other bloodborne, communicable diseases many heroin users have chosen to smoke or snort the drug in an effort to guard against the contraction of a communicable disease. While certainly

eliminating the use of needles is an important safety precaution, the use of heroin by means of smoking or snorting does not make the use of the illegal substance safe, nor will it decrease one's chances of addiction. When one snorts or smokes heroin s/he opens the door to a new host of serious respiratory complications. There is no safe way to use heroin, and all methods of absorption have potentially life threatening physical effects and complications.

In addition to a variety of medical complications associated with the use of heroin, users of this illegal substance face the medical risks associated with the unknown contaminants dissolved in or mixed with the cut heroin. Street heroin may be cut with household substances such as sugar, starch, or powdered milk, or with dangerous substances such as strychnine (a common poison) or other less expensive drug products. While these substances may go undetected prior to injection of the heroin, many of these additives will not dissolve in the user's blood stream and can clog the vessels that lead to the lungs, liver, kidneys, and/or brain. As a result, infection or death of patches of cells in organs these may occur, increasing the user's risk of sudden death. When snorted or smoked, additives may increase one's risk of severe respiratory distress and/or failure. In addition to the dangers of additives is the uncertainty of heroin itself. As heroin is produced in illegal underground laboratory facilities, each batch of heroin is unique. Users will frequently not know the strength of their heroin, nor its true contents, leading to an elevated risk of accidental overdose or death.

TOLERANCE AND ADDICTION

Heroin is extremely addictive, and repeated use can produce both tolerance and physical dependence. In fact, according to Pulse Check, a publication of the Office of National Drug Control Policy, heroin was associated with the most serious medical, legal, and societal consequences in 15 of the 20 United States Pulse Check sites during the first half of 2002. Over time a user's body begins to adapt to the presence of heroin, a phenomenon known as "tolerance". With regular use, a dependent individual will need to continually increase the quantity of administered heroin in order to achieve the desired affect. The higher doses of heroin increase the body's dependence on the presence of this illegal substance, increasing the user's risk of dependence, or, addiction.

According to the Drug Abuse Warning Network (DAWN) which tracks drug-related emergency department visits, in 2001 93,064 reports made mention of heroin, an increase of 47.4% since 1994. Heroin use and related complications comprised 15% of the 638,484 total emergency department visits tracked by DAWN in 2001. Heroin abuse is widespread, and on the rise.

TREATMENT AND WITHDRAWAL

Once an individual becomes addicted to heroin, s/he can not function normally without it. Without heroin the user will go through withdrawal, a process by which the body violently reacts to the lack of heroin. Signs and symptoms of withdrawal can begin as soon a few hours after last use, and can include restlessness, insomnia, muscle and bone pain, diarrhea, vomiting, cold flashes, involuntary movement (kicking movements commonly referred to as "kicking the habit"), among others. Depending on the individual, these symptoms may peak anywhere between 24 and 72 hours after the administration of the last dose of heroin, and can last anywhere from a few days to a month with the typical withdrawal lasting

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approximately one week. Although the signs/symptoms of heroin withdrawal can be temporarily debilitating, heroin withdrawal is rarely fatal in an otherwise healthy adult. However, heroin withdrawal by a heavily dependent users who are also in poor general health can occasionally cause death, and studies have shown that heroin withdrawal can terminate pregnancy in a pregnant addict. Despite these risks, heroin withdrawal is rarely fatal, and is considered much less dangerous than withdrawal from alcohol or another barbiturate.

Although treatment for heroin addiction is varied, most programs begin with a form of detoxification. One of the most well known detoxification substances with regards to heroin and other opioid addictions is methadone, which has been used in drug treatment programs for more than 30 years. Methadone is a synthetic opiate (narcotic) that, when administered at a very high dosage, as been proven to help suppress heroin withdrawal symptoms for 24-36 hours. Other approved substances with similar effects are naloxone (which incidentally is often used to treat cases of heroin overdose), and naltrexone. Detoxification is not a treatment for addiction, but rather an aid used to help individual users transition between heroin use and long-term treatment. Substances such as methadone do not alleviate an individual's physical dependence on heroin or any other drug, but rather ease the symptoms that result from withdrawal. Buprenorphine is new to the market, and has been shown to not only help reduce the symptoms of heroin/opioid withdrawal, but to simultaneously lower one's physical dependence on the substance. Another benefit of buprenorphine is that it can be administered in a private doctor's office, as opposed to methoxone, naloxone, and naltrexone which are typically administered in rehabilitation centers or clinics. There is also preliminary evidence that methadone and buprenorphine may help to reduce the harm caused to the fetus of an addicted pregnant woman, although most infants still require treatment for withdrawal beginning immediately after birth.

Detoxification is only one piece of the process. Most rehabilitation centers and clinics also use behavioral therapy (both residential and outpatient) as a way of helping addicted individuals modify their daily behavior to increase their chances of long-term success. Some clinics utilize contingency management therapy, a voucher-based system where patients earn points for negative drug tests which they can then exchange for items that encourage a healthy lifestyle. Cognitive-behavioral interventions are also used as a way of helping to modify an individual's thinking and daily expectations to make him/her more aware of his/her addiction and build life-long coping skills. Upon successful completion of a treatment or rehabilitation program, many heroin users are able to stop their use of heroin and return to a stable and productive life.

National data for 2000 showed that heroin addiction accounted for 15.2% of all admissions to drug treatment and rehabilitation facilities. 66.9% of heroin treatment admissions were male.

STUDENT USE

Heroin affects all strata of society, with its highest prevalence among young adults between the ages of 18 and 30, specifically white males.

GETTING HELP

If you or a friend is suffering from a heroin related problem or addiction, know that you are not alone. The University Health Service (UHS) at the University of Rochester offers both counseling and clinical treatment options to students, staff, and faculty. See Links and Resources for more information. To make an appointment with your primary health care provider at UHS, call 275-2662.

LINKS AND RESOURCES

ONDCP

<http://www.whitehousedrugpolicy.gov/publications/factsht/heroin/>

National Institute on Drug Abuse

<http://www.nida.nih.gov/Infofacts/heroin.html>

streetdrugs.org

<http://www.streetdrugs.org/heroin.htm>

do it now! Foundation

<http://www.doitnow.org>