

Evidence-Based Opiate Treatment

Medicinal opiates and their derivatives are clinically safe and rarely cause addiction when properly managed. If taken as prescribed, medications can be used to effectively treat addicted individuals. A review of the most recent addiction treatment literature concludes that no single treatment works for all addicted persons. Hence, treatment for addiction to any substance must include a variety of options. For any treatment to be effective, it must match the needs of the individual and speak to their unique situation including their age, gender, ethnicity, culture, sexual orientation and economic status. Furthermore, because of the physical, psychological and social stresses involved in addiction, treatment has to be readily available when the person needs it. The nature of addiction is such that an addicted individual does not do well in long lines or on waiting lists or welcome a call next week or next month. It is imperative that when the addicted person musters the courage and motivation to seek help, he or she finds it immediately.

In addition, as outlined in the National Institutes of Drug Abuse (NIDA) Principles of Drug Treatment, effective treatment for addiction must include all areas of the person's life, not just the drug addiction. Effective comprehensive drug treatment goes far beyond mere detoxification, which is considered a precursor to treatment. The individual's treatment should be assessed continually and modified to fit the person's place in recovery including their physical, emotional and social state. NIDA emphasizes that treatment for addiction may include any combination of counseling or psychological ther-

apy, medical services and/or medications, family therapy, parenting instruction, vocational rehabilitation, and social or legal services. While the appropriate length of time in treatment is dependent upon the individual's progress, NIDA concludes that for most

addicted individuals a minimum of three months is required for effectiveness. Further, because of the chronicity of drug addiction treatment, relapse is not necessarily a sign of ineffectual treatment, but part of the journey to recovery. In fact, The Caron Foundation states "heroin addiction is a chronic disease characterized by multiple relapses," and at least one study of heroin addicts shows that "relapse followed by treatment is actually predictive of future recovery." NIDA concludes that recovery from opiate addiction is a long term process, most often necessitating multiple episodes of treatment to achieve long term abstinence.

Studies show that heroin addiction in particular, often involves significant emotional isolation, which, in turn exacerbates the addicted person's sense of denial about the impact and destructiveness of his or her using. Heroin addicts frequently have slight insight into their own behavior because of their

isolation and reportedly often think that no one notices that they are using. In terms of treatment, this means that developing healthy peer relationships and even helpful treatment relationships—a marker in treatment progress—may prove to be difficult. For heroin addiction treatment, as with all drug addiction

The science is to know the individual and correctly match the treatments we have with the full knowledge of what is best for the individual—involving that individual and his/her family in that decision. Additionally, treatment needs to be available.

Michael T. Flaherty, Ph.D.
Executive Director
IRETA/NeATTC

“For any treatment to be effective, it must match the needs of the individual and speak to their unique situation... because of the physical, psychological and social stresses involved in addiction, treatment has to be readily available when the person needs it.”

treatment, staying engaged and participating is important and crucial to eventual recovery, even when the addict is unwilling. In fact, NIDA reports that individuals under social or legal pressure to stay in treatment actually have outcomes as favorable as those who enter treatment purely voluntarily.

To assist with socialization, the heroin addict may engage in individual and/or group counseling. Such counseling also helps individuals recognize and then modify their risky sexual and needle-sharing behavior which leads to HIV/AIDS, Hepatitis and other blood-borne diseases. Further, behavioral therapies can help the person in recovery cope with cravings and can teach them ways to avoid drugs and prevent relapse. Behavioral strategies which help a person renegotiate their recovery after relapse can also be taught.

For those addicted to opiates, medications may be prescribed during detoxification to reduce withdrawal symptoms. Synthetic opiates, methadone and LAAM (Levo-Alpha-Acetyl-Methadol), block the effects of heroin and when administered in large enough doses, extinguish withdrawal effects for 24 and 72 hours, respectively. The medication Clonidine can also be prescribed and suppresses some withdrawal symptoms. However, by itself, it has not been as effective in managing the psychological withdrawal symptoms. More recently, NIDA research has announced that the medication, Buprenorphine, taken three times a week is as effective as methadone taken daily. Since Buprenorphine can be taken less frequently than methadone, and offers fewer side effects than LAAM, some researchers believe that it promises more convenience, flexibility and effectiveness for addicts and treatment practitioners, as well as a reduction in the costs of treatment. However, some fear that the dispensing of Buprenorphine by primary care providers may promote the medication (and others) as the only treatment for addiction, which contradicts the consensus of current drug addiction research.

In keeping with comprehensive drug addiction treatment, there needs to be a recognition of co-occurring disorders, and particularly when the individual is diagnosed with a mental disorder and an addiction disorder, there must be a coordination of treatment. Medications (in conjunction with other treatments) can be prescribed for mood stabilization, depression, anxiety, post-traumatic stress and psychosis. An addicted individual who carries a dual diag-

nosis such as Post-Traumatic Stress Disorder (PTSD), is likely to experience more anxiety and emotional disturbance as they withdraw and become sober. If left unnoticed and untreated, the individual's emotional symptoms will increase, rather than decrease, as they become clean. The National Abandoned Infants Assistance Resource Center (NAIARC) notes that women, for example, due to a greater occurrence of particular traumas in their histories, often suffer from PTSD and find becoming sober too unbearable, eventually relapsing and returning to the more comfortable state of their addiction. Thus, addressing all regions of the person's life, such as gender and history of abuse, is necessary for effective treatment.

What are Opiates?

Opium is an extract of the exudate derived from seedpods of the opium poppy, *Papaver somniferum*. *Papaver somniferum* is the only species of *Papaver* used to produce opium. Opium is thought to have been used medicinally for over 9,000 thousand years. The first known written reference to the poppy appears in a Sumerian text dated around 4,000 BC. The poppy has been cultivated in countries around the world, including Hungary, Yugoslavia, Turkey, India, Burma, China, and Mexico.

Several historical events have led America to its present state of opiate addictions. First was the medical community's ability to isolate natural alkaloids found in opium beginning with morphine around 1805. Prior to isolation of the alkaloid morphine, opium in its natural form had a low potential for abuse due to the drug's slow absorption into the bloodstream. Second was development of the hypodermic needle and syringe during the mid 1800's. Soon after, the use of morphine for medicinal and recreational purposes became widespread. The newly discovered mode of administering morphine produced instantaneous effects and was several times more potent. The last and most significant was the synthesis of heroin from morphine in 1874. Heroin in tablet form was publicized by patent medicines as the wonder drug and could be purchased through the mail by the 1900's. By 1903, heroin addiction in America had risen to alarming rates.

Research Report

S E R I E S

Although heroin abuse has trended downward during the past couple of years, its prevalence is still higher than in the early 1990s.

These relatively high rates of abuse, together with the significant heroin abuse we are now seeing among school-age youth, the glamorization of heroin in music and films, changing patterns of drug use, and heroin's increased purity and decreased prices, make it imperative that the public have the latest scientific information on this topic.

The National Institute on Drug Abuse (NIDA) has developed this publication to provide an overview of the latest research findings on heroin abuse and addiction.

Heroin is a highly addictive drug, and its abuse has repercussions that extend far beyond the individual user. The health and social consequences of drug abuse—HIV/AIDS, violence, tuberculosis, fetal effects, crime, and disruptions in family, workplace, and educational environments—have a devastating impact on society and cost billions of dollars each year.

Fortunately, the availability of treatments to manage opiate addiction and the promise of new treatments from research provide hope for individuals who suffer from addiction and for those around them.

We hope this compilation of scientific information on heroin will help to inform readers about the harmful effects of heroin abuse and addiction and will assist in prevention and treatment efforts.

Alan I. Leshner, Ph.D.
Director
National Institute on Drug Abuse

HEROIN *Abuse and Addiction*

What is heroin?

Heroin is an illegal, highly addictive drug. It is both the most abused and the most rapidly acting of the opiates. Heroin is processed from morphine, a naturally occurring substance extracted from the seed pod of certain varieties of poppy plants. It is typically sold as a white or brownish powder or as the black sticky substance known on the streets as "black tar heroin." Although purer heroin is becoming more common, most street heroin is "cut" with other drugs or with substances such as sugar, starch, powdered milk, or quinine. Street heroin can also be cut with strychnine

or other poisons. Because heroin abusers do not know the actual strength of the drug or its true contents, they are at risk of overdose or death. Heroin also poses special problems because of the transmission of HIV and other diseases that can occur from sharing needles or other injection equipment.

What is the scope of heroin use in the United States?

According to the 1998 National Household Survey on Drug Abuse, which may actually underestimate illicit opiate (heroin) use, an estimated

2.4 million people had used heroin at some time in their lives, and nearly 130,000 of them reported using it within the month preceding the survey. The survey report estimates that there were 81,000 new heroin



users in 1997. A large proportion of these recent new users were smoking, snorting, or sniffing heroin, and most (87 percent) were under age 26. In 1992, only 61 percent were younger than 26.

The 1998 Drug Abuse Warning Network (DAWN), which collects data on drug-related hospital emergency department (ED) episodes from 21 metropolitan areas, estimates that 14 percent of all drug-related ED episodes involved heroin. Even more alarming is the fact that between 1991 and 1996, heroin-related ED episodes more than doubled (from 35,898 to 73,846). Among youths aged 12 to 17, heroin-related episodes nearly quadrupled.

NIDA's Community Epidemiology Work Group (CEWG), which provides information about the nature and patterns of drug use in 21 cities, reported in its December 1999 publication that heroin was mentioned most often as the primary drug of abuse in drug abuse treatment admissions in Baltimore, Boston, Los Angeles, Newark, New York, and San Francisco.

How is heroin used?

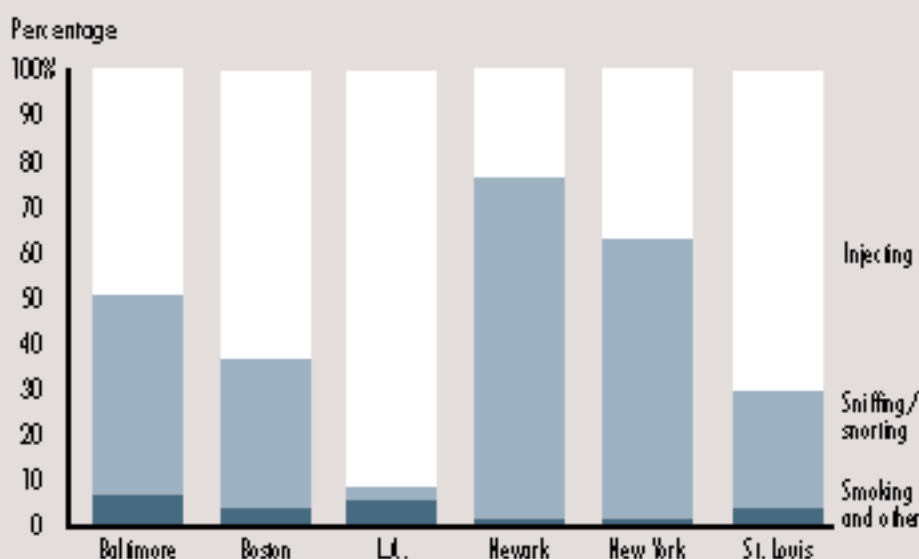
Heroin is usually injected, sniffed/snorted, or smoked. Typically, a heroin abuser may inject up to four times a day. Intravenous injection provides the greatest intensity and most rapid onset of euphoria (7 to 8 seconds), while intramuscular injection produces a relatively slow onset of euphoria (5 to 8 minutes). When heroin is sniffed or smoked, peak effects are usually felt within 10 to 15 minutes. Although smoking and sniffing heroin do not produce a "rush" as quickly or as intensely as intravenous injection, NIDA researchers have confirmed that all three forms of heroin administration are addictive.

Injection continues to be the predominant method of heroin use among addicted users seek-

ing treatment; however, researchers have observed a shift in heroin use patterns, from injection to sniffing and smoking. In fact, sniffing/snorting heroin is now the most widely reported means of taking heroin among users admitted for drug treatment in Newark, Chicago, and New York.

With the shift in heroin abuse patterns comes an even more diverse group of users. Older users (over 30) continue to be one of the largest user groups in most national data. However, the increase continues in new, young users across the country who are being lured by inexpensive, high-purity heroin that can be sniffed or smoked instead of injected. Heroin has also been appearing in more affluent communities.

Route of Administration Among Heroin Treatment Admissions in Selected Areas



Source: Community Epidemiology Work Group, NIDA, December 1999

Opiates Act on Many Places in the Brain and Nervous System

Opiates can depress breathing by changing neurochemical activity in the brain stem, where automatic body functions are controlled.

Opiates can change the limbic system, which controls emotions, to increase feelings of pleasure.

Opiates can block pain messages transmitted by the spinal cord from the body.

What are the immediate (short-term) effects of heroin use?

Soon after injection (or inhalation), heroin crosses the blood-brain barrier. In the brain, heroin is converted to morphine and binds rapidly to opioid receptors. Abusers typically report feeling a surge of pleasurable sensation, a "rush." The intensity of the rush is a function of how much drug is taken and how rapidly the drug enters the brain and binds to the natural opioid receptors. Heroin is particularly addictive because it enters the

brain so rapidly. With heroin, the rush is usually accompanied by a warm flushing of the skin, dry mouth, and a heavy feeling in the extremities, which may be accompanied by nausea, vomiting, and severe itching.

After the initial effects, abusers usually will be drowsy for several hours. Mental function is clouded by heroin's effect on the central nervous system. Cardiac function slows. Breathing is also severely slowed, sometimes to the point of death. Heroin overdose is a particular risk on the street, where the amount and purity of the drug cannot be accurately known.

What are the long-term effects of heroin use?

One of the most detrimental long-term effects of heroin is addiction itself.

Addiction is a chronic, relapsing disease, characterized by compulsive drug seeking and use, and by neurochemical and molecular changes in the brain. Heroin also produces profound degrees of tolerance and physical dependence, which are also powerful motivating factors for compulsive use and abuse. As with abusers of any addictive drug, heroin abusers gradually spend more and more time and energy obtaining and using the drug. Once they are addicted, the heroin abusers' primary purpose in life becomes seeking and using drugs. The drugs literally change their brains.

Physical dependence develops with higher doses of the drug. With physical dependence, the body adapts to the presence of the drug and withdrawal symptoms occur if use is reduced abruptly. Withdrawal may occur within a few hours after the last time the drug is taken. Symptoms of withdrawal include restlessness, muscle and bone pain, insomnia, diarrhea, vomiting, cold flashes with goose bumps ("cold turkey"), and leg movements. Major withdrawal symptoms peak between 24 and 48 hours after the last dose of heroin and subside after about a week. However, some people have shown persistent withdrawal signs for many months. Heroin withdrawal is never fatal to otherwise healthy

adults, but it can cause death to the fetus of a pregnant addict.

At some point during continuous heroin use, a person can become addicted to the drug. Sometimes addicted individuals will endure many of the withdrawal symptoms to reduce their tolerance for the drug so that they can again experience the rush.

Physical dependence and the emergence of withdrawal symptoms were once believed to be the key features of heroin addiction. We now know this may not be the case entirely, since craving and relapse can occur weeks and months after withdrawal symptoms are long gone. We also know that patients with chronic pain who need opiates to function (sometimes over extended periods) have few if any problems leaving opiates after their pain is resolved by other means. This may be because the patient in pain is simply seeking relief of pain and not the rush sought by the addict.

What are the medical complications of chronic heroin use?

Medical consequences of chronic heroin abuse include scarred and/or collapsed veins, bacterial infections of the blood vessels and heart valves, abscesses (boils) and other soft-tissue infections, and liver or kidney disease. Lung complications (including various types of pneumonia and tubercu-

losis) may result from the poor health condition of the abuser as well as from heroin's depressing effects on respiration. Many of the additives in street heroin may include substances that do not readily dissolve and result in clogging the blood vessels that lead to the lungs, liver, kidneys, or brain. This can cause infection or even death of small patches of cells in vital organs. Immune

reactions to these or other contaminants can cause arthritis or other rheumatologic problems.

Of course, sharing of injection equipment or fluids can lead to some of the most severe consequences of heroin abuse—infections with hepatitis B and C, HIV, and a host of other blood-borne viruses, which drug abusers can then pass on to their sexual partners and children.

Short- and Long-Term Effects of Heroin Abuse

Short-Term Effects:

"Rush"

Depressed respiration

Clouded mental functioning

Nausea and vomiting

Suppression of pain

Spontaneous abortion

Long-Term Effects:

Addiction

Infectious diseases, for example, HIV/AIDS and hepatitis B and C

Collapsed veins

Bacterial infections

Abscesses

Infection of heart lining and valves

Arthritis and other rheumatologic problems

How does heroin abuse affect pregnant women?

Heroin abuse can cause serious complications during pregnancy, including miscarriage and premature delivery. Children born to addicted mothers are at greater risk of SDS (sudden infant death syndrome), as well. Pregnant women should not be detoxified from opiates because of the increased risk of spontaneous abortion or premature delivery; rather, treatment with methadone is strongly advised. Although infants born to mothers taking prescribed methadone may show signs of physical dependence, they can be treated easily and safely in the nursery. Research has demonstrated also that the effects of in utero exposure to methadone are relatively benign.

Why are heroin users at special risk for contracting HIV/AIDS and hepatitis C?

Heroin addicts are at risk for contracting HIV, hepatitis C, and other infectious diseases. Drug abusers may become infected with HIV, hepatitis C, and other blood-borne pathogens through sharing and reuse of syringes and injection paraphernalia that have been used by infected individuals.

They may also become infected with HIV and, although less often, to hepatitis C through unprotected sexual contact with an infected person.

Injection drug use has been a factor in an estimated one-third of all HIV and more than half of all hepatitis C cases in the Nation.

NIDA-funded research has found that drug abusers can change the behaviors that put them at risk for contracting HIV, through drug abuse treatment, prevention, and community-based outreach programs. They

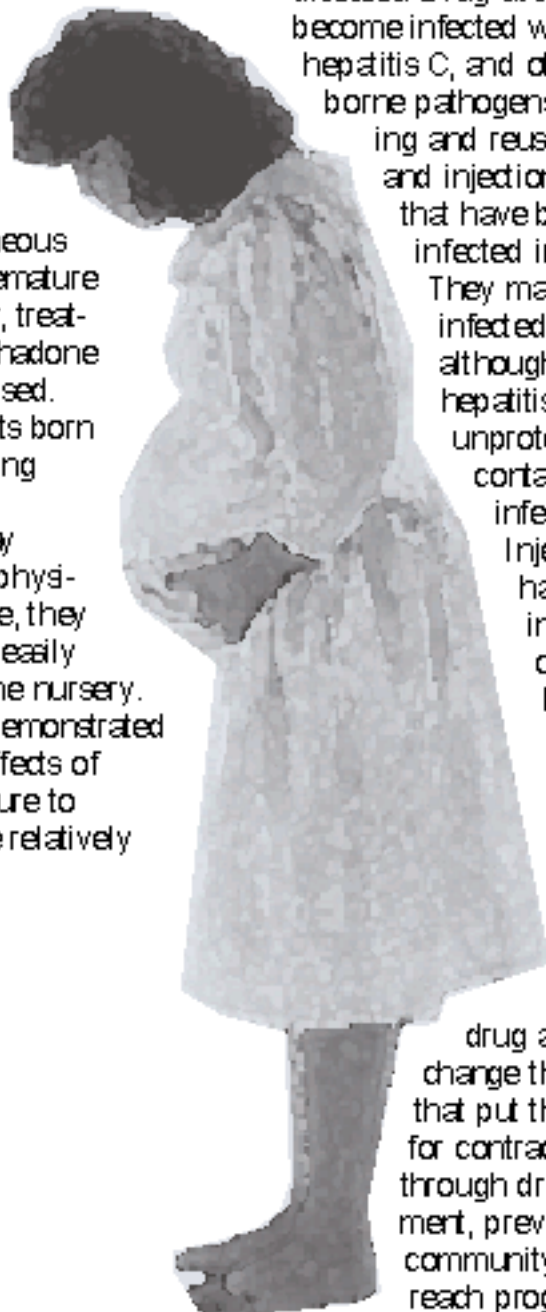
can eliminate drug use, drug-related risk behaviors such as needle sharing, unsafe sexual practices, and, in turn, the risk of exposure to HIV/AIDS and other infectious diseases. Drug abuse prevention and treatment are highly effective in preventing the spread of HIV.

What are the treatments for heroin addiction?

A variety of effective treatments are available for heroin addiction. Treatment tends to be more effective when heroin abuse is identified early. The treatments that follow vary depending on the individual, but methadone, a synthetic opiate that blocks the effects of heroin and eliminates withdrawal symptoms, has a proven record of success for people addicted to heroin. Other pharmaceutical approaches, like LAAM (levo-alpha-acetyl-methadol) and buprenorphine, and many behavioral therapies also are used for treating heroin addiction.

Detoxification

The primary objective of detoxification is to relieve withdrawal symptoms while patients adjust to a drug-free state. Not in itself a treatment for addiction, detoxification is a useful step only when it leads into long-term treatment that is either drug-free (residential or outpatient) or uses medications as part of the treatment. The best documented drug-free treatments are the therapeutic community residential programs lasting at least 3 to 6 months.



Methadone programs

Methadone treatment has been used effectively and safely to treat opioid addiction for more than 30 years. Properly prescribed methadone is not intoxicating or sedating, and its effects do not interfere with ordinary activities such as driving a car. The medication is taken orally and it suppresses narcotic withdrawal for 24 to 36 hours. Patients are able to perceive pain and have emotional reactions. Most important, methadone relieves the craving associated with heroin addiction; craving is a major reason for relapse. Among methadone patients, it has been found that normal street doses of heroin are ineffective at producing euphoria, thus making the use of heroin more easily extinguishable.

Methadone's effects last for about 24 hours—four to six times as long as those of heroin—so people in treatment need to take it only once a day. Also, methadone is medically safe even when used continuously for 10 years or more. Combined with behavioral therapies or counseling and other supportive services, methadone enables patients to stop using heroin (and other opiates) and return to more stable and productive lives.

Methadone dosages must be carefully monitored in patients who are receiving antiviral therapy for HIV infection, to avoid potential medication interactions.

LAAM and other medications

LAAM, like methadone, is a synthetic opiate that can be used to treat heroin addiction. LAAM

can block the effects of heroin for up to 72 hours with minimal side effects when taken orally. In 1993 the Food and Drug Administration approved the use of LAAM for treating patients addicted to heroin. Its long duration of action permits dosing just three times per week, thereby eliminating the need for daily dosing and take-home doses for weekends. LAAM will be increasingly available in clinics that already dispense methadone.

Naloxone and naltrexone are medications that also block the effects of morphine, heroin, and other opiates.

As antagonists, they are especially useful as antidotes. Naltrexone has long-lasting effects, ranging from 1 to 3 days, depending on the dose. Naltrexone blocks the pleasurable effects of heroin and is useful in treating some highly motivated individuals. Naltrexone has also been found to be successful in preventing relapse by former opiate addicts released from prison on probation.

Another medication to treat heroin addiction, buprenorphine,

may already be available by the time this Research Report appears. Buprenorphine is a particularly attractive treatment because, compared to other medications, such as methadone, it causes weaker opiate effects and is less likely to cause overdose problems. Buprenorphine also produces a lower level of physical dependence, so patients who discontinue the medication generally have fewer withdrawal symptoms than do those who stop taking

Treatments for Heroin Addiction



Methadone programs

LAAM, buprenorphine, and other medications

Behavioral therapies

methadone. Because of these advantages, buprenorphine may be appropriate for use in a wider variety of treatment settings than the currently available medications. Several other medications with potential for treating heroin overdose or addiction are currently under investigation by NIDA.

Behavioral therapies

Although behavioral and pharmacologic treatments can be extremely useful when employed alone, science has taught us that integrating both types of treatments will ultimately be the most effective approach. There are many effective behavioral treatments available for heroin addiction. These can include residential and outpatient approaches. An important task is to match the best treatment approach to meet the particular needs of the patient. Moreover, several new behavioral therapies, such as contingency management therapy and cognitive-behavioral interventions, show particular promise as treatments for heroin addiction. Contingency management therapy uses a voucher-based system, where patients earn "points" based on negative drug tests, which they can exchange for items that encourage healthy living. Cognitive-behavioral interventions are designed to help modify the patient's thinking, expectancies, and behaviors and to increase skills in coping with various life stressors. Both behavioral and pharmacological treatments help to restore a degree of normalcy

to brain function and behavior, with increased employment rates and lower risk of HIV and other diseases and criminal behavior.

What are the opioid analogs and their dangers?

Drug analogs are chemical compounds that are similar to other drugs in their effects but differ slightly in their chemical structure. Some analogs are produced by pharmaceutical companies for legitimate medical reasons. Other analogs, sometimes referred to as "designer" drugs, can be produced in illegal laboratories and are often more dangerous and potent than the original drug. Two of the most commonly known opioid analogs are fentanyl and meperidine (marketed under the brand name Demerol, for example).

Fentanyl was introduced in 1968 by a Belgian pharmaceutical company as a synthetic narcotic to be used as an analgesic in surgical procedures because of its minimal effects on the heart. Fentanyl is particularly dangerous because it is 50 times more potent than heroin and can rapidly stop respiration. This is not a problem during surgical procedures because machines are used to help patients breathe. On the street, however, users have been found dead with the needle used to inject the drug still in their arms.

Where can I get further scientific information about heroin abuse and addiction?

To learn more about heroin and other drugs of abuse, contact the National Clearinghouse for Alcohol and Drug Information (NCADI) at 1-800-729-6686. Information specialists are available to assist you in locating needed information and resources. Information can be accessed also through the NIDA World Wide Web site (www.drugabuse.gov) or the NCADI Web site (www.health.org).

Access information on the Internet

- What's new on the NIDA Web site
- Information on drugs of abuse
- Publications and communications (including NIDA NOTES)
- Calendar of events
- Links to NIDA organizational units
- Funding information (including program announcements and deadlines)
- International activities
- Links to related Web sites (access to Web sites of many other organizations in the field)

NIDA Web Sites
www.drugabuse.gov
www.steroidabuse.org
www.clubdrugs.org

NCADI
Web Site: www.health.org
Phone No.: 1-800-729-6686

Glossary

Addiction: A chronic, relapsing disease, characterized by compulsive drug seeking and use and by neurochemical and molecular changes in the brain.

Agonist: A chemical compound that mimics the action of a natural neurotransmitter.

Analog: A chemical compound that is similar to another drug in its effects but differs slightly in its chemical structure.

Antagonist: A drug that counteracts or blocks the effects of another drug.

Buprenorphine: A mixed opiate agonist/antagonist medication for the treatment of heroin addiction.

Craving: A powerful, often uncontrollable desire.

Detoxification: A process of allowing the body to rid itself of a drug while managing the symptoms of withdrawal; often the first step in a drug treatment program.

Fentanyl: A medically useful opiate analog that is 50 times more potent than heroin.

Levo-alpha-acetyl-methadol (LAAM): An FDA-approved medication for heroin addiction that patients need to take only three to four times a week.

Meperidine: A medically approved opiate available under various brand names (e.g., Demerol).

Methadone: A long-acting synthetic medication shown to be effective in treating heroin addiction.

Physical dependence: An adaptive physiological state that occurs with regular drug use and results in a withdrawal syndrome when drug use is stopped; usually occurs with tolerance.

Rush: A surge of euphoric pleasure that rapidly follows administration of a drug.

Tolerance: A condition in which higher doses of a drug are required to produce the same effect as during initial use; often leads to physical dependence.

Withdrawal: A variety of symptoms that occur after use of an addictive drug is reduced or stopped.

References

Bowersox, J.J. Buprenorphine may soon be heroin treatment option. *NIDA Notes* 10:8-9, 1995.

Bowersox, J.J. Heroin update: smoking, injecting cause similar effects; usage patterns may be shifting. *NIDA Notes* 10:8-9, 1995.

Cooper, J.R.; Minam, F.; Brown, B.S.; and Czechowicz, D., eds. *Research in the Treatment of Narcotic Addiction*. State of the Art. National Institute on Drug Abuse Monograph, DHHS Pub. # (ADM) 83-1281, 1988.

Dole, V.P.; Nyswander, M.E.; and Kreek, M.J. Narcotic blockade. *Arch Intern Med* 118:304-309, 1966.

Goldstein, A. Heroin addiction: Neurology, pharmacology and policy. *J Psychopharmacol* 23(2):123-133, 1991.

Hughes, P.H., and Riecke, O. Heroin epidemics revisited. *Epidemiol Rev* 17(1):63-73, 1995.

Kornetsky, C. Action of opioid on the brain reward system. In: Rapaka, R.S., and Sonar, H., eds. *Discovery of Novel Opioid Medications*. National Institute on Drug Abuse Research Monograph 147. NIH Pub. No. 95-3887. Washington, DC: Supt. of Docs, U.S. Govt. Print. Off., 1991, pp. 32-52.

Kreek, M.J. Rationale for maintenance pharmacotherapy of opiate dependence. In: O'Brien, C.P., and Jaffe, J.H., eds. *Addictive States*. New York: Raven Press, 1992, pp. 20-5230.

Kreek, M.J. Using methadone effectively: achieving goals by application of laboratory, clinical, and evaluation research and by development of innovative programs. In: Dickens, R.; Leukfeld, C.; and Schuster, C.R., eds. *Improving Drug Abuse Treatment*. National Institute on Drug Abuse Research Monograph 106. Washington, DC: Supt. of Docs, U.S. Govt. Print. Off., 24-5266, 1991.

Lewis, J.W., and Walter, D. Buprenorphine: background to its development as a treatment for opiate dependence. In: Blaine, J.D., ed. *Buprenorphine: An Alternative for Opiate Dependence*. National Institute on Drug Abuse Research Monograph 121. DHHS Pub. No. (ADM) 92-1912. Washington, DC: Supt. of Docs, U.S. Govt. Print. Off., 1992, pp. 5-11.

Mahias, R. NIDA survey provides first national data on drug abuse during pregnancy. *NIDA Notes* 10:6-7, 1995.

National Institute on Drug Abuse. *Epidemiologic Trends in Drug Abuse: Vol. 7. Highlights and Executive Summary*. Community Epidemiology Work Group. NIH Pub. No. 00-4739. Washington, DC: Supt. of Docs, U.S. Govt. Print. Off., 2000.

National Institute on Drug Abuse. "Heroin." *NIDA Capsule*. NIDA, 1986.

National Institute on Drug Abuse. IDUs and infectious diseases. *NIDA Notes* 9:15, 1994.

National Institute on Drug Abuse. *National Survey Results on Drug Use from the Monitoring the Future Study, 1975-1998, Vol. I: Secondary School Students*. Washington, DC: Supt. of Docs, U.S. Govt. Print. Off., 1999.

National Institute on Drug Abuse. *National Survey Results on Drug Use from the Monitoring the Future Study, 1975-1998, Vol. II: College Students and Young Adults*. NIH Pub. No. 96-4027. Washington, DC: Supt. of Docs, U.S. Govt. Print. Off., 1995.

Novick, D.M.; Richman, B.L.; Friedman, J.M.; Friedman, J.E.; Fried, C.; Wilson, J.P.; Townley, A.; and Kreek, M.J. The medical status of methadone maintained patients in treatment for 11-18 years. *Drug and Alcohol Depend* 33:235-245, 1993.

Office of National Drug Control Policy. *Drugs and Crime: Dealer, Resin Facts and Figures*. Rockville, MD: U.S. Department of Justice, 1996.

Sobel, K. NIDA's NDS projects succeed in reaching drug addicts, changing high-risk behaviors. *NIDA Notes* 6:2527, 1991.

Substance Abuse and Mental Health Services Administration. *Preliminary Estimates of Drug-Related Emergency Department Episodes: Advance Report Number 7.7*. Rockville, MD: SAMHSA, 1996.

Substance Abuse and Mental Health Services Administration. "Preliminary Results from the 1996 National Household Survey on Drug Abuse." SAMHSA, 1997.

Swan, N. Research demonstrates long-term benefits of methadone treatment. *NIDA Notes* 9:1, 4-5, 1994.

Swan, N. Treatment practitioners learn about LAAM. *NIDA Notes* 9:5, 1994.

Woods, J.H.; France, C.P.; and Winger, G.D. Behavioral pharmacology of buprenorphine: issues relevant to its potential in treating drug abuse. In: Blaine, J.D., ed. *Buprenorphine: An Alternative for Opiate Dependence*. National Institute on Drug Abuse Research Monograph 121. DHHS Pub. No. (ADM) 92-1912. Washington, DC: Supt. of Docs, U.S. Govt. Print. Off., 1992, pp. 12-27.

This publication was developed under Contract No. H01DA-4-2205 from the National Institute on Drug Abuse.

NIH Publication Number 00-4765.
Printed October 1997; Reprinted September 2000.
Feel free to reprint this publication.

NIDA
NATIONAL INSTITUTE
ON DRUG ABUSE

Susceptibility to HIV/AIDS Hepatitis Infection

Previous drug addiction research and literature recognized that intravenous drug use and subsequent needle sharing accounted for the major route of HIV (and Hepatitis B and C) transmission. Therefore, intravenous heroin addicts have been recognized as being at great risk for HIV infection (along with other blood-borne diseases). A recent report by NIDA has shed light on some of the gender and ethnic differences in HIV transmission and infection. The results of 10-year study found that the “biggest predictor of HIV infection for both male and female injecting drug users (IDUs) is high-risk sexual behavior, not sharing needles used to inject drugs.” Thus, sexual behaviors play a major role in the risks for HIV infection in both men and women.

Recently, studies have shown that males who share needles with multiple partners and inject drugs daily have significantly higher rates of HIV infection. However, the incidence of HIV infection in males who report engaging in homosexual sex was over three times greater than male IDUs who did not report having homosexual sex. While needle sharing also increased the risk for HIV infection for women IDUs, “high-risk heterosexual activity was a much more important risk factor for these women.”

Researchers are beginning to recognize that minorities and individuals other than heterosexual white males have different experiences of drug use and addiction. For example, some of the latest studies have shown that women’s lives are typically more relationally oriented and this orientation often shows up in their introduction to drugs and their subsequent addiction (NAIARC, Caron, NIDA). A recent Caron Foundation report cites a study in which women were more likely than men to be introduced to heroin by an opposite-sex friend or acquaintance. Women were also reportedly more likely to share needles with their partner and become more dependent in a financial sense for the acquisition of their heroin, either through money or sex. Caron reports that women find intimate relationships as the main pathway to drugs and alcohol, and this can have “potentially disastrous health consequences” for them.

A recent report by NIDA has shed light on some of the gender and ethnic differences in HIV transmission and infection. The results of 10-year study found that the “biggest predictor of HIV infection for both male and female injecting drug users (IDUs) is high-risk sexual behavior, not sharing needles used to inject drugs.”

For the most part, the same prejudices, inequities and maltreatments against women, homosexuals and other minorities (which still exist in the United States in sober society) seem to be even more pronounced in drug cultures. In certain drug cultures, homosexuality is “forbidden,” as is reported by two ethnographers who conducted a study on risky injection practices in the homeless shooting galleries of San Francisco in 1995. They reported that those individuals who were not seen as equals in the culture had a harder time making money to cover their daily heroin fixes, were less likely to be offered any and were more likely to engage in risky behavior, i.e., risk-taking sexual behaviors or needle sharing. Overall, the study reported that minorities in the drug culture were more apt to find themselves in desperate situations, i.e., in need of a fix and with few or no resources, so they put themselves at risk sexually or intravenously to avoid the impending pain.

Today’s scientific research has important implications for subsequent addiction treatment needs for women and homosexual men. Specifically, HIV prevention programs can become more effective by taking into account the different styles of behavior which put the individual at risk for HIV/AIDS infection. NIDA research has concluded that along with all other drug addiction treatment, HIV infection prevention should be gender-specific and culturally sensitive. It is in this way that the science of addiction treatment and prevention best serves the addicted individual.

OPIATE RELATED LINKS:

ONDCP Drug Facts: Heroin
www.whitehousedrugpolicy.gov/drugfact/heroin/index.html

SAMHSA: Frequently Asked Questions About Treatment for Opioid Addiction Using Buprenorphine
www.samhsa.gov/news/click_bupe.html

CSAT: Matching Treatment to Patient Needs in Opioid Substitution Therapy
Treatment Improvement Protocol (TIP) Series 20
www.health.org/govpubs/bkd168/

NIDA: INFO Facts: Heroin
www.nida.nih.gov/Infobox/heroin.html

CDC: HIV/AIDS Fact Sheet
www.cdc.gov/hiv/pubs/faqs.htm

Drug Free Pennsylvania- Heroin Page
www.drugfreepa.org/drugs_heroin.htm

SAMHSA Buprenorphine Web site
The SAMHSA Buprenorphine web site is a comprehensive resource that features license requirements, physician waiver information, buprenorphine trainings, state medical and policy guidelines, frequently asked questions, and more. Visit the site at: buprenorphine.samhsa.gov/

NeATTC Opiate Resource Web site
The complete contents of the Northeast Addiction Technology Transfer Center's Opiate Resource Disc (2.0) are available online at www.ireta.org/opiates. The site contains cutting edge articles and publications related to opiate treatment, as well as links to important internet resources. Check it out!

REFERENCES

Buprenorphine Taken Three Times per Week Is as Effective as Daily Doses in Treating Heroin Addiction, Zickler, Patrick, NIDA Notes Staff Writer. NIDA Notes, Research Findings, Volume 16, Number 4. (October 2001). www.nida.gov

Heroin Abuse and Addiction, Research Report, NIDA.
www.nida.gov

Heroin: Challenge for the 21st Century, Gordon, Susan M., Ph.D., Caron Foundation Publication (2001). www.caron.org

High-Risk Sex is Main Factor in HIV Infection for Men and Women Who Inject Drugs, Mathias, Robert, NIDA Staff Writer, NIDA Notes, vol. 17, No.2. www.drugabuse.gov

Participant Observation Study of Indirect Paraphernalia Sharing/HIV Risk in a Network of Heroin Injectors, Community Epidemiology Work Group (CEWG), NIDA.
www.nida.gov

Price, A. & Simmel, C. (2002). Partner's Influence on Women's Addiction and Recovery: The Connection Between Substance Abuse, Trauma, and Intimate Relationships, Berkeley, CA: National Abandoned Infants Assistance Resource Center, School of Social Welfare.

Principles of Addiction Treatment: A Research-Based Guide, NIDA Publication No. 00-4180 (orig. printed Oct. 1999, reprinted July 2000).

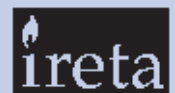
What Works in HIV Prevention for Substance Users, AIDS Action. Washington, D.C., (2001). www.aidsaction.org

Women and Addiction: Gender Issues in Abuse and Treatment, Gordon, Susan Merle, Ph.D., Caron Foundation Publication www.caron.org

Editor: Michael T. Flaherty, Ph.D.
Co-Editors: Janice Pringle, Ph.D.,
Victor Barbetti, M.A.
Contributors: Norris Davis, Dr.P.H.
Carolyn A. Work, M.A.

© 2003 Published by The Institute for Research,
Education and Training in Addictions (IRETA)

www.ireta.org/attc
Voice: 412-391-4449 Fax: 412-391-2528



PLEASE COPY OR POST



Regional Enterprise Tower
425 Sixth Avenue, Suite 1710
Pittsburgh, PA 15219

NONPROFIT ORG
U.S. POSTAGE
PAID
PITTSBURGH, PA
PERMIT #5

SUBSTANCE ABUSE AND COEXISTING DISABILITIES

POST-TEST

You are eligible to receive two (2) Continuing Education (CE) credits by completing this quiz based on this issue of Resource Links. **INSTRUCTIONS:** Circle the best answer to each of the following questions and return the completed test and application form (on back) with a check for \$20 to The Institute for Research, Education and Training in Addictions.

PLEASE CIRCLE THE CORRECT ANSWER

1. What minimum time frame does NIDA consider appropriate to give effective treatment for most addicted individuals?
 - a. 6 months
 - b. 3 months
 - c. 12 months
2. What is the biggest predictor of HIV infection for both male and female drug users?
 - a. Sharing needles.
 - b. I.V. drug use.
 - c. High-risk sexual behavior.
 - d. All of the above.
3. An ethnographic study reported:
 - a. In certain drug cultures, some prejudices, inequities and maltreatments against women, homosexuals and other minorities seem more pronounced than in sober communities.
 - b. Individuals not seen as equals in the culture have a harder time making money to support their habit.
 - c. Individuals not seen as equals are more likely to engage in risk taking sexual behavior and needle sharing.
 - d. All of the above.
4. How often must Buprenorphine be taken during a week to be as effective as methadone taken daily?
 - a. 4 times weekly.
 - b. 2 times weekly.
 - c. 3 times weekly.

PLEASE ANSWER TRUE OR FALSE

5. Individuals under social or legal pressure to stay in treatment actually have outcomes as favorable as those who enter treatment on a voluntary basis.
☐ True
☐ False
6. Opiates do not depress breathing nor do they change the neurochemical activity in the brain.
☐ True
☐ False
7. Addiction can be defined as a chronic relapsing disease, characterized by compulsive drug seeking and use, and by neurochemical and molecular changes in the brain.
☐ True
☐ False
8. Detoxification from opiates during pregnancy increases the risk of a premature delivery or a spontaneous abortion.
☐ True
☐ False
9. Methadone treatment has been used effectively and safely to treat opioid addiction for at least 10 years.
☐ True
☐ False
10. The integration of behavioral and pharmacologic treatments offers the most effective approach to opiate addiction.
☐ True
☐ False



NeATTc
425 Sixth Ave., Suite 1710
Pittsburgh PA 15219
412.391.4449 phone
866.246.5344 toll free
Infoattc@ireta.org

THE NORTHEAST ATTc WEBSITE

www.ireta.org/attc contains a variety of resources for the addiction treatment professional. Within the site you will find...

CURRENT NEWS

Contemporary substance abuse treatment news updated regularly.

PRODUCTS

Curricula: a list of downloadable training curricula, technology transfer reports and instructional modules. Including the popular *Theoretical Examination of Individual Treatment Planning: A Clinician's Guide to More Effective Planning*.

NeATTc Resource Disc: the first of a series of discs developed to aide in the dissemination of evidence based practices.

TRAINING

A list of relevant trainings within the NeATTc target region

LINKS

A page of links to substance abuse resources.

INFO SEARCH

The NeATTc provides information services to New Jersey, New York and Pennsylvania.



2 Continuing Education Hours for \$20

You are eligible to receive (2) Continuing Education (C.E.) credits by completing a post-test based on this issue of Northeast Addiction Technology Transfer Center (NeATTC) – Resource Links, Volume 2, Issue 1, January 2003. Return the completed post-test and a \$20 check for processing fee to the Institute for Research, Education and Training in Addictions (IRETA). Please make check payable to IRETA. A passing grade for the post-test is 80%. Applicants that receive an 80% or above will receive a certificate by return mail stating that he/she has been awarded 2 CEs. Credits are issued by the National Association for Addiction Professionals (NAADAC).

— REGISTRATION FORM —

EVIDENCE-BASED OPIATE TREATMENT

NAME AND DEGREE AS YOU WISH THEM TO APPEAR ON YOUR CERTIFICATE (PLEASE PRINT):

NAME: _____ DEGREE: _____

ADDRESS: _____

PHONE #: _____ FAX #: _____

E-MAIL ADDRESS: _____ LICENSE #: _____

I confirm that I personally have completed the above test, and I am submitting it for evaluation and certification

SIGNATURE: _____ DATE COMPLETED: _____

Evaluation: Overall, this issue of Evidence-Based Opiate Treatment (circle appropriate response)

PROVIDED INFORMATIVE UPDATES	5	4	3	2	1	WAS NOT INFORMATIVE
EXPANDED MY KNOWLEDGE	5	4	3	2	1	DID NOT EXPAND MY KNOWLEDGE
PROVIDED USEFUL RESOURCES	5	4	3	2	1	DID NOT PROVIDE USEFUL RESOURCES
WAS APPROPRIATE FOR MY TRAINING LEVEL	5	4	3	2	1	WAS NOT APPROPRIATE

