

## Drug Abuse and the Link to HIV/AIDS and Other Infectious Diseases

### What Is HIV/AIDS and How Is It Spread?

The human immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome (AIDS), is a virus that lives in and can severely deplete white blood cells (CD4<sup>+</sup> lymphocytes), which are part of the immune system. HIV can be transmitted by contact with the blood or other body fluids of an infected person. In addition, infected women can pass HIV to their infants during pregnancy, delivery, and breastfeeding.

An HIV-infected person may look and feel fine for many years and may therefore be unaware of the infection. However, as the immune system weakens, the individual becomes more vulnerable to illnesses and common infections. Over time, a person with untreated HIV is likely to develop AIDS and succumb to multiple, concurrent illnesses. Because HIV/AIDS is a condition characterized by a defect in the body's natural immunity to diseases, infected individuals are at risk for severe illnesses that would not normally pose a threat.

Although no vaccines or medications yet exist to prevent a person from acquiring HIV, and AIDS still has no cure, effective medications are available to treat HIV infection and help prevent the progression to AIDS.

### What Is the Extent and Impact of HIV/AIDS?

Approximately 1.1 million adults and adolescents are living with HIV infection in the United States, with an estimated 56,300 more becoming infected each

year, according to the Centers for Disease Control and Prevention (CDC).

A number of complex and interacting biological, social, and economic factors place some populations at increased risk for HIV/AIDS. For example:

- Although African Americans make up about 12 percent of the U.S. population, they accounted for nearly half of all people living with HIV/AIDS at the end of 2007. At some point in their lives, 1 in 16 African American men will be diagnosed with HIV infection, as will 1 in 30 African American women.
  - In 2006, HIV/AIDS infection was the third leading cause of death for both African American men and women aged 35–44 and the ninth leading cause of death for African Americans of all ages.
  - The rate of new HIV infections for African American men was about 6 times that of White men and 3 times that of Hispanic American men. The HIV prevalence rate for African American women was nearly 15 times that of White women and nearly 4 times that of Hispanic American women.
- Hispanic Americans make up about 15 percent of the population, yet they accounted for 17 percent of people living with HIV in the United States in 2006. In 2007, HIV/AIDS was the fifth leading cause of death among Hispanic American men and women aged 35–44.
- Men having sex with men remains the primary avenue for HIV transmission in the United States, accounting for over half of all new HIV infections each year, as well as

nearly half of all those living with HIV. Men who have sex with men (MSM) constitute the only risk group for which new HIV infections are increasing.

- Individuals infected through heterosexual contact account for about 30 percent of new HIV infections and more than a quarter of persons living with HIV.

Furthermore, CDC estimates that in 2006 about one in five HIV-infected persons in the United States were unaware of their infection, down from an estimated one in four who were unaware in 2003. Not only are these infected individuals at high risk for transmitting HIV to others but they are also not taking advantage of effective medical treatments for HIV that can slow disease progression and reduce AIDS-related illnesses.

## How Are HIV/AIDS and Drug Abuse Linked?

Drug abuse and addiction have been inextricably linked with HIV/AIDS since the beginning of the pandemic. HIV transmission can occur by sharing needles and other injection paraphernalia. In fact, about one-fourth of AIDS cases in the United States have resulted from injection drug use. However, any drug and alcohol use can put people at risk for HIV by interfering with their judgment, leading to risky sexual behaviors:

- According to combined data from 2005 to 2009, 64 percent of those living with HIV/AIDS had used an illicit drug, but not intravenously; only 19 percent had never used an illicit drug.
- One in four of those living with HIV in 2009 reported use of alcohol or drugs at a level that warranted treatment.

Drug abuse and addiction can also worsen the progression of HIV and its consequences, especially in the brain. For example, animal

studies have shown that stimulants can increase HIV viral replication, and in a human study, HIV caused greater neuronal injury and cognitive impairment in drug users than in nondrug users.

## Is AIDS Treatable?

Since the mid-1990s, the lives of people with HIV/AIDS have been prolonged and symptoms decreased through the use of HAART (highly active antiretroviral therapy). HAART is a customized combination of different classes of medications prescribed for individual patients based on such factors as their viral load, CD4<sup>+</sup> lymphocyte count, and clinical symptoms.

Interventions aimed at increasing adherence to HIV treatment are crucial to treatment success, but they usually require dramatic and often difficult lifestyle changes to counter the irregular lifestyle created by drug abuse and addiction. However, relatively easy measures can also be effective. For example, one study found that simply helping HIV-infected inmates complete the paperwork required to get their prescriptions filled upon release significantly diminished treatment interruption. Adequate medical care for HIV/AIDS and related illnesses is also critical to reducing and preventing the spread of new infections.

## Is HIV/AIDS Preventable?

Yes. Cumulative research has shown that comprehensive HIV prevention—drug abuse treatment, community-based outreach, testing, counseling for HIV and other infections, and early initiation of HAART—is the most effective way to reduce the risk of blood-borne infections.

Effective drug abuse treatments (both pharmacological and behavioral) have a demonstrated impact on reducing HIV risk behaviors and HIV transmission. For drug abusing populations, drug abuse treatment *is* HIV prevention, since the behaviors associated with drug abuse, such as sharing drug injection equipment and/or engaging in risky sexual behavior while under the influence of drugs or alcohol, can foster disease transmission. To illustrate:

- Recent research that combined methadone treatment with behavioral therapy showed that about half of study participants reporting injection drug use at intake reported no such use at study exit. Over 90 percent of all participants reported no needle sharing at study exit.
- Reduction in cocaine use has also been associated with large decreases in HIV risk, mainly as a result of fewer sexual partners and less unprotected sex.
- Buprenorphine/naloxone treatment administered in physicians' offices for opioid abuse is associated with decreased injection drug use and other HIV risk behaviors.

Research has also demonstrated that broad-based HIV screening and early initiation of HAART can reduce viral load and HIV incidence at the population level. Moreover, HIV screening has been shown to be cost-effective—as cost-effective as screening for other conditions such as breast cancer and high blood pressure.

Research is therefore under way to develop and test strategies to expand HAART coverage. A promising new approach,

known as “Seek, Test, Treat, and Retain,” seeks out high-risk individuals who have not recently been tested, initiates HAART therapy for those who test positive, and monitors their progress over time.

And while innovative strategies to reduce HIV risk behaviors are making their mark, studies are also looking at ways to improve the long-term effectiveness of successful interventions. Randomized controlled trials that compare different strategic approaches (case management strategies, use of incentives, use of technology, co-location of drug abuse treatment with care for infectious disease and other comorbid conditions, etc.) will help ascertain the most effective ways to retain in care those who test positive to improve both individual and public health.

## What Other Infectious Diseases Are Associated with Drug Abuse?

Besides increasing their risk of HIV infection, individuals who take drugs or engage in high-risk behaviors associated with drug use also put themselves and others at risk for contracting or transmitting hepatitis C (HCV), hepatitis B (HBV), and tuberculosis (TB), as well as a number of sexually transmitted diseases including syphilis, chlamydia, trichomoniasis, gonorrhea, and genital herpes. Injection drug users (IDUs) are susceptible to skin infections at the site of injection, which, if left untreated, can cause serious health problems. IDUs are also susceptible to bacterial and viral infections such as bacterial pneumonia and endocarditis.

## **HCV, HBV, and HIV/AIDS**

HCV and HBV are two of several viruses that cause inflammation of the liver. HCV, the leading cause of liver disease, is highly prevalent among IDUs and often co-occurs with HIV; HBV is also common among drug abusers. NIDA-funded studies have found that within 3 years of beginning injection drug use, most IDUs contract HCV. Up to 90 percent of HIV-infected IDUs may also be infected with HCV.

Chronic infection with HCV or HBV can result in cirrhosis (liver scarring) or primary liver cancer. How HCV infection and HIV/AIDS interact is not completely understood; however, the course of HCV infection is accelerated in dually infected individuals, with higher rates of progressive liver disease and death in those infected with both HIV and HCV than in those infected with HCV alone. Assessment of disease stage is important to the timing of therapy initiation for both infections, as is long-term medical followup in order to improve quality of life.

## **TB and HIV/AIDS**

TB is a chronic and infectious lung disease. Through major public health detection and treatment initiatives, its prevalence declined in the United States for several years—in 2005, 14,000 cases were reported, the lowest number since surveillance began in 1953. However, the decline of TB prevalence has slowed by half in recent years, and TB infection remains intertwined with HIV/AIDS and drug abuse.

People with latent TB infection do not have symptoms, may not develop active disease, and cannot spread TB. However, if such individuals do not receive preventive therapy, they may develop active TB, which is contagious. NIDA research has shown that IDUs have high rates of latent TB infection. Because HIV infection severely weakens the immune system, people infected with both HIV and latent TB are at increased risk of developing active TB and becoming highly infectious. Effective treatment for HIV and TB can reduce TB/HIV-associated disease and the risk of transmission to others.

## **Other Information Sources**

To learn more about the link between drug abuse and HIV/AIDS, visit [www.nida.nih.gov/DrugPages/HIV.html](http://www.nida.nih.gov/DrugPages/HIV.html).

To learn more about resources for HIV/AIDS, hepatitis, and TB, or for testing and referral in your geographic area, call 1-800-CDC-INFO (1-800-232-4636), or visit [www.cdc.gov/hiv](http://www.cdc.gov/hiv), [www.cdc.gov/ncidod/diseases/hepatitis](http://www.cdc.gov/ncidod/diseases/hepatitis), or [www.cdc.gov/tb/](http://www.cdc.gov/tb/).

To find publicly funded treatment services for drug abuse and addiction in your State, visit [www.findtreatment.samhsa.gov](http://www.findtreatment.samhsa.gov).