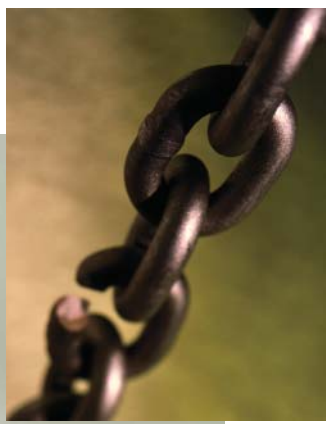
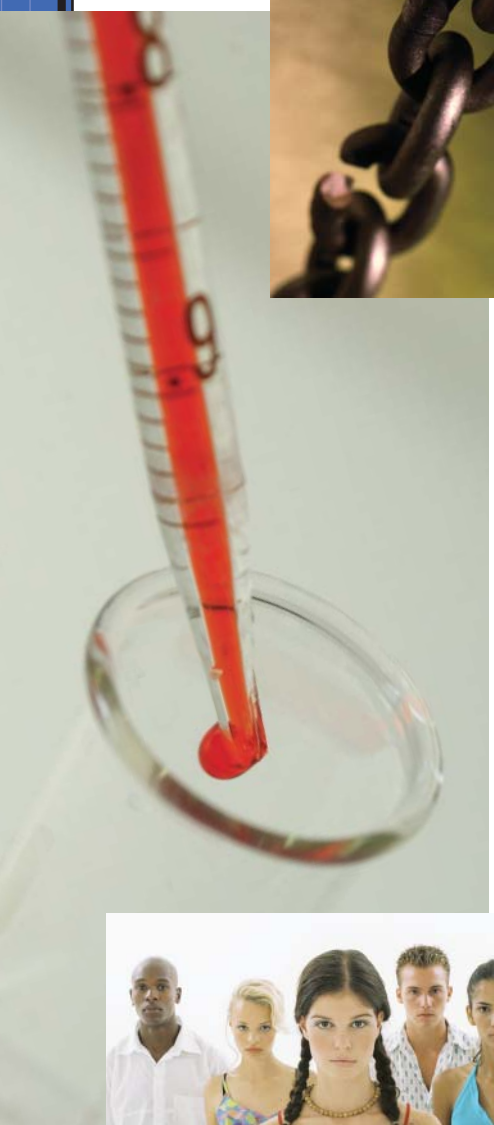
Teens, Dru and AIDS





Teens who abuse drugs face a risk of getting AIDS and (get this!) of passing it on to the friends they love.

World AIDS Day takes place every year on December 1. On that day, people all over the planet focus on the challenge of trying both to cure and control its spread.

When you think about what a terrible disease AIDS (acquired immunodeficiency syndrome) is and the huge number of lives it has claimed—a mind-boggling 20 million in 24 years—it seems that *every* day ought to be World AIDS Day. As a teenager, you might ask, What does this have to do with me? You may not know it, but young people are one of the populations at risk for infection with HIV (human immunodeficiency virus, the virus that causes AIDS). Between 1998 and 2000—the most recent years for AIDS-related statistics—about one out of every six new HIV infections were in people between the ages of 13 and 25. We'll say it again—*between the ages of 13 and 25!*

And here's another thing you may not realize—it's a fact that can help keep you and your friends safe from AIDS: According to a 2004 report from NIDA, behavior associated with drug abuse is now the *single largest factor* in the spread of HIV infection in the U.S. Nearly 300,000 Americans over the age of 12 who were diagnosed with AIDS between 1998 and 2002 could attribute it, directly or indirectly, to drug abuse. "Drug abuse is inextricably linked with the spread of infectious diseases

g Abuse, s: The Deadly Connection

such as HIV/AIDS…and hepatitis C," says NIDA director Nora D. Volkow, M.D.

How big a problem is AIDS among young people today? In the U.S., about 20,000 individuals between the ages of 13 and 25 become infected with HIV every year. Let's break that down for you: About 55 young people *each day* contract HIV, a virus that will sap their defenses against illness and possibly take their lives. It's a very big problem. Soon, you'll find out how and why the disease of drug addiction helps set the stage for the disease of AIDS. But first you have to understand exactly what AIDS is and how it spreads.

HEADS UP: THE FACTS ABOUT HIV AND HEPATITIS C

AIDS and hepatitis C, another viral disease associated with drug abuse, are both blood-borne illnesses. That means the disease-causing viruses are spread when blood or bodily fluids from an infected person come into contact with the bloodstream of a healthy person. This can happen when injection drug users share needles or when an infected person has sex with an uninfected person without using a latex condom, which physically stops transmission of viruses.

Once in the body, HIV and hepatitis C begin to cripple and kill cells. The viruses latch on to healthy cells and implant their own genetic material, causing the cells to churn out new copies of HIV or hepatitis C. The cells then die.

HIV attacks cells in the immune system, the body's disease-fighting department. As the illness progresses, patients lose their natural ability to fight off germs, and they fall prey to diseases that are not normally a threat to healthy people. People are considered to have AIDS when the level in their bloodstream of CD4, an immune cell, drops below a certain point. Before that happens, though, a person with HIV can live for years without any symptoms—*and* can pass the virus to others without realizing it. The Centers for Disease Control and Prevention (CDC) estimate that a quarter of the 850,000 to 950,000 infected people in the U.S. don't know they have HIV. There is no vaccine for AIDS and no vaccine for HIV. The hepatitis C virus infects cells in a person's liver and can live

Cutting Edge

Disease Detectives

When the problems of drug abuse, addiction, and related diseases are solved in the future, it will be thanks to teams of scientists working long and hard on research and solutions. Teens today can contribute by working toward careers that will put them at the center of the action. Here are some possibilities.

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IMMUNOLOGISTS AND VIROLOGISTS investigate mechanisms by which viruses defeat the body's defenses and cause illness. In one promising line of inquiry, researchers are searching for methods to activate the body's own immune system to fight germs in new ways.

MOLECULAR ENGINEERS are specialized chemical engineers who create molecules. This emerging scientific speciality is important in the area of pharmaceutical research, where drugs are being designed to hopefully one day stop HIV, hepatitis C, and other viruses that attack the human body.

PUBLIC HEALTH SPECIALISTS include a wide range of professionals who are concerned about health behaviors of the public. From nutritionists and prevention specialists to research coordinators and biomedical scientists, these professionals want to help people choose behaviors that can lower their risk of drug addiction, HIV, and other diseases.

silently in the body for years. Just like with HIV, people can transmit hepatitis C without knowing they have it. Hepatitis C attacks the liver and can cause liver cancer and other life-threatening liver diseases. There is no cure and no vaccine, but a small percentage of the people who get hepatitis C fight it off with the body's defenses. According to the CDC, about 4 million Americans are infected with the virus.

HEADS UP: DRUGS, AIDS, AND BAD DECISIONS

Why is drug abuse so closely linked to the spread of AIDS and other blood-borne diseases like hepatitis C? The most obvious answer is injection drugs. According to Dr. Volkow, "Injection drug use has directly and indirectly accounted for more than one-third of AIDS cases in the United States." It is also the leading cause of hepatitis C.

Injection drug use refers to when drugs are injected with a needle into the veins or tissue. The most common drugs injected are heroin, cocaine, and certain steroids. Since early in the AIDS epidemic, injection-drug abusers have had a high rate of HIV infection. They are at risk of sharing unsterilized needles with others, and when they do so, they are also at risk of sharing infected blood left behind in the needle and syringe. That's one way the virus is spread.

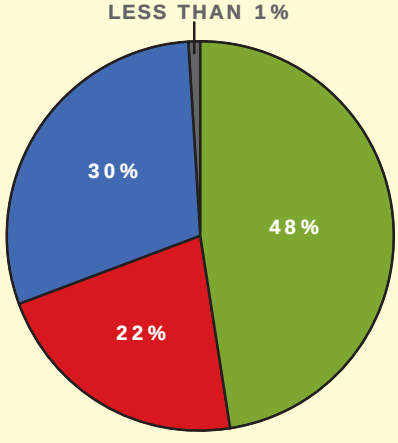
Many teens (and adults) who inject drugs know the risks, but do it anyway. Why? Scientists have found that drug addiction is a brain disease in which drugs of abuse change the way the brain functions. For example, the brain's prefrontal cortex is particularly sensitive to addiction—but it also plays an important role in judgment, decision making, and inhibiting or putting the brakes on behaviors. This means that because of their addiction, some injection-drug abusers may not realize that their ability to make decisions is impaired. On one level they may know that needle-sharing could result in the spread of HIV and other diseases, yet on another level they may not be able to use proper judgment or to inhibit actions that could lead to long-term risks for themselves or others.

HEADS UP: THE BEHAVIOR CONNECTION

Fortunately, injection-drug use among teens is relatively rare. According to the CDC, only about 1 in 50 high school students say they've ever injected an illegal drug. However, choosing to share a contaminated needle clearly isn't the only drug-related bad judgment call that can lead to AIDS or hepatitis C. What else can? The effects of drugs on thinking and good judgment can cause teens to take all kinds of risks—and we don't

Wake-Up Call How HIV/AIDS Spread

This chart shows how injection-drug use spreads AIDS far beyond just the drug abusers themselves. Based on 2002 data, it breaks down the broad category of AIDS-infected people whose infection resulted directly or indirectly from injection-drug use. What percentage of infected people became infected without any direct contact with injection drugs?



How HIV/AIDS Spread, 2002

48 PERCENT were males who injected drugs of abuse.

22 PERCENT were females who injected drugs of abuse.

30 PERCENT were males and females who had sex partners who injected drugs of abuse.

LESS THAN 1 PERCENT were children born to mothers who injected drugs or had sex partners who did.

mean risks such as big-wave surfing or extreme snowboarding. Sexual risks top the list.

In a 1999 NIDA-sponsored study, researchers at the University of Kentucky in Lexington surveyed 952 young adults ages 19 to 21 who had been surveyed in eighth grade. Researchers found that those who started using alcohol and marijuana when they were young practiced riskier sexual behavior than those who did not, putting them at higher risk for HIV. The study defined risky sexual behavior as "sex with different partners" and "inconsistent use of safe-sex practices," meaning the young adults didn't always use latex condoms.

Another, much larger 1998 study based on data collected from 8,450 young people by the CDC had similar findings. Teens who abused drugs or alcohol were more likely to have had two sex partners in the past month—which the study defined as risky sexual behavior that increases the chance of contracting HIV.

HEADS UP: A BODY ON DRUGS CAN'T FIGHT BACK

Not only do drugs cause teens to take stupid risks that can lead to infections with dangerous viruses, drug abuse can lower your immunity, making it more likely that you'll get HIV, hepatitis C, and other diseases to which you might be exposed. Want proof?

One NIDA-sponsored study showed that cocaine use cuts a certain type of immune response by more than half. Researcher John H. Halpern, with colleagues at McLean Hospital and Harvard Medical School, measured levels of a key immune-system fighter cell. They found that for four hours after drug exposure, the body produced *less than half* the fighter cells it did when cocaine wasn't present. "Even if the blunted immune response lasts only a few hours, it makes it more likely that an infection like HIV or just a common cold can take hold," says Dr. Halpern.

HEADS UP: KNOWLEDGE IS POWER

In 2005, when 38 million people worldwide are estimated to have been infected with HIV, it's hard to fathom that just 25 years ago nobody knew what AIDS was. It was so rare, it didn't have a name. It started slowly at first, then progressed with frightening speed—HIV spread from person to person until AIDS became a worldwide epidemic.

Through knowledge, you as a teen have real power when it comes to AIDS. Your peer group is at risk. By choosing to avoid drugs, you're also helping to protect yourself and the people you love from the diseases of both drug addiction and AIDS. You know the facts. AIDS simply can't survive without people making bad decisions—decisions that result in new people becoming infected with HIV.

If you're a teen who's suffering from drug abuse, there are solutions, and you can get help. For help with a drug problem, go to **www.findtreatment.samhsa.gov** to access information about a treatment center near you, or call the National hotline at 1-800-662-HELP. NIDA studies show that people in treatment for injection-drug abuse are up to six times less likely to become infected with HIV than those not in treatment. "There is hope" for people battling addiction, says Dr. Volkow. "Recovery is possible and is happening."

In the first installment of this series, you learned about the disease of addiction and why teenagers' brains are uniquely susceptible to the effects of drug abuse. Today, you found out how drug abuse and the disease of addiction can lead to the spread of AIDS and hepatitis C. Check future issues of this magazine for the next ***Heads Up: Real News About Drugs and Your Body.***

Facts for Real Life

Q: DO YOU HAVE TO BE ADDICTED TO DRUGS TO GET DISEASES LIKE AIDS AND HEPATITIS C?

A: Absolutely not. It's true that those who are addicted *are* at much higher risk. That's because they use drugs compulsively and repeatedly without regard for negative consequences. Even so, sharing equipment for injection-drug abuse EVEN ONCE can cause infection, and so can a single episode of unprotected sex with an infected person.

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