



Abuse of Inhalants and Prescription Drugs: Real Danger for Teens

Overall drug use among teens is down, except for three dangerous substances.

Listen up. There's some good news, and bad news, about teens and drugs.

First, the good news: Drug use among teens has decreased. A 2004 NIDA-sponsored study called "Monitoring the Future" found that the number of U.S. students in grades 8, 10, and 12 who said they'd used drugs in the past month dropped a whopping 17 percent compared to 2001. In real numbers, that means about 600,000 fewer teens use drugs now than in 2001—that's a whole lot of kids making the smart choice to protect their brains and bodies.

Okay. Now for the bad news. The same survey found one category of substances—inhalants—is bucking the trend. Inhalant abuse is on the upswing among teens—especially young teens—and the dangers are very real. Inhalants are

found in a variety of common products (nail polish remover, gasoline, aerosols, whipped cream canisters, computer spray cleaners) that produce chemical vapors. When they are inhaled, there can be serious, long-term health consequences. The percentage of 8th-graders who said they'd ever tried inhalants jumped from 15.8 percent in 2003 to 17.3 percent in 2004.

In addition to an increase in inhalant use, there was no decrease in the use of two prescription drugs: OxyContin® and Vicodin.® Both are pain relievers that, when used improperly, can be deadly. The same NIDA study reports that there was a significant increase between 2002 and 2004 in the use of OxyContin. That means that there are many teens who still do not understand the serious health consequences of these drugs.



Illustration: © Steven Kroninger

Inhalants Addiction

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Read on to find out the facts on why inhalants, Vicodin, and OxyContin are dangerous to your brain and body, and why the smart choice is never to try these substances—NOT EVEN ONCE.

HEADS UP: INHALANTS ARE NEVER HARMLESS

The super-toxic ingredients in inhalants harm your mind and body in dozens of ways. “I can’t really remember a lot of things,” said one girl who’d abused inhalants. “I’ll forget what I said two seconds ago. It frustrates me a lot.” But memory problems like this—likely the result of inhalant damage to brain cells—are the tip of the iceberg.

Inhalants affect the brain in a similar way to central nervous system depressants, such as alcohol and sedatives, but they can have deadly and irreversible effects. Toluene, the active ingredient in many inhalants—including glue, spray paint, and nail polish remover—strips the protective sheath off nerve cells in the brain and central nervous system and literally shrinks the brain. Other

inhalants, such as benzene (found in gasoline) cause bone marrow damage similar to that seen in a fatal disease called aplastic anemia. No inhalants are safe.

In short, as you can see, these drugs can cause major damage. Want more evidence? A NIDA-sponsored study, conducted by Dr. Neil Rosenberg of the University of Colorado Health Sciences Center, found that long-term abusers of a class of inhalants called solvents (toluene is a solvent) scored far below average on tests that measured the ability to learn and make associations.

HEADS UP: WITH INHALANTS, JUST ONE TRY CAN BE DEADLY

Long-term inhalant abuse is clearly dangerous. But what about trying inhalants even once? “Even in an otherwise healthy person, a single session of abusing highly concentrated amounts of certain inhalants can lower oxygen levels enough to cause asphyxiation or disrupt heart rhythms and cause death from cardiac arrest,” says

Cutting Edge

Learning the Truth About Teens and Drugs



How do we learn about teen drug trends? Surveys, mainly. NIDA’s 2004 “Monitoring the Future” study, which is the basis for this article, surveyed 49,474 students. Below, Dr. Lloyd Johnston, who has run the annual survey since it began thirty years ago, explains how it works.

Q: HOW DO YOU PICK STUDENTS?

A: We survey 8th-, 10th-, and 12th-graders. The schools are chosen randomly. We make sure we have a representative mix of communities.

Q: HOW LONG IS THE SURVEY?

A: One class period.

Q: WHY IS IT IMPORTANT?

A: As the survey title implies, we think the way young people are today is an indication of how the country will be in the future.

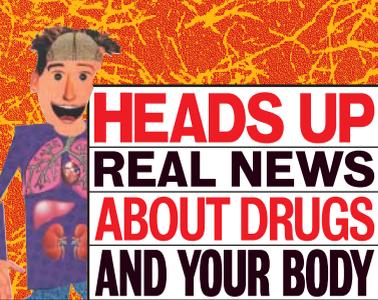
Q: DO YOU KNOW WHETHER STUDENTS TELL THE TRUTH?

A: When we started, I was a bit of a skeptic myself, but in all the tests we’ve put the data to, there’s a high level of truth-telling. In the survey itself, we ask, “If you had used marijuana, would you admit to it on this survey?” And students tend to say “yes.”

Q: DO YOU DO ANYTHING TO ENSURE HONEST ANSWERS?

A: We assure students the survey is confidential. Also, the questionnaires are distributed by our staff, not school staff. They are never in the hands of school personnel. And we ask the teachers not to circulate in the classrooms so there’s no chance for them to look over students’ shoulders.

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HEADS UP REAL NEWS ABOUT DRUGS AND YOUR BODY

Dr. Nora Volkow, Director of NIDA. Unfortunately, there is even a term for this manner of dying: *Sudden Sniffing Death*.

The tragic story of David Manlove shows the dangers.

David—a popular 16-year-old from Indianapolis, Indiana—never dreamed he'd fall victim to an inhalant. But he did.

On the morning of July 9, 2001, David went to swim in a friend's backyard pool. At lunchtime, he and another friend slipped away and bought a can of computer cleaner.

Back at the pool, David and this friend began diving underwater and inhaling the aerosol cleaner; they

thought the water pressure would intensify the high. "The girls they were with tried to tell them not to do it, but they continued," says Kim Manlove, David's father.

After two or three dives, David just didn't return to the surface. "They pulled him out very quickly," Kim says, but David wasn't breathing. He never again regained consciousness. "His heart just froze up," Kim says. "The toluene in the



David Manlove, 1984–2001

aerosol causes the rhythm of the heart to be disrupted."

To kids who think this could never happen to them, Kim says: "It can happen, because it happened to us and it happened to Dave. He was like any kid.

He had hopes. He had dreams. He wanted to be an orthopedic surgeon. Yet, in one instant, he was gone."

Now David's parents share his story in hopes of preventing future tragedies.

Some people think that because inhalants are easy to get and simple to use they're less dangerous than street drugs, or even prescription drugs. But, as you've learned here, that's false. To stay safe, the smart and only choice is not to try inhalants—NOT EVEN ONCE.

HEADS UP: VICODIN AND OXYCONTIN—NEW AND DEADLY

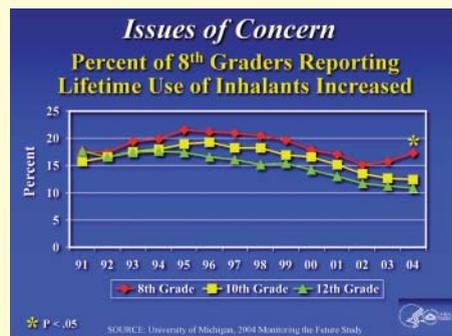
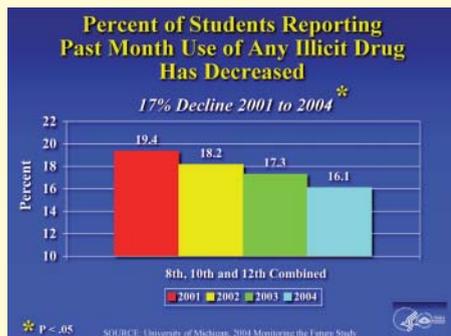
Vicodin and OxyContin are prescription medications designed to relieve pain. Their active ingredients—hydrocodone in Vicodin and oxycodone in OxyContin—belong to a class of drugs called opioids. "When used as prescribed, opioid medications can be very effective," says Dr. Volkow, "but when abused—used without a prescription and in a form and dosage different from what a doctor would prescribe—they can have serious health consequences, including death from overdose." Also, they can be addicting when abused.

Wake-Up Call Understanding Teen Drug Use Statistics

The bar graph from the "Monitoring the Future" study shows the downward trend in drug use among teens between 2001 and 2004. The line graph illustrates the alarming jump in inhalant use among 8th-graders. Statisticians, epidemiologists, and other researchers pore over charts like these to determine trends in teen drug use. They use the information to draw conclusions, predict future trends, and devise new ways to battle drug abuse.

Imagine that you're a researcher looking at these statistics. What conclusions do you draw? What explanations do you offer for the data? What are your recommendations for the

future? Do you need more information? Go to www.nida.nih.gov/Newsroom/04/2004MTFFactSheets.pdf to find out more.



These two painkillers are relatively new on the drug-abuse scene; it wasn't until 2002 that NIDA began tracking their use by teens. Even so, by 2004, 9.3 percent of 12th-graders surveyed said they'd abused Vicodin at least once in the past year. Five percent said they'd used OxyContin at least once. This is not a huge number—after all, 9 out of 10 kids *aren't* trying Vicodin and 19 out of 20 *aren't* trying OxyContin—but even one is too many, given the dangers.

PRESCRIPTION FOR DISASTER

Opioids—the class of drugs that Vicodin and OxyContin belong to—kill pain by binding to opioid receptors, which are located mainly in the brain and spinal cord. When an opioid binds to an opioid receptor, it sets off a series of chemical events in the brain leading to the relief of pain.

For people who abuse opioids, the key event is a release of the neurotransmitter dopamine in the areas of the brain that control pleasure. This leads to the euphoria that abusers experience. But opioid abuse eventually changes the brain in fundamental and long-lasting ways. As a result, the euphoria subsides and need for the drug overtakes normal desires—such as for friendship, fun, and even food. The brain changes make it difficult or impossible for people to quit using the drugs on their own. Taken together, these changes amount to what we know as the disease of addiction.

HOW PAINKILLERS CAN KILL

On top of the danger of addiction—the key risk of long-term abuse of Vicodin and

OxyContin—the drugs also carry serious short-term risks, even for people who abuse the drugs just once. Vicodin, OxyContin, and other opiates can slow or stop breathing if used incorrectly. Heads up—not breathing can kill you. And if you take OxyContin or Vicodin with another substance that can also slow respiration—such as alcohol or antihistamines—the risk of death is even greater. That's because the substances can magnify



each other's effects.

It is important that teens understand that taking Vicodin or OxyContin while drinking alcohol can be especially deadly. But most important, remember this: If you don't have a prescription and are not under a doctor's care, don't try Vicodin or OxyContin—NOT

EVEN ONCE. Some teens think that if a pill comes in a prescription bottle it's safe to take—for anyone at any time. Nothing could be further from the truth.

STAYING SMART

The drop in overall teen drug use shows that most teens understand the dangers of drug abuse. With such news, it might be tempting to stop talking about teen drug abuse. But one life cut short or compromised by drugs is one too many, and teens need to stay in the know to make smart choices.

For help with a drug problem or to find treatment centers near you, go to www.findtreatment.samhsa.gov or call the national hotline at 1-800-662-HELP.

*In this installment of **Heads Up: Real News About Drugs and Your Body**, you learned about three deadly substances that show alarming usage rates among teens: inhalants, OxyContin, and Vicodin. Watch for the next installment of **Heads Up**.*

Facts for Real Life

Q: IS IT EVER OKAY TO TAKE A MEDICATION PRESCRIBED FOR SOMEONE ELSE?

A: No. A doctor writes a prescription based on the patient's medical history and symptoms. The doctor asks questions such as, "Are you allergic to any medications?" and "Are you currently taking any other medicines?" These questions help the doctor decide which medications to prescribe and which ones not to prescribe. Then, when a prescription is picked up from a pharmacy, the pharmacist gives instructions for taking the medication and any warnings that might be necessary. When a friend gives you a pill—whether it's to cure a sore throat or to get you high—none of that happens. The consequences can be deadly.

