Bridget M. Kuehn

HILE RATES OF ILLICIT DRUG use among teens in the United States continue to decline, abuse of prescription and overthe-counter medication in this age group remains alarmingly high, according to results from an annual survey (Johnston LD et al. Monitoring the Future: National Results on Adolescent Drug Use: Overview of Key Findings, 2006. In press). The survey collects data on the attitudes and drug use habits of a nationally representative sample of about 50 000 students in grades 8, 10, and 12 at public and private schools, and is funded by the National Institute on Drug Abuse (NIDA).

The number of teens reporting pastmonth use of any illicit drugs has declined steadily since 2001, when 19.4% of those surveyed reported such drug use. In 2006, the proportion was 14.9%. Marijuana, which remains the most frequently reported drug of abuse, has also seen 5-year decreases in use, although this trend appears to have slowed among the youngest students. Overall, the rate of teens reporting marijuana use in the past month decreased by 25% between 2001 and 2006, from 16.6% to 12.5%. Older students showed the greatest declines in past-year use of marijuana between 2005 and 2006, with 32% of 12th graders reporting such use (down 2.1 percentage points from 2005), compared with 25% of 10th graders (down 1.4 percentage points) and 12% of 8th graders (down 0.5 percentage points).

MEDICATIONS FAVORED

Drug users have shifted away from using illicit drugs and toward abuse of prescription or over-the-counter medications, said Nora D. Volkow, MD, director of NIDA, during a telephone interview. She noted that drug users are increasingly using medications such as opiate analgesics, cough medicines, stimulants such as Adderall or Ritalin, and barbiturates and other sedative hypnotics.

"[There is] an erroneous belief that because these are medicines, whether prescribed by physicians or over-thecounter, that they are safer," said Volkow.



New data suggest that many teens are using high doses of cough and cold medicines and some prescription drugs in order to get high.

The easy accessibility of these drugs might also make them attractive to teens, who may have access to prescription drugs of family members or through friends and who can easily purchase over-the-counter drugs, she said.

Opiate analgesics are among the most commonly used drugs among teens. In fact, hydrocodone has become the second most abused drug among teens, possibly because it is a relatively inexpensive and easy to obtain, Volkow said. Use of hydrocodone by teens for nonmedical purposes remained relatively steady between 2002 and 2006. In 2006, 3% of 8th graders reported using the drug in the past year, as did 7% of 10th graders and 9.7% of 12th graders. Fewer students reported using oxycodone in the past year: 2.6% of 8th graders, 3.8% of 10th graders, and 4.3% of 12th graders. However, Lloyd Johnston, PhD, the principal investigator of the study and a researcher at the University of Michigan Population Studies Center, noted in a statement that even these levels of use are of concern given the addictive potential of this potent opioid analgesic.

OVER-THE-COUNTER DANGER

For the first time, the survey asked about nonmedical use of over-thecounter cough or cold medicines. Volkow said the question was added because the agency had received reports from emergency departments and poison control centers of young people becoming intoxicated by these substances. These drugs often contain the cough suppressant dextromethorphan, which can cause hallucinations and other alterations in mental state when taken in high doses and are often abused by individuals who take 10 times the recommended dose. Many teens reported abusing these medications during the past year, including about 1 in 25 eighth graders, 1 in 20 tenth graders, and 1 in 14 twelfth graders. Johnston said there was evidence that some of these individuals are becoming established users of the drug, with almost 3% of 8th and 10th graders and 4% of 12th graders reporting that they used the drug 3 or more times in the previous year.

Volkow said dextromethorphan has long been considered by physicians to be nonaddictive because, unlike other addictive drugs, it does not target the µ-opiate receptor system. However, the drug does interact with the NMDA receptor, a glutamate receptor that is targeted by the illicit drug PCP. Dextromethorphan does not stimulate the receptor as strongly as PCP, but in high enough doses it can cause behavioral effects similar to those seen in individuals using PCP.

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Another troubling aspect of teens' medication abuse is that the often take the drugs in combination, and the users themselves may not know what the combinations are, Volkow said. She explained that teens may dump tablets they have acquired into a bowl at a party, and they and their friends sample the drugs.

Reversing this troubling trend will require educating children, adolescents, and parents that even though these substances may be prescribed or recommended by physicians, they can be as dangerous as illicit substances when they are abused, Volkow said. Physicians must also be educated about the

best prescribing practices and ways to recognize early signs of addiction or drug abuse. When prescribing potentially addictive drugs, physicians and other professionals should carefully evaluate patients for a personal or family history of addiction and choose the medications wisely. □