Despite the difficulty of interpreting these data, the advisory committee acted preemptively to recommend strong regulatory action. The majority of the group accepted my argument that the propensity of sympathomimetic agents to raise blood pressure and heart rate, the history of serious adverse effects associated with two members of the class (ephedra and PPA), and the rapid increase in exposure, particularly among adults, warranted strong and immediate action. Although the committee recognized that there are important potential benefits of these drugs for certain highly dysfunctional children, we rejected the notion that the administration of potent sympathomimetic agents to millions of Americans is appropriate. We sought to emphasize more selective and restricted use, while increasing awareness of potential hazards. We argued that the FDA should act soon, and decisively.

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**An interview with Dr. Nissen can be heard at www.nejm.org.**

Dr. Nissen is the interim chairman of the Department of Cardiovascular Medicine at the Cleveland Clinic, Cleveland, and was a consultant to the FDA's Drug Safety and Risk Management Advisory Committee for the hearings on ADHD drugs.

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# The Changing Face of Teenage Drug Abuse — The Trend toward Prescription Drugs

Richard A. Friedman, M.D.

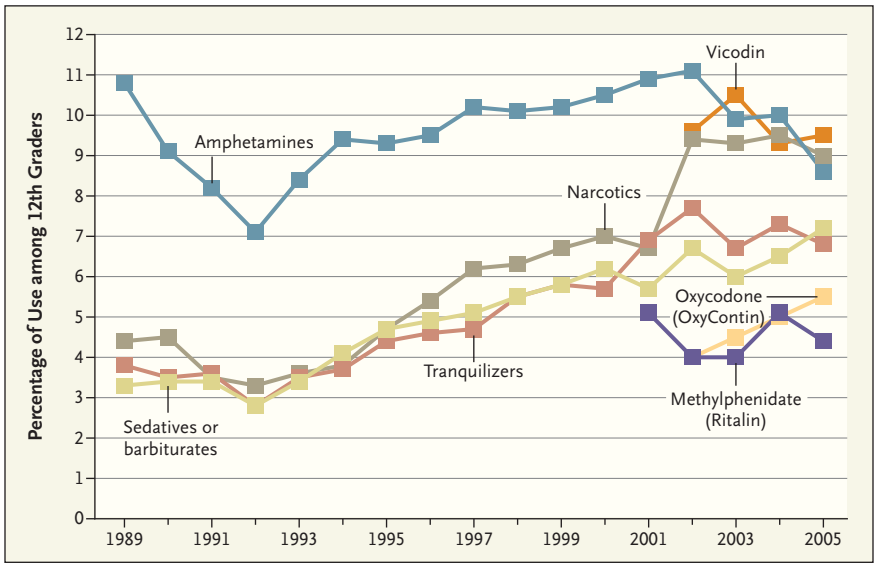
When Eric, an 18-year-old who lives in San Francisco, wants to get some Vicodin (hydrocodone–acetaminophen), it's a simple matter. "I can get prescription drugs from different places and don't ever have to see a doctor," he explained. "I have friends whose parents are pill addicts, and we 'borrow' from them. Other times I have friends who have ailments who get lots of pills and sell them for cheap. As long as prescription pills are taken right, they're much safer than street drugs."

Eric's habits reflect an emerging pattern in drug use by teenagers: illicit street drugs such as "ecstasy" (3,4-methylenedioxymethamphetamine) and cocaine are decreasing in popularity, whereas the nonmedical use of certain prescription drugs is on the rise. These findings were reported in the Monitoring the Future survey, which is sponsored by the National Institute on Drug Abuse and designed and conducted by researchers at the University of Michigan.[1] The study, which began in 1975, annually surveys a nationally representative sample of about 50,000 students in 400 public and private secondary schools in the United States.

***"We're living in a time that seems decidedly more apocalyptic. . . . Maybe we need something to slow down."***

Overall, the proportion of teens who reported having used any illicit drug during the previous year has dropped by more than a third among 8th graders and by about 10 percent among 12th graders since the peaks reported in the mid-to-late 1990s, according to the 2005 survey. Alcohol use and cigarette smoking among teens are now at historic lows. In contrast, the number of high-school students who are abusing prescription pain relievers such as oxycodone (OxyContin), a potent and highly addictive opiate, or sedatives is on the rise. A total of 7.2 percent of high-school seniors reported nonmedical use of sedatives in 2005, up from a low of 2.8 percent in 1992 (see graph). Reported use of oxycodone in this group increased from 4.0 percent in 2002 to 5.5 percent in 2005.

The survey did not ask teenag-




**Prevalence of Use of Prescription Drugs without Medical Supervision among 12th Graders.**

Data are from the Monitoring the Future survey. In 2001, the text of the question regarding tranquilizers was changed in half the questionnaire forms: Miltown (meprobamate) was replaced by Xanax (alprazolam) in the list of examples. This resulted in a slight increase in the reported prevalence. In 2002, the remaining questionnaire forms were changed. Also in 2002, the text of the question about narcotics other than heroin was changed in half the questionnaire forms: Talwin (pentazocine–naloxone), laudanum, and paregoric (which all reportedly had negligible rates of use by 2001) were replaced with Vicodin (hydrocodone–acetaminophen), OxyContin (oxycodone), and Percocet (oxycodone–acetaminophen). This resulted in an increase in reported prevalence, and in 2003, the remaining questionnaire forms were changed.

ers how they obtained their prescription drugs, but there is little doubt that the medications are easy to get from a variety of sources. "Prescription drugs are a lot easier to get than street drugs," said John, a high-school sophomore in Austin, Texas. "Kids can get them on the street, from parents and friends, or on the Internet."

They can also get them all too easily from physicians, according to recent data from the National Center on Addiction and Substance Abuse at Columbia University.[2] A 2004 survey of physicians found that 43 percent did not ask about prescription-drug abuse when taking a patient's history, and one third did not regularly call or obtain records from the patient's previous physician before prescribing potentially addictive drugs. These alarming data suggest that physicians are much too lax in prescribing controlled drugs. Claire, an 18-year-old who lives in Maine, told me, "You can always find a doctor who you can convince that you have a sleeping problem to get Ambien [zolpidem] or that you have ADD [attention-deficit disorder] and get Adderall." And even if most teenagers do not seek controlled prescription drugs directly from doctors, physicians are surely the original source of much of the medication that teens use, which has been diverted from its intended recipients.

In explaining the increase in the recreational use of prescription drugs, many teenagers draw key distinctions between these drugs and illicit street drugs. Teenagers whom I interviewed said that whereas they used illicit drugs only for recreation, they often used prescription drugs for "practical" effects: hypnotic drugs for sleep, stimulants to enhance their school performance, and tranquilizers such as benzodiazepines to decrease stress. They often characterized their use of prescription drugs as "responsible," "controlled," or "safe." The growing popularity of prescription drugs also reflects the perception that these drugs are safer than street drugs. According to the Monitoring the Future survey, for example, the use of sedatives among high-school seniors has increased in tandem with a decrease in the perceived risk and an increase in peer-group approval of the use of sedatives, whereas amphetamine use has steadily dropped as the perceived risk and societal disapproval have increased.

What might explain the growing confidence in the safety of prescription drugs? Negative media attention is frequently cited as a factor in the decreasing popularity of cocaine and stimulants among teenagers. The converse appears to be true regarding prescription medications. Nowadays, it is nearly impossible to open a newspaper, turn on the television, or search the Internet without encountering an advertisement for a prescription medication. Expenditures by the pharmaceutical industry for direct-to-consumer advertising increased from $1.8 billion in 1999 to $4.2 billion in 2004.[3,4] One effect has been to foster an image of prescription drugs as an integral and routine aspect of everyday life. Any adverse effects are relegated to the fine print of an advertisement or dispatched in a few seconds of rapid-fire speech.

Not all prescription drugs, however, have equal appeal among teenagers. According to the Monitoring the Future study, calming prescription drugs have become more popular, whereas the use of stimulants is decreasing. Whether this trend reflects the differential availability of sedative drugs, the selective effects of advertising, or other social factors is anyone's guess. Asked to speculate about it, teenagers said more or less what John, the teen from Austin, expressed in an e-mail message: "We're living in a time that seems decidedly more apocalyptic, especially since 9/11 and all the recent natural disasters. Maybe we need something to slow down."

The perception that prescription drugs are largely safe seems to justify the attitude that occasional use poses little risk. And indeed, there is little doubt that many more people try drugs than become serious drug abusers. For example, in the 2004 National Household Survey on Drug Abuse, 19 percent of persons between 12 and 17 years of age reported ever having used marijuana, whereas 14.5 percent reported use during the previous year, and only 7.6 percent reported use during the previous month.[5]

Still, the fact that 50 percent of students have tried an illicit drug by the time they finish high school — another finding of the Monitoring the Future survey — is nothing to be happy about, not to mention the 5.5 percent of 12th graders who have tried the highly addictive oxycodone. For a substantial number of teenagers with risk factors, such as a psychiatric illness or a family history of drug abuse, crossing the line from abstinence to exposure will be the first step toward serious substance abuse.

Moreover, even in small doses, sedatives, hypnotics, and opiates have subtle effects on cognition and motor skills that may increase the risk of injury, particularly during sports activities or driving. From a longer-term perspective, the brains of teenagers are still developing, and the effects of drug abuse may be harmful in ways that are not yet understood. Do we really want teenagers to think nothing of popping a pill to relax, get through the tedium of a long homework assignment, or relieve normal anxieties?

Clearly, physicians play an important role in this problem, given their apparent laxness in prescribing controlled drugs. Physicians should routinely assess their patients for substance use and psychiatric illness before they put pen to a prescription pad. They should also discuss with their adult patients who have teenage children the risks associated with controlled drugs and the need to restrict the availability of such drugs at home.

In order to address these problems appropriately, physicians need adequate education in substance abuse. The survey by the National Center on Addiction and Substance Abuse reveals that physicians do not feel they are well trained to spot signs of substance abuse or addiction — a skill that should be taught in all medical schools and residency programs.

Finally, educators and parents must address the potential dangers of prescription-drug abuse with teenagers. As Claire put it, "In a way, prescription drugs are more dangerous than street drugs, because we don't recognize their dangers."

(The names of the teenagers who were interviewed have been changed to protect their privacy.)

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