
Teen drug use: Ups and downs

Despite encouraging drops in teenagers' reported use of illegal drugs, alcohol and cigarettes since 1980, the latest nationwide survey of U.S. high school seniors contains some disturbing signs. Most glaring is the record high number of students who say they have tried cocaine. When this trend is combined with rates of illicit drug use among American youth higher than in any other industrialized nation, "you have grounds for real concern," says Lloyd D. Johnston, co-director of the study with Jerald G. Bachman and Patrick O'Malley.

The survey of 16,000 high school seniors in 132 public and private schools, conducted annually since 1975 by the University of Michigan in Ann Arbor psychologists, finds that 17 percent of the class of 1985 have tried cocaine at some point and 7 percent used it in the month prior to the survey. These are both 1 percent increases over last year. Cocaine use rose regardless of students' college plans and sex; all regions of the country except the South reported increases.

Marijuana use, on the decline among teenagers since 1979, remains at last year's level. Just over half of the seniors have tried the drug, and one in four used it in the previous month. About 5 percent use marijuana daily, compared with 11 percent in 1978. Marijuana is the most widely used

illicit drug in the sample.

Amphetamines are the second most widely used illegal drug, followed by cocaine. The number of those who used amphetamines in the past month declined slightly in 1985, to just under 7 percent; 26 percent reported trying them at some time. The only other drugs showing continued declines this year are LSD and methqualone, also known as Quaalude. Both drugs are used by a small minority of students.

Rates of overall illicit drug use are almost identical to those reported last year. About 6 in 10 seniors admit to trying illegal drugs at least once, and 4 in 10 have used an illicit drug other than marijuana. Active use in the month prior to the survey was reported by 30 percent. Still, this is down from almost 40 percent reporting active use in the late 1970s.

Daily alcohol use among the seniors increased slightly in 1985 to 5 percent, while monthly and annual use dropped slightly. Yet nearly half of the boys and over one-quarter of the girls reported drinking heavily (five or more drinks in a row) in the previous two weeks. Daily cigarette smoking rose from 19 percent in 1984 to 20 percent this year.

The Michigan survey coincides with a just-released report on drug use by the federal Drug Enforcement Agency. Cocaine use in the United States rose 11 percent in 1984, according to the study. Marijuana use was down, but the stimulant methamphetamine and the hallucinogen PCP showed increases. —B. Bower

Papain allergy and surgical risk

If, as a new study suggests, about 1 percent of individuals with allergies are sensitive to an enzyme common in meat tenderizers, then 500,000 or more Americans may risk serious reactions if they decide to undergo one type of back surgery.

In the October *ANNALS OF ALLERGY*, researchers at the Texas Tech University Health Sciences Center in El Paso, and the University of Tennessee Center for the Health Sciences in Memphis, report that the food additive papain, extracted from the papaya plant, produced allergic reactions in five of 475 subjects with positive skin tests to routinely tested allergens. This first attempt to define prevalence rates of papain hypersensitivity in people with allergies is significant for its possible relationship to chemonucleolysis—the injection of chymopapain to dissolve herniated lumbar disks. A guest editorial in the same issue points out that consumers ingest increasing amounts of papain in fast-food products, and approximately 100,000 chemonucleolysis procedures are performed in the United States each year.

Papain, the active ingredient in many commercial meat tenderizers, also is found in contact lens cleansing solutions, as a digestive aid in health food stores and

as a reagent in pharmaceutical and brewing processes. Cross-reactivity between papain and chymopapain has not been proven by laboratory studies. But about 1 percent of chemonucleolysis patients exhibit anaphylactic (allergic) reactions, and some individual allergy clinic patients show positive test results for both enzymes.

Symptoms of papain allergy, which include itching, headaches, abdominal complaints and conjunctivitis, may appear after cooking or eating tenderized meat. There have been relatively few reports of serious reactions to papain. Nonetheless, the researchers suggest, the possibility of reaction to injected chymopapain warrants concern. A communication from doctors in Ohio and Ontario in the same issue reports five out of six patients with positive skin tests for chymopapain reacted to the therapeutic injection of the enzyme, one seriously. Although the number of patients tested was small and the results preliminary, the authors assert that "recognition of the potential reactor... is of major importance since there are alternative methods of treatment of [herniated disks]." —D.D. Edwards

'Day after' effects of pot smoking

Fasten your seat belt: Pilots who get "high" on marijuana the day before taking control of an aircraft may have difficulty landing the plane safely, even though they feel alert and normal.

Furthermore, there is "a need for concern about the performance of those entrusted with complex behavioral and cognitive tasks within 24 hours after smoking marijuana," says Jerome A. Yesavage of Stanford University and his colleagues in the November *AMERICAN JOURNAL OF PSYCHIATRY*.

The investigators recruited 10 experienced private pilots and trained them on a computerized flight-simulator landing task. All subjects had smoked marijuana before, but none was a daily user. They abstained from drug use for the test period, which began with a morning "baseline" flight. Each then smoked a marijuana cigarette containing 19 milligrams of tetrahydrocannabinol (THC), the active agent in marijuana. This is comparable to "a strong social dose," say the researchers. The landing task was repeated one, four and 24 hours later.

The worst performances compared with baseline occurred one hour after THC ingestion. But 24 hours later, the pilots still experienced significant difficulty in aligning the computerized airplane and landing it at the center of the runway. There were marked deviations from the proper angle of descent in the last 6,000 feet of the approach to landing, report the scientists. "In actual flight," they explain, "where there is wind and turbulence, such errors can easily lead to crashes." The pilots, however, reported no awareness of any marijuana aftereffects on their performance, mood or alertness.

It is not known how long it takes before people can perform complex tasks at baseline levels after smoking marijuana, note Yesavage and his co-workers. THC metabolites remain in the urine for up to 72 hours; plasma concentrations rapidly drop several hours after marijuana is smoked.

The widespread use of the drug suggests that pilot performance should be more closely studied, they say. More down-to-earth tasks, such as operating complicated heavy equipment or railway trains, may also be susceptible to a "day after" marijuana effect.

THC-positive urine screens have been found among railroad crews responsible for recent train accidents, note the researchers, and the pilot in a 1983 commercial air crash at Newark (N.J.) Airport was found to have smoked marijuana 24 hours before the accident. But at this point, they caution, data on the behavioral aftereffects of marijuana are preliminary. —B. Bower