

Drugs of Choice

Drug users who never suffer addiction attract scientific interest

By BRUCE BOWER

Nancy Reagan's battle cry in her war on drugs was "Just say no" — a simple phrase that carries the implicit message that once you say "yes" and take a snort of cocaine or a swig of whiskey, or taste any intoxicating substance, you risk falling into dangerous, uncontrolled drug use.

Many recent theories reflect this notion in suggesting that repeated exposure to an addictive substance inevitably saps the human will and segues into unrestrained drug consumption.

But what those theories ignore, and what some people forget amid alarming stories of crack cocaine deaths and other drug-induced tragedies, is that many people "just say yes" to over-the-counter or under-the-table substances and use them moderately without getting hooked.

Although most drug researchers concentrate on abusers, some focus on people who manage to control their ingestion of mood-altering drugs. In fact, some investigators maintain that occasional users may help clarify the nature of drug addiction and present new approaches to preventing or curing it.

"The occasional user of narcotics and other drugs is more common than most people realize," says psychopharmacologist Ronald K. Siegel of the University of California, Los Angeles. "These users are difficult to study because they do not regularly appear in hospitals, clinics, coroners' offices, courts or other places where abusers surface."

On the other hand, researchers cannot point to a typical "addictive personality" or predict who will and who will not become addicted to a particular drug.

One attempt to illuminate the nature of controlled drug use focuses on people who ingest a highly toxic, extremely habit-forming and entirely legal substance — nicotine. Psychologist Saul Shiffman of the University of Pittsburgh and his colleagues

study "tobacco chippers" — light smokers who regularly use tobacco without developing symptoms of physical or psychological dependence.

"Chipping" is a street term originally used to describe the occasional use of opiates such as heroin.

Tobacco chippers are not easily found. Federal statistics indicate one-quarter to one-third of U.S. adults smoke cigarettes. Recent studies of smokers find that more than 90 percent experience intense cravings for cigarettes and other withdrawal symptoms typical of nicotine dependence.

Shiffman and his co-workers compared 18 tobacco chippers who regularly smoke five or fewer cigarettes per day with 29 dependent smokers who consume 20 to 40 cigarettes daily.

Chippers differed from dependent smokers in a number of ways, Shiffman reports in the April *PSYCHOPHARMACOLOGY*. Dependent smokers reported numerous signs of withdrawal, such as irritability and cigarette craving, after an enforced overnight abstinence; chippers appeared unaffected by the deprivation and reported regularly abstaining from smoking for days at a time. Thus, chippers continue to smoke without any of the withdrawal symptoms that reinforce the addiction in other smokers, Shiffman asserts.

Chippers appear psychologically distinct from dependent smokers, he adds. They report less stress in their daily lives and more effective methods of coping with stress, perhaps lessening their need to smoke.

Tobacco chippers also tend to smoke while drinking a cup of coffee or in response to other external cues, Shiffman says, whereas dependent smokers "basically smoke when they're awake." His research team confirmed this observation with reports from 25 chippers and 25 dependent smokers who carried hand-held computers for several days, on which they recorded their moods and activities just before lighting

up a cigarette.

Chippers smoke as often when they are alone as when they are with others who are smoking, Shiffman says, dampening suspicions that occasional smoking is primarily a social behavior.

Further findings suggest tobacco chippers and dependent smokers may differ biologically, he notes. Surprisingly, chippers report fewer uncomfortable reactions to their first cigarette, such as dizziness, coughing and nausea, than do heavy smokers. Also, fewer of the chippers' relatives ever smoked, and more of their smoking relatives successfully gave up cigarettes.

Despite the contrasts between the two groups of smokers, chippers fully inhale tobacco smoke and absorb the same amount of nicotine from each cigarette as do heavy smokers, Shiffman and his co-workers found in a study to appear in the *ARCHIVES OF GENERAL PSYCHIATRY*. After smoking one cigarette, chippers' blood nicotine levels increase in amounts equal to those of dependent smokers, as do their blood levels of a long-lasting nicotine metabolite.

The researchers also found that heavy smokers who agreed to reduce their consumption to five cigarettes per day compensated by inhaling more deeply and tripling their per-cigarette nicotine intake. Chippers, however, do not compensate for their limited use with deeper inhalation.

"I don't claim to understand how chippers do what they do," Shiffman says. But long-term observations of their smoking behavior and physiological responses will illuminate individual differences in tobacco use and perhaps help clarify the nature of dependent smoking, he contends.

Shiffman's work follows in the footsteps of research on heroin chippers directed by the late Norman E. Zinberg, a psychiatrist at Harvard Medical School in Boston. Zinberg held

that three major forces mold a person's use of and experience with heroin or any other substance: the pharmacology of the drug, the personality of the user and the physical and social setting in which use takes place.

Zinberg saw the social setting as an especially powerful influence on heroin use. In 1972, he observed two types of heroin addicts in England, where these users obtained the opiate legally through public clinics. The first type used heroin in a controlled fashion and functioned adequately or even quite successfully, while the second took heroin constantly and lived desperate, self-destructive lives. But the latter group was not a cause of societal unrest, crime or public hysteria, Zinberg writes in *Drug, Set, and Setting* (1984, Yale University Press), because British social and legal sanctions allowed them to live as addicts.

Zinberg then studied small groups of heroin chippers and addicts in the United States. He found that occasional users did not experience the distressing withdrawal symptoms of hard-core addicts and tended to use heroin at specific times when it would not disrupt their jobs or other responsibilities.

The Vietnam War also provided a natural laboratory for studying controlled heroin use. Southeast Asian heroin was cheap, plentiful and delivered in an easy-to-use smokable form. About one out of three U.S. soldiers tried heroin while in Vietnam and half of them became addicted, according to surveys conducted in the early 1970s by psychologist Lee N. Robins of Washington University in St. Louis and her colleagues.

Yet when these veterans came home and left the bleak social setting of the war behind, their craving for heroin largely diminished. In one study, Robins and her co-workers interviewed 617 enlisted men before their return from Vietnam in 1971 and again three years later. Half the veterans addicted in Vietnam had used heroin since their return home, but only 12 percent of those became readdicted.

As early as 1947, heroin chippers were recognized as "joy poppers" who used the drug occasionally without signs of addiction, Siegel points out.

"Even if most heroin addicts had once been chippers," he asks, "why didn't all chippers become addicts? Is there a secret to controlled intoxicant use?"

No one offers a simple answer to this question, but in Siegel's opinion, the drug dose taken by an individual and its frequency are critical.

Consider crack, a smokable form of cocaine produced from cocaine hydrochloride powder through a chemical process known as freebasing. Smoking crack leads to a much faster and more intense intoxication than sniffing cocaine hydrochloride. In the early 1980s, Siegel

studied about 200 arthritis sufferers under treatment at a desert clinic in California, where they regularly received Esterene — the pharmaceutical trade name for an experimental form of crack. Not one case of abuse surfaced in Siegel's investigation.

Esterene proved nonaddictive because doses were fixed by physicians and the drug was sniffed through the nostrils and absorbed slowly through the nasal membranes, he contends. Esterene did not cure arthritis, but many patients — who did not know they were using a form of cocaine — reported less pain and greater freedom of movement after the treatments.

Esterene remains nonaddictive when used outside a medical setting, Siegel says. The Esterene program in California is now banned, but Siegel located 175 people in the Los Angeles area who concocted crack at home for a variety of reasons. Some were cocaine users attracted to reports that snorting crack was safer than snorting cocaine hydrochloride powder, while others were elderly people seeking relief from arthritis or depression.

Again, these crack users — including those with a history of cocaine consumption — experienced few problems. They reported more energy and less physical pain but did not experience the rapid and reinforcing euphoria that helps give cocaine its addictive punch. While daily cocaine hydrochloride users snort the white powder around the clock, the 175 people sniffing their homemade crack took the drug infrequently and displayed no physical side effects or signs of dependency.

In contrast, street users of crack repeatedly smoke large doses of the drug, which rapidly enters the brain. Taken in this way, crack produces an almost instantaneous "rush" of intoxication, promoting rapid addiction as well as toxic physiological effects.

Nonetheless, Esterene users, crack addicts and other consumers of both legal and banned drugs share a common motivation, Siegel argues in *Intoxication: Life in Pursuit of Artificial Paradise* (1989, E.P. Dutton). "People use intoxicants to change the way they feel and satisfy their needs for psychological or physical stimulation," he says. "Intoxicating drugs are medications for the human condition."

Siegel, hardly in the mainstream of drug research, draws harsh criticism from those who believe abstinence is essential in the prevention of drug addiction. But his book has been read widely in scientific circles, as well as by at least one official in the White House Office of Drug Control Policy.

The pursuit of substances that alter mood and consciousness has evolved into a "fourth drive," on a par with sex,

thirst and hunger, Siegel contends. Not only is intoxicant use a characteristic of people in virtually all societies, but evidence of the fourth drive turns up throughout the animal kingdom, he says. Siegel and his colleagues have observed the self-administration of naturally occurring drugs among mammals, birds, insects, reptiles and fish (SN: 11/5/83, p.300). Bees, for instance, taste the nectar of opium flowers and drop to the ground in a stupor, then go back for more; elephants seek out fermented fruits and proceed to get drunk; and monkeys munch hallucinogenic mushrooms and then assume a reflective pose, sitting with their heads on their hands.

Yet animals do not have significant problems with uncontrolled drug use in the wild, Siegel says. They consume infrequent, relatively small drug doses in the natural plant form, a pattern not likely to produce addiction.

Humans are another story. "We take benign intoxicants out of their natural packages, purify them and turn them into poisons," Siegel says.

Efforts to stem the ravages of addiction by cutting off drug supplies wither before the power of the fourth drive, and legalizing currently outlawed drugs will not make them safe, he argues. Moreover, it seems unrealistic to expect that drug addiction will disappear if people are taught about controlled "chipping" techniques or exposed to educational messages through the media, he says.

If society acknowledges both controlled and excessive drug use as efforts to meet the needs of the fourth drive for a change in mental state or mood, the next step is a scientific search for safe intoxicants, or "utopiants," Siegel contends. These designer drugs would balance pleasurable effects with minimal or no toxic consequences, have fixed durations of action and contain built-in chemical antagonists to prevent addiction or overdose.

In one possibility Siegel cites, future molecular chemists may combine Esterene preparations with nitrenidipene — a chemical that reverses cocaine overdoses — to create a controllable form of cocaine.

In the meantime, Siegel supports efforts to prevent and treat drug abuse, including plans by the National Institute on Drug Abuse to spend nearly \$100 million annually in search of medications that block the effects of cocaine and other illicit drugs.

But the fight against dangerous drugs must also embrace the scientific pursuit of safe intoxicants, he maintains. "Just saying 'no' often does not work, because the fourth drive is too strong," Siegel says. "This is not moral surrender [in] the war on drugs. The development of safe, man-made intoxicants is an affirmation of one of our most human drives and a challenge for our finest talents." □