

## The Antabuse high

If alcohol makes you sick every time you use it, then you probably will learn to avoid it. That's been the rationale for alcoholism treatment programs that use drugs to produce painful physical reactions to alcohol. But the programs have been only minimally successful — and it may be because under certain conditions the drugs used to produce the aversive reactions can help produce an alcoholic high, say Zavier W. Brown and Zalman Amit of Concordia University in Montreal. The drugs in question are Antabuse (disulfiram) and Temposil (citrate calcium carbamide), which have been used extensively for 25 years in alcoholism treatment programs.

Brown and Amit recently noticed that one of their alcoholic patients who was being treated with Antabuse was showing signs of intoxication and euphoria. After the patient admitted to consuming small amounts of alcohol without feeling any of the expected ill effects, researchers designed an experiment to test the possibility that Antabuse and Temposil might actually enhance the mood-altering effects of low doses of alcohol. Nine volunteers were given either Antabuse, Temposil or a placebo. Several hours later they attended an experimental cocktail party and were required to drink small amounts of vodka mixed with fruit juice. Vital signs and blood alcohol levels were monitored prior to and during intervals between drinks. The subjects also completed self-rating scales that previously had been shown to be an accurate measure of alcohol-induced changes. Two independent judges rated the degree of euphoria in each of the subjects at the end of the experiment.

Following alcohol consumption, experimental subjects reported being "happier" more "relaxed," more "tired" and more "hazy" than did control subjects. Five of the six subjects classified as "high euphoria" by the independent judges had been treated with Antabuse or Temposil, and two of the three subjects labeled as "low euphoria" had received the placebo. In other words, those who had taken the drugs got higher than those who had taken the placebo — even though all had been given the same amount of alcohol (relative to body weight). No aversive physical symptoms were reported by any of the subjects.

Antabuse and Temposil work by inhibiting production of the enzyme necessary for the oxidation of acetaldehyde, the first metabolite of ethanol. The resulting increased levels of acetaldehyde cause the aversive physiological response that discourages further drinking. But acetaldehyde may be related to drinking in more important ways. There is evidence, for instance, that acetaldehyde rather than alcohol itself may be responsible for the effects of alcohol. If so, low doses of alcohol may be enough to cause highs in patients taking Antabuse or Temposil. Only high doses of alcohol would cause enough of an acetaldehyde buildup to be painful.

The researchers have yet to test their findings with alcoholics, but they suggest that Antabuse and Temposil may be "contraindicated as anti-alcohol agents." Even though the drugs prevent the excessive consumption of alcohol, they say, the alcoholic may continue to experience the positive effects of alcohol by drinking only small amounts and thereby maintain alcohol-oriented behaviors.

## Where have all the radicals gone?

Jerry Rubin turned up on Wall Street. Abbie Hoffman apparently has been surfacing in a number of places. But what about the rest of the leftist radicals from the sixties? One recent study suggests that they neither dropped out nor sold out and that many continue to hold out for the principles they enunciated in their protests. The study was conducted by Alberta J. Massi of the University of California at Davis.

On December 2, 1964, 800 protesting students were arrested at a mass sit-in on the steps of Sproul Hall at the University of California's Berkeley campus. Massi contacted 30 of these former Free Speech Movement activists and compared them with student government contemporaries and a cross-section of the 1964-65 student body. "Fifteen years following their arrest," says Massi, "former FSM activists still appeared to comprise a distinctive social and political cohort . . . . They have grown up but do not appear to have grown out of the political philosophy that galvanized their activist youths." Some of this is reflected in their occupation choices. FSM arrestees have smaller annual incomes than do members of the two comparison groups and are more likely to be employed in social service and creative occupations. Their radicalism has waned, but the study finds that many still endorse leftist politics and regard themselves as less conventional than those of the comparison groups.

## Smokers and uppers

Cigarette smoking, once regarded as a psychological habit, is now seen by many researchers as a legitimate instance of drug dependence. And it has been suggested that the stimulant-like activities of nicotine are important in maintaining the smoking habit. Accordingly, some treatment programs have attempted to reduce smoking by replacing the nicotine with amphetamines or other stimulants. Jack E. Henningfield and Roland R. Griffiths of the Johns Hopkins University's School of Medicine in Baltimore now find that amphetamines actually may increase a smoker's rate of smoking.

Volunteers who had smoked at least one pack of cigarettes per day for an average of almost 15 years were paid to take part in a controlled study. During daily, 90-minute sessions, subjects were allowed to smoke freely in a specially designed test room. Two hours prior to each session the subjects swallowed 2 capsules. On Mondays, Wednesdays and Fridays, the dose was either 0, 5, 15 or 25 mg of amphetamine. On Tuesdays and Thursdays, the capsules were placebos. Measures of smoking were made during at least five sessions at each dose. The researchers report that both the number of puffs and the number of cigarettes tended to increase with increasing doses of amphetamine.

## Coping with Parkinson's disease

The degenerative brain disorder known as Parkinson's disease causes tremors, rigidity and extreme slowness of movement. During the past decade, the drug L-dopa has been used to control the condition but not without serious side effects. Larger doses often cause disabling dyskinesias, or involuntary movements, and the drug tends to lose its effectiveness after several years of treatment. In the absence of an alternative pharmacological treatment, George K. Montgomery and Charles S. Cleeland of the Clinical Science Center in Madison, Wis., suggest the use of behavioral therapy.

Using basic behavioral techniques, the researchers achieved impressive results in three cases. Because symptoms of the disease commonly are aggravated by work or emotional stress and by fatigue, progressive relaxation training was used to teach improved control of stress. Biofeedback techniques were used to teach improved muscular control. Facial rigidity, handwriting difficulties, loss of balance, shuffling gait and speech impairment were among the symptoms that responded well to behavioral therapy. Because many neurologists advocate withholding L-dopa as long as possible, the researchers feel that behavioral therapy may provide patients with a nonpharmacological means of dealing with symptoms.