LIFESTYLES

MDMA

Studies of popular illicit drug raise questions about effects

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BY JOHN ACCOLA Rocky Mountain News Staff Writer

TWO YEARS AGO on a picnic in the Canadian Rockies, Brian and his girlfriend tried a pill called with a powdery drug called "ecstasy." Despite government warnings that the banned drug could induce psychosis, Brian remembers his first ecstasy trip as anything but frightening. "All we did was talk," recalls the 41-year-old Boulder college professor. "Ecstasy has a way of doing that. It makes you fearless to communicate.

But last fall, after consulting a doctor friend, Brian began to have second thoughts about that memorable Canadian afternoon and the dozen other times since then that he has taken ecstasy.

His concern: that ecstasy is eating away at his brain. The drug is a chemical cousin of amphetamine, which originally was produced in 1914 as a diet pill and later used as a tool in psychotherapy to help increase insight and awareness. Also known as "Adam" and by its abbreviated chemical name, MDMA, ecstasy was placed in the same outlaw category as heroin and cocaine in 1963 but is still found on the street for $15 to $25 a dose.

"But I don't think I lived to the extent I would have appreciated the potency of the drug," says Brian, who spoke on condition that his real name not be used. "I want to live a longer, healthier life."

Brian's decision to stop using ecstasy comes on the heels of a study that could prove to be the most serious scientific indictment against MDMA yet.

Speaking in Steamboat Springs in January at the annual Winter Conference on Brain Research, Dr. George Postma of the California Institute for Medical Research said MDMA appears to cause brain damage even when used in moderate doses.

Studies also have linked MDMA to brain damage but only when taken in large doses and in research conducted with mice and rats. Postma, however, conducted his experiments with monkeys, considered the best predictors of the human condition.

But Postma says researchers are observing toxic effects after doses of MDMA that are only two to three times higher than those that are typically ingested by humans. "It is a high dose," Postma says.

Postma says MDMA affects the monkey's ability to produce a neurotransmitter called serotonin. Scientists say they think serotonin is important in regulating subtle functions such as mood, sleep, appetite, blood pressure, sexual behavior and aggression.

In some cases, where monkeys showed daily injections of MDMA during a four-day period, serotonin levels dropped by as much as 90%.

Although the monkeys showed no outward changes in behavior, the study clearly showed that MDMA could trigger brain damage, a finding that it was a brain-related phenomenon. Even monkeys given single oral doses of the drug showed a 20% to 30% reduction in their serotonin levels in a single day. "The monkeys may appear normal and act like normal monkeys," Postma says. "But in terms of the brain, we see that it is involved in the response."

"I think the most important finding is that single dose of MDMA is producing long-term effects in the monkey brain," Postma says. "In view of those findings, my feeling is that people should be extra-cautious in their use of this drug."

Dr. Stephen Peroutka, a Stanford University neurologist and psychiatrist who conducted the study with Postma, shares the concern. An informal poll Peroutka conducted earlier this winter indicated that nearly 40% of the university's students have experimented with ecstasy. Another survey conducted a year ago on the Stanford campus indicated that fewer than 10% had used the drug.

Peroutka fears that the latest survey in further evidence of MDMA's growing popularity nationwide. He refers to a survey at the University of Colorado at Boulder last spring that showed one of five students had used ecstasy one or more times.

Unlike LSD, ecstasy does not produce hallucinations or out-of-body sensations — oddly, as one Boulder psychologist described it, a feeling of discovery and "a deeper level of truthfulness."

Five deaths have been linked to the drug, most of them from overdoses that induced heart arrhythmia in people with untreated heart disease. At drug abuse centers, therapists say people who have overdosed on MDMA suffer psychosis, paranoia, elevated blood pressure, nausea, blurred vision and dehydration. And ecstasy has its more subtle temporary side effects. After a night of "X-ing," users have been known to wake up to a hangover — headaches, a dry mouth and depression.

"Not everyone within the scientific community is interpreting the monkey study findings the same way. That includes Rick Dobbin, president of the Multi-Disciplinary Association for Psychedelic Studies, a non-profit group in Sarasota, Fla., that is funding much of Postma's and Peroutka's research.

"People are getting the impression that when they take MDMA there is a risk of permanent brain damage, and no one has ever found that," Dobbin says. "It is not a toxic drug."

In the study, Dobbin says, the monkeys that showed the largest drop in serotonin received ecstasy by injection, rather than orally. The injections, he says, proved to be twice as toxic as oral doses, the most popular method of taking MDMA. "That is doubly illegal on the streets. For

therefore, for weeks after the monkeys received ecstasy, the only behavioral side-effects exhibited by the primates was a loss of appetite."

Dobbin says the reduction of serotonin levels in the monkeys tested was disturbing, but that the long-term effect wasn't as significant as the researchers claim.

When asked for study 15 months later, monkeys that had been given ecstasy by injection had regained half their normal serotonin levels.

But Dobbin says his organization wants ecstasy reformulated on the federal government's dangerous drugs list so that it may be used for research and therapy, says another study being funded by MAPS should prove more relevant.

That study involves the observation of 29 monkeys who have admitted using MDMA repeatedly for the past five years. The volunteers, who range in age from their early 20s to 70s, have agreed to return every few months to analyze their spin fluids to detect whether MDMA use is affecting their serotonin levels.

"If people in the study have not used MDMA at average of 60 times and some of them are exhibiting any neurological complications," Dobbin says.

At the University of Colorado in Boulder, Bill Olson, director of the drug and alcohol program at the Wardenburg Student Health Center, says he has received "several calls" from students who want more information about the monkey study. But unless researchers can directly link MDMA to toxic brain damage in humans, he says ecstasy is likely to remain a popular underground "party drug."

Olson spearheaded the CU survey of ecstasy use last summer. According to the survey, ecstasy ranks fifth in drug popularity among Boulder students, who listed alcohol and no. 1, followed by marijuana, psychedelic mushrooms and cocaine.

"We're still in the honeymoon phase with ecstasy," Olson says. "People have been using it for two years and only now are we seeing the trouble it brings."

Partly because the drug's popularity has grown since its outlawed in Boulder, Olson says, it is the expert who disagrees with the Federal Drug Enforcement Administration's ban on use of ecstasy for research. "I have some mixed feelings on this. Obviously banning this drug hasn't curtailed its use," Olson says.

Harvard University drug researcher Dr. Lester Grinspoon advocates placing MDMA on the DEA's Schedule III list, which would put street use but would make the drug available for testing.

"Every psychologist who's experimented with this drug will tell you it has a very interesting potential as a psychotherapeutic catalyst," Grinspoon says. "But it hasn't been studied thoroughly. We don't have to be afraid of it."

Dr. Daniel Goldstein, a Denver toxicologist and specialist in pharmacology, takes a more conservative stance.

"This has all the hallmarks of a miracle drug that if it were ever released into the market it could destroy the market for other drugs," Goldstein says. "There is absolutely no scientific data reporting its effectiveness as a psychotherapeutic agent. All we have are testimonials."

He also questions the drug's non-addictive classification. "All drugs with amphetamine-like properties represent significant addiction problems," he says.

Joseph Wagnon, Rocky Mountain News. The Rocky Mountain News is a morning newspaper in Denver, Colorado, that covers local news, sports, and entertainment. It was founded in 1926 and is owned by the Hearst Corporation. The newspaper is known for its investigative reporting and coverage of important issues affecting the western United States. It is one of the largest-circulation daily newspapers in the Rocky Mountain region. The paper is known for its investigative reporting and coverage of important issues affecting the western United States. It is one of the largest-circulation daily newspapers in the Rocky Mountain region.