



NATIONAL DRUG AND
ALCOHOL RESEARCH CENTRE

ECSTASY STUDY IDENTIFIES POTENTIALLY LETHAL COMBINATION

For release: 12 October 2004

Some ecstasy users are using a variety of pharmaceutical drugs to increase the effect of ecstasy or to combat the negative effects of the drug a new study released today has found. The results suggest that some of these combinations are potentially lethal and could result in 'serotonin syndrome'.

About 25% of a sample of ecstasy users had deliberately taken a pharmaceutical substance to increase the euphoric effects of, or recovery from, ecstasy use. Viagra and benzodiazepines were the most commonly used pharmaceutical substances, the former almost always used for sexual purposes and the latter for their calming properties. Anti-depressant medications were also commonly used by this sub-group of people, as many of those interviewed believed that they were beneficial in increasing the strength of the ecstasy 'high' and/or in assisting with the 'comedown' period.

The survey conducted by the National Drug and Alcohol Research Centre at the University of New South Wales and funded by the Australian Government Department of Health and Ageing interviewed 216 ecstasy users, the majority of whom were from the Sydney metropolitan area.

Those who reported using pharmaceuticals were significantly more likely to be male, had more reported years of use and were more likely to have injected ecstasy and related drugs.

The mixing of ecstasy with other drugs that act on serotonin is a topic that urgently needs addressing explained Mr Paul Dillon, one of the investigators of the study. Serotonin is a neurotransmitter that is released when ecstasy is taken. The functions of serotonin are numerous and appear to involve control of appetite, sleep, memory and learning, temperature regulation, mood, behavior (including sexual behavior), cardiovascular function, muscle contraction, and depression. Many other substances, most particularly antidepressants, also act on serotonin.

"Using ecstasy with other substances that act on serotonin is of great concern, as this practice can result in dangerously high levels of serotonin and bring about the potentially fatal condition known as 'serotonin syndrome'," said Mr Dillon. "Serotonin syndrome is a toxic condition which can be fatal and death can occur very rapidly. The syndrome's rate of incidence is unknown, but appears to be on

the rise, particularly since the 1960s when a larger range of drugs directly affecting serotonin began to be used more often.”

The symptoms of the serotonin syndrome are: euphoria, drowsiness, sustained rapid eye movement, overreaction of the reflexes, rapid muscle contraction and relaxation in the ankle causing abnormal movements of the foot, clumsiness, restlessness, feeling drunk and dizzy, muscle contraction and relaxation in the jaw, sweating, intoxication, muscle twitching, rigidity, high body temperature, mental status changes were frequent (including confusion and hypomania - a "happy drunk" state), shivering, diarrhoea, loss of consciousness and death.

“This study suggests the need for particular harm reduction messages around serotonin syndrome for this high-risk group,” said Mr Dillon. “Particular attention needs to be given to informing users of the potentially fatal outcome that is likely to arise from the combinations of these groups of drugs.”

“We also need to address where young people are accessing these substances. The most common source of these pharmaceuticals was from friends and this study has raised a number of concerns for primary health care practitioners and pharmacists around the diversion of these products.”

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For further information contact Paul Dillon

9385 0226 (W)
0419 402 099 (M)