

NIIDA INFOFACTS

www.drugabuse.gov

National Institute on Drug Abuse • National Institutes of Health • U.S. Department of Health & Human Services

Club Drugs

MDMA (ecstasy), Rohypnol, GHB, and ketamine are among the drugs used by teens and young adults who are part of a nightclub, bar, rave, or trance scene. Raves and trance events are generally night-long dances, often held in warehouses. Many who attend raves and trances do not use drugs, but those who do may be attracted to their generally low cost, and to the intoxicating highs that are said to deepen the rave or trance experience. Current science, however, is showing changes to critical parts of the brain from use of these drugs.

Although national rates for hospital emergency department (ED) mentions of club drugs were low in 2002 (with none exceeding 2 mentions per 100,000 population) and no increases were measured from 2001 to 2002, significant increases in certain club drug mentions were apparent from 1995 to 2002. MDMA ED mentions, for example, increased from 421 in 1995 to 4,026 in 2002; and GHB ED mentions increased from 145 in 1995 to 3,330 in 2002.*

MDMA (Ecstasy) —————

MDMA (3-4 methylenedioxymethamphetamine) is a synthetic, psychoactive drug

chemically similar to the stimulant methamphetamine and the hallucinogen mescaline. Street names for MDMA include "ecstasy," "XTC," and "hug drug." Drug use data sources for 21 metropolitan areas nationwide indicate that MDMA, once used primarily as a club drug, is being used in a number of other social settings.** In high doses, MDMA can interfere with the body's ability to regulate temperature. This can lead to a sharp increase in body temperature (hyperthermia), resulting in liver, kidney, and cardiovascular system failure. Because MDMA can interfere with its own metabolism (breakdown within the body), potentially harmful levels can be reached by repeated drug use within short intervals.

Research in humans suggests that chronic MDMA use can lead to changes in brain function, affecting cognitive tasks and memory. MDMA can also lead to symptoms of depression several days after its use. These symptoms may occur because of MDMA's effects on neurons that use the chemical serotonin to communicate with other neurons. The serotonin system plays an important role in regulating mood, aggression, sexual activity, sleep, and sensitivity to pain. In addition, users of MDMA face many of the same risks as

users of other stimulants such as cocaine and amphetamines.

Research in animals links MDMA exposure to long-term damage to serotonin neurons. A study in nonhuman primates showed that exposure to MDMA for only 4 days caused damage of serotonin nerve terminals that was evident 6 to 7 years later. While similar neurotoxicity has not been definitively shown in humans, the wealth of animal research indicating MDMA's damaging properties suggests that MDMA is not a safe drug for human consumption.

According to the Monitoring the Future*** (MTF) survey, NIDA's annual survey of drug use and associated attitudes among the Nation's 8th-, 10th-, and 12th-graders, 10th-graders reported a significant decrease in lifetime**** MDMA use in 2004; a significant increase in perceived harmfulness associated with using MDMA occasionally; and an increase in disapproval of taking it once or twice. Twelfth-graders also reported a significant increase in disapproval associated with taking MDMA once or twice. All three grades surveyed reported a significant decrease in perceived availability of the drug.

Another national survey, the National Survey on Drug Use and Health***** (NSDUH), reported a significant decrease in lifetime and annual use of ecstasy

among youths aged 12 to 17. NSDUH also measured a drop in new MDMA users between 2001 and 2002 among persons aged 12 and older. Young adults aged 18 to 25 reported a decrease in MDMA annual and 30-day use in 2003.

GHB, Ketamine, and Rohypnol ———

GHB and Rohypnol are predominantly central nervous system depressants. Because they are often colorless, tasteless, and odorless, they can be added to beverages and ingested unknowingly.

These drugs emerged several years ago as "date rape" drugs.***** Because of concern about their abuse, Congress passed the "Drug-Induced Rape Prevention and Punishment Act of 1996" in October 1996. This legislation increased Federal penalties for use of any controlled substance to aid in sexual assault.

GHB

Since about 1990, GHB (gamma hydroxybutyrate) has been abused in the U.S. for its euphoric, sedative, and anabolic (body building) effects. It is a central nervous system depressant that was widely available over-the-counter in health food stores during the 1980s and until 1992. It was purchased largely by body builders to aid in fat reduction and muscle building. Street names include "liquid ecstasy,"

“soap,” “easy lay,” “vita-G,” and “Georgia home boy.”

Coma and seizures can occur following abuse of GHB. Combining use with other drugs such as alcohol can result in nausea and breathing difficulties. GHB may also produce withdrawal effects, including insomnia, anxiety, tremors, and sweating. GHB and two of its precursors, gamma butyrolactone (GBL) and 1,4 butanediol (BD) have been involved in poisonings, overdoses, date rapes, and deaths.

Ketamine

Ketamine is an anesthetic that has been approved for both human and animal use in medical settings since 1970; about 90 percent of the ketamine legally sold is intended for veterinary use. It can be injected or snorted. Ketamine is also known as “special K” or “vitamin K.”

Certain doses of ketamine can cause dream-like states and hallucinations. In high doses, ketamine can cause delirium, amnesia, impaired motor function, high blood pressure, depression, and potentially fatal respiratory problems.

Rohypnol

Rohypnol, a trade name for flunitrazepam, belongs to a class of drugs known as benzodiazepines. When mixed

with alcohol, Rohypnol can incapacitate victims and prevent them from resisting sexual assault. It can produce “anterograde amnesia,” which means individuals may not remember events they experienced while under the effects of the drug. Also, Rohypnol may be lethal when mixed with alcohol and/or other depressants.

Rohypnol is not approved for use in the United States, and its importation is banned. Illicit use of Rohypnol started appearing in the United States in the early 1990s, where it became known as “rophies,” “roofies,” “roach,” and “rope.”

Abuse of two other similar drugs appears to have replaced Rohypnol abuse in some regions of the country. These are clonazepam, marketed in the U.S. as Klonopin and in Mexico as Rivotril, and alprazolam, marketed as Xanax. Rohypnol, however, continues to be a problem among treatment admissions in Texas along the Mexican border.

For more science-based information on MDMA and other club drugs, visit www.ClubDrugs.org, www.Teens.drugabuse.gov, and www.BacktoSchool.drugabuse.gov; or call the National Clearinghouse for Alcohol and Drug Information at 1-800-729-6686.

* The latest data on drug abuse-related hospital emergency department (ED) visits are from the 2002 Drug Abuse Warning Network (DAWN) report, from HHS's Substance Abuse and Mental Health Services Administration. These data are from a national probability survey of 437 hospital EDs in 21 metropolitan areas in the U.S. during the year. For detailed information from DAWN, visit www.samhsa.gov/statistics/statistics.html, or call the National Clearinghouse for Alcohol and Drug Information at 1-800-729-6686.

** Community Epidemiology Work Group (CEWG) researchers meet twice yearly to share emerging trends in drug abuse for 21 major U.S. metropolitan areas. This report was based on data published in the CEWG Advance Report for December 2003. CEWG reports are on NIDA's Web site at www.drugabuse.gov.

*** These data are from the 2004 Monitoring the Future Survey, funded by the National Institute on Drug Abuse, National Institutes of Health, DHHS, and conducted by the University of Michigan's Institute for Social Research. The survey has tracked 12th-graders' illicit drug use and related attitudes since 1975; in 1991, 8th- and 10th-graders were added to the study. The latest data are online at www.drugabuse.gov.

**** "Lifetime" refers to use at least once during a respondent's lifetime. "Annual" refers to an individual's drug use at least once during the year preceding their response to the survey. "30-day" refers to an individual's drug use at least once during the month preceding their response to the survey.

***** The 2003 NSDUH, produced by HHS's Substance Abuse and Mental Health Services Administration, creates a new baseline for future national drug use trends. The survey is based on interviews with 67,784 respondents who were interviewed in their homes. Not included in the survey are persons in the active military, in prisons, or other institutionalized populations, or who are homeless. Findings from the 2003 National Survey on Drug Use and Health are available online at www.DrugAbuseStatistics.samhsa.gov.

***** Also known as "drug rape," "acquaintance rape," or "drug-assisted" assault.