

Drug Intelligence Brief



DRUG ENFORCEMENT ADMINISTRATION
INTELLIGENCE DIVISION

February 2000

AN OVERVIEW OF CLUB DRUGS

Overview

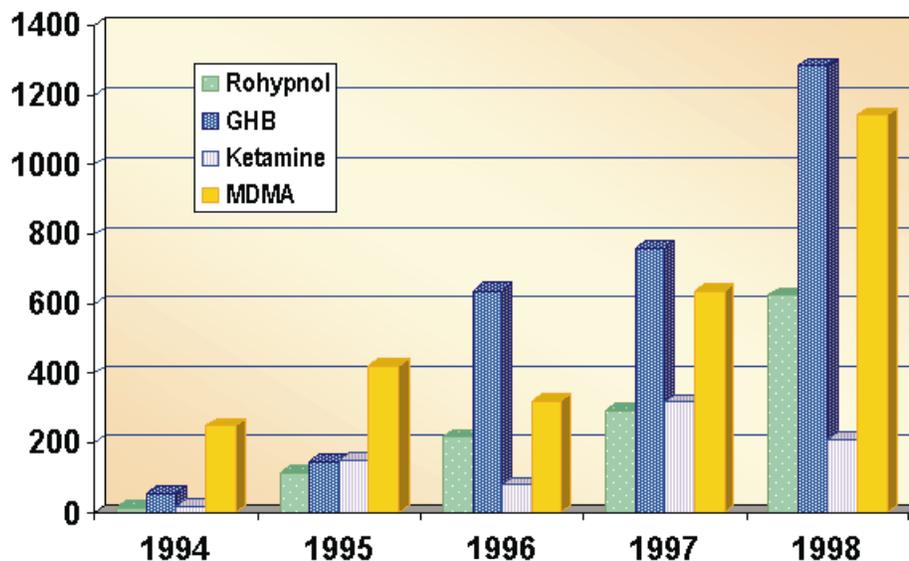


MDMA tablets

"Club Drugs" is a general term for a number of illicit drugs, primarily synthetic, that are most commonly encountered at nightclubs and "raves." The drugs include MDMA, Ketamine, GHB, GBL, Rohypnol, LSD, PCP, methamphetamine, and, to a lesser extent, cocaine and psilocybin mushrooms. The drugs have gained popularity primarily due to the false perception that they are not as harmful, nor as addictive, as mainstream drugs such as heroin.

One of the dangers associated with this emerging drug market is that drug quality may vary significantly, and substitute drugs often are sold when suppliers are unable to provide the drug currently in demand. This has been a significant problem with Rohypnol, because the illicit supply has been limited and any number of "look-alike" pharmaceutical products could be sold in its place. Since club drug users usually do not have a steady distribution network to depend upon, they unwittingly risk taking dangerous combinations of drugs. Not only can this lead to a greater risk of drug overdose, the lack of knowledge regarding what drug was ingested can complicate the task of emergency response personnel.

Estimated Emergency Room Mentions for Selected Club Drugs



Source: DAWN

Reports from the Drug Abuse Warning Network (DAWN) indicate that the use of club drugs, most notably the synthetic ones, is increasing significantly. The number of nationwide hospital emergency room mentions, particularly those involving MDMA and GHB, have more than quadrupled from 1994 to 1998.

This report provides an overview of the drugs primarily encountered at raves and nightclubs, with a discussion of the drug sources, pharmacological effects, prices, and scheduling.

MDMA (3, 4-methylenedioxymethamphetamine)

Street Names: Ecstasy, XTC, E, X, and Adam

Primarily illicitly manufactured in and trafficked from Europe, MDMA is the most popular of the club drugs. DEA reporting indicates widespread abuse of this drug within virtually every city in the United States. Although it is primarily abused in urban settings, abuse of this substance also has been noted in rural communities. Prices in the United States generally range from \$20 to \$30 per dosage unit; however, prices as high as \$50 per dosage unit have been reported in Miami.



MDMA tablets in various forms

The drug is a synthetic, psychoactive substance possessing stimulant and mild hallucinogenic properties. Known as the "hug drug" or "feel good" drug, it reduces inhibitions and produces feelings of empathy for others, the elimination of anxiety, and extreme relaxation. In addition to chemical stimulation, the drug reportedly suppresses the need to eat, drink, or sleep. This enables club scene users to endure all-night and sometimes 2 to 3 day parties. MDMA is taken orally, usually in tablet form, and its effects last approximately 4 to 6 hours. Often taken in conjunction with alcohol, the drug destroys both dopamine and serotonin cells in the brain. Taken at raves, the drug often leads to severe dehydration and heat stroke, since it has the effect of "short-circuiting" the body's temperature signals to the brain. An MDMA overdose is characterized by a rapid heartbeat, high blood pressure, faintness, muscle cramping, panic attacks, and in more severe cases, loss of consciousness or seizures. One of the side effects of the drug is jaw muscle tension and teeth grinding. As a consequence, MDMA users will often use pacifiers to help relieve the tension. The most critical, life-threatening response to MDMA is hyperthermia or excessive body heat. Recent reports of MDMA-related deaths were associated with core body temperatures ranging from 107 to 109 degrees Fahrenheit. Many rave clubs now have cooling centers or cold showers designed to allow participants to lower their body temperatures.

The long-term effects of MDMA are still under evaluation; however, research by the National Institute of Mental Health in Bethesda, Maryland, in 1998 directly measured the effects of the drug on the human brain. The study revealed that the drug causes damage to the neurons (nerve cells) that utilize serotonin to communicate with other neurons in the brain, and that recreational MDMA users risk permanent brain damage that may manifest itself in depression, anxiety, memory loss, learning difficulties, and other neuropsychiatric disorders.

MDMA is a Schedule I drug under the Controlled Substances Act (CSA).

Ketamine

Street Names: *K, Special K, and Cat Valium*

Marketed as a dissociative general anesthetic for human and veterinary use, the only known source of ketamine is diverted pharmaceutical products. Recent press reports indicate a significant number of veterinary clinics are being robbed specifically for their ketamine stock. Ketamine liquid can be injected, applied to smokable material, or consumed in drinks. The powdered form is made by allowing the solvent to evaporate, leaving a white or slightly off-white powder that, once pulverized, looks very similar to cocaine. The powder can be put into drinks, smoked, or injected. Prices average \$20 per dosage unit.



Liquid Ketamine in its original pharmaceutical packaging

Ketamine produces physical effects similar to phencyclidine (PCP), with the visual effects of LSD. Users report that it is better than PCP or LSD, because the trip lasts an hour or less. Low doses of the drug produce an experience called "K-Land," a mellow, colorful "wonder world." Higher doses produce an effect referred to as "K-Hole," an "out of body," or "near-death" experience. Use of the drug can cause delirium, amnesia, depression, long-term memory and cognitive difficulties, and fatal respiratory problems. Due to its disassociative effect, it is reportedly used as a date-rape drug.

Ketamine was placed on Schedule III of the CSA on August 12, 1999.

GHB (Gamma Hydroxybutyrate)

Street Names: *Liquid Ecstasy, Soap, Easy Lay, Georgia Home Boy, Grievous Bodily Harm, Liquid X, and Goop*

GHB is a central nervous system depressant that was banned by the FDA in 1990. Originally sold in health food stores, GHB was marketed as a releasing agent for growth hormones that would stimulate muscle growth. GHB is easily produced by combining Gamma Butyrolactone (GBL) with either sodium hydroxide or potassium hydroxide in a cooking pot or bucket. The chemicals give off heat as they react, and the final product does not have to be isolated or separated from the solution.

Internet recipes warn prospective chemists to closely monitor the pH level of the solution. Several companies advertise kits for sale over the Internet that provide the customer with GBL, sodium hydroxide, and litmus paper. Since the drug is easy to synthesize and manufacture, distribution is handled by local operators.



Highly soluble GHB is often added to spring water or concealed in mouthwash bottles.

At lower doses, GHB causes drowsiness, dizziness, nausea, and visual disturbances. At higher dosages, unconsciousness, seizures, severe respiratory depression, and coma can occur. Overdoses usually require emergency room treatment, including intensive care for respiratory depression and coma. As of January 2000, DEA documented 60 GHB-related deaths.

GHB generates feelings of euphoria and intoxication. Some users also report that it is an aphrodisiac. It is often used as a chemical method of counteracting the stimulant effect of MDMA. GHB is primarily available in liquid form, although it is sometimes encountered as a powder. It is highly soluble, and is often added to spring water or concealed in mouthwash bottles. Due to its salty taste, flavorings are often added, and it is sometimes passed off as a high-carbohydrate health drink. GHB is usually sold by the capful, and sells for \$5 to \$10 per cap. GHB is often added to alcohol, which enhances its effect and increases the potential for respiratory distress. Although it is not the primary reason for its abuse, GHB has been used in the commission of sexual assaults, because it renders the victim incapable of resisting, and may cause memory problems that could complicate case prosecution.

On February 18, 2000, President Clinton signed the Hillary J. Farias and Samantha Reid Date-Rape Prohibition Act of 2000. This legislation makes GHB a Schedule I drug under the CSA.

GBL (Gamma Butyrolactone)

GBL is a chemical used in many industrial cleaners, and is the precursor chemical for the manufacture of GHB. Several Internet businesses offer kits that contain GBL and the proper amount of sodium hydroxide or potassium hydroxide, along with litmus paper and direc-



Blue Nitro and Renewrient, liquid and pill form, have been removed from the market.



tions for the manufacture of GHB. The process is quite simple, and does not require complex laboratory equipment. The kits sell from \$48 to \$200. As with GHB, GBL can be added to water and is nearly undetectable.

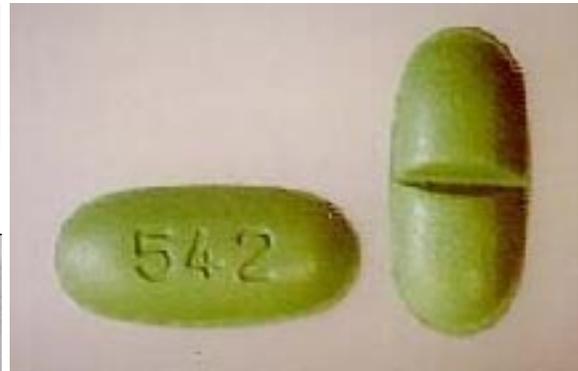
In addition to its industrial applications, GBL has been marketed as a health supplement. The products that contained GBL, such as Longevity, Revivarant, G.H. Revitalizer, Gamma G, Blue Nitro, Insom-X, Remforce, Firewater, and Invigorate, have been removed from the market. However, many of the products were re-introduced under new names, utilizing 1,4 butanediol (BD) as a replacement for GBL. BD is synthesized by the body to produce GHB.

GBL also is synthesized by the body to produce GHB. As a consequence, some partygoers drink small quantities of GBL straight. This often causes a severe physical reaction, usually through the violent regurgitation of the fluid. These chemicals increase the effects of alcohol, and can cause respiratory distress, seizures, coma, and death.

GBL became a List I chemical on February 18, 2000. BD is not scheduled under Federal guidelines.

Rohypnol (Flunitrazepam)
Street Names: Roofies, Rophies, Roche, Forget-me Pill, Circles, Mexican Valium, Rib, Roach-2, Roopies, Rope, Ropies, Ruffies, and Roaches

Most commonly known as a date-rape drug, Rohypnol continues to be popular among young adults at raves. The drug is readily available at clubs and raves, and reportedly has become extremely popular at gay clubs.



(Left) The original Rohypnol pills and packaging. **(Above)** The new Rohypnol tablet which includes a dye that would make the drug visible if slipped into a drink.

Rohypnol is marketed by Hoffman - La Roche Inc., and is legally sold in Latin America and Europe as a short-term treatment for insomnia, and as a preanesthetic medication. One of the significant effects of the drug is anterograde amnesia, a factor that strongly contributed to its inclusion in the Drug-Induced Rape Prevention and Punishment Act of 1996. It is available as a .5-milligram and 1-milligram oblong tablet, as well as a 1-milligram per milliliter injectable solution. Roche Pharmaceuticals phased out the 2-milligram dose tablet from 1996 to 1997, and is phasing out the round, white 1-milligram tablet. The licit market for the drug is currently supplied with a 1-milligram dose in an olive green, oblong tablet, imprinted with the number 542. The new tablet includes a dye which, according to Hoffman - La Roche, will be visible if it is slipped into a drink.

Rohypnol usually is smuggled into the United States by way of the mail or delivery services. Although Rohypnol smuggling has not reached the scale of MDMA trafficking, DEA has investigated several large-scale smuggling operations. Texas and Florida have the most significant activity, and several packages seized in Miami containing up to 11,000 dosage units were shipped from Cali, Colombia. Reports indicate that it is often sold for \$5 or less per dosage unit, although it may sell for \$10 to \$20 per dosage unit.

In addition to the chemically induced amnesia, Rohypnol often causes decreased blood pressure, drowsiness, visual disturbances, dizziness, confusion, gastrointestinal disturbances, and urinary retention. Users of the drug report effects similar to intoxication, yet claim that they wake up the next morning without a hangover. Adding to the popularity of the drug is the perception that the drug cannot be detected in a urinalysis. While the drug can be detected (2-milligram doses can be detected within 72 hours of ingestion), it does break down very quickly, and many commercial toxicological screens do not detect flunitrazepam. In sexual assault cases, forensic laboratories need to screen for the flunitrazepam metabolite, 7-amino-flunitrazepam, using gas chromatography and/or mass spectrometry.

Rohypnol is a Schedule IV drug under the CSA.

LSD (d-lysergic acid diethylamide)

Street Names: Acid, Boomers, Yellow Sunshines, Cid, Doses, and Trips

LSD is a powerful hallucinogenic compound that is readily available at concerts and raves. Manufacture of the drug is controlled tightly by California organizations, although reports suggest that there may be some localized production with limited distribution networks around the country. LSD generally sells for \$4 or \$5 per dosage unit, although some DEA field divisions report prices as low as \$1, and as high as \$10.

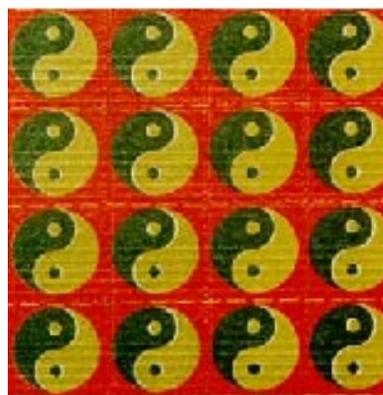
LSD manufacturing is a time-consuming, complex chemical process. Although the recipe is available on the Internet, a solid background in chemistry is essential. The primary precursor chemicals are either ergotamine tartrate or lysergic acid amide. Lysergic acid and lysergic acid amide are both Schedule III chemicals, and ergotamine tartrate is a List I chemical under the Chemical Substance Act.

Although the synthesis of LSD does not require a large quantity of precursor chemicals, the difficulty in obtaining precursors serves to limit the number of independent manufacturers. Pure LSD is a clear or white, odorless crystalline material that is water-soluble. Liquid LSD is primarily associated with mid-level distribution. LSD in liquid or crystal form generally is sold in plastic film canisters or, occasionally, in small, opaque plastic bottles to prevent oxidation. Liquid LSD is mixed with a binding agent and pressed into pills ("microdots" that are only 3/32 of an inch or smaller); distributed in thin squares of gelatin ("window panes"); distributed in breath mint vials and treated sugar cubes; or dissolved and diluted and applied to blotter paper. Since variations in the manufacturing of LSD may result in an off-white color, the finished product is often applied to off-white, tan, or yellow paper with colorful designs to mask the impurities. The most common method of distributing LSD is blotter paper, and there may be as many as 80 street names for the drug, based upon the designs on the papers.

LSD potency varies between 20 to 80 micrograms per dosage unit, considerably lower than the 100 to 300 microgram or higher dosages encountered in the late 1960s. High dosages of LSD often resulted in harmful reactions, or "bad trips." The lower potency of today's LSD may be the reason for lower LSD-related emergency room visits, and may also account for the drug's continued popularity.

In addition to hallucinations, LSD users may experience panic, confusion, suspicion, and anxiety. Flashbacks can occur even after the user has stopped taking the drug. Most users of LSD voluntarily decrease or stop using it over time, since it does not produce the same compulsive, drug-induced behavior of cocaine and heroin.

LSD is listed as a Schedule I drug under the CSA.



Examples of LSD on blotter paper. Each has its own street name based upon the paper's design.

Methamphetamine

Street Names: Speed, Ice, Chalk, Meth, Crystal, Crank, Fire, and Glass

Methamphetamine has emerged as an alternative to MDMA at clubs and raves. Traditionally considered the “poor-man’s” cocaine, methamphetamine is a central nervous system stimulant. Once under the exclusive control of outlaw motorcycle gangs, the majority of the methamphetamine is produced in large clandestine laboratories in Mexico and California, and shipped across the country in cars and trucks. A significant quantity also is produced by independent laboratory operators (“mom and pop” laboratories), particularly in the Midwest. While the drug remains a concern in the West, Southwest, and Midwest regions of the country, there are strong indications that the drug’s impact is moving through the Southeast and Northeast. While not as popular as some of the other synthetic drugs associated with clubs and raves, methamphetamine could make its impact felt in the urban environments of these areas. Prices for methamphetamine vary greatly across the country, but generally range from \$80 to \$125 per gram, and \$1000 to \$2000 per ounce.



Methamphetamine crystals

Methamphetamine is a white, odorless, bitter-tasting, soluble crystalline powder. Methamphetamine abuse can lead to memory loss, aggressive behavior, violence, psychotic and paranoid behavior, and potential cardiac and neurological damage. Methamphetamine is neurotoxic, and users may suffer a significant reduction in dopamine transporters. If methamphetamine is supplied by small-scale, amateur laboratory operators, there is a strong possibility that the drug may contain toxic chemical adulterants.

Methamphetamine can be smoked, snorted, injected, or orally ingested. The injection of methamphetamine can contribute to higher rates of infectious disease, especially hepatitis, HIV, and AIDS. At least three DEA investigations uncovered the use or attempted acquisition of pill-presses to convert methamphetamine powder into pill form. While this is not indicative of a general trend, there is a strong likelihood that this may become the preferred method of distributing methamphetamine. Generally, club drug users already use drugs that are in pill form, and wish to avoid the stigmas that come with the use of drugs such as cocaine and heroin (intravenous injections, track marks, etc.).

Methamphetamine is a Schedule I drug under the CSA.

PCP (Phencyclidine)

Street Names: Angel Dust, Crystal, Hog, Supergrass, Killer Joints, Ozone, Wack, Embalming Fluid, and Rocket Fuel.

PCP is a clandestinely manufactured hallucinogen. The chemicals required to manufacture the drug are readily available and inexpensive. Moreover, the production process is relatively simple and requires very little laboratory equipment. Manufacture of the drug primarily remains under the control of Los Angeles-based street gangs.



PCP in both crystalline form and a vial of PCP dissolved in water

In its pure form, PCP is a white crystalline powder that is readily dissolved in water or pressed into tablets. Most PCP contains contaminants from its makeshift manufacture, resulting in a color ranging from tan to brown, while its consistency ranges from crystalline powder to a gummy mass. PCP tablets sell from \$5 to \$15 each, while vials sell for \$1 to \$3 each. Dipped cigarettes reportedly sell for \$20 each.

PCP usually is sprayed onto a leafy material and smoked, or is used to adulterate commercially manufactured cigarettes. While reports of PCP abuse in nightclubs and raves are not widespread, its ready availability and the club drug culture may set the stage for another resurgence of the drug.

PCP is a Schedule II drug under the CSA.

Nexus (2-(4-Bromo-2,5-dimethoxy-phenyl)-ethylamine)

Street Names: *Venus, Bromo, Nexus, 2CB, Spectrum, BDMPEA, Toonies, and MFT.*

Although reports of Nexus abuse are sporadic, this drug could emerge as a significant drug in the rave culture. Reports indicate that it has become popular in Germany and Switzerland, and its effects (enhancement of visual and auditory perception, increased sexual desire, and heightened senses of taste and touch) may appeal to the U.S. rave culture. The drug was legally available in South Africa, and much of the trafficking of the drug originated from there; however, reports now indicate that it is clandestinely manufactured in the Netherlands. The Washington Field Division reports that Nexus has been seized by DEA Richmond, and that the drug is starting to appear in clubs in Washington, DC.



Nexus

Nexus is generally available in pill, capsule, or powder form. It is ten times more powerful than MDMA with a typical dosage unit ranging from 5 to 10 milligrams. The drug does have some serious side effects, including confusion, cardiovascular disturbances, and dehydration. No price data are available at this time.

Nexus is a Schedule I drug under the CSA.

Psilocybin Mushrooms

Street Name: *Shrooms, Mushies, and Mexican Magic Mushrooms*

Although they are not as popular as the synthetic drugs, psilocybin mushrooms are encountered at raves, clubs and increasingly on college campuses. Due to the difficulty in growing and storing mushrooms, suppliers are usually independent operators who distribute their product locally. Prices for mushrooms vary, but generally cost \$20 per 1/8 ounce, and \$100 to \$120 per ounce.

Mushrooms can be ingested alone or in combination with alcohol or illegal drugs. The mushrooms can be soaked or boiled in water to make tea, and often are



Psilocybin Mushrooms

cooked and added to other foods to mask their bitter taste. Although mushroom potency varies, they generally contain .2% to .4% psilocybin, and only a trace amount of psilocyn. Both chemicals can be manufactured, but there is no DEA reporting at this time that indicates that this is taking place. Psilocybin is broken down by the body to produce psilocyn, which may be the source of the mind-altering effects of the drug. The physical effects of the mushrooms appear within 20 minutes of ingestion, and last approximately 6 hours. These effects include nausea, vomiting, muscle weakness, yawning, drowsiness, tearing, facial flushing, enlarged pupils, sweating, and lack of coordination. Other physical effects include dizziness, diarrhea, dry mouth, and restlessness. Information published on a number of rave Internet sites indicate that while mushrooms are used at clubs, they provide no energy for the dancer, affect coordination, and most users experience profound relaxation and the lack of desire to move.

The psychological and physical effects of the drug include changes to audio, visual, and tactile senses. Colors reportedly appear brighter and users report a crossing of the senses, for example, "seeing a sound" and "hearing a color." Users often report a sense of detachment from their body and a greater feeling of unity with their surroundings. Furthermore, the high is described as a more natural sensation than that supplied by synthetic hallucinogens. A large dose of the drug produces hallucinations and an inability to discern fantasy from reality. This sometimes leads to panic reactions and psychosis. No evidence of physical dependence exists, although tolerance does develop when mushrooms are ingested continuously over a short period of time. Individuals tolerant to LSD also show tolerance to mushrooms.

In one of the more significant trafficking cases, on November 18, 1999, the DEA Medford Oregon, Resident Office, in conjunction with the Federal Bureau of Investigation, the Internal Revenue Service, and state and local law enforcement authorities, reported the seizure of an indoor psilocybin mushroom growing operation. This operation resulted in the seizure of 66 pounds of dried mushrooms and 100 pounds of fresh mushrooms. The investigation revealed that the operator supplied psilocybin mushrooms to Oregon, California, Washington, New York, Nevada, Hawaii, Florida, Vermont, North Carolina, New Mexico, and Canada.

Mushrooms are not scheduled under the CSA, but both psilocybin and psilocyn are Schedule I drugs.

4-MTA (4-methylthioamphetamine)

Street Names (in Europe): Flatliners and Goldeneagle

Reports from England indicate that 4-MTA is appearing in nightclubs in the United Kingdom, and British authorities recently seized 25,000 tablets that probably originated in Holland. As of June 1999, at least 15 overdoses, five of which were fatal, were reported in Europe. The European Union has taken steps to make distribution of the drug illegal. The drug is an amphetamine that serves as a powerful serotonin releasing agent, leading European scientists to believe that it is more deadly than MDMA.

In a report released earlier this year, the Dutch Ecstasy Monitoring Program reported only seven samples of 4-MTA out of 3,900 samples submitted. 4-MTA has not been widely encountered, and anecdotal information from European sources suggests that it has not gained in popularity, because its effects are not as pronounced as MDMA. However, authorities with Britain's National Criminal Intelligence Service believe the drug is making an appearance due to recent police crackdowns on the supply of precursor chemicals for MDMA.

Should the drug achieve popularity in the European market as an alternative to MDMA, there is the potential for a contagion effect in the United States. Since this drug is being supplied as a replacement for MDMA,

there is a possibility that it could also be smuggled to the United States. Although this drug has not yet appeared in the United States, it is quite likely that 4-MTA could be passed along as a counterfeit drug for MDMA.

Conclusion

The use of synthetic drugs has become a popular method of enhancing the club and rave experience, which is characterized by loud, rapid-tempo "techno" music (140 to 200 beats per minute), light shows, smoke or fog, and pyrotechnics. Users of drugs such as MDMA report that the effects of the drug heighten the user's perceptions, especially the visual stimulation. Quite often, users of MDMA at clubs will dance with light sticks to increase their visual stimulation. Legal substances such as Vick's Vapo Rub © are often used to enhance the effects of the drugs.

Raves originated in England and the culture rapidly spread to the United States, along with techno music. Raves are either legal or illegal, the former run by professional promoters with the requisite permits and licenses, while the latter are amateur operations at unapproved sites (such as warehouses or open fields). Attendance can range from less than 100 to several thousand, and admission varies from \$10 to over \$50. Raves often are advertised on the Internet. Advertisements range from simple black and white flyers to elaborate artwork designed to portray the freedom and social awareness that these events espouse. Event attendance is heavily determined by the disk jockeys working the shows.

While these events were not originally intended to serve as a nexus for illicit drug sales, the culture surrounding the events has created a favorable environment for illegal drug trafficking.

This report was prepared by the DEA Intelligence Division, Office of Domestic Intelligence, Domestic Strategic Unit. Comments and requests for copies are welcome and may be directed to the Intelligence Production Unit, Intelligence Division, DEA Headquarters, at (202) 307-8726.



Rave advertisements from various Internet sites.