

GHB

Profile

The chemical gamma-hydroxybutyrate (GHB) is a naturally occurring component of human cells. It is a central nervous depressant that was initially sold and promoted in health food stores to improve physical performance, reduce stress, induce sleep, build muscle, and burn fat. GHB, also known as “G” or “liquid ecstasy,” is now often found and used in social environments, such as parties, clubs, and raves, for its intoxicating, euphoric, and sedative effects. Because of these effects, GHB can be lethal when combined with alcohol or other depressants,¹ and as a result, has been implicated in many cases of ‘date rape’ and also labeled as a ‘club drug.’ These associations may have prompted the federal government in March 2000 to classify GHB as a Schedule I controlled substance, indicating that there no currently accepted medical uses. GHB that is sold and used recreationally is obtained illegally from clandestine labs. Since this makes it difficult to obtain, users often seek out alternative forms of the drug such as GBL (gammabutyrolactone) and BD (1,4 butanediol) – precursors to GHB that are converted to GHB in the human body. These drugs are also called analogues to GHB, which means that they are similar in chemical structure or induce similar effects to a legally controlled substance. Neither GBL nor BD is approved for human consumption, but each has legitimate uses as cleaning and manufacturing chemicals.² In the end, the prevalence and use of GHB, GBL, and BD is hard to estimate, but studies have found that illicit recreational use of these drugs is has been increasing steadily since the mid 1990s.³

History

GHB was synthesized and introduced into medicine in 1960 and in 1963 discovered as a naturally occurring chemical in the human brain.⁴ Throughout much of the 1960’s it was a popular anesthetic, but was abandoned by doctors following discoveries of its poor analgesic effects. In the 1970’s, GHB was recommended for the treatment of narcolepsy, though it was also found to be an ineffective and unpopular form of treatment primarily due to its euphoric side effects.⁵ Use began to intensify in the 1980’s when it was marketed as a fat burner and muscle developer. However, in 1990, based on more than 30 reports of GHB-linked illness, the FDA declared the chemical unsafe and ordered it to be removed from store’s shelves, thus limiting a user’s ability to purchase the product.⁶ Following the FDA ban, many producers of GHB began to switch their ingredients to GBL and BD and sold those drugs as muscle enhancers and sleep aids.⁷ On January 21, 1999, the FDA began to ask manufactures of GBL to stop producing it and to recall products containing GBL because it was never approved for human consumption. Around this same time GHB gained in popularity among ‘party drug’ users for its euphoric and aphrodisiac (a substance that enhances sexual desires) effects.⁸ In March 2000, GHB was federally classified as a Schedule I drug.

Methods of Use

Most illicit GHB is sold in the form of a clear, odorless, nearly tasteless liquid – though it can be somewhat salty tasting. It is often sold or found in a variety of containers such as water bottles, eyedroppers and/or vitamin bottles. Ingestion is usually achieved by mixing the solution with a

beverage, usually water or various alcoholic drinks.⁹ Like other drugs (e.g., ecstasy, marijuana) the chemical composition of GHB is highly variable, and sold in a wide range of concentrations. As a result, there is no definitive way for users to know how strong a particular form of GHB is, thereby increasing the risk of an overdose. Powder forms of GHB are not as prevalent as liquid forms, yet the method of use is nearly identical.

GHB and Date Rape

GHB can be both an odorless, colorless liquid or a white powder. Both forms can be mixed with almost any beverage making it extremely difficult to detect. Because of this people have become victims of date rape after unsuspectingly ingesting GHB slipped into their drinks by an attacker. The effects of GHB – especially when combined with alcohol – can induce blackouts and memory loss that allow sexual predators to more easily facilitate sexual encounters.

Tolerance, Dependence, and Withdrawal

Numerous case studies and research experiments indicate that continued use of GHB could cause a user to develop a tolerance. Also upon cessation of use, users may experience physical and psychiatric withdrawal symptoms. Typical symptoms of withdrawal can include anxiety, tremor, insomnia, confusion, delirium, and hallucinations. Severe withdrawal – and tolerance – may also occur in individuals who use for long periods of time, in high amounts, and with great frequency.¹⁰ Studies also indicate that addiction can be rapid and unexpected, participants who initially considered GHB or GBL a safe supplement transitioned from short-term use to long-term dependence over the course of the experiments.¹¹ Though much of the research has primarily reported on the effects of GHB, abuse patterns of GBL and BD are similar to GHB and should be viewed as such when considering tolerance, dependence, and withdrawal from the drug.¹²

Physical Effects

The time it takes GHB to affect a user will depend on whether or not he or she is using GHB in combination with other drugs – especially alcohol and other depressants. Typically, effects are first felt within 10-20 minutes of the initial ingestion; 45 minutes to 1½ hours later effects begin to level off and the user starts to experience decreasing effects. After-effects like grogginess and sleepiness are felt for as little as two hours or up to twelve hours after use. Physical effects of GHB depend heavily on the dose the user has ingested; in other words, each person will have a different response to each dose level, a trait that furthers the dangerous nature of the drug.

Low doses

- Euphoria
- Decreased inhibitions

High Doses

- Extensive muscle relaxation
- Disorientation
- Sleepiness and lethargy

- Confusion
- Loss of coordination and balance
- Heart rate and respiration lower
- Impaired learning and memory

Overdose

- Headache
- Nausea and vomiting
- Hallucinations
- Seizures
- Amnesia
- Respiratory depression
- Loss of consciousness, coma, and possibly death

Slang Terms

GHB:

GBH, Gamma Oh, Georgia Home Boy, Goop, Great Hormones at Bedtime, Grievous Bodily Harm, Jib, Liquid E, Liquid Ecstasy, Liquid X, Salty Water, Sleep, Soap, Somatmax, Vita G, Growth Hormone Booster

GBL:

Firewater, Lactone, RenewTrient, Revivarant, Blue Nitro, Vitality

Links

- [DEA Briefs and Background: GHB](#)
- [NDIC Information Bulletin: GHB Analogs](#)

¹ O'Connell, T., Kaye, L., and Plosay, J.J. (2000). "Gamma-Hydroxybutyrate (GHB): A Newer Drug of Abuse." *American Family Physician* 62: 2478-82.

² Drug Early Warning System. (2001). "Deciphering the Threat of Analogue Drugs." DEWS News, January 2001 Vol.2, No. 1. Center for Substance Abuse Research, University of Maryland, College Park.

³ Center for Substance Abuse Research. "Highlights from CEWG June 2001 Advanced Report: Heroin Use Spreading to Suburban and Rural Areas; Use of Club Drugs Increasing." *CESAR Fax* September 10, 2001, Vol. 10, Issue 36. University of Maryland, College Park.

⁴ Graeme, K.A. (2000). "New Drugs of Abuse." *Pharmacologic Advances in Emergency Medicine* 18: 625-636.

⁵ Teter, C.J. and Guthrie, S.K. (2001). "A Comprehensive Review of MDMA and GHB: Two Common Club Drugs." *Pharmacotherapy* 21:1486-1513.

⁶ Nordenberg, T. "The Death of the Party: All the Rave, GHB'S Hazards Go Unheeded." *FDA Consumer Magazine March – April 2000*. Retrieved October 18, 2006, from http://www.fda.gov/fdac/features/2000/200_ghb.html.

⁷ Food and Drug Administration. "Alert about Misuse of Consumer Products Containing Gamma Hydroxybutyric Acid (GHB), Gamma Butyrolactone (GBL), and 1,4 Butanediol (BD)." U.S. Department of Health and Human Services. Retrieved October 18, 2006, from <http://www.fda.gov/cder/news/ghb.htm>.

⁸ Dillon, P. and Degenhardt, L. (2001). "Ketamine and GHB: New Trends in Club Drug Use?" *Journal of Substance Abuse* 6:11-15

⁹ Drug Enforcement Administration Briefs and Background. "GHB (gamma hydroxybutyric acid)." Retrieved October 18, 2006, from <http://www.usdoj.gov/dea/concern/ghbp.html>.

¹⁰ Nicholson, K.L. and Balster, R.L. (2001). "GHB: A New and Novel Drug of Abuse." *Drug and Alcohol Dependence* 63: 1-22.

¹¹ McDaniel, C. and Miotto, K.A. (2001). "Gamma Hydroxybutyrate (GHB) and Gamma Butyrolactone (GBL) Withdrawal: Five Case Studies. *Journal of Psychoactive Drugs* 33: 143-49.

¹² McDaniel, C. and Miotto, K.A. (2001).