

Gem State Evaluator

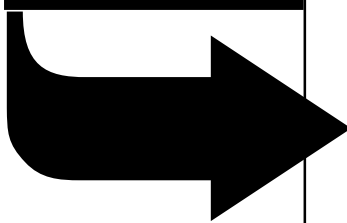
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Gamma Hydroxy Butyrate "GHB"

by Tim Riha, ISP, State Coordinator

GHB is a drug all officers should be aware of. The substance is becoming more and more popular, especially with juveniles and at "rave" parties. I think we will see an increase in usage of this drug in Idaho, mainly because the ingredients are so easily accessible and can be ordered via the Internet. Though we many not have seen a lot of this drug around in the past, it is not a new drug.

Medical studies on GHB were completed back in the early 60's. Researchers were trying to find an anesthetic that wasn't so addictive, like PCP. When they gave GHB to patients, there were many side effects including grand mal seizures. Growth of illicit use started in the 80's and has grown greatly in the 90's. Currently, body builders, teenagers and those that associate with the "club/dance scene", are primary abusers of GHB. It is also becoming more and more popular as a "date rape" drug.

GHB occurs naturally in the human body in minute quantities, so promoters of the drug try to use this as proof the drug is safe. GHB has been studied in Europe and the U.S. and no medical benefit for the drug has been discovered. Illicit uses have been for its euphoric effect, a sleep aid and by body builders. Body builders use GHB to counteract stimulants, or to work out longer and many believe that it stimulates the release of human growth hormone.

GHB is very easily manufactured and as stated before there are many Internet sites that contain the recipe. GHB is manufactured by combining a readily available industrial solvent known as Gammabutyrol Lactone with lye (sodium hydroxide). GHB is most commonly found in a liquid form, however powder and pill forms do exist. GHB in a liquid form is slightly thicker than water and if shaken, bubbles can be seen in the liquid for a short period of time, much like soapy water. Users have also figured out that if they take Gammabutyrol Lactone (GBL) directly, their bodies will convert this to GHB. GBL is used as a degreaser and floor stripper.

The desired effects for users of GHB are a state of relaxation, pleasant drowsiness, mild euphoria, hallucinations and a release of inhibitions. GHB also causes a loss of memory along with the loss of inhibitions, which is the effect the date rapist is after.

GHB is most commonly taken orally. The odorless, colorless liquid has a salty bitter aftertaste and is usually mixed with water, juice or alcoholic beverage to mask the objectionable taste. The powder form of GHB is said to have an odor that resembles mothballs. The doses vary from individual to individual. Doses most commonly range from 1/2 - 3 tsp. And with many abusers the drug is taken every 2-3 hrs. On the street a dose will be described as a "capful." The doses are poured into the cap of the GHB container and sold for \$5-\$10 dollars.

Continued on page 4

Marijuana & Alcohol Combined Increase Impairment

While alcohol is clearly the predominant drug in fatal crashes, marijuana is the next drug most frequently found in crash-involved drivers. Alcohol and marijuana are often found together (See Traffic Techs 57 and 62, 1993 and 1994).

The Institute for Human Psychopharmacology at Maastricht University in the Netherlands has completed the second of a series of studies for the National Highway Traffic Safety Administration (NHTSA) to assess the separate and combined effects of marijuana and alcohol on driving performance in real driving situations. Eighteen subjects between the ages of 20 and 28 who said they smoked marijuana and drank alcohol at least once a month participated in the study. They were all licensed drivers; half were males and half were females.

Each participant was dosed with marijuana alone, alcohol alone, a combination of marijuana and alcohol, or neither. There were two levels of tetrahydrocannabinol (THC, the primary psychoactive ingredient of marijuana, tested: a low dose at THC 100 ug/kg, body weight and a moderate dose at THC 200 ug/kg. A third, marijuana placebo, containing marijuana leaf from which the THC had been removed, was also run. These levels were selected based on an earlier NHTSA study. There were two levels of alcohol tested: an initial alcohol dose sufficient to achieve a blood alcohol concentration (BAC) of about 0.07 g/dl and an alcohol-free placebo. Since alcohol concentration declines with time, booster doses of alcohol were given later in the test to sustain BACs around 0.04 g/dl during testing, well below the per se levels in the United States.

There were two on-road test scenarios. The Road Tracking Test measured a driver's capability to maintain a constant speed of 62 mph (100 km/h) and a steady lateral position between the boundaries of the right traffic lane. The Car Following Test measured drivers' reaction times and

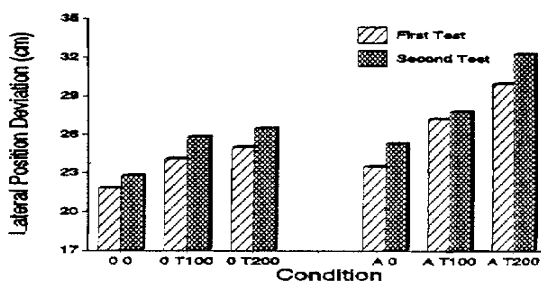
headway variability (distance between vehicles) while driving 164 feet (50 m) behind a vehicle that executed a series of alternating accelerations and decelerations. On a given test evening after dark, participants smoked the marijuana or placebo, and drank the alcohol or placebo, and then waited 30 minutes to begin the driving tests. On a particular evening, they drove each of the two 25 mile long tests on real roads with real traffic twice (first and second repetitions), accompanied by a driving instructor with separate dual controls.

Lateral Position and Time Out of Lane

The graph above shows the average or mean deviation of lateral position during the Road Tracking Test. In practical terms, it's a measure of the composite index of allowed weaving, swerving, and overcorrecting. Failures to keep the vehicle within the boundaries of the lane are shown in the next graph, Time Out of Lane.

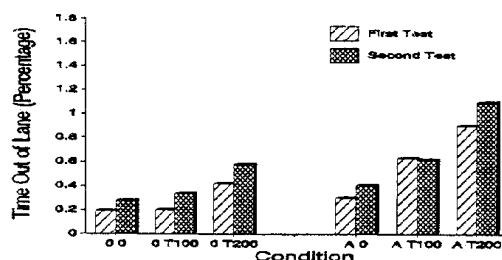
Both THC doses alone, and alcohol alone, significantly impaired performances on both road tests, compared with the baseline (no alcohol, no marijuana). Performance deficits were minor after alcohol and the low THC dose, and moderate after THC 200 ug/kg. Combining marijuana with alcohol, however, severely impaired performance, leading to decrements in performance as great as for driving with BACs at .09 and .14, respectively. These comparisons are based on previous research documenting alcohol induced performance deficits. The percentage of the time a driver spent out of lane increased with the severity of drug effects, until arriving at 1.1 percent after the combination of alcohol and THC 200ug/kg.

Deviations in Lateral Position



0 0 = no alcohol, no THC
 0 T100 = no alcohol, THC 100 µg/kg
 0 T200 = no alcohol, THC 200 µg/kg
 A 0 = alcohol, no THC
 A T100 = alcohol, THC 100 µg/kg
 A T200 = alcohol, THC 200 µg/kg

Time Out of Lane



Reaction Time

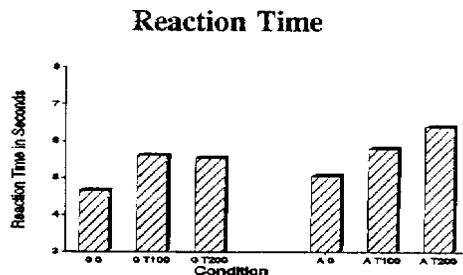
The next graph shows how reaction times increased with each drug or alcohol dose, compared with the baseline (00). With neither THC nor alcohol, the mean reaction time was 4.65 seconds. This is the time it took for an unimpaired driver to begin to initiate a response. Reaction time in-

creased to 6.33 seconds under the combined influence of alcohol and THC 200 ug/kg a 36 percent performance decrement.

Considering that their vehicles were traveling at 59 mph at the time, this delay meant that the vehicle traveled, on average, an additional 139 feet beyond the point where the subjects began to decelerate. Even the lower THC dose, by itself, retarded the subjects' mean reaction time by 0.9 seconds.

Another measure was the average headway, or distance between the lead and following vehicles.

In every drug condition, there was a diminished ability to perceive and/or respond to changes in the relative velocities of other vehicles, and to adjust one's own vehicles' speed accordingly.



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Conclusions

Marijuana, even in low to moderate doses, negatively affects driving performance in real situations. While previous research on alcohol effects alone show that alcohol at BACs around .10 is far more impairing than low or moderate THC doses alone, marijuana does impair driving performance. Drivers would be less than normally able to avoid collisions if confronted with the sudden need for evasive action. The effect of combining moderate doses of alcohol and moderate doses of marijuana resulted in a dramatic performance decrement and levels of impairment, as great as observed when at 0.14 BAC alone.

HOW TO ORDER

For a copy of Marijuana, Alcohol and Actual Driving Performance (39 pages), prepared by the Institute for Human Psychopharmacology, write to the Media and Marketing Division, NHTSA, NT S 400 Seventh Street, S.W., Washington, DC 20590, or send a fax to (202) 493-2062.

Reprinted from Traffic Tech Number 201 June 1999

Provided by Dale Hughes, ISP
Gem State Evaluator, August 1999

DRE FIELD EVALUATIONS

POST has order the latest version of the DRE field evaluations on CD for all DREs. They are expected to be received by the first of September.

Every Idaho DRE will receive a CD.

The CD will also contain instructions on how to access the online manual and download your disk to send the system administration data to POST.

This process may take an adjustment period but in the end, it will bring the Idaho DRE in connection with DREs nationwide.

Continued from page 1

GHB is a depressant. Alcohol, as well as any of the many other depressants, will have an additive effect when taken with GHB. GHB is most often taken in combination with other drugs, particularly alcoholic beverages. Onset of the effects of GHB generally occurs within 10-30 min. after ingestion.

When examining a suspected user of GHB, officers should remember that GHB is most commonly taken with other drugs. GHB alone will cause drowsiness, HGN, VN, LOC, body tremors, slowed breathing, lowered pulse, lowered blood pressure, lowered body temperature, muscle flaccidity, a trance like state, a lack of pupillary reaction to light, and may cause hallucinations. In lower doses the subject may appear agitated, however their pulse and other vital signs will be depressed.

GHB is addicting, producing chemical dependency and tolerance, causing the user to need to take more of the drug in order to attain the desired effects. Users will usually have withdrawal effects when they stop taking the drug.

GHB in Idaho is a Schedule I drug but listed as a non-narcotic. Therefore, according to a local prosecuting attorney, it is a misdemeanor to possess. The under the influence code section omits GHB so it does not apply. The state lab will test for GHB in urine, but it needs to be a requested test. If blood is the only option, then it will have to be contracted out.

There is a lot of information available on GHB. If you have access to the Internet, there are several sites with information about this drug. If you do not have access to the Internet, you can contact me and I'll send you some reference material that I have collected from many different sources. Most of the information contained in this article was taken from a document on GHB written by Sgt. Devin Chase with the Torrance, CA Police Department.

**Don't Forget to Check
out the POST
Website!!!**

www.idaho-post.org

**Other Great DRE
Websites**

LAPD:

www.cityofla.org/lapd/traffic/dre/index.htm

Colorado:

*www.dot.state.co.us/public/
transportationsafety/alcohol/dre.htm*

**QUESTIONS
OR COMMENTS?**

If you would like to contribute an article or other information or have questions or comments regarding this newsletter, please write, call or fax to:

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FLUNITRAZEPAM (Rohypnol) "roofies"

Flunitrazepam is a sedative/hypnotic belonging to the class of drugs called benzodiazepines which includes such familiar drugs as diazepam (Valium), alprazolam (Xanax), chlordiazepoxide (Librium) and triazolam (Triazolam). For many years it has been a drug of abuse in countries where it has been marketed. Over the past five years it has emerged as a drug of abuse in the United States. This abuse has been accompanied by an increase in the illicit distribution of the drug. Flunitrazepam has also emerged as a drug used to aid in committing sexual assaults. As a result of the increased abuse and illegal distribution of flunitrazepam, as well as the use of this drug to aid in committing sexual assault, increased regulatory and criminal control actions on flunitrazepam have been taken both at the federal and state levels. In addition, Hoffmann-La Roche, the principle manufacturer and distributor of flunitrazepam, has also taken steps to reduce the abuse and misuse of flunitrazepam.

Marketing

Flunitrazepam is marketed in more than 70 countries worldwide including countries in Europe, South America, Asia and Africa. It is sold under various trade names and as generic preparations. The most common trade name is Rohypnol by Hoffmann-La Roche Inc. Flunitrazepam is formulated as 0.5, 1.0 and 2.0 mg tablets and as a 2.0 mg/ml injectable solution. Flunitrazepam has never been submitted to the Food and Drug Administration for marketing approval in the United States. As a result it has never been marketed in this country.

Principal Effects, Clinical Uses and Toxicity

The principal effects of flunitrazepam include sedation, hypnosis (production of sleep), muscle relaxation, relief of anxiety, elevation in seizure threshold (anticonvulsant effect) and anterograde amnesia. The last effect, namely anterograde amnesia, is a loss of memory for things experienced while under the influence of the drug. In terms of sedative/hypnotic effects, flunitrazepam is approximately 10 times more potent than diazepam (Valium).

In countries where it is marketed, flunitrazepam is primarily used for the short-term (four weeks or less) treatment of insomnia. The drug is given orally in the dosage range of 0.5 to 2 mg just prior to retiring for the night. The effects appear within 30 minutes, peak at around 2 hours and last 4 to 8 hours. Residual effects may be evident at 18 hours after use. In addition, flunitrazepam is used as a preanesthetic medication and, only in combination with other drugs, as an anesthetic drug. As a preanesthetic agent, the beneficial effects of flunitrazepam include sedation, relief of anxiety

and production of amnesia. In the United States there are other drugs available for all of the indications for which flunitrazepam is used in other countries. Some of these drugs include diazepam (Valium), flurazepam (Dalmane), triazolam (Halcion), estazolam (ProSom), temazepam (Restoril), midazolam (Versed) and lorazepam (Ativan).

The principal adverse effects associated with the use of flunitrazepam include drowsiness, hangover, dizziness, gastrointestinal upsets, confusion and headaches. Other adverse effects include slurred speech, muscle weakness, disorientation, sweating, tremor, motor incoordination, unsteadiness, loss of judgement and anterograde amnesia. These adverse effects are dose dependent in that the higher the dose the more likely one is to experience one or more of these effects. At very high doses flunitrazepam may cause respiratory depression, coma and, in rare cases, death. Of particular importance is the mutual potentiation of sedative/hypnotic effects and adverse effects between flunitrazepam and alcohol. Combination of flunitrazepam and alcohol may be lethal.

Flunitrazepam use causes dependence in humans. Once dependence has developed, abstention induces a barbiturate-like withdrawal syndrome including headache, muscle pain, extreme anxiety, tension, restlessness, irritability, confusion, delirium, hallucinations and convulsions. Treatment of flunitrazepam dependence must be gradual, with use tapering off.

Abuse of Flunitrazepam

Since its introduction in 1975, flunitrazepam has been a drug of abuse in many countries including Australia and those in Europe, South American, and Asia. The principal abusing population has been heroin addicts who use flunitrazepam for one of the following reasons: 1) to boost the high of heroin; 2) to alleviate the withdrawal from heroin; or 3) to serve a substitute for heroin when heroin is not available. In some countries flunitrazepam abuse via ingestion or snorting has been observed among adolescents.

In the United States flunitrazepam emerged as a drug of abuse around 1993 in the form of Rohypnol smuggled from Latin American countries. Over the next few years this abuse increased reaching maximum levels in 1995 and early 1996. Beginning in the summer of 1996 and continuing through 1997, the abuse of flunitrazepam declined substantially, most likely due to a decline in drug availability. The vast majority of this abuse has been focused in the southern United States particularly, Florida, Texas, Louisiana,

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Arizona and California. The principal populations abusing flunitrazepam have been middle and high school students, college students, street gang members, party and nightclub attendees, cocaine and heroin addicts.

Flunitrazepam has been abused in the United States for several reasons and in several ways. It is most commonly taken by mouth in combination with alcohol to produce an exaggerated intoxication. Adolescents, particularly in Florida, have been known to grind up the tablets and to snort the resulting powder to obtain a euphoric effect. Cocaine addicts have also been known to use flunitrazepam to "parachute" down from a binge of cocaine use.

Flunitrazepam and Sexual Assault

In a number of cases, flunitrazepam has been used to physically and psychologically incapacitate women targeted for sexual assault. In these cases the drug is given covertly to unsuspecting women usually mixed in with their drinks. With time, depending on the doses administered, there is a loss of muscle control, judgement and possibly consciousness. With the occurrence of either unconsciousness or anterograde amnesia, victims cannot the next morning remember what happen to them the previous night.

To date at least eight people have been convicted in five cases of sexual assault in which flunitrazepam was used. Two of these cases were in Florida, two in Arkansas, and 1 in California. Based on toxicological analysis of biological fluids there have been 12 alleged sexual assault cases involving flunitrazepam. These cases have come from Florida, Texas, and California. Based on other kinds of evidence there are indications that flunitrazepam was used in three additional cases coming from Florida, Texas, and Missouri. It is important to note that flunitrazepam is but one of a number of drugs that can be and have been used to aid in committing sexual assault.

In the case of a flunitrazepam-induced sexual assault, exposure to flunitrazepam can be detected by analyzing the biological fluids in a toxicology laboratory. The most appropriate fluid to collect is urine. To have the best chances of detecting exposure to flunitrazepam, urine samples need to be collected within the first 72 hours following exposure. Very little flunitrazepam is excreted into the urine. Instead, once in the body, the flunitrazepam is converted to other substances, called metabolites, which are then dumped into the urine. Toxicology assays are directed towards detecting in the urine metabolites of flunitrazepam, and not flunitrazepam itself.

The most important metabolite to look for in urine is 7-amino-flunitrazepam. Detection of this substance in urine indicates prior exposure to flunitrazepam. In most cases of

sexual assault urine samples probably will not be collected until 12 to 72 hours after flunitrazepam ingestion. At these late times and depending upon the dose taken, only low to residual levels of 7-amino-flunitrazepam will be in the urine. To detect these levels, highly sensitive analytical techniques must be used. Standard screening assays, such as immunoassays, used in the United States to detect benzodiazepines will not detect these low levels.

Trafficking of Flunitrazepam

The trafficking of flunitrazepam has been evaluated in terms of encounters with the drug by law enforcement agencies across the United States. Between 1985 and March 1998, DEA has recorded over 4,300 federal, state and local law enforcement cases involving flunitrazepam. Approximately 4,000 of these cases occurred after 1992. About 85% of the cases were in either Florida or Texas. The remaining cases were in 34 other states, primarily located in the southern and central parts of the country. Each year between 1985 and 1993, there were isolated cases involving flunitrazepam, primarily along the border with Mexico. Beginning in 1993 the number of reported encounters started escalating, reaching peak levels in 1995 and early 1996. From the middle of 1996 and continuing through most of 1997 there was a substantial reduction in encounters with flunitrazepam across the United States. However, since about November 1997, the DEA has seen an increase in the number of large seizures of flunitrazepam.

Flunitrazepam has been smuggled into the United States from a variety of countries. Mexico has been and continues to be the main country from which the drug is brought into the United States. Other countries include Colombia, Brazil, Ecuador and Peru. Smaller amounts of flunitrazepam have been smuggled into the United States from countries in Europe and Asia.

Changes have occurred in the preparations of flunitrazepam encountered in the United States. Up until the early summer of 1996, virtually all encounters were with the 2 mg Rohypnol tablets legitimately produced in other countries, particularly in South America. Seizures varied from one tablet up to tens of thousands of tablets. Some examples of large seizures included 52,000 tablets in Louisiana in February 1995, 57,000 tablets in Texas in February 1995 and 60,000 tablets in Florida in January 1996. Beginning in the summer of 1996 the following changes occurred: 1) a rapid decline in encounters with legitimately produced 2 mg Rohypnol tablets; 2) the appearance of clandestinely produced counterfeit 2 mg Rohypnol tablets; and 3) the gradual appearance of 1 mg Rohypnol tablets legitimately produced in other countries. In 1997 and early 1998 most seizures of pharmaceutical grade flunitrazepam were the 1 mg Rohypnol tablet. The largest seizures were in March

1998 when a total of about 19,000 1 mg Rohypnol tablets were encountered by the DEA.

As of arch 1998, six different counterfeit versions of Hoffmann-La Roches's Rohypnol tablets have been detected in the United States. The DEA has seized over 50,000 such tablets. The vast majority (over 48,000) of these counterfeit tablets have been found to contain roughly 2 mg of flunitrazepam (but some contain no flunitrazepam). Examples of seizures of counterfeit 2 mg Rohypnol tablets include 19,866 in Florida in September 1996, 5,515 in California in December 1997 and 17,312 tablets in Texas in January 1998. Counterfeit tablets have been encountered both loose and in clandestinely produced bubble packaging.

Flunitrazepam in the form of foreign produced pharmaceutical grade and counterfeit Rohypnol tablets are sold on the street under such names as "roofies", "roopies", "rope", "ruffies", "circles", "Mexican valium", "rib", "roach-2", R-2 and "roaches". Street price has varied from \$1.25 to \$8.00 per tablet. They are sold either loose or in the bubble packaging.

Scheduling

In 1983, flunitrazepam was placed into Schedule IV of the 1971 United Nations Convention on Psychotropic Substances. To meet the minimum regulatory requirements of the 1971 Convention, the United States in 1984 placed flunitrazepam into Schedule IV of the Controlled Substances Act of 1970 (CSA). This occurred at a time when there was no abuse or tracking of the drug in the United States. In March 1995, at the recommendation of the World Health Organization, flunitrazepam was moved from Schedule IV to Schedule III of the 1971 Convention, due to widespread abuse and trafficking of flunitrazepam in many countries. This did not require a change in domestic scheduling, since the regulatory requirements of Schedule III of the 1971 Convention were met by keeping flunitrazepam in Schedule IV of the CSA.

In an effort to address the emerging Rohypnol problem, in October 1996, Congress passed the Drug-Induced Rape Prevention and Punishment Act of 1996. It established a 20 year maximum sentence for the use of any controlled substance, including flunitrazepam, to aid in committing a violent act such as sexual assault. The law also enhanced the penalties to those of Schedule I depressants for the manufacture, smuggling and distribution of flunitrazepam. It further required the United States Sentencing Commission to establish new sentencing guidelines in light of the enhanced penalties established in the law. The new sentencing guidelines became effective on November 1, 1997. The law also mandated that DEA do a study and report back to Congress on the desirability and feasibility of placing

flunitrazepam into Schedule I of the CSA. After careful analysis of the relevant abuse data, as well as the medical and scientific evaluation conducted by the Department of Health and Human Services (HHS), DEA concluded that at this time it does not have the grounds to reschedule flunitrazepam as a Schedule I controlled substance pursuant to the administrative process.

Additional Actions to Control the Trafficking of Flunitrazepam

On March 5, 1996 the United States Customs Service placed into effect a policy of prohibiting the importation with or without a foreign medical prescription of flunitrazepam into the United States. Prior to that date, individuals could declare and bring into the United States up to 180 tablets of flunitrazepam every three months, providing they possessed a prescription for the drug. This became an important source of flunitrazepam entering the United States. With the establishment of the prohibition, U.S. Customs began seizing all flunitrazepam that individuals attempted to bring into the United States. This prohibition did not apply to the importation of flunitrazepam for research purposes under an FDA approved Investigational New Drug Application.

Hoffmann-La Roche, the manufacturer and distributor of flunitrazepam under the brand name of Rohypnol, has also taken steps to address problems caused by flunitrazepam in the United States. These steps include: 1) termination of worldwide production and distribution of the 2 mg Rohypnol tablet; 2) development of a new 1 mg tablet that will be less abusable and will be detectable when placed in various drinks; 3) promotion at both the federal and state levels of regulatory actions to enhance the penalties for the possession, distribution and misuse of flunitrazepam without moving the drug from Schedule IV; and 4) establishment of a drug testing laboratory where law enforcement and rape crisis centers can send biological samples, collected in suspected sexual assault cases, to be tested for flunitrazepam and its metabolites free of charge. Hoffmann-La Roche has also organized various seminars and financed the production of written material and television commercials to educate the American public concerning the effects and misuse of flunitrazepam. DEA supports efforts to counter the illicit trafficking of Rohypnol and also supports

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