

## FEATURE: Dangerous compounds linked to supplement deaths

By Keith Mulvihill

NEW YORK, Jan 11 (Reuters Health) - A dangerous group of related chemicals commonly sold as sleep aids, weight reducers and muscle promoters and even as "organic" cleaning products is still in widespread use, despite warnings issued by the Food and Drug Administration (FDA), researchers report.

Ingestion of any of the three substances--gamma butyrolactone (GBL), gamma hydroxybutyric acid (GHB), and 1,4 butanediol (BD)--which act like strong sedatives to suppress the central nervous system, can cause dangerously low respiratory rates, unconsciousness, coma, vomiting, seizures, slowed heartbeat and death.

In a study reported in the January 11th issue of The New England Journal of Medicine, researchers led by Drs. Deborah L. Zvosec and Stephen W. Smith of the Hennepin County Medical Center in Minneapolis, Minnesota evaluated nine episodes of toxic effects pertaining specifically to the ingestion of BD. Two of the patients died as a result of their ingestion of the substance.

Zvosec and Smith explained in an interview with Reuters Health that their findings should put to rest a widely held myth that BD or GHB are only dangerous when used in connection with other drugs or alcohol.

"We proved using laboratory analysis that in six of the nine instances, that the toxic ingestion was due solely to BD," Smith said.

The "study includes all the different aspects of the lethality and addiction of these dangerous substances," Zvosec told Reuters Health.

In their report, the investigators describe the case of a man suffering from alcohol addiction. After obtaining information on the Internet that falsely markets BD for the treatment of alcohol and drug addiction, the man purchased "highly concentrated BD as a cheaper alternative to dietary supplements," Zvosec and colleagues relate.

Indeed, some of the products containing BD can cost upward of \$100 for 32 ounces, Zvosec told Reuters Health.

The study goes on to report that after ingesting the substance, the man was later found on the ground after neighbors reported that he was "wandering around, partially unclothed and disoriented. An initial examination revealed respiratory depression, (excessive perspiration), twitching of the arms and legs, and a depressed level of consciousness." After 5 hours, the man recovered and was released, the report indicates.

To date, no studies have been done to gauge actual use of BD, GBL and GHB in the United States, Smith pointed out. However, "our hospital sees about one overdose per week as a result of one of these three substances, and other hospitals in our area report seeing overdoses and abuse in general on a regular basis," he told Reuters Health.

With regard to products advertised on the Internet, Zvosec stressed that the claims made by the product "are absolutely false."

"The sellers of these products deliberately manipulate people on the Internet who may be depressed, suffering from insomnia or overweight and are seeking treatment," she said.

### FDA WARNS PUBLIC

Since the FDA started warning consumers of the potential dangers of BD, GHB and GBL more than a year ago, many of the products formerly sold as dietary supplements have changed their names or the intended use of the product, such as calling it a "cleaning

solution." Yet information provided about the product retains many of the former claims, such as "improves sexual desire and function," Smith and Zvosec explained.

Back in 1999, the FDA designated BD as a Class I health hazard, citing it as "a potentially life-threatening risk." Officials noted then that BD may increase the effects of alcohol and is even more dangerous if consumed with other depressant drugs.

Products that contain BD are sold under the brand names Revitalize Plus, Serenity, Enliven, GHRE, SomatoPro, NRG3, Thunder Nectar and Weight Belt Cleaner. The products might list 1,4-butanediol, tetramethylene glycol, gamma butyrolactone, or 2(3H)-furanone di-hydro on the label.

"GBL, GHB and BD have been linked to at least 122 serious illnesses reported to FDA, including three deaths," the FDA reported in 1999. "These agents, which are powerful hypnotic substances known to produce significant and potentially dangerous sedative effects, also increase the effects of alcohol and are even more dangerous when consumed with other central nervous system depressant drugs."

The FDA report added that "while these products are listed as 'party drugs' on Internet sites, advertised in muscle-building magazines, and sold in health food stores as dietary supplements, the FDA considers them to be unapproved new drugs and has conducted seizures to prevent their sale to consumers and any further illnesses or deaths."

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