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Army Studies Workout Supplements After Deaths

The United States Army is investigating whether certain dietary supplements for athletes, available until recently at stores on military bases in the United States, may have played a role in the deaths of two soldiers.

Both soldiers died last year after having heart attacks during fitness exercises, according to a spokesman for the Army's assistant secretary of defense for health affairs.

With names like Jack3d and OxyElite Pro, these supplements are popular with athletes because they contain an ingredient, known as dimethylamylamine or DMAA, advertised to increase energy, concentration and metabolism. The products are best sellers among fitness buffs at stores like GNC and the Vitamin Shoppe, as well as on Web sites like bodybuilding.com.

As a precaution, the Defense Department has removed all products containing DMAA from stores on military bases, including more than 100 GNC shops, pending the completion of an Army safety review, said Peter J. Graves, an Army spokesman.

Consumers, however, can still buy Jack3d, a "preworkout booster," and OxyElite Pro, a fat burner, at GNC stores and other retailers in the United States.

In a statement, USPlabs, the Dallas company that markets OxyElite Pro and Jack3d (pronounced "jacked"), said there was no medical evidence to suggest the products are dangerous when used as directed. The company said it stood by the safety of its products and was fully cooperating with the inquiry by the Defense Department.

The company and retailers say that DMAA is a dietary supplement. But some medical experts said it should be classified as a drug, which would require approval from the Food and Drug Administration before it could be marketed.

Greg Miller, a spokesman for GNC, said that a variety of retailers in the United States have sold DMAA and that "there is absolutely no reason to believe there are any safety issues." The Army investigation comes as the F.D.A. has been increasing its scrutiny of the supplement industry. Tamara Ward, a spokeswoman for the F.D.A., declined to comment on whether the agency was investigating products containing DMAA .

Some sports organizations including the World Anti-Doping Authority, the international body that regulates drug use by Olympic athletes, and several professional sports leagues have listed

DMAA as a banned stimulant. In Canada, where the government health agency has classified DMAA as a drug, companies cannot sell products containing it as a dietary supplement.

Mr. Graves, the Army spokesman, said that DMAA had been identified in the toxicology reports of the two soldiers' deaths. He added that the Army had also received some reports of liver and kidney failure, seizures, loss of consciousness and rapid heartbeat in other military personnel who have used products containing DMAA. Mr. Graves said the Army was evaluating whether there were links between the use of the DMAA products and the reported health problems.

Kerri Toloczko, a USPlabs spokeswoman, said in a statement that "there have been over one billion doses of DMAA-containing products taken without a single corroborated serious" health problem among people who used the products as directed.

DMAA, she wrote in the statement, is a naturally occurring compound found in an Asian geranium and has been used as food for more than a century. It is a mild stimulant with effects similar to caffeine, she said, adding that studies of Jack3d and OxyElite "have proven definitively that products containing DMAA are safe when used as directed."

But some medical and industry experts said DMAA is a powerful drug, and have raised concerns about its widespread availability.

DMAA is a stimulant similar to amphetamine, said Edward Wyszumiala, the general manager of dietary supplement programs at NSF International, a nonprofit organization that tests supplements for the National Football League and other professional sports groups to rule out performance-enhancing substances. He added that Eli Lilly, the pharmaceutical company, originally developed DMAA in the 1940s as a nasal decongestant formula called Forthane.

Although Eli Lilly later stopped marketing Forthane, medical literature in the 1950s warned doctors that DMAA was more potent in animals than ephedrine, an amphetamine-like stimulant, said Dr. Pieter Cohen, an assistant professor of medicine at Harvard Medical School who has studied tainted dietary supplements.

"Unfortunately, what we have now is pharmacological levels of an amphetamine derivative easily available," said Dr. Cohen, also an internist at the Cambridge Health Alliance. Dr. Cohen added that he was concerned about the results of a recent study of OxyElite Pro that reported the kinds of responses in users — like cold sweats and increased blood pressure — that might foreshadow serious heart problems.

Ms. Toloczko, the spokeswoman for USPlabs, said DMAA met the legal definition of a dietary supplement, denying that it was a drug.

Even so, several prominent professional sports and supplement industry experts said that companies marketing DMAA as a dietary supplement are exploiting lax regulations and potentially putting consumers at risk.

Under United States law, dietary supplements are defined as products containing only supplemental dietary ingredients, like vitamins or minerals, and do not need F.D.A. approval before they are sold.

“How is this possibly being legally sold under the current rules for dietary supplements?” said Travis Tygart, the chief executive of the United States Anti-Doping Agency and an advocate for tighter regulation of supplements.

Last summer, a 22-year-old soldier collapsed at an Army base in the Southwest during a training run with his unit. Last fall, a 32-year-old soldier at the same base also collapsed after taking a physical fitness test. DMAA was identified in both soldiers’ toxicology reports, the Army spokesman said, but he declined to identify them.

Mr. Tygart said the issues raised by DMAA reminded him of the case of ephedra, another stimulant. The F.D.A. banned ephedra as a dietary supplement in 2004 after the deaths of several prominent athletes, including Steven S. Bechler, a pitcher for the Baltimore Orioles, who had used the substance.

USPlabs is run by Jacobo E. Geissler, who, according to the company’s Web site, studied nutrition at Texas A&M. In 2003 , before he started USPlabs, Mr. Geissler was criminally charged in Texas with buying illegal steroids, according to court records . He pleaded no contest and served a term of community service.

Many fitness enthusiasts remain devoted to Jack3d, which, according to a widely disseminated online product description, “gives you the mad aggressive desire and ability to lift more weight, pump out more reps and have crazy lasting energy.”

Some of its users raved about the product last week on Twitter. “Jack3d got me feeling beastly! Gym time!! #beastmode,” Luis Vasquez wrote.

Last summer, the United States Anti-Doping Agency issued a warning notice about DMAA to athletes, but Mr. Tygart said he worried about ordinary consumers.

“As long as it is not being removed from stores, we’ve got to ensure, as we have with our athletes, that consumers are aware of this issue and are making informed, reasoned decisions,” Mr. Tygart said.