Are Dietary Supplements Marketed for Weight Loss and Muscle-Building Safe? Research Studies Show the Answer Is No

   This study reviewed 489 cases of adverse and unwanted health outcomes, such as seizure, heart attack, and death, and found these to be associated with dietary supplement use. Associations between adverse events and specific ingredients are difficult to verify due to incomplete information systems.

   Using a nationally representative survey, researchers found that, between 1999 and 2002, 31.8% of U.S. children 18 years and younger used dietary supplements.

   Teenagers and young athletes are vulnerable to using dietary energy supplements with the intention of building muscle mass, increasing strength, and improving physical performance. Young people and athletes often take multiple doses and combinations of above tolerable or accepted levels. Authors state stricter rules are needed for the authorization, sale, and advertising of these products.

   The U.S. Food and Drug Administration banned Pai You Gou, a dietary supplement marketed for weight loss, after detecting at least two banned pharmaceutical compounds, sibutramine and phenolphthalein, in this product. Research suggests sibutramine may increase a person’s risk of heart attack while phenolphthalein, a laxative, may contain traces of cancer-causing substances.

   The U.S. Centers for Disease Control and Prevention documented a series of severe acute hepatitis and liver failure of unknown cause. Of the 29 confirmed cases of acute hepatitis and liver failure, 24 patients reported using OxyELITE Pro, a dietary supplement marketed for weight loss and muscle gain, within 60 days before illness onset.
In this study, researchers found N,α-DEPEA, a banned and potentially dangerous designer stimulant, in the widely available muscle-building supplement Craze.

Twenty-one brands of acacia rigidula supplements were analyzed to determine if these products contained β-methylphenylethylamine (BMPEA), a stimulant that has not been assessed for safety or efficacy in humans. BMPEA was found in more than half of all supplements containing acacia rigidula sold in the United States.

All dietary supplements sold in the United States listing ingredients believed to be substitutes of DMBA, a banned stimulant otherwise known as 1,3-dimethylbutylamine (DMBA), were tested. Researchers found at least a dozen supplements to contain DMBA in dosages ranging from 13 to 120 mg per serving. Given the potential health risks associated with untested pharmacologic stimulants, researchers strongly suggest that manufacturers recall all supplements containing DMBA.

Researchers studied 365 cases of testicular germ cancer in participants from Connecticut and Massachusetts. Muscle-building supplements were found to be associated with increased risk of testicular germ cell cancer. The association was particularly strong among early users, long-term users, and use of two or more types of muscle-building supplements.

Research suggests that illicit use of anabolic-androgenic steroids, otherwise known as “pro-hormones or natural steroids” is widespread and may be a common cause of hepatotoxicity, cholestasis, renal failure, hypogonadism, gynecomastia, and infertility among younger men who use these supplements. Authors suggest patients should be advised against dietary supplement use, especially supplements known or suspected to contain designer steroids.