

After Ephedra, More Dietary Supplements Still Contain Dangerous Ingredients

Even though this year has seen the ban of the popular weight loss dietary supplement ephedra, many health groups believe that their work is still not done – that the ephedra ban was just the stepping stone to the ban of many more dietary supplements that contain dangerous ingredients.

Dietary supplements are readily available at many corner pharmacies or grocery stores, which makes them easily obtainable for consumers who believe that if they purchase an “all natural” dietary supplement for preventative and therapeutic purposes, there are no hazards involved in consuming the product. This is false – dietary supplements, like any supplement, when taken in excess or in conjunction with prescription medications, may cause serious adverse events that may be fatal.

Some examples of problems associated with the use of supplements include:

- | aristolochia acid – an herb linked to kidney failure and cancer;
- | yohimbe – a sexual stimulant linked to heart and respiratory problems; and
- | bitter orange – an herb whose ingredients have effects similar to those of ephedra.

Other common dietary supplements which contain ingredients which have been deemed dangerous include Ginkgo biloba, St John’s Wort, Ginseng, and Kava Kava.

Dietary Supplement Definition

The Dietary Supplement Health and Education Act of 1994 (DSHEA) defines a “dietary supplement” using several criteria:

- | a product (other than tobacco) that is intended to supplement the diet that bears or contains one or more of the following ingredients: a vitamin, a mineral, an herb or other botanical, an amino acid, a dietary substance for use by man to supplement the diet by increasing the total daily intake, or a concentrate, metabolite, constituent, extract, or combinations of these ingredients;
- | is intended for ingestion in pill, capsule, tablet, or liquid form;

- | is not represented for use as a conventional food or as the sole item of a meal or a diet;
- | is labeled as a “dietary supplement”; and
- | includes products such as an approved new drug, certified antibiotic, or licensed biologic that was marketed as a dietary supplement or food before approval, certification, or license (unless the secretary of [the United States Department of] Health and Human Services [HHS] waives this provision).

Dietary Supplement Safety Precautions

A February 9, 2004 editorial in *American Medical News* (www.amednews.com), the American Medical Association’s online newspaper for physicians, stated, “The Food and Drug Administration’s [FDA] ban of dietary supplements containing ephedra is a big consumer protection victory. But the American public deserves much more.”

The [amednews.com](http://www.amednews.com) column goes on to mention that dozens of ephedra-containing products have been taken off the market after more than 18,000 people reported negative reactions, the most serious being stroke, heart attack, and even death.

Even though adverse reactions to dietary supplements, usually herbal products, have been reported, it is difficult to remove these products from store shelves due to the DSHEA. According to the DSHEA, dietary ingredients used in supplements are not subject to vigorous premarket safety evaluations required for new food ingredients and new uses of old food ingredients. Instead, supplement manufacturers are required to demonstrate that their product(s) are safe and that any representations or claims made about them are substantiated by adequate evidence to show that they are not false or misleading. To remove a certain dietary supplement from the market, DSHEA requires that FDA prove products pose significant risk to the public health and are, therefore unsafe. Also, FDA must rely on voluntary adverse event reports from manufacturers because FDA cannot force the supplement manufacturers to report adverse events. According to the *American Medical News* article, "... [V]oluntary reporting captures only 1% of adverse events."

Many popular products, even when used following recommended dosing, may cause side effects. Ginkgo biloba, which is promoted to increase memory and blood flow to the brain,

can cause spontaneous bleeding and should not be taken with drugs such as aspirin, Coumadin®, Ticlid®, Plavix®, or Persantine® due to an increased risk of bleeding. Another example is St John's Wort, a widely-used herb promoted as a natural antidepressant. Side effects of St John's Wort include gastrointestinal disturbances, allergic reactions, fatigue, dizziness, confusion, and dry mouth; it should not be taken with prescription antidepressants because, in addition to increased side effects, the herbal product may alter the therapeutic effect of the prescription antidepressant.

Side effects are also common among vitamin and mineral supplements. Niacin, when taken in doses over the recommended daily allowance (RDA), can cause side effects such as gastrointestinal distress, mild to severe liver damage, myopathy, and maculopathy of the eyes. Side effects associated with the consumption of Vitamin A at more than the RDA of 25,000 international units consist of severe liver injury, including cirrhosis; bone and cartilage pathologies; and elevated intracranial pressure.

An April 12, 2004 *Consumer Reports* article entitled "Dangerous Supplements: Still at Large" references individuals who

have experienced significant adverse effects including kidney failure. The article noted that Beverly Hames and Donna Andrade-Wheaton both sought safe and natural treatments from acupuncturists who prescribed Chinese herbal medicine. In Hames' case, she was prescribed several Chinese herbal products, five of which were later found to contain aristolochic acid. Four years later, in 1996, she had to undergo a kidney transplant due to kidney failure from the aristolochic acid. Donna Andrade-Wheaton also sought help from an acupuncturist and was prescribed half a dozen Chinese supplements to treat health conditions including endometriosis. At least one of these supplements contained aristolochia acid – after FDA released a nationwide aristolochia safety warning in 2001. In 2002, Andrade-Wheaton also underwent a kidney transplant, most likely due to the aristolochia acid.

A Stricter DSHEA

The warnings about dietary supplements are out there, but they are not as predominant as those for prescription medications. What can be done to make dietary supplements safer and avoid dangerous side effects?

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NABP's NABPLAW a Powerful Reference Tool for Many

Established in February 1993, NABP's NABPLAW® Online is a specialized database that contains pharmacy statutes and regulations from all 50 state boards of pharmacy as well as the Guam and Puerto Rico boards of pharmacy. The database serves as a reference tool for anyone researching the current individual state pharmacy laws.

Searching NABPLAW

NABPLAW is a well-organized, easily searchable database. Searches of the laws and regulations of one, several, or all 50 states

and two territories can be achieved using keywords and phrases, which appear highlighted in the search results. Depending upon how detailed the user's search is, there are three types of searches available:

- | **General Search** – search by a word or a phrase;
- | **Expert Search** – search a particular state or subset of a state's statutes or regulations; and
- | **Advanced Search** – allows for more searching options, including searches for exact phrases or synonyms.

After searches are completed, the results appear on the screen as a list of "hits." These hits are then displayed within the document, table of contents, or both. NABPLAW allows users to "tag" and download relevant statutory and regulatory text. When an item is tagged the user can refer to the item at a later time without losing it. For those interested in trying out NABPLAW firsthand, a **free** demonstration is available on NABP's home page at www.nabp.net.

Who Subscribes to NABPLAW?

Anyone who needs to stay informed about current pharmacy regulations will find the database useful. Listed below are the percentages of those parties subscribing to NABPLAW, as of press time.

- | 51% – Pharmaceutical companies
- | 20% – State boards of pharmacy
- | 9% – Law firms
- | 7% – Chain drug companies
- | 6% – Professional associations
- | 5% – Universities and colleges

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Dietary Supplements

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The year 2003 saw the introduction of two US Senate bills to protect consumers from the adverse reactions of dietary supplements and force manufacturers to ensure the safety of their products before consumers buy them, instead of waiting until an adverse reaction occurs. Both bills have yet to be passed.

In March 2003, Senate Bill 722, the "Dietary Supplement Safety Act of 2003," was introduced. The bill amends the

federal Food, Drug, and Cosmetic Act to require that manufacturers of dietary supplements submit to FDA reports on adverse experiences with dietary supplements. The bill also calls for manufacturers to submit an annual report that discloses all adverse dietary supplement experiences. Postmarket surveillance may also be required for dietary supplements if the secretary of HHS determines that there is a reasonable possibility that a use or expected use of the dietary supplement by a great number of consumers may result in serious adverse experiences.

Senate Bill 1538, which was introduced in the Senate on July 31, 2003, states, "[the] DSHEA Full Implementation and Enforcement Act of 2003 . . . ensure[s] that the goals of the [DSHEA] are met by authorizing appropriations to fully enforce and implement such Act and the amendments made by such Act, and for other purposes."

As previously stated, Congress has not passed either bill, so FDA will continue to warn the public about the dangers of dietary supplements through news releases, FDA's Web site (www.fda.gov), and via other media.

NABP on Dietary Supplements

NABP recognizes that many Americans are seeking to improve their health by taking dietary supplements in addition to prescription medicines. This shift has significantly impacted the practice of pharmacy by expanding the wealth of knowledge that a competent entry-level pharmacist must possess. Consequently, the revised North American Pharmacist Licensure Examination™ blueprint includes a competency statement specifically addressing the documented uses, adverse effects, and toxicities of dietary supplements. Ⓢ