



DANGERS OF ISOFLAVONES IN SOY AND SOY-BASED FOODS

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The studies are easily found by doing a Pubmed search.

DANGERS OF DIETARY ISOFLAVONES AT LEVELS ABOVE THOSE FOUND IN TRADITIONAL DIETS

Cargill has received "self-determined" GRAS status for its AdvantaSoyTMClear™ isoflavone supplement to be used as an additive for beverages, nutrition bars, yogurt, meal replacements and confections. The summaries of studies attached give ample demonstration of the dangers of adding phytoestrogens (isoflavones) to common foods. Deleterious effects include endocrine disruption, thyroid suppression, immune system suppression and increased incidence of leukemia, breast cancer, colon cancer, infertility, growth problems and subtle changes in sexually dimorphic behaviors.

It has been argued that high levels of soy isoflavones such as genistein, daidzein and genistin in Asian diets protect the inhabitants of Japan and China from certain degenerative diseases, especially breast and prostate cancer. Actually, consumption of soy in traditional Asian diets is low. A 1975 report lists soyfoods as minor sources of protein in Japan and China.(1) Major sources of protein listed were meat including organ meats, poultry, fish and eggs. Average isoflavone consumption in Asian diets ranges from 10-28 mg/day, as shown in the table below. Studies indicate that isoflavone consumption at levels slightly exceeding those found in traditional diets results in thyroid suppression and endocrine disruption.

The AdvantaSoyTMClear™ supplement would add 30-50 mg of isoflavones to a 100-gram serving of various common foods, levels that exceed the amounts found in traditional diets and that are in the range of levels shown to cause problems, especially for sensitive individuals. It is not only possible but likely that many individuals will consume two or more servings of foods to which the Cargill isoflavones have been added, especially as these foods will be promoted with much advertising touting their health benefits. Two or more servings of such foods would provide 60-100 mg isoflavones per day, an amount that clearly poses dangers after only a brief period of daily intake.

Isoflavones

Japan (1996 survey) (2)
10 mg/day Japan (1998 survey) (3)
25 mg/day Japan (2000 survey) (4)
28 mg/day China (1990 survey) (5) 10 mg/day

In Japanese subjects receiving adequate iodine, causing thyroid suppression after 3 months (6) 38 mg/day

In American women, causing hormonal changes after 1 month (7) 45 mg/day

AdvantaSoyTMClear™ 30-50 mg/ 100 g serving

As evidence on the toxicity of soy isoflavones accumulates, warnings have begun to appear in the popular press. An article appearing in the Washington Post Health Section was titled: "You have to be soy careful: tofu and similar foods may be beneficial, but some experts fear that too much could be unsafe."(8) Writing for the New York Times, health columnist Marian Burros published the following: "Against the backdrop of widespread praise. . . there is growing suspicion that soy-despite its undisputed benefits-may pose some health hazards. . . Not one of the 18 scientists interviewed for this column was willing to say that taking isoflavones was risk free."(9)

The addition of isoflavones to common foods poses a clear danger to the public and should not be allowed.

References:

1. Nutrition during Pregnancy and Lactation. California Department of Health, 1975.
2. Fukutake M, Takahashi M, Ishida K, Kawamura H, Sugimura T, Wakabayashi K. Quantification of genistein and genistin in soybeans and soybean products. Food Chem Toxicol 1996;34:457-461.
3. Nagata C, Takatsuka N, Kurisu Y, Shimizu H. Decreased serum total cholesterol concentration is associated with high intake of soy products in Japanese men and women. J Nutr 1998 Feb;128(2):209-13.
4. Nakamura Y, Tsuji S, Tonogai Y. Determination of the levels of isoflavonoids in soybeans and soy-derived foods and estimation of isoflavonoids in the Japanese daily intake. J AOAC Int 2000;83:635-650.
5. This exhaustive study of Chinese diets found that legume consumption ranged from 0 to 58 grams per day, with an average of 13 grams. Assuming that two-thirds of this is from soy beans, then consumption averages about 9 grams of soy products per day. Isoflavone content would be about 10 mg/day. Chen J, Campbell TC, Li J, Peto R. Diet, Lifestyle and Mortality in China. A study of the characteristics of 65 counties. Monograph, joint publication of Oxford University Press, Cornell University Press, China People's Medical Publishing House. 1990.
6. Y Ishizuki, et al, "The effects on the thyroid gland of soybeans administered

experimentally in healthy subjects," *Nippon Naibunpi Gakkai Zasshi* 1991, 767: 622-629

7. Cassidy A, Bingham S, Setchell KD. Biological effects of a diet of soy protein rich in isoflavones on the menstrual cycle of premenopausal women. *Am J Clin Nutr* 1994;60(3):333-340.

8. Washington Post Health Section, January 30, 2001.

9. Burros M. Doubts Cloud Rosy News on Soy. *New York Times*, January 26, 2000. ISOFLAVONE STUDIES