

HEALTHY SOY

Soy in the Store

Innovations in soyfood processing have created an array of soy-based foods that appeal to infants, children and adults. From 2001 to 2004, food manufacturers in the U.S. introduced over 1,600 new foods with soy as an ingredient, averaging 400 new products per year. In the United States, soy drinks, tofus, cultured soy, non-meat alternatives, frozen dairy free soy treats, soy nuts, soy nut butter, and/or cereals and bars with soy can be found in most supermarkets.

Soy Health Claim

On October 26, 1999, the Food and Drug Administration authorized a health claim that links the consumption of soy protein with a reduced risk of coronary heart disease. The FDA extensively reviewed over 50 scientific research studies and public comments before approving a health claim that recommends “25 grams or 4 servings of foods with 6.25 grams of soy protein daily to lower cholesterol” (FDA Final Rule; 64 (206) 1999). A wide variety of soyfoods including: regular and seasoned tofu, soy-based beverages, cereals, meat alternatives, baked goods, tempeh, frozen desserts, protein bars, and non-dairy alternatives carry the claim.

Healthy Soy

Fact: Soyfoods have many nutritional benefits and can contribute to a heart healthy diet. At the very least, soyfoods can replace less healthy foods that are high in saturated fat and cholesterol and contribute to a heart healthy diet. Soy proteins are high quality proteins that contain all the essential amino acids in appropriate ratios needed for human growth and body maintenance. Both the American Heart Association (AHA) and U.S. Food and Drug Administration (FDA) agree that soyfoods contribute to a heart-healthy diet. According to a very recent statement from the AHA, “...soy products such as tofu, soy butter, soy nuts, or some soy burgers should be beneficial to cardiovascular and overall health because of their high content of polyunsaturated fats, fiber, vitamins, minerals and low content of saturated fat and no cholesterol” (Circulation, 2006).

Fact: Soyfoods are safe to consume throughout the life cycle. People who consume traditional soyfoods as

a normal part of their diet throughout their lifespan, including pregnancy and lactation, do not show evidence of growth or endocrinological problems. Today, the American Academy of Pediatrics recognizes iodine fortified soy-based infant formula as a safe and effective alternative for infants allergic to cow’s milk to provide appropriate nutrition for normal growth and development (Pediatrics, 1998). Comparisons of adults fed soy formula or breast-fed as infants indicate no significant differences in growth, maturation, fertility or other reproductive outcomes (JAMA, 2001). A critical review of breast cancer studies suggests that adult consumption of soyfoods is not likely to result in adverse outcomes (Breast Ca Res Treat, 2003). In fact, early dietary exposure to soyfoods may have beneficial health effects in humans. Consuming soyfoods during adolescence has been shown to decrease the risk of breast cancer in Asian women (Ca Epi Biom & Prev, 2001).

Fact: Soyfoods also contain isoflavones that offer additional health benefits. Lowered risks of certain cancers, cardiovascular disease, and osteoporosis have all been attributed to soyfoods containing isoflavones. Isoflavones are described as phytoestrogens (plant estrogens) because they are structurally similar to the female sex hormone estrogen, but they are also quite different from estrogen. The compounds do not have estrogen-like effects in human studies; and they often function as anti-estrogens even inhibiting the effects of estrogen (J Clin Endoc Metab 2004). These plant estrogens are much weaker than naturally circulating human estrogens and they have approximately 1/1000th of the biological activity of synthetic estrogens. No significant research in humans suggests that isoflavones cause harm, even though in some studies the intake of isoflavone-rich soyfoods or isoflavone supplements greatly exceeded typical intake in Japan (J Nutri Food, 1999 & Nutr Cancer 2004).

Fact: Soyfoods are different from soy supplements. Eating soyfoods is different from consuming supplements containing isoflavones. Isoflavones are biologically active compounds found in soy and other plants. Studies using rat models often add

purified isoflavones at levels much higher than those found in human diets. It is well-established that the biological effects isolated compounds may be quite different from the effects of these compounds when provided in the form of a food (J Nutr 2004, J Am Diet Assoc 2001, JAMA 2005).

Fact: Soyfoods are produced through many different processes. Numerous human studies have demonstrated that processed soy products provide the same high-quality protein as traditional soyfoods (Am J Clin Nutr 2003). Soybeans used in foods undergo some type of processing. Processing techniques include both traditional and modern methods. Traditional methods employ germination, cooking, roasting, and fermenting. More modern processing removes undesirable constituents by fractionation or extraction. All of these treatments can increase the digestibility of soy proteins, remove indigestible sugars, inactivate enzymes that affect flavor, and prevent undesirable changes that may occur during storage. Soyfoods are heat processed and soybeans cooked before consumed to remove trypsin inhibitors that are small proteins present in many other plant products including raw legumes, cereals, potatoes, and tomatoes that reduce digestion of dietary proteins (J Nutr, 1995). Small quantities of trypsin inhibitors are not detrimental to health but rather they may have beneficial effects in reducing tumor growth and preventing the spread of some cancers (Am J Clin Nutr, 1998).

Fact: Soy does not adversely affect thyroid function when diets contain sufficient iodine. In healthy adults, consuming soyfoods appears to have no negative effect on thyroid function (Thyroid, 2006). In fact, the findings of a recent human study suggest that consumption of both traditional and modern soyfoods is associated with a reduced risk of thyroid cancer (Ca Epi, Biom, & Prev, 2002). In individuals predisposed to goiter or who are consuming marginally iodine sufficient diets, soy could conceivably be a risk factor for goiter. Screening for thyroid dysfunction, as recommended by the American Thyroid Association (ATA), would identify such individuals.

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