

Soy Myths and Facts

From the internet to the evening news, soy is making health and nutrition headlines. But it's not always easy to separate rumors from reality. Read on to wise up about the basics of soy science.

General Nutrition

Myth: Soymilk isn't good for you like cow's milk.

Reality: Soymilk such as Silk delivers many of the same important nutrients as cow's milk including calcium, vitamin D and protein. In addition, unlike many forms of cow's milk, soymilk is very low in saturated fat and cholesterol-free.

Myth: Soy is dangerous because it's an allergen.

Reality: Soy protein is one of the eight most common food allergens on a list that also includes proteins in milk, eggs, peanuts, tree nuts, fish, shellfish and wheat. Like any allergen, soy is harmful to those who are allergic to it, but this has no bearing on the safety of soy for the general population. If you know or suspect you are allergic to soy, consult your doctor for dietary guidelines and always read labels with care.

Myth: Soy interferes with mineral absorption.

Reality: This myth stems from the fact that soybeans — like other legumes and whole grains — contain phytic acid, a substance which has been associated with reduced mineral absorption. However, recent research indicates that over the long term, daily soy consumption has no negative impact on overall mineral balance.¹

Myth: Soy contains "anti-nutrients."

Reality: Like the related myth about mineral absorption, this one stems from the fact that soybeans — along with other legumes and whole grains — contain phytic acid, a substance which has been associated with reduced mineral absorption. But recent research indicates that over the long term, daily soy consumption has no negative impact on overall mineral balance.¹ Iron has long been a topic of particular interest in soy nutrition. Nutritionists once believed that iron absorption from plant sources like soy was poor. Improved research techniques, however, have demonstrated that iron absorption from soy is excellent, and that incorporating soy into the diet does not negatively impact iron status.^{2,3}

Myth: Soy protein is inferior because it comes from a plant.

Reality: Soy protein is the only commonly consumed plant protein that is "complete," meaning it contains all of the essential amino acids in sufficient quantities to meet the body's requirements. The medical and nutrition communities, and the FDA, recognize soy protein as equal in quality to animal protein.

Myth: All soy is the same.

Reality: Whole natural soybeans are a nutritious source of protein, fiber, beneficial omega-3 fats and a variety of vitamins and minerals such as folate and potassium. However, not all foods made from soybeans provide all of these beneficial components. Soymilk made from whole soybeans, as well as soynuts, tempeh and edamame are examples of foods that preserve the fiber and all of the major nutrients of the soybean. Products that are more processed, such as soy supplements and isolated soy protein, do not.

Myth: All soymilk is the same.

Reality: There are two types of soymilk commonly found on the market: those made from whole soy, and those made from isolated soy protein. Whole bean soymilk, such as Silk, is made by crushing the bean and removing the indigestible fibrous portions, then blending the resulting "base" with water, flavoring and nutritious fortifications such as calcium. This whole bean process preserves not only the protein, but also other important components of the original soybean including isoflavones, essential fatty acids, omega-3 fats and some fiber. Soymilk from isolated soy protein is more highly processed, made by chemically extracting the protein from the bean, then reconstituting the isolated protein with water and other additives.

Myth: Soy flour and soy protein powder are the same thing.

Reality: Soy flour (used in some soy products such as Silk Light) is a minimally processed ingredient made by mechanically grinding soybeans. Soy protein powder is a highly processed substance made by chemically extracting and isolating the protein from the bean.

Myth: Soy upsets your stomach.

Reality: While any food may cause sensitivity in some people, there is little scientific evidence that soy is more irritating to the stomach than other foods. Furthermore, soymilk provides a wholesome and delicious milk alternative for those who can't drink milk due to lactose intolerance.

Pregnancy and Fertility

Myth: Soy affects fertility.

Reality: There is no human scientific evidence indicating that consuming soy has an effect on fertility.

Myth: Consuming soy affects men's sperm.

Reality: There is no clinical data suggesting soy consumption negatively affects sperm quality or quantity. Three clinical trials have examined soy consumption and sperm quality and quantity, and all showed no effect.^{3,4,5} The trials also showed no relationship between soy consumption and men's reproductive hormone levels.

Myth: Soy is not safe for pregnant women.

Reality: There is no scientific evidence that soy is unsafe for pregnant women. In fact, fortified soymilk like Silk is a delicious and convenient source of many nutrients that are important in pregnancy including calcium and high-quality protein. Soymilk is also lactose-free, which may be helpful to some pregnant women with lactose sensitivity. If you are pregnant, ask your doctor for advice about a healthy diet.

Children

Myth: Soy is dangerous for children.

Reality: Soymilk like Silk and other soyfoods can be a nutritious addition to a child's diet. For most children, soymilk can be introduced around the same time you'd introduce dairy milk (usually around age one). Because all children are different, Silk recommends consulting your doctor before changing your child's diet. Silk is a good source of high-quality protein and provides many of the same nutrients found in milk including calcium, vitamin D, potassium, riboflavin and vitamin B12. Soymilk and other milk alternatives should not be used as infant formula.

Myth: Soy doesn't support growth and development in children.

Reality: The medical and nutrition communities, as well as government agencies, agree that soy can play a valuable role in a healthy balanced diet for men, women and children alike. Soy is a "complete" plant protein, meaning that it contains all the amino acids necessary for optimal human health. Soymilk such as Silk is also an excellent source of calcium and vitamin D, two nutrients especially important for growing kids. A serving of Silk provides as much calcium and vitamin D as a glass of dairy milk.

Myth: Consuming soy affects sexual development.

Reality: There is no human scientific evidence showing that soy affects sexual development. Soy does not contain the hormone estrogen. It does, however, contain isoflavones, also known as phytoestrogens or "plant estrogens." While the chemical structure of isoflavones is similar to estrogen, the two function very differently in the body. Isoflavones have been studied for a number of beneficial effects including a potential role in supporting heart and bone health, minimizing menopausal symptoms and reducing the risk of some forms of cancer.

Hormones and Sexuality

Myth: Soy contains estrogen.

Reality: Soy does not contain the hormone estrogen. It does, however, contain isoflavones, also known as phytoestrogens or "plant estrogens." While the chemical structure of isoflavones is similar to estrogen, the two function very differently in the body. Isoflavones have been studied for a number of beneficial effects including a potential role in supporting heart and bone health, minimizing menopausal symptoms and reducing the risk of some forms of cancer.

Myth: Consuming soy affects sexual orientation.

Reality: There is no scientific evidence that soy consumption affects sexual orientation.

Myth: Soy causes thyroid problems.

Reality: There is no scientific evidence that soyfoods or soy isoflavones adversely affect thyroid function.⁶ Some studies suggest that consuming soyfoods may affect the dosage requirement of synthetic thyroid hormones for patients already taking thyroid medication. This is similar to other common food-drug interactions and does not indicate a relationship between soy and thyroid health. Patients using thyroid medication should work closely with a doctor to ensure consistent and effective dosing.

Cancer and Other Diseases

Myth: Soy increases cancer risk.

Reality: In fact, a number of scientific studies suggest a link between soy consumption and reduced risk of certain cancers, including breast and prostate cancer. Many researchers have noted lower rates of breast cancer in Asian populations, which have traditionally consumed a high-soy diet for centuries. More research is needed to draw firm conclusions about soy and beneficial effects on cancer risk. However, today's medical and nutrition communities recognize soyfoods like soymilk as nutritious additions to a healthy diet.

Myth: Soy is not safe for breast cancer patients and survivors.

Reality: The American Cancer Society states that breast cancer patients can consume soyfoods like soymilk, tofu and edamame regularly.⁷ A major recent study lends credence to this perspective, indicating that soy is not only safe, but it may also have a positive impact, potentially helping to decrease the incidence of breast tumor recurrence.⁸

Myth: Soy increases the risk of heart disease.

Reality: In fact, the FDA asserts that consuming 25 grams of soy protein per day, as part of a healthy diet low in saturated fat and cholesterol, may help reduce the risk of heart disease. More than 80 studies over the past 40 years have shown that soy protein directly lowers LDL ("bad") cholesterol. Soy also contains naturally occurring omega-3 fatty acids, which have been studied for their role in heart health. Furthermore, plant-based foods like soymilk are often lower in saturated fat and cholesterol than their animal-based counterparts, making them an especially smart choice for a heart-healthy lifestyle.

Myth: Soy damages the immune system.

Reality: There is no human scientific evidence showing that soy negatively impacts the immune system. This myth stems from animal studies in which rodents exposed to very high quantities of isolated compounds found in soybeans displayed changes in immune function. However, both positive and negative changes were observed. Furthermore, studies in humans suggest that soy has either no effect on the immune system, or may actually enhance immune function.⁹

References:

- 1 Murray-Kolb LE, Welch R, Theil EC, Beard JL. Women with low iron stores absorb iron from soybeans. *Am J Clin Nutr.* 2003 Jan; 77: 180-4.
- 2 Lonnerdal B, Bryant A, Liu X, Theil EC. Iron absorption from soybean ferritin in nonanemic women. *Am J Clin Nutr.* 2006 Jan; 83: 103-7.
- 3 Messina M, Watanabe S, Setchell KD. Report on the 8th International Symposium on the role of soy in health promotion and chronic disease prevention and treatment. *J Nutr.* 2009 Apr; 139: 796S-802S.
- 4 Mitchell JH, Cawood E, Kinniburgh D, Provan A, Collins AR, Irvine DS. Effect of a phytoestrogen food supplement on reproductive health in normal males. *Clin Sci (Lond)* 2001 Jun; 100: 613-8.
- 5 Beaton LK, McVeigh BL, Dillingham BL, Lampe JW, Duncan AM. Soy protein isolates of varying isoflavone content do not adversely affect semen quality in healthy young men. *Fertil Steril* 2009 Oct 9.
- 6 Messina M, Redmond G. Effects of soy protein and soybean isoflavones on thyroid function in healthy adults and hypothyroid patients: a review of the relevant literature. *Thyroid.* 2006 Mar; 16: 249-58.
- 7 Doyle C et al. Nutrition and physical activity during and after cancer treatment: an American Cancer Society guide for informed choices. *CA Cancer J Clin.* 2006 Nov-Dec; 56: 323-53.
- 8 Xiao OS et al. Soy food intake and breast cancer survival. *JAMA* 2009; 302(22): 2437-2443.
- 9 Ryan-Borchers TA, Park JS, Chew BP, McGuire MK, Fournier LR, Beerman KA. Soy isoflavones modulate immune function in healthy postmenopausal women. *Am J Clin Nutr.* 2006 May; 83: 1118-25.