

WHAT IS SOY?

The term 'soy' is commonly used to refer to foods or food ingredients derived from the soybean, a type of legume. Other legumes include chickpeas, lentils and broad beans. Soy foods include traditional Asian foods such as tofu, tempeh and miso. More recently, however, a greater variety of soy foods, such as soy beverages, yogurts, soy cheese, breads, breakfast cereals and meat alternatives such as burger patties, soy sausages and sandwich slices have reached supermarket shelves creating greater consumer interest and demand.

For centuries soy foods have been consumed as part of the staple diet, and as an important source of high-quality protein, throughout Asia. These people exhibit low rates of many of the chronic diseases that plague Western civilization.

[What is it about soy that gives it health benefits?](#)

[How much soy should we eat?](#)

[How does soy protein quality compare with the quality of animal protein?](#)

[Soy terminology](#)

[References](#)

What is it about soy that gives it health benefits?

[Back to menu](#)

Scientific research has confirmed that substituting soy protein for animal protein in the diet can lead to beneficial effects in lowering blood cholesterol levels ¹. Research is also examining soy protein's potential benefits in providing protective effects against certain forms of cancer ², relieving menopausal symptoms ³, maintaining bone health ^{4, 5} and enhancing athletic (sports) performance ⁶.

Other components of soy may also contribute to its health effects. These include:

- ◆ isoflavones - which have been considered to add to the beneficial effects of soy protein;
- ◆ plant sterols - which are well known to lower blood cholesterol;
- ◆ saponins - which may lower cholesterol and stimulate the immune system ⁷;
- ◆ dietary fibre - with a range of benefits;
- ◆ omega 3 plant (vegetable) fats - an essential nutrient in the diet, which is not found in significant amounts in many other plant foods.

This site provides an overview of each of the major areas of research with regard to soy.

How much soy should we eat?

[Back to menu](#)

Including as little as one serving of a soy food in our daily diet can provide us with nutritional and health benefits. In traditional Asian cultures, however, soy foods are consumed frequently throughout the day. Although intakes vary, they are much higher than what is contained in the typical western diet. Vegetarians are a special group since they also generally have a higher intake of legumes including soybeans, than omnivores ⁸.

If you already have a health condition, such as an elevated cholesterol level, higher amounts of soy foods would be desirable. The U.S. Food and Drug Administration (FDA) advises that 25g of soy protein per day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease. This is based on the health claim for soy protein that was approved by the FDA in October 1999. Three to four servings of soy protein-rich foods each day will provide approximately 25g of soy protein. [See section 'Soy Foods for Health']

It is worth noting that the vast majority of research to date into the health benefits of soy protein, has been conducted using soy protein isolate and textured soy protein rather than traditional soy foods, although there is strong interest in the latter.

How does soy protein quality compare with the quality of animal protein?

[Back to menu](#)

Soy protein is a high quality protein, equal in quality to meat, milk, and egg protein⁹. It has a Protein Digestibility Corrected Amino Acid Score (PDCAAS) of 1.0 - the highest score that a protein can have⁹. Soy protein meets or exceeds the essential amino acid requirements of both children over the age of two years and adults^{10, 11}, and is highly digestible.

Soy terminology

[Back to menu](#)

Throughout this guide, and indeed in much of the material you will read on the subject of soy, the scientific terms 'phytochemicals', 'phytoestrogens' and 'isoflavones' will be commonly used.

Phytochemicals are chemicals found naturally in plants that are believed to offer various health benefits.

Phytoestrogens are a type of phytochemical that have a similar structure to the hormone estrogen. Two major types of phytoestrogens are isoflavones and lignans. Phytoestrogens occur richly in legumes, particularly soybeans, linseeds, and in lower but significant quantities in wholegrain cereals, other seeds and nuts and many fruits and vegetables.

Isoflavones (a type of phytoestrogen) are important compounds found in soy beans and most soy protein-rich foods. Soy is naturally rich in isoflavones, and in combination with soy protein, these phytochemicals are thought to play a critical role in the health benefits associated with consuming soy.

References

[Back to menu](#)

1. Anderson JW, Johnstone BM, Cook-Newell ME, Meta-Analysis of the effects of soy protein intake on serum lipids, N Eng J Med 1995;333:276-282.
2. Messina M, Barnes S. The role of soy products in reducing risk of cancer, J Natl Cancer Inst 1991;83:541-546.
3. NAMS Consensus Opinion, The role of isoflavones in menopausal health: consensus opinion of The North American Menopause Society, Menopause 2000;7:215-229.
4. Potter SM, Baum J, Teng H, et al., Soy protein and isoflavones: their effects on blood lipids and bone density in postmenopausal women, AJCN 1998;68(suppl):1375S-9S.
5. Alekel DL, St Germain A, Peterson CT, et al., Isoflavone-rich soy protein isolate attenuates bone loss in the lumbar spine of perimenopausal women, Am J Clin Nutr 2000;72:844-52.

6. Husaini MA, Moeloek D, Utamin SS, et al., Supplementation of "SUPRO(r)SOY" beverage powder on body size, iron status and physical performance of growing badminton athletes, Final Report, Nutrition Research and Development Centre, Bogor, Indonesia, June 1998.
7. Rao AV, Sung MK, Saponins as anticarcinogens, *J Nutr* 1995;125(3s):717-724.
8. Setchell KDR and Cassidy A, Dietary isoflavones: Biological effects and relevance to human health, *J Nutr* 1999;129:758S-767S.
9. Henley EC, Kuster, JM, Protein quality evaluation by protein digestibility-corrected amino acid scoring, *Food Tech* 1994;48:74-77.
10. Scrimshaw NS, Young VR, Soy protein in adult human nutrition: a review with new data. In: Wilcke HL, Hopkins DT, Waggle DH, eds. *Soy Protein and Human Nutrition*. New York, NY. Academic Press, Inc. 1979:121-148.
11. Young VR. Soy protein in relation to human protein and amino acid nutrition, *J Am Diet Assoc* 1991;91(7):828-35.