

# Science says Soy is Safe

Many people have heard rumors that soy causes all kinds of undesirable, even unhealthy, impacts on our bodies. Most of these rumors are being propagated by a single organization, which just happens to be funded by the meat industry! Thanks to their efforts, a lot of misinformation floats around the internet, and many people are unnecessarily fearful of consuming soy products. But the truth is that the “anti-soy” publicity drew increased scientific scrutiny that has since uncovered still greater health benefits from soy than originally thought.

When encountering the wild claims against soy, keep in mind that soy is one of the most tested of all foods. Consider that soy and soy products have been consumed by literally billions of people for thousands of years. The truth is that soy is just a bean. As with most plant foods, it has certain health advantages. However, it is not magic and not the fountain of youth, it is just a healthy food, and while this statement may not be as attention-grabbing as some of the wild claims against soy, it has the advantage of being much closer to the truth.

This fact sheet does not give an overview of soy. It is intended to counter some of the more irresponsible claims against soy by identifying the latest scientific research on these topics.

## Soy and Estrogen: The Real Story

Soy, and most other plant foods, contain “phytoestrogens” (phyto means plant). These are plant estrogens, not animal or human estrogens, and are meant to function in the plant they come from. They have only extremely weak, if any, effects in humans, and what effects there are have been shown to be quite beneficial.

Not understanding this, and being led astray by a similarity in terminology, some have charged that soy would increase the risk of getting breast cancer and pose a danger to breast cancer patients. But hard science says the opposite. **Soy is actually really helpful to people** who have had, or are at risk of **having breast cancer and other cancers**.

The following quotations, from reputable medical journals, confirm this:

- “Soy intake during childhood, adolescence, and adult life was associated with decreased breast cancer risk.” *Cancer Epidemiology* 2009 Apr;18(4) 1050-9
- “High soy intake is associated with an approximate one third reduction in the risk of both premenopausal and postmenopausal breast cancer.” *American Journal of Clinical Nutrition* 2009 May;89(5)1673-1679
- Breast cancer patients who ate the most soy had a 54% reduction in risk of dying from breast cancer. *Cancer Epidemiol Biomarkers Prev.* 2011 May;20(5):854-8. Epub 2011 Feb 25.
- “Clinicians can advise their patients with breast cancer that soyfoods are safe to eat and that these foods may offer some protective benefit for long-term health. Patients with breast cancer can be assured that enjoying a soy latte or indulging in Pad Thai with tofu causes no harm and, when consumed in plentiful amounts, may reduce risk of disease recurrence” *Journal of the American Medical Association* 2009; 302: 2437-43
- “Women who consumed the most soy had a 44% lower risk of ovarian cancer.” *American Journal of Epidemiology.* 2007 Jan 8;

## Soy and Sex Hormones

### **Soy infant formula supports normal growth and development.**

A large retrospective cohort study of 811 men and women, who were fed either cow’s milk-based or soy-based infant formula as infants, revealed no significant effects on over 30 reproductive and developmental endpoints. Researchers concluded that exposure to soy formula does not appear to lead to different general health or reproductive outcomes than exposure to cow’s milk formula.

*JAMA.* 2001 Aug 15;286(7):807-14.

This sentiment is similar to the current position of the American Academy of Pediatrics on the use of soy infant formula, which states “... although studied by numerous investigators in various species, there is no conclusive evidence from animal, adult human, or infant populations that dietary soy isoflavones may adversely affect human development, reproduction, or endocrine function.”

*Pediatrics.* 2008; 121:1062-1068

### **Evidence confirms Soy does NOT have feminizing effects on men.**

A review, published in the Fertility and Sterility journal, examined data from over 150 clinical studies and found that isoflavone and soy food consumption showed no effect on testosterone or estrogen, sperm count, semen quality, breast size, or erectile function in men.

*Fertility and Sterility Journal 2010; 93 (7): 2095-2104*

### **Soy and Dementia**

Based on a poorly designed study, some have made the charge that soy causes dementia or cognitive decline. But more recent and better quality studies show that not only do both fermented soy products, such as Tempeh, and non-fermented ones, such as tofu, not cause dementia but they actually have a mild effect in helping to prevent it. They have also been shown to slightly improve cognitive performance in people of all ages ranging from young adults to seniors.

- *Hogervorst E. Soy consumption may be associated with better recall. Brain Res. 2010 Oct 28.*
- *Duffy R, Wiseman H, File SE. Improved cognitive function in postmenopausal women after 12 weeks of consumption of a soya extract containing isoflavones. Pharmacol Biochem Behav. 2003 Jun;75(3):721-9*
- *Thorp AA, Sinn N, Buckley JD, Coates AM, Howe PR. Soya isoflavone supplementation enhances spatial working memory in men. Br J Nutr. 2009 Nov;102(9):1348-54*
- *Islam F. Short-term changes in endogenous estrogen levels and consumption of soy isoflavones affect working and verbal memory in young adult females. Neurology. 2012 Jun 5;78(23):1841-8*
- *Henderson VW. Long-term soy isoflavone supplementation and cognition in women: a randomized, controlled trial. Med Sci Monit. 2011 Apr;17(4):CR196-202.*

### **Thyroid function**

Back in 1960, a single infant on a pure soy diet developed goiter (thyroid swelling). Based on that one child, soy opponents exaggerated this risk to the entire population. Hypothetical concerns about the consumption of soy affecting thyroid hormone function have not translated into any negative impact on the thyroid of normal healthy individuals who regularly consume soy products.

According to a much more recent study conducted by the University of California, daily consumption of soy resulted in no change in thyroid function, "After 2 years of daily isoflavone exposure, all clinical chemistry values remained within the normal range."

*Steinberg, F.M., Clinical outcomes of a 2-yr soy isoflavone supplementation in menopausal women, American Journal of Clinical Nutrition, 2011 Feb;93(2):356-67*

### **Mineral Absorption**

Recent research indicates that daily soy consumption has no negative impact on overall mineral balance. Some had claimed that since soy contains phytate, that mineral absorption would be compromised. Phytate and phytic acid are naturally occurring substances in many plant foods, such as grains, nuts, seeds and some legumes including soy. However, recent research has shown that the "good bacteria" in our intestines breaks down almost 100% of the phytates in our diet. So important minerals such as iron are still absorbed.

*Journal of Applied Microbiology, 2013 Mar 30*

*American Journal of Clinical Nutrition 2003 Jan; 77: 180-4.*

*American Journal of Clinical Nutrition. 2006 Jan; 83: 103-7.*

*Journal of Nutrition. 2009 Apr; 139:*

**UPDATE:** Since this fact sheet was first written many additional studies have documented the safety of soy. For example, one three year study documented the safety of soy, even at very high levels, and showed no effect on estrogen, thyroid hormones and female generative organs. *Menopause. 2015 Feb;22(2):185-97.*

The information in this flyer is a summary of a more complete discussion of soy's health benefits, with detailed medical references. See <http://www.soynutrition.com/category/soyfacts/>