Since soy is such a common ingredient in plant-based diets, we need to address the many misconceptions around this food.

The soybean (or Glycine Max), soy is primarily a legume, native to East Asia. It is higher in fat than most beans or lentils, but lower in carbohydrates and an excellent source of plant protein.

In the Okinawan diet , soy is associated with longevity – particularly fermented soy like miso soup and tofu. Soy can be found in many forms, including tofu, tempeh, miso paste or soup, edamame beans, soy yogurt, milk, cheese or ice cream, and veggies burgers and fake meats.

There is a great deal of controversy surrounding soy foods, mostly due to their isoflavones which can bind to estrogen receptors and affect thyroid hormone.

People have been concerned that moderate amounts of soy could increase the risk of cancer or be harmful to women with breast cancer, especially if their cancer is estrogen receptor positive. However, the research to date has been quite reassuring, showing mostly benefits for breast cancer prevention.

There is significant evidence that eating moderate amounts (one to two servings per day) of traditional soy foods, whether fermented or not, can reduce the risk of prostate cancer and can lower LDL cholesterol.

Breast cancer
Studies have shown that regular consumption of soy foods can actually be protective against breast cancer.

Studies show that women who regularly include soy products are less likely to develop breast cancer, compared with other women. In January 2008, researchers at the University of Southern California found that women averaging one cup of soymilk or about one-half cup of tofu daily have about 30 percent less risk of developing breast cancer, compared with women who have little or no soy products in their diets. However, to be effective, the soy consumption may have to occur early in life, as breast tissue is forming during adolescence.

For instance, the traditional Japanese diet has 25-50 mg isoflavones (phytoestrogens) per day in 2-3 servings of soy and may be protective. In nearly 10,000 breast cancer survivors, those who ate more soy after diagnosis had a significant 25% reduction in recurrence at 7.4 years post diagnosis.

Another study on breast cancer survivors showed over a median of 7.3 years as isoflavone intake increased risk of death decreased, with women at the consuming the highest level of isoflavones having a significant 54% reduction in risk of deat

Prostate cancer
A Chinese study found that those who consumed soy had the lowest likelihood of developing prostate cancer, and, even more, soy greatly reduced the risk of the cancer metastasizing, or spreading throughout the body.

Researchers at The Ohio State University found similar results, and found that soy intake led to an improved early immune system response to development of cancer cells.[13]

Ovarian cancer
Several epidemiological studies show that intake of isoflavones is linked with reduced risk of ovarian cancer. The Japan Collaborative Cohort Study, consisting of 64,327 women, found that the intake of tofu may have preventive action against ovarian cancer .

A study with American women also found that the group of women with highest isoflavones intake showed lower risk of ovarian cancer [15].

A meta-analysis found that women with highest soy intake showed a 48% lower risk of ovarian cancer than women with the lowest intake

There has been some concern that soy may have negative effects on thyroid function and hormonal health because it falls into a category of foods known as goitrogens (vegetables, grains and foods that promote formation of goiter or an enlarged thyroid). Some goitrogens also have a definite anti-thyroid effect and appear to be able to slow thyroid function, and in some cases, trigger thyroid disease.

However, recent studies have shown that in order for soy to adversely affect the thyroid, other factors have to be present like iodine deficiency, problems with hormone synthesis or additional goitrogens in the diet.

Andrew Weil, MD, while usually a proponent of soy, has some thyroid-related concerns about soy. He has said at his "Ask Dr. Weil" website:

“Excess consumption of soy can affect thyroid function, if you have a thyroid disorder to begin with or if you're not getting enough iodine in your diet...you're unlikely to get too many isoflavones as a result of adding soy foods to your diet -- but you probably will take in too much if you take soy supplements in pill form. At this point, I can only recommend that you avoid soy supplements entirely.”

Soy and Fertility

It should be remembered that China is the world's most populous nation, with over 1.3 billion citizens, and who have been consuming soya for over 3,000 years.

For women, a large-scale study at a Boston fertility center showed female consumption of soy improved birth rates for couples undergoing fertility treatment.[4]

And for men, soy intake had no negative impact on fertility. A study at Harvard University found men's soy intake was unrelated to the clinical outcomes on fertility. [5]

A 2010 meta-analysis (meta-analysis is a review of the results from many independent scientific studies) of fifteen placebo-controlled studies said that "neither soy foods nor isoflavone supplements alter the measures of bioavailable testosterone concentrations in men."[6]. Furthermore, isoflavone supplementation has no effect on sperm concentration, count or motility, and it leads to no observable changes in testicular or ejaculate volume.

So men's testosterone is not affected by consuming soy products.

Soy and phytate/phytic acid

Phytate is the name for the salt form of phytic acid, a phosphorus containing molecule in many plant tissues

The phytates in soy can lower the absorption of calcium, zinc, iron, and magnesium. However, you do absorb these minerals from soy foods and eating moderate amounts of soy should not cause deficiencies.

Phytates themselves have some health benefits, including anti-inflammatory effects. In laboratory research, phytates have helped normalize cell growth and stopped the proliferation of cancer cells. They also may help prevent cardiovascular disease and lower a food's glycemic load