Safety of Soyfoods

Soyfoods can play an important role in vegetarian diets. Tofu, tempeh, soymilk, and foods made from soy protein are good sources of a number of nutrients.

These foods may also have key health benefits. However, articles in magazines and blogs on the Internet have raised questions about the safety of soyfoods. These questions focus on soy isoflavones and the absorption of minerals from soyfoods.

Soy Isoflavones

Isoflavones are plant estrogens, also known as phytoestrogens. They are not, however, the same as the hormone estrogen. In some parts of the body, isoflavones act like estrogen, while in others parts, their effect is the opposite of estrogen. This means that in theory isoflavones may provide some benefits of estrogen without the hormone's harmful side effects.

Effects in Men

Two men who ate very high amounts of soyfoods—as many as 12 to 20 servings per day—experienced some feminizing effects. But studies of men who eat more usual amounts of soy show no such effects. In fact, even when men ate the equivalent of 6 servings of soy per day, which is much more than the usual Asian intake of about 2 servings per day, there were no effects on testosterone levels. Studies also show that isoflavones have no effect on sperm or semen.

Effects on Breast Cancer

While there is some evidence that suggests estrogen therapy may increase breast cancer risk in older women. However, most research shows that soy isoflavones don't have this effect. In fact, eating soyfoods is linked to better prognosis in women who have breast cancer. Additionally, young girls who eat soy may have a lifelong lower risk of breast cancer.

Thyroid Function

Soyfoods have no effects on thyroid function in healthy adults. This is true even when people regularly consume soyfoods for several years. A small number of people with poor thyroid function who are not taking medication may need to monitor their thyroid when first adding soyfoods to their diet to see if any changes in thyroid function occur. Those who take thyroid drugs, however, can safely consume soyfoods as long they separate the time from which they take their thyroid medication from the time they consume soyfoods. Recommendations are between 1 and 3 hours.
Cognitive Function
When looking at a variety of different types of evidence there is no strong evidence that soyfoods affect cognitive function.

Soyfoods in Diets of Children
In Japan, tofu and miso soup are common infant foods. Infants usually begin to eat soyfoods between the ages of 6 and 12 months. They continue to eat soyfoods throughout childhood. As mentioned previously, early intake of soyfoods in girls may reduce breast cancer risk later in life.

Human intervention studies show that soyfoods don't affect hormone levels in children or at the age at which girls or boys begin puberty.

Soy and Nutrient Absorption
Soybeans are similar to all other beans and whole grains, in that they contain compounds that bind to minerals such as calcium, iron, and zinc, and lower their absorption. However, the iron in soyfoods appears to be in a form that makes it well-absorbed. In one study, women who ate 2 to 3 servings of soy per day had similar iron status to women eating meat.

Calcium is also well absorbed from soyfoods. Calcium absorption from calcium-fortified soymilk and calcium-set tofu is similar to the absorption of calcium from cow's milk.

Raw soybeans contain compounds that inhibit the ability of enzymes needed for the digestion of protein. However, processes such as heat inactivate these compounds to vary degrees. The digestion of protein from foods such as tofu, soymilk and isolated soy protein is excellent.

Soy in Traditional Diets
Soyfoods have been consumed in China for at least 1,500 years and in Japan for at least 1,000 years. In Japan, people consume about 1 to 1½ servings of soy per day. Many older people who eat more traditional diets eat 2 to 3 servings per day. A serving is ½ cup of tofu or tempeh or one cup of soymilk.

Many types of soyfoods including tofu, miso, tempeh, soymilk and whole soybeans are consumed throughout Asia today. Based on several types of evidence a reasonable intake goal for Western vegetarians is about two servings per day. There is no evidence that consuming more than four servings poses any problems but doing so would place too much emphasis on one type of food, which is inconsistent with dietetic principles.

Genetically Modified (GMO) Soy
Genetically modified (GMO) soy has raised numerous questions and concerns from consumers and scientists alike. GMO soy has been in our food supply for the past few decades, and to date, there has been no science-based linkages to adverse health outcomes from human consumption. If consumers are concerned about eating GMO soy products for ethical or environmental related reasons, the best way to avoid it is to buy USDA Certified Organic products. It should be noted that many soy products (tofu, soymilk, tempeh etc.) are already GMO free, and many are organic.

Resources
A registered dietitian nutritionist can help you develop a healthy vegetarian eating plan that meets your needs. To find an RDN in your area, visit:

https://vegetariannutrition.net/find-a-registered-dietitian/

For more information on the safety of soy, go to:
http://www.veganhealth.org/articles/soy_wth