



# Soy and Phytoestrogens: *What are the Benefits?*

## What are Phytoestrogens?

Phytoestrogens fall under a broader category of substances in food called phytochemicals. **Phytochemicals** are compounds in plants (vegetables, fruits, and legumes) that don't contribute nutrients, but contain biologically active components that affect our bodies in healthful ways. **Phytoestrogens, found most concentrated in soy foods, have been linked to lower incidences of certain cancers, heart health, relieving menopausal symptoms, and potentially lowering the risk of osteoporosis.**

## Current Research

Recently there has been a great deal of interest in the potential role of plant estrogens, or phytoestrogens, in improving the health of postmenopausal women. Preliminary animal studies have indicated that these compounds improve plasma lipid concentrations (total cholesterol levels, LDL cholesterol, and HDL cholesterol), thereby lowering cholesterol levels and reducing risk of heart disease. Soy proteins may also prevent bone loss and inhibit the growth of both breast and prostate tumors, as well as reduce some menopausal symptoms.

Soy is a rich and primary dietary source of the phytoestrogen class known as isoflavones. Isoflavones are present in relatively large amounts in virtually all soy foods. The primary isoflavones found in soy are *genistein* and *daidzein*. They are structurally similar to estrogen and mimic its effect in the body. Scientists have used animal models to learn about the potential risks and benefits of soy estrogens and how they exert their effects. Some researchers have begun looking at the effects of phytoestrogens in limited, carefully controlled studies of postmenopausal women.

## Using Phytoestrogens as Replacement for Hormone Replacement Therapy

The dietary approach appeals to many women because it is a natural alternative to hormones. Unfortunately, we still have a limited understanding of the physiological effects of soy phytoestrogens. To receive benefits similar to those from use of hormonal drugs, one must consume a near-vegetarian diet that is rich in foods not typical to American cuisine. Physicians and scientists caution women that the evidence thus far suggests that food-based estrogens *may not* provide all the known benefits of estrogen drugs, especially the ability of the drugs to protect bones against osteoporosis and their apparent ability to preserve brain function and ward off Alzheimer's disease.

In a woman past menopause, the weak phytoestrogens supplied in a soy rich diet may supply just enough of an estrogenic effect to reduce the frequency and severity of hot flashes, vaginal dryness, mood swings and other common menopausal symptoms. Scientists believe this helpful effect is also without increased risk of breast and uterine cancer. In *premenopausal* women who produce a sufficient supply of estrogen, eating a phytoestrogen-rich diet may interfere with normal estrogen activity. Therefore, scientists are cautious until further research in this group of women confirms the risks or benefits.



### Which foods are rich in phytoestrogens?

While other beans, including lentils, kidney beans, and lima beans, contain the phytoestrogen isoflavones, they are present in the largest concentrations in soybeans and products made from soybeans. The following chart is a partial listing of foods rich in genistein and daidzein, the isoflavones or phytoestrogens found in soy containing foods. So, although they may not do the full job of hormone replacement therapy, they can be a helpful, nutritious, and disease fighting adjunct to your diet! Incorporate them gradually into your diet. Keep in mind, soy foods can also be excellent sources of calcium and can be substituted for animal protein in the diet, which can help reduce intake of artery clogging saturated fats!

### How much phytoestrogen should I eat daily?

Start increasing your phytoestrogen intake slowly and gradually build up to 30-50 mg/day. Make sure you get your phytoestrogens from food and not from pills or supplements. There may be critical differences between the isoflavone composition of soy foods versus soy pills, as well as the nutrient benefits received from eating natural soy products.

<u>Food</u>	<u>Phytoestrogen Content</u>
Miso	30 mg per ¼ cup
Soybeans	40 mg per ½ cup
Soyflour	25 mg per ¼ cup
Tempeh	40 mg per ½ cup
Tofu	40 mg per ½ cup
Soy Milk	40 mg per 1 cup
Roasted Soybeans	162 mg per 3 ½ ounces
Textured Vegetable Protein	138 mg per 3 ½ ounces
Green Soybeans	135 mg per 3 ½ ounces
Tofu yogurt	16 mg per 3 ½ ounces
Soy hot dog	15 mg per 3 ½ ounces
Soy noodles (dry)	8.5 mg per 3 ½ ounces

### Tips for choosing calcium rich soy drinks and tofu:

- The amount of calcium varies in tofu because of the type of calcium-rich coagulant used to thicken the soymilk. If you want more calcium, then look for a tofu which lists *calcium chloride* or *calcium sulfate* in the food ingredient list.
- Soy milk that has been fortified with calcium is your best choice for getting significant amounts of calcium. Since all soy milk is not fortified, one needs to watch nutrition labels carefully. For example if the soy milk container states “calcium 20 percent” then you know the amount of calcium for one serving of soymilk is 200 milligrams, or 20 percent of the daily value for adults and older children.

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