



## Soy Foods, phytoestrogens and cancer

### What are phytoestrogens and where are they found?

Phytoestrogens are compounds found in plants that may act like oestrogen when consumed. Foods high in phytoestrogens include soy products (soy milk, tofu, tempeh and soy yoghurt), flaxseed, legumes and whole grains. The phytoestrogens in soy foods are also known as isoflavones.

As phytoestrogens have a very similar structure to the body's own oestrogen, this means phytoestrogens can bind to oestrogen receptors. The effects of phytoestrogens on the body are not fully understood, it is believed that phytoestrogens may act like weak oestrogen in some situations, but also block the actions of oestrogen in other situations.

### Do phytoestrogens and soy foods protect against breast and prostate cancer?

As phytoestrogens have the ability to interact with the actions of sex hormones, phytoestrogens have become a topic of interest for the possible prevention of hormonal cancers. High levels of sex hormones (oestrogen in women and androgens in men) over a person's lifetime are believed to be associated with an increased risk of hormonal cancers such as breast and prostate cancer.

Lower rates of breast and prostate cancer in some Asian countries, where soy is very common in the diet, have led scientists to investigate if there is a link between eating soy foods and protection against breast and prostate cancer. It is important to remember that people in these countries also differ from Australians in many other aspects of their diets; for example, they eat more vegetables and fish, and less meat. They may also have different risks for these cancers because of genetic factors. So it is not completely clear whether it is the soy in the diet, or some other factor, that is responsible for the lower rates of cancer in these countries.

Animal and test tube studies do support an anti-cancer effect. Overall in large studies on people it seems like a high consumption of soy foods may lower the risk of breast and prostate cancers, **but only a little**. There is no association between soy foods and the risk of other types of cancers.

More studies are needed to examine if phytoestrogens have a protective effect against breast and prostate cancer. From the current evidence, it is believed that a moderate consumption of soy foods (eg 1-2 serves of soy foods/day) along with an overall healthy eating plan is unlikely to have adverse effects. This is consistent with The Cancer Council's recommendations and dietary guidelines to eat a diet rich in plant foods.

There is no evidence supplements that contain high doses of soy or soy isoflavones are effective in preventing cancer, and are therefore not recommended.

### **Should women with breast cancer eat soy foods?**

It is not clear if eating a diet high in phytoestrogens is safe for women who have breast cancer. Tamoxifen is a common treatment for women with oestrogen receptor positive breast cancer. Tamoxifen works by blocking the actions of oestrogen, and therefore stopping or reducing tumour growth.

For women with oestrogen receptor positive breast cancer who are taking tamoxifen, it is still unclear whether eating soy foods or taking soy supplements will block or enhance the actions of tamoxifen. The results of scientific studies are contradictory, and unfortunately there are no clinical trials to definitively answer this question. A moderate consumption of soy foods, as part of an overall healthy eating plan, is unlikely to have any harmful effects.

### **Should women with breast cancer take soy supplements?**

Supplements that contain high doses of soy or soy isoflavones have not been tested for safety in women who have breast cancer or who are taking tamoxifen. The best advice is to eat soy foods in moderation as part of an overall healthy eating pattern, and not to suddenly increase the amount of soy phytoestrogens in the diet. The Cancer Council recommends that women with breast cancer avoid soy and phytoestrogen supplements.

### **What can women with breast cancer do to improve their health?**

Research is underway looking at the types of eating patterns that are protective for women who have had breast cancer. Evidence is starting to emerge that maintaining a healthy weight by eating a low-fat diet with plenty of fruit and vegetables and being physically active can improve survival and the overall health of breast cancer survivors.

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**For more information call the Cancer Council Helpline 13 11 20 for the cost of a local call.**