Soy and Breast Cancer: Should breast cancer survivors eat soy foods?

What are soy foods?

Soy is one of the only plant-based food sources of complete protein. Soy is rich in fiber, potassium and magnesium. Examples of soy foods include edamame (soybeans), tofu, soymilk, soybean sprouts, miso and tempeh (fermented soybeans). These traditional soy foods have been used in many cultures as reliable sources of protein for thousands of years. More recently, processed soy protein has been added to a variety of foods, such as frozen meals, soups, protein powder drinks, and snack bars.

Is there a concern about eating soy foods?

Soy foods contain a natural plant compound called isoflavone. Research on isoflavones shows that eating traditional soy foods may:

- Prevent the growth of tumors (tumor suppressant).
- Induce apoptosis (death of unhealthy cells).
- Aid in DNA repair.

Population studies do not link consuming soy with any cancer. In fact, evidence continues to grow showing that eating traditional soy foods may actually lower the risk of breast, prostate, and endometrial cancer.

Why was there a concern?

There used to be concern regarding eating isoflavones due to its estrogen-like activity in the body. However, isoflavones bind to estrogen receptors differently and function differently than estrogen. It is also important to note that the concern was based on findings of isoflavone consumption in rodent studies and not humans. The human body metabolizes isoflavone differently than rodents. These findings are not true of human isoflavone consumption and metabolism.

Is it safe for survivors?

Studies of pre- and post-menopausal women suggest soy isoflavones may have a protective effect against breast cancer. Population studies indicate that soy consumption in survivors of breast cancer may be linked to decreased recurrence and greater overall survival. A 2017 study (Zhang, F.F, et al) looked at more than 6,200 American and Canadian women with breast cancer. These women filled out surveys about what they ate and other lifestyle habits. Those women who ate the highest amounts of isoflavones had a 21% lower risk of having died from any cause, compared to the women who ate the lowest amount of isoflavones.

Are processed soy foods safe for survivors?

Soy protein powder (soy protein isolate) and isoflavone supplements were not found to have an effect on markers of breast cancer risk. When soy protein isolate is one of many ingredients, it often does not offer as much isoflavone content as a standard serving of less processed soy. Cooking methods, however, may also deplete isoflavone content by up to 80-90%. Soy foods that have undergone minimal processing may be the best choice, as they offer more total isoflavones (around 25 mg of isoflavone per single serving of traditional soy food) along with dietary fiber and phytochemicals. Let’s compare:

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<table>
<thead>
<tr>
<th>Type of Soy</th>
<th>Total Isoflavone / 100g</th>
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<tbody>
<tr>
<td>Soy Protein Isolate</td>
<td>91.05 mg</td>
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<tr>
<td>Mature Raw Soybeans</td>
<td>85–178 mg total isoflavone / 100g serving (depending on country of origin)</td>
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**Should you avoid soy supplements?**

Supplements are not regulated by the Food and Drug Administration and should be used with caution. Please consult with your provider before using any type of supplement, as they may interfere with your medications.

Supplements may contain high doses of concentrated sources of soy. These include soy powders, soy protein powders and isoflavone supplements. Genistein and daidzein are specific types of soy isoflavones that are often sold as dietary supplements.

Researchers studied the effect of soy supplementation in patients with breast cancer found that supplementation did not decrease mammographic density, a strong breast cancer risk factor. There is still little data to support the use of supplements of isolated soy phytochemicals for reducing cancer risk.

**What about other soy products?**

Soy is often used as a food additive (soy lecithin, soy oil) and can be found in processed food, such as salad dressing and baked goods. These forms of soy do NOT contain isoflavones. Also, soy sauce does NOT contain isoflavones. You do not have to avoid foods that have these additives.

**Should you avoid soy if you take Tamoxifen?**

Tamoxifen and similar medications are prescribed for some breast cancer survivors because they can block the effects of the body’s estrogen. According to the study authored by Zhang, eating soy did not have a negative impact on the effectiveness of Tamoxifen.

Still have questions? Everybody’s medical history and treatment plan is different. Talk with your medical team about what is right for you.

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