

Flaxseeds and Breast Cancer



Question:

Should patients with Estrogen Receptor Positive (ER+) breast cancer avoid flaxseed due to the potential “phytoestrogenic” role of lignans?

Answer:

To understand the potential impacts of flaxseed and cancer, let’s review what lignans are, how they impact breast cancer risk, and how they may influence breast cancer treatment.

Flaxseed and phytoestrogens

Flaxseed is the richest dietary source of lignans, a type of phytoestrogen. Phytoestrogens are found in a variety of foods including soy, flaxseeds, other nuts and seeds, whole grains, and some vegetables and fruits. A phytoestrogen is a plant nutrient that is somewhat similar to the female hormone estrogen. Due to this similarity, lignans may have estrogenic and/or anti-estrogenic effects in the body. Lignans are the nutrients that are at the center of the controversy regarding whether it is safe for women with breast cancer to eat flaxseeds.

Phytoestrogens and breast cancer

Some cancers may be hormonally related, meaning that hormones may contribute to the growth of those cancer cells such as with Estrogen Receptor positive (ER+) breast cancer. Most of the research regarding flaxseed and breast cancer focuses on the lignans found in flaxseeds, and their potential for weak estrogenic or anti-estrogenic effects in a women’s body. However, phytoestrogens are not the same as human estrogen. Some research suggests that lignans may shift human estrogen production to a weaker estrogen. Lignans may also decrease the production of estrogen in adipose tissue by inhibiting the aromatase enzyme.

There is data to suggest that flaxseed consumption may decrease risk of breast cancer diagnosis. Consuming flaxseed during adolescent years may reduce risk of being diagnosed with breast cancer during adulthood. Multiple

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studies have shown that those regularly consuming flaxseed have a modest reduction in risk of developing breast cancer, especially in postmenopausal women.

Phytoestrogens and breast cancer treatment

In postmenopausal women diagnosed with breast cancer, those who consumed flaxseed had a decrease in tumor cell proliferation (cellular growth), a reduction in the expression of HER2 (an oncogene associated with progression of breast cancer), and an increase in cell apoptosis (cell death). In addition, women who recorded higher intakes of flaxseed or had higher serum lignan levels, had decreased rates of mortality. This was most significant for post-menopausal women.

There are many medications that have been proven to reduce risk of breast cancer recurrence and it is important to establish whether or not flaxseeds impact the efficacy of those medications. Aromatase Inhibitors (AI) are a class of medications used in postmenopausal women to prevent the body from producing estrogen. A study looking at postmenopausal women taking an AI showed no interaction between flaxseed and aromatase inhibitors on tumor characteristics compared to those not consuming flaxseed. Selective Estrogen Receptor Modulators, such as tamoxifen, work by block estrogen from receiving the estrogen receptors in breast cells. Experimental studies have shown that flaxseed does not inhibit the function of tamoxifen and may enhance tamoxifen's effectiveness. Additionally, flaxseed may also enhance the effectiveness of trastuzumab (Herceptin) for those with HER2 positive breast cancer. In vitro studies have shown that flaxseed may increase cytotoxicity (being toxic to cancer cells) when combined with chemotherapy agents such as doxorubicin, doxorubicin, and carboplatin.

Bottom line

Research has shown some benefit to regularly consuming flaxseed prior to and after breast cancer diagnosis. Moderate intakes of 2-3 tablespoons per day appears safe but it is also best to consult your health care team prior to making any changes in your diet. Flaxseed consumption can cause abdominal fullness, gas, nausea, and more frequent bowel movements for some individuals so it may be best to start increasing your intake slowly.

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References, Websites, and Resources:

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The original question and answer were generously donated by Diana Dyer, MS, RD a cancer survivor, registered dietitian, organic garlic farmer, and the author of "A Dietitian's Cancer Story: Information & Inspiration for Recovery & Healing from a 3-time Cancer Survivor."

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