

Flax for Health: Nature's Richest Source of Lignans and Alpha Linolenic Acid

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Flax seed is gaining popularity among health and nutrition experts as well as consumers. Why? Research has shown flax can have a big impact on your health. Scientific studies are showing the benefits of flax for lowering cholesterol, helping with rheumatoid arthritis, and recently in the treatment and prevention of breast cancer. Flax seed offers a high content of alpha linolenic acid (ALA) and large quantities of soluble and insoluble fibre and is the richest known source of lignans.

Flax seed - Good Source of Healthy Fats

ALA is an essential fatty acid and is one of the essential nutrients necessary for life. ALA is part of the omega 3 family of essential fatty acids and must be obtained from the diet as the human body is not able to manufacture this essential fat. Through the body's metabolic processes, some ALA is transformed into eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which are the beneficial fats found in fish oil.

A growing body of research shows that flax seed is a beneficial dietary supplement for people who want to reduce their risk of heart attack and atherosclerosis and maintain a healthy level of blood cholesterol. Researchers at the University of Toronto found that total blood cholesterol levels dropped by 9% and LDL ("bad" cholesterol) decreased by 18% when a group of 9 healthy women added flax seed to their regular diets. The women ate 50 g of milled flax seed a day for four weeks.⁽¹⁾

The Lignan Link to Health

Flax seed is nature's most abundant source of lignans, containing a concentration more than 100 times greater than other lignan-containing foods such as grains, fruits and vegetables.^(2,3) Lignans are naturally-occurring substances found in plants and are classified as phytoestrogens, plant compounds that can modulate the metabolism and use of estrogen. Over the past five decades, more than a thousand studies have examined the role of phytoestrogens in maintaining health, and in protecting against or modifying disease.

There are a number of reasons why we all should be interested in incorporating more lignans into our diet on a daily basis.

➤ **Lignans have anti cancer effects**

An impressive number of studies have shown that flax seed lignans are very potent anti cancer agents for hormone-sensitive cancers. Extensive studies on both breast and colon cancer indicate that flax seed may play an important role in cancer treatment, as well as prevention. Dr. Lilian Thompson, Professor in the Department of Nutritional Sciences at the University of Toronto, has performed clinical trials using flax seed with breast cancer patients.⁽⁴⁾ The work was done in conjunction with Dr. Paul Goss, director of the breast cancer prevention program at the Princess Margaret Hospital and the Toronto Hospital. The study involved 50 women diagnosed with breast cancer. While waiting for surgery, half of the women received muffins containing 25 grams of milled flax seed daily while the other half received ordinary muffins. The women who received the flax seed muffins had slower-growing tumors compared to the other group. Dr. Paul Goss also conducted a clinical trial involving 116 women suffering from cyclical mastalgia (breast pain).⁽⁵⁾ Women were given either a muffin containing 25 grams of flax seed or a placebo and were followed for 4 menstrual cycles. The women who had received the flax muffins had a great reduction in breast swelling and lumpiness and their breast pain was alleviated. Interestingly, mastalgia has been linked to the development of certain types of breast cancer.

Flax seed has been studied extensively in hormone-sensitive cancers (breast, prostate and colon) because of its known effects on hormone levels. Overall, flax seed has tremendous potential in the area of cancer prevention and treatment.

➤ **Lignans naturally affect hormone levels**

Lignans have both estrogenic and anti-estrogenic activity. Intake of lignans on a daily basis results in hormonal changes that are beneficial to women of all ages. In menstruating women who consumed 10 grams (about 2 teaspoons) of flax seed on a daily basis, significant hormonal changes have resulted. These changes are similar to those seen after consumption of soy isoflavones.⁽⁶⁾ Positive effects included less cycle changes, along with a reduction in ovarian dysfunction. This, in turn, may decrease the development of breast and other cancers. In fact, the effects of lignans are similar to those observed with tamoxifen,⁽⁶⁾ an anticancer drug often used in the treatment of hormone-dependent breast cancer. Tamoxifen has been achieving much attention lately because of its possible use in the prevention of breast cancer.

As women reach menopause, the level of estrogens in their body decreases. This not only gives rise to menopausal symptoms, but also increases the risk of disease, including cardiovascular disease and osteoporosis. In post-menopausal women the protective effect of lignans is due primarily to their estrogenic activity. Lignans can reduce menopausal symptoms, including hot flashes, sweating, and vaginal dryness. Lignans have even been proposed as an alternative to hormone-replacement therapy in post-menopausal women.⁽⁷⁾

Flax seed, with its high concentration of lignans, is a great choice for all women, whether younger, middle aged or older, as a natural way to normalize the menstrual cycle, manage menopause, and lower the risk of osteoporosis, cancer, and heart disease.

➤ **Lignans help reduce the risk of cardiovascular disease and osteoporosis**

Both heart disease and osteoporosis are hormone-dependent diseases in that their incidence increases as estrogen decreases. Estrogens are useful in the prevention and treatment of both these diseases.

Bone maintenance and loss is affected by hormonal and nutritional factors. Daily dietary intake of lignans protects against bone loss, may increase bone density, and reduces the risk of osteoporosis. It also decreases the so-called “bad” cholesterol, increases the “good” cholesterol, decreases blood pressure, suppresses the development of atherosclerosis and inflammation, and enhances blood vessel tone. Increasing the lignans naturally through diet or supplement form is an effective method to achieving health and preventing chronic disease, including heart disease and osteoporosis.

➤ **Improved immune function**

Immunity is the body’s ability to defend itself successfully against foreign substances. The alpha-linolenic acid, as well as the lignans, decrease inflammation and promote healthy functioning of the immune system. Flax seed may be useful to manage autoimmune and inflammatory disorders such as rheumatoid arthritis, psoriasis, and lupus.

For example, some researchers believe that flax seed is a potential treatment for lupus nephritis based on the results of a 1995 study of 9 patients. Patients started with 15 g of flax seed daily for four weeks. The dosage was increased to 30 g daily for the next four weeks and 45 g daily for the last four weeks. The researchers concluded that 30 g flax seed a day was well tolerated and showed benefit in terms of kidney function as well as inflammatory mechanisms important in the pathogenesis of lupus nephritis.⁽⁸⁾

Fibre it Up

We have all heard that fibre does the body good. The insoluble fibre in flax seed is helpful in regulating bowel movements, increasing the frequency of bowel movements and preventing or treating bowel irregularities and constipation. Soluble fibre is helpful in lowering blood cholesterol levels as well as lowering blood sugar levels (important for people suffering from diabetes).

A Spoonful of Health

The light, nutty taste of flax seed enhances the flavour of food, and adds nutritional value to your diet. Flax seed may be eaten on its own, sprinkled on cereal, popcorn, and salads, or added to oatmeal, yogurt and blender drinks. Adding flax seed to baked goods adds flavour, extra texture, and good nutrition. Milled flax seed may be baked into a variety of products including breads, pancakes, bagels, muffins and cookies. Although cooking does not destroy the lignans in the milled flax seed, flax oil should not be used for frying as the high temperatures will denature the healthy fats.

But be aware, not all flax products are the same. Be sure to look for a brand that is certified organic. If you opt for oil or capsules, make sure the oil is expeller pressed (also called “cold pressed”). Expeller pressed seeds produce the highest quality flax oils. But most importantly, look for the lignans. Milled flax is by far your best source of lignans, but if you prefer oil or capsules, the bottle should state “with lignans” clearly on the label.

Super Potent Flax Seed Muffins

The following is the recipe used in clinical research on flax seed and breast cancer. The recipe yields a week's supply of muffins (7 muffins). Each muffin provides 25 grams of flax seed.

5/8 cup all-purpose flour
3/4 cup ground flaxseed
3/8 cup brown sugar
1/2 tblsp baking powder
1/2 tsp nutmeg
1/2 tsp cinnamon
1 1/2 cups skim milk

Mix all ingredients together until blended. Fill paper lined muffin tins and bake at 350°F for 30 minutes. For more flavor add diced apple or crushed pineapple. Please note: batter will appear runny, but will rise as it bakes.

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