We suggest that every woman take at least one to two tablespoons of lignan-rich flaxseed oil daily to reduce her risk of breast cancer—and to minimize the potential for it to spread. Some breast cancers are very invasive and spread fast. Besides reducing breast cancer risk, the active ingredients in flax can minimize such spread and invasiveness (more on this later).

Lignan-rich flaxseed oil is unique. Unlike regular flaxseed oil, with lignan-rich products flax particulate from flaxseeds is retained in the oil, delivering powerful cancer-fighting lignan precursors.

There may not be a single nutritional supplement or pharmacological drug today that can offer the same level of protection against cancer and other diseases as delivered with the combination of flaxseed oil and lignan precursors.

**Benefits of Lignan-rich Flaxseed Oil**
- Prevention of estrogen-related cancers
- Prevention of metastasis of cancerous tumors
- Reduction in hot flashes
- Reduction in bloating
- Reduction in breast tenderness
- Regulation of menstrual cycle
- Improved nail strength
- Improvement in skin texture and appearance
- Improvement in hair sheen and appearance
- Lack of cravings for fat-laden and junk foods

**Flaxseed: Nature’s Richest Source of Plant Lignans**
Flaxseed contains phytochemicals known as lignans within the cell matrix of its seed. Much of the interest surrounding plant lignans is based on the suspected association between them and the low incidence of breast and colon cancers of those consuming a plant- and grain-based vegetarian diet. High levels of lignans are present in the blood, urine, and feces of individuals with the lowest rates of several malignant diseases. Flaxseed, in particular, contains 100 to 800 times more plant lignans than its closest competitors, wheat bran, rye, buckwheat, millet, soy beans and oats.

**Pioneering Lignan Research**
Use of lignan-rich flax as a cancer prophylactic is “an area that I think has a lot of promise,” notes Lilian U. Thompson, Ph.D., of the University of Toronto, one of a handful of researchers investigating the relationship between flax and cancer inhibition.

Today, Thompson is one of the world’s leading authorities on flax’s human health benefits, especially in the area of its use for breast cancer prevention and treatment.

In one of her early studies, Thompson already knew flaxseed lignans had been shown to be protective at the early promotional stage when cancers have not quite formed. Now she wanted to determine whether supplementation with flaxseed, beginning 13 weeks after carcinogen administration, would reduce the size of already established mammary tumors present at the start of treatment, as well as appearance of new tumors. After seven weeks of treatment, established tumor volume was over 50 percent smaller in all treatment groups while there was no change in the placebo group. The correlation between established tumor volume and urinary lignan excretion “indicates that the reduction in tumor size is due in part to the lignans derived from...flaxseed.”

A woman’s cumulative exposure to estrogen, including the length of her estrous cycle, plays an important role in her lifetime breast cancer risk; the more estrogen to which her reproductive tissues are exposed, the greater her risk. Because flax lignans are weakly estrogenic, it has been thought that they might displace on the receptors of breast...
cells more toxic forms of estrogen that are likely to increase women’s risk of cancer. In this sense, because they are weak estrogens, flax’s lignans might have a beneficial anti-estrogenic effect much like the drug tamoxifen—but without its risks.

Thus, the antiestrogenic effects of flaxseed were compared with tamoxifen by monitoring estrous cycles. Four-week supplementation of a high-fat diet with flaxseed produced a dose-related cessation or lengthening of the cycle in about two-thirds of animals. With tamoxifen, 83 percent of the animals had irregular cycles. Thus, both compounds were antiestrogenic; however, flax performed its activities without tamoxifen’s gross tissue toxicity (including uterine cancer risks).

In a 1999 report in Carcinogenesis, Thompson and a co-investigator presented intriguing experimental evidence that suggests starting our daughters out on lignan-rich flaxseed oil early on in their lives (including consumption of flax by the mother during pregnancy) can reduce their lifetime breast cancer risk. Flax lignans appear to do so by affecting the highly proliferative terminal end bud structures in the developing mammary gland. Stimulating the terminal ends to develop into alveolar buds and lobules has been suggested to be protective against mammary carcinoma.

Comparative biological research suggests an anti-breast cancer role for lignans. Researchers from the Department of Biological Sciences, Clark Atlanta University, Georgia, compared levels of urinary lignans among cancer-resistant primates with those of humans.

It was found that primates consuming their regular food excreted large amounts of the lignans, enterolactone and enterodiol. When fed a high fat diet, excretion levels were reduced by more than 90 percent—to a level observed in women with breast cancer. The researchers concluded, “Because non-human primates are particularly resistant to mammary and genital carcinoma on estrogen treatment, the present data suggest that the very high levels of phytoestrogens and lignans as found during exposure to the regular diet may partially account for why these primates are so resistant to hormonal manipulations to induce cancer.”

Finally, we have convincing human evidence that levels of various fatty acids in adipose breast tissue and the emergence of aggressive metastases are intimately related. In this study, published in the British Journal of Cancer, 121 women patients with an initially localized breast cancer were studied. Their adipose breast tissue was obtained at the time of initial surgery and its fatty acid content analyzed. A low level of alpha-linolenic acid (found predominantly in flax) was strongly associated with the presence of vascular invasion, indicating the cancer was likely to spread. After an average 31 months of follow-up, 21 patients developed metastases. Large tumor size, high cell-division rates, presence of vascular invasion and low levels of alpha-linolenic acid were single factors significantly associated with an increased risk of metastasis.

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**Did You Know?**

- Lignan-rich flax oil can easily be incorporated into any diet by using it as an ingredient in salad oils, stirred into oat meal, combined with a blender drink, mixed into yogurt, or simply taking it straight, chased by fresh fruit juice.
- You will find lignan-rich flax oil at your local health food store or natural products supermarket, located in the refrigerated section of the supplements department, or in the dairy case.
- Women consuming lignan-rich flaxseed oil products generally report a reduction in breast tenderness, bloating, hot flashes and other symptoms related to PMS and menopause.
- Lignans in flaxseed also regulate women’s menstrual cycle. In one study, women consuming lignans in flaxseed did not miss a single cycle, compared to the control group that missed several cycles.
- In addition to anti-tumor and estrogen mimicking capabilities, lignans have also been found to be powerful antioxidants, as well as possessing anti-viral, anti-bacterial, and anti-fungal properties.

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We also have important human evidence from the University Department of Surgery, Queen Elizabeth II Medical Center, Perth, Western Australia. In this case-control study, published in Lancet, women with newly diagnosed early breast cancer were interviewed by means of questionnaires, and a 72 hour urine collection and blood sample were taken. The urine samples were assayed for various plant constituents including lignans. After adjustment for age at menarche, parity, alcohol intake, and total fat intake, high excretion of both equol (a plant estrogen) and enterolactone was associated with a “substantial reduction in breast-cancer risk,” note the researchers. “There is a substantial reduction in breast-cancer risk among women with a high intake (as measured by excretion) of phyto-estrogens—particularly the isoflavonic phyto-estrogen equol and the lignan enterolactone. These findings could be important in the prevention of breast cancer.”

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**The Doctors’ Prescription**

To appreciate the dual protective effect of lignans and flaxseed oil, it is imperative that consumers recognize and purchase the right products. Flaxseed oil is typically found in the refrigerated section of the supplements department in your favorite health food store. Look for flaxseed oil products that are labeled as lignan-rich. Due to flaxseed oil’s limited shelf life, it is important that you choose products with both a pressing date and a best before date that does not exceed a four-month span. Flaxseed oil products that have been Fresh ExPressed ensure you that the oil was gently expeller pressed without filtration or refinement. Fresh ExPressed oils are made to order for health food stores and sent manufacturer direct arriving just days after being made.

*References available at www.freedompressonline.com*

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One flax oil that fits these criteria and we would recommend for the ultimate in freshness is Barlean’s Lignan Rich Flax Oil.