

## Researchers Find Flaxseed Can Slow Tumor Growth In Breast Cancer Patients

**A** muffin a day—with 50 grams of ground flaxseed—could keep breast cancer at bay, according to a new Canadian study. The researchers found there was a “slowing down in tumor growth” in breast cancer patients fed flaxseed muffins.

“Our results are very exciting because this is the first time anyone has demonstrated these changes in breast cancer with any dietary component,” said Dr. Paul Goss, director of the breast cancer prevention program at Princess Margaret Hospital and the Toronto Hospital.

Earlier animal studies have shown that flaxseed has anti-cancer properties, but the researchers were surprised by how potent the effect appears to be in people.

“It encourages us to believe this is a very significant

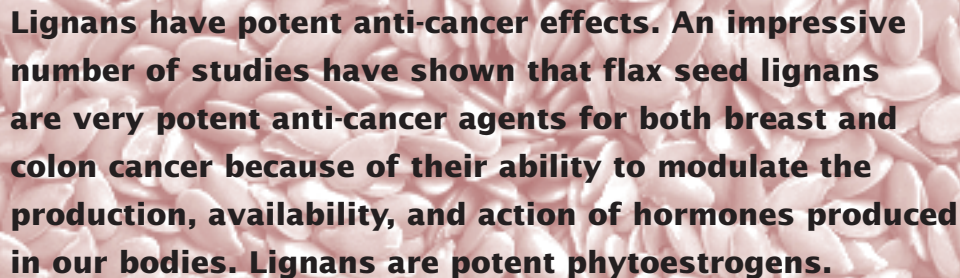
the flaxseed muffins had slower-growing tumors than the others.

### Confirms Other Recent Work

This study supports the work of French researchers who recently found that low levels of the omega-3 fatty acid **alpha-linolenic acid** (of which flax is perhaps the richest terrestrial source) predict increased risk of breast cancer. The study was published in the February 2000 issue of the *European Journal of Cancer*.

This case-control study conducted in central France was designed to explore whether alpha-linolenic acid inhibits breast cancer, using fatty acid levels in adipose breast tissue as a biomarker of its intake. Biopsies of adipose breast tissue at the time of diagnosis were obtained from 123 women with invasive non-metastatic

breast carcinoma, while 59 women with benign breast disease served as controls. Women with the highest levels of alpha-linolenic acid experienced a 74 percent reduced risk for breast cancer, compared with those women with the lowest intake, thus, say the researchers, “suggesting a protective effect of alpha-linolenic acid in the risk of breast cancer.”



**Lignans have potent anti-cancer effects. An impressive number of studies have shown that flax seed lignans are very potent anti-cancer agents for both breast and colon cancer because of their ability to modulate the production, availability, and action of hormones produced in our bodies. Lignans are potent phytoestrogens.**

biological effect in women and we are heading towards more definitive proof that dietary flaxseed may prevent breast cancer,” Goss said.

Goss presented his research team’s finding in January at an international breast cancer conference in San Antonio, Tex.

The study involved 50 women who had been recently diagnosed with breast cancer. While waiting for their surgery, the women were divided into two groups. One group received a daily muffin containing 50 grams of ground flaxseed, about 30 milliliters (two tablespoons). The others were prescribed ordinary muffins.

When their tumors were removed—usually within 40 days of diagnosis—the researchers examined them for signs of how fast the cancer cells had been growing. It turned out that the women who had received

### Recent Experimental Evidence

Additional research from the Department of Nutritional Sciences, Faculty of Medicine, University of Toronto, Ontario, Canada, further confirms the amazingly potent benefits of flax constituents—especially the prized lignans found in flaxseed and lignan-rich flax oil—when it comes to breast cancer prevention. Very often, breast tumors are the result of both environmental and intrinsic internal factors, that is, an environmental contaminant can initiate cancer processes or promote future cancerous processes by damaging the genetic structure of the cell so that it becomes susceptible to cancer. In their experimental study, the Canadian researchers wanted to know whether ever higher dietary amounts of flaxseed or its lignan constituents could reduce chemically induced breast tumors. The researchers determined

that flax's lignans were the most potent constituents of flax for reducing tumor size and number. Interestingly, these results may have been skewed somewhat, say the researchers, by the control diet, which consisted of a high amount of soy oil, a relatively rich source of in alpha-linolenic acid.

#### Natural Estrogen Buffer

Plant lignans are nature's estrogen buffers. They appear to reduce the most potent toxic effects of some forms of estrogen. Women's bodies have evolved over millions of years in such a way that they require this buffering effect; yet in the industrialized nations, lignan levels in women's bodies are generally very low.

Therefore, flax is definitely a food women want to put more of in their diets. "I've been recommending flaxseeds and flaxseed oil for years," says Christiane Northrup, M.D., one of America's leading experts on women's health. "Flaxseed is the highest known

source of anti-cancer and phytoestrogenic compounds known as lignans—a concentration more than 100 times greater than other lignan-containing foods such as grains, fruits, and vegetables. Lignans are plant substances that get broken down by intestinal bacteria into two main mammalian lignans—enterodiols and enterolactone. These lignans then circulate through the liver and are later excreted in the urine. There are a number of reasons why we all should be interested in incorporating more lignans into our diet. The following are some of the most compelling: Lignans have potent anti-cancer effects. An impressive number of studies have shown that flax seed lignans are very potent anti-cancer agents for both breast and colon cancer because of their ability to modulate the production, availability, and action of hormones produced in our bodies. Lignans are potent phytoestrogens. In women who consume flaxseed oil, studies have shown significant hormonal changes and decreased estradiol levels—alterations similar to those

**DID YOU KNOW?**  
**Barley Grass Stimulates Growth Hormone Release**  
 The holy grail of anti-aging medicine is to rejuvenate the body's levels of growth hormone. One natural food that appears to do so is. Barley grass is a rich source of vitamin E succinate (VES). When extracted from barley grass, VES has been shown to stimulate growth hormone release, note David W. Johnson, Ph.D. and David J. Mokler, Ph.D., of the College of Osteopathic Medicine, University of New England.

seen with soy isoflavones. This makes flaxseed oil or meal a great choice for women who can't use soy or who simply want another source of phytohormones."

The role of alpha-linolenic acid in breast cancer prevention and reduced risk of its spread may be due to its potent membrane-stabilizing effects; ability to act as an anti-inflammatory agent; and by normalizing the body's production of specific cancer-promoting prostaglandins. ❖

#### REFERENCES

- Klein, V., et al. "Low alpha-linolenic acid content of adipose breast tissue is associated with an increased risk of breast cancer." *Eur J Cancer*, 2000;36(3):335-340.  
 Rickard, S.E., et al. "Dose effects of flaxseed and its lignan on N-methyl-N-nitrosourea-induced mammary tumorigenesis in rats." *Nutr Cancer*, 1999; 35(1):50-57.

#### The Ecology of Flax

One reason we recommend flax is that it is an ecologically sound choice—as shown by the recent ban on fishing for cod in the North Sea.

On January 24, 2001, some 40,000 square miles of the North Sea were closed to cod fishermen to prevent over fishing during the spawning season. This ban will last until April 30, 2001. EU officials say the entire cod stock in the North Sea is in danger of collapse. Meanwhile, cod liver oil, a primary source of omega-3 fatty acids, may be in scarce supply. The declining populations of fishery resources such as cod should provide environmentally conscious consumers with impetus to make the ecologically wise choice of flax, a renewable resource that also provides omega-3 fatty acids.

#### The Doctors' Prescription

Use Barlean's newly introduced **Forti-Flax** flaxseed for baking and lignan-rich flaxseed oil (e.g., **Barlean's Lignan Rich Flax Oil**) as a salad dressing, in smoothies, with yogurt and as a spread on bread and muffins.

The reason that we recommend Barlean's as the premiere flaxseed oil is its exceptionally high lignan content, combined with freshness dating. Other flax oil products are freshness dated for as long as one year. Barlean's freshness dates products for only four months.

When a natural health retailer orders Barlean's Lignan Rich Flax Oil, it is freshly expressed and air-shipped to the store direct from the manufacturer—and Barlean's Flax Oil must be refrigerated.

Flax oil should be thought of as a perishable food item and it should be handled as such. Flax oil should *not* be warehoused for long periods or exposed to extreme temperature variations. Such changes can cause flax to lose potency, reduce its taste, and even cause it to become rancid. We think freshness dating matters—and that Barlean's does it best.

