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The Cancer Epidemic

By William Faloon

While cancer incidence is running at epidemic levels in the United States, soy genistein appears to be effective in preventing cancer at certain sites in the body, and has demonstrated many other disease-preventing benefits as well.

Based on the published scientific evidence, those seeking to reduce their risk of disease should consume about 50 mg a day of genistein. But up until now, it has been difficult and expensive to obtain the amount of genistein and other soy isoflavones that scientists say may prevent age-related diseases.

The Life Extension Foundation has been working with a major food processing company for the last year to develop a soy extract that provides a greater concentration of genistein and other isoflavones. The result of this research is a soy extract, in a product called Mega Soy Extract, that contains 41 times more genistein than the best previous soy extract, sold under the trade name Ecogen. The Foundation was the first to market a soy supplement for cancer prevention. The first soy protein concentrate, made by the Ralston-Purina company, contained only 0.68 mg of genistein per gram. At the time, that was the best genistein extract science had to offer.



Mega Soy Extract contains 191 times more genistein per gram than the original soy protein concentrate powder sold by Ralston-Purina. This new soy extract makes it economical and convenient to obtain the amount of genistein (50 mg a day) and other isoflavones scientists suggest may prevent a multitude of diseases.

Healthy people only need to take only one small 135-mg capsule in the morning, and again one 135-mg capsule in the evening.

Here is a comparison of the new 135-mg Mega Soy Extract capsule to other soy extract supplements:

- Just two small 135-mg capsules provide the amount of genistein and other isoflavones found in 18 tablets of another product, Soy Power.
- Those same two capsules provide the equivalent of 11 tablets of the Foundation's current high soy extract, Ecogen.
- Two Mega Soy Extract capsule provides the equivalent of 11 grams of Ecogen powder.
- And, Mega Soy Extract is 3.5 times less costly than other soy extracts.

According to peer-reviewed scientific studies, two Mega Soy Extract capsules may provide enough soy isoflavones to:

1. Prevent cancer at multiple sites
2. Prevent gallstones
3. Protect kidney function
4. Stimulate bone formation
5. Lower cholesterol levels
6. Inhibit the oxidation of LDL cholesterol
7. Inhibit the development or progression of atherosclerosis
8. Alleviate pre- and post-menopausal symptoms (higher doses may be needed by some women)

As noted, based upon records of dietary soy consumption in Japan, where breast and prostate cancers are very low, the typical daily isoflavone intake has been estimated at 50 mg per person. By contrast, the typical Western diet has been estimated to provide only 2 to 3 mg a day of genistein. The daily dose of Mega Soy Extract provides 50 mg of genistein along with 60 mg of other important isoflavones. This means that two capsules of this new soy extract provide more than twice the amount of total isoflavones found in the typical Japanese diet.

Not only are certain cancer levels lower in those who consume soy, but menopausal symptoms and the incidence of osteoporosis are reduced. One study shows that soy isoflavones promote a growth in bone density in post-menopausal women by binding to an estrogen receptor in bone.

Why wasn't the daily dose of Mega Soy Extract put into one larger capsule instead of two? Because isoflavones are water-soluble, and twice-a-day dosing is necessary to maintain optimal blood levels. We suggest that healthy people take one capsule in the morning and one in the evening. Take with food for optimal results.

While for general disease prevention purposes, one capsule twice a day is suggested, women seeking to use higher doses of the new soy extract for the phytoestrogenic effects may take two to three capsules twice a day.

Soy extracts also have become very popular in the last few years as an adjuvant (assisting) cancer therapy. This is one reason that Mega Soy Extract is also available in a stronger 700-mg capsule dose for adjuvant cancer treatment. Treating cancer, however, is not simple, and there are some cancer patients who should not use soy, or are less likely to benefit from soy.

Cancer patients (and their doctors) may find the following information complicated, but it is crucial that it be understood if the cancer patient is to use high concentrations of soy properly.

First of all, cancer patients undergoing radiation therapy should not take soy supplements one week before, during, and one week after being treated. Soy inhibits protein kinase C activity in cancer cells. Since cancer cells use protein kinase C for energy production, inhibiting this enzyme is usually desirable. Radiation therapy, on the other hand, depends on protein kinase C to help generate free radicals that kill cancer cells. It's possible, therefore, that large amounts of genistein in cancer cells could protect them against radiation-induced free-radical-mediated destruction.

An investigation into the effects of soy genistein on the growth and differentiation of human melanoma cells showed that genistein significantly inhibited cell growth. In addition, some studies suggest that genistein may enhance the benefits of certain chemotherapy regimens.

One study showed that genistein inhibited the proliferation and expression of the invasive capacity of prostate cancer cells, in vitro. Genistein proved to be toxic to a line of prostate cancer cells. The more aggressively the prostate cancer cells grew, the more genistein was effective in inhibiting both growth factors and the rate of cellular proliferation.

Another study sought to determine if genistein can induce human breast adenocarcinoma cell maturation and differentiation. And, in fact, genistein resulted in growth inhibition accompanied by increased cell maturation, with optimal maturation after nine days. Cancer cells with both positive estrogen-receptors and negative estrogen-receptor cells differentiated in response to genistein, a crucial step in the induction of cancer cell apoptosis (programmed cell death).

The suggested dose for cancer patients (according to the published literature) is five 700-mg capsules of the new high-dose Mega Soy Extract, four times a day. This provides the optimal daily dose of approximately 2,800 mg of standardized genistein. Genistein is rapidly metabolized within the body, which makes it necessary for cancer patients to take Mega Soy Extract in four divided doses spaced evenly throughout the day.

Soy genistein may inhibit an enzyme that normally recycles cyclooxygenases in the colon. This may lead to excess levels of cyclooxygenase-2 (Cox-2), causing excess production of prostaglandin-E2. That can promote cancer growth, stimulate angiogenesis and induce immunosuppression. Colon cancer patients taking soy supplements should consider taking an aspirin with their heavy meal every day to inhibit Cox-2. Other Cox-2 inhibitors include a daily dose of fish oil concentrate containing 2,400 mg of EPA, and 1,800 mg of DHA, 2,000 mg of ginger extract, and 6,000 mg a day of garlic.

It is important to remember that soy extract is not a cancer cure. It has documented anti-cancer benefits that may work synergistically with other conventional and alternative cancer therapies.

Please refer to the Foundation's revised Cancer Treatment Protocol before using Mega Soy Extract as an adjuvant cancer therapy.

Mega Soy Extract's price is much lower per milligram than any other soy product on the market. And, based on the published literature, cancer patients have to take large amounts of soy genistein in order to have a chance of duplicating the remarkable results seen in laboratory studies.

For detailed information about the multiple benefits of soy supplementation, refer to the February and March 1997 issues of Life Extension magazine. These issues contained two in-depth reports from an international symposium held in Brussels entitled, "Role of Soy in Preventing and Treating Chronic Disease."

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