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Evening Primrose Oil

A Supplement for Health and Beauty

The evening primrose plant (*Oenothera biennis*) has been commonly known as “tree primrose” and “sun drop”. Evening primrose can be found in many parts of North America and is native in the north temperate zone, especially at high altitudes. The native people of North America as well as the English and pilgrims, were well aware of the healing properties of the leaves and bark as an astringent, sedative and nervine (a herb that affects the nerves and includes relaxants, tonics and even stimulants). It was often used for stomach and liver complaints, coughs and female disorders. Even the roots were eaten as a vegetable. The seeds were recommended as a coffee substitute in wartime and have a strong flavor similar to poppy seed oil. The therapeutic value of the seed oil is a more recent discovery. It is this seed oil, and its essential fatty acid content, that holds the most interest today in maintaining health and preventing disease.

Evening primrose oil is an oil rich in essential fatty acids – polyunsaturated fats that are as essential as

vitamins and minerals for the maintenance of good health. The oil contains 74 percent linolenic acid (LA) and 8-10 percent gamma linolenic acid (GLA). Although other oils such as borage oil and black currant oil contain higher amounts of GLA, evening primrose oil is by far the most popular and familiar source of this fatty acid. Evening primrose oil also contains 11 percent oleic acid, 6 percent palmitic acid, and 2 percent stearic acid.

Under ideal conditions, the body uses LA to produce GLA. In turn, GLA is used to produce beneficial hormone-like compounds called prostaglandins. Specifically, GLA is used to produce series one prostaglandins such as prostaglandin E1 (PGE1).

Prostaglandins affect the function of virtually every system in the body – these molecules are used in the regulation of inflammation, pain, blood pressure, fluid balance, and blood clotting. Prostaglandins also affect hormone production and function.

The key to understanding the important need for supplementing with oils rich in GLA, such as

evening primrose oil, is that many of us cannot convert LA to GLA efficiently. Dietary deficiencies, disease conditions, processed oils, trans fatty acids, heated oils, alcohol, aging, viral infections and sugar consumption block, slow down, or interfere with the enzyme that catalyzes the conversion of LA to GLA. The result is that virtually all North Americans are deficient in GLA. Supplementing with evening primrose oil can enrich the body’s GLA supply and restore the production of beneficial prostaglandins derived from GLA. Research completed over the last 20 years has confirmed that supplementation with evening primrose oil has beneficial effects in numerous diseases and conditions.

Health problems supported and/or suggested by scientific trials using evening primrose oil include premenstrual syndrome, fibrocystic breast pain, eczema, rheumatoid arthritis, diabetes, heart disease, osteoporosis and ulcerative colitis. Other conditions for which it may provide benefit include menopause and pregnancy.

Premenstrual Syndrome

PMS has been linked to excessive and incorrect prostaglandin production. Women with PMS may have a deficiency of prostaglandin E1 at the central nervous system¹ and in other tissue such as breast tissue. Supplementing with GLA may raise the body's production of this prostaglandin. The most popular and scientifically documented method is to supplement with GLA in the form of evening primrose oil. Rigorous scientific studies have demonstrated that supplementing with evening primrose oil has a significant effect on symptoms of PMS.^{2,3,4} Evening primrose oil has been shown to improve symptoms including premenstrual headaches, depression, irritability, and bloating. Evening primrose oil also dramatically relieves premenstrual breast pain and tenderness.

Breast Health

The pain and tenderness associated with premenstrual breast pain and fibrocystic breasts has been alleviated with evening primrose oil in more than one scientific study.^{5,6} In 1985, when 291 women took three grams per day of evening primrose oil for three to six months, almost half of the 92 women with cyclic breast pain experienced improvement compared with one-fifth of the patients who received the placebo. In the course of treatment, it has been detected that women with breast pain have unusually low concentrations of GLA and metabolites from GLA. When patients receive supplements of evening primrose oil, the concentration of GLA metabolites increases and the concentration of saturated fats in the breast decreases. This may also have long term implications for prevention of breast diseases such as breast cancer.

Menopause

Evening primrose oil and other oils containing GLA are popularly con-

sumed by women to decrease the symptoms of menopause. GLA in the form of evening primrose oil has been found to reduce the maximum number of nighttime flushes associated with menopause. However, there was no overall difference between the supplement and the placebo.⁷ Many other herbal supplements are available to relieve menopausal symptoms and these may be used in conjunction with EFAs for greater benefit.



Fetal development is associated with a high EFA requirement, and this supply is dependent on the amount and availability of EFAs from the mother.

Pregnancy and Fetal Development

Essential fatty acids have a unique role during pregnancy because of the rapid development of new cell growth, new tissues, and new organ systems in a developing fetus. Fetal development is associated with a high EFA requirement, and this supply is dependent on the amount and availability of EFAs from the mother.

Prostaglandins are also involved in the development and clinical

expression of pre-eclampsia (the simultaneous occurrence of the clinical triad of hypertension, edema and protein in the urine at any time during the course of the pregnancy). These prostaglandins are modulators of vascular smooth muscle tone and platelet aggregation (blood platelets sticking together). Pre-eclampsia is characterized by increased vasoconstriction, frequently associated with increased platelet aggregation, reduced uteroplacental blood flow, and premature delivery. In a placebo-controlled clinical trial, a group of pregnant women receiving a combination of evening primrose oil and fish had a significantly lower incidence of edema.⁸

Skin Health

Nutritional supplementation with GLA is one of the most important tools in treating eczema. GLA also helps moisturize the skin and protect it from environmental oxidative damage. There have been many scientific studies using GLA with excellent benefits in improving the symptoms of eczema.^{9,10,11,12}

Dosages in the range of 0.5 to 3 grams of GLA are appropriate. Both evening primrose oils and borage oil have been used in these studies.

Arthritis

Many studies on GLA have shown that individuals with rheumatoid arthritis experience significant improvements in their symptoms within the first six months of use. They also continue to improve by as much as 50 percent in the number of tender joints, 54 percent in the reduction of tender joints, and 42 percent in the reduction in swollen joints. Overall, morning stiffness can decrease on average by 67 percent, and pain can be reduced on average by 27 percent.^{13,14} Studies using evening primrose oil also consistently show that individuals using 1.5 to 2.8 grams of GLA daily can reduce their use of nonsteroidal anti-inflammatory medications.

Although there have been no human trials to date studying the effects of GLA

on other forms of arthritis such as osteoarthritis, animal studies do show that GLA supplementation can have anti-inflammatory effects. Practitioners of natural medicine report that they see positive benefits using evening primrose oil supplements in osteoarthritis as well as rheumatoid arthritis.

Diabetes

Diabetes is associated with abnormalities in essential fatty acid metabolism. One of these abnormalities is an impairment in the conversion of LA to GLA. By supplementing with GLA in the form of evening primrose oil, we can bypass this impairment and give the body the GLA it needs. Individuals with diabetic related neuropathies have been studied using GLA. Significant favorable changes have been observed in muscle strength, hot and cold thresholds, sensation, and reflexes.¹⁵

Heart Disease

High cholesterol: Although fish oils and flax oil have received considerable attention for their role in reducing heart disease due to their effects on blood lipids and blood pressure, we shouldn't forget about the role of other essential fatty acids. For example, supplementing with 3 grams of GLA daily for four months has been shown to decrease triglyceride levels by 48 percent, increase HDL ("good" cholesterol) by 22 percent, and significantly reduce total cholesterol and LDL ("bad" cholesterol).¹⁶ We should always include evening primrose oil supplementation in our heart disease treatment and prevention plans in addition to other EFA oils.

High blood pressure: High blood pressure (a reading above 140/90) is another risk factor for heart disease. More than 60 double-blind studies have demonstrated that either fish oil supplements or flaxseed oil are effective in lowering blood pressure. Again, we would be wise not to forget about the potential of evening primrose oil in this regard. In a study combining evening primrose oil and fish oil supplementation, blood pressure was significantly lowered when compared to

evening primrose oil plus sunflower and evening primrose oil plus flax oil.¹⁷

Osteoporosis

It appears evident from the published research that we must expand our use of EFAs to maximize calcium metabolism and preserve bone health. There is a growing body of evidence and research to warrant advice about EFAs and calcium metabolism, bone health and the prevention of osteoporosis. EFAs have been shown to increase calcium absorption from the gut (in part by enhancing the effects of vitamin D), reduce urinary excretion of calcium, increase calcium that is deposited in the bone and improve the strength of bone.¹⁸ Adults with osteoporosis who are given fish oil show an increase in calcium levels and an increase in urinary calcium clearance.¹⁹ GLA in particular has been shown to reduce the excretion of calcium²⁰, inhibit bone reabsorption and markers of bone turnover while at the same time increasing the levels of calcium content in the bone.²¹

Ulcerative Colitis

Evening primrose oil has been studied for individuals with ulcerative colitis. Although evening primrose oil did not reduce rectal bleeding or stool frequency, it did significantly improve the stool consistency.²² Evening primrose oil and other EFA supplements may prove to have a long term role in managing the symptoms of ulcerative colitis as well as the underlying chronic inflammatory condition. We look forward to more research in this area.

Other Effects

Brain function: A study of psychiatric patients with tardive dyskinesia (abnormal involuntary movements) received evening primrose oil capsules over four months. Although evening primrose oil supplementation did not improve the abnormal movements, there was significant improvement in mental state, schizophrenic symptoms and memory. In a second phase, zinc, niacin and vitamins C and B6 were added to evening primrose oil. The combination

of supplements yielded marked and significant improvements in memory, schizophrenic symptoms and abnormal movement.^{23, 24, 25}

Alcoholism: In a clinical trial of alcoholics withdrawing from alcohol, evening primrose oil significantly reduced the severity of the withdrawal syndrome and improved liver function as well. In individuals who did not relapse, subjects reported improved memory and visual motor coordination while taking evening primrose oil supplementation.²⁶

Kidney transplants: In a clinical trial of 89 kidney transplant patients who received either evening primrose oil or placebo along with their standard immunosuppressive medication, graft survival was significantly better in the evening primrose oil group compared to placebo within the first 3-4 months.²⁷

Safety and Side Effects

Minor side effects that may occur with evening primrose oil supplementation include nausea, upset stomach and loose bowel movements.

These side effects may be minimized by taking supplements with food or milk, taking the daily dose in divided portions and increasing the dose slowly.

No problems have been associated with pregnancy or breast feeding while supplementing with evening primrose oil.

As with any nutritional supplement, you are advised to consult with your health care practitioner before beginning a supplementation program.



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