

The Longwood Herbal Task Force
(<http://www.mcp.edu/herbal/default.htm>) and
The Center for Holistic Pediatric Education and Research
(<http://www.childrenshospital.org/holistic/>)

Clinician Information Summary

EVENING PRIMROSE OIL *(Oenothera biennis)*

SUMMARY

The major American uses for evening primrose oil are to treat inflammatory disorders ranging from eczema to rheumatoid arthritis; it is also used to treat cyclic mastalgia associated with premenstrual syndrome, inflammatory bowel disease and diabetic peripheral neuropathy. Its constituents include linoleic acid (LA) and gamma linolenic acid (GLA). These essential fatty acids serve as precursors in arachidonic acid metabolism to prostaglandins and leukotrienes. Despite its convincing biochemical rationale, data from animal studies and its widespread use in Europe, the current scientific evidence regarding EPO's effectiveness supports only a modest role as an adjunctive therapy for eczema, premenstrual syndrome (particularly cyclic mastalgia), rheumatoid arthritis, hypercholesterolemia and diabetic peripheral neuropathy. The evidence is insufficient to support its routine use as an adjunctive therapy for inflammatory bowel disease or chronic fatigue syndrome. Side effects from evening primrose oil are mild; they typically include diarrhea and headache, but are seldom severe enough to discontinue treatment. There are no studies evaluating toxicity during pregnancy, lactation or childhood.

POPULAR USES: Inflammatory disorders such as eczema, asthma and allergies; arthritis, cyclic mastalgia, diabetic peripheral neuropathy, inflammatory bowel disease, chronic fatigue syndrome.

CHEMICAL CONSTITUENTS: Gamma Linolenic Acid (GLA): 7% -10%; Linoleic Acid (LA): 60% - 75%

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SCIENTIFIC DATA

In Vitro: Gamma linolenic acid is an omega-6 fatty acid that is metabolized to arachidonic acid, an important precursor for a number of prostaglandins and leukotrienes. GLA supplementation also reduces T-cell activation in rheumatic disorders.

In Animals: In diabetic rats, EPO supplements significantly improves peripheral circulation and improves peripheral neuropathies. Giving hypertensive rats GLA-rich vegetable oils such as EPO lowers blood pressure; EPO also lowers cholesterol in rats, rabbits and guinea pigs fed atherogenic diets. Pre-treating rats with EPO prior to cyclosporine or adriamycin administration provides marked protection against nephrotoxicity. Numerous double-blind, placebo controlled trials demonstrate EPO's effectiveness in treating animals with eczema-like dermatoses. EPO also reduces adjuvant-induced arthritis in rats.

In Humans: In two randomized controlled clinical trials in adults with diabetic peripheral neuropathy, GLA supplements improved symptoms and neural function. In a separate study, EPO supplements (4 grams daily) lowered serum cholesterol concentrations by over 30%. EPO supplements are no more helpful than placebo in reducing menopausal hot flashes. In open label studies, EPO supplements are useful in treating eczema and rheumatoid arthritis, but randomized controlled trials suggest only modest benefits over several months of treatment with 3 – 6 grams daily of EPO. Similarly, EPO seems to help about 50% of women suffering from cyclic mastalgia, somewhat more than are helped by placebo but fewer than those who improve on danazol. A small pilot study suggests EPO might be helpful in treating chronic fatigue syndrome, but no clinical trials have evaluated its use in treating multiple sclerosis or other chronic conditions.

TOXICITY AND SIDE EFFECTS:

Allergic reactions have not been reported.

Side effects are rare and include diarrhea and headache at about the same rate as in placebo-treated persons.

Interactions with other medications: None known.

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Contraindications: None known.

Pregnancy and lactation: No data evaluating safety. Non-teratogenic. Generally approved as safe in 30 countries.

Pediatric use: No clinical studies or systematic surveillance evaluating safety.

ADDITIONAL REFERENCES OR RESOURCES

- HOME: <http://www.mcp.edu/herbal/default.htm>
- Evening Primrose Oil Complete Monograph:
<http://www.mcp.edu/herbal/epo/epo.pdf>
- Evening Primrose Oil Patient Fact Sheet:
<http://www.mcp.edu/herbal/epo/epo.ph.pdf>