

Lisa Ta
Katrina Johnson
Erica Azucena
October 24, 2012
DFM 655

Alternative Nutrition Therapy Project: Evening Primrose Oil

Introduction

Recent consumer interest in non-mineral and non-vitamin alternative supplementation has risen to roughly 17% of adults using a form of complementary and alternative medications (Nelms, 2011). One such bioactive agent used by consumers is *Oenothera biennis*, commonly known as evening primrose, a wild flower which grows throughout North America, Europe and throughout the world. Evening Primrose Oil (EPO) is high in essential fatty acids such as gamma linolenic acid (omega-6). The oil extracted from the evening primrose seeds are used as a dietary, therapeutic and cosmetic source.

History and Description

Classified as a weed, evening primrose is a biennial plant that grows in wild spaces. Evening primrose thrives in low-nutrient soil with adequate sunlight and does not require maintenance. The plant's yellow flowers open only at night or on overcast days, to be pollinated by moths (UMMC, 2011). Every part of the plant is edible although its oil is most commonly used; it is pressed from its fluffy seeds. The roots (when boiled) and leaves can be consumed (Wong, 2009). The scientific name *Oenothera biennis* means wine hunt because it was believed that eating the roots would counter the effect over the consumption of wine. Evening Primrose was originally discovered in North America, where they were used by the Native Americans for food and its poultice capabilities to heal bruises (UMMC, 2011).

It is thought that evening primrose oil (EPO) was brought to Europe because the soil used to ballast ships and railroad tracks contained Evening Primrose Seeds or perhaps that settlers brought the roots back. The research to support its natural remedy benefits began in 1980. It was used as a prescription form of fatty acids to treat eczema and breast pain in the U.K., but in 2002, the British withdrew the licenses to market it as a prescription drug product due to its inconclusive effectiveness (Medline Plus, 2012).

Uses, Doses

1. Historical Time

Since the 1930s, it was used for its beneficial properties in promoting health capabilities in skin disorders, bone health and for premenstrual syndrome (PMS), so it's fairly new for medicinal purposes. Native Americans used the dried seeds of the plant as food (Wong, 2009) and its poultice capabilities to heal bruises (UMMC, 2011).

2. Modern Time

Evening primrose oil has been used to alleviate a wide range of conditions including headaches (the oil contains pain-relieving phenylalanine)(Duke, 1997), infertility, impotency, cancer, diabetes as well as diabetic neuropathy, osteoarthritis, memory loss, attention deficit

hyperactivity disorder, assist with alcohol withdrawals, and improve athletic performance (Nelms, 2011). It is a popular treatment for treating premenstrual and menopausal symptoms. It can be taken as an agent to relieve ulcerative colitis manifestations. For those experiencing eczema, evening primrose oil may help treat the associated inflammation, itching, and scaling. (Wong, 2009). EPO is an excellent source of gamma-linoleic acid; thus, it can be utilized for its anti-clotting, cholesterol-lowering effects as a mild antihypertensive supplement and to prevent strokes. Conditions that indicate the use of GLA can be used in conjunction with EPO (Duke, 1997). Our bodies need a balance of the essential fatty acids (GLA), such as omega-6, found in evening primrose oil and omega-3, found in fish oil to function.

Evening Primrose oil can be purchased at health food stores and taken as a capsule, gel cap, liquid form, or used as an additive for skin creams. To avoid rancidity, it must be kept in the refrigerator and out of direct sunlight. Purchasing it is recommended as extracting the oil from the seeds is difficult. EPO is generally safe, but consult a physician first to determine possible side effects and conflicts with other medications.

For regular supplementation, the recommended dosage is 2.5 to 8 grams per day (Nelms, 2011). It is recommendation to take orally for at least six months for optimal efficacy (Wong, 2009). According to the American Cancer Society (2012), daily dosages of 500 milligrams ranged from 2 to 16 capsules, but another study used a daily dose that went up to 36 capsules. Those that use it for breast pain, the daily recommended dose is 3-4 grams daily.

Scientific research

1. Effectiveness

Many small studies show different effectiveness for EPO. According to the American Cancer Society (2012), Evening Primrose Oil can be effective in the treatment of autoimmune disorders, hormones, infections, musculoskeletal, nervous system, organ health, skin, hair, nails, and for urogenital conditions. It has shown promise in small studies for alleviating breast pain and treating osteoporosis. There are conflicting findings in several studies that regard its effectiveness in psoriasis, PMS, rheumatoid arthritis and cancer.

A study was done in India, Kolkata, which showed 96% of their patients in the EPO group and 32% in the placebo group to have improvements in Atopic Dermatitis (Senapati, 2008). They concluded that EPO was effective in managing Atopic Dermatitis, but other studies done had shown different results (Senapati, 2008). Some research had possible confounders due to a small patient population or that it was uncontrolled. For example, there were trials done to see if EPO was effective for rheumatoid arthritis, which had its largest group of 19 patients that showed mixed results (Kleijnen 1994). In the past, four trials were done to test the effectiveness for Premenstrual Syndrome, which resulted in positive outcomes. Recently, a small trial conducted by Khoo et al resulted with the same positive outcomes for both the placebo and EPO groups (Kleijnen 1994). Currently, based on several studies, EPO does not have an effect on cancer.

2. Nutritional Facts

EPO contains 10 kilocalories and 1 gram of fat per serving (per 1000 mg of EPO). It contains polyunsaturated and monounsaturated fat (Evening primrose oil). As mentioned previously, it contains a significant amount of gamma-linoleic acid (GLA); 89 mg. GLA plays a role in bone and growth health and metabolism (Wong, 2009). EPO also contains phenylalanine.

3. Drug-nutrient interaction/side effects

When taking EPO, a range of interactions can occur and thus an individual should first consult with a healthcare provider before beginning supplementation. Potential mild side effects are headaches, gastrointestinal upset, nausea, and diarrhea (*Evening primrose oil*, 2009). EPO carries special precautions for pregnant women, although it may be acceptable for breastfeeding women to take it, they should check with a healthcare provider first (*Evening primrose oil*, 2009). Additional groups who should take caution with EPO are those with bleeding disorders (including anyone who plans to undergo or has had a surgery), prone to seizures, undergoing anesthesia, and patients on phenothiazine, antidepressants, or blood pressure lowering medications because EPO can enhance antihypertensive effects (Medline Plus, 2012). It should be noted that immunosuppression may result from prolonged use (Nelms, 2011).

A significant potential EPO drug interaction that may occur is that it can enhance the action of anticoagulant and antiplatelet drugs. Because of the GLA levels in EPO, it increases the chance of any bruising and/or bleeding. Herbal and supplement interactions when using herbs such as angelica, clove, danshen, garlic, ginger, ginkgo, red clover, and turmeric with Evening Primrose oil can cause slow blood clotting.

Discussion

Like many other alternative supplements, individuals consume EPO exclusively to treat as well as use in conjunction with other agents to treat a vast array of conditions. As discussed previously, there have not been many studies completed on the medicinal efficacy of the numerous uses of EPO by consumers. There has been moderate indication found for the use of EPO in treating atopic dermatitis. Additional small studies have supported the use of EPO for breast pain and arthritis. For individuals with these conditions, EPO can be a helpful natural treatment, if there are no other contraindications; otherwise the patient should avoid this supplement. Specifically, those on blood thinners, pregnant mothers, individuals prone to seizures, or anyone undergoing anesthesia should avoid EPO.

Conclusion

Evening primrose oil is considered to be a safe natural supplement if an individual understands its mild side effects and gets an approval from a healthcare provider. It's been used throughout history and has not shown any serious life threatening complications, unless there are drug interactions. Some researchers may say Americans get enough Omega 6 or other sources are much more useful than EPO, but Evening primrose has been known to be useful in cosmetics, therapies, and as a food source. The fact that evening primrose is a weed and is easy to grow, it has flexible qualities that can be beneficial to our environment as well. As with all supplements with limited research, the adage of "First do no harm" is particularly applicable. EPO will become a promising treatment some day or yet again, when more research is done to support its effectiveness in promoting health.

References

1) Duke, J. (1997). *The green pharmacy*. Emmaus, PA: Rodale Press.

- 2) *Evening primrose oil*. (n.d.). Retrieved from http://www.netrition.com/now_epo_page.html
- 3) Evening primrose oil.(2009). *Webmd*. Therapeutic Research Faculty. Retrieved from <http://www.webmd.com/vitamins-supplements/ingredientmono-1006-EVENINGPRIMROSEOIL.aspx?activeIngredientId=1006&activeIngredientName=EVENINGPRIMROSE OIL>
- 4) Kleijnen, J. (1994). Evening primrose oil. 309, 824. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2541068/pdf/bmj00459-0008.pdf>
- 5) Nelms, M. (2011). *Nutrition therapy and pathophysiology*. Belmont, CA: Wadsworth, Cengage Learning.
- 6) Senapati , S. (2008). Evening primrose oil is effective in treatment of atopic dermatitis . 74, 447-452. Retrieved from <http://0-web.ebscohost.com/opac.sfsu.edu/ehost/pdfviewer/pdfviewer?sid=0541e090-a4a-4579-855b-0f071c4be2e3@sessionmgr113&vid=2&hid=123>
- 7) Wong, J. (2009). *Grow your own drugs*. Hammersmith, England: Collins.
- 8) Evening Primrose Oil Retrieved from UMMC (2011)
<http://www.umm.edu/altmed/articles/evening-primrose-000242.htm>
- 9) Evening Primrose Oil Retrieved from Medline Plus (2012)
<http://www.nlm.nih.gov/medlineplus/druginfo/natural/1006.html>
- 10) Evening Primrose Oil Retrieved from National Center for Complementary and Alternative Medicine (NCCAM, 2006/2012)
<http://nccam.nih.gov/health/eveningprimrose>