Gamma-linolenic acid

GLA

Gamma-linolenic acid (GLA) is an omega-6 fatty acid. Omega-6 fatty acids are considered essential fatty acids. They are necessary for human health, but the body cannot make them. You have to get them through food. Along with omega-3 fatty acids, omega-6 fatty acids play a crucial role in brain function, and normal growth and development. Also known as polyunsaturated fatty acids (PUFAs), they help stimulate skin and hair growth, maintain bone health, regulate metabolism, and maintain the reproductive system.

There are several different types of omega-6 fatty acids. Most omega-6 fatty acids in the diet come from vegetable oils in the form of linoleic acid (LA). The body converts linoleic acid to GLA and then to arachidonic acid (AA). You can get GLA from several plant-based oils, including evening primrose oil (EPO), borage oil, and black currant seed oil. Most of these oils also contain some linoleic acid.

A healthy diet contains a balance of omega-3 and omega-6 fatty acids. Omega-3 fatty acids help reduce inflammation while some omega-6 fatty acids promote inflammation. The typical American diet contains 14 to 25 times more omega-6 fatty acids than omega-3 fatty acids. Many physicians blame this high rate of omega-6 to omega-3 fatty acids for the large number of inflammatory diseases in the American population.

Not all omega-6 fatty acids behave the same. Linoleic acid and arachidonic acid (AA) tend to promote inflammation. GLA, on the other hand, may actually reduce inflammation. Some studies even suggest that GLA protects DNA.

The body converts much of the GLA taken as a supplement to a substance called DGLA that fights inflammation. Having enough of certain nutrients in the body (including magnesium, zinc, and vitamins C, B3, and B6) helps promote the conversion of GLA to DGLA.

Many experts find the science supporting the use of omega-3 fatty acids to reduce inflammation and prevent diseases to be much stronger than that supporting GLA.

Uses

Preliminary clinical research suggests that GLA may be useful for the following conditions:

Diabetic neuropathy

Some studies show that taking gamma linolenic acid (GLA) for 6 months or more may reduce symptoms of nerve pain in people with diabetic neuropathy. People who have good blood sugar control may find GLA more effective than those with poor blood sugar control.

Rheumatoid arthritis

Studies are mixed as to whether EPO helps reduce symptoms of rheumatoid arthritis. Preliminary evidence suggests EPO may reduce pain, swelling, and morning stiffness. But other studies have found no effect. When using GLA for arthritis symptoms, it may take 1 to 3 months to see any benefit. It is unlikely that EPO would help stop the progression of the disease. So joint damage could still occur.

Allergies

GLA from EPO or other sources has a longstanding history of folk use for allergies. Women and children who are prone to allergies appear to have lower levels of GLA in breast milk and blood. However, there is no solid scientific evidence that taking GLA helps reduce allergy symptoms. More research is needed.

Before you try GLA for allergies, speak with your doctor to determine if it is safe for you. Then track your allergy symptoms closely for any signs of improvement.

Attention deficit/hyperactivity disorder (ADHD)

Clinical studies suggest that children with ADHD have lower levels of essential fatty acids (EFAs), both omega-6s and omega-3s. EFAs are important to normal brain and behavioral function. Some studies suggest that taking fish oil (containing omega-3 fatty acids) may help reduce ADHD symptoms, though the studies have not been well-designed. Studies that used EPO found it was no better than placebo at reducing symptoms.

Breast cancer

One study found that women with breast cancer who took GLA had a better response to tamoxifen (a drug used to treat estrogen-sensitive breast cancer) than those who took only tamoxifen. But speak with your doctor before taking GLA supplements.

Eczema and Acne

Evidence is mixed as to whether GLA helps reduce symptoms of eczema and acne. If you want to try GLA, including EPO, for these conditions, talk to your doctor about whether it is safe for you.

High blood pressure (hypertension)

Preliminary evidence suggests that GLA may help reduce high blood pressure, either alone or in combination with the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), found in fish oil. In one study, men with borderline high blood pressure who took 6g of black currant oil had a reduction in diastolic blood pressure compared to those who took placebo.

Another study examined people with intermittent claudication, pain in the legs while walking that is caused by blockages in the blood vessels. Those who took GLA combined with EPA had a reduction in systolic blood pressure compared to those who took placebo.

More research is needed to see whether GLA is truly effective for hypertension.

Menopausal symptoms

EPO has gained popularity as a way to treat hot flashes associated with menopause. Studies are mixed. If you want to try EPO for hot flashes and night sweats, ask your doctor whether it is safe and right for you.

Mastalgia

Some evidence suggests that EPO may reduce breast pain and tenderness in people with cyclic mastalgia. It may also help reduce symptoms to a lesser extent in people with noncyclic mastalgia. However, it does not seem to be effective for severe breast pain.

Osteoporosis

Some studies suggest that people who do not get enough essential fatty acids (particularly EPA and GLA) are more likely to have bone loss than those with normal levels of these fatty acids. In a study of women over 65 with

osteoporosis, those who took EPA and GLA supplements had less bone loss over 3 years than those who took placebo. Many of these women also experienced an increase in bone density.

Premenstrual syndrome (PMS)

Although most studies have found no effect, some women report relief of PMS symptoms when using GLA. The symptoms that seem to improve the most are breast tenderness and feelings of depression, as well as irritability, swelling, and bloating from fluid retention.

Dietary Sources

GLA is found in the plant seed oils of evening primrose, black currant, borage, and fungal oils. Spirulina (often called blue green algae) also contains GLA.

Available Forms

GLA supplements are made from EPO, as well as black currant seed and borage seed oils. Most GLA supplements are capsules containing oil. EPO has been the most researched source of GLA.

Generally, high quality oil will be certified as organic by a reputable third party, packaged in light-resistant containers, refrigerated, and marked with a freshness date.

How to Take It

For your overall health, you should get a balance of omega-6 and omega-3 fatty acids. There is much disagreement in the nutrition field about what constitutes the proper ratio of omega-6 to omega-3 fatty acids in one's diet. The average diet provides plenty of omega-6 fatty acids. So most people do not need supplements. You may want to ask your doctor about taking omega-6 supplements if you have a condition such as eczema or psoriasis, arthritis, diabetes, or breast tenderness (mastalgia).

Pediatric

For nursing infants: Infants should get enough essential fatty acids in breast milk if the mother is eating a balanced diet. Never give an infant a GLA supplement, unless it is specifically prescribed by a pediatrician.

Adult

Dosage and form will vary based on your condition. Black currant oil and borage oil are often delivered in gel caps. Speak to your physician to determine the most effective dose for your condition.

Precautions

Because of the potential for side effects and interactions with medications, you should only take dietary supplements under the supervision of a knowledgeable health care provider.

DO NOT take omega-6 fatty acids if you have a seizure disorder. Several reports describe seizures in people taking EPO. Some of these seizures developed in people with a previous seizure disorder, or in people taking epoin combination with anesthetics. People who plan to have surgery requiring anesthesia should stop taking evening primrose oil 2 weeks ahead of time.

Pregnant women should not take borage seed oil, and possibly other sources of GLA, because they may harm the fetus and induce early labor. Talk with your physician.

Avoid doses of GLA greater than 3,000 mg per day. High levels may increase inflammation in the body.

Side effects of EPO can include occasional headache, abdominal pain, nausea, and loose stools. In animal studies, GLA is reported to decrease blood pressure. Early results in human studies do not show consistent changes in blood pressure.

Laboratory studies suggest that omega-6 fatty acids, such as the fat found in corn oil, promote the growth of prostate tumor cells. Until more research is done, health care professionals recommend not taking omega-6 fatty acids, including GLA, if you are at risk for or have prostate cancer.

Possible Interactions

If you are being treated with any of the following medications, you should not use omega-6 supplements without first talking to your doctor:

Blood-thinning medications: People taking blood-thinning medications should not take omega-6 fatty acid supplements without consulting a doctor. Omega-6 and omega-3 fatty acids may increase the risk of bleeding. These medications include:

- Aspirin
- Clopidogrel (Plavix)

- Warfarin (Coumadin)

Ceftazidime: GLA may increase the effectiveness of ceftazidime. Ceftazidime, an antibiotic in a class known as cephalosporins, is used to treat a variety of bacterial infections.

Chemotherapy for cancer: GLA may increase the effects of anti-cancer treatments, such as doxorubicin, cisplatin, carboplatin, idarubicin, mitoxantrone, tamoxifen, vincristine, and vinblastine.

Cyclosporine: Cyclosporine is a medication used to suppress the immune system after organ transplant. Taking omega-6 fatty acids with cyclosporine may increase the immunosuppressive effects of this medication. It may also protect against kidney damage (a potential side effect from this medication).

Phenothiazines: People taking a class of medications called phenothiazines to treat schizophrenia should not take EPO. EPO may interact with these medications and increase the risk of seizures. The same may be true for other omega-6 supplements. Phenothiazines include:

- Chlorpromazine (Thorazine)
- Fluphenazine (Stelazine)
- Perphenazine (Trilafon)
- Promethazine (Compazine)
- Thioridazine (Mellaril)

Supporting Research

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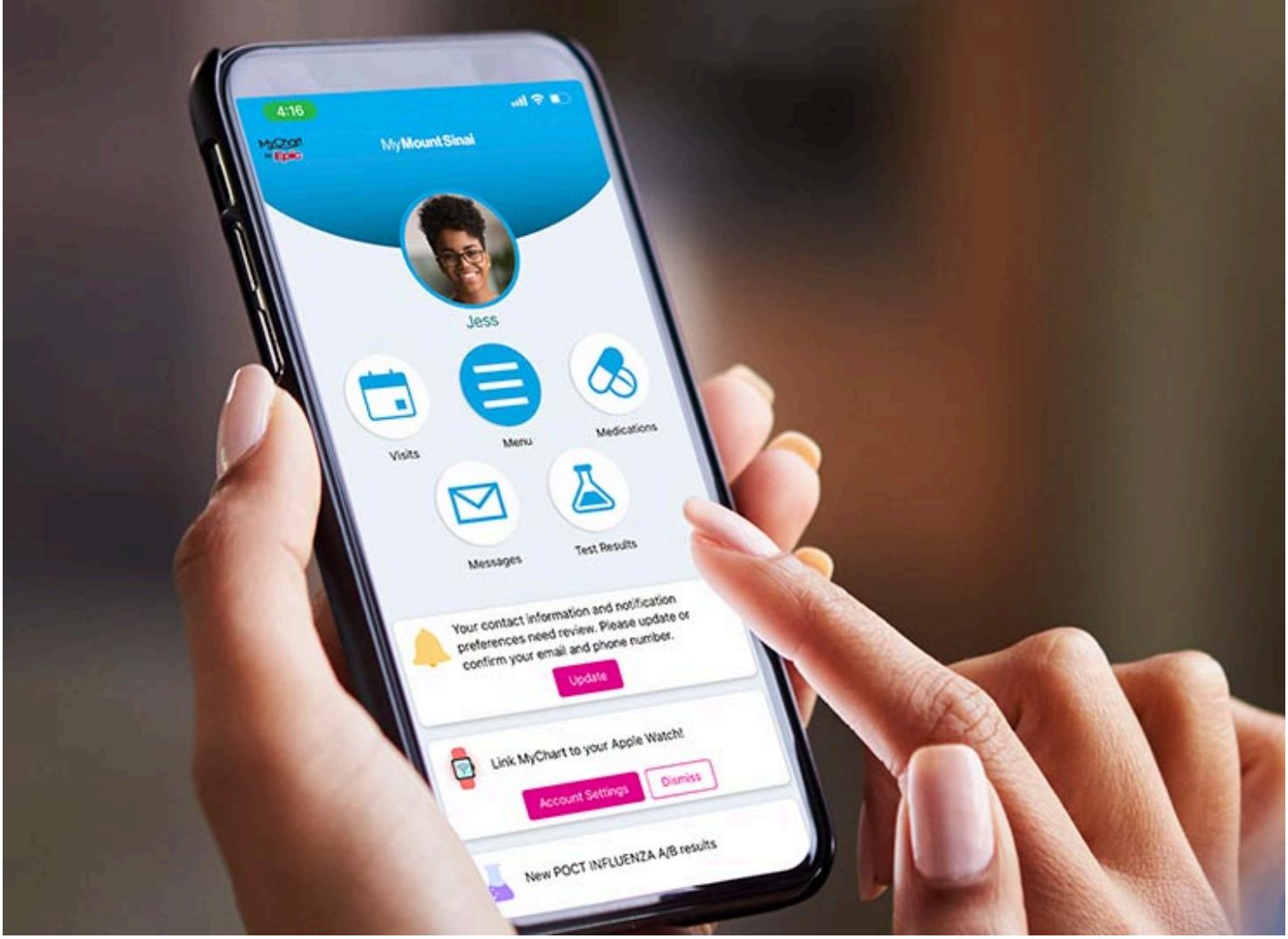

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