**RESEARCH SPOTLIGHT**

Concentrated Essential Fatty Acids (EFAs) and Inflammation

In the past, studies revealed that supplementation of human diets with gamma-linolenic acid (GLA) reduced the generation of lipid mediators and clinical symptoms of chronic inflammatory disorders. However, it has also been shown that supplementation with GLA alone may cause a marked increase in serum arachidonic levels (AA), as a potentially harmful side effect.

Arachidonic acid (AA), present in immune cell phospholipids, is the precursor of eicosanoids (PGE2) that promote neutrophil accumulation which leads to tissue injury and inflammation.

In order to increase levels of beneficial PGE1 in the body, GLA is elongated to DGLA, which is the direct precursor of PGE1. However, in some cells, there is the precursor for DGLA to be further metabolized, via delta-5 desaturase, to AA leading to more PGE2 and thus more inflammation.

It is now understood that when EPA and GLA are given together, the human body is able to maximize the production of anti-inflammatory PGE1 and PGE3, while maximizing the reduction in AA-derived PGE2. Providing EPA with GLA has demonstrated the ability to inhibit delta-5 desaturase enzyme activity, the terminal enzyme responsible for the production of AA and the precursor of PGE2.

To test the in vivo effects of a GLA and EPA combination in humans, healthy adult volunteers consumed a controlled diet supplemented with 3 g/day of GLA and EPA. This supplementation strategy significantly increased serum levels of EPA, but did not increase AA levels. EPA and DGLA levels in neutrophil glycerolipids increased significantly during the 3-week supplementation period.

Most notably, a study in the *American Journal of Clinical Nutrition* demonstrated that fish oil, in conjunction with GLA, improved lipid and fatty acid profiles in women that measurably reduced their heart attack risk. A mixture of 4 g EPA+DHA and 2 g GLA favorably altered blood lipid and fatty acid profiles in healthy women. The group was estimated to have a 43% reduction in the 10-year risk of myocardial infarction.

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**FEATURING PRODUCT**

**ProEFA® Xtra**

ProEFA Xtra contains exceptionally high levels of EPA, DHA, and GLA to increase beneficial prostaglandins PGE1 and PGE3, and reduce detrimental PGE2.

ProEFA Xtra is formulated specifically for:
- Immune support and function*
- Joint flexibility and improved mobility*
- Cellular homeostasis and resolution*
- Beneficial prostaglandins PGE1 and PGE3*

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For more research on fish oil, please visit: omega-research.com