

OMEGA 3- FATTY ACID

Common Names: *Omega-3 fatty acid (fish oil, herring oil, cod liver oil, marine fish oil, DHA, EPA)*

Scientific Names: *Omega-3 unsaturated fatty acids*

Effectiveness: Taking omega-3 fatty acids (DHA and EPA) is likely beneficial in patients with RA to reduce joint pain and improve function. Omega-6 and omega-9 fatty acids are not recommended.

Safety: DHA and EPA are likely safe.

What are Omega-3 fatty acids?

- Omega-3 fatty acids are considered 'essential' fatty acids that the human body cannot produce. It is needed for human growth and development.
- Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are the key components found in marine fish or krill.
- Alpha-linolenic acid (ALA) is an omega-3 fatty acid found in plant sources (such as flaxseed)
- Other unsaturated fatty acids (Omega-6 and Omega-9) are commonly promoted as natural supplements. However, Omega-6 and Omega-9 are readily obtained through diet alone.
 - The typical North American diet may be deficient in omega-3 fatty acids and can contain more than 15 – 20 times more Omega-6 than Omega-3.
 - Omega-9 fatty acid is produced in the body and available through food sources including animal fat and olive oil.
- It is important to maintain a proper ratio of Omega-3 to Omega-6 fatty acids:
 - Omega-3 fatty acids help to reduce inflammation, while some omega-6 fatty acids can boost inflammation.
 - Diets such as the Mediterranean diet may provide a better balance.

What are some sources of Omega-3?

- Over the counter:
 - **Triple Concentration** 600mg EPA + 300mg DHA = 900mg Omega 3
 - **Alaskan Salmon Oil** 90mg EPA + 110mg DHA = 200mg Omega 3
 - **Super Concentration** 420mg EPA+ 280mg DHA = 700mg of Omega 3
- One Walnut contains around 360mg ALA (25mg EPA)
- One teaspoonful (2 grams) of ground flaxseed contains 570mg ALA (38 mg EPA)
- One teaspoonful (4.5 grams) of flaxseed oil contains 2400mg ALA (160mg EPA)
- Studies have found in most cases ALA has about a 6.6% conversion rate to EPA (with an insignificant amount converted to DHA).

What are Omega-3 fatty acids used for in people with rheumatic conditions?

- Omega-3 has been used for the management of rheumatoid arthritis and osteoarthritis.

How is it thought to work?

- Omega-3 fish oils (specifically, DHA and EPA) have anti-inflammatory properties
 - Other benefits of EPA and DHA may include cholesterol reduction, blood clot prevention, and potentially heart and blood vessel (cardiovascular) protection.
- Plant source Omega-3 (ALA) does not seem to have as much benefit as EPA and DHA.
- Supplement with omega-6 fatty acids is not recommended.
- Currently lack reliable evidence to recommend omega-9 fatty acids.

Omega-3 fatty acids (up to 3g of DHA + EPA)

Studies up to 12 months have shown that taking fish oil, in patients with RA, reduced joint pain, joint swelling, duration of morning stiffness, and dose of non-steroidal anti-inflammatory drugs required for pain relief after a few months of use.

- Likely beneficial in RA but studies used various doses of EPA and DHA.
- EPA and DHA have other benefits such as cholesterol lowering. Supplementation may be beneficial especially if diet is deficient in omega-3 fatty acids.

Omega-3 (5.5g of EPA + DHA)

In one study, omega-3 fatty acids (DHA & EPA) increased the likelihood of disease remission and reduced the rate of medical therapy failure in patients newly diagnosed with RA treated with DMARDs. The target dose was 5.5g of DHA + EPA, however adherence was low and the average daily dose was 3.7g due to adverse effects.

- Small well-conducted trial showed benefit of omega-3 in new onset rheumatoid arthritis, but high doses used were not well tolerated.

Omega-6 and -9 fatty acids

- No evidence that omega-6 fatty acids benefit patients with rheumatic conditions.
- In one small preliminary study, the combination of fish oil 3g/day and olive oil (omega-9) 9.6mL/day was shown to modestly reduce pain and improve function in patients with RA after 12 weeks of treatment.

What are possible side effects and what can I do about them?

- *Fish oil* is generally well tolerated when taken within the recommended dose range.
- Some common side-effects may include: fishy aftertaste, heartburn, and nausea. Rash and mild diarrhea have also been reported.
 - In amounts higher than recommended, fish oil may increase risk of bleeding by reducing the way platelets clump together (platelet aggregation).

Interactions

With drugs:

- *Fish oil (DHA & EPA)*: has blood pressure lowering and blood thinning effects, which could increase the risk of low blood pressure and bleeding. This risk would be higher in patients taking blood pressure lowering (antihypertensive) and blood thinning (anticoagulant/antiplatelet) drugs.
 - Common antiplatelet and anticoagulant drugs may include: *ASA (Aspirin), and clopidogrel (Plavix), ticagrelor (Brilinta), prasugrel (Effient), enoxaparin (Lovenox), dalteparin (Fragmin), warfarin (Coumadin), dabigatran (Pradaxa), rivaroxaban (Xarelto), apixaban (Eliquis) and others.*

With other natural health products:

- *Fish oil (DHA & EPA)*: can interact with other natural products that have blood pressure lowering (antihypertensive) and blood thinning (anticoagulant/antiplatelet) effects. This would increase the risk of low blood pressure and bleeding.
- Anticoagulant/antiplatelet: *clove, garlic, ginger, ginkgo, Panax ginseng, turmeric, others.*
- Blood pressure lowering: *Cat's claw, co-enzyme Q-10, fish oil, stinging nettle, others.*

For more information about omega 3-fatty acids, consult your physician and pharmacist.