TRUTH AND ILLUSIONS REGARDING OMIGA-3 FATTY ACIDS IN RELATION TO HUMAN HEALTH

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ABSTRACT (Overview)

Several hundred research papers can be found in open access journals that deal with basics and benefits of long chain omega-3-poly unsaturated fatty acids (PUFAs) i.e.: Alpha linolenic (ALA), eicosapentaenoic (EPA) and Docosahexaenoic acids (DHA).

In reviewing these papers, it was found that some of them are not meta-analyzed and thus need more work to confirm their findings. The purpose of this presentation is to distinguish between the results of the meta-analyzed data and the others. Two separate sketches were designed for this purpose.

A number of health organizations have recommended these fatty acid formulations as a remedy for a number of diseases attacking human beings. However, no limitation for using them in daily nutrition is recorded.

It also is worth noting that ALA is prevalent in seeds of a number of higher plants including flax (Linseed) while EPA and DHA are commonly found in the fat of marine animals such as krill, squid and others.

These fatty acids are synthesized in higher plants and in phytoplankton and algae (food sources of marine animals) and also can be commercially extracted.

Key words: ω-3 Fatty acids, structure, source, benefit history, types, importance krill, fish, flax seeds

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ω-3 Fatty acid and Human health

• ω is the last letter in Greek Alphabet which start with α, β, ........, ω
• Fatty acids
  1. Saturated
  2. Unsaturated (including Omiga-3)

The fatty acid has 2 terminals: 1st is COOH and the other (tail) is CH3 which is omega carbon
The 3 types of ω-3 Fatty acids involved in human health are:

- α-Linolenic acid (ALA) is found in plant oil (short chain consists of 18 carbon and 3 double bonds).

- Eicosapentaenoic acid (EPA) is abundant in marine animal oil (20 carbon atoms and 5 double bonds).

- Docosahexaenoic acid (DHA) is abundant in marine animal oil (22 carbon atoms and 6 double bonds).
Natural Source of ω-3 Fatty acid

- Plant oils
  - α-Linolenic acid (ALA)
    - Flax seed
    - Hemp
    - Inchi
    - Walnut

- Marine oils
  1. Eicosapentaenoic acid (EPA)
  2. Docosahexaenoic acid (DHA)
    - Krill oil
    - Fish oils
    - Squid oils
Fig. 3: Evidence based benefits, Meta analysis (verified) in relation to human health
Fig. 4: Not confirmed benefits
(Need more work and Meta-analysis)
Thank you