

# **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:**  $\omega$ -3 Fatty acids, structure, source, benefit history, types, importance krill, fish, flax seeds

## Acknowledgment

We gratefully acknowledge Dr. Adel ElMansoury, Prof. of Forensic Medicines of Mansoura University who directed our attention to explore the real benefits of omega-3-fatty acids as remedy for a number of human diseases, especially [Alzheimers](#) and [arteriosclerosis](#).

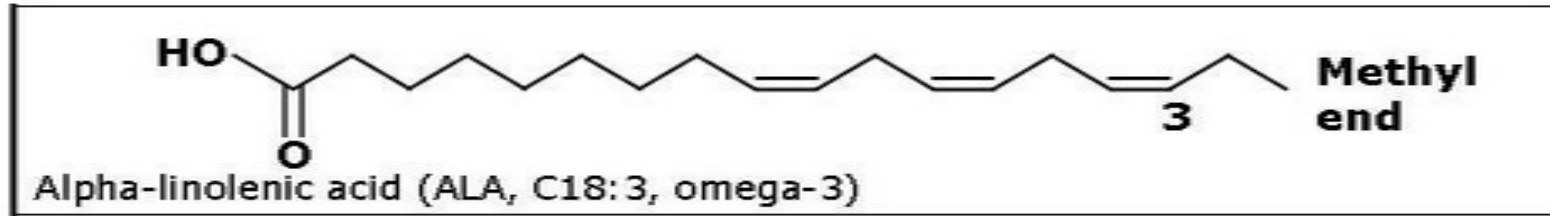
## **$\omega$ -3 Fatty acid and Human health**

- $\omega$  is the last letter in Greek Alphabet which start with  $\alpha$ ,  $\beta$ , .....,  $\omega$
- Fatty acids
  1. Saturated
  2. Unsaturated (including Omega-3)

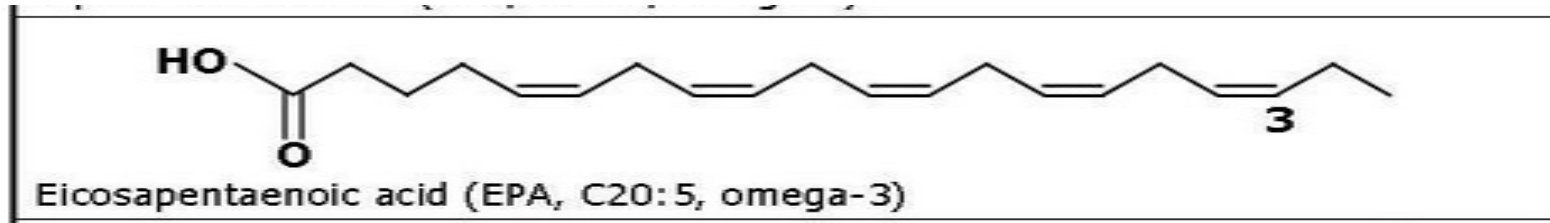
**The fatty acid has 2 terminals: 1st is COOH and the other (tail) is CH<sub>3</sub> which is omega carbon**

## The 3 types of $\omega$ -3 Fatty acids involved in human health are:

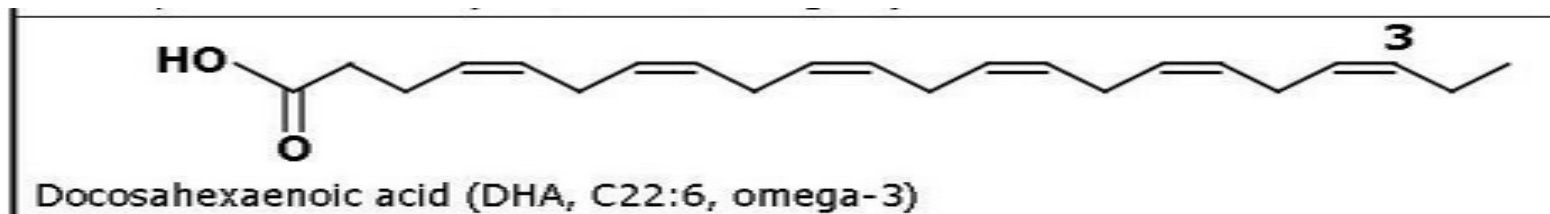
- $\alpha$ -Linolenic acid (ALA) is found in plant oil (short chain consists of 18 carbon and 3 double bonds).



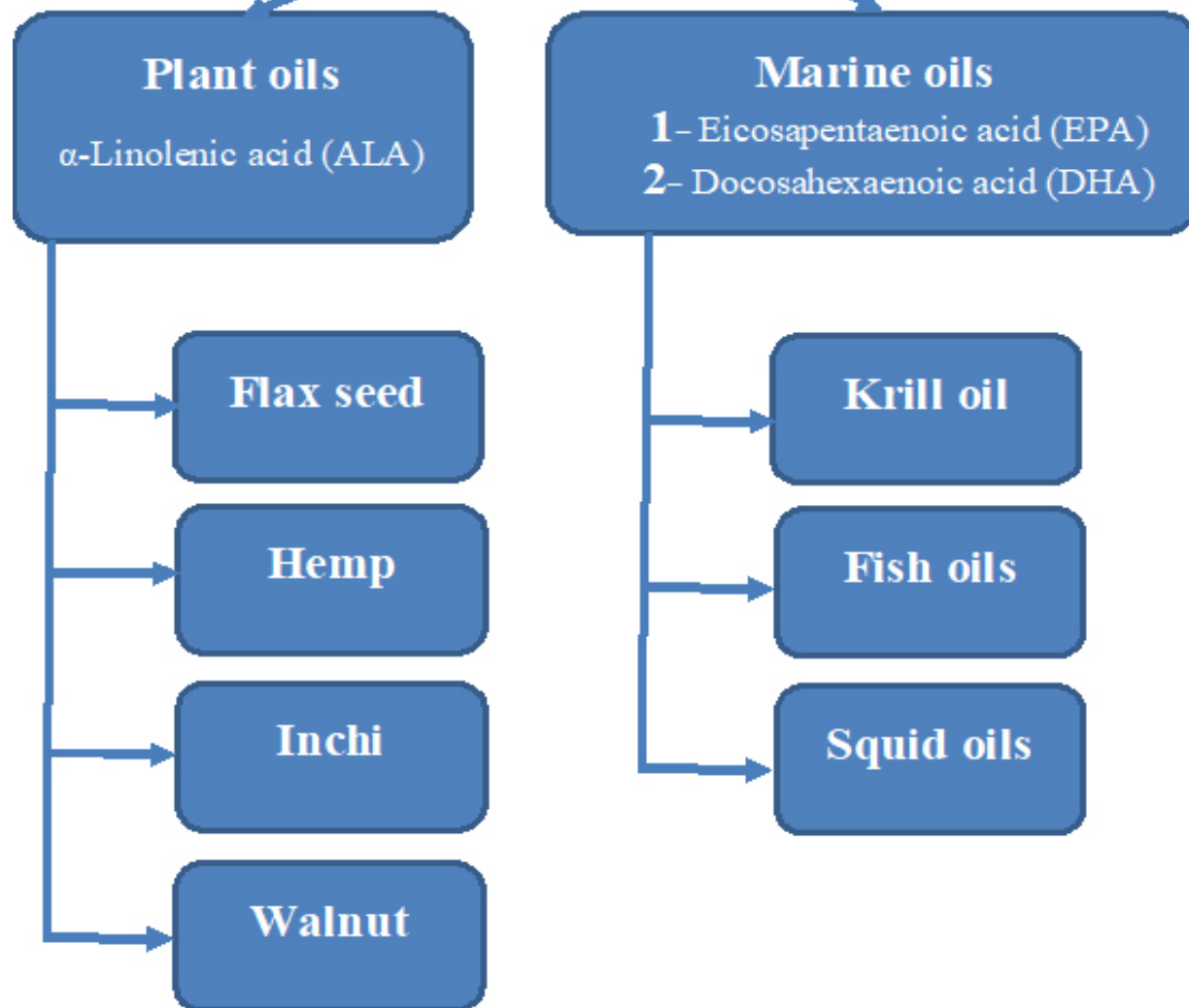
- Eicosapentaenoic acid (EPA) is abundant in marine animal oil (20 carbon atoms and 5 double bonds).

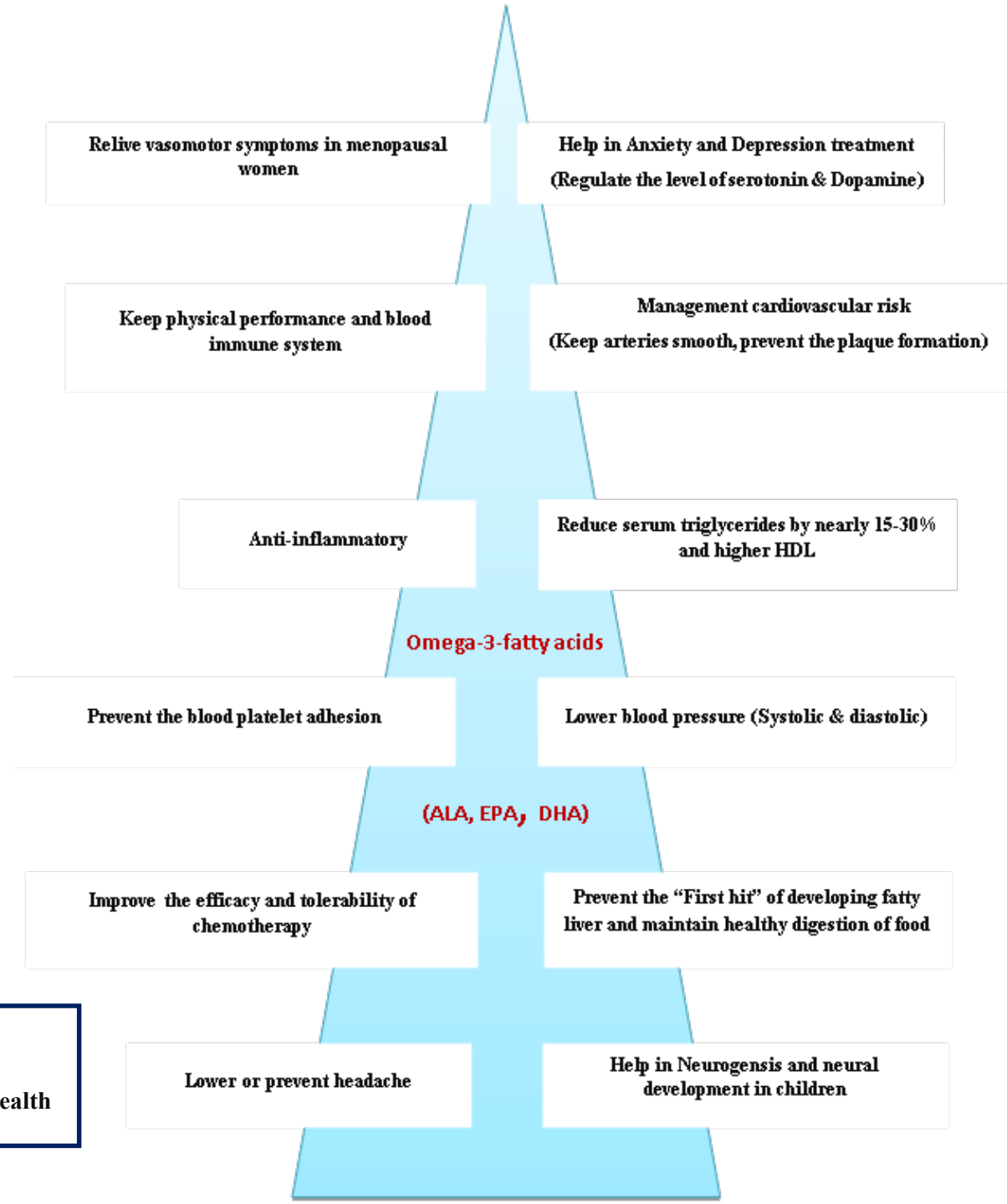


- Docosahexaenoic acid (DHA) is abundant in marine animal oil (22 carbon atoms and 6 double bonds).

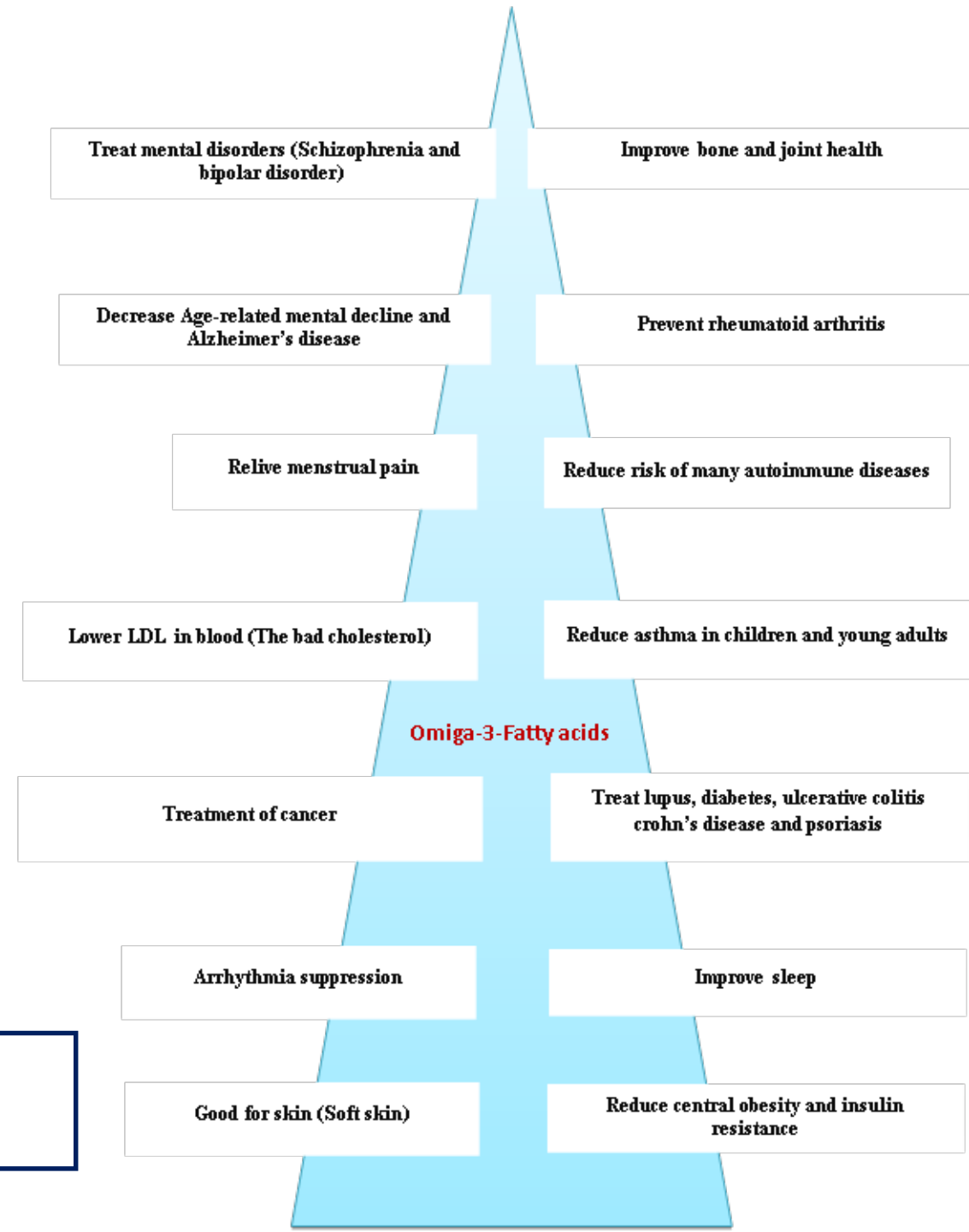


## Natural Source of $\omega$ -3 Fatty acid





**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

