

# The Fish Oil Files

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You are what you eat. This might sound fishy (couldn't pass it up) but stands as true as any statement as the nutritional world can claim. This series of articles requires a little fortitude from the reader. Probably lost you already, but I hope you join me in this part of your journey to health and healing. Today's world requires an almost numbing brevity of words before one loses their audience. Very little truth can be summarized briefly, only false claims that lean to one side or the other. Reminds me of the American political process, which suffers from the same sound-bite mentality. So let's dig deeper folks.

Essential Fatty Acids (EFAs) include those fatty acids that one must consume dietarily as they cannot be adequately synthesized by the body. The primary role of these EFAs include structural functions that direct cellular communication in every cell of the body. So if you wonder why improving levels of EFAs can positively impact nearly every known condition, you have your answer. Due to a shift in the American and global diet away from the Paleolithic meat, fruit, vegetable and nuts diet and to a modern grain and sugar-based diet, deficiencies, and more importantly insufficiencies, of these vital macro-nutrients have led to epidemics of chronic disease and just un-wellness.

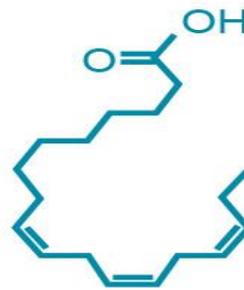
Furthermore, concurrent nutritional insufficiencies of many other vitamins and minerals (due to the SAD, Standard American Diet) work synergistically to negatively affect well-being. Current "negative" studies on EFAs look at short-term trials, often one year or less of low dose "fish oils" without correcting diet or other nutritional deficiencies, and thus routinely find no benefit to the supplemented groups. Our friendly fats help rebuild us, and it will take studies that don't evaluate them as drugs but for the foods they are to accurately report their importance.

A brief fatty acid lesson (Now I've lost you! Hang in there): Fats are chains of hydrocarbons with a methyl group (where we start counting from) on one end and a carboxylic acid group on the other. Fats provide energy, and when glucose rises in the blood stream, our bodies synthesize fatty acids and carry them in the blood stream as triglycerides. Our body knows sugars and grains are toxic and converts the easily digestible carbohydrates to safe fats as soon as possible to keep serum glucose low. Thusly a high carbohydrate diet becomes a highly non-essential fatty acid diet pretty quickly. All fatty acids play a role in health and disease in the body. The SCFAs (short chain fatty acids, those with 4-6 carbons) especially play a role in bowel health. MCFAs

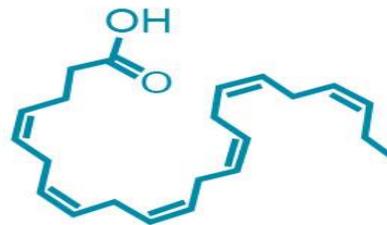
(medium chain fatty acids with 8-14 carbons) play a vital role in metabolism. Finally, the LCFAs long chain fatty acids with 16-24 carbons) play nutritional and structural roles.

A fatty acid is saturated and more stable if there are no double bonds, meaning hydrogen atoms are missing. Monounsaturated means one double bond and polyunsaturated means more than one double bond. In humans three omega families predominate, omega-3, omega-6, and omega-9 (omega refers to which carbon has the first double bond). Most mammals have no desaturase enzyme that can insert a double bond before carbon nine. Meaning we have to consume the omega 3s and 6s that we need. Making them essential!

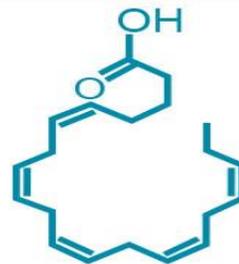
**ALA**  
Alpha-Linolenic Acid  
18 carbon  
3 double bonds



**DHA**  
Docosahexaenoic Acid  
22 carbon  
6 double bonds

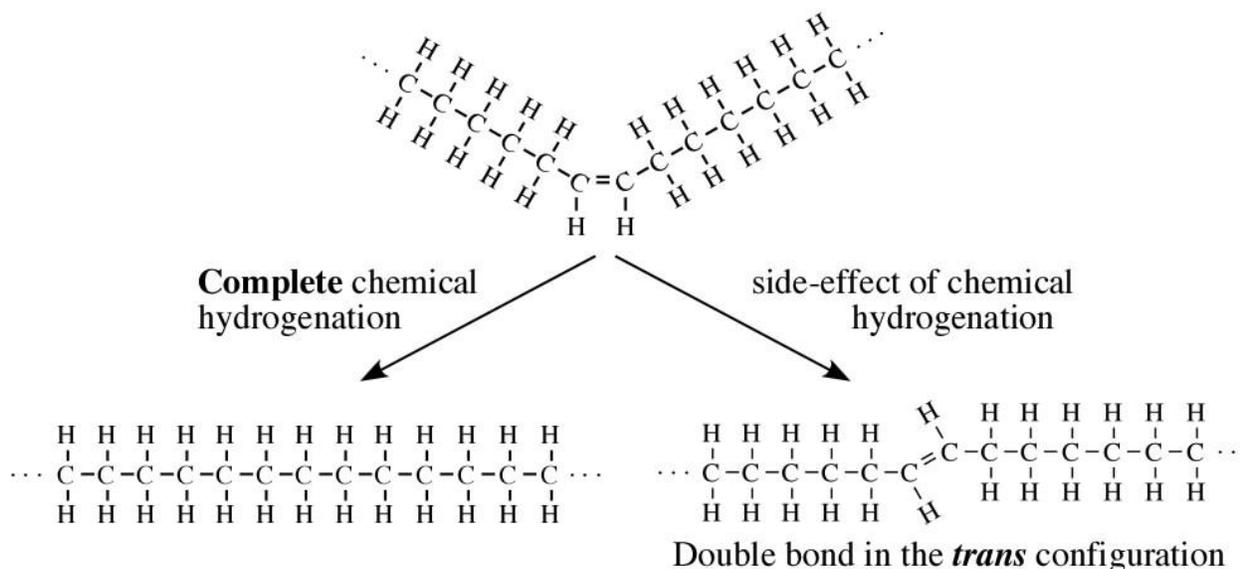


**EPA**  
Eicosapentaenoic Acid  
20 carbon  
5 double bonds



The primary EFAs we will discuss are the omega 3s EPA and DHA above. These are also known as “fish oils”, as cold-water fish serve as the primary nutritional source. The omega 3 obtained from flax seed, nuts and other oils, ALA, does not have the health benefits of EPA/DHA and is not converted in the body to any significance compared to the healthy fish oils. Vegans can take note and use algae based supplements to obtain “fish oils”; that’s what the fish do!

When the food industry takes polyunsaturated fats found in plant oils utilizing heat and a nickel catalyst and hydrogen, they create a new fat that unfortunately still has some double bonds in an unnatural trans configuration.



As few natural trans fats exist, these unnatural fats become incorporated into cellular structures and act very “sticky”. Most of you know by now that the non-fat, low-fat, cholesterol-is-bad-for-you mania of the past few decades led to margarine and “non-dairy creamer” and some of the worst foods ever created, in the name of being “healthy”. Eliminate all hydrogenated oils and trans-fats from your diet (processed foods), as they represent the worst of the worst in the fatty acid world. Even high fructose corn syrup and artificial sweeteners can’t compete with trans fats when it comes to their negative impact on human health.

Today’s article begins by giving us a working vocabulary for our in-depth look at EFAs, especially EPA and DHA in human health. The first step in improving health in this arena comes from a Paleo/Primal diet correcting the imbalanced SAD diet. The right fish oil supplements can help if given at the right doses and added to a healthy diet!

Your Journey to Health and Healing,  
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