Clinical Influence of Triple Omega Fatty Acids (Omega-3, 6, 9)

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Abstract

Fatty acids play a vital role in biological life, one of the most important fatty acid triple omega. These fatty acids are unsaturated fatty acids, two from them are essential where the body cannot synthesize them (omega 3 and 6), while the other is essential fatty acid that the body can synthesize but needs adequate amounts from omega 3 and 6. Each type of omega fatty acids has its own chemical structure, sources, and functions. Triple omega plays an essential role in protecting the human body from heart attack. It is very necessary to make a balance between triple omega dose, as high levels lead to the deposition of fats in the body and can lead to several healthy problems.

Keywords: Triple Omega; Fatty Acids, Omega-3, Omega-6, Omega-9; Heart Attack

Introduction

Fatty acids are considered vital biochemical components for all organs of the human body, such as skin, lungs, heart, and brain [1]. Fatty acids are categorized into two classes according to their chemical structure, two classes are saturated fatty acids in which the number of hydrogen that are attached to the carbon backbone of these molecules, while the other group is unsaturated fatty acids, where a few hydrogen missing with double bonds between the carbons where those hydrogen would go. Also, fatty acids can be classified according to the body requirements into essential fatty acids that the body does not produce on its own, and non-essential fatty acids where the body can produce them [2]. Omega fatty acids are characterized by their unsaturation and healthy fats due to them preventing a number of medical problems such as depression, cardiovascular disease, brain dysfunction, asthma and arthritis [3]. There are 3 types of omega fatty acids: Omega-3, Omega-6, and Omega-9, each one from them has its own chemical structure and biological roles [4]. Omega-3 fatty acid (α-linolenic acid) is an essential fatty acid that plays a significant role in brain function and may help in prevention of heart attack. The American Heart Association recommends a diet in which fatty fish, like salmon, herring, sardines, and tuna are consumed at least twice a week [5].

In addition to their role in the structure and function of cells throughout your body, the omega-3s reduce your risk of cardiovascular disease through multiple actions. They fight inflammation, keep blood vessels healthy, and reduce levels of cholesterol and triglycerides. They may also help prevent rheumatoid arthritis and cancer, according to the Harvard School of Public Health [6]. The other essential fatty acid is Omega-6 fatty acid (Linoleic Acid); omega-6 should be taken about twice as much as omega-3; where omega-6 to omega-3 ratio is 2:1 [7]. Finally, Omega-9, or monounsaturated oleic and stearic acid, is a non-essential fatty acid which produced naturally by the body in the presence of an adequate amount of both Omega 3 and 6 fatty acids. In the absence of omega fatty acids 3 and 6 omega 9 must take from the diet. Natural foods and healthy benefits for triple omega are summarized in the following (Table 1)[6].

Table 1: Natural foods & Biological Benefits for Triple omega.

<table>
<thead>
<tr>
<th>Natural Foods</th>
<th>Biological Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omega-3</td>
<td></td>
</tr>
<tr>
<td>a) Salmon</td>
<td>a) Reduce risk of heart attack, through decrease the level of cholesterol</td>
</tr>
<tr>
<td>b) Mackerel</td>
<td>b) Anti-inflammatory.</td>
</tr>
<tr>
<td>c) Eggs</td>
<td>c) Lower blood pressure</td>
</tr>
<tr>
<td>d) Fruits</td>
<td>d) Treatment of various diseases such as, Asthma, Diabetes, Osteoporosis, Arthritis, and Some Cancers.</td>
</tr>
<tr>
<td>e) Grains</td>
<td></td>
</tr>
<tr>
<td>f) Spirulina</td>
<td></td>
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</tbody>
</table>

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| g) | Brazil Nuts |
| h) | Mustard Seeds |
| i) | Pumpkin Seeds |
| j) | Chia Seed Oil |
| k) | Wheat Germ Oil |
| l) | Green Leafy Vegetables |

**Omega-6**

- a) Seeds
- b) Nuts
- c) Grains
- d) Green leafy vegetables
- e) Cold vegetable oils

- a) Reduce risk for developing type 2 diabetes.
- b) Reduce the level of cholesterol.
- c) Treatment of allergy, and multiple sclerosis.

**Omega-9**

- a) Almonds
- b) Macadamia Nuts
- c) Chia Seed Oil
- d) Olives & Olive Oil
- e) Avocados
- f) Pecans
- g) Pistachios
- h) Cashews

- a) Reduces bad cholesterol (LDL) and increasing good cholesterol (HDL) in bloodstream.
- b) Form myelin sheath as cover to protect nerves.
- c) Weight Loss
- d) Eye Disorder
- e) Heart disease
- f) Immune System

**Usualy maintains a healthy diet that provides all nutrients. It will keep you away from many diseases [8]. As a result of consumption Omega 3 6 9, this creates unbalance between these nutrients. In case of unbalance of nutrients it creates deposition of those extra fats. These lead to a health problem. These fatty acids must be taken according to the American Heart Association (AHA) as the following doses [7]:**

- **Omega 3:** < 3 gram / daily
- **Omega 6:** Less than Omega 3
- **Omega 9:** Less than Omega 6

Some signs can be happen if triple omega take in large dose includes:

- a) Skin Rashes or itching
- b) Dizziness
- c) Swelling of tongue, face or throat
- d) Breathing problem.

**References**


