

## Alteration Source of Omega 3 Fatty Acids for Vegan Consumer and their Health Benefits

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### Abstract

Today modern nutrition focuses on omega 3 fatty acids for its effective metabolic activities. It has the significant health benefits that protects the joints, improves the brain cognitive function, reduces the risk of heart attack and promotes the eye sight. ALA, DHA and ELA are the main types of omega 3 fatty acids which are found in our diet. ALA can only be in plant foods thus vegan consumes has to get the other types of omega 3 DHA and ELA from alternative supplementary and algal sources. Studies have proved that omega 3 supplement up-take in our day-to-day life has significant advantage without any side effects.

**Keywords:** Omega 3 Fatty Acids; Nutrient; Supplementary

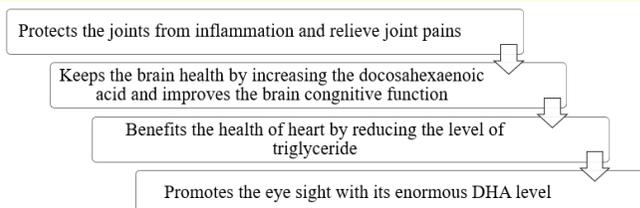
### Introduction

Multiple health benefits can be achieved by the vegan diet. Plant based products helps to decrease the blood sugar levels, reduce the risk of heart diseases and even helps to maintain the body weight [1]. Since, omega-3 fatty acids obtained apart from animal-based sources or dairy found to be a right replacement of certain effective micro and macro nutrients. Omega fatty acids for vegan diet play the important role in improving the mental health state [2]. Food sources of omega- 3 fatty acids such as chia seeds, Brussels sprouts, walnuts, hemp seeds, flaxseeds, soybean oil and kidney beans can be consumed in a right quantity. Omega 3 fatty acids are a commonly studied nutrient with the three different types of molecules such as alpha-linoleic acid (ALA), eicosapentanoic (EPA) and docohexaenoic acid (DHA). Since Most importantly, omega 3 fats cannot be created by our own body, it to be consumed as one of the important essential nutrient from different food sources. ALA omega 3 can only be obtained from the vegan based foods. Tough body can obtain DHA and EPA from ALA; it can't be produced in a sufficient amount. As DHA and EPA also plays important role in human health issues. Vegan consumers can take vegan omega 3

supplements to gain DHA and EPA, in addition algae also found to be nutritionally equivalent with omega 3.

### Function

Nutrition world focus on the need of omega 3 fatty acids, due to the lacking sources in vegan diet. Plant based omega 3 fatty acids than the essential nutrient also plays a vital role in the cell wall construction [3], has the anti-inflammatory activities by changing into other molecules, also maintains the blood pressure, prevents heart attack by the platelet aggregation blood clotting, lowers the cholesterol level and protects the brain health and also has the anti-aging properties [4].



**Figure 1:** Schematic representation of Health benefits of omega 3 consumption.

**Source of omega 3**

Sufficient omega-3s can be obtained by eating an assortment of food varieties. Nuts and seeds are plentiful in numerous supplements like proteins, nutrients, fats and so on Omega 3 unsaturated fats predominantly created solely (like flaxseed, chia seeds and pecans), Vegetable oils, (for example, flaxseed oil, soybean oil and canola oil), Fortified food sources (like eggs, yogurt, juice, milk, soy beverages, and a few brands of baby recipe) [5]. Flaxseed oil is often used as an omega-3 supplement. They have a much better omega-6 to omega-3 ratio than most oily plants. Chia seeds are staggeringly nutritious. It has a place with a rich wellspring of Omega-3 content: 5,060 milligrams per ounce (28 grams). Walnut has Omega-3 content: 2,570 milligrams per ounce (28 grams), or about 14 walnuts. Each 3 tablespoons of Hemp seeds contains 2.605g ALA. Soybeans are a popular legume in Asia. Soybean oil contains 0.923 grams of ALA per tablespoon. A half-cup serving of frozen edamame beans is a source of 0.28 grams of ALA. Steamed or steamed edamame beans work well in salads or as a side dish [6].

Cold pressed flax seed oil	7.26
Hemp seeds	0.87
Pesto	0.27
Dried walnuts	0.21
Refried beans, vegetarian	0.03
Dried Chia seed	2.53
Soybean oil	0.92
Canola oil	1.28
Navy bean	0.07
Edamame, Frozen	0.03

**Table 1:** Content of the OMEGA 3 Grams/Tbsp.

**Deficiency**

Deficient amount of omega 3 fatty acids may lead to the high risk of certain negative health effects. Researchers identified certain signs and symptoms to sense the decrease in omega 3 fatty acid level such as skin irritation and dryness due to the loss of moisture; Low omega 3 status leads to the depression symptoms and finally get affected by some neurodegenerative diseases [7]. It also affects the eye health led to the loss of moisture, tear production and cause dry eye symptom; Joint pain and decreased grip strength; Hair fall,

thinning and dryness due to the loss of skin moisture content. All the omega 3 These deficiencies can be notes identified and improved by the regular intake of omega 3 supplements [8].

**Benefits**

Dietary patterns rich in omega 3 fatty acids play a vital role in improving the health and wellbeing [3]. Adipose tissues store the omega 3 fats and get released during the low dietary intake. ALA is one of the abundantly seen omega 3 fat can be converted to EPA and DHA [9]. It improves the integrity of skin barriers thus reduce the skin related inflammations, moisture loss and sun sensitivity; Improves the mental health and are also important for the brain function [10]; Increase the visual activity and retinal development. Central nervous system development and improve the IQ level.

**Omega-3 supplements**

Adding nutrition supplements need for our body to maintain the omega 3 fat level [11]. FDA recommends the intake of algae-based DHA supplements to increase the DHA level in the vegan diet. EPA and DHA supplements can help to improve the skin sensitivity to UV light and acne break down and skin inflammation. Systematic review and analysis of researchers had found the uptake of 1.3 grams of omega 3s per day can reduce the depression level in adults. These supplements also capable of reducing the eye discomfort and vision disturbances. PUFAs supplements help to overcome the osteoarthritis and treat the arthritis symptoms. Regular intake of EPA and DHA supplements improves the fatty acid composition in blood and hair. Recent research shows that omega-3 supplements can treat diseases such as cystic fibrosis, insulin sensitivity, Crohn’s disease, or bipolar disorder.

**Conclusion**

Omega 3 unsaturated fats are restoratively specialist to fix colossal of medical problems in our body. The best outcome for veggie lover customer to allow their plant-based omega-3 unsaturated fat through various plant source. Plant omega-3 fatty acids are the main source of ALA, which influencing increases the blood DHA and ARA levels, increase insulin sensitivity and has a very small hypotensive effect, and a protective against on bone metabolism.

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