

## Effects of omega-3 supplements in patients with MS, A review of the findings

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**Introduction:** Multiple sclerosis is one of the most crippling multiple neurological diseases that is an inflammation. MS affects the central nervous system (CNS) and can cause unpleasant side effects in the patient's clinical condition. Proper nutrition and diet therapy in these patients can improve the symptoms, signs accelerate the healing process. More than 70% of the dry weight of the brain and more than half of the nerve cells are formed by long-chain omega-3 fatty acids. The purpose of this study is the evaluation of therapeutic supplementation with omega-3 supplementation in MS patients.

**Methods:** This study reviewed the articles in the databases ISI (web of knowledge) and PubMed searches based on keywords that n-3 fatty acid, omega-3, supplement and multiple sclerosis has been carried out in the years 2005-2015.

**Results:** The effects of omega-3 in patients with MS is associated with the following results:

- Omega-3 and immune cell migration and matrix Metalloproteinase in the blood - brain barrier: One of the concerns of people with MS, the BBB is a contagious inflammation. Studies have shown that Omega-3's role in regulating the immune system and reduce the matrix product Metalloproteinase -9.

- Omega-3 and Depression: Depression is one of the most common problems in people with MS. Omega-3 supplementation has a significant effect in improving depression.

- Omega-3 and inflammation: the main characteristic of MS is inflammation. Cyclooxygenase and Lipoxygenase pathways in the effect of omega-3 has a beneficial effect in reducing inflammation.

Conclusion: Many studies were shown fish oil, n-3 PUFA and omega-3 fatty acids may have significant effect in protection against inflammation, depression and immune modulation and this supplement can recommended in patients with MS.

**Keywords :** n-3 fatty acid, omega-3, supplement, multiple sclerosis