Multiple sclerosis is a disabling disease of the central nervous system (CNS) and is the result of the loss of the myelin sheath (a protective coating of the nervous system). Not all sufferers will experience all the same symptoms. These symptoms may improve during periods of remission. Some of the symptoms include; extreme fatigue, vision problems, muscle stiffness, problems with coordination, speech problems, short term memory loss, bladder and bowel dysfunction as well as partial or complete paralysis.

Sixteen newly-diagnosed multiple sclerosis (MS) patients were supplemented with 900 mg/day long-chain marine fatty acids (DHA= 500 mg, EPA= 400 mg) along with vitamin supplementation and dietary advice (Nordvik et al. 2000). The patients were followed for two years with dietary habits and blood parameters being monitored as well as neurological assessments being performed. Compared to the baseline values, the patients exhibited a significant decline in the mean Expanded Disability Status Scale (EDSS) by 25% and the mean annual exacerbation rate. The authors of this paper suggest that dietary advice along with supplementation of omega-3 fatty acids and selected vitamins can improve function and decrease the exacerbation rate of the disease in new MS patients. Monitoring the fatty acid levels of the patients via the blood plasma phospholipid (biomarker for omega-3 status) at 2 years relative to the entry (baseline) indicated a more than doubling of DHA/EPA (combined) levels with omega-3 supplementation.

A more recent double-blind, randomized trial compared a low-fat diet (15% fat) combined with fish oil supplementation (DHA= 1320 mg/day, EPAA= 1980g/day) with the American Heart Association (AHA) step 1 diet (= 30% fat) combined with olive oil (6g/day) for a period of one year on quality of life (QOL) and relapsing-remitting MS (RRMS) (Wienstock-Guttman et al. 2005). It was found that the relapse rate was lower in both groups relative to their rates during the year preceding the study. Those in the fish oil group fared better in both the Physical Component Scale (PCS) of the Short Form Health Survey Questionnaire and the Mental Health Inventory (MHI) at the six month point of the study. These authors propose that a low fat diet combined with omega-3 fatty acid supplementation may complement other concurrent therapies and can potentially improve the quality of life of those suffering from MS.