Rheumatoid Arthritis (RA) is a chronic autoimmune disease which results in swollen, stiff and painful joints. RA sufferers may also experience fevers, loss of appetite, loss of weight, drowsiness and generally not feel well. Symptoms may vary from case to case. The exact cause or trigger of this disease is not known.

The Japanese population consumes a larger quantity of long-chain omega-3 fats in their diet compared to North Americans. A case-controlled study showed that subjects who ate 2 or more fish meals per week had a 43% reduced risk of developing RA as compared to those who consumed less than one serving of fish per week (Shapiro et al., 1996).

All of the published randomized controlled trials involving omega-3 supplementation with DHA/EPA from fish oil have shown a moderate benefit when combined with standard RA pharmacotherapy (Stamp et al., 2005). Furthermore, there have been reports that symptoms worsened after fish oil supplementation was ceased. The supplement dose in these trials varied from 0.4 to 6.0 g of DHA/ EPA (combined) per day, with the mean dose being approximately 3g (3000 mg)/day. Overall, these studies have established that a dose of 2.6 g/day or more of n-3 fatty acid supplementation (DHA+EPA) generally will reduce the symptoms of RA after about 12 weeks; consuming a larger dose will reduce this latency period.

The suggested mechanism for the ameliorating effects of omega-3 fatty acids (DHA plus EPA) on RA is a decrease in inflammation due to EPA's ability to competitively inhibit omega-6 prostaglandins and thus increasing the production of LTB5, a non-inflammatory eicosanoid and decreasing the production of pro-inflammatory eicosanoids (eg. PGE2, thromboxane and LTB4). The result is decreased vasodilation, neutrophil degranulation, vascular permeability and hyperalgesia. This combination effectively decreases swelling, redness and loss of function which are the hallmark signs and symptoms of RA.

The authors conclude there is strong and consistent scientific evidence that omega-3 fatty acid supplementation is effective at reducing inflammation and improving symptoms of RA in randomized controlled trials and that dietary alteration provides an added opportunity to give patients some control over their health and management of their disease.