Multiple sclerosis (MS) is a chronic demyelinating disease of the central nervous system associated with inflammation and neuro-degeneration that exhibits significant oxidative damage. Though often neglected, cognitive impairment is a common feature of MS that affects 40-70% of patients.

Pomegranate seed oil (PSO) comprises Punicic Acid (PA), a poly-saturated fatty acid, which is considered as one of the strongest antioxidants in nature. To increase its bioavailability and activity, PSO was prepared in oil-in-water nano-emulsions. This approach allows the distribution to organs and especially reach and pass the blood brain barrier.

In previous studies, PSO was administered to mice afflicted with the animal model of Multiple Sclerosis. The treatment reduced demyelination and oxidation of lipids in the brains of the animals and improved their clinical disease course.

We included 30 MS patients, of which 15 were given GranaGard for the first three months, then placebo for three months and 15 received placebo for the first three months, and GranaGard for the following three months. All patients received GranaGard for additional six months. GranaGard®, was added to the designated MS treatment. Patients follow up included: Short quality of life and fatigue questionnaires (SF-12, MFIS-5), Expanded Disability Status Scale (EDSS), Multiple Sclerosis Functional Composite (MSFC) and cognitive tests: Brief International Cognitive Assessment for Multiple Sclerosis (BICAMS), Symbol Digit Modalities Test (SDMT), California Verbal Learning Test (CVLT-II), Brief Visuospatial Memory Test (BVMT-R), International Cognitive Assessment for Multiple Sclerosis.

There was a significant beneficial effect of GranaGard®, on the verbal testing in the relevant periods of treatment. This was reflected in an increase in z score from 0.891 to 1.415 in CVLT-II (p=0.00825, paired T test) in the period that patients received GranaGard®. At that time there was no significant change in the placebo group. For the patients receiving GranaGard in the initial 3 months, the value of z score remained high (z=1.415) at the following three months, while they received placebo, suggesting a long - term effect.