Since Alzheimer's Disease (AD) etiology involves multiple interrelated factors, single target approaches for the management of AD may be insufficient. Epidemiological studies indicate a clear link between nutrition and AD. Several nutrient deficiencies are known risk factors frequently reported among AD patients, and consumption of certain nutrients has been shown to be protective. A multi-nutrient intervention in AD may be beneficial as it can work on multiple processes involved in AD pathogenesis making synergistic contributions to proper brain functioning.

Reductions in synaptic membranes and the number of brain synapses are diagnostic features of AD. Several nutrients like omega-3 fatty acids, choline and certain vitamins, are considered essential for the brain, as precursors in the synthesis of new membranes. Preclinical studies have demonstrated that combining specific nutrients has synergistic effects in regeneration of neurons. Multi-nutrients increased membrane synthesis, neurite outgrowth and dendritic spine density. Further, these nutrients enhanced neurotransmitter release and improved performance on tests of hippocampus-dependent cognitive functions. By providing nutritional building blocks to improve membrane integrity, membrane-dependent processes such as APP processing can be beneficially influenced. Moreover, multi-nutrient supplementation may also have neuroprotective effects e.g. by reducing AD risk factors as lipid-peroxidation (via anti-oxidants) or vascular damage (via B-vitamins lowering plasma homocystein).

In summary, a multi-nutrient intervention has been formulated to improve the quantity and quality of neuronal membranes; to stimulate synapse formation; and to enhance the functions of membrane-bound proteins. This intervention addresses specific nutritional needs in AD patients and is developed for the dietary management of AD.