

A Review on Role of Nutraceutical in Alzheimer's Disease

Miss. Jagruti V. Kumbhar¹, Miss. Payal S. Rakshe², Miss. Kajal S. Gunjal³

Miss. Pratiksha N. Uchale⁴, Prof. Sachin V. Datkhile⁵

Students, B Pharmacy, Samarth Institute of Pharmacy, Pune, India^{1,2,3,4}

HoD, Samarth Institute of Pharmacy, Pune, India⁵

Abstract: *Nutraceuticals are the products derive from food sources with extra health benefits. They can prevent malignant processes. The term 'nutraceuticals' combines two words 'nutrients (a nourishing food component) and 'pharmaceuticals'(a medical drug) The philosophy behind nutraceuticals is according to Hippocrates " Let food be your medicine". Categories of nutraceuticals are dietary supplements, functional food, medicinal food, pharmaceuticals. Advance age is often characterized by a declined in large spectrum of cognitive abilities including reasoning, memory, perceptual speed and language. Alzheimer's disease (AD) is the most common and feared from dementia representing circa 70% of all dementia cases and displaying a dramatic epidemics due to the enormous growth of the aged population worldwide. It is still unclear which factors lead to molecular cascade of neurodegeneration in AD, but along with genetic environmental factors vascular pathology and risk factor have been recently shown to play crucial role in AD pathogenesis .AD impacts dramatically on everyday life of older adults, being one of the main cause of disability in old age. There is clear evidence that a diet rich in specific nutritional food group (fruit, fish, vegetables) can reduce the incidence and prevalence of some of the main clinical outcomes, such as neurodegenerative disorders, cardiovascular diseases, diabetes, cancer. This specific nutritional food group are rich in micronutrients and vitamins are beneficial for health. The Mediterranean diet is characterized by a high consumption of plant food, fish olive oil as primary source of monounsaturated fat and moderate intake of wine. In this article, we focus our attention on group of substance proposed to prevent or treat Alzheimer's disease.*

Keywords: Dementia, antioxidant vitamin, Cognitive impairment, Alzheimer's disease, prebiotics, probiotics, dietary fibres, human diet.

REFERENCES

- [1]. Cognition Dementia Assessment Measures. (2015). Retrieved from <http://www.dementia-assessment.com.au/cognitive/>
- [2]. Jun, I.S.Y (2008). What is Alzheimer's Disease? [Video file]. Retrieved from: <http://ed.ted.com/lessons/what-is-alzheimer-s-disease-ivan-seah-yu-jun>
- [3]. National Institute on Aging. (2015). Alzheimer's Disease, Unraveling the mystery. (NIH Publication No. 08-3782). Retrieved from: <https://www.nia.nih.gov/alzheimers/publication/alzheimers-disease-unraveling-mystery/preface>.
- [4]. PJ Josmi, PD Divya and JM Rosemol A Review On Role of Nutraceuticals in Alzheimer's disease
- [5]. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4336979/#:~:text=Nutraceutic%20is%20a%20term%20derived,used%20as%20medicine.%5B1%5D>
- [6]. Cristina Polidori M, Joachim Scholz R. Nutritional contributions to dementia prevention: main issues on antioxidant and micronutrients. *Genes Nutr.* 2014;9(382).
- [7]. Engel RR, Stzger W, Gunther W, Kathmann N, Bove D, Gerke S et al. Double-blind cross over study of phosphatidylserine vs. placebo in patients with early dementia of Alzheimer type. *Eur Neuropsychopharmacol.* 1992; 2:149-155.
- [8]. Falinska AM, Colombo CB, Irina AG, Mark G, John LH. The role of omega 3- fatty acid in brain function and ameliorating Alzheimer's disease: opportunities for biotechnology in the development of nutraceuticals.

- Biocatalysis and Agricultural Biotechnology. 2011;1:159-166.
- [9]. Wang C, Holtzman DM. Bidirectional relationship between sleep and Alzheimer's disease: role of amyloid, tau, and other factors. *Neuropsychopharmacology* 45: 104–120, 2019.
- [10]. Laudon M, Wade AG, Farmer M, Harari G, Fund N, Nir T, Frydman-Marom A, Zisapel N. Add-on prolonged-release melatonin for cognitive function and sleep in mild to moderate Alzheimer's disease: a 6-month, randomized, placebo-controlled, multicenter trial. *Clinical Interventions in Aging* (2014). doi: 10.2147/cia.s65625.
- [11]. Stark KD, Elswyk MEV, Higgins MR, Weatherford CA, Salem N. Global survey of the omega-3 fatty acids, docosahexaenoic acid and eicosapentaenoic acid in the blood stream of healthy adults. *Progress in Lipid Research* 63: 132–152, 2016.
- [12]. Quinn JF, Raman R, Thomas RG, Yurko-Mauro K, Nelson EB, Dyck CV, Galvin JE, Emond J, Jack CR, Weiner M, Shinto L, Aisen PS. Docosahexaenoic Acid Supplementation and Cognitive Decline in Alzheimer Disease. *Jama* 304: 1903, 2010.
- [13]. Kleiner AC, Cladis DP, Santerre CR. A comparison of actual versus stated label amounts of EPA and DHA in commercial omega-3 dietary supplements in the United States. *Journal of the Science of Food and Agriculture* 95: 1260–1267, 2014.
- [14]. Bronzuoli MR, Facchinetti R, Steardo L, Romano A, Stecca C, Passarella S, Steardo L, Cassano T, Scuderi C. Palmitoylethanolamide Dampens Reactive Astrogliosis and Improves Neuronal Trophic Support in a Triple Transgenic Model of Alzheimer's Disease: In Vitro and In Vivo Evidence. *Oxidative Medicine and Cellular Longevity* 2018: 1–14, 2018.
- [15]. Beggiato S, Tomasini MC, Ferraro L. Palmitoylethanolamide (PEA) as a Potential Therapeutic Agent in Alzheimer's Disease. *Frontiers in Pharmacology* 10, 2019.
- [16]. Remington R, Bechtel C, Larsen D, Samar A, Doshanjh L, Fishman P, Luo Y, Smyers K, Page R, Morrell C, Shea TB. A Phase II Randomized Clinical Trial of a Nutritional Formulation for Cognition and Mood in Alzheimer's Disease. *Journal of Alzheimer's Disease* 45: 395–405, 2015.
- [17]. <https://www.webmd.com/alzheimers/guide/alzheimers-disease-stages>.