



## ABSTRACT

## Positive effects of probiotics against alzheimer's disease: A scoping review

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### Website

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### **Nutri Symposium 2024: Nutrition advancement in healthcare from conception to well-aged perfection: Unveiling nutrition's impact – Oral presentation**

**Background and Objective:** Alzheimer's disease (AD) is a neurodegenerative disease related to elderly with subtle onset and progressive impairment of behavior and cognitive functions that is projected to increase without medical breakthroughs. Recent medication effectiveness is limited, only symptomatic treatment is available, none are curative, and variably palliative. Studies suggest an association between gut health and Alzheimer's progression through the "microbiome-gut-brain axis". A scoping review was conducted to further explore the positive effects of probiotics on AD, highlighting potential of enhancing cognitive function, mitigating inflammation, and improving lipid profiles.

**Methods:** The literature search was conducted in March 2024 on Pubmed, SageJournals, SpringerLink, Cochrane, Frontier, and hand searching due to limited finding. The search is limited to publications from January 2010 until March 2024.

**Results:** A total of 7 studies were included. Probiotics exhibited positive effects in Alzheimer's disease in cognitive functions and decreased inflammation biomarkers. Probiotics improved cognitive function via increased production of brain neurotransmitters and short-chain fatty acids. Probiotics significantly reduced most of the pro-inflammatory cytokines and increased PPAR- $\gamma$ , kynurenine/tryptophan ratio, and SOD activity. Results in lipid profiles were contrary.

**Conclusions:** Probiotics have a positive effect on improving cognitive function and reducing pro-inflammatory mediators. The effect of probiotic administration on lipid profiles remains ambiguous.

**Keywords:** alzheimer disease, probiotics, cognitive function, inflammation

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