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Effect of Physical Activity on Modulation of Gut Microbiome in Patients with Alzheimer's Disorder

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ABSTRACT

Alzheimer's Disease (AD) is a neurodegenerative disorder with the hallmark of neuropsychiatric symptoms and neurodegenerative dysregulation. Recent researches have suggested that gut microbiome can influence the pathological pathways and progression of AD. All qualitative and quantitative alteration in gut microbial composition can potentially contribute in progression of the AD. Physical Activity (PA) has become a potent strategy for preventing cognitive decline and lowering chronic inflammation. PA also causes notable alterations in gut microbiota composition, functionality, diversity, and Short-chain Fatty Acid (SCFA) production. Physical stress and cognitive abilities are positively correlated in both AD patients and the elderly. Physical activities can be carried out with relatively easy and affordable methods, and even brief interventions that occur seldom appear to have beneficial effects. This review aims to examine the existing evidence to find the effect of physical activity on modulating gut microbiome and its implication for the progression of AD. The literature search was conducted from various databases including PubMed, PEDro, and Cochrane. This review includes findings from 8 studies which suggest that exercise-induced alterations for the treatment of gut dysbiosis can alleviate the symptoms of AD and improves physical health and psychological wellbeing of patient. Furthermore, exercise has a major impact on gut microbiota.

Keywords: Alzhiemer disease, Exercise, Gastrointestinal microbiome, Neurodegenerative disease