

Fecal Microbiota Transplantation Role in the Treatment of Alzheimer's Disease: A Systematic Review

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Recent studies have linked gut microbiota to brain function through the microbiota-gut-brain axis (MGBA). Studies show this microbiota to be highly influenced by multiple factors; including nutrition and other gut-modifying agents (e.g., prebiotics and probiotics), and that it can impact our brain's cognitive function exerting its effect through MGBA. Fecal microbiota transplantation (FMT), is another gut-microbiota-modifying method that is defined as the process of transferring fecal material from a fit donor to a receiver to calibrate the recipient's intestinal composition and, thus, the function of intestinal microbiota.

In that sense, can FMT be effective in the treatment of Alzheimer's disease (AD), the leading cause of dementia worldwide, and its progressive symptoms? This review aims to answer this question, by identifying and summarizing the effects of FMT on AD.

This systematic review is done based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. A systematic search was done using Google Scholar, PubMed, PubMed Central, and ScienceDirect databases in June 2022. The studies were chosen based on predefined criteria that included animal studies done on Alzheimer's subjects as no previous meta-analysis or systematic reviews were done on this topic. The criteria also included English research that was done in the past ten years, narrative reviews, observational studies, and case reports.

Later, a quality assessment was done using the available assessment tool based on each study type. The initial search generated 4,302 studies, yielding 13 studies to be included in the final selection: 1 cohort, 2 case reports, 2 animal studies, and 8 narrative reviews. Our results showed that FMT positively affected AD subjects (mice or humans). In humans, the FMT effect was measured by the Mini-Mental State Examination (MMSE), showing improvement in Alzheimer's symptoms of mood, memory, and cognition.

Biography:

Sondos Nassar has completed her MD at the age of 24 from Jordan University of Science and Technology. She is a general physician and a research student at California institute of Behavioral and Neuroscience.

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