

This literature review examines the relationship between beta-amyloid plaque accumulation during sleep and the onset of Alzheimer's disease (AD). Beta-amyloid plaques, proteins that form masses in the brain, are associated with various diseases, including AD, the most prevalent form of dementia in the United States and a leading cause of disability worldwide. Identifying contributing factors, such as the link between poor sleep quality and early AD stages, is crucial for developing preventive measures to reduce the risk of Alzheimer's. An extensive literature search was conducted using the University of Washington Library Database, focusing on peer-reviewed journal articles with an impact factor of 1.6 or higher. Findings indicate a strong correlation between poor sleep quality and beta-amyloid deposition in the preclinical stage of AD. Notably, sleep quality, rather than duration, is linked to AD risk, as it affects the brain's ability to clear beta-amyloid and leads to fragmented sleep patterns. This insight underscores the importance of good sleep hygiene for long-term cognitive health. Improving sleep quality could serve as a preventive approach to lower AD prevalence and delay its onset. Public health initiatives should prioritize sleep education and interventions to encourage healthy sleep habits, potentially reducing future healthcare burdens and enhancing quality of life across generations.