

Matters of the Mouth and Mind: The Impact of Periodontitis on Alzheimer's Disease

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Objective: This presentation analyzes the relationship between chronic periodontal inflammation and neurodegeneration in patients with Alzheimer's disease. It explores the possibility of periodontitis as a modifiable risk factor for the development of Alzheimer's disease by examining the presence and influence of periodontal pathogens in neuronal tissue.

Methods: A review of the literature was conducted by searching PubMed, EMBASE, and CINAHL, using keywords such as periodontal disease, periodontal pathogens, periodontitis, Alzheimer's disease, and dementia. The returns were screened using inclusion and exclusion criteria and the studies were critically appraised.

Results: A total of nine articles met the inclusion criteria. A significant theme that emerged was the presence of *P. gingivalis* in both the brains of mice and post-mortem Alzheimer's brains. Furthermore, several studies emphasized the role of systemic inflammation as a key mediator in the relationship between periodontal disease and neurodegeneration.

Discussion: Several mechanisms have been proposed which suggest how periodontal pathogens are affecting our brain. One of the probable mechanisms is the translocation of bacteria, and another being systemic inflammation. Current literature indicates that periodontal pathogens have been detected in the brains and cerebral spinal fluid of patients with Alzheimer's disease, suggesting that these pathogens can travel from the oral cavity into the bloodstream. Additionally, the literature found that when mice subjects were infected with *P. gingivalis*, they experienced an increase in neuroinflammation and amyloid plaque production, a widely suggested etiology of Alzheimer's disease.

Conclusion: With current literature revealing a potential link between periodontal pathogens and Alzheimer's disease, dental hygienists should aim to improve their knowledge surrounding this connection and implement this information into individualized patient care.