



DENTAL HYGIENE | ORAL-SYSTEMIC LINK | BRAIN

Study reveals causal association between brain, periodontitis

Gum disease affects the cortical structure of the brain, including the surficial area and cortical thickness, suggesting a connection and emphasizing the periodontal tissue-brain axis, according to a study published in the *Journal of Periodontal Research*.

By — Ava Barros

Jan 11th, 2024

Gum disease affects the cortical structure of the brain, including the surficial area and cortical thickness, suggesting a connection and emphasizing the periodontal tissue-brain axis, according to a study recently published in the *Journal of Periodontal Research*.

It is believed to be the first study that shows a causal relationship between gum disease and the brain cortex structure, the authors wrote.

“Periodontitis causally influences the cerebral cortical structures, presenting new evidence supporting the causal impact of periodontitis on the brain,” wrote the authors, led by Dr. Fulan Wei of the Cheeloo College of Medicine at Shandong University in China ([*J Periodontal Res*](#), December 7, 2023).

“Periodontitis causally influences the brain cortical structures, implying the existence of a periodontal tissue–brain axis,” Wei et al concluded.

Researchers used Mendelian randomization to assess the potential causal influence of genetically linked periodontitis on brain cortical structure. The team used genetic data from previous studies on periodontitis to create instrumental variables, examining their association with brain structure data from 51,665 patients in the Enigma Consortium. They assessed how genetically linked periodontitis might affect the surface area within specific regions of the brain or cortical thickness using various statistical methods like inverse-variance weighted analysis.

Genetically linked periodontitis impacts the surface area of various brain regions, including the medial and lateral orbitofrontal cortices, the inferior temporal and entorhinal cortices, and the temporal pole. Additionally, it affects the thickness of the entorhinal cortex, the authors wrote.

The study, however, had limitations. The results present the effects of periodontitis on the cortical structure of the brain. Additional research is needed to evaluate underlying mechanisms and functional alterations, they wrote.

“Recognizing the conditions related to brain cortical changes might be an effective population-based approach to recognizing alterations in brain function and early-diagnosis disorders in the brain,” they urged.

Source URL: <https://www.drbcuspid.com/dental-hygiene/oral-systemic-link/brain/article/15661584/study-reveals-causal-association-between-brain-and-periodontitis>