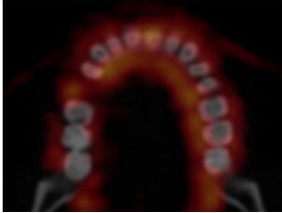


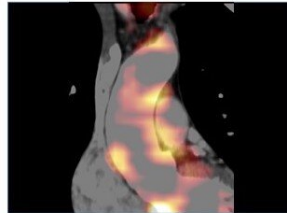
Periodontal disease increases risk of major cardiovascular events

22 February 2021

A. Imaging Inflammation of the Periodontium with PET/CT



B. Imaging Atherosclerotic Inflammation with PET/CT



Researchers found that inflammation associated with active gum disease was predictive of arterial inflammation, which can cause heart attacks, strokes, and other dangerous manifestations of cardiovascular disease. Credit: Forsyth Institute

People with periodontitis are at higher risk of experiencing major cardiovascular events, according to new research from Forsyth Institute and Harvard University scientists and colleagues.

In a [longitudinal study](#) published recently in the *Journal of Periodontology*, Dr. Thomas Van Dyke, Senior Member of Staff at Forsyth, Dr. Ahmed Tawakol of Massachusetts General Hospital, and their collaborators showed that inflammation associated with active gum [disease](#) was predictive of arterial inflammation, which can cause heart attacks, strokes, and other dangerous manifestations of cardiovascular disease.

For the study, researchers performed [positron emission tomography](#) and computer tomography (PET and CT) scans on 304 individuals to view and quantify inflammation in the arteries and gums of each patient. In follow-up studies approximately four years later, 13 of those individuals developed major adverse cardiovascular events. Presence of periodontal inflammation was shown to be

predictive of cardiovascular events, even after researchers controlled for all other [risk factors](#), such as smoking, high blood pressure, obesity, and diabetes.

Importantly, researchers found that [bone loss](#) from prior periodontal disease was not associated with cardiovascular events. Patients that did not have actively inflamed gums had a lower risk of cardiovascular disease—even if those individuals had a prior history of periodontal disease as evidenced by periodontal bone loss in their CT scans.

"This is very definitely related to people who have currently active inflammatory disease," said Van Dyke, who is also Vice President of Clinical and Translational Research at Forsyth.

Researchers hypothesize that local periodontal inflammation activates and mobilizes cells signaling through bone marrow, which triggers the inflammation of arteries, leading to adverse cardiac events.

While the study sample size is relatively small, Van Dyke said the observation is significant and should be studied in a much larger population. And for people with active gum disease, seeking treatment could potentially prevent a dangerous cardiac event.

"If you're in the age zone for cardiovascular disease or have known cardiovascular disease, ignoring your periodontal disease can actually be dangerous and may increase your risk for a [heart attack](#)," Van Dyke said.

More information: Thomas E. Van Dyke et al, Inflammation of the periodontium associates with risk of future cardiovascular events, *Journal of Periodontology* (2021). [DOI: 10.1002/JPER.19-0441](#)

Provided by Forsyth Institute

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