

Tooth loss associated with cardiovascular risk factors in patients with chronic heart disease

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Poor dental health, especially tooth loss, is associated with several established cardiovascular risk factors, including diabetes, smoking, blood pressure, obesity and other novel risk factors, according to research being presented at the American College of Cardiology's 62nd Annual Scientific Session.

Although several studies have proposed a link between periodontal disease and [coronary heart disease](#), knowledge about periodontal disease in patients with established heart disease is lacking. Researchers investigated the prevalence of self-reported tooth loss and occurrence of gum bleeds, as [surrogate markers](#) of periodontal disease, and their relation to cardiovascular risk factors in high-[risk patients](#) with coronary heart disease participating in the ongoing STABILITY study, a global clinical trial evaluating the anti-atherosclerosis drug darapladib.

At the start of the study, 15,828 [study participants](#) from 39 countries reported their remaining number of teeth, categorized as none, 1-14, 15-19, 20-25 or 26-32, and frequency of gum bleeds, never/rarely, sometimes, often or always. Data on cardiovascular risk factors were also obtained, and statistical analyses were performed, adjusting for age, smoking, diabetes and education. Approximately 40 percent of participants had fewer than 15 teeth and 16 percent had no teeth; 25 percent of subjects reported gum bleeds.

For every decrease in number of teeth, researchers observed increasing levels of Lp-PLA2, an enzyme that increases inflammation and promotes hardening of the arteries, as well as an increase in other [cardiac risk](#) markers including LDL or "bad" cholesterol, blood sugar, blood pressure and [waist circumference](#). Participants with fewer teeth also had higher probability of having diabetes, with the odds increasing by 11 percent for every decrease in number of teeth category. Greater loss of teeth was also associated with being a current or former smoker compared to being a non-smoker and having a lower education. Gum bleeds were associated with higher levels of [bad cholesterol](#) and blood pressure, as well as a greater likelihood of being a non-smoker and having a higher education.

Researchers were surprised by the large proportion of patients with no or very few teeth and had expected somewhat stronger associations between gum bleeding and [cardiovascular risk factors](#).

"Gum bleeding is an early manifestation of periodontal disease, whereas tooth loss represents the final stage," said Ola Vedin, MD, from the Department of Medical Sciences at Uppsala University in Sweden and the study's lead investigator. "Therefore, one theory is that patients with gum bleeding but little or no tooth loss have had less and shorter exposure to the processes of periodontitis and have thus developed fewer complications."

Dr. Vedin cautions that researchers are still unclear about what is behind the association between tooth loss, gum health and heart health.

"Whether [periodontal disease](#) actually causes coronary heart disease remains to be shown. It could be that the two conditions share common risk factors independently," Dr. Vedin said. "Those who believe that a causal relationship exists propose several theories, including systemic inflammation, the presence of bacteria in the blood from infected teeth and bacteria invading coronary plaques."

According to Dr. Vedin, additional studies are needed to unravel the potential for periodontal health to be a useful risk marker for heart disease. If future research can confirm a causal relationship, dentists could play an important role in cardiovascular risk assessment.

More information: Dr. Vedin will present the study "Tooth Loss Is Highly Prevalent And Associated With Cardiovascular Risk Factors In Patients With Chronic Coronary Heart Disease In The Global Stability Trial" on Saturday, March 9 at 3:45 p.m., in Moscone Center, Expo North.

Provided by American College of Cardiology

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