

# THE ***HEART-GUM*** DISEASE CONNECTION

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The evidence linking periodontitis to heart disease originated from a Finnish study in 1989 (27), which noted that patients who had heart attacks had more severe oral conditions including periodontal disease and tooth decay. Several studies since then have shown that pre-existing periodontal disease results in an increased risk for a heart attack or stroke. (2) The first National Health and Nutrition examination survey followed 9760 subjects for 14 years. DeStafano and co-workers found that individuals with periodontitis at

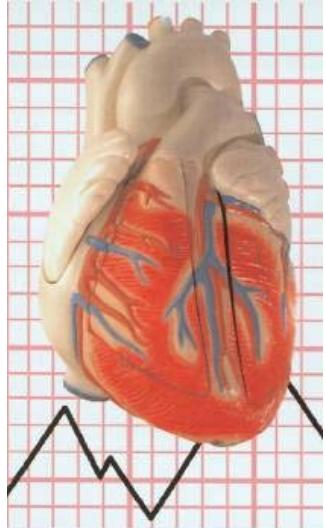
baseline had a 25% greater chance of having coronary artery disease. After adjusting for age, gender, race, education, poverty index, marital status, blood pressure, cholesterol, body mass index, physical activity, alcohol consumption and cigarette smoking, men with periodontitis had a 1.72 fold greater chance of cardiovascular disease! (28)

Numerous studies suggest that periodontal disease is not only associated with cardiovascular events like heart attack and stroke, but it is also associated with sub clinical evidence of atherosclerosis, including thickening of the vessel wall. Such controlled studies indicate that periodontitis remains an independent contributor to heart disease. Causality is being studied extensively in current research.

New evidence is suggesting that these organisms can lodge in vessel walls and plaque and persist. The relationship between gum disease and heart disease is seen by demonstrating the presence of periodontal pathogens (bacteria & microorganisms) within the plaque lesions of the blood vessels (1).

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We have long known that gum disease is associated with transmission of oral bacteria into the blood (bacteremia) and this is the reason why preventative antibiotics are used prior to dental treatment for patients with heart murmurs, valve problems and heart and joint surgeries. New evidence is suggesting that these organisms can lodge in vessel walls and plaque and persist.



Other new information links gum disease with systemic inflammation, as measured by the production of liver proteins such as C-Reactive Protein (8) (23). This protein has been known to be a risk factor for heart attacks and peripheral artery disease in otherwise healthy individuals and it has been published that CRP is more predictive of heart attacks than bad cholesterol (9). In fact over 50% of the people who have heart attacks have normal Cholesterol.

As shown in the inflammation article while a CRP value of under 1mg/liter is considered normal, a value of 2-3 triples your risk of heart attack and higher values can increase your risk up to seven and a half times! The actual disease process was only recently explained (10). The CRP actually interferes with the process that inhibits blood clots which can predispose one to a sudden heart attack or stroke.

By comparison bad cholesterol slowly builds up plaque in the arteries which may allow more warning. New research links gum disease as one potential cause for elevations in this protein, thus suggesting another link between gum disease and bacteria and heart disease risk.

However, there is much promise in the fact that successful treatment of periodontal disease can significantly lower C-Reactive Protein (19) (25).

In the December 2005 issue of the Journal of Lipid Research, researchers found that patients with generalized aggressive periodontitis frequently had elevated plasma levels of a particularly bad subclass of the low density lipoprotein (LDL) called small-dense LDL. Previous research revealed that people who have predominantly small-dense LDL in their blood are at a three- to six-fold increased risk of heart disease and stroke. Thus, we have three means by which periodontal disease can increase the risk of heart disease.

American Heart Association spokesman Dr. Richard Stein, who is also director of preventive cardiology at Beth Israel Medical Center, in New York City, said he “regularly counsels patients worried about their risk for heart attack or stroke to incorporate good periodontal care in their preventive strategies, just as they would include exercise, healthy diets and appropriate medications”.

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