

Gum disease bacteria may cause heart disease

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A University of Florida study shows that the same bacteria that cause gum disease also promotes heart disease – a discovery that could change the way heart disease is diagnosed and treated. Researchers report their findings today at the annual meeting of the American Society for Microbiology.

"We report evidence that introduction of oral bacteria into the bloodstream in mice increased [risk factors](#) for atherosclerotic heart disease. Our hope is that the American Heart Association will acknowledge causal links between [oral disease](#) and increased heart disease. That will change how physicians diagnose and treat heart disease patients," says Irina M. Velsko, a graduate student in the University of Florida's College of Medicine, who presented the data.

Heart disease is the leading cause of death in the North America. Gum disease affects 46 percent of the U.S. population and is caused by bacteria that grow on the teeth under the gums. Although doctors know that patients with [gum disease](#) are at higher risk for heart disease, gum disease isn't viewed as a traditional risk factor for heart disease. In 2012, the American Heart Association published a statement that they support the association between gum disease and heart disease, but not causal association.

In the study, the researchers infected mice with four specific bacteria (*Porphyromonas gingivalis*, *Treponema denticola*, *Tannerella forsythia*, *Fusobacterium nucleatum*) that cause gum disease and tracked their

spread. Once the bacteria were detected in the mouse gums, heart and aorta, researchers saw an increase in risk factors, including cholesterol and inflammation, associated with heart disease.

Funded by the National Institutes of Health/National Institute of Dental and Craniofacial Research, this study is part of a larger study on the effects of gum disease on overall health being conducted in the laboratory of by Kesavalu Lakshmyya in the University of Florida's Department of Periodontology in the College of Dentistry.

"In Western medicine there is a disconnect between oral health and general health in the rest of the body; Dentistry is a separate field of study from Medicine. The mouth is the gateway to the body and our data provides one more piece of a growing body of research that points to direct connections between oral health and systemic health," says Kesavalu.

"Our intent is to increase physician awareness of links between oral bacterial infection and heart disease. Understanding the importance of treating gum disease in patients with heart disease will lead to future studies and recommendations for careful attention to [oral health](#) in order to protect patients against [heart disease](#)," says cardiologist Alexandra Lucas of the University of Florida, College of Medicine, who is a co-investigator in the research.

More information: This research was presented as part of the 2014 General Meeting of the American Society for Microbiology held May 17-20, 2014 in Boston, Massachusetts.

Provided by American Society for Microbiology

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