

# Researchers Report Periodontal Disease Independently Predicts New Onset Diabetes

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(PhysOrg.com) -- Periodontal disease may be an independent predictor of incident Type 2 diabetes, according to a study by researchers at Columbia University Mailman School of Public Health. While diabetes has long been believed to be a risk factor for periodontal infections, this is the first study exploring whether the reverse might also be true, that is, if periodontal infections can contribute to the development of diabetes. The full study findings are published in the July 2008 issue of *Diabetes Care*.

The Mailman School of Public Health researchers studied over 9,000 participants without diabetes from a nationally representative sample of the U.S. population, 817 of whom went on to develop diabetes. They then compared the risk of developing diabetes over the next 20 years between people with varying degrees of periodontal disease and found that individuals with elevated levels of periodontal disease were nearly twice as likely to become diabetic in that 20 year timeframe. These findings remained after extensive multivariable adjustment for potential confounders including, but not limited to, age, smoking, obesity, hypertension, and dietary patterns.

“These data add a new twist to the association and suggest that periodontal disease may be there before diabetes,” said Ryan T. Demmer, PhD, MPH, associate research scientist in the Department of Epidemiology at the Mailman School of Public Health and lead author. “We found that over two decades of follow-up, individuals who had periodontal disease were more likely to develop Type 2 diabetes later in

life when compared to individuals without periodontal disease.”

Also of interest, the researchers found that those study participants who had lost all of their teeth were at intermediate risk for incident diabetes. “This could be suggestive that the people who lost all of their teeth had a history of infection at some point, but subsequently lost their teeth and removed the source of infection,” noted Dr. Demmer. “This is particularly interesting as it supports previous research originating from The Oral Infections and Vascular Disease Epidemiology Study (INVEST) which has shown that individuals lacking teeth are at intermediate risk for cardiovascular disease” said Moïse Desvarieux, MD, PhD, director of INVEST, associate professor and Inserm Chair of Excellence in the Department of Epidemiology at the Mailman School and senior author of the paper.

The contributory role of periodontal disease in the development of Type 2 diabetes is potentially of public health importance because of the prevalence of treatable periodontal diseases in the population and the pervasiveness of diabetes-associated morbidity and mortality. However, observes Dr. Demmer, more studies are needed both to determine whether gum disease directly contributes to type 2 diabetes and, from there, that treating the dental problem can prevent diabetes. In addition to Dr. Desvarieux, David R. Jacobs Jr., PhD, professor in the Department of Epidemiology and Community Health at the University of Minnesota, also contributed to the research.

Provided by Columbia University

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