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Dentists Can Identify People With Undiagnosed Diabetes

ScienceDaily (July 18, 2011) — In a study, Identification of unrecognized diabetes and pre-diabetes in a dental setting, published in the July 2011 issue of the *Journal of Dental Research,* researchers at Columbia University College of Dental Medicine found that dental visits represented a chance to intervene in the diabetes epidemic by identifying individuals with diabetes or pre-diabetes who are unaware of their condition. The study sought to develop and evaluate an identification protocol for high blood sugar levels in dental patients and was supported by a research grant from Colgate-Palmolive. The authors report no potential financial or other conflicts.

"Periodontal disease is an early complication of diabetes, and about 70 percent of U.S. adults see a dentist at least once a year," says Dr. Ira Lamster, dean of the College of Dental Medicine, and senior author on the paper. "Prior research focused on identification strategies relevant to medical settings. Oral healthcare settings have not been evaluated before, nor have the contributions of oral findings ever been tested prospectively."

For this study, researchers recruited approximately 600 individuals visiting a dental clinic in Northern Manhattan who were 40-years-old or older (if non-Hispanic white) and 30-years-old or older (if Hispanic or non-white), and had never been told they have diabetes or pre-diabetes.

Approximately 530 patients with at least one additional self-reported diabetes risk factor (family history of diabetes, high cholesterol, hypertension, or overweight/obesity) received a periodontal examination and a fingerstick, point-of-care hemoglobin A1c test. In order for the investigators to assess and compare the performance of several potential identification protocols, patients returned for a fasting plasma glucose test, which indicates whether an individual has diabetes or pre-diabetes.

Researchers found that, in this at-risk dental population, a simple algorithm composed of only two dental parameters (number of missing teeth and percentage of deep periodontal pockets) was effective in identifying patients with unrecognized pre-diabetes or diabetes. The addition of the point-of-care A1c test was of significant value, further improving the performance of this algorithm.

"Early recognition of diabetes has been the focus of efforts from medical and public health colleagues for years, as early treatment of affected individuals can limit the development of many serious complications," says Dr. Evanthia Lalla, an associate professor at the College of Dental Medicine, and the lead author on the paper. "Relatively simple lifestyle changes in pre-diabetic individuals can prevent progression to frank diabetes, so identifying this group of individuals is also important," she adds. "Our findings provide a simple approach that can be easily used in all dental-care settings."

Other authors who contributed are: Dr. Carol Kunzel, associate clinical professor at the College of Dental Medicine and at Columbia's Mailman School of Public Health; Dr. Sandra Burkett, at the College of Dental

Medicine; and Dr. Bin Cheng, an assistant professor in the Department of Biostatistics at the Mailman School of Public Health.

According to the Centers for Disease Control and Prevention, one in four people affected with type 2 diabetes in the United States remains undiagnosed. And those with pre-diabetes are at an increased risk for type 2 diabetes and also for heart disease, stroke and other vascular conditions typical of individuals with diabetes.

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1. E. Lalla, C. Kunzel, S. Burkett, B. Cheng, I. B. Lamster. **Identification of Unrecognized Diabetes and Pre-diabetes in a Dental Setting**. *Journal of Dental Research*, 2011; 90 (7): 855 DOI: [10.1177/0022034511407069](#)

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