

Predicting Periodontal Disease



by Lisa Loving DDS

We are not all built the same when it comes to periodontal disease. As a dentist practicing for nearly 20 years, I have heard many patients complain that they brush and floss and do “everything right” yet their spouse who does “nothing right” gets better checkups.

We have always understood in our profession that there are many variables when it comes to periodontal disease and often treating this condition is as much of an art as it is a science.

We know that bacteria and inflammation cause periodontal disease. Gingivitis begins as a buildup of plaque (a thin biofilm layer comprised of bacteria, food debris, and a mucus film) on the teeth. The plaque, if left long enough, will harden and mineralize and turn into calculus or “tartar” and will trigger inflammation called gingivitis.

As inflammation occurs, the periodontal tissue (gums) swells and pockets get deeper. As bacteria moves into the deeper pockets the environment begins to change in the sulcus. As the pocket gets deeper it favors the anaerobic bacteria (oxygen hating). Many of these bacteria attack the ligament and bone that support teeth and result in periodontal infection and tooth loss. We also know that not all people that have *gingivitis* will progress to periodontal disease.



As dentists, we know that medical conditions such as pregnancy, immune-suppression, diabetes, inflammatory disease, and medications can affect periodontal disease and reciprocally that periodontal disease can impact medical conditions such as cardiovascular disease, premature birth, and diabetes. Stress undoubtedly plays a role as a variable as well. Hence the art of putting all of the information together to develop appropriate protocol becomes a little more subjective as we make decisions when to treat conservatively or more aggressively.



It's undisputed that physically reducing the amount of plaque in your mouth by brushing and flossing properly is the single biggest factor in prevention. Good

nutrition, smoking cessation, and regular professional cleanings are key factors that greatly impact the disease that are in the patient's control. Still there are patients that do “everything right” and can't seem to avoid periodontal disease.

Recently, however, science and genetic testing have stepped up to give dentists additional tools in developing more objective treatment protocols that are more individualized for treating patients.

Coming soon, there are two salivary tests that will be available to give dentists more definitive information about what underlying factors we are dealing with. The first is a salivary test that is called MyPerioID test which identifies an individual that has a “PST positive” genotype. It's estimated that the prevalence of this genome is 30-40 % of Caucasians and the significance is that there is a 3-7 fold increase in risk for SEVERE periodontal disease. The PST composite genotype is based on the presence of the “T” in the DNA sequence at the (interleukin-A site) IL-A and IL-B genes.

Now PST positive patients can be identified early, even before the disease is established, and these patients can be treated more aggressively in the prevention stage such as more frequent cleanings to disrupt the normal flora. The other advantage to finding out your status early for this test is that you are 3.88 times at risk for cardiovascular disease if you are positive. (*American Journal of Nutrition 2006*)

The second salivary test that will be offered is the MyPerioPath test that is used to identify and quantify key bacteria that allow us to find out which specific microorganisms are triggering a patient's periodontal disease. These populations can be different in different patients. It's estimated that the human mouth can have over



Continued

Predicting Periodontal Disease *continued*

400 different types of bacteria but only a handful of these are pathogenic and cause disease.

Specifically, MyPerioPath identifies pathogenic bacterial types. For example, *A. actinomycetemcomitans*, *P. gingivalis*, *F. periodonticum* which are known aggressive anaerobic bacteria that cause deterioration in the deeper pockets of the periodontal sulcus (the natural space found between tooth and gum tissue). From a medical perspective, this test is also significant as patients that have severe periodontal disease with the presence of *P. gingivalis* bacteria are at 3.8 times the risk of a heart attack and twice the risk of a stroke according to research presented in the *American Journal of Periodontology*.

These tests are performed using a saliva sample. It's easy and fast to collect. Our patients will simply swish a sterile saline solution in his/her mouth and spit it into a tube. The sample is then sent to the lab where the test is performed. After testing, the results will be sent to our office and we will be able to review all of your risk factors and determine an appropriate individualized course of treatment.



It's an exciting time for dentistry and the medical community. Advances in technology allow us to understand and better predict how our patients will respond to our care.

Dr. Lisa and her husband, Dr. Tim, graduated from Oregon Health and Science University School of Dentistry. They opened Loving Family Dental in Fountain Hills in 2000. Dr. Lisa enjoys spending time with their family and traveling. You can visit online at www.lovingfamilydental.com or for appointments, call (480) 836-7600. For more information on the saliva testing, visit www.oraldna.com.



©Dr. Lisa Loving & TyH Publications (M. Squires)

**“You'll find that life is still worthwhile,
if you just smile.”**

Charles Chaplin

Also by TyH Publications in our online Health Library

◆ *CoQ10 & Periodontal Disease*

Health
POINTS

Published in *Health Points*. This article is protected by copyright and may not be reproduced without written permission. For information on a subscription, please call TyH Publications, 1-800-801-1406 or write TyH Publications, 12005 N. Saguaro Blvd., Ste. 102, Fountain Hills, AZ 85268. E-mail editor@e-tyh.com. For information on TyH products, visit our website at www.e-tyh.com.