

# Bacterial challenge of caries risk

By Peter Mackley

In recent years dentistry has shifted its focus in many areas more towards cosmetic treatment options. Advertising and television shows such as Extreme Makeovers have highlighted wonderful transformations and exposed people to what is now possible in dentistry. It's interesting to note that little is spoken about the underlying factors that contributed to the original situation that brought the patient into the dental office.

If we were to review some of the more recent literature relating to dental caries it is interesting to note the definitions. Professor John Featherstone, (Professor & Chair, Department of Preventative & Restorative Dental Science, University of California) has reported, "Dental caries is a transmissible bacterially generated disease. There is a mistaken belief that drilling out a caries lesion and placing a restoration eliminates the bacteria and thereby stops caries progression." Likewise, Professor Philip Mash, (Centre for Applied Microbiology and Research, Salisbury, UK), "Oral diseases, such as dental caries and periodontal disease, should be considered as consequences of ecologically driven imbalances of oral microbial biofilms".

By these definitions and many others that have been previously reported, **caries is a transmissible bacterial based biofilm disease/imbalance.**

In reviewing conventional diagnostic modalities it is interesting to note that diagnosis still generally evolves around the amount of destruction to the tooth. Visual examination, a probe, radiographs and even the diagnodent are all predominantly focused on the advent of a cavity. None of these modalities provide any data about the state or condition of the oral bacterial biofilm.

Professor Featherstone summarized the problem perfectly (The science and practice of caries prevention, JADA, Vol. 131, July 2000), "The problem facing clinicians is how to determine, in a timely fashion, whether the bacterial challenge is high, medium or low". He clearly identified that new diagnostic tools are required to meet the challenge of caries the disease.

Bacterial culturing has been available for a number of years, however it normally requires a 48 hour incubation period to obtain a result. Many clinicians have felt this diagnostic modality alone does not fit well within the day to day time restraints of running a busy practice. Also once a diagnosis has been made, there seems to be a level of confusion about treatment modalities. What product should be used? How can we simply and quickly determine if the treatment is benefiting the patient?

Today clinicians have a new set of diagnostic tools that helps them to quickly and accurately determine the bacterial challenge of caries. Oral

BioTech, the developers of the CariFree® system have developed a 4 step system that can simply be integrated into an existing hygiene or check-up appointment. CariFree® has been designed by dentists for dentists, understanding the practical constraints that they are placed under on a daily basis. Dr Kim Kutsch the creator of CariFree® stated, "Dentists are very familiar with systems, so our objective in developing CariFree® was to ensure we could provide a total solution, from the initial diagnosis right through to treatment, and the ongoing monitoring of the patients health".

The CariFree® system is really simple to use. Patient's are screened annually with an oral swab test known as CariScreen™. It takes less than a minute and provides an immediate reading on the portable hand held unit. The CariScreen™ test has proved to be extremely valuable as it helps to identify high risk individuals from the low risk group. A simple way to think about this is, some people may have a balanced oral bacterial biofilm, while others may have an overburdened biofilm. The CariScreen™ test helps to determine this.

Patient compliance is a key factor when providing treatment options. Factors such as taste, staining, smell, duration and frequency of use, and the complexity of user instructions can all influence patient acceptance of the treatment regime. The CariFree® system has gone a long way to bridge this gap by simplifying the whole process for both the clinician and patient.

The CariFree® Treatment Rinse is an antimicrobial therapy that has been designed to reduce the number of disease causing bacteria, while elevating the oral pH. A one minute application is required daily for 7-10 days. Patients normally experience a positive change in their mouth after several days, many commenting that their teeth feel smooth like they have just been professionally cleaned. After this period the patient would commence use of the CariFree™ Maintenance Rinse. This is a daily one minute application that should be used for about 20 days. The Maintenance Rinse encourages a non-cariogenic biofilm to propagate and elevates the oral pH, creating a healthier oral environment. Following an initial 30 day total treatment cycle, re-screening is advised to help determine the level of change and patient compliance. ♦

To learn more about the CariFree® system, drop by the Essology booth, number 37 at the ADA Congress Exhibition, or contact us at [www.essology.com](http://www.essology.com)



Peter Mackley

