Defeat the demineralisation guessing game

As dental professionals, we are aware of how prevalent dental caries is in this country. With an estimated 31 per cent of the population exhibiting some level of this disease,[1] it is imperative that we attempt to eliminate this essentially preventable problem.

Indeed, while it is the responsibility of dental practitioners to impress upon their patients the importance of undertaking effective dental care routines at home, it is also important that they take a proactive approach in clinic to diagnose and treat dental caries, preventively.

In its early stages, dental caries can be stopped and potentially reversed. If active demineralisation is identified, the lesion can be treated therapeutically, eliminating the need for cavity preparation and restorative procedures.[2,3]

Unfortunately, there is a distinct lack of reliable diagnostic methods for detecting, measuring and monitoring the progress of a carious lesions. What methods currently exist are effective for the diagnosis of cavitated lesions, but by this time it is generally too late for preventive techniques.[4]

What's more, early detection of dental caries has been made significantly more difficult due to the increasing prevalence of fluoride in the country's water supplies, and in toothpaste. As such, cavities are more likely to start developing under the top layer of harder, fluoridated enamel, making it easier for dental professionals to miss until too late.

The main issue with preventively treating dental caries is the difficulty in determining whether demineralisation is active or not. Of course, only active lesions will develop into cavities – but identifying these from inactive lesions is difficult. As such, it is common for active caries to go untreated or, conversely, inactive caries to be treated unnecessarily.

Typical assessment of caries activity has relied predominately on visual and tactile inspection, relying heavily on an individual practitioner's subjective clinical judgement.

Yet, in the current age of digital diagnostics – where accuracy has been improved across a wide range of different medical fields – this type of educated 'guesswork' seems outdated.

Aiming to offer a unique solution to this problem, UK innovator CALCIVIS has been developing state-of-the-art bioluminescence technology that detects free calcium and images active demineralisation on teeth. With this vital information, practitioners can then offer a precise, evidence-based and, thus bespoke preventive treatment plan – saving time and teeth before cavitation can take place.

For more information visit www.calcivis.com, call on 0131 658 5152 or email at info@calcivis.com

[1] Oral Health Foundation: National Smile Month, Facts and Figures. Link: http://www.nationalsmilemonth.org/facts-figures/ [accessed 26/08/16]

[2] Featherstone JD. Caries detection and prevention with laser energy. Dent Clin North Am. 2000;44:955–69. [PubMed]

[3] Pereira AC, Verdonschot EH, Huysmans MC. Caries detection methods: Can they aid decision making for invasive sealant treatment? Caries Res. 2001;35:83–9. [PubMed]

[4] Zadik, Y., Bechor, R. *Hidden Occlusal Caries – Challenge for the Dentist*: New York State Dent. J. 74 (4): 46-50 (2008)