

## Lighting the way for preventive dentistry

As a dental professional, you will undoubtedly be aware that tooth decay is the most common preventable disease in the developed world, affecting approximately 36 per cent of the global population – which is approximately 2.6 billion people.<sup>1</sup>

In the UK, tooth decay remains a serious issue, with an estimated 31 per cent of all adults exhibiting some sign of carious decay.<sup>2</sup> Amongst the country's children, the numbers are no better – with approximately one third of school age children presenting with some level of dental decay.<sup>2</sup>

As we know, tooth decay can have a wide range of negative ramifications for patients who allow the disease to progress unopposed – including infection, tooth loss and the formation of abscesses. In deciduous teeth, dental caries can negatively impact the development of adult teeth.

What's more, tooth decay may also lead to inflammation of the tissues around the teeth – progressing to periodontal disease if left untreated. The importance of this cannot be understated, since periodontitis has been linked to a number of serious health conditions, such as diabetes, heart disease and, according to some sources, even cancer.

There can be no question, therefore, that tooth decay is a serious problem – one that must be addressed by the UK dental profession with earnest. Frustratingly, however, we all know what must be done to prevent dental caries; after all, the disease is entirely preventable.

Indeed, with good oral care and patient diligence, dental caries can be avoided altogether. While there is some research that suggests a genetic predisposition to the disease, there can be no denying that the main causal factor of tooth decay is a lack of thorough oral care and hygiene.

Unfortunately, many people in the UK are still unaware of the actual causes of dental decay – and do not understand the best methods of preventing it. As such, it is crucial that dental professionals do everything they can to educate their patients on the importance of regularly brushing their teeth and attending routine check ups – as well as treating their patients preventively rather than reactively.

Indeed, ever since the 'Steele' report that was released in 2009,<sup>3</sup> the onus on practitioners has been to promote preventive dental care, rather than focus on restorative treatment. This paradigm shift has forced dental diagnostics into the limelight and means that dental professionals are under a great deal of professional and public pressure to identify and treat symptoms as early as possible.

Unfortunately, dental caries is notoriously difficult to detect in its earliest stages, when the effects can be easily reversed or repaired. Normally, a patient will be diagnosed with tooth decay once they have attended a routine check-up and a

carious lesion, along with the resultant damage it has caused, has been physically detected by the practitioner. The next step is to treat the tooth, normally by drilling away the infected material and filling the cavity with a restorative material. Unfortunately, the efficacy of such methods are being increasingly called into question, with evidence suggesting that the structural integrity of a filled tooth is significantly less than a healthy tooth. Some research even indicates that the strength of the teeth adjacent to a filled tooth will also be compromised.

Fortunately, new technologies are emerging on the dental market that will improve the precision and efficacy of dental diagnostics – and encourage enhanced preventive care. Visual technology, fuelled by the ‘digital revolution’, are proving to be especially effective, since both practitioners and patients can more clearly see the result of dental decay – improving clinical treatments and patient education at the same time. Indeed, visual technologies are having a positive impact on the profession by allowing information to be shared quickly and effortlessly between patients and dentists, enabling an overall higher standard of care.

One such technology is the all-new CALCIVIS imaging system, which uses an advanced bioluminescent (light-emitting) substance that, when introduced to the surface of the tooth, reacts immediately with free calcium ions, indicative of dental demineralisation – the early signs of dental caries. By detecting this reaction at its earliest stage, the CALCIVIS imaging system allows dentists to undertake and communicate simple preventive treatments including remineralisation therapy that reverse a dental caries prognosis.

Dental technology is advancing to the stage where it is now possible for practitioners to offer their patients effective, individual preventive care. As such, it is important for dental professionals to familiarise themselves with such technology to ensure they have the skills and tools necessary to help patients improve their oral health in the future.

For more information visit [www.CALCIVIS.com](http://www.CALCIVIS.com)

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<sup>1</sup> Vos, T (Dec 15, 2012). "Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010.". *Lancet* 380(9859): 2163–96.

<sup>2</sup> Oral Health Foundation: National Smile Month, Facts and Figures. Link: <http://www.nationalsmilemonth.org/facts-figures/> [accessed 23/5/17]

<sup>3</sup> NHS England: NHS dental services in England: An independent review led by Professor Jimmy Steele, June 2009. Link: [http://www.sigwales.org/wp-content/uploads/dh\\_101180.pdf](http://www.sigwales.org/wp-content/uploads/dh_101180.pdf) [accessed 23/5/17]