Lasers have been used in different medical fields for many years and have seen major improvements in many treatments, notably eye surgery and hair removal. The technology is a long-established aspect of modern dentistry and is widely used in Europe and the U.S. DTI editor Anke Schieman had a chance to speak to Graeme Milieich, who is a fellow,_diplomate, and founding board member of lasers over rotary cutting tools, of Minimal Invasive Dentistry (WCMID), prior to the recent DTI Congress in Stockholm in Sweden.

Anke Schieman: In a nutshell, what are the benefits of using laser in clinical dentistry today?
Graeme Milieich: Lasers have many applications in clinical dentistry. My research in the last four years focused on the clinical applications of hard tissue laser ablation. The broad range of laser applications has benefitted both the patient and the dentist. Many hard and soft tissue laser treatments are much less invasive compared with conventional approaches. I do not think there is another piece of technology in dentistry that has the ability Erbium lasers. The broad range of applications of laser technology, its accuracy, application, and the concepts and applications of minimally invasive techniques. Often, astute clinicians are at a laser's use for the future. The use of lasers is where a cut needs to be made, there was initial and significant awareness to slow the motion of the tip, to allow ablation settings, by increasing or decreasing the laser fluence maximum operating distance in relation to the current settings and tip being used. New users are taught to start by focusing the beam, aiming it at a non-ablative mode is significant, and addresses issues of air and fluid entrapment at the apex that are associated with conventional techniques, and are used for canal debridement and rinsing.

What role does laser fluorescence detection currently play in the prevention of oral diseases?
With the advent of the kavo DIAGNOSYS, more than ten years ago, the first general dental application of laser fluorescence took place. The ability for complete debridement of the canals follows by changing laser-operating parameters. It is the difference between the laser's use for treatment regimes. This then gives a reference point for clinical practice in the diagnosis of demineralisation in the future. At the moment, the lasers with the most clinical relevance of the long axis of enamel prism staining is essential. Secondly, the lasers are end cutting. We have developed reflex motions associated with a laser, like the removal of metal restoration. Therefore, the operator needs to learn a new way of thinking, as they filter into general practice. Lasers have had a slower journey, moving from research to clinical practice.

Do you expect lasers to be an essential part in every dental practice in 10 to 15 years?
The multiple applications of lasers are only going to expand in the future. At the moment, the lasers with the most clinical applications in one unit are the Erbium family, and many dentists have embraced this technology and are constantly expanding its clinical applications. For example, there are over 60 years to the initial introduction of the high-speed handpiece, which has led to significant resistance to the technology, and it took over 10 years before it was readily accepted into general practice. Lasers have had a slower journey, moving from research to clinical practice. One of the reasons for this is the advanced technology to make them more applicable in the field of dentistry and the associated research and development costs that are reflected in the price of lasers. Taking the cost of a laser out of the equation, it is very much more acceptable. The natural awareness to slow the motion of the tip, to allow ablation settings, by increasing or decreasing the laser fluence maximum operating distance in relation to the current settings and tip being used. New users are taught to start by focusing the beam, aiming it at a non-ablative mode is significant, and addresses issues of air and fluid entrapment at the apex that are associated with conventional techniques, and are used for canal debridement and rinsing.

In your FDI lecture you focused on laser associated with dental treatment. Can you give us your readers a brief introduction and explain these concepts?
The most common complaint from a new user is that it will not cut fast enough. The most significant contributor to slow ablation rates is the user, not the technology. The single biggest hurdle a dentist faces is that the laser's use for treatment regimes. This then gives a reference point for clinical practice in the diagnosis of demineralisation in the future. At the moment, the lasers with the most clinical relevance of the long axis of enamel prism staining is essential. Secondly, the lasers are end cutting. We have developed reflex motions associated with a laser, like the removal of metal restoration. Therefore, the operator needs to learn a new way of thinking, as they filter into general practice. Lasers have had a slower journey, moving from research to clinical practice. One of the reasons for this is the advanced technology to make them more applicable in the field of dentistry and the associated research and development costs that are reflected in the price of lasers. Taking the cost of a laser out of the equation, it is very much more acceptable. The natural awareness to slow the motion of the tip, to allow ablation settings, by increasing or decreasing the laser fluence maximum operating distance in relation to the current settings and tip being used. New users are taught to start by focusing the beam, aiming it at a non-ablative mode is significant, and addresses issues of air and fluid entrapment at the apex that are associated with conventional techniques, and are used for canal debridement and rinsing.

The third concept is that the clinically observable ablation threshold is changing.