

Press release

AdvErL Evo: Morita presents innovative Er:YAG laser

Pioneering laser technology offers more minimally invasive options for dental indications

When they hear the word “laser,” many people are still reminded of science fiction. But the technology has long since made its way into our present and has become an integral aspect of the treatment in medical specialties such as ophthalmology, surgery, dermatology – and dentistry. The traditional Japanese company Morita has been producing special lasers for dental applications for almost 20 years now, lasers that are used in areas such as periodontology, cariology, endodontics, oral implantology and oral surgery. With the introduction of the AdvErL Evo high-tech Er:YAG laser in Europe, Morita combines advanced Japanese technology with efficiency, functionality and ergonomics, making minimally invasive treatment available for many dental indications.

The acronym “laser” stands for “**L**ight **A**mplification by **S**timulated **E**mission of **R**adiation.” This term describes a light beam of high intensity and a sharp focus — the combined result being concentrated energy. One use of lasers in medicine is to remove various types of human tissue. The traditional Japanese company Morita has offered applications of this technology in dentistry for many years, manufacturing laser systems that are particularly suitable for periodontal, implantological and endodontic oral surgical procedures.

The third laser generation, AdvErL Evo, is an Er:YAG laser and will be officially unveiled at an exclusive press conference at the International Dental Show in Cologne in March 2015. The AdvErL Evo combines a stylish design with ease of

use and a minimally invasive treatment approach, contributing to a smooth dental workflow.

Micro-explosions for minimally invasive therapy

Er:YAG lasers emit stimulated electromagnetic radiation at a wavelength of 2,940 nm, which is ideally absorbed by water. The water molecules are excited by the laser beam, increasing their volume 800 to 1,000 times and causing so-called micro-explosions that ensure a treatment that is gentle on the tissue and greatly enhances patient comfort. AdvErL Evo offers patients a treatment result that is hardly achievable with the classical methods: The procedure is minimally invasive and almost painless, does not produce major vibration or excessive heat and is tissue conserving and therefore pleasant for the patients. This improves not only patient's quality of life, but also offers a high level of comfort for the treatment team – in the therapy of periodontitis and peri-implantitis as well as during endodontic treatment.

Product benefits: flexible, easy to handle, ergonomic

Morita offers a compendium of 18 tips for different AdvErL Evo indications that cover multiple dental disciplines and provide for wide range of possible applications. A special characteristic of the AdvErL Evo is that it directs water and air directly to the application tip, which avoids distractions by spray and mist and provides a better view of the treatment field. The highly flexible hollow-fiber cable in combination with the extremely light and ergonomically designed handpiece helps protect the operator's hand and arm from fatigue while facilitating very accurate movements. The user interface is thoughtfully conceived and features a clear and intuitive design. It has 20 readily accessible pre-programmed settings. User protocols can be stored on a USB that is easily connected to a computer.

The compact yet lightweight laser system with its large wheels is easy to maneuver and can be operated from all sides if a change in position should be necessary during use. The laser unit is designed as a very simple and modern “plug-and-play” device: all water and air supply systems for — essential — cooling during

treatment are already integrated into the device so that it can be easily connected to a power outlet.

Broad range of clinical indications

Its unique mix of cutting-edge technology, functionality and ergonomics makes the AdvErL Evo perfect for many applications: In caries treatment, the laser can be used for cavity preparation or surface roughening. In periodontology, it excels in conservative soft- and hard-tissue treatment (e.g. in the removal of supra- or subgingival calculus or of inflamed and necrotic tissue in gingival pockets), facilitating much less invasive treatments than conventional approaches. A major advantage of laser therapy in periodontitis treatment is that the working field is automatically sterilized. The AdvErL not only eliminates the inflamed tissue but also fights the resident bacteria with high efficiency and nearly precludes the risk of bacteremia.

More and more natural teeth are preserved well into old age. The flip side of this otherwise beneficial development is that periodontal treatment becomes increasingly relevant, with adults and especially geriatric patients exhibiting a higher risk for periodontal disease with increasing age.¹ In oral implantology, Morita's innovative laser demonstrates its strength not least in peri-implantitis therapy. It eliminates both inflamed tissue and contaminated concretions on the implant surface without adversely affecting osseointegration.

Above all, the AdvErL Evo has been in the vanguard of a "soft" revolution in endodontics, where it facilitates conservative treatment modalities. The laser is used in surgical procedures (e.g. apical resections or the removal of cysts or tumors) and in the context of root canal treatments, to name just a few.

The AdvErL Evo is particularly suitable for endodontic debridement: Studies have shown that treatment with Er:YAG lasers is more effective in removing debris than

¹ Vierte Deutsche Mundgesundheitsstudie (Fourth German Study of Oral Health [German]) (2005). Kassenzahnärztliche Bundesvereinigung (German Federal Association of Contract Dentists) and Bundeszahnärztekammer (German Dental Association). Download from: <http://www.bzaek.de/fileadmin/PDFs/presse/dms/brosch.pdf>



alternative methods ². In short: Morita's new AdvErL Evo laser is an effective and ergonomic high-tech instrument for the dental surgery that offers a more comfortable and less invasive approach for many indications than conventional therapeutic methods option — important benefits not only for the practitioner but also for patients, who can be offered state-of-the-art treatment using cutting-edge technology.

More information can be found at www.morita.com/europe.

² Yao K, Ide A, Satake K, Ichikawa M, Watanabe S, Anjo T, Ebihara A, Kobayashi C, Suda H (2014). Er:YAG Laser-activated irrigation for lateral canals. 14th World Congress for Laser Dentistry. Paris, July 2–4, 2014. Abstract #64558. Download from: <http://www.wfld-paris2014.com/images/Abstracts%20book%20IWC%20&%20WFLD.pdf>