

Laser Alveolar Preservation: A new Biological Approach

Dr. Thierry Maleca

• *Exclusive practice in perio/implantology*

For many years we tended to think mechanically in our practice, using tools for ablation, bleeding support or just for closing wounds with sutures. The new challenges will be to integrate biology in our treatments, tissue absorption of light emission and cell reactions. Evolution has shifted from the macroscopic aspect of treatments to the nanoscopic.

Lasers are a real step forward in dental treatments; they allow us to stabilize extraction sites by thermal coagulation, decontaminate and enhance rapid repair through photo biomodulation. Two wavelengths are perfectly adapted for this task: Erbium:YAG (Fotona LightWalker AT) for granulation tissue vaporisation and bone wall preparation, and Nd:YAG for photothermal clot coagulation and photobiomodulation; a simple protocol will be described.

After explanation of the physiology of an extraction socket, a 9 year extraction cases will be exposed, through pictures and videos, from everyday situations: simple extraction, pre-implantology situations to more complicated cases involving osteonecrosis in oral cancers or that are secondary to treatments of osteoporosis.

Lasers for the most common procedures performed in the world can be useful to help reduce bleeding, pain, inflammation and accelerate epithelium proliferation for fast recovering.

SkyPulse: A Laser for My Practice

Tomaž Ivanušič

We will address a few common problems in dentistry like tooth hypersensitivity, ceramic debonding and efficient irrigation in endodontics.

Tooth hypersensitivity affects more than one third of the population. Conventional techniques for treating this condition have low success rates and do not provide long-term results. Laser treatment, however, has proven to be fast, effective and minimally invasive, with better long-term results.

Aesthetics are very important in dentistry. Many patients ask for ceramic brackets in orthodontics, and veneers in the anterior region. Composite adhesives are hard to remove, however, Er:YAG laser is the most effective and conservative tool for this indication.

Success in endodontics is mostly dependent on our ability to eliminate microorganisms in the root canal system. Mechanical instrumentation is not enough to clean all parts of the root canal. Different irrigation methods are utilized to increase the penetration of irrigation solutions in non-instrumented parts of a complex root canal system. The SWEEPS® technique of irrigation is very effective and lowers the need for over-shaping and enlarging the root canal. This allows us to be both faster and minimally invasive, while having fewer iatrogenic complications.

SkyPulse is a new laser platform from Fotona that can help us with these common indications, in addition to many others.

Photobiomodulation, Photodynamic Therapy and Photothermal Therapy

Krešimir Simunovic

High quality, low energy laser-assisted therapies are often the fundamental key of success for complex systemic health-compromising challenges. The interactivity between oral and systemic health is essential and contributes to beneficial triggering protocols.

Photobiomodulation moved from anecdotal evidence to evidence-based therapy, addressing inflammation and pain, and markedly increasing the quality of overall tissue and body healing. The wavelengths are set in the optical window where tissue penetration is at its best, ranging from blue light to near infrared, including different diodes and the high-power Nd:YAG. The added value of Photodynamic Therapy PDT and Photothermal Therapy PTT, as adjunct or standalone therapies, completes the picture of this high-level therapy circle.

The intent of this Laser and Health Academy publication is to facilitate an exchange of information on the views, research results, and clinical experiences within the medical laser community. The contents of this publication are the sole responsibility of the authors and may not in any circumstances be regarded as official product information by medical equipment manufacturers. When in doubt, please check with the manufacturers about whether a specific product or application has been approved or cleared to be marketed and sold in your country.