

Laser-enhanced Adhesion in Restorative Dentistry - Myths and Reality

Damir Šnjarić

Laser-enhanced adhesion is a concept in which the ablative properties of dental lasers are used for alteration or modification of various tissue or dental material surfaces for enhanced adhesive purposes.

Beside restorative dentistry, dental lasers are used in periodontology and implantology for improved adhesion of fibroblasts and bone augmentation materials, respectively, as well in prosthodontics for various cementation or repair procedures.

Laser-enhanced adhesion is an evidence-based clinical approach supported by many scientific studies that show increased adhesion between enamel/dentin and dental restorative materials after dental laser application. Although the majority of studies are in favor of laser-enhanced adhesion, there is a growing number of studies that do not support laser application for enhanced adhesion. An understanding of the different adhesion principles and techniques is mandatory for efficient dental laser application and optimal clinical results.

An overview of contemporary literature and novel studies will be presented along with clinical cases.

Dental Treatments with the Fotona LightWalker Laser in Pediatric Dentistry

Agnieszka Milc

My presentation shows some cases reports about laser treatments in pediatric dentistry. The use of low power diode laser with Near Infrared Digital Imaging Fiber Optic Trans Luminescence to detect occlusal caries in young adult permanent teeth before sealing, and preparation of the tooth enamel with Er:YAG laser energy prior to sealing them.

The use of Er:YAG laser energy to treat caries of primary teeth, young permanent teeth and permanent teeth.

The use of the Fotona Er:YAG LightWalker laser to cut the frenulum of the upper lip and the frenulum of the tongue.

The Fotona LightWalker laser is a very innovative tool. Treatment with this laser is short and painless. The LightWalker laser uses Er:YAG laser energy to remove cavities with no pain, shots or drilling.

The Fotona LightWalker laser has a very wide range of use in dentistry. It has the optimal two wavelengths of Er:YAG and Nd:YAG that provide excellent results with a high level of safety. Dental treatments with LightWalker are easier, painless and don't require anesthesia.

The LightWalker laser is a universal laser that transforms the quality of dental work. Patients are very happy because the duration of the dental treatment is very short, and they don't feel vibrations or pain. Laser treatments are tissue-sparing, non-destructive and minimally invasive. Each dental treatment with the Fotona LightWalker laser in my medical practice has been very successful.

Laser Dentistry Meets Beauty

Harvey Shiffman

Erbium:YAG and Neodymium:YAG are two of the most researched wavelengths in medicine and dentistry. Both of these wavelengths are found in our Fotona LightWalker laser. SmoothLase® uses the photothermal capabilities of Erbium and Neodymium lasers to convert and initiate the formation of new collagen in mucosal tissues and the supporting tissues of the face and lips.

Indications: for patients with age- and lifestyle-related loss of facial volume, elasticity and dryness, all caused by loss of collagen. Also, as a preventative therapy to maintain "young collagen", or for patients who do not want surgical intervention or artificial materials injected.

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.