

The medical power of light

Laser-Assisted Ceramic Debonding

Top quality aesthetics solutions for the smile you always wanted

- Significantly less force needed for debonding
- Reduced treatment time
- Increased safety with reduced risk of fractures
- Little to no thermal effect on the remaining tooth structures



Debonding with ER:YAG



Easy bracket removal



Intact enamel surface

Courtesy of Dr. Tosun Tosun

What is laser-assisted debonding?

Laser-assisted debonding is the easiest and safest method for removing orthodontic brackets or veneers, using the unique properties of the Er:YAG wavelength and its optimized interaction with bonding material.

How does debonding work?

The properties of LightWalker's Er:YAG wavelength allow for the transmittance of laser energy through veneer or orthodontic bracelets. Laser energy is in turn absorbed in the bonding material, which causes modification of its bonding strength, thus allowing for quick and painless removal with a significantly reduced risk of enamel fracture.



Veneer removal, courtesy of Dr. Dimitri Malev



Why is the Er:YAG wavelength superior?

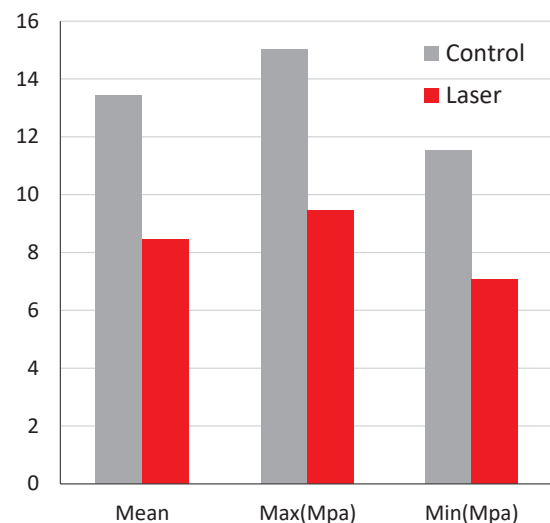
In the past debonding was performed with several different laser sources and wavelengths, including CO₂, Nd:YAG, diode and now Er:YAG. Among this versatile group of wavelengths, Er:YAG has the highest absorption in water, which results in a minimal thermal effect and decreased heat conduction.

As bonding materials are high in water content, this results in optimized absorption of energy in this type of material, resulting in reduced adhesion by thermal softening and selective ablation, with a decreased thermal load on the surrounding tissue.

Getting started with debonding

The LightWalker and SkyPulse training program is organized in cooperation with the Laser and Health Academy. During an intensive two-day workshop, participants cover basic laser physics and gain an in-depth understanding of laser-tissue interaction. Hands-on sessions under the guidance of laser dentistry experts help participants gain insight into the effects of Er:YAG, Nd:YAG and diodes on different tissues. Presentations and discussions are led by Laser and Health Academy lecturers and cover multiple dental therapies.

Shear bond strength



Alakuş Sabuncuoğlu, Fidan, et al. (2016). Debonding of Ceramic Brackets by Er:YAG Laser. J Istanbul Univ Fac of Dent; 50(2):24-30.

To learn more about laser-assisted debonding contact Fotona at info@fotona.com today.

For related patents see: www.fotona.com/patents