Fotona
choose perfection

LightWalker

Hard and Soft-Tissue Dental Lasers

ASP POWERED

New Revolutionary
Adaptive Structured Pulse
Technology

Virtually Unlimited Applications

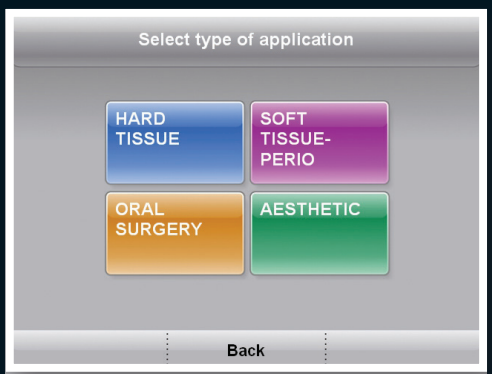
From Dentistry to Aesthetics

LightWalker lasers are designed for ultimate versatility, with one of the most comprehensive lists of clinical applications available on any dental laser. With both tipped and tipless handpieces, your clinical options are endless. LightWalker offers the highest standard of dental treatment, and at the same time simplicity of use in:

- Conservative dentistry
- Endodontics
- Periodontics
- Soft-tissue surgery
- Implantology
- Aesthetic treatments
- Photobiomodulation.

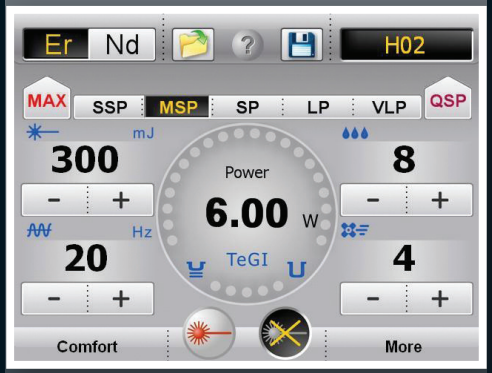
Presettings for 80 Different Applications

The LightWalker touchscreen offers a simple menu of pre-programmed laser treatments. You select the treatment and the laser automatically sets your optimum starting parameters. With easy-to-follow protocols and touch-of-a-button treatment settings, you'll be able to perform every dental procedure with confidence and high success rates, bringing in extra income to your practice along the way. You can even upgrade the AT model to perform aesthetic skin treatments such as skin rejuvenation and removal of benign and vascular lesions.



The four main application groups

Comfort window for routine daily procedures



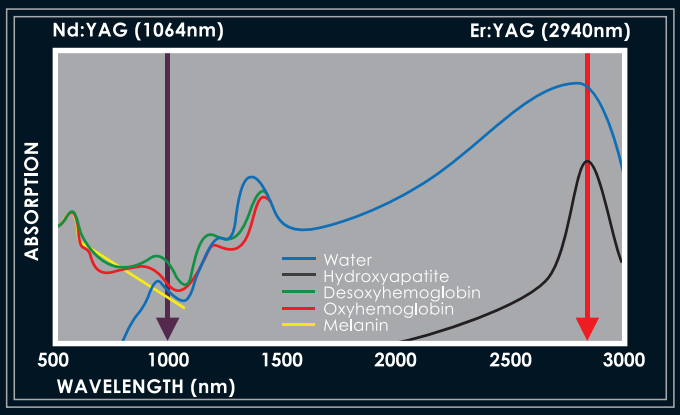
Advanced window to fine tune specific procedures

LightWalker

No Compromise – Dentistry's Two Optimal Laser Wavelengths

Two lasers for superior clinical results

The LightWalker model AT S come standard with dentistry's two most effective laser wavelengths: Er:YAG and Nd:YAG for no-compromise dentistry with a touch of the control screen.



Absorption spectrums

Universal Laser System

It is a well-established fact that different dental procedures require different laser wavelengths. Wavelength is important because specific oral tissues react in different ways depending on the particular laser source. With the choice of two complementary wavelengths (in terms of their effect on tissues) LightWalker comes very close to being a "universal" laser. Practically all laser-assisted dental treatments can be performed with either the most highly absorbed Er:YAG laser wavelength or the most homogeneously absorbed Nd:YAG laser wavelength.

TwinLight® Treatment Concept

The combination of the two best wavelengths in one laser system enables practitioners to perform not only single-wavelength but also dual-wavelength (TwinLight®) treatments. Utilizing both wavelengths in a treatment makes optimum use of the unique laser-tissue interaction characteristics of each wavelength. For example, Nd:YAG laser energy is superior for coagulation and deep disinfection while Er:YAG is uniquely efficient at ablating hard and soft tissues. Combined, they can greatly expand the range of treatment possibilities and dramatically improve the outcome of laser-assisted treatments.

Frenulotomy
(Er:YAG and Nd:YAG)

Exceptional Power and Range of Pulse Modes

Technology for efficacy and safety

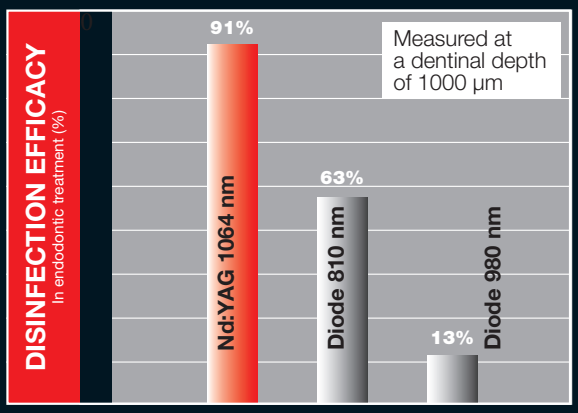
In LightWalker, both “gold standard” laser wavelengths are produced by solid crystal lasers that can significantly outperform diode lasers in terms of peak power and the range of pulse durations.

Fast efficient cutting with unmatched patient comfort

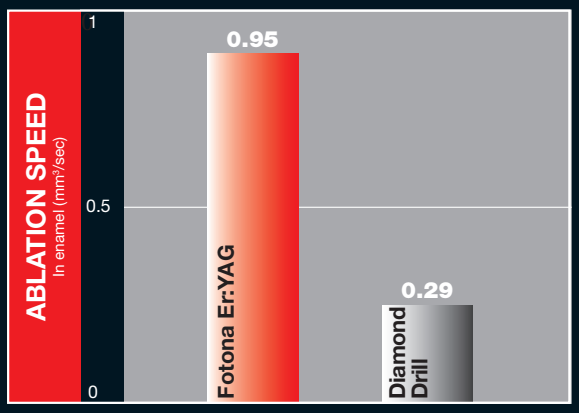
With the advent of QSP technology and higher output power (several kW), the LightWalker ATS has established a new standard for ablation/cutting speed. This new accelerated cutting speed provides today’s dentists with the speed and precision they demand, while simultaneously increasing patient comfort.

Precise tissue surgery with simultaneous disinfection

The homogeneous absorption of the Nd:YAG laser in soft tissue results in controlled tissue vaporization with simultaneous coagulation for superior healing and disinfection.



Disinfection efficacy: Nd:YAG vs. other lasers *



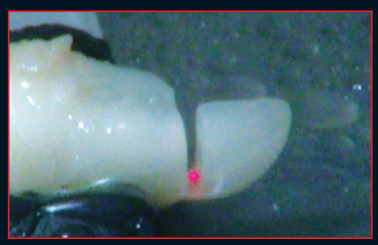
Cutting speed: Er:YAG vs. diamond drill **

** Diode Laser Radiation and Its Bactericidal Effect in Root Canal Wall Dentin, NORBERT GUTKNECHT, DIRK VAN GOGSWAARDT, GEORG CONRADS, CHRISTIAN APEL, CLAUS SCHUBERT, and FRIEDRICH LAMPERT. Journal of Clinical Laser Medicine & Surgery. April 2000, 18(2): 57-60. doi:10.1089/clm.2000.18.57.*

Antibacterial Effects of Nd:YAG Laser Irradiation within Root Canal Dentin. THOMAS KLINKE, WOLFGANG KLIMM, and NORBERT GUTKNECHT. Journal of Clinical Laser Medicine & Surgery. FEBRUARY 1997, 15(1): 29-31. doi:10.1089/clm.1997.15.29.

Bactericidal Effect of a 980-nm Diode Laser in the Root Canal Wall Dentin of Bovine Teeth, N. GUTKNECHT, D.D.S., Ph.D., R. FRANZEN, M. SCHIPPERS, and F. LAMPERT, D.D.S., Ph.D., Journal of Clinical LaserMedicine & Surgery, Volume 22, Number 1, 2004, Pp. 9–13

*** Ablative potential of the erbium-doped yttrium aluminium garnet laser and conventional handpieces: A comparative study. A. BARABA et al, Photomed Laser Surg. 2009;27(6):921-927.*



X-Runner cutting

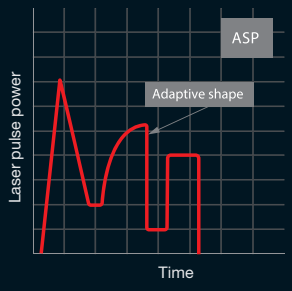
The Technology Behind an Award-Winning Dental Laser

Solutions for experts as well as beginners

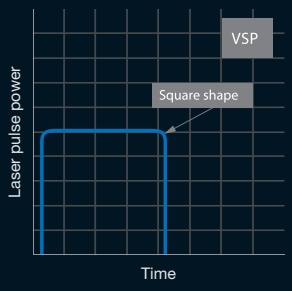
The development of LightWalker is based on Fotona's 50 years of experience in laser technology. The LightWalker system has technologically advanced laser elements that are engineered for ultimate performance in the world of dentistry:

Third Generation ASP Technology

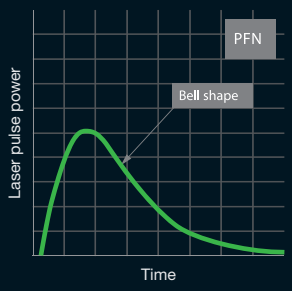
LightWalker and its groundbreaking ASP (Adaptive Structured Pulse) technology represent a cosmic shift forward for the medical and dental laser industry. This third-generation technology combines the unsurpassed range of pulse duration modes of Fotona's VSP (Variable Square Pulse) technology with the revolutionary capability of ASP technology to adapt the temporal structure of laser pulses to the bio-photonic dynamics of laser-tissue interaction.



Third Generation Fotona ASP Technology



Fotona VSP Technology



Standard PFN Technology

Energy Feedback Control

The laser system incorporates a sophisticated double channel safety structure for energy regulation, which contributes to procedure safety. The laser output energy is constantly regulated by a signal from two energy meters.

Quantum Square Pulse (QSP)

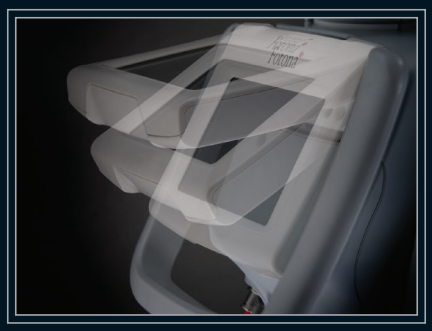
By avoiding the hard-tissue debris cloud the laser ablates more efficiently and with greater precision in Fotona's patented QSP mode because the laser beam is not affected by the debris. By being able to ablate more efficiently, the edges of individual craters are sharp and consistent, providing higher levels of precision and preservation in hard-tissue treatments.

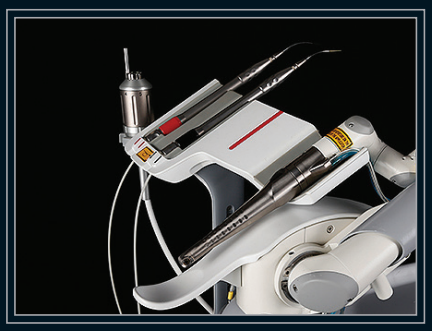
Tissue Effect Graphical Interface (TeGI)

The Tissue Effect Graphical Interface (TeGI) provides a graphical representation of the laser tissue effect, maximizing ease-of-use and shortening the learning curve.

Convenience in Use

Designed with the dentist in mind





Easy-to-use touch screen

LightWalker has an easy-to–use color touch-screen with an adjustable tilt and 80 customiz-able presettings that cover more than 40 different applications.

Easy access spray/heated water reservoir

The integrated spray water container means that you don't have to rely on any water mains outlet, making your laser system exceptionally mobile and hassle-free. The container is handily located at the back of the system for easy refilling access. Additionally, the water is heated to body temperature, avoiding cold sensitivity reactions during procedures.

Patented weightless OPTOflex® arm

LightWalker's unique and patented OPTOflex® Er:YAG articulated arm is designed to transmit a high-power laser beam to the handpiece, while maintaining the quality of the laser beam to ensure precision and repeatability even at the highest settings.

The OPTOflex® arm is perfectly balanced during use, making handpieces completely weightless in your hand. OPTOflex® allows a full range of motion and a maximum degree of control as it makes maneuvering the handpiece much smoother, which improves treatment precision and ease.

Wireless footswitch

LightWalker also has an optional wireless footswitch that avoids unnecessary tangling of electric cables on your practice floor.

Supreme Clinical Results

Designed with the patient in mind

Shorter and More Effective Treatments

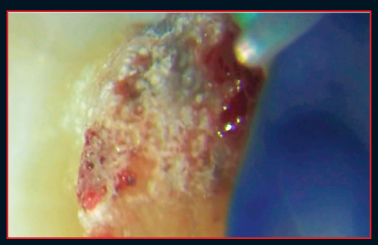
With LightWalker, procedures are typically shorter, easier to perform and more effective. Laser treatments are by nature minimally invasive, and LightWalker takes this concept to a new level.

Patient Comfort

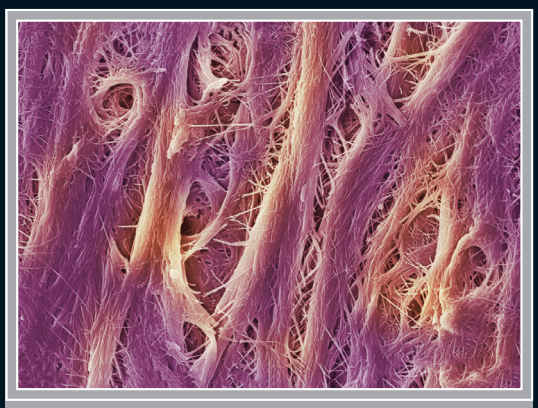
Working with LightWalker is less stressful for the patient because pain and bleeding are minimal if any. LightWalker lasers are so gentle for cavity preparations and most soft-tissue procedures that patients rarely require any anesthetic. Laser light allows you to work in a non-contact way and without drilling noise, which is far more comfortable for patients, especially children. LightWalker also allows you to achieve simultaneous disinfection and prevention of cross-contamination.

Unmatched Flexibility

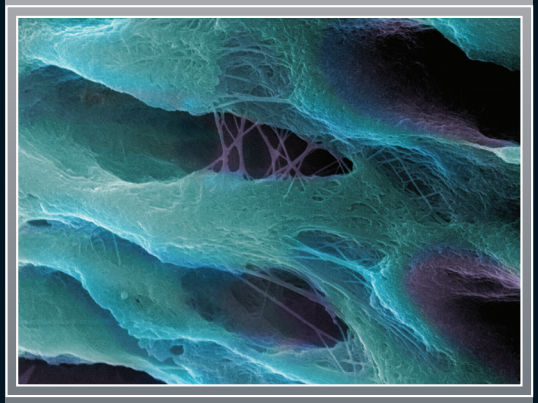
The Nd:YAG laser source is ideal for root canal disinfection, soft-tissue crown lengthening and numerous other applications. And LightWalker's Er:YAG laser is compatible with a set of over 20 specialized fiber tips, expertly designed to offer advanced options in conservative dentistry plus an additional range of lucrative, high quality treatments in endodontics, periodontics, and implant recovery, areas you may otherwise have to refer out to specialists.



Direct pulp capping

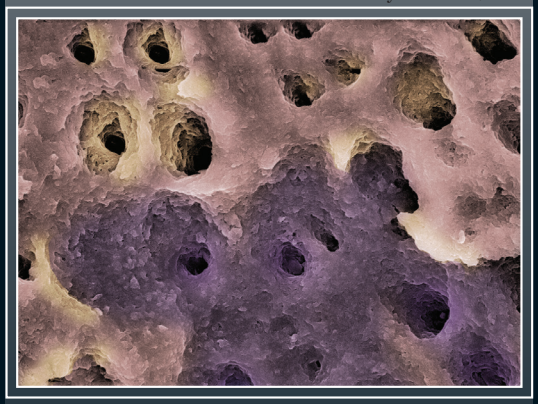


Intact collagen fibers after laser treatment.



Preserved collagen fibrils of the intertubular dentin at the entrances to the dentinal tubules.

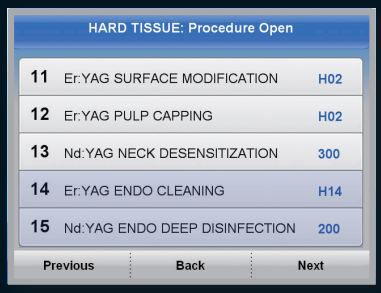
Courtesy of MDATG, LLC



After endodontic laser treatment the dentinal tubules are disinfected and fully open.

TwinLight® Endodontic Treatment

Simple, gentle and powerful

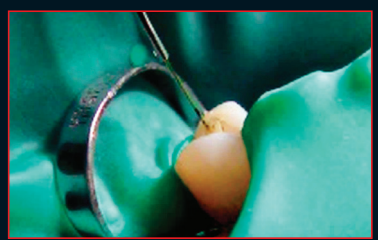


The Fotona TwinLight® Endodontic Treatment successfully addresses two major disadvantages of classical chemo-mechanical procedures: the inability to clean and debride anatomically complex root canal systems and to deeply disinfect dentinal walls.

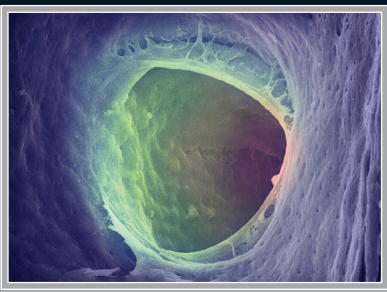
In the first step of the TwinLight® treatment, a revolutionary SWEEPS (shock wave enhanced emission photoacoustic streaming) method is employed, which uses the power of the Er:YAG laser to create non-thermal photoacoustic shock waves within the cleaning and debriding solutions introduced in the canal. Following this treatment, the canals and subcanals are left clean and the dentinal tubules are free of a smear layer.

This powerful photon-induced photoacoustic streaming method, which is available only with Fotona lasers, is equally effective for final water rinsing prior to obturation.

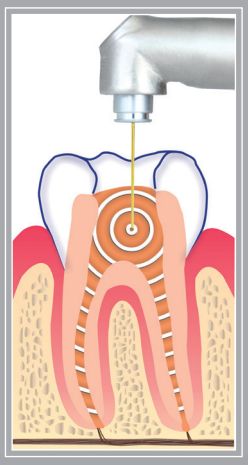
In the second step, the deeply penetrating Nd:YAG laser wavelength is utilized to decontaminate dentinal walls up to 1000 µm deep. In this step, the high peak-pulse power of the Nd:YAG laser plays an important role as it induces maximum temperature pulsing for eliminating bacteria.



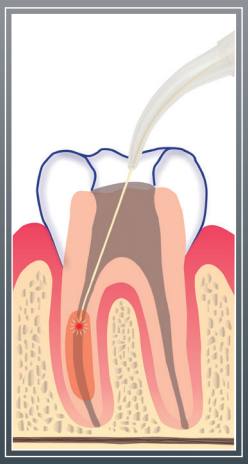
TwinLight®
endodontic treatment



Following endodontic laser treatments with photoacoustic streaming, there is no smear layer around the opening of the lateral canal.



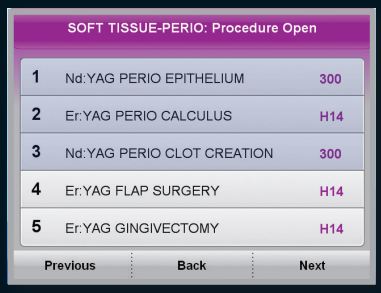
In the first step, Er:YAG laser light cleans and debrides the canals and subcanals.



In the second step, the Nd:YAG laser deeply disinfects the dentinal walls.

TwinLight® Periodontal Treatment

WPT - Wavelength-optimized Periodontal Treatments



TwinLight® Periodontal Treatment is a minimally invasive periodontal disease therapy incorporating dentistry's two best laser wavelengths.

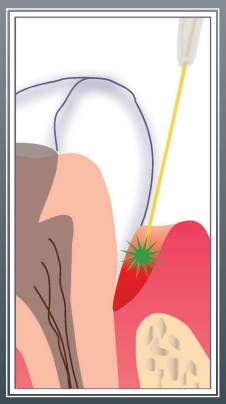
The TwinLight® approach enables wavelength-optimized treatments for periodontal therapy (WPT™), which create favorable conditions for healing periodontal tissues by removing the diseased epithelial lining of the periodontal pocket, removing microbial biofilm and calculus from the root surface and sealing the pocket after treatment with a stable fibrin clot.

The TwinLight® Periodontal Treatment approach gives general dentists the confidence to treat their patients' moderate-to-severe periodontal disease the laser way, without scalpels and sutures.

TwinLight®
periodontal treatment

Step 1: the Nd:YAG laser removes the diseased epithelial lining and improves access to the root surface.

Step 2: Er:YAG is used to thoroughly remove calculus from the root surface.



Step 3: Nd:YAG laser energy is used to coagulate and leave a stable fibrin clot.

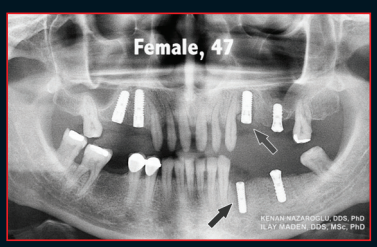
TwinLight®
Peri-implantitis Treatment

Fast and easy to perform

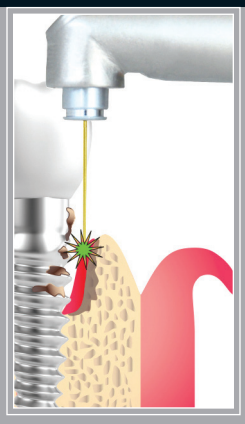
TwinLight® Peri-implantitis Treatment combines dentistry's two best laser wavelengths, Er:YAG and Nd:YAG, to significantly enhance treatment success rates and shorten healing time.

Removal of granulation tissue from the alveolar bone and connective tissue with Er:YAG laser is selective. The bactericidal effect of Er:YAG on the surgical site is highly effective and the implant surface is completely cleaned without chemicals. The subsequent Nd:YAG treatment step promotes faster healing by decontaminating and biomodulating the tissue. Inflammation, swelling, and bleeding of soft-tissue lesions, which may lead to bone loss, can be handled without surgery, and healthy peri-implant tissue assures greater long-term implant success.

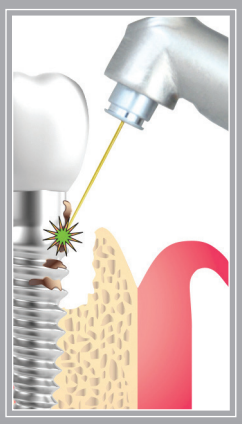
Gentle treatment with LightWalker assures that the highly fragile bone surrounding the implant remains intact. Because the Er:YAG wavelength with LightWalker is used in a safe mode, there is no danger of thermal damage to the surrounding bone and no significant alterations of the implant surface, as is caused with other lasers. There is no mechanical, chemical or any other means of trauma during the entire treatment.



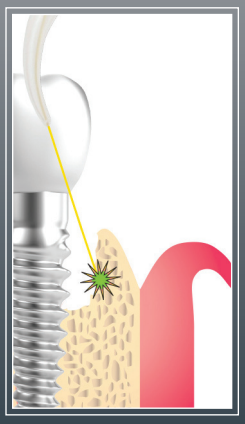
Peri-implantitis treatment



Removal of the soft-granulation tissue and ablation of the infected bone with Er:YAG



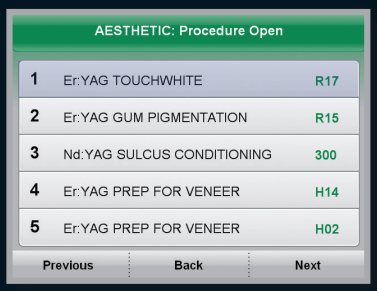
Removal of the bacterial biofilm on the implant surfaces with Er:YAG



Bacterial reduction and biostimulation of the bone tissue with Nd:YAG (never expose the implant surface to the Nd:YAG laser beam).

TouchWhite®
Laser-Assisted Tooth Whitening

Shorter, patient-friendly treatments



TouchWhite® patented tooth whitening makes use of the fact that the Er:YAG laser wavelength has an absorption peak in water, which is the major component of aqueous bleaching gels. This eliminates the need for any additional absorbing particles in the bleaching gels. More importantly, taking into account thermal burden considerations, the TouchWhite® procedure represents the most effective and least invasive laser-assisted tooth whitening method possible.

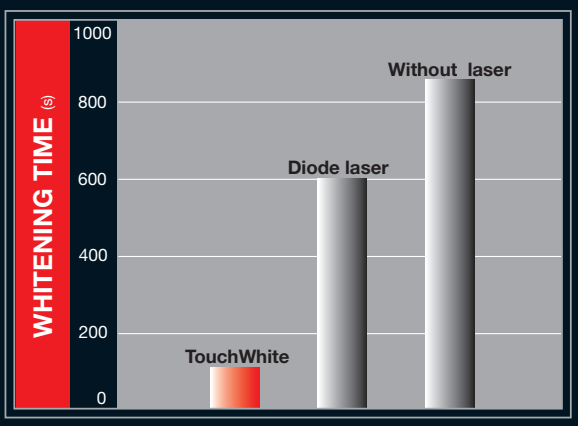
Due to its high absorption in bleaching gels, the Er:YAG laser beam is fully absorbed in the gel and does not penetrate to the hard tissue or the pulp. All of the laser energy is thus effectively used for the heating of the gel. There is no direct heating of the dental tissue and the pulp, as is the case with other laser-assisted whitening methods. There is also no risk of accidentally damaging the hard dental tissue as the laser fluence of every laser pulse is set to be significantly below the ablation threshold for dental tissues. As a consequence, the procedure can be performed with a minimal undesirable thermal burden on the tooth, and the tooth whitening speed can be safely increased by 5 – 10 times.

Before (A3 VITA Shade Guide)

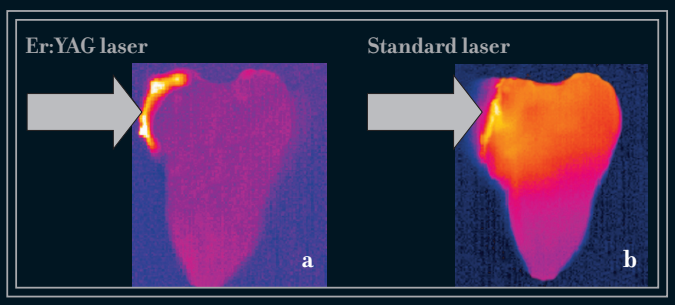
Bleaching gel is applied to the teeth.

Immediately after (A1 VITA Shade Guide)

Courtesy of Dr. Jovanović



TouchWhite® Tooth Whitening substantially shortens the whitening process.*

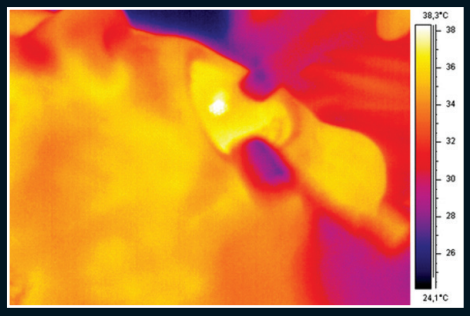


With TouchWhite® whitening, only the gel is heated (a) while with standard laser whitening the entire tooth is heated (b).

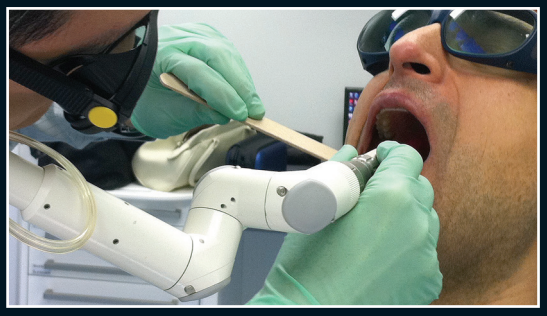
** J LA&HA 2011, No 1 Gutknecht N. et at, A Novel Er:YAG Laser-Assisted Tooth Whitening Method*

NightLase®
Snoring and Apnea Treatment

A non-invasive method for better quality sleep



Step 1: PRECONDITIONING

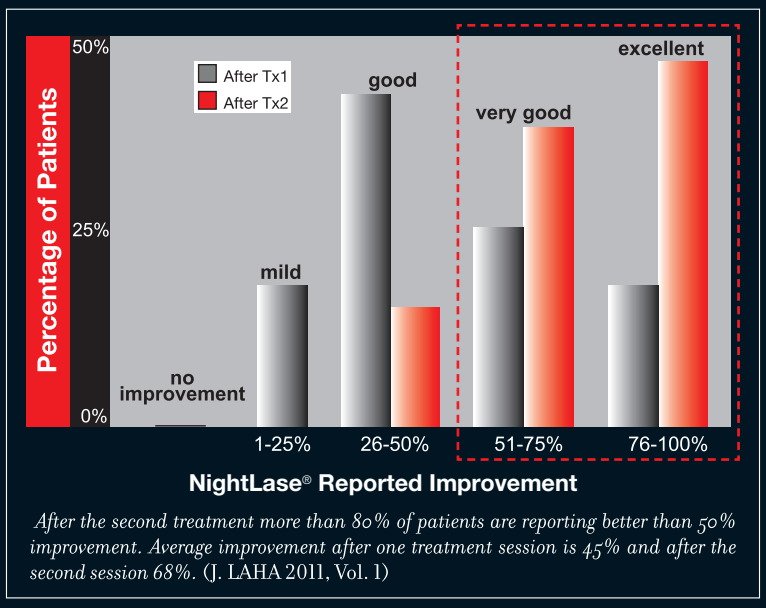


Step 2: TISSUE STRENGTHENING

NightLase® Treatment is a patented, fast, non-invasive and friendly way of increasing the quality of a patient's sleep. NightLase® lessens the effects of sleep apnea and decreases the amplitude of snoring through the use of gentle, superficial Er:YAG laser light. No anesthesia is used in this treatment.

During NightLase® treatment laser light gently heats the tissue, causing tightening of the tissue without damage or adverse effects. It is gentle enough to be used on the sensitive tissue inside the mouth, but strong enough to provide clinically efficacious heating.

NightLase® is easy for any doctor or dentist to perform and has a high success rate in producing a positive change in sleep patterns. Research has shown that NightLase® reduces and attenuates snoring and provides an effective, non-invasive way to lessen the effects of sleep apnea.

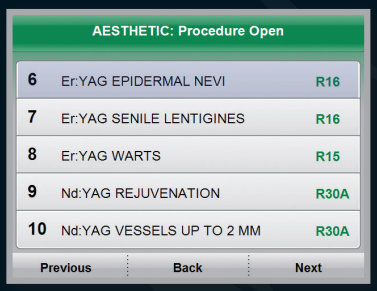


After the second treatment more than 80% of patients are reporting better than 50% improvement. Average improvement after one treatment session is 45% and after the second session 68%. (J. LAHA 2011, Vol. 1)

NightLase
snoring treatment

Facial Aesthetic Treatments

Unlimited Possibilities

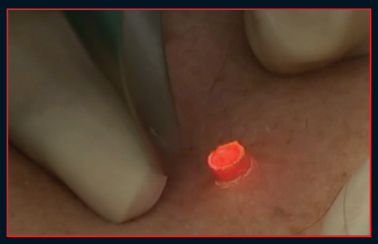


Apart from providing a wide range of hard- and soft-tissue dental treatments, LightWalker also enables many facial aesthetic treatments. In today's competitive healthcare industry it makes sense to widen horizons and develop strong healthcare partnerships through additional services. LightWalker ATS offers the unique opportunity to provide patients with aesthetic facial treatments ranging from laser hair reduction and facial skin rejuvenation to vascular lesion treatments and skin lesion removal (where permitted by local practice regulations).

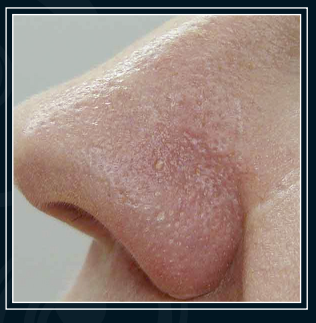
Benign skin lesions are quickly removed with a minimally invasive and fast-healing Er:YAG treatment.

Courtesy of Dr. Dovsak

Skin Fibroma Removal



Facial spider veins, telangiectasias and hemangiomas are removed with long-pulsed Nd:YAG via complete occlusion of the vessels.



Courtesy of R. Sult

Courtesy of R. Sult

Long-pulsed Nd:YAG ensures penetration to the deepest hair follicles to remove hair efficiently and safely, regardless of skin type, without affecting the surrounding skin structures.

What doctors are saying about LightWalker

"The LightWalker generation represents a remarkable, and indeed a historical step forward in science and technology for laser–assisted dentistry. The ergonomic benefits, due to the completely new and easy–to–maneuver OPTOflex articulated arm, the interactive adjustable panel with fast menu access and easy, complete clinical guidance, and the choice of ready–to–use Nd:YAG fibers for both sizes at the same time, are truly unique features, which allow for comfortable and efficient chair–side work, fully focusing on the patient's need, considered as a pillar of evidence–based dentistry."

Kresimir Simunovic, DMD, MSc

"What I've learned is that there are very few lasers or laser companies that go to the extent to which Fotona does for their customers, starting with the science, but also with the thinking and the intention and the intelligence that they put into their lasers. I've had and have worked with many other lasers, but my LightWalker ATS is really in a category of one. There are parts of the LightWalker ATS that you can compare to certain other lasers, but as a whole it's incomparable. You will know what I'm talking about when you get to experience it, but just remember that it is a unique category in today's world amongst all dental lasers. And that's a fact, not just an opinion."

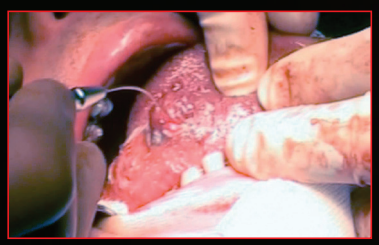
Hisham Abdalla, DDS

"I would highly recommend the LightWalker, its Durability and Mobility allow for a wide arrange of daily tasks. The low maintenance especially is helpful for the daily work horse like myself, making it virtually self proficient. I specifically find the low drag and high efficiency delivery systems remarkable. Another great feature that is exceedingly convenient, is that it is comfortably quiet in its operation… the fan noise is typically loud in lasers. However, the most vital attribute is the LightWalker's dual wavelength versatility to perform the full spectrum of laser dental procedures. I own several lasers and have found that overall, it is widely accepted and preferred by myself, staff and my patients."

Dr. Scott R. Neish DMD

The LightWalker is the easiest, most efficient, clean cutting laser I have ever used. Having both the Er:YAG and Nd:YAG wavelengths in one system easily allows you to switch from one procedure to another at the touch of a button. I have found that performing PIPS with the LightWalker dramatically improves my ability to do endodontics by making it easier and faster, with much better results. I have cut down the amount of time it takes for me to perform a routine endodontic cases by more than 25% and PIPS allows me to clean and debride the root canal system in a three dimensional fashion.

Mark Colonna, DDS



Hemangioma removal (Nd:YAG)

LA&HA magazine March, 2015, 4

The LightWalker Range

Laser model comparison chart

Model		AT S	ST-E		
			ST-E	ST-E Pro	ST-E Advanced
Er:YAG	Power (W)	20	10	12	20
	Energy (mJ)	1500	500	900	1500
	Modes	SWEEPS, QSP, MAX, SSP, MSP, SP, LP, VLP, SMOOTH	SWEEPS, SSP, MSP, SP, LP, VLP	SWEEPS, QSP*, SSP, MSP, SP, LP, VLP	SWEEPS, QSP, MAX, SSP, MSP, SP, LP, VLP, SMOOTH
	Optical delivery	OPTOflex	7 - Mirror Arm	OPTOflex	OPTOflex
Nd:YAG	Power (W)	15			
	Modes	MSP, SP, VLP, 15 ms, 25 ms			
	Optical delivery	Dual Fiber System			
General	Spray temperature regulation	✓	-	✓	✓
	Handpiece autodetection	✓	-	✓	✓
	Digital handpiece	✓	-	-	✓
	Dermatology	✓	-	-	✓
	Green pointer	✓	-	✓	✓

*optional (ST-E Pro Plus)

- Superior Power
- Variable Square Pulse Technology
- Electronic Spray Control
- Quantum Square Pulse
- Wireless Footswitch
- Titanium Handpieces
- Digitally Controlled Dental Handpiece
- Multiple Er:YAG Fiber Tips
- Automatic Handpiece detection
- Tissue Effect Graphical Interface
- Advanced Performance
- Facial Aesthetic Treatments
- TouchWhite® Laser Assisted Tooth Whitening
- TwinLight® Perio Treatment
- Peri-implantitis Treatment

Advanced Easy-To-Use Handpieces

H02

Tipless (non-contact), 90°-angled Er:YAG handpiece

H14

90° degree tipped Er:YAG handpiece and straight tipped Er:YAG handpiece

R09-3

Tipless, non-contact Er:YAG straight handpiece with a collimated beam at 5 mm spot size for 7 - mirror arm

R02

Tipless, non-contact, 90° angled Er:YAG dental handpiece for 7 - mirror arm

R14

90° angled Er:YAG dental handpiece for 7 - mirror arm

R15

Dermatological, straight handpiece, with collimated 3mm spot size

R16

Dermatological, straight handpiece, with collimated 7 mm spot size

R17

Tipless, non-contact Er:YAG straight handpiece with a collimated beam at 5 mm spot size

R21-C3

300 µm fiber-optic Nd:YAG handpiece

R21-C2

200 µm fiber-optic Nd:YAG handpiece

GENOVA™

Unique collimated homogeneous Nd:YAG beam with 1 cm^2 spot size

LA adapter

Intraoral adapter for R16 or Genova handpiece

R30-A

Nd:YAG aesthetic and dermatological handpiece with a variable 2 to 8 mm spot size

PS04

Pixel structure Er:YAG handpiece

The First Digitally Controlled Dental Laser Handpiece

X-Runner

LightWalker is the first dental laser system that works with a digitally controlled dental handpiece. Fotona's revolutionary X-Runner® technology, with ultra-high-precision HDS (High Density Scanning) mode, increases the precision of dental laser treatments by helping to swiftly and accurately guide the laser beam across the treatment area according to perfectly shaped, predefined patterns.

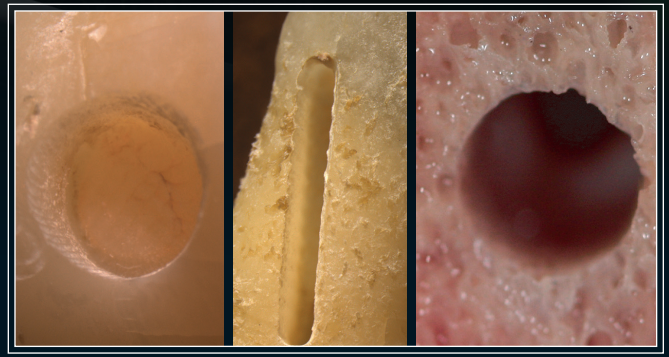
Unmatched Precision

X-Runner® replaces multiple dental tools and makes treatments more precise, simple and easy. It provides precise, consistent and even ablation in hard or soft tissue over a 6×6 mm surface. With X-Runner®, the shape and size of the treatment area are selected in advance, allowing practitioners to perform treatments with a level of speed and consistency that is virtually impossible to achieve with any other tool.

Walk into the Future with LightWalker

LightWalker technology is enabling practitioners to utilize the most important feature of laser light – its weightlessness. The new X-Runner® digitally controlled dental handpiece is a major advance in laser dentistry that will greatly impact fields such as surgery, conservative dentistry and implantology.

After precise and fast ablation with X-Runner



Samples of easily achievable scanning patterns in hard tissue drilling and cutting.

Advanced support for your dental laser practice

Internatonal workshops in laser dentistry

- led by leading international laser experts
- live demos and hands-on
- explore all areas of laser dentistry
- a great experience-sharing opportunity

To get the most out of your LightWalker system, our practitioner workshops, coorganized with the Laser and Health Academy, provide hands-on demonstrations of our lasers from international clinical experts. Fotona also works closely with other leading educational authorities in the field of laser dentistry to offer the LA&HA Master's program to help you on your path to becoming a top laser specialist.

www.laserandhealth.com

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LightWalker International Recognition

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