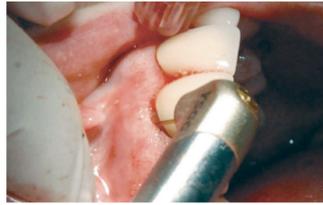


## REPAIR WATERLASE® PERIO PROTOCOL CONTINUED

3

### DE-EPITHELIALIZATION AND RETRACTION

The pocket epithelium should be removed and should be completed apically, down to bone. The gingival margin can be retracted as a mini flap for access.



Tip: RFPT5  
Power: 1.5W  
Air/Water: 40%/50%  
Pulse rate: 30 Hz  
H Mode

4

### SCALING AND ROOT PLANING

Conventional treatment with ultrasonics and hand instruments to remove root surface accretions and/or calculus and to smooth cementum.



Laser not used

5

### BONE DECORTICATION

Recontour osseous defects. Hold tip parallel to root surface and gently tap all the way down to and into bone, retracting slightly and repeating all the way around tooth. If necessary, change angle of the laser tip and treat into the walls of infrabony defects.



Tip: MZ6  
Power: 2.5W  
Air/Water: 70% / 80%  
Pulse rate: 30 Hz  
H mode

6

### FINAL SULCULAR DEBRIDEMENT

Remove residual debris and induce blood coagulation.



Tip: RFPT5  
Power: 1.5W  
Air/Water: 10% / 10%  
Pulse rate: 30 Hz  
H mode

7

### COMPRESS WITH 2X2

Compress surgical site with wet 2x2 for 5 minutes.

### POST-SURGICAL PHASE

- IMMEDIATE POST-OPERATIVE: Brush teeth lightly with soft brush and use mouth rinse to supplement brushing if discomfort exists.
- ONE WEEK AFTER LASER TREATMENT: Gently clean between teeth using an interproximal brush dipped in mouthwash.
- NO PROBING for at least 3 months, at which time a supragingival scaling is completed.

## VERSATILE. TREAT SOFT TISSUE, TOOTH ROOT, AND BONE.

Unlike other lasers used in periodontal therapy, the WaterLase iPlus is indicated for more than just soft tissue. It is safe for use on bone and tooth structures, making it an extremely versatile tool.

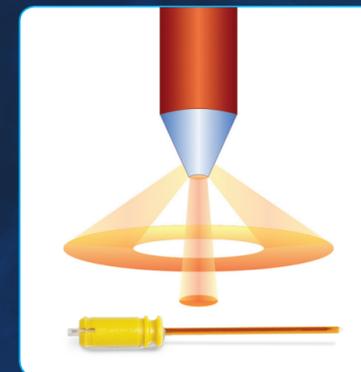
### PERIODONTAL SURGERY WITHOUT TISSUE TRAUMA

The WaterLase iPlus combines YSGG laser energy and a patented spray of water to cut soft tissue and bone without heat, with reported benefits such as less swelling and post-op sensitivity, a better patient experience and greater case acceptance.

In soft tissue mode, the laser energy penetrates into tissues to seal blood vessels as it cuts, providing excellent hemostasis, which in turn provides you with a better field of vision during surgery.\*

Soft-tissue is mostly water, so the laser energy is absorbed immediately without raising the tissue's temperature. Bone is also primarily made up of water and hydroxyapatite, so the WaterLase iPlus cuts it without heat as well. The laser water spray enhances its "cool cutting" as well.

## INNOVATIVE. SOLVE YOUR POCKET ACCESS CHALLENGES.



### THE RADIAL FIRING PERIO TIP™

Our patented Radial Firing Perio Tip (RFPT) is superior to traditional laser tips used for periodontal therapy. The 14-mm long RFPT features a unique design that precisely tapers the end of the 500µm diameter tip. The result is primary radial emission of laser energy with a portion of straight emission, and better access to the narrow part of the periodontal pocket since the tip has no side edges.

Compared to most tips and fibers that only emit straight laser energy, the radial energy provides more efficient irradiation of diseased or inflamed soft tissue as well as calculus deposits for treating moderate to advanced periodontal disease.



PRE-OP



IMMEDIATE POST-OP

### IMPLANTS

WaterLase iPlus improves productivity through a range of implant related applications:

- Creating an aesthetic emergence profile
- Bone resection for autogenous bone graft harvesting
- Osteoplasty and osteotomy
- Implant recovery



PRE-OP



POST-OP

### OSSEOUS CROWN LENGTHENING FOR SAME DAY REFERRALS

The minimally invasive nature of the WaterLase iPlus can help minimize tissue displacement and flap preparation in osseous crown lengthening. It assists in performing an externally beveled gingivectomy, shaping the free gingival margin, troughing, and recontouring and smoothing bone.



# REPAIR

## WaterLase® Er,Cr:YSGG Periodontitis Protocol

Effectively manage your periodontal patients with minimally invasive therapy.

# REPaIR:

## Minimally Invasive YSGG Protocol for Periodontal Patient Management

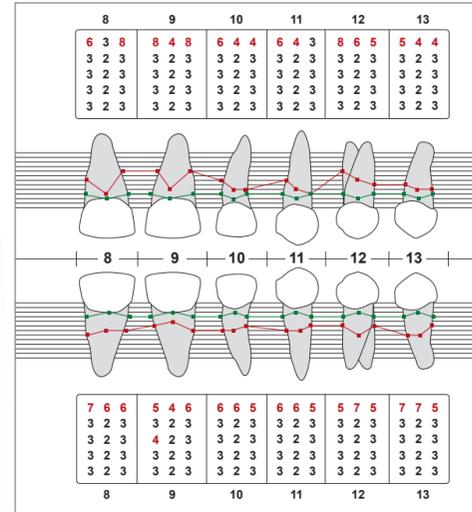
REPaIR™, the WaterLase® Er,Cr:YSGG Periodontitis Protocol, was developed to provide clinicians a scientifically advanced treatment option for managing periodontally compromised patients. Utilizing the WaterLase iPlus and patented Radial Firing Perio Tip™ (RFPT), REPaIR provides a safe, effective laser protocol that patients accept. REPaIR allows you to treat site specific and full mouth cases, offering greater flexibility in treatment planning.

- + Minimally invasive YSGG protocol.
- + Supported by clinical evidence and scientific research.
- + Versatile YSGG laser ideal for comprehensive clinical use.
- + Only laser cleared for gentle removal of subgingival calculus.
- + Promotes cementum-mediated periodontal ligament new-attachment to the root surface in the absence of long junctional epithelium.



"WaterLase Perio Treatment is a highly effective, more aesthetic and more comfortable alternative to traditional surgical procedures for my patients."  
- Dr. Bret Dyer

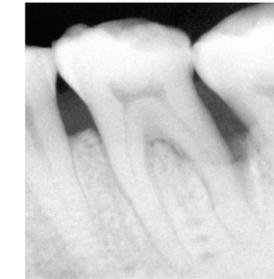
CASE 1 Courtesy of Dr. Bret Dyer



CASE 2



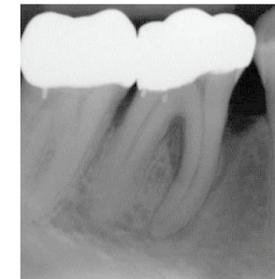
BEFORE



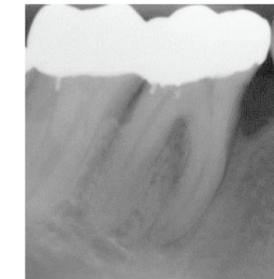
3 YEARS AFTER

Courtesy of Dr. Bret Dyer

CASE 3



BEFORE



6 MONTHS AFTER

Courtesy of Dr. Rana Al-Falaki

### CLINICAL EVIDENCE

Dyer, B, and E C Sung. "Periodontal Treatment using the Er, Cr: YSGG Laser." Lasers in Surgery and Medicine: 1442.

Hakki, Sema S et al. 2010. "Comparison of Er,Cr:YSGG laser and hand instrumentation on the attachment of periodontal ligament fibroblasts to periodontally diseased root surfaces: an in vitro study." Journal of periodontology 81(8): 1216-25. <http://www.ncbi.nlm.nih.gov/pubmed/20476883>

Kelbauskienė, Solveiga et al. 2011. "One-year clinical results of Er,Cr:YSGG laser application in addition to scaling and root planing in patients with early to moderate periodontitis." Lasers in medical science 26(4): 445-52. <http://www.ncbi.nlm.nih.gov/pubmed/20549280>

Kelbauskienė, Solveiga, and Vita Maciulskienė. 2007. "A pilot study of Er,Cr:YSGG laser therapy used as an adjunct to scaling and root planing in patients with early and moderate periodontitis." Stomatologija / issued by public institution "Odontologijos studija" ... [et al.] 9(1): 21-6. <http://www.ncbi.nlm.nih.gov/pubmed/17449974>.

Ting, Chun-Chan et al. 2007. "Effects of Er,Cr:YSGG laser irradiation on the root surface: morphologic analysis and efficiency of calculus removal." Journal of periodontology 78(11): 2156-64. <http://www.ncbi.nlm.nih.gov/pubmed/17970683>

Arnabat-Dominguez, Josep et al. 2010. "Advantages and esthetic results of erbium, chromium:yttrium-scandium-gallium-garnet laser application in second-stage implant surgery in patients with insufficient gingival attachment: a report of three cases." Lasers in medical science 25(3): 459-64. <http://www.ncbi.nlm.nih.gov/pubmed/19756837>

Assaf, Mohammad et al. 2007. "Effect of the diode laser on bacteremia associated with dental ultrasonic scaling: a clinical and microbiological study." Photomedicine and laser surgery 25(4): 250-6. <http://www.ncbi.nlm.nih.gov/pubmed/17803380>

Borrajó, J L Leyes et al. 2004. "Diode laser (980 nm) as adjunct to scaling and root planing." Photomedicine and laser surgery 22(6): 509-12. <http://www.ncbi.nlm.nih.gov/pubmed/15684752>.

Hakki, Sema S, and S Buket Bozkurt. 2011. "Effects of different setting of diode laser on the mRNA expression of growth factors and type I collagen of human gingival fibroblasts." Lasers in medical science. <http://www.ncbi.nlm.nih.gov/pubmed/21246387>

Lin, Jiang et al. 2011. "Gingival curettage study comparing a laser treatment to hand instruments." Lasers in medical science 26(1): 7-11. <http://www.ncbi.nlm.nih.gov/pubmed/1970683>

pubmed/19789937 (Accessed December 27, 2011). Moritz, a et al. 1998. "Treatment of periodontal pockets with a diode laser." Lasers in surgery and medicine 22(5): 302-11. <http://www.ncbi.nlm.nih.gov/pubmed/9671997>.

Walsh, Laurence. 2010. "Maximising gingival aesthetics using lasers." Australasian Dental Practice (August): 48-51.

René Franzen, Marcella Esteves-Oliveira, Jörg Meister, Anja Wallerang, Leon Vanweersch, Friedrich Lampert and Norbert Gutknecht "Decontamination of deep dentin by means of erbium, chromium:yttrium-scandium-gallium-garnet laser irradiation" Lasers in Medical Science Volume 24, Number 1, 75-80, DOI: 10.1007/s10103-007-0522-2

Dahlén, G. G. 1993. Black-pigmented gram-negative anaerobes in periodontitis. FEMS Immunol. Med. Microbiol. 6:181-192.

Haffajee, A. D., and S. S. Socransky. 1994. Microbial etiological agents of destructive periodontal diseases. Periodontol. 2000 5:78-111.

# REPaIR WATERLASE® ER,CR:YSGG PERIODONTITIS PROTOCOL

THE WATERLASE® Er,Cr: YSGG PERIO PROTOCOL is the first definitive step-by-step protocol for using an Er,Cr:YSGG laser to assist in the management of early, moderate and severe chronic periodontitis. It is broken into three phases: pre-surgical, surgical and post-surgical.

### PRE-SURGICAL PHASE

All patients should have a comprehensive periodontal examination/evaluation including data collection of periodontal charting and radiographs, medical and dental history, and risk assessment. A phase I treatment is implemented for removal of supra- and subgingival biofilm and calculus through scaling and root planing (S/RP) and the initiation and evaluation of oral hygiene compliance. Occlusal assessment and treatment may be warranted in this phase. Splinting of teeth may be an option.

### SURGICAL PHASE

A phase II surgical treatment plan is developed based on the re-evaluation of periodontal inflammation and oral hygiene compliance. The surgical plan can be for a single or multiple teeth sites, a quadrant or half-mouth depending on number of indicated sites. If desired, the half-mouth protocol is generally UR/LR followed by at least 2-3 weeks of post-operative management before treating the UL/LL areas.

1

### OUTER POCKET DE-EPITHELIALIZATION

Outer pocket gingival epithelium is removed from the free gingival margin down to a width at least equal to the pocket depth.



Tip: RFTP5  
Power: 1.5W  
Air/Water: 40%/50%  
Pulse rate: 30 Hz  
H mode

2

### GINGIVECTOMY (AS NEEDED)

A gingivectomy should only be performed if pseudo-pocketing is present. Ensure you do not compromise adequate attached gingivae.



Tip: RFTP5  
Power: 1.5W  
Air/Water: 40%/50%  
Pulse rate: 30 Hz  
H mode

\*FDA 510(k) Clearances: K011041, K013908, K030523, K083927 and K101658 (new attachment) and K091746 (calculus removal).