



A Minimally Invasive Protocol for Effective Management of Peri-Implantitis

REPAIR Implant™ provides clinicians a scientifically advanced method to assist in the management of perimplantitis. Utilizing the Waterlase® and patented Radial Firing Perio Tips™ (RFPT), and Side Firing Tips™ (SFT), REPAIR Implant provides a safe, effective laser treatment protocol that patients accept and prefer.

- Minimally invasive
- Easy access to implant surface and in-between threads, without reflecting a flap
- Treat site-specific or full-mouth cases for greater flexibility in treatment planning
- Supported by clinical evidence and scientific research
- Versatile YSGG laser ideal for comprehensive clinical use
- Laser photoacoustic properties effectively debride the implant surface





# WATERLASE® ER, CR: YSGG PERI-IMPLANTITIS REGIMEN

REPAIR Implant is the first definitive step-by-step protocol for using a Waterlase laser to assist in the management of peri-implantitis. It consists of three phases: pre-surgical, surgical and post-surgical.

### PHASE I: PRE-SURGICAL PHASE

All patients should have a comprehensive examination/evaluation including data collection of periodontal charting and radiographs, medical and dental history, and risk assessment.

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. Remove the crown and abutment, when possible, and a healing cap should be placed on the affected implant body. This allows for vertical laser tip access to the implant. Flap reflection may be necessary for complete access to threads in moderate to severe cases.

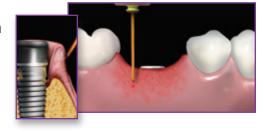
#### PHASE II: SURGICAL PHASE

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 implant or multiple sites.

## 1 OUTER 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	Power	Air/Water	Pulse rate	Mode
RFPT5	1.5W	40% / 50%	30 Hz	Н



## GINGIVECTOMY (AS NEEDED)

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

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



## **POCKET DEBRIDEMENT**

The epithelium should be removed and should be completed apically, from the free gingival margin down to the osseous level. All granulation tissue is removed. Gingival margin can be retracted as a mini-flap for access.

Tip	Power	Air/Water	Pulse rate	Mode
RFPT5	1.5W	40% / 50%	50 Hz	Н





# REPAIR WATERLASE PERI-IMPLANTITIS REGIMEN CONTINUED

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#### IMPLANT DECONTAMINATION

Conventional treatment with ultrasonics to osseous levels. (Use implant-safe tips. Please consult your implant manufacturer for recommended ultrasonic tips.) Upon completion, place a side firing tip circumferentially beginning at the coronal surface of the first thread exposed and move apically.

NOTE: When using the side firing tip, the orientation of the tip handle should be opposite (180°) the direction of the laser energy output.

Tip	Power	Air/Water	Pulse rate	Mode
SFT8	1.5W	40% / 50%	30 Hz	Н



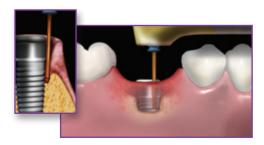
Side-Firing Tip



#### **DECORTICATION**

Re-contour osseous defects and stimulate bone regeneration. Hold tip parallel to implant surface and gently tap all the way down to and into bone, retracting slightly and repeating all the way around the implant. If necessary, change angle of laser tip and treat into the walls of infrabony defects.

Tip	Power	Air/Water	Pulse rate	Mode
MZ6	2.4W	70% / 80%	30 Hz	Н





#### FINAL DEBRIDEMENT

Remove residual debris and induce blood coagulation.

Tip	Power	Air/Water	Pulse rate	Mode
RFPT5	1.5W	10% / 10%	50 Hz	Н





#### COMPRESS WITH 2X2 GAUZE

Compress surgical site with wet 2x2 gauze for 3-5 minutes.



#### PHASE III: 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.

CASE 1 - Courtesy of Dr. Rana Al-Falaki



**BEFORE** 



1 YEAR AFTER FLAPLESS TECHNIQUE

CASE 2 - Courtesy of Dr. Rana Al-Falaki



**BEFORE** 



20 MONTHS AFTER

### CASE 3 — Courtesy of Dr. Todd Jorgenson



**BEFORE** 



12 MONTHS AFTER

#### CLINICAL EVIDENCE

- Prathapachandran J, Suresh N, Management of peri-implantitis; Dent Res J (Isfahan). 2012 Sep-Oct: 9(5): 516-521
- Mombelli A, Muller N, Cionca N, The epidemiology of peri-implantitis; Clin Oral Implants Res. 2012 Oct 23 Suppl 6:67-76
- 3. Jepsen S, Berglundh et al, Primary prevention of peri-implantitis: managing peri-implant mucositis. J Clin Peridontol, 2015 April; 42 Suppl 16:S152-7
- Rosen P, Clem D, Cochran D et al, Peri-mucositis and peri-implantitis: a current understanding of their diagnoses and clinical implications; J Periodontol 2013; 84(4): 430-443
- Lindhe J, Meyle J. Peri-implant diseases: Consensus report of the Sixth European Workshop on Periodontology. J Clin Periodontol 2008;35(Suppl. 8):282-285.)
- 6. Renvert S, Polyzois I, Persson GR Treatment modalities for peri-implant mucositis and peri-implantitis. Am J Dent. 2013 Dec;26(6):313-8.
- Kotsovilis S, Karoussis IK, Trianti M, Fourmousis I. Therapy of peri-implantitis: a systematic review. J Clin Periodontol 2008;35(7):621-9.
- Mailoa J1, Lin GH, Chan HL, Maceachern M, Wang HL. Clinical Outcomes of Using Lasers for Peri-Implantitis Surface Detoxification: A Systematic Review and Meta-Analysis. J Periodontol. 2014 Jan 30. [Epub ahead of print] DOI: 10.1902/ jop.2014.130620
- 9. Deppe H,& Henning Horch H, Laser applications in oral surgery and implant dentistry Lasers Med Sci (2007) 22:217–221
- Kotsakis G, Konstantinidis I, Karoussis I et al. A systematic review and meta-analysis
  of the effect of various laser wavelengths in the treatment of peri-implantitis J
  Periodontol. 2014 Jan 30. [Epub ahead of print] DOI: 10.1902/jop.2014.130610
- Meyle J. Mechanical, chemical and laser treatments of the implant surface in the presence of marginal bone loss around implants Eur J Oral Implantol. 2012;5 Suppl:S71-81.
- Aoki A et el; Periodontal and peri-implant wound healing following laser therapy. Periodontology 2000 (68), 2015; 217-269
- Esposito M, Grusovin MG, Kakisis I, Coulthard P, Worthington HV. Interventions for replacing missing teeth: treatment of perimplantitis. Cochrane Database Syst Rev 2008(2):CD004970.
- Ntrouka VI, Slot DE, Louropoulou A, Van der Weijden F. The effect of chemotherapeutic agents on contaminated titanium surfaces: a systematic review. Clin Oral Implants Res 2011;22(7):681-90.0)
- Tosun E, Tasar F, Strauss R, Gulmez D.Comparative Evaluation of Antimicrobial Effects of Er:YAG, Diode, and CO2 Lasers on Titanium Discs: An Experimental Study;
- Kreisler M, Kohnen W, Marinello C, et al. Bactericidal effect of the Er:YAG laser on dental implant surfaces: An in vitro study. J Periodontol 2002;73:1292-1298.

- Aoki A, Sasaki K, Watanabe H et al. Lasers in nonsurgical periodontal therapy Periodontology 2000, 2004; 36:59-97
- Takasaki AA, Aoki A, Mizutani K, Kikuchi S, Oda S, Ishikawa I. Er: YAG laser therapy for peri-implant infection: A histological study. Lasers Med Sci 2007;22:143-157.
- Schwarz F, Jepsen S, Herten M, Sager M, Rothamel D, Becker J(2006) Influence of different treatment approaches on nunsubmerged and submerged healing of ligature induced peri-implant lesions. An experimental study in dogs. J Clin Periodontol 23:564 565
- Schwarz F, Bieling K, Nuesry E, Sculean A, Becker J. Clinical and histological healing pattern of peri-implantitis lesions following non-surgical treatment with an Er:YAG laser. Lasers Surg Med 2006;38(7):663-71.
- Giannelli M, Pini A, Formigli L, Bani D. Comparative in vitro study among the effects of different laser and LED irradiation protocols and conventional chlorhexidine treatment for deactivation of bacterial lipopolysaccharide adherent to titanium surface. Photomed Laser Surg. 2011;29(8):573–80.
- 22. Persson G, Roos-Jansaker A, Lindahl C, Renvert S (2011) Microbiological results after non surgical erbium doped yttrium, aluminium, and garnet laser or air- abrasive treatment of peri-implantitis: a randomized clinical trial J Periodontol 82, 1267-1278
- 23. Schwarz F, Sahm N, Iglhaut G et al, Impact of the method of surface debridement and decontamination on the clinical outcome following combined surgical therapy of peri-implantitis: a randomized controlled clinical study J Clin Periodontol 2011; 38: 276–284
- Schwarz F, Hegewald A, John G, N, Becker J, Four-year follow-up of combined surgical therapy of advanced peri-implantitis evaluating two methods of surface decontamination J Clin Periodontol 2013; 40: 962–967 doi: 10.1111/jcpe.12143
- Miller R, Treatment of the contaminated implant surface using the Er,Cr:YSGG laser Implant Dentistry 2004 13(2):165-169
- 26. Azzeh M, Er,Cr:YSGG laser assisted surgical treatment of peri-implantitis with 1 year re-entry and 18 month follow up J Periodontol 2008; 79(10):2000-2005
- Smith LP, Rose T, Laser explantation of a failing endosseous dental implant Aus Dent J 2010; 55:219-222
- Al-Falaki R, Hughes F, Cronshaw M: Non-surgical management of peri-implantitis using Er,Cr:YSGG laser: one year follow up case series. J Clin Periodontal 2015 doi. 10.1111/jcpe.12399, pg 439-440
- 29. Al-Falaki R, Hughes F, Cronshaw M; Treatment outcome following use of the Er, Cr.YS-GG laser in the non-surgical management of peri-implantitis: a case series. British Dental Journal 2014 (217), 453-457 doi: 10.1038/sj/bdj.2014.910

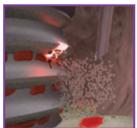


# Successfully managing peri-implantitis is more important than ever.

In conjunction with a Waterlase® All-Tissue Laser, REPAIR Implant is a groundbreaking solution for the management of peri-implantitis.

- → Minimally invasive protocol, no scalpels, suture or open flaps
- → Treat specific sites or full-mouth cases in a single visit
- → Gentle removal of granulation tissue associated with implant disease











## THE ALL-NEW WATERLASE SIDE FIRING TIP

The Waterlase Side Firing Tip (SFT) is ideal for safely and effectively debriding implant threads and is superior to traditional implant debridement methods.

Feature	SFT	Traditional
Access to subgingival infected implant and in-between threads, without opening a flap	$\odot$	×
Effective at removing >98% of biofilm on infected titanium surface <sup>1</sup>	$\odot$	8
Does not damage titanium surface or significantly affect surface temperature	<b>⊘</b>	8

