A whole new approach in periodontal treatment

GENIUS 9 **SDL**™

Laser Assisted Treatment of Periodontitis

GENIUS
IT TAKES ONE TO KNOW ONE

The GENIUS 9 **SDL**™ *provides dentists and hygienists with an easy approach to treat periodontal disease without pain, without bleeding and much faster than conventional treatment*

GENIUS 9 **SDL**™

The GENIUS 9 ***SDL***™ *patented water/air spraycooling system provides speed, visibility and comfort unrivaled in LED based or competing ND:YAG laser systems.*

DENTIST'S ADVANTAGES

› No bleeding
› No anaesthesia
› No suturing
› No wound paste
› Faster workflow

PATIENT'S ADVANTAGES

› Painless
› No bleeding
› No postoperative pain
› Faster treatment
› Faster healing

Simple, safe, superior

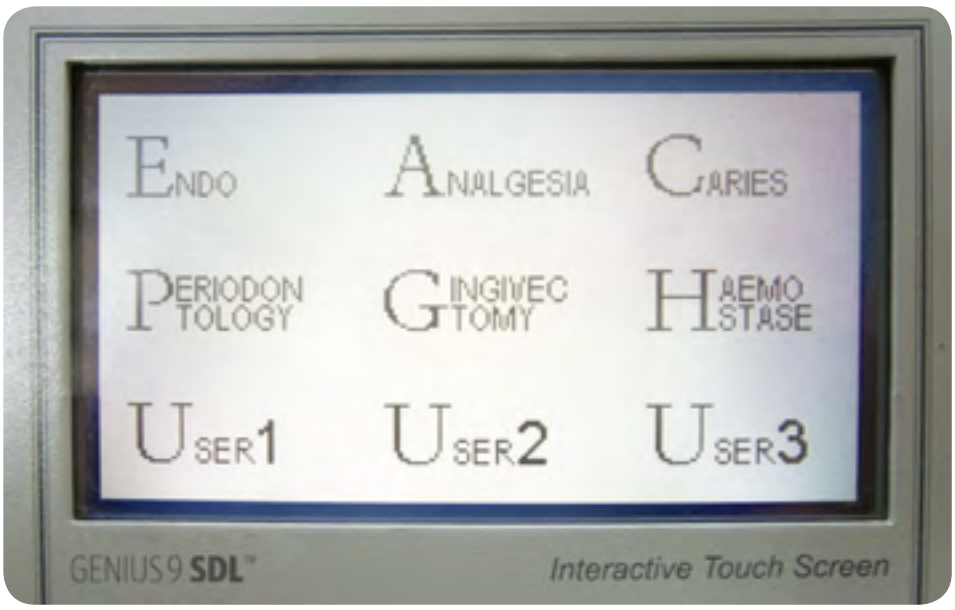
GENIUS 9 **SDL**™ has the market's most user-friendly laser. The interactive Touch Screen offers the latest technology and displays a menu for virtually all treatments.

FEATURES

- Surgical Dental Laser
- Solid state crystal (Nd: YAG)
- Variable pulse width
- Variable repetition rate
- Diagnostics software

INTERACTIVE DISPLAY

Pressing the interactive display, automatically sets the electronics to the optimum laser parameters for the chosen application.



SPECIFICATIONS

GENIUS 9 **SDL**™ has optimised parameters for soft tissue treatments, which cannot be compared to any other laser on the market today.

- Laser type: Nd: YAG (Neodymium - Yttrium - Aluminium - Garnet) 1064nm.
- Laser mode: Super pulsed, frequency 50 Hz. Pulse duration 200-600 microsec.
- Output power: 1200 peak/12 watt
- Cooling of tissue: Water/air spray system
- Operation mode: Presetting of optimum parameters for the chosen application
- CE certified by LNE/G-MED: CE 0459, - ISO 13485 certified by LNE/G-MED, - CFDA approved

The above specifications allows the dentists an optimal performance within soft tissue applications.

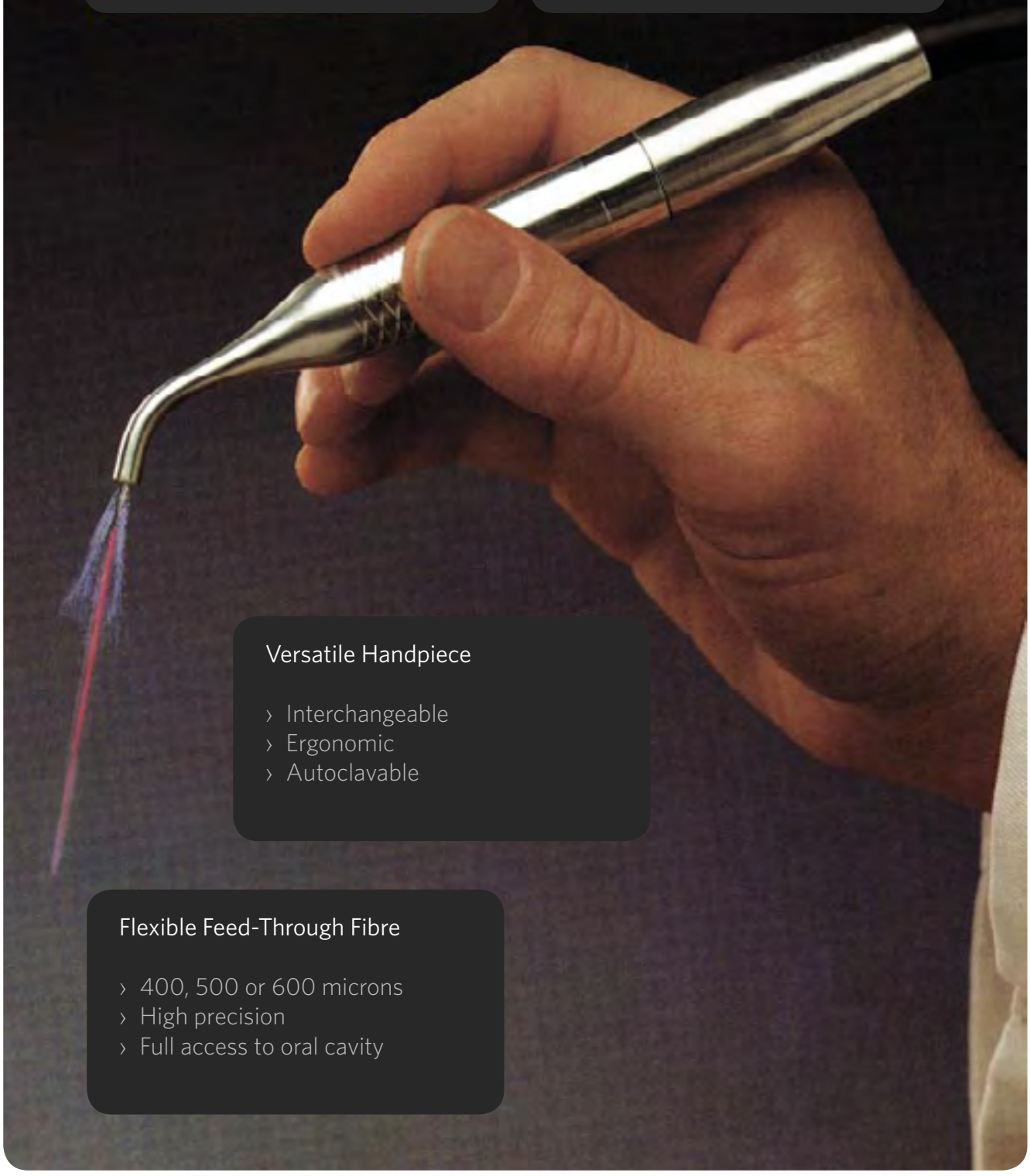
GENIUS 9 **SDL**™

Water/Air Cooling System

› No carbonisation
› No smell of burned tissue
› Minimized pain during treatment
› Faster treatment

Water/Air Controlled

› Controls penetration
› Prevents thermal damage



Versatile Handpiece

› Interchangeable
› Ergonomic
› Autoclavable

Flexible Feed-Through Fibre

› 400, 500 or 600 microns
› High precision
› Full access to oral cavity

A whole new approach in dentistry

The World Health Organization estimates that approximately 70% of the population will develop periodontal problems that ought to be treated by surgery or other that periodontal disease is related to medical diseases such as heart disease, diabetes, and stoke, as well as low birth weight and premature births in pregnant women. It is therefore essential that dentists and patients treat periodontal problems seriously.

More than 50% of all patients indicate that they fear receiving periodontal treatment.

Treatment Support

- Periodontal pocket curettage
- Removal of pocket epithelium
- Papillectomy
- Pocket elimination surgery
- Gingivectomy & gingivoplasty
- Crown lengthening surgery
- Frenectomy
- Surgical removal of fibroma
- Opening of an absess
- Tooth hypersensitivity
- Gingival retraction for impression taking
- Desinfection of root canals
- Small caries removal

Treatment Advantages

- No anaesthetics
- No bleeding during treatment
- Clear visibility for the dentist
- No suturing and wound paste required
- Faster treatment
- Easy single-tooth surgery
- Greater patient satisfaction
- Easy acceptance of treatments

Curretage Case

Treatment of periodontal pockets with PPD of 4-6 mm or deep pockets during the initial hygienic phase.

Adjust the length of the optic fiber according to the depth of the pocket scheduled for the treatment. During pocket curettage the laser fiber is always held parallel to the root of the tooth. Activate the laser, and place the fiber tip in contact with gingiva at the entrance of the pocket (Fig. 1a). Then, slowly insert the fiber into the pocket by moving it in the buccolingual direction at proximal sites, while in the mesio-distal direction at buccal or lingual sites. Placement of the fiber into the pocket is usually painless. The fiber, held in contact with the soft tissues, is then slowly moved apically until the bottom of the pocket is reached. This procedure results in gradual vaporizing of the pocket epithelium, subgingival plaque and some granulation tissues (Fig. 1b). The laser fiber, held in contact with the root surface, is then moved coronally and withdrawn from the pocket in order to vaporize microbial debris on the root surface (Fig. 1c). Remaining mineralized deposits, if present, are easily detected with a non-activated fiber and removed with a curette. Usually, this procedure requires 30-120 seconds per site.

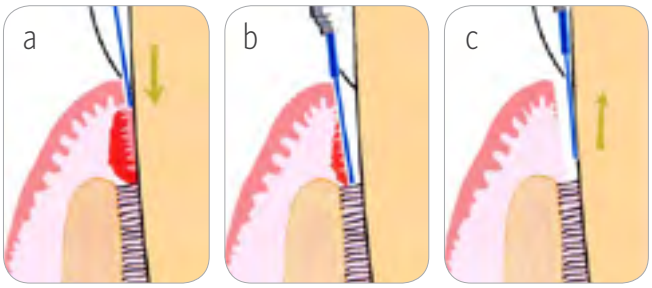


Fig. 1

Before treatment pocket depth 8 – 10 mm

Just after treatment

3 month after treatment pocket depth 3 – 4 mm

Laser Surgery

Elimination of periodontal pockets with PPD > 6 mm, gingival enlargement, furcation involvements. Prior to surgery, all patients have to complete the hygienic phase, which includes OH-instruction, removal of supra- and subgingival deposits.

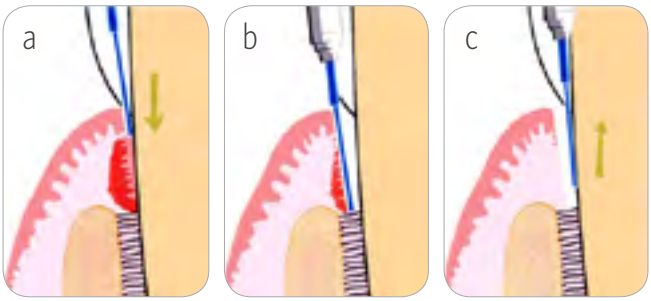
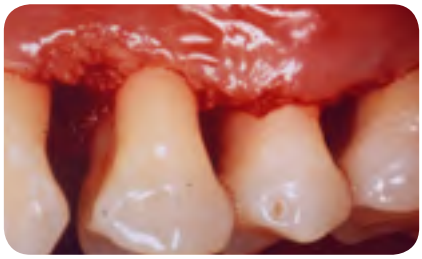


Fig. 2

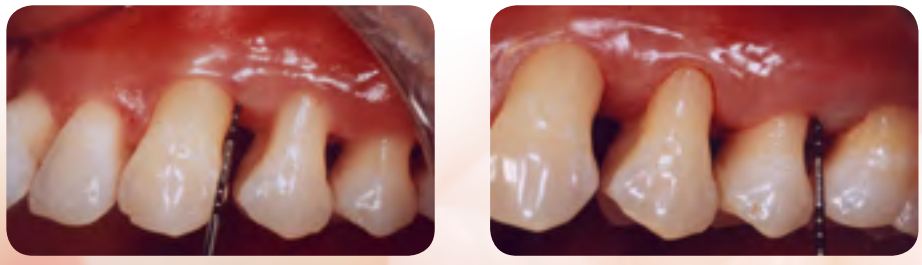
Supra-alveolar periodontal pockets or gingival hyperplasias

For treatment of these lesions laser gingivectomy is performed. Identify the depth and type of pocket around each tooth scheduled for the treatment. A beveled incision is made at the level of the bottom of the pocket through the gingiva onto contact with the tooth surface (Fig. 2a). The excised tissue is removed with a curette or forceps (Fig. 2b).

Before treatment pocket depth 8 – 10 mm



Just after treatment

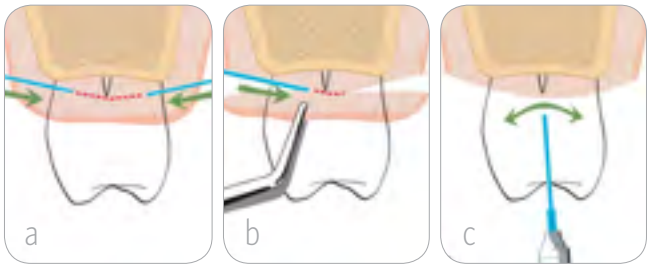


3 month after treatment pocket depth 3 – 4 mm

Pocket Resection With Laser

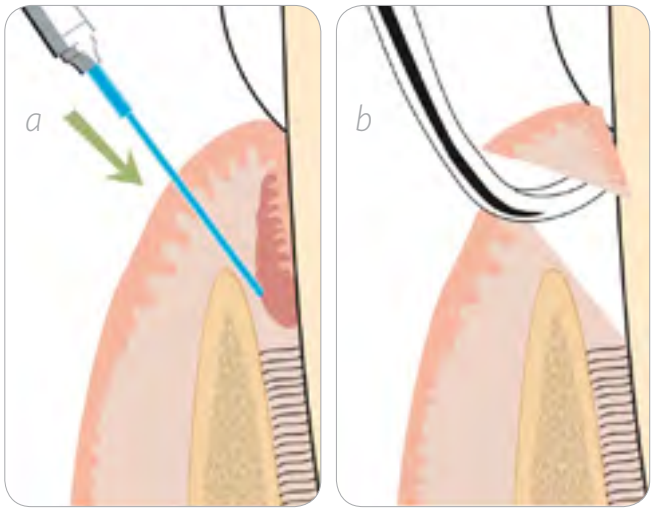
Treatment of periodontal pockets with PPD of 4-6 mm or deep pockets during the initial hygienic phase.

Fig. 3



Supra-alveolar periodontal pockets or gingival hyperplasias

At interproximal sites, the beveled incisions are made on the buccal and oral aspects (Fig. 3a). Then, the dissected free tissue is lifted with a curette or forceps and seperated from the interdental periodontium with the laser (Fig. 3b). The exposed root surfaces are then treated with the laser for vaporizing bacteria (Fig. 3c) and scaled, if calculus is present.



Infrabony defects

Fig. 4

In such defects, the bottom of the pocket is located below the bone level. Therefore, a reverse bevel incision is used for the treatment of such lesions. The fiber is angulated at approximately 45 degrees to the long axis of the tooth (Fig. 4a). The laser is activated and an initial incision is made. By gradually deepening the incision towards the bottom of the pocket, the pocket epithelium and the granulation tissue are dissected free and removed with a curette (Fig. 4b). In case of post-surgical bleeding, move the fiber over the operated area for a few seconds to coagulate the blood vessels. The exposed root surfaces are then treated with the laser for vaporizing bacteria and scaled, if calculus is present.

Antibacterial Effect of *GENIUS 9* **SDL**™

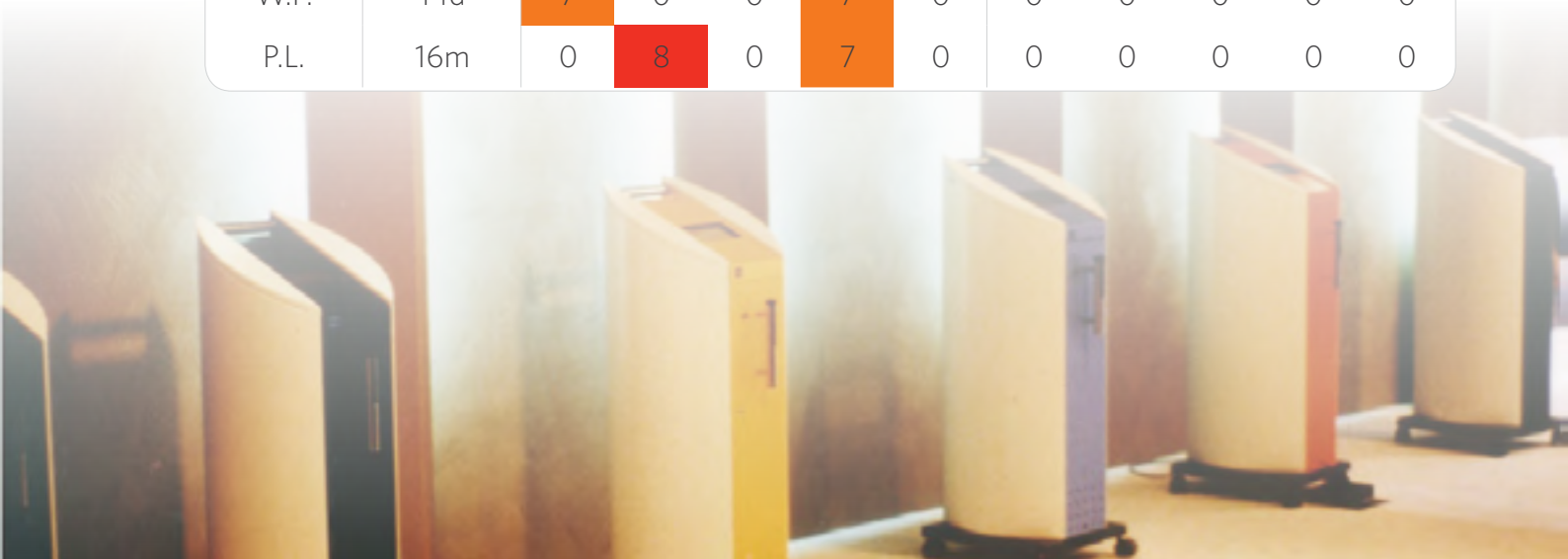
LEGEND	
DEGREE	SEVERITY
0	Undetectable
5	Mild
6	Moderate
7	Severe
8	Very severe

Purpose: Evaluation of the 'in vitro' bactericidal effect of the *GENIUS 9* **SDL**™ on five periodontal pathogens.

Conclusion: 15 sec of *GENIUS 9* **SDL**™ laser use was found to be effective for killing of the five tested periodontal pathogens.

Source: Vollier AG, Molekularbiology/ Genetic, CH 4002- Basel

		Before Treatment					After Treatment				
Patient	Tooth	AA	PG	PI	TF	TD	AA	PG	PI	TF	TD
G.M	17d	0	0	5	5	6	0	0	0	0	0
L.J.	17m	0	0	7	7	8	0	0	0	0	0
	15d	0	8	0	7	0	0	0	0	0	0
C.P.	24d	0	0	0	5	0	0	0	0	0	5
B.V.	36d	0	8	0	7	0	0	0	0	0	0
P.I.	14m	6	6	6	0	0	0	0	0	0	0
B.C.	46m	0	8	0	8	0	0	0	0	0	0
W.A.	11m	0	8	0	8	0	0	0	0	0	0
S.H.	15d	5	6	7	6	0	0	0	0	0	0
W.B.	46d	0	8	6	8	0	0	5	0	0	5
S.E.	11d	0	8	0	7	0	0	0	0	0	0
W.P.	14d	7	0	0	7	0	0	0	0	0	0
P.L.	16m	0	8	0	7	0	0	0	0	0	0



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Contact

GENIUS PERIODONTAL A/S, DENMARK

www.geniusdental.dk, info@geniusdental.dk