

Perisolv®



Perisolv®

Show biofilm the red card

Effective treatment for periodontal and peri-implant inflammation

- PERISOLV® is a new cleaning gel used in addition to mechanical debridement.
- Gel based on Chloramines
- ➔ ELIMINATION OF THE BIOFILM*
- ➔ IMPROVED MUCOSITIS TREATMENT¹
- ➔ REDUCTION OF POCKET DEPTH EVEN IN PERSISTENT POCKETS^{2,3}



* Enhancing bacterial removal by mechanical debridement

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What



Transparent:

- Amino acids
- Sodium Chloride
- Viscosity modifier

White:

- Hypochlorite solution
(NaOCl) of 0.95%

Tips:

- Plastic & metal tips
- Luer-Lock standard

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Composition



General antimicrobial effect

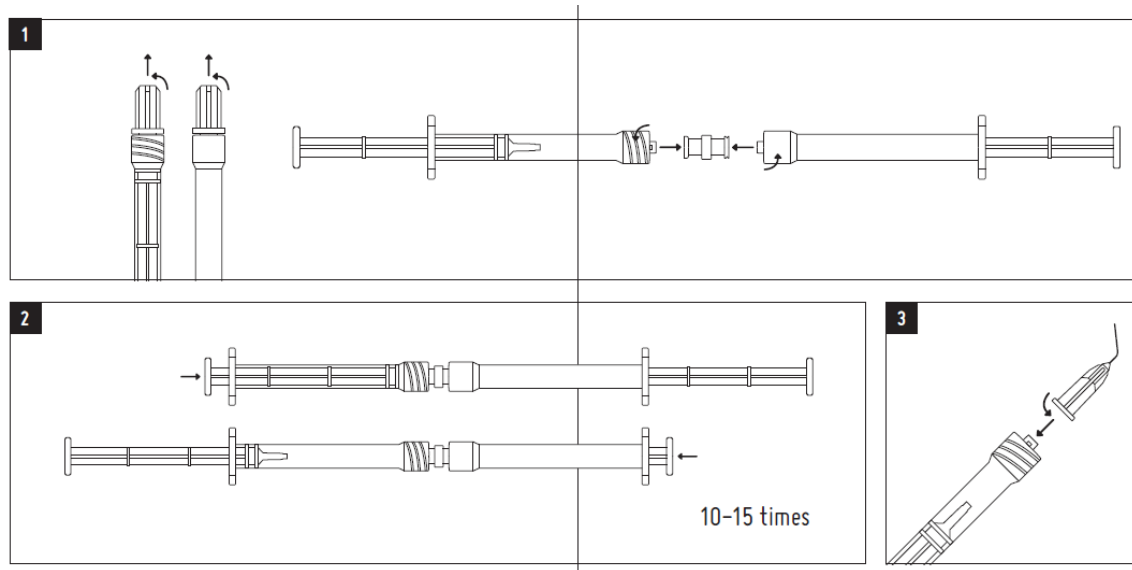
Penetrates biofilm and softens degenerated tissue

Non toxic and completely environmental friendly

Gottardi W, Nagl M, 'N---chlorotaurine, A Natural antiseptic with outstanding tolerability.' J AnAmicrob Chemother 2010; 65: 399– 409

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Application



WEBLINK: https://www.youtube.com/watch?v=XpOx8a_ttc8

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Laboratory study – Effect Perisolv® on the periodontal biofilm

Scope

- Compare the antimicrobial effect of Perisolv to its elements and to CHX

Tested products

- Perisolv®
- Hypochlorite
- Amino acids
- Chlorhexidine (CHX)

Method

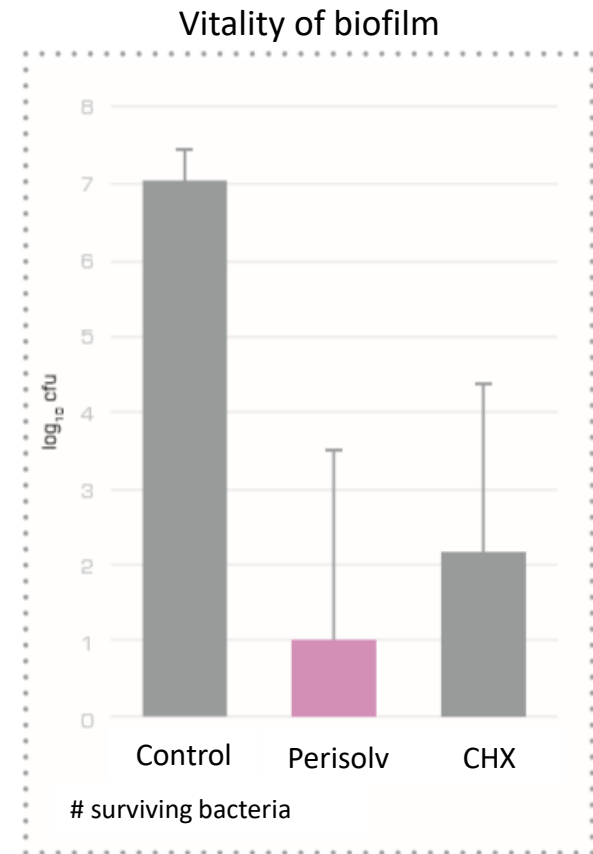
- Mix of 13 different bacteria and matrix of periodontal biofilm were created in the laboratory
- Minimal inhibitory concentration (MIC) and effect on vitality were investigated

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Laboratory study – Effect Perisolv® on the periodontal biofilm

Result

- In this study it was observed, that PERISOLV® reduces the vitality of an established biofilm at a higher level as chlorhexidine (CHX)
- The activity of Perisolv® differed between Gram-positive and Gram-negative bacteria, growth of Gram-negatives is inhibited by lower concentrations



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In vitro study – Effect of different surface treatments on dentin surface

Scope

- Examine morphological changes of dentin surfaces following surface treatments and to assess their influence on periodontal ligament (PDL) cells

Method

- Model: Treatment of bovine dentin discs
- Products: EMS Powders (1) Classic, (2) Plus, (3) Perio and (4) Perisolv
- Control: Non treated discs
- Treatment: Discs were air sprayed with each powder per disc (Air Flow). Perisolv dentin discs were rinsed with Perisolv
Seeding of disc surface with human PDL (5000 cells per well)
- Parameters: Surface morphology (SEM)
Cell survival, spreading and attachment

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In vitro study – Effect of different surface treatments on dentin surface

Results of effect on surface morphology

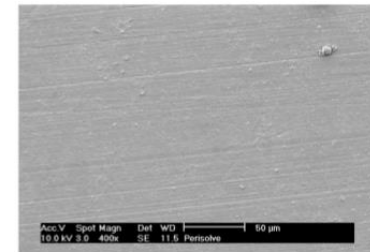
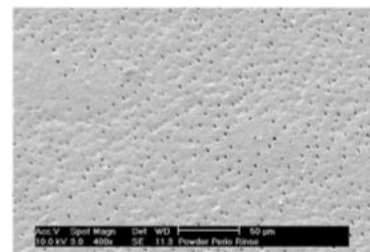
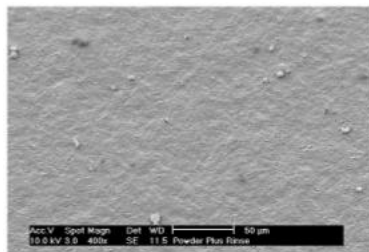
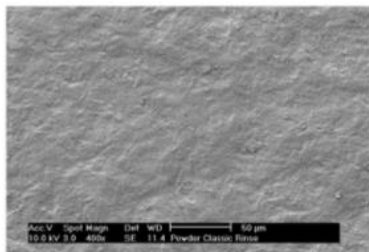
- Morphological changes to dentin slices were first visualized using SEM imaging
- The Classic powder demonstrated the additional layer of powder following Air-Flow fine particles were still observed at high magnification.
- A similar observation was observed for Powder Plus however to a lesser extent. The dentin surfaces revealed surfaces with many additional micro-rough patterns as a result from the Air-Flow spraying.
- Dentin discs that were sprayed with Powder Perio demonstrated very profound changes to dentin discs. It was found that spraying surfaces with Powder Perio revealed the open of dentinal tubules.
- The use of Perisolv® rinsing did not affect surface morphology of dentin discs

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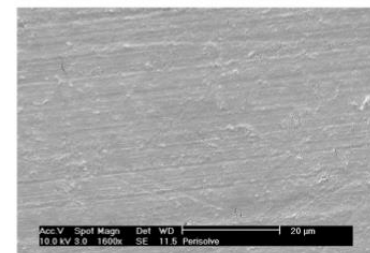
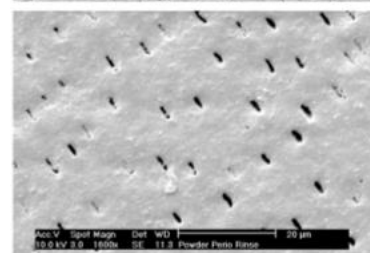
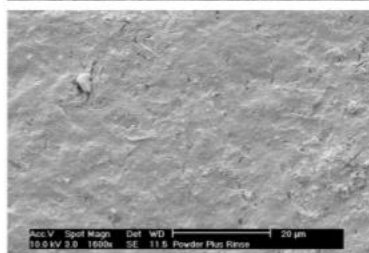
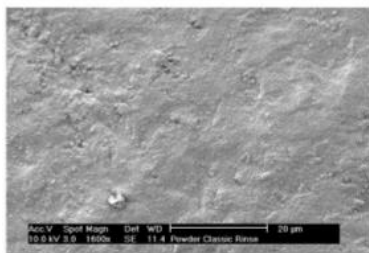
In vitro study – Effect of different surface treatments on dentin surface

Results of effect on surface morphology

400 x



1600 x



Powder Classic

A thin layer of collected powder was observed on dentin discs before and after rinsing

Powder Plus

A thin layer of powder was observed on dentin surfaces following spraying

Powder Perio

AirFlow spray with Powder Perio revealed the opening of dentinal tubules

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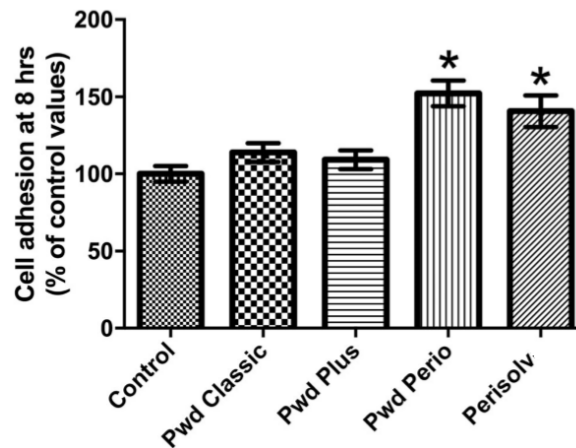
No change in surface morphology was observed when compared to control dentin discs

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In vitro study – Effect of different surface treatments on dentin surface

Results – effect on PDL cells

- Cell survival was near 100% for all samples
- Significantly more cells attached to dentin discs having been treated with Perio Powder or with Perisolv®
- Investigation of cell spreading did not reveal any discernable differences between treatment groups



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Clinical cases– Treatment of critical patients

Patients

- Number: 3 patients

Method

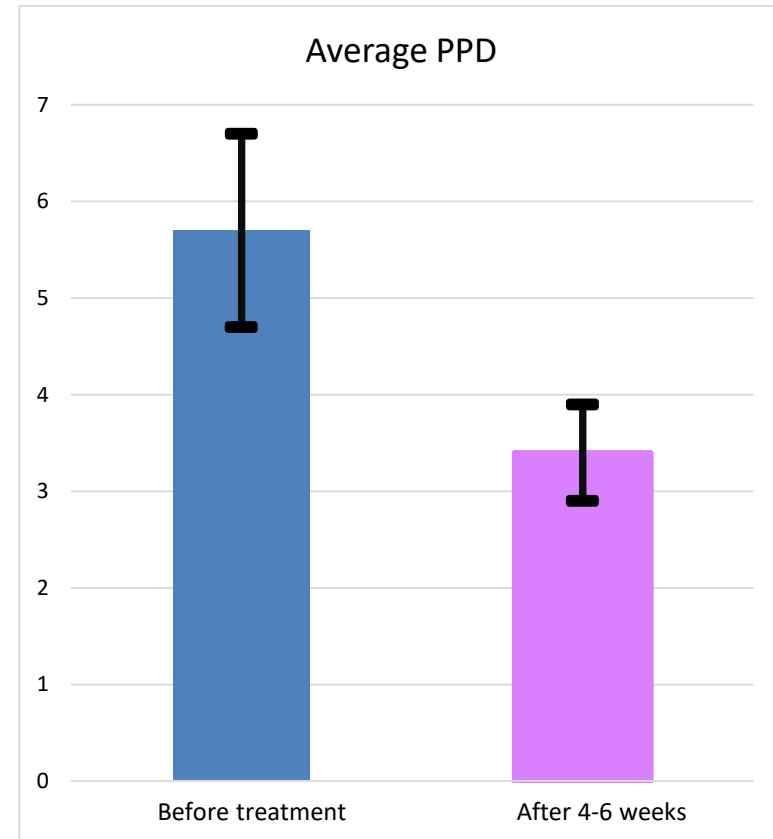
- Indications: Residual pockets, BOP+ and PPD \geq 5mm
- Treatment:
 - a) Application Perisolv®
 - b) Ultrasound treatment
 - c) Treatment repeated after 20-25 minutes

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Clinical cases– Treatment of critical patients

Results

- PPD was reduced in all pockets after treatment with Perisolv[®]
- PPD before: 5.7mm ± 1.0mm
- PPD after 4-6 w.: 3.4mm ± 0.5mm
- All pockets were with a depth below 4mm and all BOP positive became negative.



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Clinical case series – treatment of residual periodontal pockets

Clinics

- Private practice in Switzerland

Initial situation

- 18 patients with residual periodontal pockets
- 173 measurements with PPD from 5mm to 12mm
- Patient had already undergone phase 1 treatment
- PPD stable at treatment

Treatment

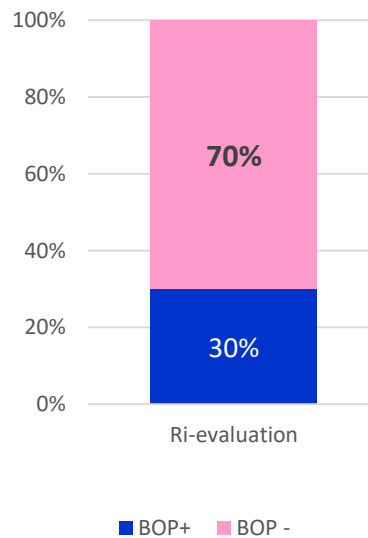
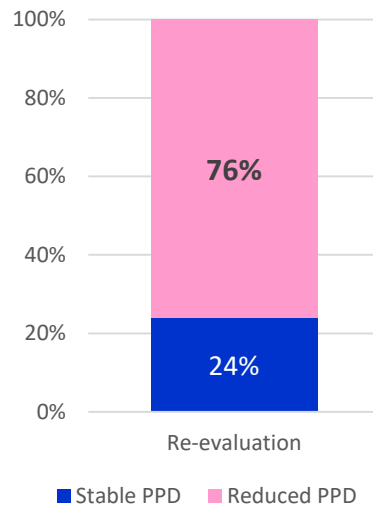
- Application of Perisolv, waiting 30 seconds
- Scaling & root planing procedure

Re-evaluation

- Re-evaluation time between 9 and 35 weeks
- PPD and BOP measurements

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Clinical case series – treatment of residual periodontal pockets

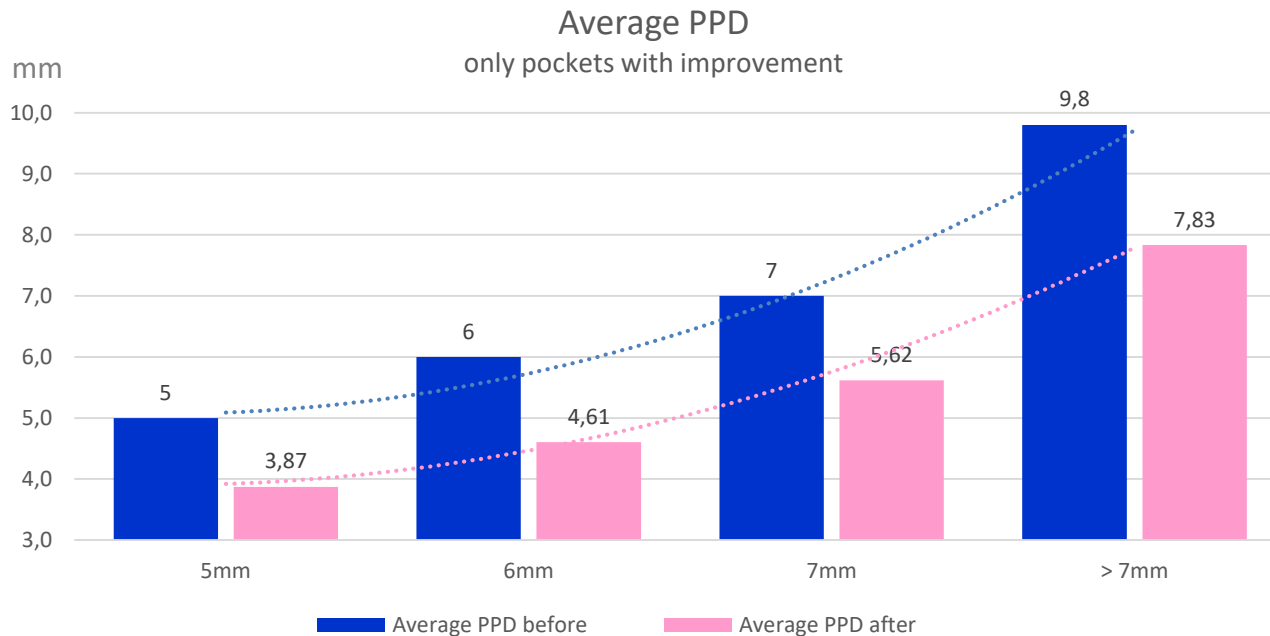


Results

- For 76% of the measurements a PPD reduction was achieved.
- 70% of BOP+ became BOP- .

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Clinical case series – treatment of residual periodontal pockets



Results

- For 66% of the 5mm measurements, for 84% of the 6mm measurements and for 92% of the 7mm measurements a reduction of the depth was achieved.

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Clinical study – Effect in the non surgical treatment of peri-implant mucositis

Clinics

- University of Berne, University of Timisoara

Initial situation

- 40 patients
- Control: Placebo (# 20)
- Test: Perisolv (# 20)
- PPD of 5mm or less (mucositis does not show any bone loss)

Treatment

- Non surgical instrumentation
- Application of Perisolv or Placebo
- Instrumentation

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Clinical study – Effect in the non surgical treatment of peri-implant mucositis

Initial situation:

Sites with BOP positive

	Baseline
Test group	63
Control group	76
P-value	0.24

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Clinical study – Effect in the non surgical treatment of peri-implant mucositis

Results:

Sites with BOP positive

	Baseline	1mt	6 mts	P
Test group	63	10	29	0.001
Control group	76	24	48	0.001
P-value	0.24	0.02*	0.02*	

➔ Statistical significant less BOP+ sites for the Perisolv group

Non surgical treatment of deep periodontal pocket

Prof. Andrea Pilloni / Dr. Laura Matrigiani

University La Sapienza, Rome, Italy



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Periodontal pocket



Deep pocket PPD: 7mm and BOP + / Application of Perisolv® till the gel comes out of the pocket. Then wait 30 seconds for the gel to act in the pocket.

These pictures are a courtesy of Dr.ssa. Laura Matrigiani e Prof. Andrea Pilloni , La Sapienza Roma (Italia)

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Periodontal pocket



Deep scaling and root planing is performed



Situation after 6 months: PPD 4mm, BOP –
Baseline : PPD 7mm, BOP +

These pictures are a courtesy of Dr.ssa. Laura Matrigiani e Prof. Andrea Pilloni , La Sapienza Roma (Italia)

Non surgical treatment of deep periodontal pocket

Prof. Vincenzo Iorio-Siciliano

University Catanzaro & private practice Naples, Italy



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Residual periodontal pocket



Residual pocket of tooth 21
PPD 7mm, BOP+



Application of Perisolv before scaling &
root planing procedure

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

Strictly confidential

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Residual periodontal pocket



Baseline: Residual pocket of tooth 21
PPD 7mm, BOP+



1 year follow up:
Inflammation free, stable pocket
PPD 4mm, BOP-.

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

Non surgical treatment of residual periodontal pocket

PD Dr. Stefan Fickl

University of Würzburg, Germany



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Residual periodontal pocket



Deep residual pocket, BOP +



Application of PERISOLV before SRP

These pictures are a courtesy of PD Dr. Stefan Fickl, Universität Würzburg (Germany)

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Residual periodontal pocket



Baseline

Deep residual pocket, BOP+



Follow up at 6 months

These pictures are a courtesy of PD Dr. Stefan Fickl, Universität Würzburg (Germany)

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Residual periodontal pocket



Baseline

Deep residual pocket, BOP+



Follow up at 2 years

These pictures are a courtesy of PD Dr. Stefan Fickl, Universität Würzburg (Germany)

Non surgical treatment of furcation class II

Prof. Vincenzo Iorio-Siciliano

University Catanzaro & private practice Naples, Italy



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Furcation class II



Pocket in posterior region



Furcation class II

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

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Furcation class II



Application of Perisolv in pocket and furcation. Clinician waited in this case 2 minutes before starting mechanical treatment

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

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Furcation class II



First treatment with ultrasound



Second part of the treatment with curette

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

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Furcation class II



Pocket at Baseline



Pocket at 6 months follow up

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

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Furcation class II



Furcation at baseline



Furcation after 6 months

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

Non surgical treatment of peri-implant mucositis

Prof. Vincenzo Iorio-Siciliano

University Catanzaro & private practice Naples, Italy

Research associate at University of Berne



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Peri-implant mucositis



Strong bleeding on probing indicating an inflammation, thin soft tissue



No bone loss visible radiographically

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

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Peri-implant mucositis



Application of Perisolv



After 2 minutes instrumentation is started

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

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Peri-implant mucositis



Situation at baseline



Situation at 6 months

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

Non surgical treatment of peri-implant mucositis

Prof. Vincenzo Iorio-Siciliano

University Catanzaro & private practice Naples, Italy



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Peri-implant mucositis



Implant with probing depth (PD) $\leq 5\text{mm}$ and BoP+



Application of Perisolv before non surgical therapy. Then waiting at least 30 seconds.

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

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Peri-implant mucositis



Biofilm removal using sonic scaler with PEEK tip.



Probing depth (PD) after 6-month observation time.

These pictures are a courtesy of Dr. Vincenzo Iorio-Siciliano (Italy)

Surgical treatment of peri-implantitis

PD Dr. Stefan Fickl

Université de Würzburg, Allemagne

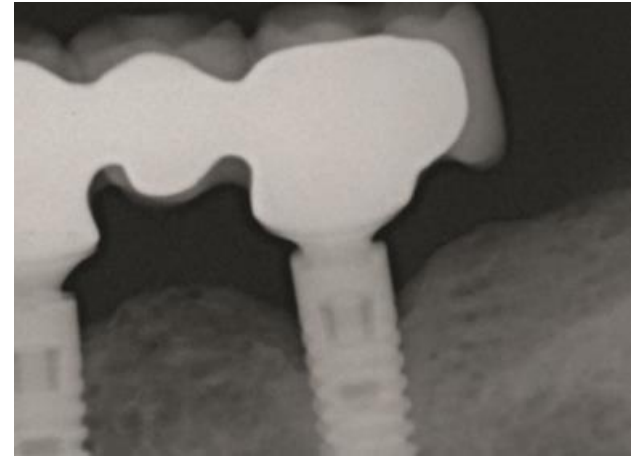


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Peri-implantitis



Recession & signs of inflammation around threads of implant 37. Probing reveals a deep buccal dehiscence of 8 mm.



Significant bone loss proximal and distal of implant.

These pictures are a courtesy of PD Dr. Stefan Fickl, Universität Würzburg (Germany)

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Peri-implantitis



Situation post surgical presentation and degranulation: strongly pronounced trough-shaped bone defect.



First application of PERISOLV®. After 30 seconds start with mechanical (sandblasting) treatment.

These pictures are a courtesy of PD Dr. Stefan Fickl, Universität Würzburg (Germany)

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Peri-implantitis



Winding of implant do not reveal any visible tissue remnants.



Second PERISOLV® application

These pictures are a courtesy of PD Dr. Stefan Fickl, Universität Würzburg (Germany)

Perisolv®

Peri-implantitis



1 YEAR POST-OP

Stable soft tissue progression: small gingival recession, no signs of inflammation. No bleeding identified on probing, stable buccal bone situation with no recession

These pictures are a courtesy of PD Dr. Stefan Fickl, Universität Würzburg (Germany)