P149

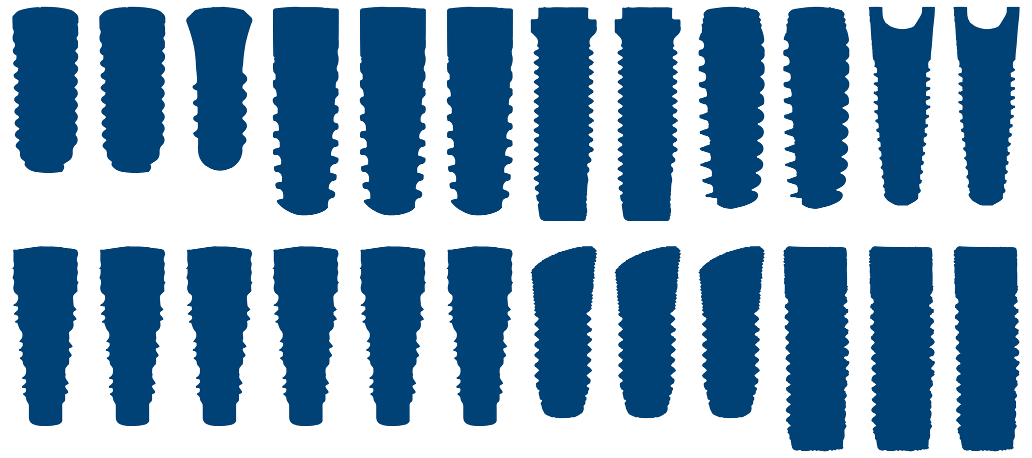
Hard and Soft Tissue Regeneration of Severe Peri-implantitis Defects with the Laser-assisted Periimplant Defect Regeneration Technique (LAPIDER): 3-year Results

Surgical peri-implantitis therapy using a crestal access to the lesion leads most often to a partial defect regeneration and a buccal recession.
This retrospective cohort study evaluates the regeneration of severe peri-implantitis deficiencies treated with the LAPIDER approach within a 3-year follow-up.

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Method

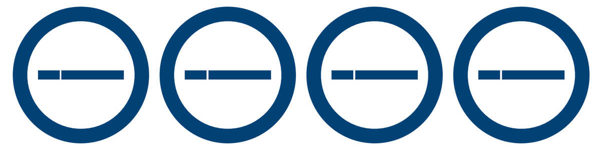
24 implants



18 patients

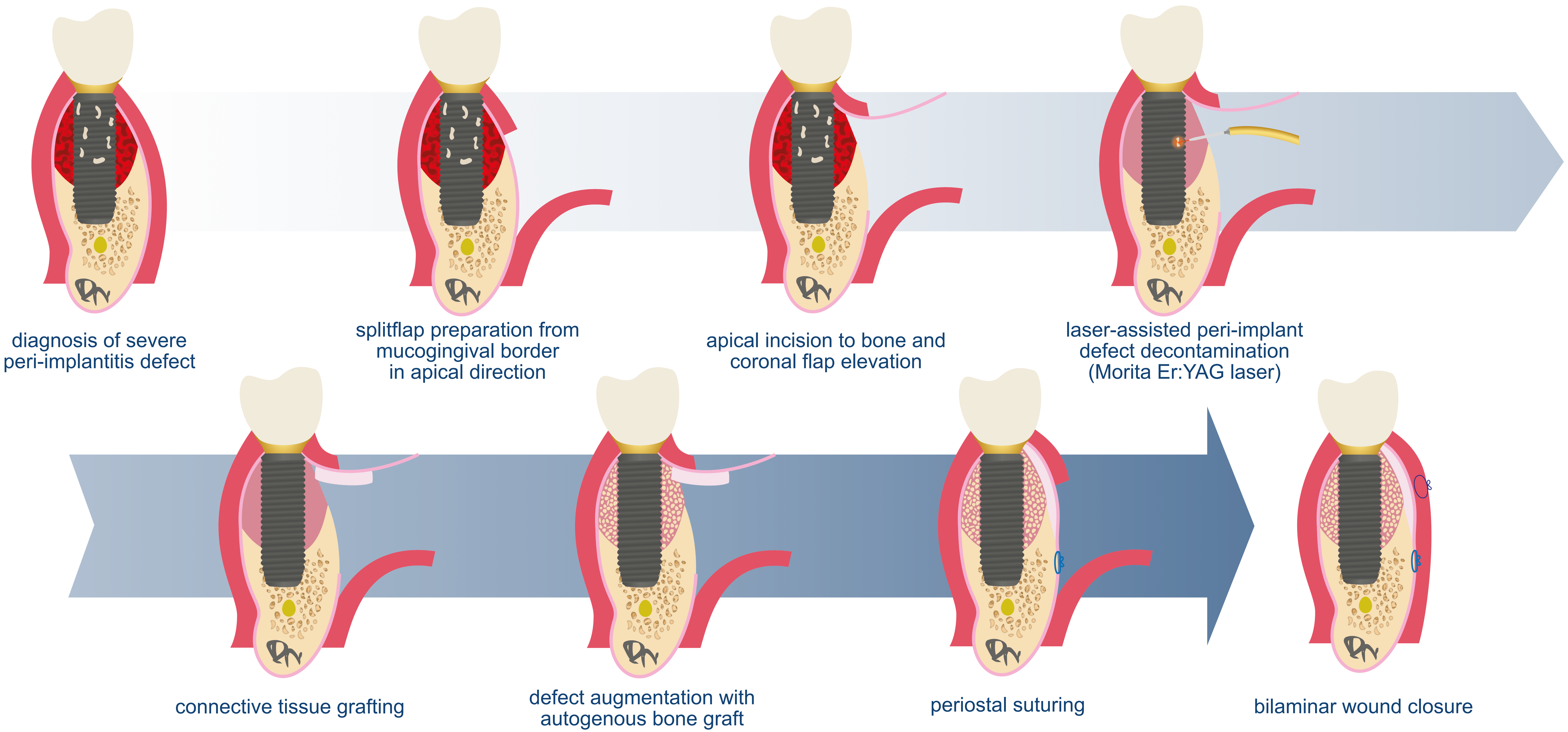


4 smokers



14 non-smokers





diagnosis of severe peri-implantitis defect
splitflap preparation from mucogingival border in apical direction
apical incision to bone and coronal flap elevation
laser-assisted peri-implant defect decontamination (Morita Er:YAG laser)
connective tissue grafting
defect augmentation with autogenous bone graft
periostal suturing
bilaminar wound closure

Primary outcomes: changes of the marginal bone levels (MBL) **|** buccal bone thickness


Secondary outcomes: implant survival **|** peri-implant probing depths (PPD) **|** bleeding on probing (BOP) **|** recession **|** width (KMW) and thickness of keratinized mucosa (KMT) **|** soft tissue esthetics (PES) **|** implant success

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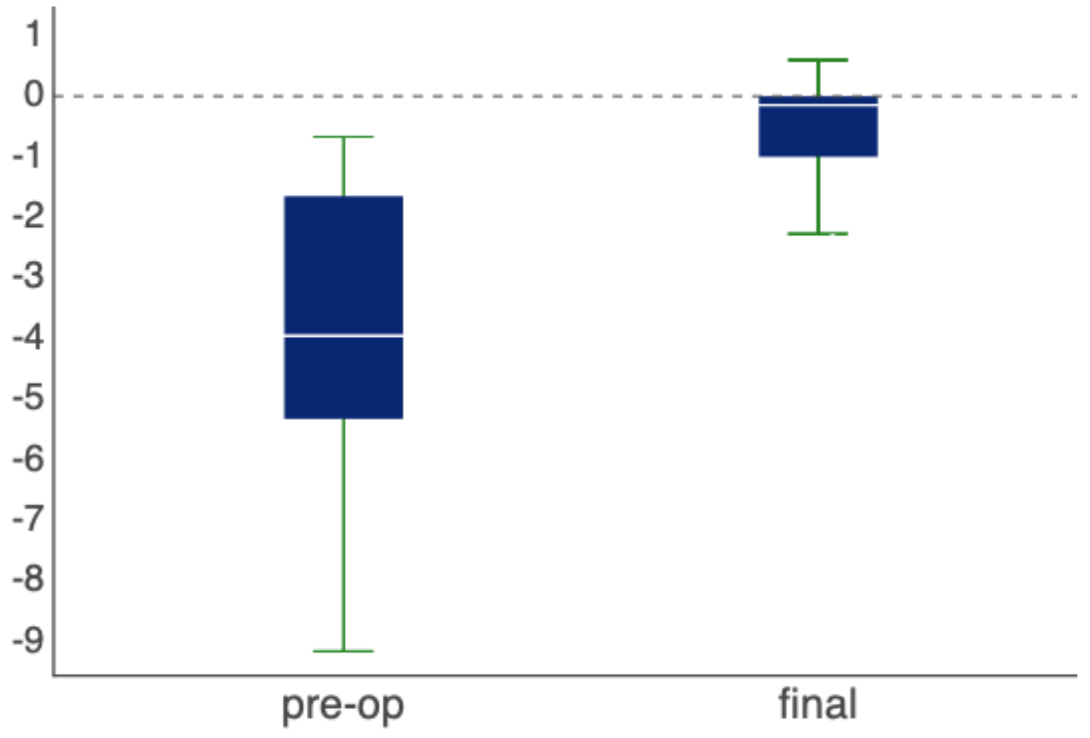
Results



access to the defect | bone and connective tissue graft | wound closure | 10-day | 14-month | 3-year | pre-op | 2-year | 6-month | 3-year



pre-op | Morita Er:YAG laser | bone and connective tissue graft | wound closure | 8-month | 2-year | pre-op | 2-year | pre-op | 3-year

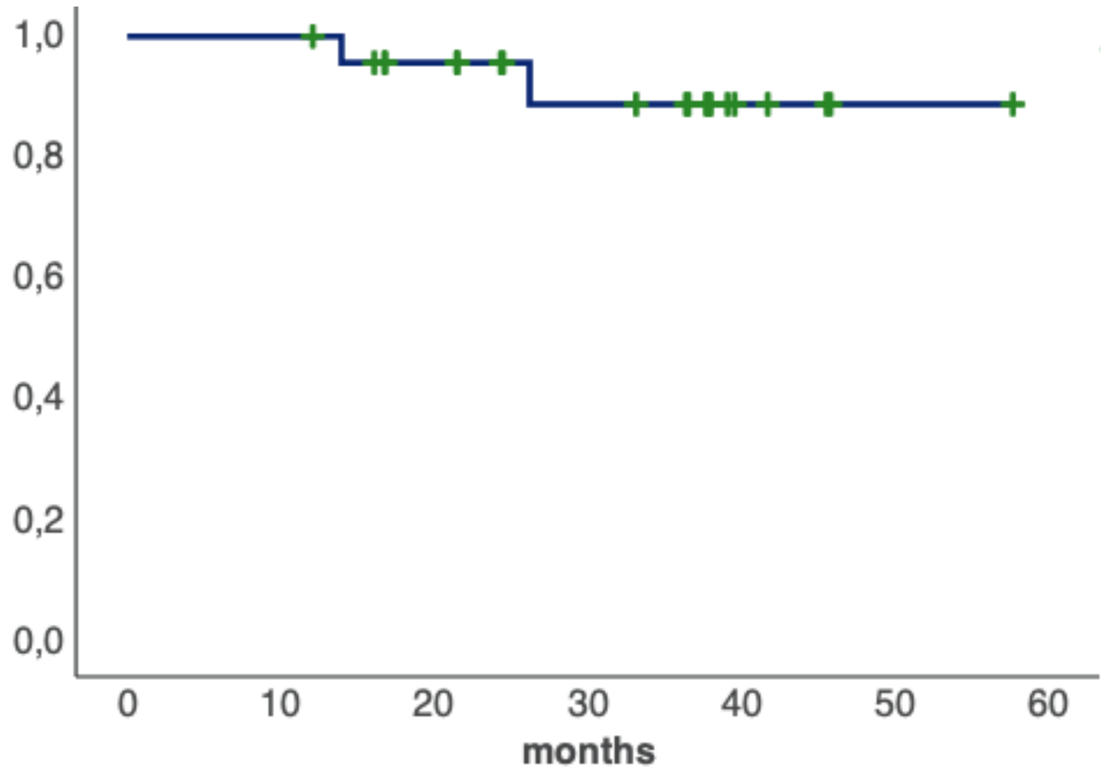


1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
pre-op
final

Interproximal marginal bone level improved by 3.10 ± 2.02 mm (p<0.001)

level	pre-op	final	increase	p =
1 mm	0.01	0.55	0.55 mm	0.005 mm
3 mm	0.32	1.32	1.01 mm	0.001 mm
6 mm	1.26	1.90	0.65 mm	0.163 mm

Buccal bone thickness increased by 0.55 ± 0.60mm (p=0.005) and 1.01 ± 1.25 mm (p=0.001) at 1 and 3 mm below reference level



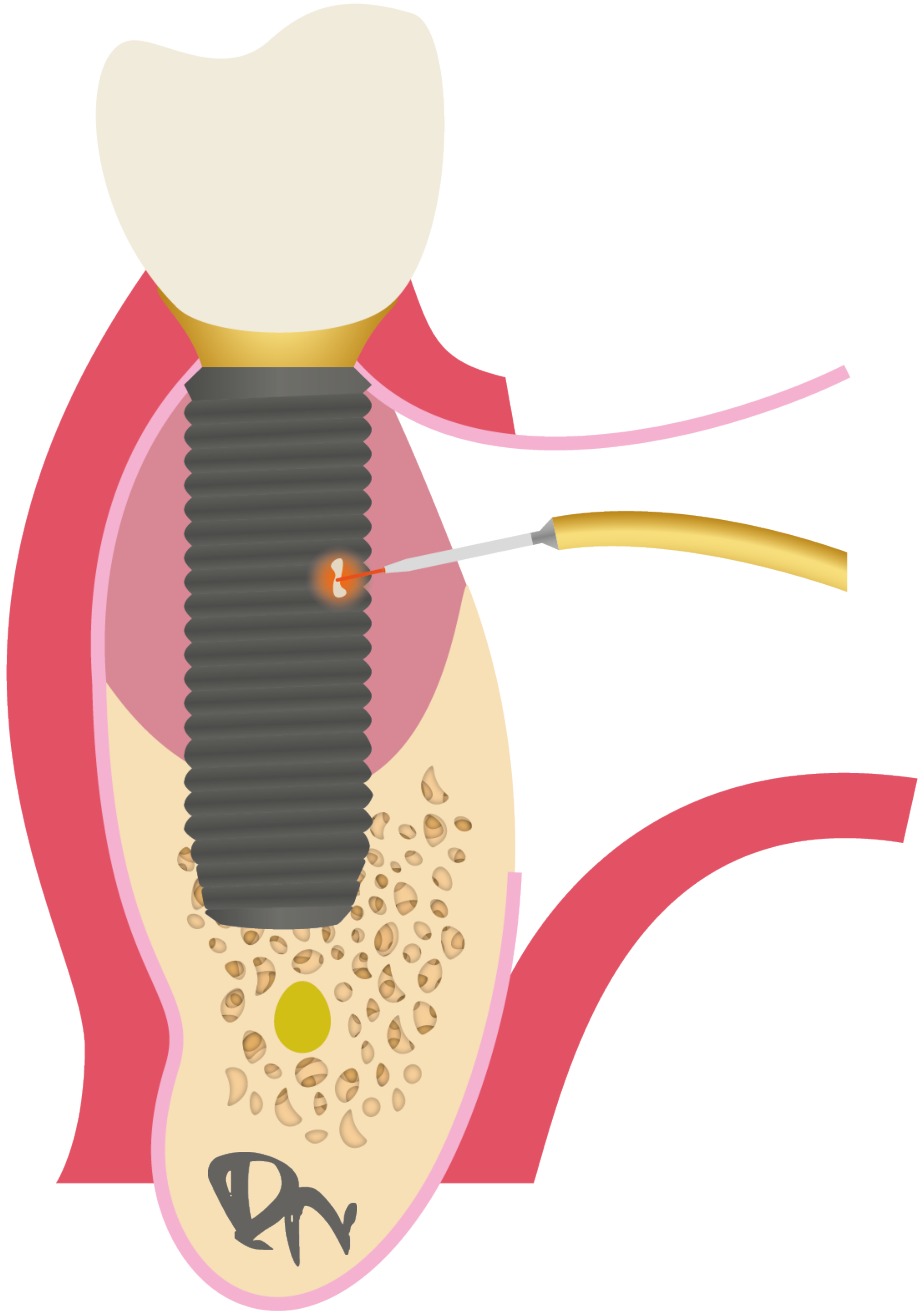
1,0
0,8
0,6
0,4
0,2
0,0
0
10
20
30
40
50
60
months

2 implants were removed; 22 implants were still in function at a mean follow-up of 36 months (cumulative survival rate 90.8%)

- **Buccal MBL** increased by 3.49 ± 2.89 mm (p<0.001)
- **Lingual MBL** increased by 1.46 ± 1.98 mm (p=0.003)
- **PPD** changed from 5.05 ± 1.39 to 3.08 ± 0.71 mm (p<0.001)
- **Recession** was reduced from 2.07 ± 1.70 to 0.91 ± 1.13 mm (p=0.001)
- **KMW** increased from 2.91 ± 1.81 to 4.18 ± 1.67 mm (p=0.006)
- **KMT** improved from 1.73 ± 0.50 to 2.44 ± 0.43 mm (p<0.001)
- **PES** changed from 7.7 ± 2.8 to 10.7 ± 1.9 (p<0.001)
- **45.8% to 54.2%** of the implants met the criteria of implant success

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Conclusion



- Proof of principle for the regeneration of severe peri-implant hard and soft tissue deficiencies
- High survival rate
- Increase of marginal bone levels
- Decrease of peri-implant probing depths & BOP
- Reduction of recession
- Increase in width and thickness of the keratinized mucosa

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