

# Maintenance of Marginal Hard and Soft Tissue Support at Immediately Provisionalized OsseoSpeed Profile Implants 1-year Results

Noelken R<sup>1,3</sup>, Neffe BA<sup>1</sup>, Kunkel M<sup>2</sup>, Wagner W<sup>3</sup>

<sup>1</sup> Private Practice, Lindau / Lake Constance, <sup>2</sup> University Hospital, Bochum, Germany, <sup>3</sup> University Hospital, Mainz, Germany

Topic: Implant therapy outcomes, surgical aspects

## Background and Aim

To overcome the disadvantages of staged implant surgery and treatment, immediate loading concepts as well as flapless surgery approaches have been introduced in recent years. Specifically, promising results in terms of high success rates and remarkable esthetic outcomes have been reported for implants placed in extraction sockets and immediately loaded via provisional crowns. In the anterior maxilla the extraction socket anatomy is sloped in a lingual to buccal direction and the placement of a regular implant is not optimal. A dental implant with a sloped marginal contour, OsseoSpeed™ Profile (Astra Tech AB, Mölndal, Sweden), has been developed to optimize implant placement in such situations.

The study examined the clinical performance of OsseoSpeed Profile implants and the transgingival components in a one-stage procedure with immediate insertion and provisionalization in the anterior maxilla.

## Methods and Materials

18 OsseoSpeed Profile implants were inserted in 13 patients. All implants were placed immediately into extraction sockets. Facial bony defects (1 total, 7 partial losses of facial lamella) were reconstructed immediately with autogenous bone chips without raising a flap. All patients received immediate prosthetic restorations. Primary outcome variables were implant survival, marginal bone levels and Pink Esthetic Score.

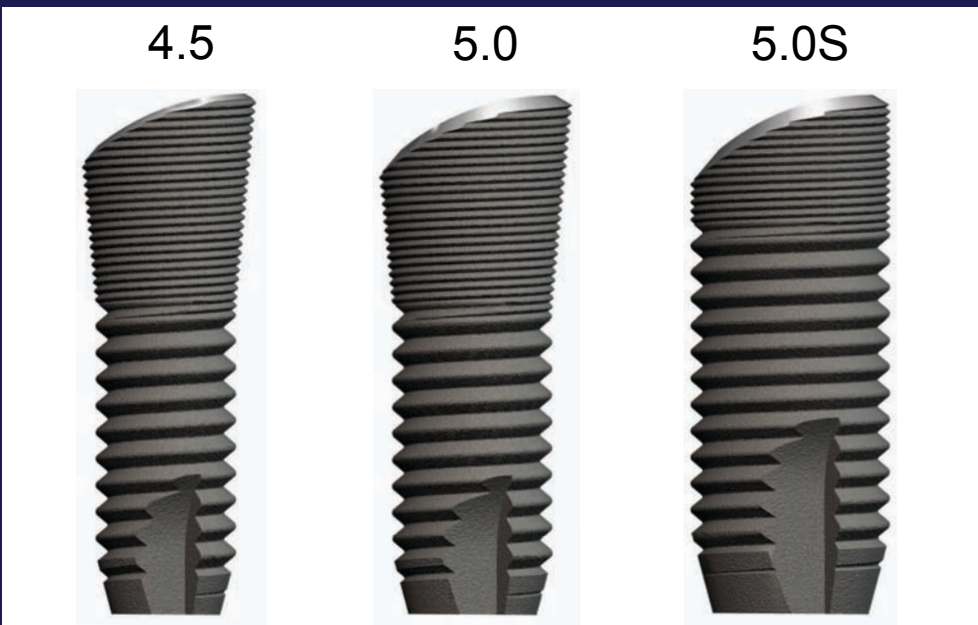


Fig. 1: Astra Tech OsseoSpeed™ Profile implant dimensions.

## Results

Mean primary stability at time of implant insertion was 24 Ncm; 3 further implants had to be excluded because of insufficient primary stability for immediate provisionalization (below 15 Ncm). Mean follow-up was 12 months (range 8 to 16 months). There was one implant loss. Cumulative survival rate according to Kaplan-Meier was 94.4%. Marginal bone levels remained stable from the time of implant insertion to the final follow-up. In 82% of the implant sites it was possible to keep the gingival esthetics stable or even to improve it from the pre-operative examination to the final follow-up.

## Conclusions

Results of survival rate, marginal bone stability and esthetic improvement suggest proof of principle for immediate provisionalization of Astra OsseoSpeed Profile implants.

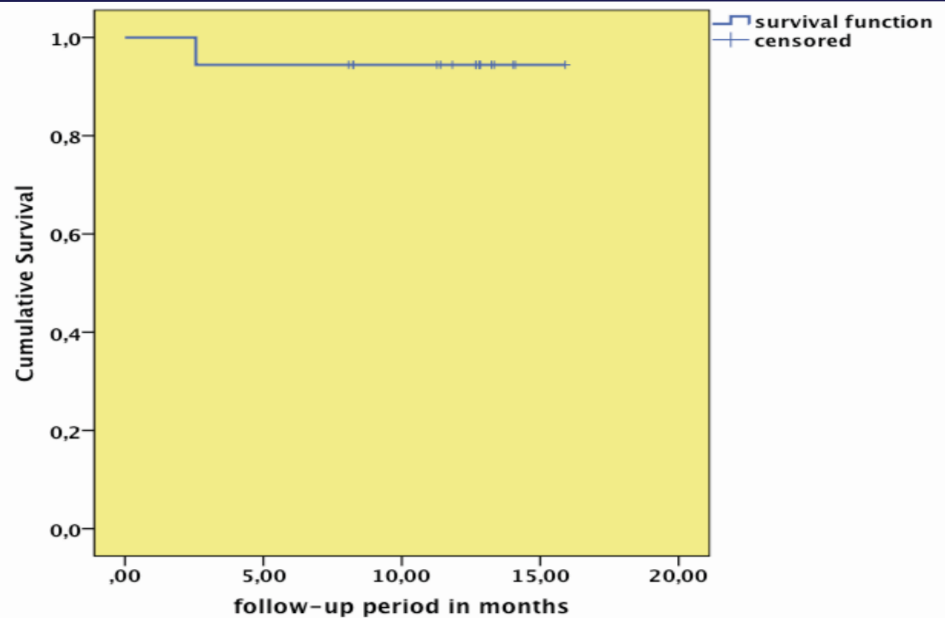


Fig. 2: Cumulative survival rate was 94.4% (range up to 16 months).

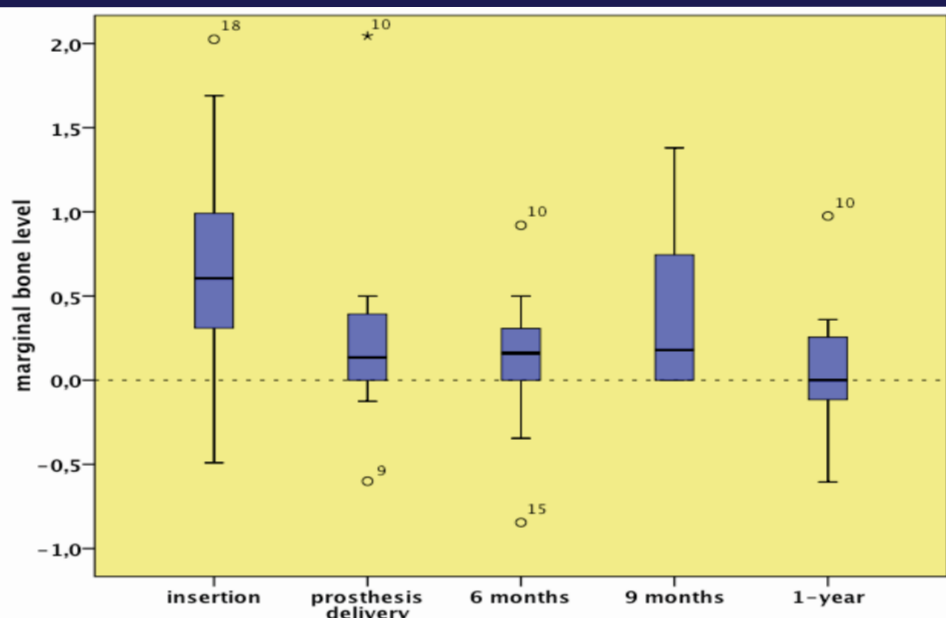


Fig. 3: Maintenance of marginal bone level at implant shoulder level.

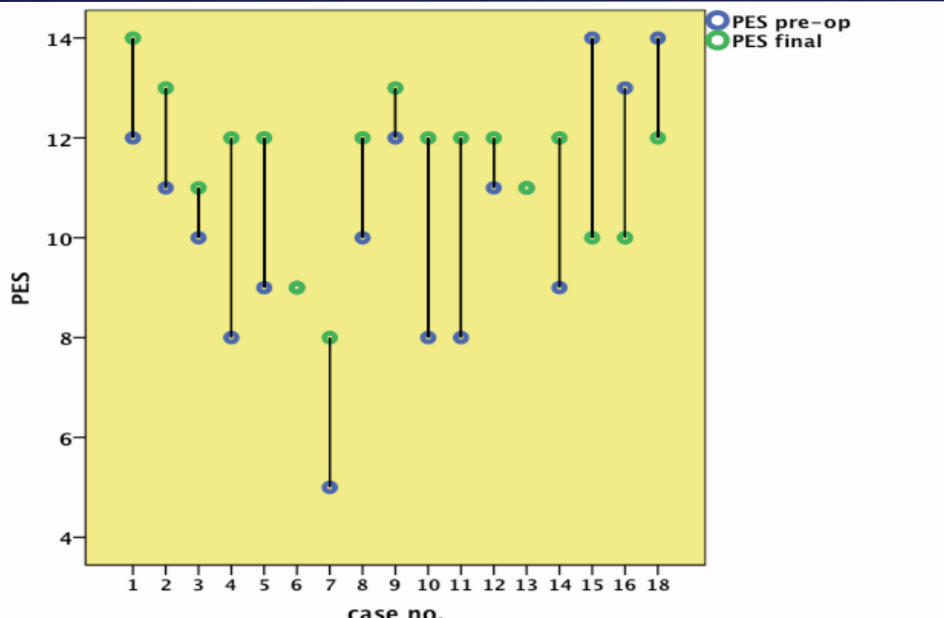


Fig. 4: Stable or improved PES ratings in 82% of the implant sites.



Fig. 5a: Occlusal view of pre-operative situation.

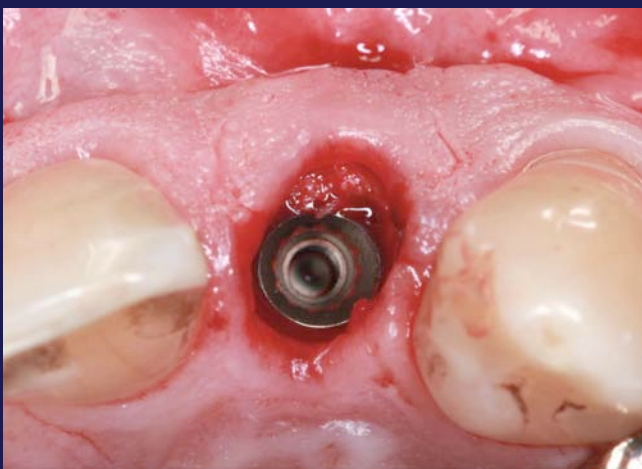


Fig. 5c: Grafting of facial defect with autogenous bone.

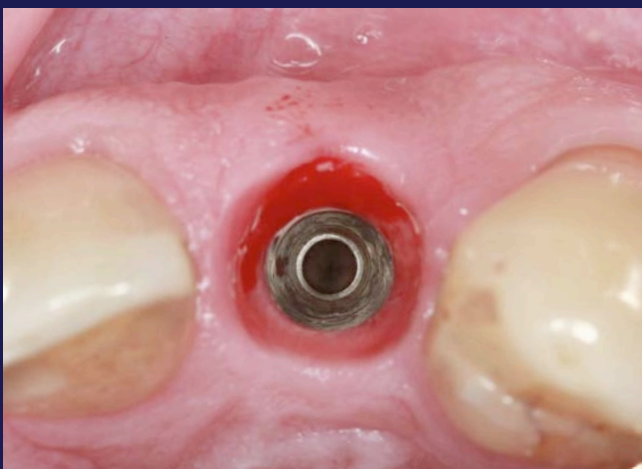


Fig. 5e: Emergence profile at final abutment delivery.



Fig. 5g: Maintenance of alveolar process contour at 1-

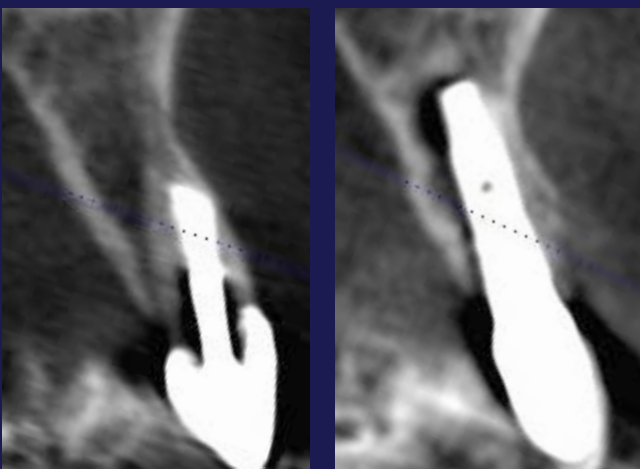


Fig. 5i & j: CB-CT pre-op and at 1-year.



Fig. 5b: Initial situation after post restoration and apectomy.



Fig. 5d: Immediate provisionalization and creeping attachment.



Fig. 5f: Delivery of ZirDesign abutment 3 months post-op.



Fig. 5h: Improvement of peri-implant mucosa at 1-year.

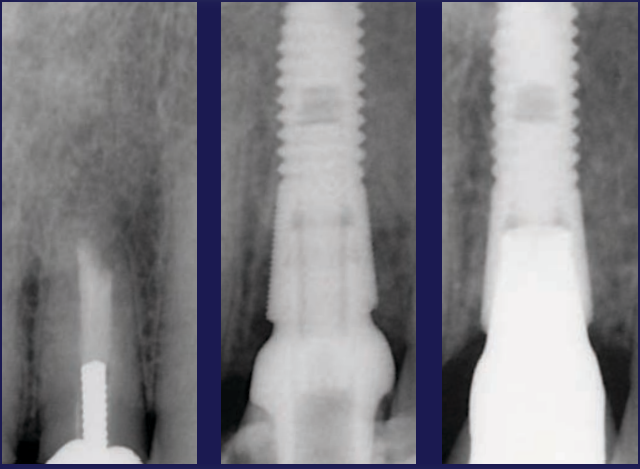


Fig. 5k, l & m: Radiographs pre-op, at insertion and at 1-year.



Fig. 6a: Occlusal view of pre-operative situation.

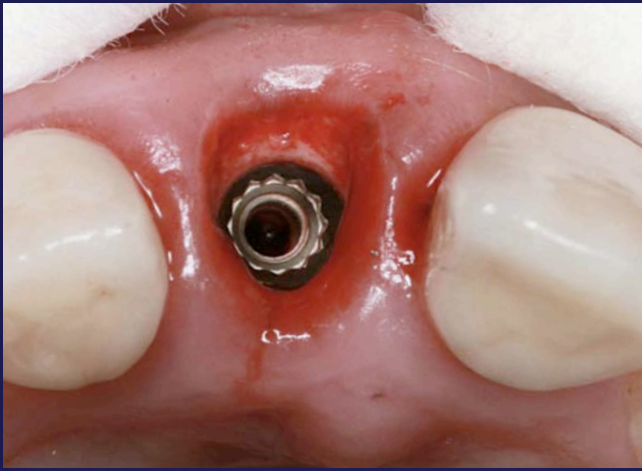


Fig. 6c: Immediate flapless reconstruction of facial defect.



Fig. 6e: Emergence profile at final abutment delivery.



Fig. 6g: Maintenance of alveolar process contour at 1-

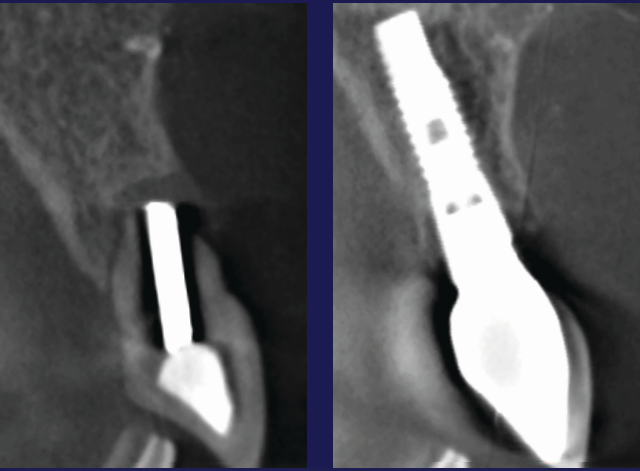


Fig. 6i & j: CB-CTs proof regeneration of facial bone wall.



Fig. 6b: Initial situation after apectomy and root fracture.



Fig. 6d: Provisionalization with under-contoured crown.



Fig. 6f: Delivery of ZirDesign abutment 4 months post-op.



Fig. 6h: Improvement of peri-implant mucosa at 1-year.

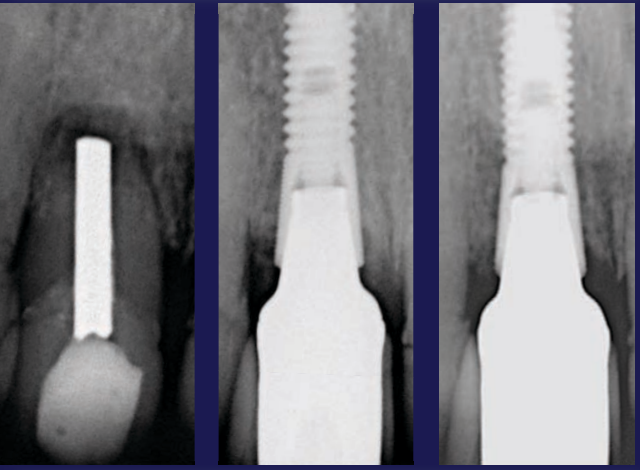


Fig. 6k, l & m: Radiographs pre-op, at insertion and at 1-year.

## References

- Noelken R, Donati M, Fiorellini J, Gellrich N-C, Parker W, Berglundh T. Maintenance of marginal bone support at OsseoSpeed Profile implants. Poster EAO #201, Glasgow 2010
- De Santis E, Botticelli D, Pantani F, Pereira FP, Beolchini M, Lang NP. Bone regeneration at implants placed into extraction sockets of maxillary incisors in dogs. Clin. Oral Impl. Res. 22, 2011; 430-7
- De Kok IJ, Chang SS, Moriarty JD, Cooper LF. A retrospective analysis of peri-implant tissue responses at immediate load/provisionalized microthreaded implants. Int J Oral Maxillofac Implants 2006; 21(3): 405-12

## Contact

Dr. Robert Noelken, private practice for oral surgery, Paradiesplatz 7 - 13,  
D - 88131 Lindau / Lake Constance, Germany, e-mail [noelken@me.com](mailto:noelken@me.com)