

# Long term follow-up of patients treated with OsseoSpeed™ implants in a private practice setting

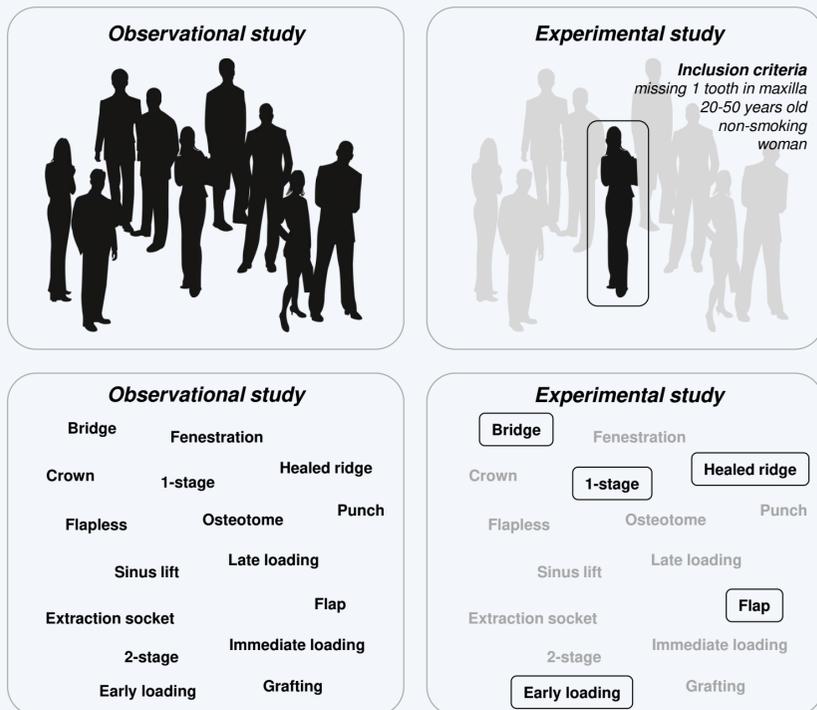
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Topic: Implant therapy outcomes, surgical aspects

## Background and aim

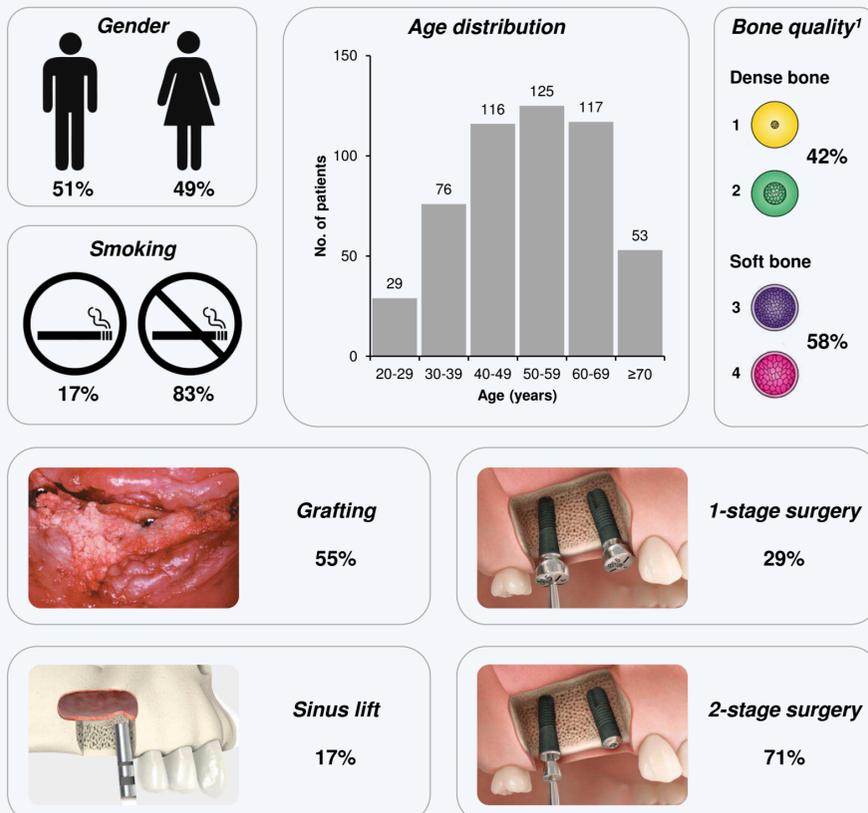
A great number of clinical studies published in the scientific literature describe implant therapy in well-defined study populations, treated according to strictly controlled study protocols (experimental studies). As a complement to this, larger and broader observational studies evaluating the typical implant patient and the outcome of routine implant therapy in clinical practice are needed (Figure 1). The aim of the current study was to evaluate the OsseoSpeed™ implant (ASTRA TECH Implant System™, DENTSPLY Implants, Mölndal, Sweden) when routinely used in a private practice setting.



**Figure 1.** Differences between experimental and observational studies. The current study is an observational study in which all patients treated with OsseoSpeed implants between June 2008 and February 2013 at the 4 participating clinics were included.

## Methods and Materials

Four dental clinics in Switzerland have retrospectively compiled data according to an established case report form from all patients who were treated with OsseoSpeed™ implants between June 2008 and February 2013. Information was collected from the time of implant installation, abutment surgery, delivery of permanent restoration and the following yearly control visits. At these follow-up visits, implant stability, plaque, bleeding on probing, patient satisfaction and complications were evaluated and registered. In addition, intra-oral radiographs were collected for evaluation of marginal bone level changes. The study is ongoing and the enrolled patients will continue to be followed-up annually.



**Figure 2.** Description of patients (518 subjects) and implant sites (931 implants placed)

## Results

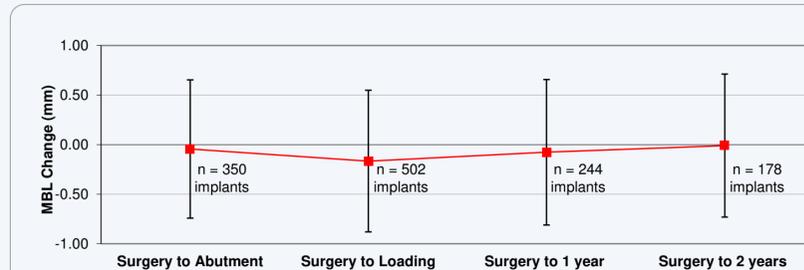
During the studied time period, 518 patients were treated with 931 OsseoSpeed™ implants at the four clinical practices. Patient population and implant sites are described in Figure 2.

Six implants were reported as failures, resulting in a cumulative survival rate of 99.3%. Four of the implants were lost before loading and 2 implants were lost due to peri-implantitis 4 and 7 months, respectively, after loading. The incidence of complications was low and the most commonly reported complications were extensive bone loss, which was reported around 15 implants (1.6%), and loose bridges or crowns, which were reported for 14 implants (1.5%) (Table 1). Up to now, 150 patients with a total of 281 implants have been followed for at least 2 years after loading. After 2 years in function, plaque was registered on 49% of the examined surfaces and bleeding on probing around 17% of the implants. All but one of the 150 patients were satisfied with the implant therapy. Analyses of intra-oral radiographs showed a mean marginal bone loss of 0.01 mm from implant installation to the 2-year follow-up visit (Figure 3).

**Table 1.** All complications reported in the study

Type of complication	n	% of placed implants
<b>Implant complications (n=6)</b>		
Implant failure	6	0.6%
<b>Abutment complications (n=18)</b>		
Abutment fractured	9	1.0%
Abutment/abutment screw loose	8	0.9%
Abutment screw fractured	1	0.1%
<b>Prosthetic complications (n=16)</b>		
Bridge/Crown loose	14	1.5%
Ceramic chipping/fracture	2	0.2%
<b>Other complications (n=20)</b>		
Bone loss	15	1.6%
Delayed healing	2	0.2%
Little soft tissue buccally	1	0.1%
Soft tissue hyperplasia	1	0.1%
Soft tissue recession	1	0.1%
<b>Surgical complications (n=3)*</b>		
Hematoma	1	0.1%
Minor dehiscence	1	0.1%
Sinus membrane perforation	1	0.1%

\* Registered during/in connection to implant surgery



**Figure 3.** Marginal bone level (MBL) changes from surgery (Mean ± 1 SD)

## Conclusions

This study will provide long-term clinical outcome data after implant treatment in patients routinely treated by clinicians in private clinical practices. So far, the results indicate a high implant survival rate, a low frequency of complications, stable marginal bone levels and a high rate of satisfaction with the implant therapy among the treated patients.

## References

1. Lekholm U, Zarb, G. Patient selection and preparation. Brånemark P-I, Zarb, G.A., Albrektsson, T., editor. Chicago: Quintessence; 1985.