

# Evaluation of OsseoSpeed™ 3.0 S implants

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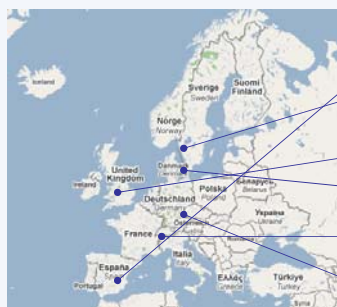
Topic: Implant and guided surgery

## Abstract

This study was initiated to evaluate 5-years survival for Astra Tech OsseoSpeed™ 3.0 S implant when replacing a single tooth in the anterior region. The implants were loaded 6 to 10 weeks after implant placement. This poster reports baseline data and complications for 69 patients (97 implants) and 6 months follow-up data for 44 patients (62 implants). During the 6 to 10 weeks healing period 5 implants were lost. No implants have been reported lost after loading. This clinical study is ongoing and sponsored by Astra Tech AB, Mölndal, Sweden.

## Background and Aim

In cases with limited space between adjacent teeth and roots, particularly in the anterior regions, there is a clinical need for using narrow diameter implants. This study was designed to evaluate the clinical performance of the newly developed Astra Tech OsseoSpeed™ 3.0 S implant with early loading (6 to 10 weeks after implants placement) in the anterior maxilla or mandible. 72 patients were recruited in 6 different study centre in Europe.



- Granada, Spain
- Jönköping, Sweden
- Bristol, UK
- Copenhagen, Denmark
- Milan, Italy
- Ulm, Germany

## Methods and Materials

This international multi-centre study was designed with specific inclusion and exclusion criteria. Patients missing a single tooth in positions 12, 22, 32, 31, 41 or 42 were eligible to the study. In cases where both contra laterals were missing, installation of two implants was allowed. The implants (OsseoSpeed™ 3.0 S, Astra Tech AB, Mölndal, Sweden) used in the study were of 3,0 mm diameter and 11, 13 or 15 mm lengths. One-stage surgery was utilised for all patients, and Healing abutments were used during the 6 to 10 weeks healing period. The crowns were cemented on standard titanium abutments (TiDesign™, Astra Tech AB, Mölndal, Sweden).

Main inclusion criteria were edentulism in the study area for at least 2 months and presence of natural tooth roots adjacent to the implant. Main exclusion criteria were smoking more than 10 cigarettes per day and a health status that would not allow implant placement. Primary variable in the study is implant survival 5 years after implant placement. Secondary variables are overall implant survival, implant success, implant stability, marginal bone level alterations, soft tissue status, gingival zenith score and safety. This is a baseline report of a 5-year follow-up study.



Figure 1: Implant installation



Figure 2: Placement of the crown

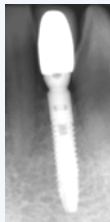


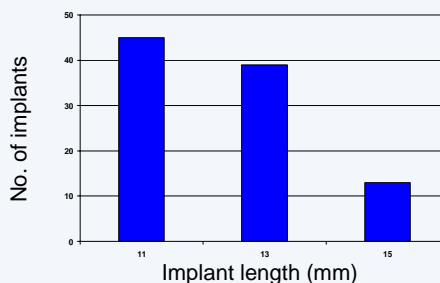
Figure 3: Radiograph taken at placement of the crown

## Results

The recruitment and treatment phase of study patients has been completed and all patients have entered the follow-up phase. 72 patients have been included in the study. The study population represents a wide variety of patients with respect to age (mean 32 years, maximum 72 and minimum 17 years), gender (52% male and 48% female) and smoking history (16% smokers, 13% previous smokers, 71% non smokers). Data for three patients have not been analyzed, two patients were excluded since they did not fulfill all eligibility criteria and one patient never showed up for the installation of the implant. In this analysis 69 patients with 97 implants were included.

Bone quantity	Bone quality					Total
	A	B	C	D	E	
1	1					1
2	20	28 (3)	13 (1)			61
3	9	22 (1)	1			32
4		3				3
<b>Total</b>	<b>30</b>	<b>53</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>97</b>

Number of implants (lost implants within parenthesis)



Complications are limited to 5 lost implants during the healing period, before loading of the implant (94.8% survival) and one fractured abutment (TiDesign™).

44 patients (62 implants) have carried out the 6 months follow-up visit and 5 patients (5 implants) have carried out the 1 year follow-up visit. No implants have been lost after placement of the crown (100% survival after loading).

## Conclusions

Early results from this clinical study indicate that treatment with OsseoSpeed™ 3.0 S implants is a safe and reliable treatment option in the anterior region when physical space is limited.

This is in line with a previous review article by Renouard and Nisand indicating that survival rates for narrow diameter implants are comparable to that of standard diameter implants, when used in appropriate indications. Moreover no relationship was found between marginal bone loss and implant diameter (1).

## References

1. Renouard F and Nisand D, Impact of implant length and diameter on survival rates, *Clin Oral Implants Res* 2006;17 Suppl 2:35-51