

Vanden Bogaerde L, Pedretti G, Sennerby L & Meredith N, 2010. 'Immediate/Early Function of Neoss Implants Placed in Maxillas and Posterior Mandibles: An 18-month Prospective Case Series Study'. Clin Implant Dent Relat Res, vol.12, Suppl.1, pp.e83-e94.

# Immediate/Early Function of Neoss Implants Placed in Maxillas and Posterior Mandibles: An 18-Month Prospective Case Series Study

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## ABSTRACT

*Background:* An increasing number of studies show that immediate/early function of dental implants can be as successful as two-stage procedures. However, the results may not be universal for all implant types and it is important that new implants are tested for this treatment modality.

*Purpose:* The aim was to evaluate an immediate/early function protocol in the maxilla and in the posterior mandible using Neoss implants (Neoss Ltd., Harrogate, UK).

*Materials and Methods:* A total of 21 patients were provided with 69 Neoss implants (4 mm in diameter and 9–15 mm in length) and a provisional bridge within 7 days (mean 4.6 days). Sixteen implants were placed in immediate extraction sites where seven were treated with autologous bone grafts ( $n = 6$ ) or bone grafts + resorbable membrane ( $n = 1$ ). A final fixed prosthesis was made 3 to 6 months later. The patients were followed-up with clinical examinations for 18 months. In addition, the implants were monitored with resonance frequency analysis (RFA) measurements at surgery and after 1, 2, and 6 months. Intraoral radiographs were taken after surgery and after 1, 6, and 18 months.

*Results:* One implant in an extraction site in the maxilla failed after 1 month, giving a survival rate of 98.5% after 18 months. The mean marginal bone loss was 0.7 mm (SD 0.7) after 18 months. RFA showed a mean implant stability quotient (ISQ) value of 68.1 (SD 8.8) at surgery, which increased to 73.7 (SD 5.7) after 6 months. The primary stability for maxillary and mandibular implants was similar, although mandibular implants showed slightly higher values with time. Implants in extraction sockets showed a lower initial stability than in healed sites, ISQ 65.8 (SD 7.5), which increased to ISQ 67.5 (SD 6.9) after 6 months. The failed implant showed an ISQ of 74 at placement, which decreased to 42 1 month after surgery.

*Conclusion:* Within the limitations of the present study, it is concluded that immediate/early function with Neoss implants is a reliable method with an implant survival rate comparable to that of the traditional two-stage protocol.

**KEY WORDS:** clinical study, dental implants, immediate/early function, radiography, resonance frequency analysis

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