Marginal Bone Loss Evaluation Around Immediate Non-Occlusal Microthreaded Implants Placed in Fresh Extraction Sockets in the Maxilla: A 3-Year Study

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Objective
To evaluate marginal bone loss over 3 years around immediate microthreaded implants placed in the maxillary anterior/esthetic zone and immediately restored with single crowns.

Material and methods
Seventy-one SEVEN® implants (with microthreads up to the platform – rough surface body and neck, internal connection and platform switching) were placed in fresh extraction sockets in the maxillary arches of 30 men and 23 women (mean age 37.85 ± 7.09 years, range 27–60). All subjects had at least 3mm of soft tissue to allow the establishment of adequate biologic width and to reduce bone resorption. Each patient received a provisional restoration immediately after implant placement with slight occlusal contact. Mesial and distal bone height was evaluated using digital radiography on the day following implant placement (baseline) and after 1, 2 and 3 years. Primary stability was measured with resonance frequency analysis.

Results
No implants failed, resulting in a cumulative survival rate of 100% after 3 years. Marginal bone loss from implant collar to bone crest measured at baseline (peri-implant bone defect at the fresh extraction socket) and after 3 years was 0.86mm ± 0.29mm. Mesial and distal site crestal bone loss ranged from 3.42mm ± 1.2mm at baseline to 3.51mm ± 1.5mm after 3 years (P = 0.063) and from 3.38mm ± 0.9mm at baseline to 3.49mm ± 0.9mm after 3 years, respectively (P = 0.086).

Conclusions
This prospective study found minimal marginal bone loss and a 100% implant survival rate over the 3-year follow-up for microthreaded immediate implants subjected to immediate non-occlusal loading.