

# A longitudinal study of the survival of All-on-4 implants in the mandible with up to 10 years of follow-up

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**Background:** Immediate-function implants have become an accepted alternative for fixed restoration protocols in edentulous mandibles on the basis of documented high success rates. The All-on-4 concept (Nobel Biocare, Göteborg, Sweden), a surgical and prosthetic protocol for immediate function involving the use of four implants to support a fixed prosthesis in patients with completely edentulous mandibles, represents one of these protocols. The authors conducted a study to document long-term follow-up of the All-on-4 concept.

**Methods:** This longitudinal study included 245 patients with a total of 980 immediate-function implants (four per patient), all placed in the anterior region, to support fixed full-arch mandibular prostheses. The inclusion criterion was having an edentulous mandible, or a mandible with hopeless teeth, in need of fixed implant restorations.

**Results:** A total of 21 implants failed in 13 patients, giving cumulative patient-related and implant-related success rates of 94.8 percent and 98.1 percent, respectively, at five years, and 93.8 percent and 94.8 percent, respectively, with up to 10 years of follow-up. The prostheses' survival rate was 99.2 percent with up to 10 years of follow up.

**Conclusions:** The results support the conclusion that use of the All-on-4 immediate-function implant concept in completely edentulous mandibles is viable in the long term.

**Clinical implications:** High prosthesis survival rates can be achieved by the use of four implants to support a full-arch fixed prosthesis in the mandible.

**Key Words:** Dental implants; implant angulations; complete arch; immediate load; mandible. JADA 2011; 142(3): 310-320.