

Implant Survival Rate with Geistlich Bio-Oss®

This systematic review of relevant articles from refereed journals between 1980 and 2005 was conducted to identify the most successful technique to provide the necessary alveolar bone to place a dental implant and support long term survival.

Clinical success of Geistlich Bio-Oss®: As a highly osteoconductive biomaterial, Geistlich Bio-Oss® has been shown to promote grafts that maintain structural integrity and sustain increasing vital bone formation over time. The long-term presence of Geistlich Bio-Oss® granules stabilizes the graft, leading to the retention of both volume and the desired form of augmented sites. Furthermore, bone mineral density is also increased. As a result of this, Geistlich Bio-Oss® grafted sites provide an ideal environment for long-term implant survival.

Which hard tissue augmentation techniques are the most successful in furnishing bony support for implant placement?

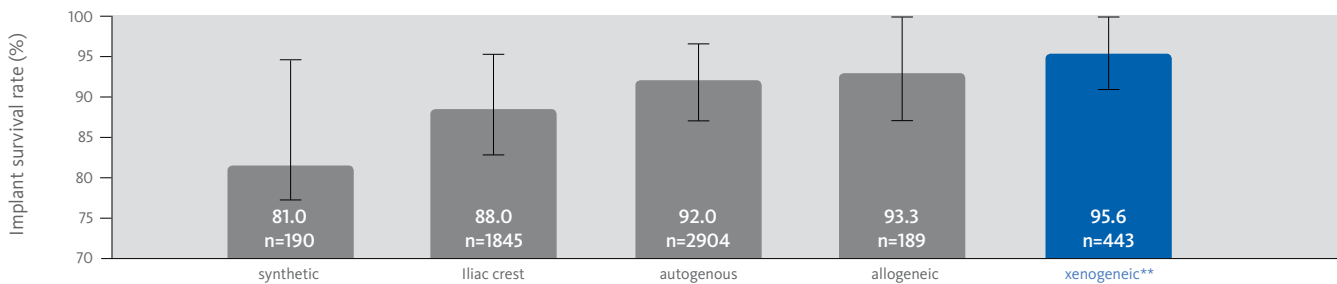
Aghaloo, T. L. and P. K. Moy (2007) • Int J Oral Maxillofac Implants 22(Suppl): 49-70.

Purpose: A variety of techniques and materials have been used to establish the structural base of osseous tissue for supporting dental implants. The aim of this systematic review was to identify the most successful technique(s) to provide the necessary alveolar bone to place a dental implant and support long-term survival. **Methods:** A systematic online review of a main database and manual search of relevant articles from refereed journals were performed between 1980 and 2005. Updates and additions were made from September 2004 to May 2005. The hard tissue augmentation techniques were separated into 2 anatomic sites, the maxillary sinus and alveolar ridge. Within the alveolar ridge augmentation technique, different surgical approaches were identified and categorized, including guided bone regeneration (GBR), onlay/veneer grafting (OVG), combinations of onlay, veneer, interpositional inlay grafting (COG), distraction osteogenesis (DO), ridge splitting (RS), free and vascularized autografts for discontinuity defects (DD), mandibular interpositional grafting (MI), and socket preservation (SP). All identified articles were evaluated and screened by 2 independent reviewers to meet strict inclusion criteria. Articles meeting the inclusion criteria were further evaluated for data extraction. The initial search identified a total of 526 articles from the electronic database and manual search. Of these, 335 articles met the inclusion criteria after a review of the titles and abstracts. From the 335 articles, further review of the full text of the articles produced 90 articles that provided sufficient data for extraction and analysis.

Results: For the maxillary sinus grafting (SG) technique, the results showed a total of 5,128 implants placed, with follow-up times ranging from 12 to 102 months. Implant survival was 92% for implants placed into autogenous and autogenous/composite grafts, 93.3% for implants placed into allogeneic/nonautogenous composite grafts, 81% for implants placed into alloplast and alloplast/xenograft materials, and 95.6% for implants placed into xenograft materials alone. For alveolar ridge augmentation, a total of 2,620 implants were placed, with follow-up ranging from 5 to 74 months. The implant survival rate was 95.5% for GBR, 90.4% for OVG, 94.7% for DO, and 83.8% for COG. Other techniques, such as DD, RS, SP, and MI, were difficult to analyze because of the small sample size and data heterogeneity within and across studies.

Conclusion: The maxillary sinus augmentation procedure has been well documented, and the long-term clinical success/survival (> 5 years) of implants placed, regardless of graft material(s) used, compares favorably to implants placed conventionally, with no grafting procedure, as reported in other systematic reviews. Alveolar ridge augmentation techniques do not have detailed documentation or long-term follow-up studies, with the exception of GBR. However, studies that met the inclusion criteria seemed to be comparable and yielded favorable results in supporting dental implants. The alveolar ridge augmentation procedures may be more technique- and operator-experience-sensitive, and implant survival may be a function of residual bone supporting the dental implant rather than grafted bone. More in-depth, long-term, multicenter studies are required to provide further insight into augmentation procedures to support dental implant survival.

Implant survival rates with Geistlich Bio-Oss®



**Note: The 22 studies with xenogeneic material were carried out with Geistlich Bio-Oss®

DOCUMENTED: More than 900 publications
RELIABLE: More than 25 years of clinical experience
EXPERIENCED: 160 years of Geistlich collagen competence

CAUTION: Federal law restricts these devices to sale by or on the order of a dentist or physician.

Indications:

Geistlich Bio-Oss® is indicated for the following uses: Augmentation or reconstructive treatment of the alveolar ridge; Filling of periodontal defects; Filling of defects after root resection, apicoectomy, and cystectomy; Filling of extraction sockets to enhance preservation of the alveolar ridge; Elevation of the maxillary sinus floor; Filling of periodontal defects in conjunction with products intended for Guided Tissue Regeneration (GTR) and Guided Bone Regeneration (GBR); and Filling of peri-implant defects in conjunction with products intended for GBR.

Warnings:

Possible complications which may occur with any surgery include swelling at the surgical site, flap sloughing, bleeding, local inflammation, bone loss, infection or pain.

For more information on contraindications, precautions, and directions for use, please refer to the Geistlich Bio-Oss® Instructions for Use at: www.geistlich-na.com/ifu

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