

# Guided Bone Regeneration in the Atrophic Posterior Mandible: Clinical Outcomes of a Staged Implant Placement Protocol

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## Abstract

**Background:** Implant rehabilitation of the atrophic posterior mandible is frequently limited by insufficient bone volume, requiring regenerative procedures prior to or alongside implant placement. **Objectives:** This paper evaluates the clinical outcomes of a staged guided bone regeneration (GBR) protocol using resorbable membranes and particulate xenograft prior to implant placement. **Methodology:** A retrospective evaluation of consecutively treated patients, assessing ridge dimension changes, implant survival, and peri-implant tissue health over follow-up. **Key findings:** Staged GBR achieved predictable horizontal ridge augmentation and high implant survival, with stable peri-implant marginal bone levels. **Conclusions:** A staged, biologically driven GBR protocol supports predictable implant rehabilitation in the atrophic posterior mandible.