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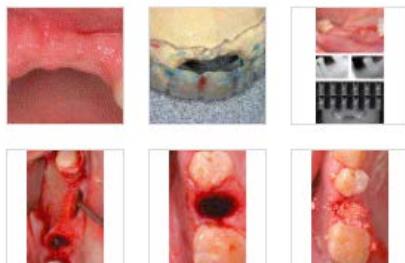
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 **Original Article**

A Review on Alveolar Ridge Preservation Following Tooth Extraction

Robert Horowitz DDS^a, Danny Holtzclaw DMD, MS^b, Paul S. Rosen DMD, MS^{c,d}[Show more](#)[https://doi.org/10.1016/S1532-3382\(12\)70029-5](https://doi.org/10.1016/S1532-3382(12)70029-5)[Get rights and content](#)**Abstract**

Context The question that clinicians face is whether the use of bone replacement grafts and/or barrier membranes enhance their ability to provide for the future placement of a dental implant or to maximize ridge dimensions following the extraction of a tooth versus no additional treatments.

Evidence Acquisition The evidence was obtained by search of Entrez PubMed and manual search of The International Journal of Oral and Maxillofacial Implants, The International Journal of Periodontics & Restorative Dentistry, Clinical Oral Implant Research, The Journal of Periodontology, The Journal of Clinical Periodontology, and The Compendium of Continuing Education in Dentistry. Key search words included Guided Bone Regeneration, Dental Extraction, Tooth Extraction, Bone Replacement Graft, Alveolar Ridge. The years of search included from January 2011 through February 2012.

Evidence Synthesis The recurring theme was that there was considerable heterogeneity to study designs, time periods, and methods of evaluation. This created great difficulty in trying to answer with good high-quality evidence questions about the techniques and materials to be used for maximizing

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regeneration at the time of tooth extraction or in which situations this ought to be used.

Conclusions There appears to be consensus from the reviewed literature supporting ridge preservation techniques as a whole. Multiple studies demonstrated less ridge resorption occurring when alveolar ridge preservation procedures were used versus the placement of no graft material in fresh alveolar sockets. The analysis did not show any grafting materials demonstrating a clear benefit over any others or that a barrier membrane is necessary. The evidence is also too premature about whether **socket preservation** efforts require primary closure. In the emerging area of growth factors, there is no high-quality evidence to either support or refute their use.

Background Tooth extraction is one of the most widely performed procedures in dentistry today and it has been historically well documented that this procedure may induce significant dimensional changes of the alveolar ridge. The dilemma that clinicians face is how to manage tooth extractions to provide for the future placement of a dental implant or to maximize ridge dimensions for the fabrication of a fixed or removable prosthesis. If performed inadequately, the resulting deformity can be a considerable obstacle to the esthetic, phonetic, and functional results that both our patients and we clinicians expect at this current time.



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Keywords

Periodontics; tooth extraction; oral surgical procedures; oral surgical procedures; preprosthetic; alveolar ridge augmentation; dental implants; guided bone regeneration

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