

Evolution of Sinus Floor Augmentation - Past, Present, and Future Perspectives

Yung-Ting Hsu,¹ DDS, MDSc, MS, PhD, and Tiziano Testori,² MD, DDS, FICD

1. Department of Periodontics, University of Washington School of Dentistry, Seattle, WA
2. Department of Periodontics and Oral Medicine, University of Michigan, School of Dentistry

ORCID IDs

0000-0002-0439-5578 Yung-Ting Hsu

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as doi: [10.1111/cid.70074](https://doi.org/10.1111/cid.70074)

This article is protected by copyright. All rights reserved.

Editorial: Advances in Sinus Floor Augmentation for Maxillary Posterior Reconstruction

Reconstructing the posterior maxilla remains a significant clinical challenge, primarily due to insufficient alveolar ridge height. Over the past few decades, sinus floor augmentation techniques—via both lateral and vertical approaches—have become tools for facilitating implant placement in this anatomically complex region. With careful patient selection and meticulous surgical execution, these procedures have demonstrated high implant survival rates and predictable clinical outcomes, despite an inherent risk of complications. For many clinicians, encountering a patient with less than 4 mm of residual bone height in the posterior maxilla presents a pivotal decision point: Can we rebuild here—reliably and safely? If so, which technique and graft materials should I use? Will biologics help?

In this issue, leading experts offer a comprehensive overview of contemporary sinus floor elevation techniques. The collection addresses critical considerations ranging from anatomical factors influencing treatment planning to technique selection, contributing outcome variables, grafting materials, complication management, and alternative solutions. Together, these contributions reflect the current landscape and evolving direction of maxillary sinus augmentation.

This issue is designed as a practical resource for clinicians involved in the rehabilitation of the atrophic posterior maxilla. It equips readers with critical insights into case selection criteria and the nuanced indications for each sinus augmentation approach. A detailed review of sinus anatomy and relevant radiographic assessments provides essential guidance for determining the suitability of vertical versus lateral approaches. For each technique, the authors offer evidence-based evaluations of clinical efficacy, success rates, and biological and biomechanical considerations. Additional reviews compare graft materials and biologics to help guide clinicians in their material selection. Equally important, the issue includes a focused discussion on the diagnosis and management of complications, which are critical for ensuring long-term treatment success. Given the anatomical complexity of the maxillary sinus and the potential for complications, collaboration among multidisciplinary teams—particularly between implant surgeons and otolaryngologists—is essential. Such collaboration enhances surgical outcomes and ultimately supports the long-term success of posterior maxillary reconstruction.

Importantly, this special issue will be valuable for both experienced surgeons and novice clinicians alike, as they will find the latest evidence to better treat their patients and refine their decision-making processes. Moreover, the readers will benefit from practical tips that can be applied during different phases of the treatments, from preoperative planning through surgical execution and postoperative patient management.

The overarching goal of this issue is to provide clinicians with a comprehensive understanding of current sinus augmentation techniques and materials while also highlighting future directions for research and clinical innovation. By understanding the strengths and limitations of each approach, we hope to empower practitioners to make informed decisions and achieve optimal patient outcomes.

Finally, we extend our sincere appreciation to all the contributing authors and co-authors for their commitment to advancing clinical knowledge and improving care for patients in need.