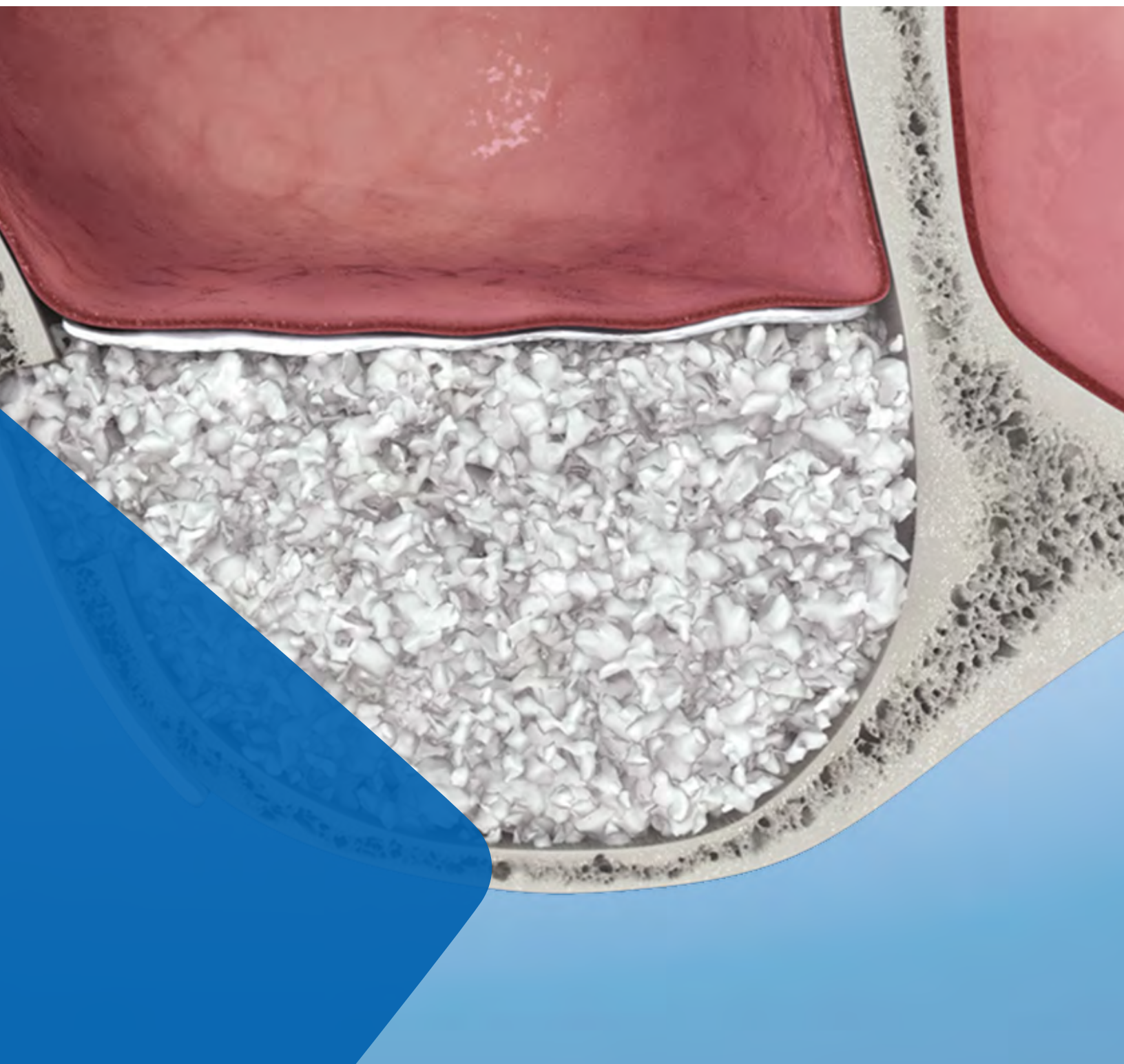


LEADING REGENERATION

**Geistlich**  
Biomaterials

# Sinus Floor Elevation



## Overview

Following the loss of a premolar or molar, posterior maxilla bone height is often insufficient for implant placement. A sinus floor elevation procedure creates additional bone height, either via a transcrestal or lateral window approach.

Sinus augmentation procedures can be conducted before implant placement (two-stage surgery) or simultaneously (single surgery). The posterior maxilla residual bone and sinus anatomy must be analyzed prior to planning the procedure and determining the timing of implant placement.

Residual bone height >6-12 mm

- › Transcrestal or lateral window technique simultaneous or staged implant placement

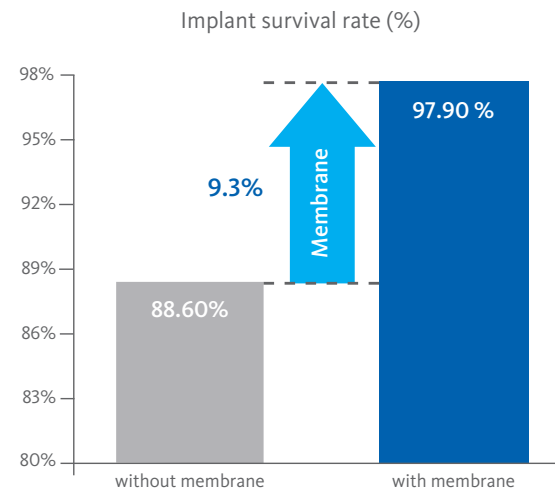
Residual bone height <6 mm

- › Lateral window technique second-stage surgery

## More Than 200 Sinus Augmentation Studies Document Predictable Outcomes Achieved with Geistlich Products<sup>1</sup>

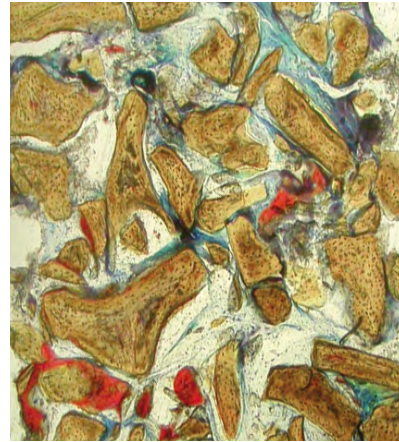
Evidence indicates that xenogeneous materials result in superior long-term results in sinus floor elevation compared to autologous bone chips<sup>2</sup>. Application of a membrane such as Geistlich Bio-Gide<sup>®</sup> increases implant survival rate significantly<sup>3</sup>. Geistlich Bio-Gide<sup>®</sup> can also be placed in the sinus to protect a perforated Schneiderian membrane during the surgical procedure and subsequent post-operative healing.

## More Bone Volume and Improved Bone Quality Lead to a Higher Implant Survival Rate<sup>4</sup>



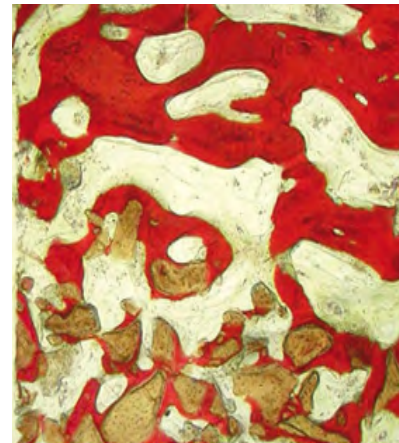
By using a membrane for sinus floor elevation, the implant survival rate is significantly increased by 9.3% (meta-analysis in humans).<sup>5</sup>

### Increase in New Bone Formation Within Sinus Floor Elevation When Geistlich Bio-Gide<sup>®</sup> is Used



#### Without a Membrane

Connective tissue encapsulation of Geistlich Bio-Oss<sup>®</sup>



#### With Geistlich Bio-Gide<sup>®</sup>

Complete osseointegration of Geistlich Bio-Oss<sup>®</sup> (Red: New bone, Yellow: Geistlich Bio-Oss<sup>®</sup> particles, White: Connective tissue/bone marrow)  
Courtesy of: Dr. Michael R. Norton  
London, England

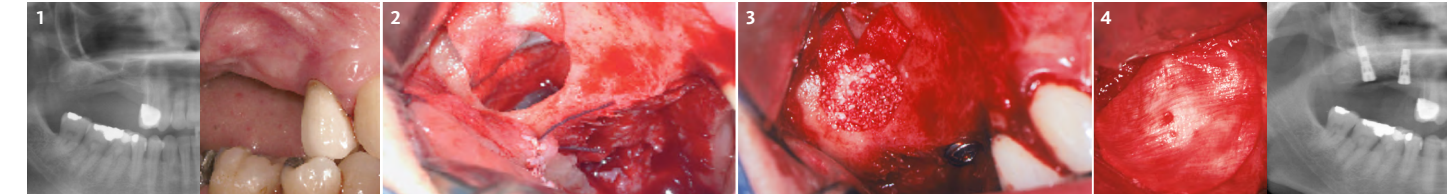
## Case Documentation

### ▶ Sinus Floor Augmentation with Lateral Access

Dr. Pascal Valentini, Corsica, France

#### Objectives

- › Clinical procedure for one and two-stage procedure without the use of bone
- › Tips and tricks for preparing the lateral window, dealing with perforations of the Schneiderian membrane or with septa



1 Clinical situation pre-operatively. Atrophied posterior maxilla with insufficient bone height (<2-3 mm).

2 A lateral window is carefully prepared. A perforation of the Schneiderian membrane that occurred during surgery is covered with Geistlich Bio-Gide<sup>®</sup>.

3 Geistlich Bio-Oss<sup>®</sup> completely fills the lateral window aligned with the buccal bone wall.

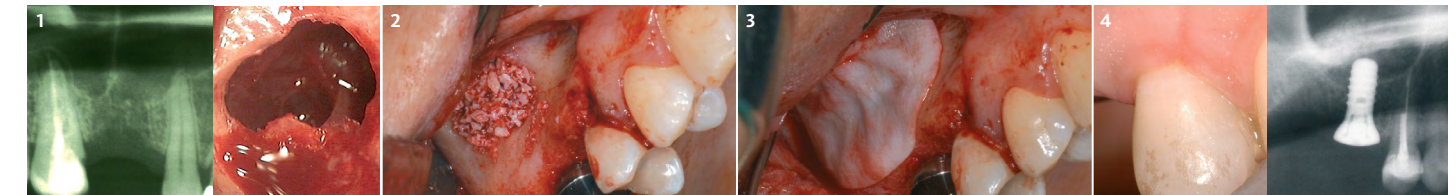
4 The lateral window is covered with a Geistlich Bio-Gide<sup>®</sup> membrane. Post-operative radiograph shows the augmented region and the implants inserted.

### ▶ Lateral Sinus Elevation with a Bone Septa in the Implantation Region

Dr. Beat Walkamm, Langenthal, Switzerland

#### Objectives

- › If there is a bone septum in the region of the implantation site, the bony window must be removed completely in every case



1 The radiograph displays a septum in the implantation region. Membrane preparation: 2 spaces are prepared mesial and distal to the septum.

2 The cavity is filled with a Geistlich Bio-Oss<sup>®</sup> bone mixture. A fine periosteal elevator is used to insert the material which adheres very well to the instrument when mixed with blood. The implant is placed.

3 The lateral fenestration is covered with Geistlich Bio-Gide<sup>®</sup>.

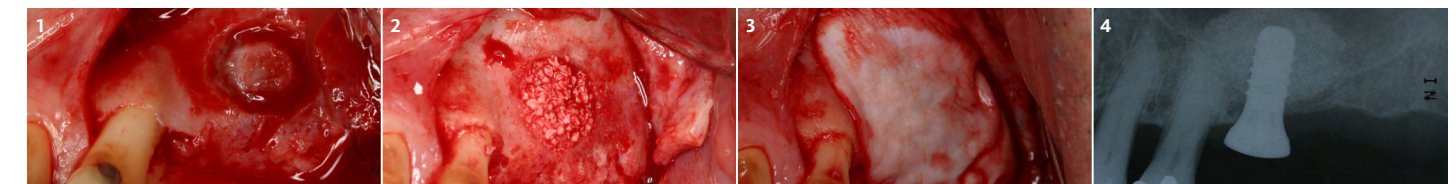
4 Clinical healing at ten days. Radiographic image of implant placement.

### ▶ Lateral Window Sinus Augmentation to Accommodate Single Implant Placement

Dr. Andrew Chapokas, San Diego, CA, USA

#### Objectives

- › Single implant and restoration to replace the maxillary left first molar
- › Sinus pneumatization with approximately 2 mm of remaining bone in the area of interest for implant placement
- › Lateral window approach to create adequate bone volume for implant placement



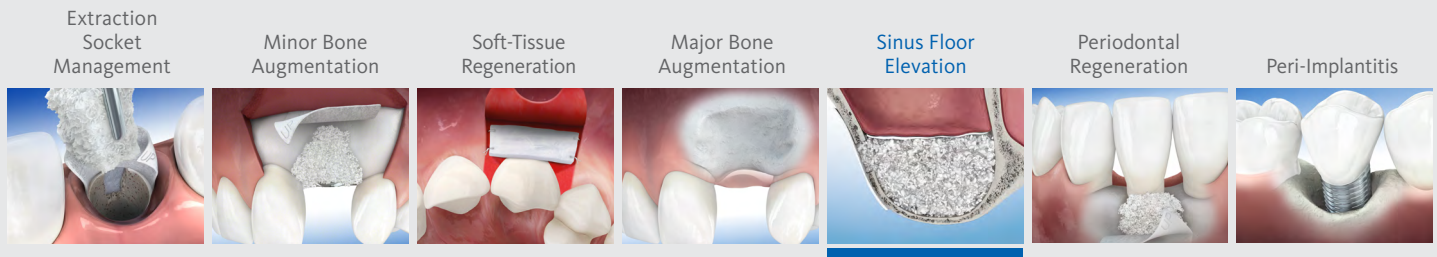
1 The buccal mucoperiosteal flap with the initial osseous outline of the lateral window osteotomy to facilitate the sinus augmentation.

2 Placement of Geistlich Bio-Oss<sup>®</sup> after the Schneiderian membrane reflection limited to the maxillary left first molar region.

3 Placement of Geistlich Bio-Gide<sup>®</sup> over the osteotomy and sinus graft.

4 Post-operative radiograph of implant placement into the maxillary sinus graft, following 8 months of healing.

For additional information on [Sinus Floor Elevation](#), please visit the dental professional section of our website: [www.geistlich-na.com](http://www.geistlich-na.com)



## Therapeutic Areas

At Geistlich Biomaterials, we are committed to developing treatments that are uniquely matched to the clinical situations you see every day. That's why we do more than bring you a family of products – we provide proven solutions in specific therapeutic areas.

The recommended Geistlich products below are the ideal biomaterials for use in **Sinus Floor Elevation** procedures.

### Recommended Products for Sinus Floor Elevation

#### BONE SUBSTITUTES

Geistlich  
**Bio-Oss®**



Geistlich  
**Bio-Oss Pen®**



#### MEMBRANES

Geistlich  
**Bio-Gide®**



### The Ideal Geistlich Biomaterials for Sinus Floor Elevation

When used in combination, these proven and reliable products provide a foundation for long-term clinical success in regenerative dentistry.

Geistlich Bio-Oss® provides a stable scaffold for bone formation leading to long-term volume preservation, while Geistlich Bio-Gide® ensures undisturbed bone regeneration and prevents soft-tissue ingrowth.

For additional information about Sinus Floor Elevation, please visit the Dental Professional section of our website: [www.geistlich-na.com](http://www.geistlich-na.com)

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

For information on indications, contraindications, precautions, and directions for use, please refer to the Geistlich Bio-Oss® and Geistlich Bio-Gide® Instructions for Use at: [www.geistlich-na.com/ifu](http://www.geistlich-na.com/ifu)

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- 1 Pubmed. (2013). Search term "Bio-Oss" and "Sinus".
- 2 Aghaloo, TL. et al. (2008). Int J Oral Maxillofac Implants. 23(1): 56.
- 3 Pjetursson, BE. et al. (2008). J Clin Periodontol. 35(8 Suppl): 216-40.
- 4 Chen, S. et al. (2011). ITI Treatment Guide. Vol 5, Quintessenz Publishing.
- 5 Misch, CE. (1990). Int Oral Implantol. 7(1): 9-17.