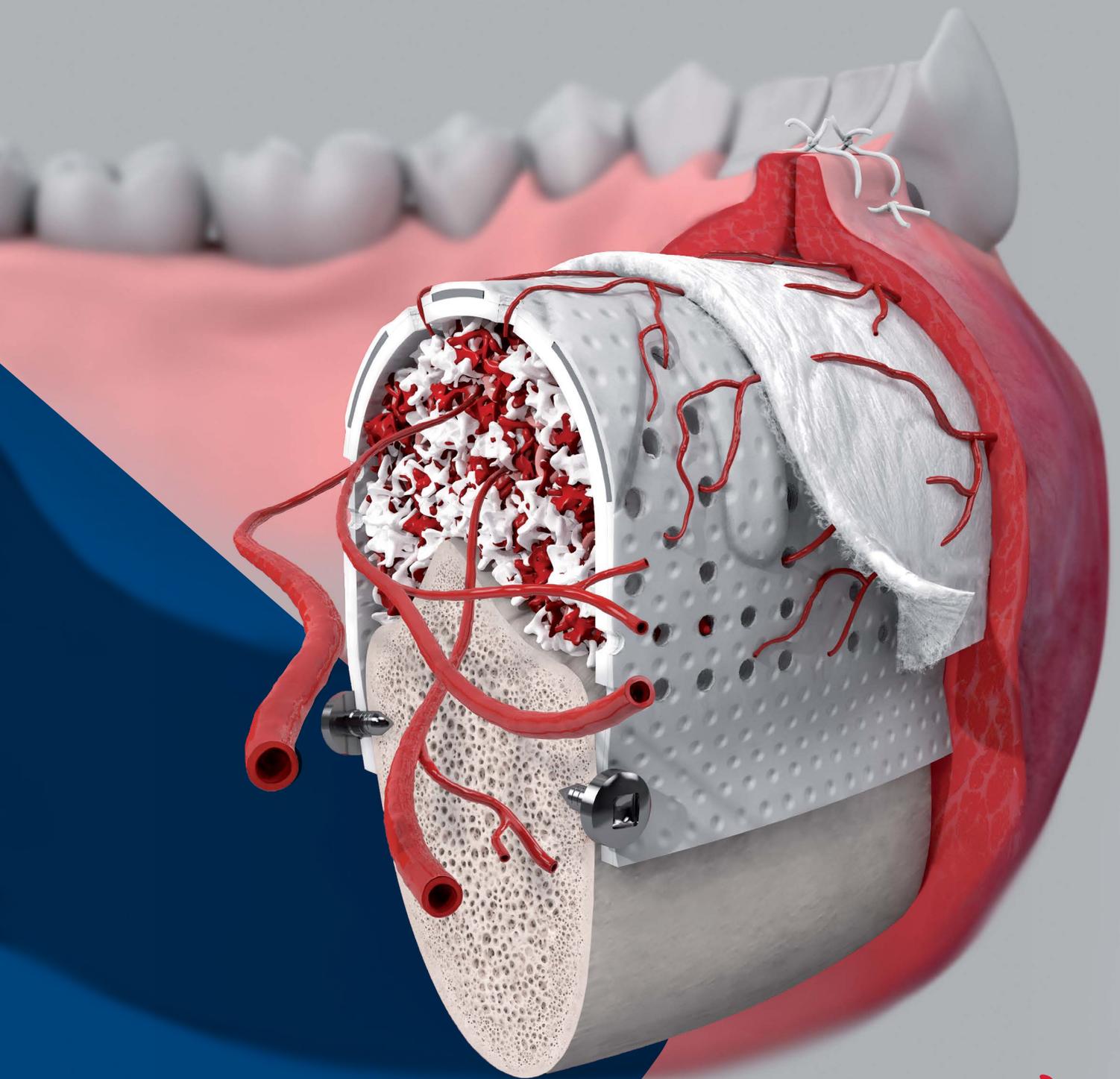


LEADING REGENERATION

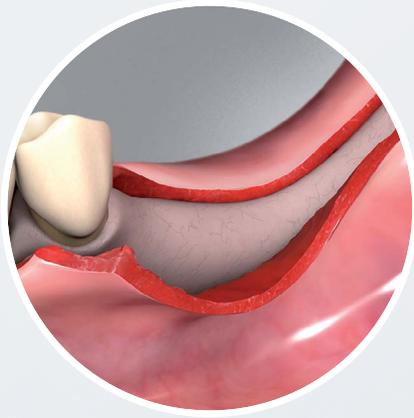
**Geistlich**  
Biomaterials

# Reinforce, Revascularize, Regenerate



**RPM**  
reinforced pte mesh

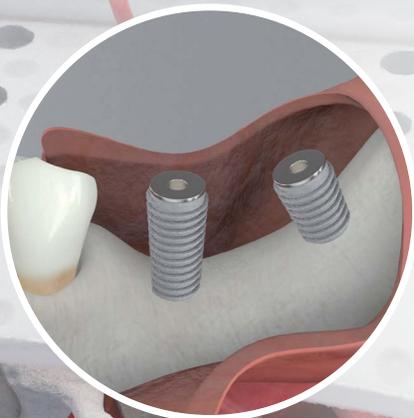
## ... and the consequences if no appropriate measures are taken



- > Collapse of non-reinforced membranes alone will result in insufficient bone volume<sup>1</sup>
- > Space making ability is key for vertical bone augmentation<sup>1</sup>



- Conventional PTFE barrier membranes represent an established approach to rebuild vertical height<sup>1</sup>, but:
- > Do not allow revascularization from the surrounding periosteum<sup>5</sup>



- > Placing an implant in the available bone, but not in the correct prosthetic position, can compromise the long-term success<sup>6</sup>
- > Bone regeneration using fast resorbing biomaterials can compromise the extent of bone volume maintenance<sup>7</sup> and long-term success<sup>8</sup>

## Facing challenges with vertical augmentations . . .



### Stability

- > Vertical defects are difficult to treat and stabilize<sup>1</sup>
- > Space-making elements are required<sup>1</sup>



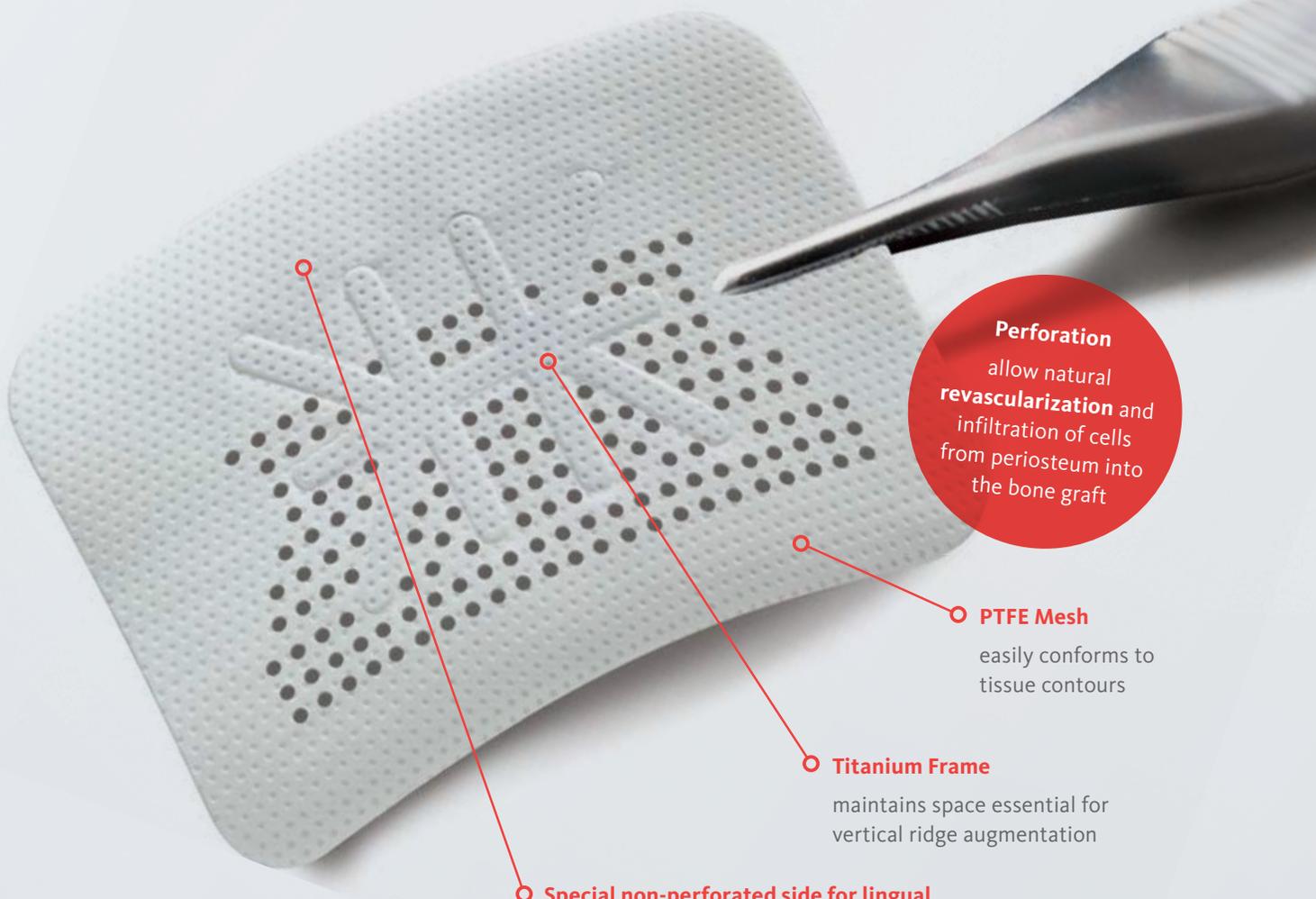
### Vascularization

- > Larger bone volumes are challenging to revitalize<sup>2</sup>
- > Complete vascularization of the graft is key for new bone formation<sup>1</sup>



### Bone Volume

- > Insufficient bone volume may not allow proper implant placement and proximity to the mandibular nerve is challenging<sup>3</sup>
- > Esthetic: additional bone augmentation is required in 90% of implant surgical sites<sup>4</sup>



**Perforation**  
allow natural **revascularization** and infiltration of cells from periosteum into the bone graft

**PTFE Mesh**  
easily conforms to tissue contours

**Titanium Frame**  
maintains space essential for vertical ridge augmentation

**Special non-perforated side for lingual**  
Designed to decrease soft tissue ingrowth facilitating easier removal



### Geistlich Bio-Gide®

#### Revascularization

The natural collagen structure of Geistlich Bio-Gide® permits prompt and homogeneous vascularization and offers optimal tissue integration and wound stabilization.<sup>9</sup>

#### Prevents soft tissue ingrowth

The smooth side of Geistlich Bio-Gide® prevents soft tissue from growing into the defect and serves as a scaffold for the attachment of fibroblasts.<sup>9, 10, 11, 12, 13</sup>

#### Soft tissue assurance

Potential exposures can be anticipated. By covering the non-resorbable mesh with Geistlich Bio-Gide® you can obtain better soft tissue healing.<sup>11, 14</sup>



### Geistlich Bio-Oss®

#### Bimodal pore structure<sup>15</sup>

This characteristic initiates high level bone formation on the surface of Geistlich Bio-Oss®.<sup>16</sup>

#### The regenerative potential

The excellent results of Guided Bone Regeneration with Geistlich Bio-Oss® and Geistlich Bio-Gide® are largely due to their unsurpassed biofunctionality.<sup>8, 17, 18, 19, 20</sup>

#### 100% commitment to tissue regeneration

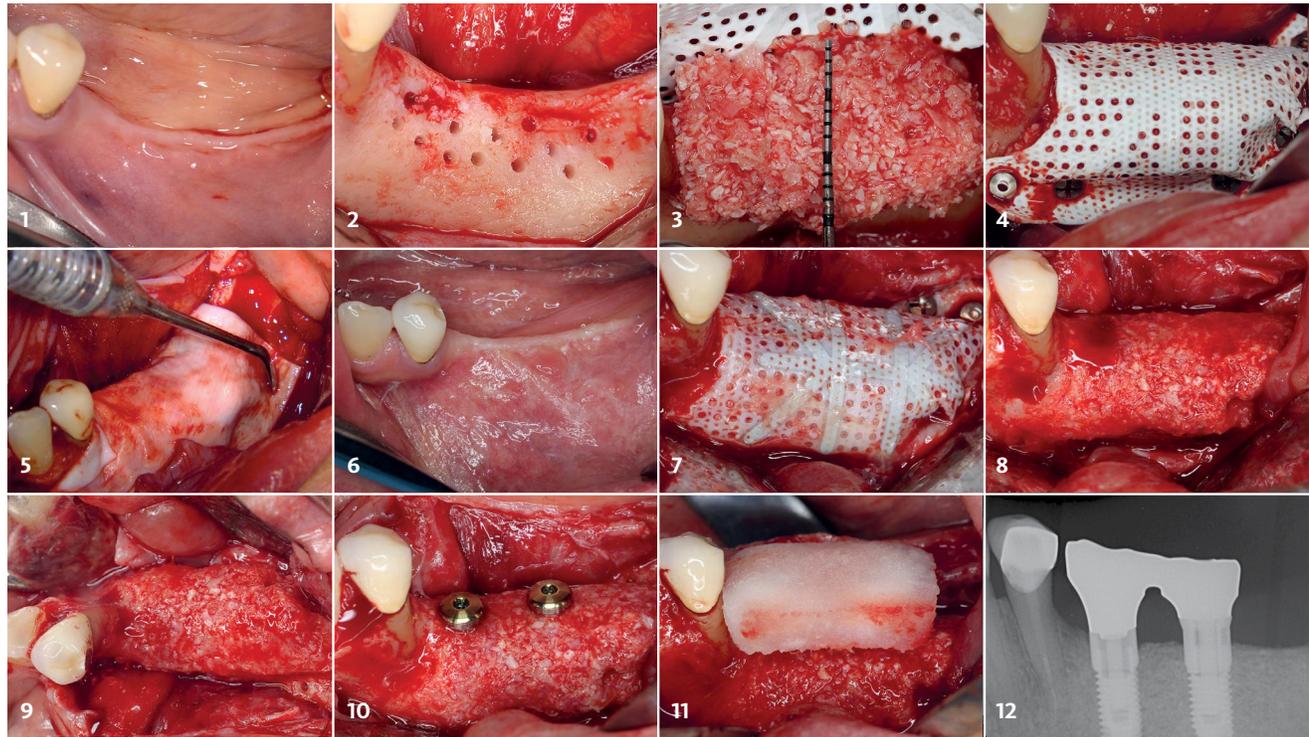
Numerous trials confirm outstanding long-term results and stable esthetic results with Geistlich Bio-Oss® for your patients.<sup>8, 17, 22</sup>

# Vertical Ridge Augmentation treated with Geistlich Bio-Gide®, Geistlich Bio-Oss® and RPM™



“With the new RPM™, I get as close as possible to the results of vital regenerated bone as with the Sausage Technique™, but for vertical bone augmentation.”

Surgery by Dr. Istvan Urban (Hungary)



- 1 Pre-operative assessment demonstrating significant bone loss, prior to vertical ridge augmentation.
- 2 Buccal view of the posterior mandibular defect site. Cortical bone was perforated to increase the blood supply.
- 3 RPM™ was secured on the lingual side prior to applying a 1:1 mixture of autogenous bone and Geistlich Bio-Oss®.
- 4 RPM™ was secured over the bone graft with titanium pins and screws.
- 5 Geistlich Bio-Gide® is placed on top of RPM™ to prevent early soft tissue ingrowth while allowing for graft vascularization.
- 6 Labial view of the soft tissue 9 months after the vertical bone augmentation.
- 7 RPM™ exposed at 9 months, following flap elevation.
- 8 Labial view of the regenerated surgical site at 9 months demonstrates well vascularized bone.
- 9 Occlusal view of the regenerated surgical site at 9 months demonstrates well vascularized bone.
- 10 Implant placement in the newly regenerated bone.
- 11 Geistlich Fibro-Gide® (15x20x6mm) was placed on top of two implants, to increase soft tissue thickness.
- 12 Periapical x-ray 1 year post-operatively, demonstrates implant stability and mature bone formation following vertical bone augmentation and soft tissue thickening.

## References

- 1 Elgali I et al. Eur J Oral Sci. 2017 Oct;125(5):315-337 (clinical review)
- 2 Fernandez de Grado G et al. J Tissue Eng. 2018 Jun 4;9:2041731418776819 (clinical and pre-clinical review)
- 3 Chiapasco M et al. Clin Oral Implants Res. 2018 Jul;29(7):725-740 (clinical study)
- 4 Lang NP et al. Clin Oral Implants Res. 2007 Apr;18(2):188-96 (clinical study)
- 5 De Marco AC et al. Int J Oral Maxillofac Implants. 2005 Nov-Dec;20(6):867-74 (pre-clinical)
- 6 Chiapasco M & Casentini P. Periodontol 2000. 2018 Jun;77(1):213-240 (clinical review)
- 7 Schneider D et al. J Clin Periodontol. 2014 Jun;41(6):612-7 (clinical study)
- 8 Jung RE et al. Clin Oral Implants Res. 2013 Oct;24(10):1065-73 (clinical study)
- 9 Rothamel D et al. Clin Oral Implants Res. 2005 Jun;16(3):369-78 (pre-clinical study)
- 10 Schwarz F et al. Clin Oral Implants Res. 2006 Aug;17(4):403-9 (pre-clinical study)
- 11 Tal H et al. Clin Oral Implants Res. 2008 Mar;19(3):295-302 (clinical study)
- 12 Zitzmann NU et al. Int J Oral Maxillofac Implants 1998 Jul-Aug;13(4):576 (clinical study)
- 13 Rothamel D et al. Clin Oral Implants Res. 2004 Aug;15(4):443-9 (pre-clinical study)
- 14 Becker J et al. Clin Oral Implants Res. 2009 Jul;20(7):742-9 (clinical study)
- 15 Data on file, Geistlich Pharma AG, Switzerland
- 16 Traini T et al. J Periodontol. 2007 May;78(5):955-61 (clinical study)
- 17 Jensen SS et al. J Periodontol. 2014 Nov;85(11):1549-56 (clinical study)
- 18 Galindo-Moreno P et al. Clin Oral Implants Res. 2010 Feb;21(2):221-7 (clinical study)
- 19 Orsini G et al. Oral Dis. 2007 Nov;13(6):586-93 (clinical study)
- 20 Degidi M et al. Oral Dis. 2006 Sep;12(5):469-75 (clinical study)
- 21 Degidi M et al. Clin Implant Dent Relat Res. 2009 Sep;11(3):178-82 (clinical study)
- 22 Buser D et al. J Periodontol. 2013 Nov;84(11):1517-27 (clinical study)

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4620 71st St #78  
Lubbock, TX 79424 USA

## RPM™ Reinforced PTFE Mesh

Configurations shown not actual size.

### Versatile Rectangular Shapes

These configurations can be trimmed to fit a variety of defects



### Shapes with Fixation Points

These configurations are designed with fixation points outside of the defect area



### Interproximal Shapes

These configurations are designed to fit between existing teeth



## Geistlich Biomaterials



**Geistlich Bio-Oss®**  
SMALL GRANULES  
(0.25 – 1 mm)  
0.125 g  
0.25 g  
0.5 g  
1 g  
2 g  
5 g



**Geistlich Bio-Oss®**  
LARGE GRANULES  
(1 – 2 mm)  
0.5 g  
1 g  
2 g



**Geistlich Bio-Gide®**  
13 x 25 mm  
25 x 25 mm  
30 x 40 mm  
40 x 50 mm



**Geistlich Fibro-Gide®**  
15 x 20 x 6 mm  
20 x 40 x 6 mm

For more information, please visit:  
[dental.geistlich-na.com](http://dental.geistlich-na.com)

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

For more information on contraindications, precautions, and directions for use, please refer to the Instructions for Use at:  
[dental.geistlich-na.com/ifu](http://dental.geistlich-na.com/ifu)

## Bone Harvesting Instruments



**Micros**  
1 Sterile disposable scraper per package



**SafeScrapper TWIST (3 Pack)**  
1 Sterile disposable scraper per package