Protecting Success with the Proven Membrane

Geistlich Bio-Gide®
Geistlich Bio-Gide® Compressed
Geistlich Bio-Gide® Shape
Geistlich Bio-Gide® Perio
Histological section demonstrating the utilization of Geistlich Bio-Gide® following a sinus augmentation procedure in a human. In these types of procedures, the membrane is used as an effective barrier over the lateral window to exclude the connective tissue from the wound.

Image Courtesy of Dr. Dr. H. Hildebrandt, Bremen, Germany.

The Collagen Expert

Geistlich Biomaterials has set the standard for the processing of native collagen fibers.

We’ve accomplished this by specifically focusing on the development of biomaterials for the regeneration of bone, cartilage and tissue. For over 165 years, we have continually refined the processing of collagen by investing in and optimizing our state-of-the-art manufacturing techniques.

The result is our proven family of membranes designed with unique properties and a bilayer structure to promote both bone and periodontal regeneration. The proprietary Geistlich process yields natural structures containing native collagen fibers which allow the body to reliably accept and integrate the biomaterial.

Geistlich Bio-Gide® has helped set the standard for guided tissue and bone regeneration since its introduction more than 20 years ago. Today, over 250 publications for Geistlich Bio-Gide® and over 1,000 for our Geistlich biomaterials stand as a testament to their superior clinical results.

Our product lines include:

Membranes
- Geistlich Bio-Gide®
- Geistlich Bio-Gide® Compressed
- Geistlich Bio-Gide® Shape
- Geistlich Bio-Gide® Perio

Bone Substitutes
- Geistlich Bio-Oss®
- Geistlich Bio-Oss Collagen®
- Geistlich Bio-Oss Pen®

Matrices
- Geistlich Mucograft®
- Geistlich Mucograft® Seal
- Geistlich Fibro-Gide®

Combination Products
- Geistlich Combi-Kit Collagen
- Geistlich Perio-System Combi-Pack

Elevating patient care is what drives your choice of professional partners and products.

That’s why Geistlich Biomaterials brings you a full range of hard and soft tissue treatment options that you can use with absolute confidence.

Our commitment to product reliability and time-tested manufacturing creates a bond like no other, empowering you with treatments that are exactly what patients deserve.
Advantages of Early Vascularization

1. supports bone formation 1, 2
2. wound stabilization 3, 4
3. oxygen and nutrient transfer 3, 5
4. tissue integration 3, 5
5. uneventful wound healing 5, 6

Intelligently Designed Structures

The unique bilayer structure of Geistlich Bio-Gide® is designed with both a cell occlusive and a fibrous surface which protect the site during healing and allow for the deposition of proteins. This intentional design ensures optimal regenerative healing of bone and soft tissue.

Geistlich Bio-Gide® is ideally suited to guide your daily regenerative needs. Throughout our long history of quality and innovation, Geistlich biomaterials have been intentionally designed for each application. In the patented production of Geistlich Bio-Gide®, the native collagen fibers are preserved in a non-artificially cross-linked porcine derived collagen membrane. This results in early vascularization and subsequent bone formation.

Vascularization Leads to Integration

The preservation of native fibers ensures that vital building blocks are present to promote the initial biologic processes of cell adhesion and proliferation. Geistlich Bio-Gide® integrates with surrounding tissues to protect the initial coagulum and then optimally degrades to allow for the cascade of biologic events leading to regeneration. It is the sum of these characteristics that defines the biofunctionality of Geistlich Bio-Gide® and is the basis for its long-term clinical success.

Early and Complete Vascularization

Membrane vascularization is a key step in bone and periodontal regeneration with Geistlich Bio-Gide®.

At 2 Weeks:
- Dense network of blood vessels surrounded by newly formed trabeculae of woven bone
- New bone formation occurs adjacent to the bone defect and directly underneath Geistlich Bio-Gide®

At 6 Weeks:
- Wound healing is characterized by ongoing bone formation
- The blood clot has transformed into a primary reinforced scaffold of woven bone

At 12 Weeks:
- Healing is primarily characterized by a continual filling of the intertrabecular spaces where maturation to lamellar bone begins

For clinical indications where both a physical matrix and a barrier are needed, Geistlich Bio-Oss® provides the volume and space preservation necessary to make it a natural companion to Geistlich Bio-Gide®.

* Additional information regarding indications for Geistlich Membranes can be found on the back panel of this brochure.

Geistlich Bio-Gide® provides excellent wound stability and graft containment.

**Unique Structures**

Non-artificially cross-linked native collagen fibers

Geistlich Bio-Gide® is a unique bilayer collagen membrane that provides optimal protection for bone regeneration. It is comprised of a smooth and a rough, open-pored layer. These structures promote reliable bone regeneration and excellent tissue integration due to the optimal duration of the barrier function.

**Biological Interaction**

Uneventful wound healing

The smooth layer orientated towards the soft tissue favors the growth of fibroblasts, while the barrier function prevents the ingrowth of soft tissue into the newly forming bone beneath.

Optimum bone healing

The rough layer orientated towards the bone, functions as a 3D scaffold for osteoblasts.

Prompt and homogeneous vascularization

The natural collagen structure of Geistlich Bio-Gide® permits prompt and homogeneous vascularization resulting in optimum tissue integration and wound stabilization.

**Clinical Long-Term Success**

Optimal barrier time

Optimum time for duration of the barrier has been carefully engineered. Once the protective function of Geistlich Bio-Gide® has been fulfilled, the membrane resorbs and the natural complex structure of the soft tissue, with all the intrinsic components such as the periosteum, form.

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Contour Augmentation with L-shape technique

Objective: Geistlich Bio-Oss Collagen® is cut into an L-shape and is adapted to the defect using Geistlich Bio-Gide® and resorbable pins. This supports the peri-implant soft tissue and mimics the natural root contour at the implant site.

Conclusion: The 10% collagen component in Geistlich Bio-Oss Collagen® supports stabilization of the blood coagulum and keeps the Geistlich Bio-Oss® particles together.

Guided Bone Regeneration with Geistlich Bio-Gide®

Objective: Increase of alveolar ridge width to enable implant placement.

Conclusion: This technique provides successful ridge augmentation with high predictability. Covering the autologous block graft with Geistlich Bio-Oss® and Geistlich Bio-Gide® significantly reduces autologous bone block resorption.
Our Extended Product Range

Geistlich Bio-Gide® Compressed

Geistlich Bio-Gide® Compressed is a resorbable collagen membrane possessing the same biological properties as Geistlich Bio-Gide®.

An Alternative Handling Option:
Designed by our collagen experts to suit your personal handling preference.

› Compressed membrane
› Smoother surface
› Firmer feel
› Easier to trim

Available in 13x25 mm and 20x30 mm sizes to better meet your clinical needs.

Contour Augmentation with Geistlich Bio-Gide® Compressed

Geistlich Bio-Gide® Compressed combines alternative handling with the proven biofunctionality of Geistlich biomaterials.

Dr. Luca De Stavola | Padua, Italy

Objective: Optimal implant placement in newly regenerated bone following a ridge augmentation procedure. Conclusion: The alveolar crest was successfully augmented, hard-tissue contour completed and an esthetic outcome achieved.

1 Pre-implantation CBCT image showing the regenerated bone volume 4 months after reconstruction.
2 CBCT image showing the sagittal view of the reconstructed region.
3 Intra-operative view of the vertical and horizontal bony defect in region 8.
4 Intra-operative view of the 3D autologous bone graft.
5 Intra-operative view of the implant inserted into the 3D regenerated bone, remodeling of the bony contour to improve esthetic outcome in region B is required.
6 Augmentation of the crest with Geistlich Bio-Oss® covered with Geistlich Bio-Gide® Compressed to improve hard-tissue contour and esthetic outcome.
7 Stabilization of Geistlich Bio-Gide® Compressed by pins (vestibular) and resorbable sutures (palatal) immobilizing the graft.
8 Primary wound closure is obtained after flap passivation and internal-external sutures.
9 Eight day follow-up of the augmented site. Good primary wound healing is obtained with no soft tissue dehiscence.

4 Technique according to: Urban Sausage Technique.
Geistlich Bio-Gide® Shape is a pre-trimmed resorbable collagen membrane designed for the treatment of non-intact extraction sockets.

A Predictable Solution\(^1\)\(^\text{6}\) for Ridge Preservation:

- Convenient: Unique shape specifically designed for non-intact extraction sockets
- Open healing: the wings on the top portion of the membrane are placed inside the gingival sulcus and stabilized with tension-free sutures
- Easy handling application: Modified structure has been made firmer when dry to facilitate easier trimming of the material
- Ready-to-use: Pre-Trimmed for clinical use reduces preparation time

**Treatment of an Non-Intact Extraction Socket with Geistlich Bio-Gide® Shape**

**Objective:** Maintain alveolar ridge dimensions following atraumatic tooth extraction.

**Conclusion:** The alveolar height and width were maintained, resulting in a good esthetic outcome.

1. Atraumatic extraction of tooth #10 with the Benex® Extraction Kit.
2. Inspection of the extraction socket with a periodontal probe shows a buccal bony defect.
3. The pre-trimmed Geistlich Bio-Gide® Shape helps reduce the preparation time for cutting to size.
4. The native bilayer collagen membrane is placed buccally on the inner alveolar wall, slightly protruding the crestal bone.
5. Geistlich Bio-Oss Collagen® fills the socket up to the soft tissue level. It might be advantageous to cut up the Geistlich Bio-Oss Collagen® and to insert it hydrated piece-by-piece.
6. The socket is closed with Geistlich Bio-Gide® Shape. The augmented site is stabilized tension-free by cross suturing.
7. Ten days follow-up with good wound healing by secondary intention.
8. Clinical situation 3 months after tooth extraction.
9. Restoration with a resin-bonded fixed dental prosthesis 3 months after tooth extraction.

**References:**

**Geistlich Bio-Gide® Perio**

Geistlich Bio-Gide® Perio is a resorbable collagen membrane with specific handling characteristics that make it ideal for periodontal indications.

**Modified Structure Provides:**
- Slower uptake of moisture into the barrier
- Prolonged working time
- Firmer surface facilitates easier cutting of the material

**Sterilized Templates for a Wide Range of Defects:**

The outer blister pack includes four sterile templates, perforated to easily distinguish them from the membrane. These water-repellent templates can be placed repeatedly in the region of the defect to allow customization of the template before cutting the membrane to the precise shape.

Available in a 16x22 mm size to better meet the needs for periodontal defects.

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**Treatment of an Intrabony defect with Geistlich Bio-Gide® Perio**

The ideal biomaterial for a wide variety of periodontal defects with sterile multiple form templates and a modified structure that facilitates cutting of the material when dry.

**Objective:** Functional and esthetic reconstruction of chronic periodontitis with deep intrabony defects.

**Conclusion:** After controlling the periodontal disease, this guided tissue regeneration technique leads to a long-term stable bony situation with an esthetic soft tissue appearance.

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1. Initial clinical situation after anti-infective therapy.
2. Intra-surgical situation after preparation of the mucoperiosteal full-thickness flap reveals deep osseous defect.
4. The grafted site is covered with Geistlich Bio-Gide® Perio.
5. The flap is repositioned and sutured to relieve flap tension and obtain primary closure of the interdental space.
7. Clinical situation 5 years post-operatively.
8. 4.5 years post-operative radiograph showing sustained defect fill from Geistlich Bio-Oss Collagen®.
9. Clinical situation 7 years post-operatively; note the naturally reformed papilla between the central incisors, and no gingival recession.

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Product Range by Therapeutic Area

Our membranes are essential components in the treatment of a broad range of therapeutic areas and are available in a variety of options to meet your handling and delivery needs.

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<thead>
<tr>
<th>Geistlich Bio-Gide®</th>
<th>Sizes: 13 x 25 mm, 25 x 25 mm, New Size 30 x 40 mm, 40 x 50 mm</th>
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<tbody>
<tr>
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<th>Geistlich Bio-Gide® Shape</th>
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<thead>
<tr>
<th>Geistlich Bio-Gide® Perio</th>
<th>Size: 16 x 22 mm</th>
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<tbody>
<tr>
<td>Native Bilayer Collagen Membrane with 4 templates for periodontal application</td>
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| Geistlich Combi-Kit Collagen | |
|-----------------------------||

| Geistlich Perio-System Combi-Pack | |
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Recommended Membrane Products By Therapeutic Area

Membranes

- Geistlich Bio-Gide®
- Geistlich Bio-Gide® Compressed
- Geistlich Bio-Gide® Shape
- Geistlich Bio-Gide® Perio
- Geistlich Perio-System Combi-Pack
- Geistlich Combi-Kit Collagen

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.

Guided Bone Regeneration’s Winning Combination

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

Guided Bone Regeneration

- Extraction Socket Management
- Minor Bone Augmentation
- Soft Tissue Regeneration
- Major Bone Augmentation
- Sinus Floor Elevation
- Periodontal Regeneration
- Peri-Implantitis

Combination Products

- Geistlich Combi-Kit Collagen
  Geistlich Bio-Gide® 16 x 22 mm, Geistlich Bio-Oss Collagen® 100 mg
  When used together, Geistlich Bio-Gide® and Geistlich Bio-Oss Collagen® provide optimal properties for ridge preservation and minor bone augmentation procedures.

- Geistlich Perio-System Combi-Pack
  Geistlich Bio-Gide® Perio 16 x 22 mm, Geistlich Bio-Oss Collagen® 100 mg
  When used together, Geistlich Bio-Gide® and Geistlich Bio-Oss Collagen® provide optimal properties for regenerative periodontal procedures.
CAUTION: Federal law restricts these devices to sale by or on the order of a dentist or physician.

Indications:
Geistlich Bio-Gide®, Geistlich Bio-Gide® Compressed, Geistlich Bio-Gide® Shape and Geistlich Bio-Gide® Perio are indicated for the following uses: Augmentation around implants placed in immediate and delayed extraction sockets; Localized ridge augmentation for later implantation; Alveolar ridge reconstruction for prosthetic treatment; Filling of bone defects after root resection, cystectomy, removal of retained teeth; GBR in dehiscence defects; and GTR procedures in periodontal defects.

Warnings:
As these are collagen products, allergic reactions may not be totally excluded. Possible complications which may occur with any surgery include swelling at the surgical site, flap sloughing, bleeding, dehiscence, hematoma, increased sensitivity and pain, bone loss, redness, and local inflammation.

Indications:
Geistlich Bio-Oss®, Geistlich Bio-Oss Collagen® and Geistlich Bio-Oss Pen® are indicated for the following uses: Augmentation or reconstructive treatment of the alveolar ridge; Filling of periodontal defects; Filling of defects after root resection, apicectomy, and cystectomy; Filling of extraction sockets to enhance preservation of the alveolar ridge; Elevation of the maxillary sinus floor; Filling of periodontal defects in conjunction with products intended for Guided Tissue Regeneration (GTR) and Guided Bone Regeneration (GBR); and Filling of peri-implant defects in conjunction with products intended for GBR.

Warnings:
Possible complications which may occur with any surgery include swelling at the surgical site, flap sloughing, bleeding, local inflammation, bone loss, infection or pain. As Geistlich Bio-Oss Collagen® contains collagen, in very rare circumstances cases of allergic reactions may occur.

For more information on contraindications, precautions, and directions for use, please refer to the Geistlich Biomaterials Instructions for Use at: www.geistlich-na.com/ifu