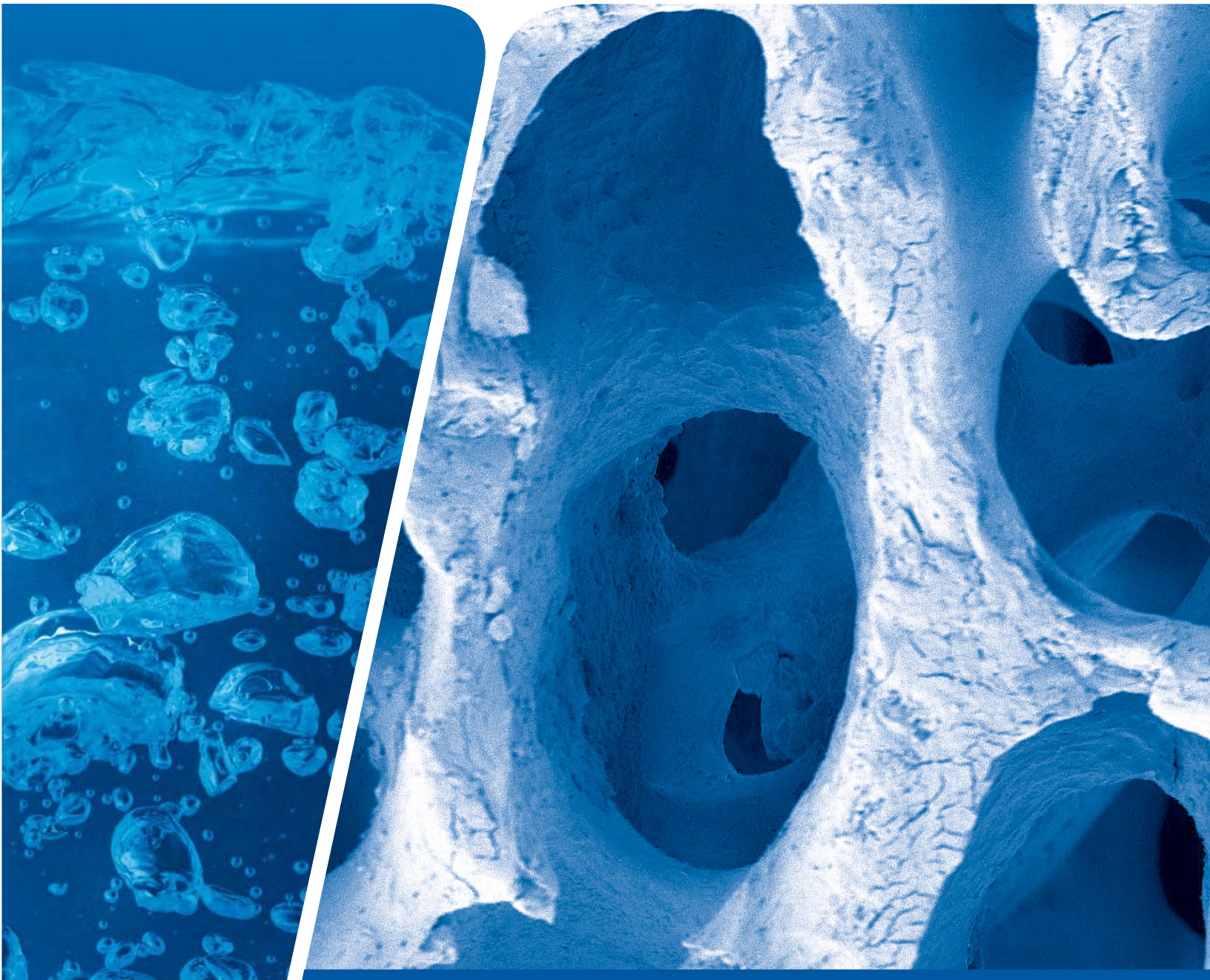
Geistlich Bio-Oss®

The Master's Choice

Hydrophilic and Topographic Benefits



LEADING REGENERATION

Geistlich – leading regeneration

Geistlich Biomaterials

Geistlich is the world leader in regenerative dentistry.[1, 2]
We transform natural biomaterials into safe and reliable treatment methods that recreate lost structures. Our family of products connect regenerative professionals and patients around the world. At the core of this connection is trust.

It is this trust and an innovative spirit at Geistlich that create a unique environment for developing evidence-based treatment solutions. For 160 years, our family-owned Swiss company has pioneered the technological advances that make regenerative treatment with natural biomaterials the preferred choice for clinical predictability.

Today, Geistlich continues this spirit of innovation and scientific collaboration in North America.

Geistlich Bio-Oss®

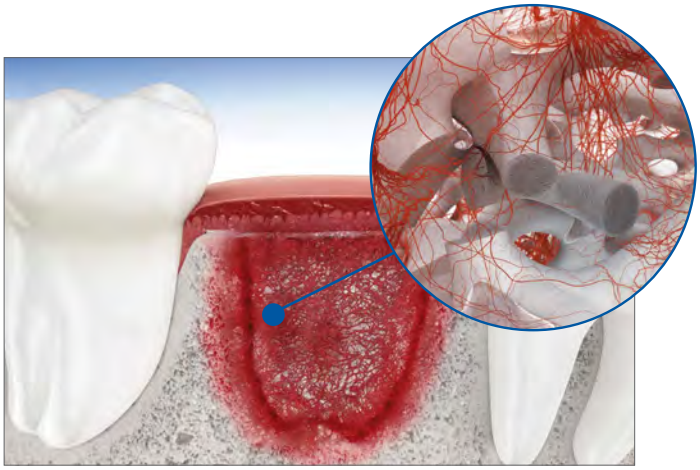
Unique properties of the Master's Choice

Geistlich Bio-Oss® continues to build on more than 25 years of clinical success. Geistlich's long-term commitment to evidence and innovation is well-documented in more than 700 publications, making Geistlich Bio-Oss® the most successful bone substitute worldwide.[3, 4] Through its unique properties and reliable clinical outcomes, Geistlich Bio-Oss® remains the Master's Choice among an expanding range of indications.

Two Key Factors for Success

Due to its remarkable similarity to human bone, Geistlich Bio-Oss® is readily adapted to the natural modeling and remodeling process. Its topographic structure features a unique and highly efficient system of pores[5, 8] that supports optimal ingrowth for healthy bone formation. The hydrophilic properties of Geistlich Bio-Oss® ensure complete hydration of the biomaterial via the physical phenomenon of capillary action and effective blood clot stabilization[4]. This biofunctionality makes Geistlich Bio-Oss® a predictable part of the osseointegration process.

For specific clinical indications where barrier function is needed, Geistlich Bio-Gide® is a natural companion to Geistlich Bio-Oss®.*



Blood clot stabilization and early vascularization is crucial for a good bone formation.[3, 4]

* Additional information regarding indications for Geistlich Bio-Oss® and Geistlich Bio-Gide® can be found on the back panel of this brochure.

The unique topography of Geistlich Bio-Oss®

The topographical features of Geistlich Bio-Oss® play a decisive role in guided bone regeneration. These include:

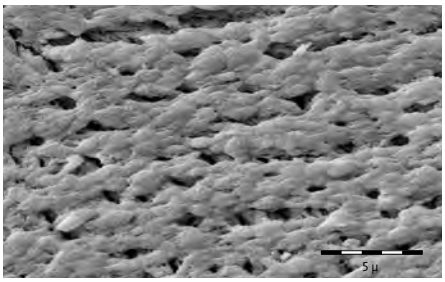
- An ultraporous surface
- An interconnected pore system
- A 3-dimensional microenvironment

The ultraporous surface of Geistlich Bio-Oss® is the portal for the biological interactions that support new bone formation. The interconnected micropore system allows rapid and complete saturation of the material. This encourages binding and storing of proteins and growth factors, creating the appropriate conditions for de novo bone synthesis.[5, 6, 7, 8]

The unique structure of Geistlich Bio-Oss® provides optimal space maintenance within the defect while the 3-dimensional microenvironment supports blood vessel formation (angiogenesis) and new bone deposition (osteogenesis).[5, 9]

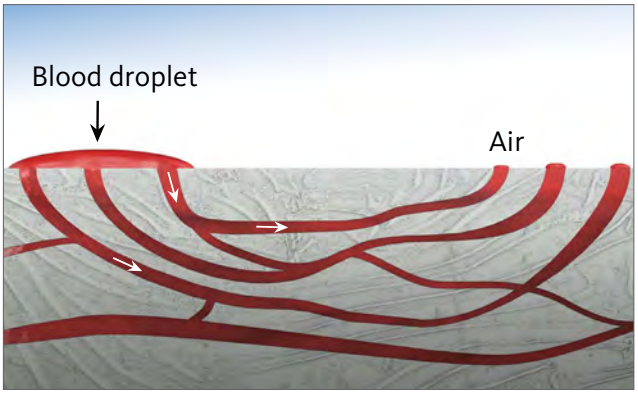
Micropores

1 Ultraporous surface



The micropores (5000×) ensure the high capillary action, and consequently the fast liquid uptake in Geistlich Bio-Oss®.

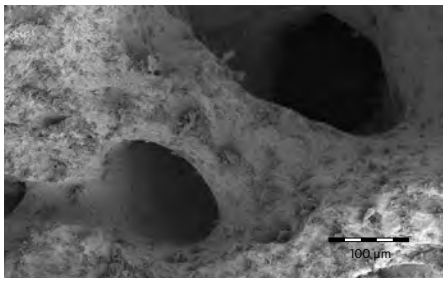
Geistlich Bio-Oss®



As blood is saturated into the material, air is removed through the interconnective pore system.

Macropores

2 Internal Macropore Network



The interconnected macropores (200×) allow blood cells, osteoblasts, osteoclasts and proteins to enter into the Geistlich Bio-Oss® particles enabling effective osseointegration of Geistlich Bio-Oss®.

References:

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4 Degidi M, Artese L, Rubini C, Perrotti V, Iezzi G, Piattelli A. Microvessel density and vascular endothelial growth factor expression in sinus augmentation using Bio-Oss®. Oral Dis. 2006 Sep; 12(5): 469–75.
5 Berglundh T, Lindhe J: Healing around implants placed in bone defects treated with Bio-Oss®. An experimental study in the dog. Clin Oral Implants Res 1997; 8(2): 117–24.
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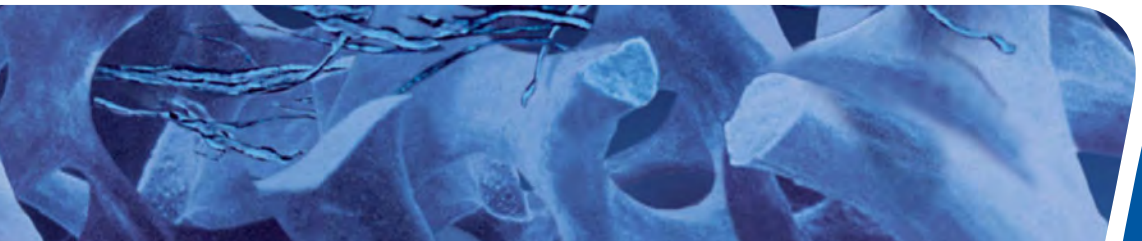
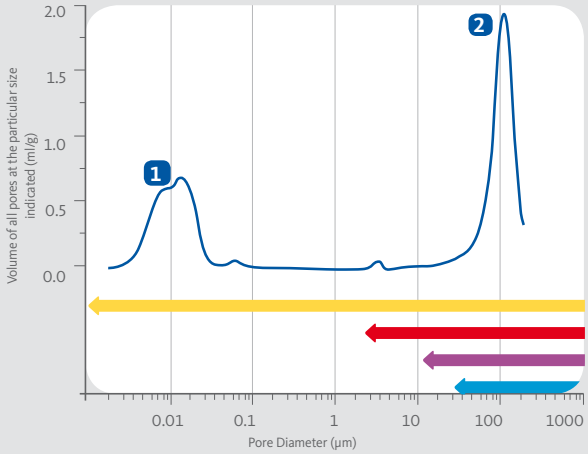


Topography translates to hydrophilic benefits

Geistlich Bio-Oss®

It is the unique topographic structure of Geistlich Bio-Oss® that gives the material superior hydrophilic properties. The interconnected pore system creates a robust capillary action resulting in rapid uptake of blood and complete saturation of the material prior to coagulation[6]. This efficient permeation guards against blockage of the pores allowing for effective blood clot stabilization, predictable new bone formation and clinical success.[3,4]

Micropore and Macropore Structure = exceptional hydrophilicity[6]



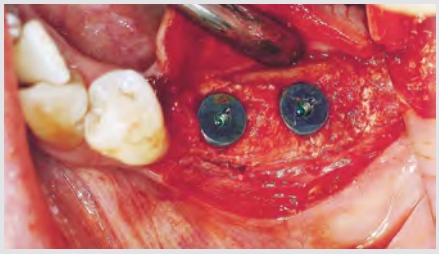
The unique micro- and macroporosity of Geistlich Bio-Oss® is an important element in its superior hydrophilicity:

1 The micropores ensure robust capillary action, and consequently the fast liquid uptake in Geistlich Bio-Oss®.

2 The interconnected macropores allow blood cells and proteins to permeate the Geistlich Bio-Oss® enabling predictable osseous regeneration.

- Tissue fluids
- Blood cells
- Osteoblast (15 µm–20 µm)
- Osteoclast (40 µm–100 µm)

Clinical success with Geistlich Bio-Oss®



The hydrophilic biofunctional characteristics of Geistlich Bio-Oss® give rise to long-term clinical success in a broad range of indications. Shown here is a six month post-operative procedure resulting in optimal bone support for implant placement following augmentation with Geistlich Bio-Oss®. Reliable and predictable results can be achieved in clinical practice. Geistlich Bio-Oss® remains the most documented bone substitute in the world. *Case: Prof. Dr. C. Maiorana*

In this histology, 9 years postoperatively, new bone is in direct contact with the Geistlich Bio-Oss® particles. Bone is forming bridges between bone trabeculae and Geistlich Bio-Oss® as well as between the particles of the inorganic bone matrix.[9]

Individual results may vary.

Versatile by Indication

Topographic and hydrophilic properties support ease of use and make Geistlich Bio-Oss® the reliable treatment choice in a broad range of indications. Comprehensive long-term studies continue to support the safety and efficacy of Geistlich Bio-Oss® where predictable bone regeneration is the key to clinical success.

To meet functional and esthetic demands when placing implants, augmentation procedures are necessary in a growing number of indications. Similarly, these materials have become the treatment of choice for natural tooth preservation, when both a physical matrix and a barrier may be required to support new bone formation and prevent the downgrowth of soft tissue into the defect. These characteristics have made Geistlich Bio-Oss® and Geistlich Bio-Gide® the gold standard for regenerating bone and periodontal tissues.

Geistlich Bio-Oss®, Geistlich Bio-Oss Collagen® and Geistlich Bio-Gide® are used in the following indications:

Peri-implant defects

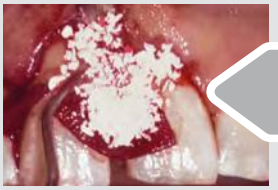
Case: Prof. Dr. Ch. Hämmerle

Horizontal augmentation

Case: Prof. Dr. D. Buser

Sinus floor elevation

Case: Dr. B. Wallkamm



Periodontal regeneration

Case: Dr. P. Cortellini

Geistlich Bio-Oss®
small and large granules

Geistlich Bio-Oss® Collagen

Geistlich Bio-Gide®
Resorbable bilayer collagen membrane

Ridge augmentation

Case: Prof. Dr. C. Maiorana

Extraction sockets

Case: PD Dr. R. Jung

Vertical augmentation

Case: Prof. Dr. M. Simion

Geistlich Bio-Oss®

Geistlich Bio-Oss® Collagen

Geistlich Bio-Gide®

Geistlich
Biomaterials

DOCUMENTED: More than 700 publications
RELIABLE: More than 25 years of clinical experience
EXPERIENCED: 160 years of Geistlich collagen competence

Geistlich Bio-Oss®
Small granules (0.25 – 1 mm)

Quantities: 0.25 g, 0.5 g, 2 g, 5 g (1 g ≈ 2 cc)

The small Geistlich Bio-Oss® particles allow close contact with the surrounding bony walls. They are recommended for smaller 1–2 socket defects and for contouring autogenous block grafts.

Geistlich Bio-Oss®
Large granules (1–2 mm)

Quantities: 0.5 g, 2 g (1 g ≈ 3 cc)

The large Geistlich Bio-Oss® granules offer more volume and are ideal for the regeneration of larger defects such as ridge augmentation.

Geistlich Bio-Oss Collagen®
Geistlich Bio-Oss® (small granules) + 10 % collagen (porcine)

Sizes: 100 mg (0.2–0.3 cc), 250 mg (0.4–0.5 cc), 500 mg (0.8–1.2 cc)

Consists of Geistlich Bio-Oss® cancellous bone granules with the addition of 10% highly purified porcine collagen. The combination offers enhanced handling and ease of application.

Geistlich Bio-Gide®
Resorbable bilayer collagen membrane

13 mm x 25 mm, 25 mm x 25 mm , 40 mm x 50 mm

Consists of porcine collagen and has a bilayer structure – a rough side that faces the bone tissue to be regenerated and a smooth side that faces the soft tissue. Geistlich Bio-Gide® is easy to handle: it can be positioned easily, adheres well to the defect, and is resistant to tension and tearing.

Geistlich Bio-Oss®
and Geistlich Bio-Gide®
available directly from
Geistlich Pharma North America

Customer Care
Toll-free 855-799-5500

www.GeistlichOnline.com
www.biooss-na.com
www.biogide-na.com

Geistlich Pharma North America, Inc.
202 Carnegie Center • Princeton, NJ 08540

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

Indications:
Geistlich Bio-Oss® and Geistlich Bio-Oss Collagen® are indicated for the following uses: Augmentation or reconstructive treatment of the alveolar ridge; Filling of periodontal defects; Filling of defects after root resection, apicoectomy, 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 periimplant 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.

Indications:
Geistlich Bio-Gide® is 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 it is a collagen product, 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.

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