

IN PARTNERSHIP, WE'RE BETTER

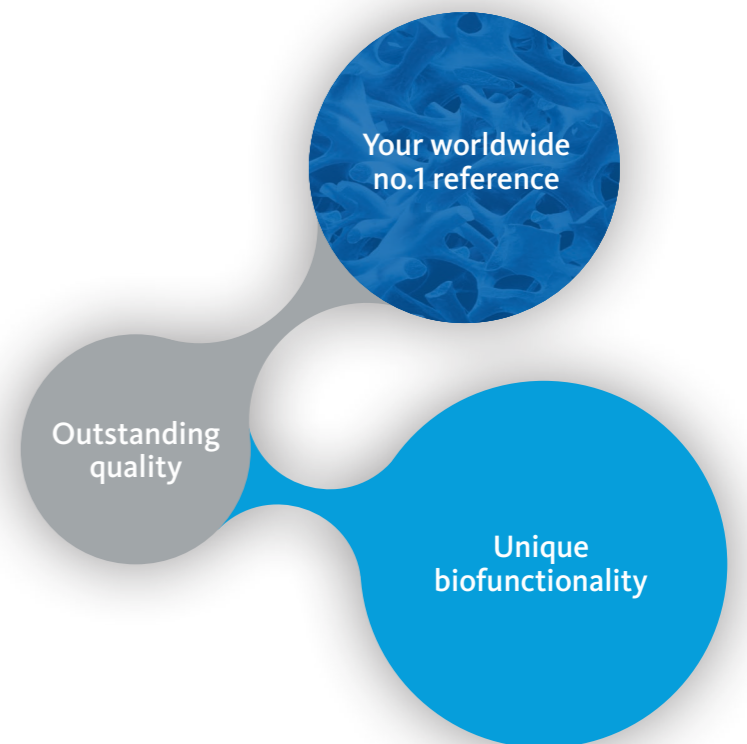


YOUR MAGIC HANDS – OUR EXCELLENT PRODUCTS



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GEISTLICH BIOMATERIALS – FROM PIONEER TO EXPERT



Geistlich company founder, Dr. E. Geistlich's expertise is the origin of what we have become today: No. 1 in regenerative dentistry.

Thanks to intensive research and close collaboration with scientists and dentists over 30 years ago, Dr. Peter Geistlich created pioneering products for a new technology, Guided Bone Regeneration (GBR).

Organic components were removed from bone for the first time without alteration to its microstructure and mineral part. This is how Geistlich Bio-Oss[®], a bovine-based bone replacement material whose structure and chemical composition resembles human bone, came into being.

In consequence, Dr. Peter Geistlich achieved another milestone with the development of Geistlich Bio-Gide[®], a natural bi-layer collagen membrane. Geistlich Bio-Gide[®] enables surgical techniques to be simplified, superseding non-resorbable e-PTFE membranes. In addition, the remarkable wound healing properties of Geistlich Bio-Gide[®] have effectively revolutionised bone regeneration.¹

EXPERTISE IN COLLAGEN PROCESSING

Along with bone-processing, Geistlich has specialised in the processing of collagen for over 160 years and have refined this expertise from generation to generation. Manufacturing processes and systems have been continually optimised to make them cutting edge in their field. Today's range comprises many specialised collagen products such as a membrane with a barrier function (Geistlich Bio-Gide[®]), with a scaffold function for soft tissue regeneration (Geistlich Mucograft[®]) and products designed for easy handling (Geistlich Bio-Oss[®] Collagen).



¹ Zitzmann NU et al., Int J Oral Maxillofac Implants. 1997 Nov–Dec;12(6):844–52.

THE DREAM-TEAM: GEISTLICH BIO-OSS[®] AND GEISTLICH BIO-GIDE[®]

Guided Bone Regeneration (GBR) with Geistlich Biomaterials

Guided Bone Regeneration uses the body's regenerative capability to reconstruct missing bone. Compared to other regenerative techniques, GBR has proved to be especially dependable.² Predictable results can be obtained both functionally and aesthetically, even in complex cases.

The GBR success story is the result of close and inspiring collaboration between Geistlich Biomaterials and leading dental specialists. The combined application of Geistlich Bio-Oss[®] and Geistlich Bio-Gide[®] as a part of GBR is today considered the standard therapy for a wide range of indications.⁴

A POWERFUL COMBINATION

With Geistlich Bio-Oss[®] and Geistlich Bio-Gide[®] a dentist can have confidence that they are using complimentary products that have extensive scientific documentation and proven efficacy in millions of clinical applications.

- > High long-term implant survival rate³
- > Excellent aesthetic long-term results⁴
- > Easy and safe to use



Prof. Daniel Buser
BERNE, SWITZERLAND

"GBR with biomaterials from Geistlich succeeds aesthetically and functionally, is extremely reliable and features minimal risk of aesthetic complications."

² Aghaloo TL et al., Int J Oral Maxillofac Implants 2007; 22(suppl):49–70.

³ Jung R et al., Clin Oral Implants Res. 2013 Oct;24(10):1065–73.

⁴ Buser D et al., J Dent Res. 2013 Dec;92(12 Suppl):176S–82S.

WORK WITH THE NO. 1

Your worldwide no. 1 reference

Geistlich Bio-Oss® and Geistlich Bio-Gide® are the experts in regenerative dentistry. Some 1,000 pre-clinical and clinical studies⁵ prove the successful use in practice. No other supplier has the experience of Geistlich Biomaterials when it comes to the number of patients treated and products sold. For almost 30 years Geistlich Biomaterials has been the undisputed no. 1 in regenerative dentistry.^{6,7}



Prof. Mariano Sanz
MADRID, SPAIN

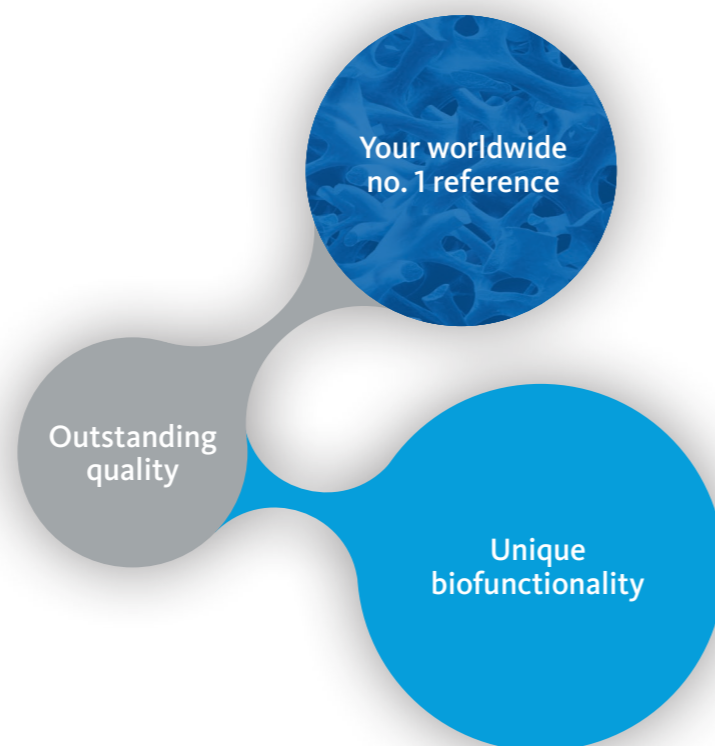
"Geistlich products have gained my trust down the years."



⁵ Pubmed 2014 Search term „Bio-Oss or Bio-Gide or Mucograft“.

⁶ iData Research Inc., US Dental Bone Graft Substitutes and other Biomaterials Market, 2013.

⁷ iData Research Inc., European Dental Bone Graft Substitutes and other Biomaterials Market, 2013.



Outstanding quality

Quality and safety are at the forefront of the manufacturing process at Geistlich Pharma. At our site in Switzerland we inspect every production stage of our biomaterials; from the raw material selection through to the quality management of the final product. Our products and processes are regularly verified by stringent international agencies.

NOT ALL BIOMATERIALS ARE THE SAME – TAKE A CLOSER LOOK!

Unique biofunctionality

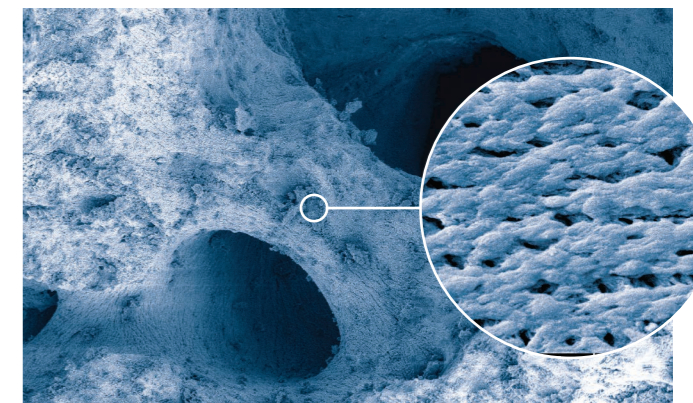
The excellent results of Guided Bone Regeneration with Geistlich Bio-Oss® and Geistlich Bio-Gide® are largely due to their unsurpassed biofunctionality. The products are perfectly suited to combined use: Geistlich Bio-Oss® forming the scaffold

for the in-growing blood vessels and bone-forming osteoblasts while Geistlich Bio-Gide® shields the young bone from the surrounding connective tissue cells and supports in wound healing.

Geistlich Bio-Oss® the bone replacement material with outstanding biofunctionality

Geistlich Bio-Oss® is very similar to human bone in its structure and chemical make-up. The biofunctional biomaterial aids vascularisation and the formation of new bone.⁸ The slow resorption of Geistlich Bio-Oss® increases the stability of the augmentation material⁹ – the best prerequisite for long-term implant survival rates.³

Geistlich Bio-Oss®:
Unique macro- and micropore structure



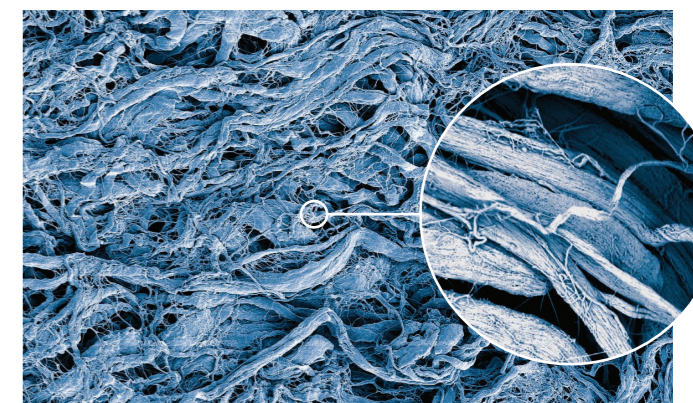
Magnification: 200x

Magnification: 5000x

Geistlich Bio-Gide® the unique bi-layer collagen membrane

Geistlich Bio-Gide® is a porcine collagen membrane without any artificial cross-linking which closely resembles human collagen. The natural bi-layer structure promotes reliable bone regeneration¹⁰ and excellent tissue integration on account of an optimal barrier duration. The soft tissue heals without scarring and largely without complications.¹¹

Geistlich Bio-Gide®:
Unique arrangement of collagen fibres (rough side)



Magnification: 200x

Magnification: 4900x

³ Jung R et al., Clin Oral Implants Res. 2013 Oct;24(10):1065-73.

⁸ Galindo-Moreno P et al., Clin. Oral Impl. Res. 21, 2010; 221-227.

⁹ Orsini G et al., Oral Diseases 2007; 19:357-368.

¹⁰ Schwarz F et al., Clin Oral Implants Res. 2014 Sep;25(9):1010-5.

¹¹ Becker J et al., Clin. Oral Implants Res. 2009; 20(7): 742-93.

COMPLEMENTARY PROCESSES IN BONE REGENERATION

1 UNIQUE STRUCTURES

Optimal protection for bone regeneration


Geistlich Bio-Gide® is a unique bi-layer collagen membrane comprising a smooth and a rough, open-pored layer.

Geistlich
Bio-Gide®




2 BIOLOGICAL INTERACTION

Uneventful wound healing¹¹

The smooth layer orientated towards the soft tissue, favours the growth of fibroblasts  1. Whilst the barrier function prevents the ingrowth of soft tissue into the newly forming bone beneath.

Optimum bone healing¹⁰

The rough layer orientated towards the bone, functions as a three-dimensional scaffold for osteoblasts  2.

Prompt and homogeneous vascularisation¹³

The natural collagen structure of Geistlich Bio-Gide® permits prompt and homogeneous vascularisation and so brings about optimum tissue integration and wound stabilisation.

3 INTEGRATION

Optimal barrier time

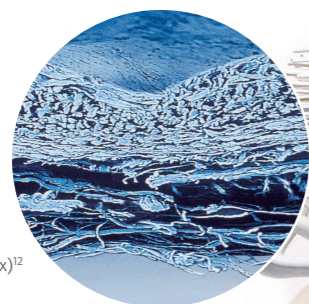
Optimum barrier instead of unnecessary blockade! Once the protective function of Geistlich Bio-Gide® has been fulfilled the membrane resorbs and the natural complex structure of the soft tissue, with all the intrinsic components such as the periosteum, form.

4 CLINICAL LONG-TERM SUCCESS

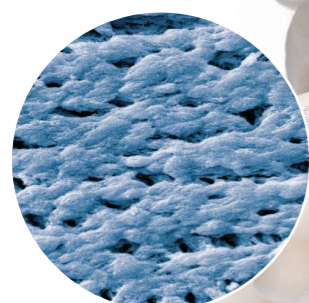


Clinical long-term success in combination

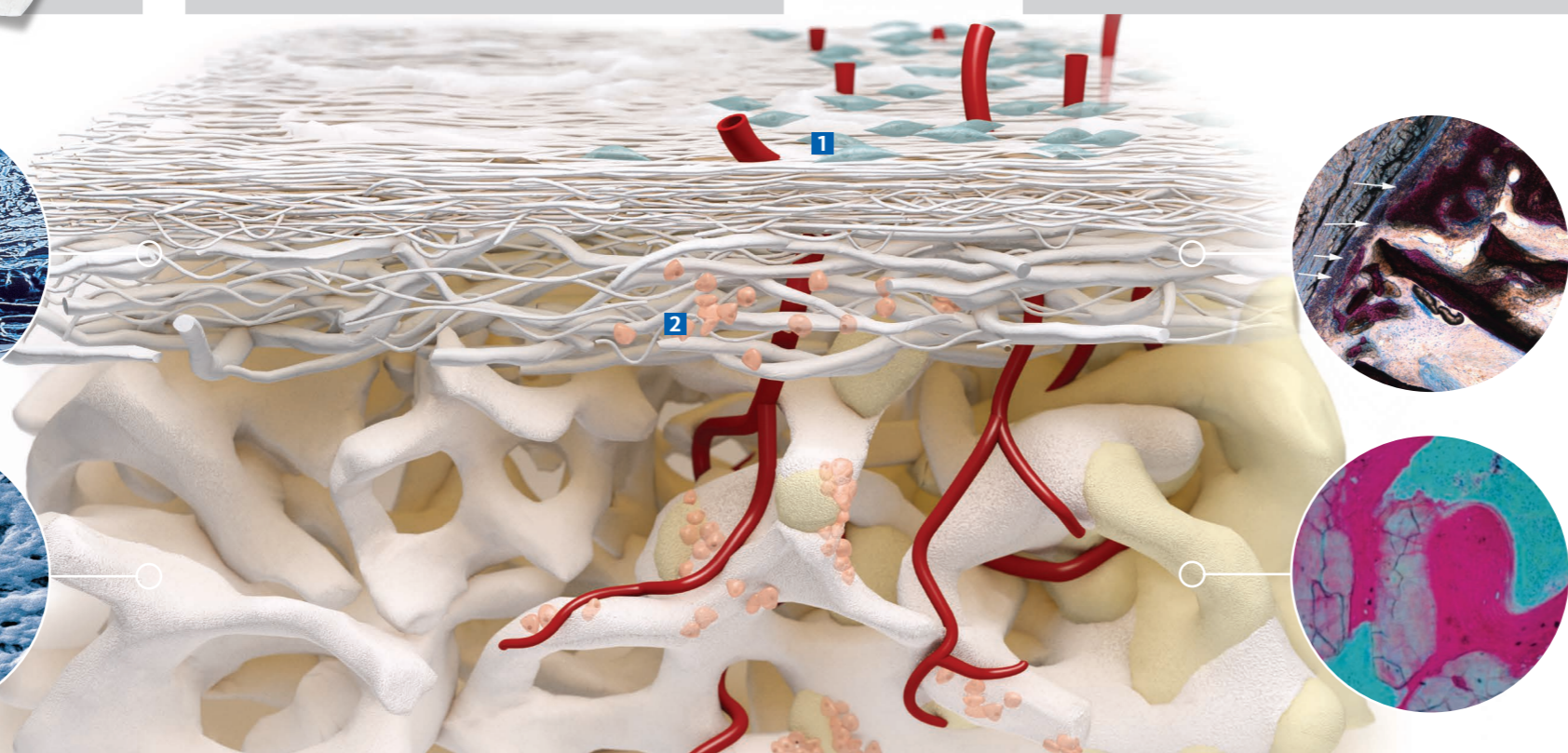
The slow resorption of Geistlich Bio-Oss® and the ideally matched protective function of Geistlich Bio-Gide® promote the long-term volume stability²² of the augmentation material and ensure high implant survival rates.³



Geistlich Bio-Gide®:
Unique
bi-layer structure (100x)¹²



Geistlich Bio-Oss®:
Micropores (5000x)¹²



Ideal environment for forming new bone¹⁵

Geistlich Bio-Oss® consists of a unique interlinked pore system. The micropores ensure an efficient fluid intake. The macropores permit unimpeded migration of cells.

Geistlich
Bio-Oss®



Plenty of space for vascularisation and bone formation^{16,17}

The pore system and surface morphology of Geistlich Bio-Oss® favours the growth of osteoblasts. The porous structure serves as a scaffold for in-growing blood vessels and bone growth

Stable scaffold for new bone^{18,19,20,21}

Thanks to its biofunctionality, Geistlich Bio-Oss® is integrated into the natural bone remodelling process. Geistlich Bio-Oss® and the newly formed bone make a stable scaffold which favours long-term clinical success.

³ Jung R et al., Clin Oral Implants Res. 2013 Oct;24(10):1065-73.

¹⁰ Schwarz F et al., Clin Oral Implants Res. 2014 Sep;25(9):1010-5.

¹¹ Becker J et al., Clin. Oral Implants Res. 2009; 20(7): 742-93.

¹² Data on file. Geistlich Pharma, Wolhusen, Switzerland.

¹³ Rothamel D et al., Clin. Oral Implants Res. 2005;16:369-378.

¹⁴ Rothamel D et al., Int J Oral Maxillofac Implants. 2012;27(1):146-54.

¹⁵ Berglundh T, Lindhe J, Clin Oral Implants Res 1997; 8(2): 117-124.

¹⁶ Weibrich G et al., Mund Kiefer Gesichtschirurg 4, 2000; 148-152.

¹⁷ Degidi M et al., Oral Dis. 2006 Sep; 12(5): 469-475.

¹⁸ Orsini G et al., J Biomed Mater Res, B: Appl Biomater 74B, 2005; 448-57.

¹⁹ Piattelli M et al., Int J Oral Maxillofac Implants 1999; 14: 835-40.

²⁰ Sartori S, et al., Clin Implants Res 2003; 14: 369-72.

²¹ Traini T et al., J Periodontol. 2007 May; 78(5): 955-961.

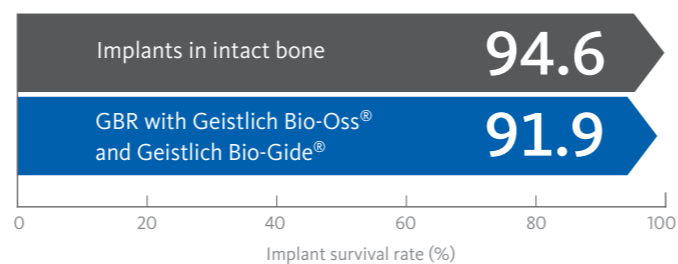
²² Mordenfeld A et al., Clin Oral Implants Res. 2010 Sep;21(9):961-70.

ALL OUR SCIENCE IN YOUR HANDS

Numerous studies prove excellent long-term results...

Reliable
91.9%
Implant survival rate after 12-14 years

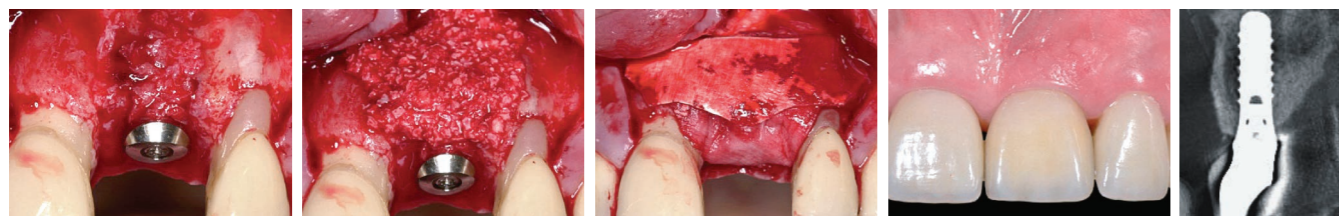
After 12-14 years implants that were placed in bones augmented with Geistlich Bio-Oss® and Geistlich Bio-Gide® show the same survival rate as implants in local bone.³



...and stable aesthetic results

Guided Bone Regeneration with Geistlich Bio-Oss® and Geistlich Bio-Gide® yield reliable results in aesthetic terms. Due to the contour augmentation the facial bone wall was able to be preserved in 95% of patients over a period lasting from 5 to 9 years.^{4,5}

Predictable
Excellent preserved facial bone wall after 5-9 years



Minor bone augmentation, Prof. D. Buser



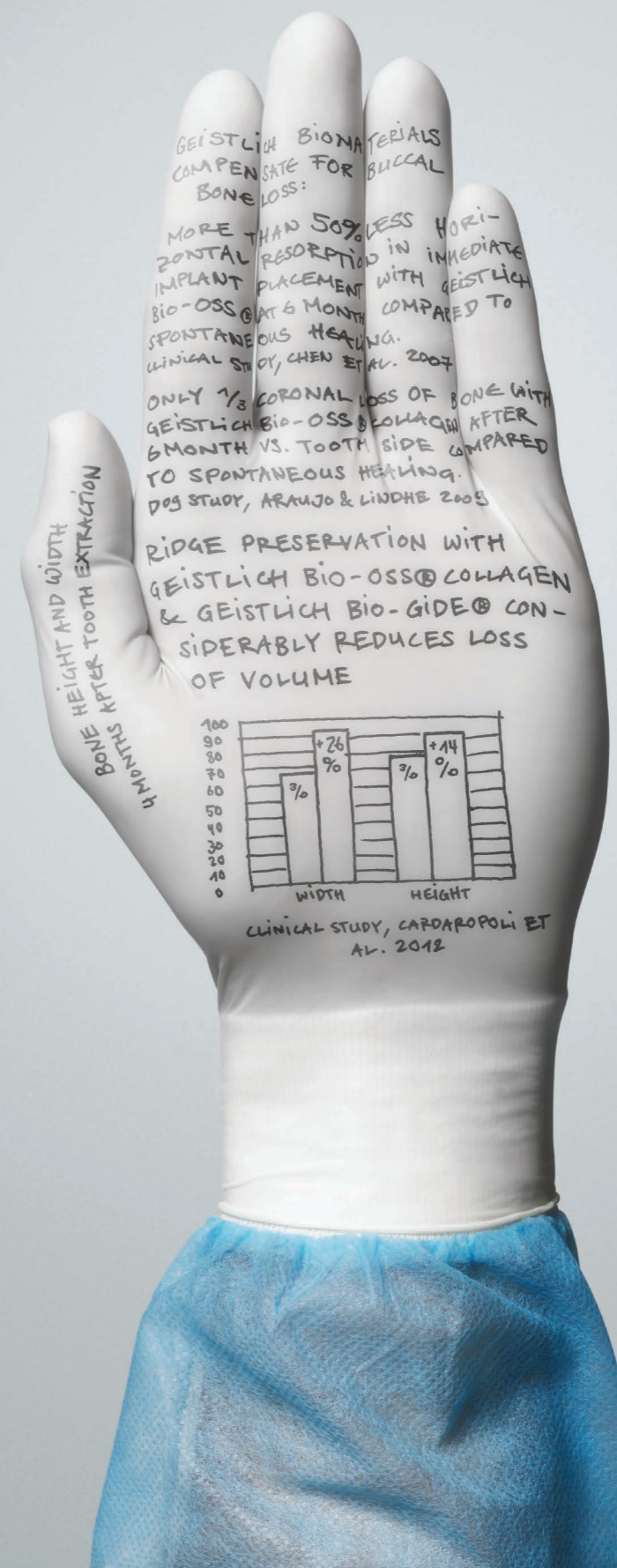
Prof. Maurício Araújo
MARINGÁ, BRAZIL

"I have faith in Geistlich Biomaterials because they are scientifically proven and have been used successfully in practice for years."

³ Jung R et al., Clin Oral Implants Res. 2013 Oct;24(10):1065-73.

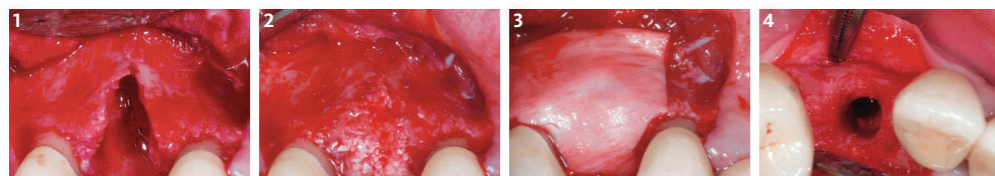
⁴ Buser D et al., J Periodontol. 2013 Nov;84(11):1517-27.

⁵ Jensen SS et al., J Periodontol 2014 Nov;85(11):1549-56.



THE RIGHT SOLUTION FOR EVERY CHALLENGE

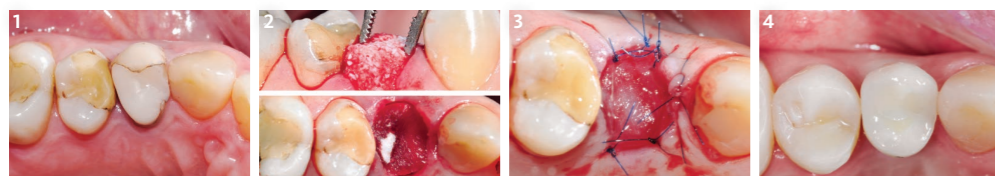
Extraction sockets with defective socket, Prof. M. Araújo



- 1 Clearly visible buccal bone dehiscence after extraction of tooth 14 and forming a flap.
- 2 Augmentation with Geistlich Bio-Oss® Collagen.
- 3 A Geistlich Bio-Gide® is applied to cover the augmentation material.
- 4 4 months after extraction: abundant newly formed buccal bone.

Product solution
 > Geistlich Bio-Oss® Collagen
 > Geistlich Bio-Gide®

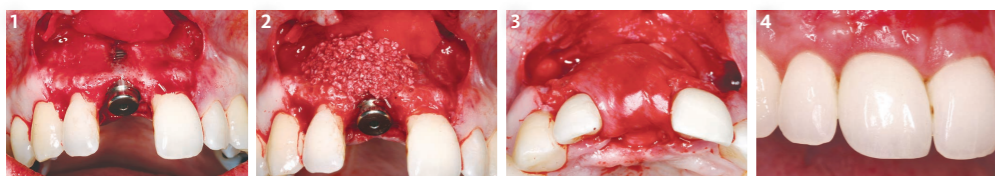
Extraction sockets with intact socket, Dr. R. Cavalcanti



- 1 Initial situation before extracting tooth 14.
- 2 Extraction socket filled with Geistlich Bio-Oss® Collagen and sealed with Geistlich Mucograft® Seal.
- 3 Geistlich Mucograft® Seal sutured using single interrupted sutures.
- 4 Final restoration 7 months after tooth extraction.

Product solution
 > Geistlich Bio-Oss® Collagen
 > Geistlich Mucograft® Seal

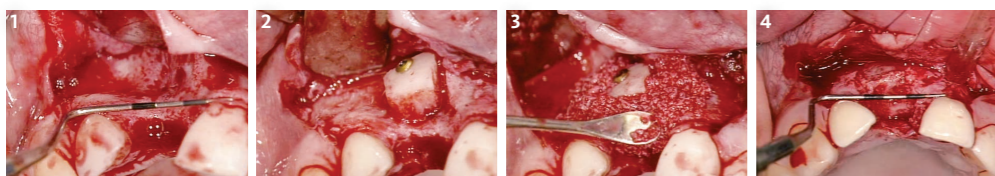
Minor bone augmentation, Prof. K.-L. Ackermann



- 1 Bone loss showing apical implant threads.
- 2 Application of Geistlich Bio-Oss®.
- 3 Application of Geistlich Bio-Gide®.
- 4 Good healing of the hard and soft tissue 13 months after surgery.

Product solution
 > Geistlich Bio-Oss®
 > Geistlich Bio-Gide®

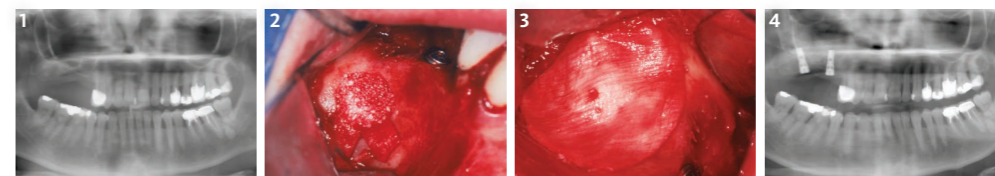
Major bone augmentation, Prof. D. Buser



- 1 Defect with pronounced horizontal bone loss.
- 2 Cortico-cancellous bone transplant from the chin area.
- 3 Contouring with Geistlich Bio-Oss® and coverage with Geistlich Bio-Gide®.
- 4 Suitable bone bed for implant placement 6 months after surgery.

Product solution
 > Geistlich Bio-Oss®
 > Geistlich Bio-Gide®

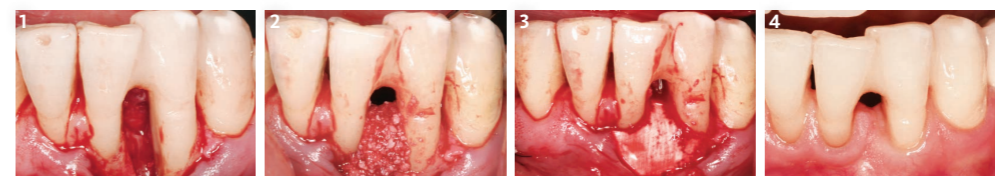
Sinus floor elevation, Dr. P. Valentini



- 1 Atrophied posterior maxilla with insufficient bone height (<2-3 mm).
- 2 Geistlich Bio-Oss® completely fills the lateral window orientated to the buccal bone wall.
- 3 The lateral window is covered with a Geistlich Bio-Gide® membrane.
- 4 The postoperative x-ray shows the augmented region and the implants placed.

Product solution
 > Geistlich Bio-Oss® Pen
 > Geistlich Bio-Gide®

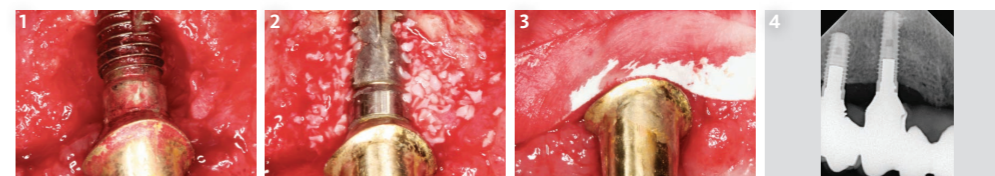
Periodontal Defects, Prof. M. Christgau



- 1 Intraoperative view of the elongated twin-wall defect.
- 2 The basal defect is filled with autogenous bone chips and augmented with Geistlich Bio-Oss® Collagen.
- 3 Coverage with Geistlich Bio-Gide® Perio membrane cut to size and applied without fixing.
- 4 Clinical situation 6 years after surgery shows a long-term stable condition.

Product solution
 > Perio-System
 Combi-Pack

Peri-implantitis, Prof. F. Schwarz

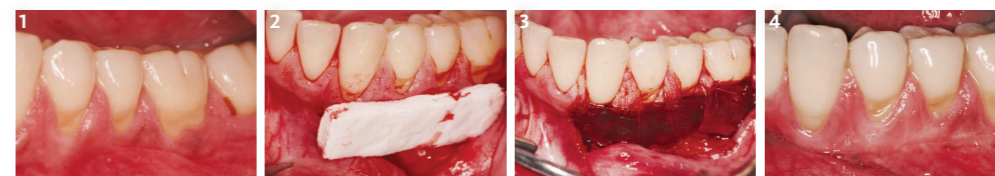


- 1 Class Ic* defect configuration.
- 2 Class Ic defect component after application of Geistlich Bio-Oss®.
- 3 „Double layer“ membrane technique with Geistlich Bio-Gide® on vestibular and lingual aspect.
- 4 Radiographic findings after 12 months show a gain in bone.

Product solution
 > Geistlich Bio-Oss®
 > Geistlich Bio-Gide®

*Schwarz et al. Clin Oral Implants Res. 2007 Apr;18(2):161-70

Soft tissue regeneration, Dr. M. K. McGuire**



- 1 Initial situation: Patient with insufficient keratinised tissue.
- 2 Geistlich Mucograft® is cut to the size of the defect and placed onto the recipient site in a dry state.
- 3 Geistlich Mucograft® is sutured with 5-0 sutures and absorbs the blood from the receiving site.
- 4 Gain in keratinised gingiva and excellent colour and texture match to the adjacent tissue after 6 months.

Product solution
 > Geistlich Mucograft®

**McGuire MK & Scheyer ET. J Periodontol. 2014 J Periodontol. 2014 Oct;85(10):1333-41.

INDICATIONS PRODUCT SOLUTIONS

	Extraction sockets with intact socket	Extraction sockets with defective socket	Minor bone augmentation	Major bone augmentation	Sinus floor elevation	Periodontal defects	Peri-implantitis	Soft-tissue regeneration
Bone replacement materials								
Geistlich Bio-Oss® Granules 0.25–1 mm 0.25 g ~ 0.5 cm ³	Ⓢ	Ⓢ	Ⓢ				Ⓢ	
Geistlich Bio-Oss® Granules 0.25–1 mm 0.5 g ~ 1.0 cm ³	Ⓢ	Ⓢ	Ⓢ				Ⓢ	
Geistlich Bio-Oss® Granules 0.25–1 mm 2.0 g ~ 4.0 cm ³	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ		Ⓢ	
Geistlich Bio-Oss® Granules 1–2 mm 0.5 g ~ 1.5 cm ³				Ⓢ	Ⓢ			
Geistlich Bio-Oss® Granules 1–2 mm 2.0 g ~ 6.0 cm ³				Ⓢ	Ⓢ			
Geistlich Bio-Oss® Block 1 x 1 x 2 cm ~ 2.0 cm ³				Ⓢ				
Geistlich Bio-Oss Pen® Granules 0.25–1 mm 0.25 g ~ 0.5 cm ³	Ⓢ	Ⓢ	Ⓢ				Ⓢ	
Geistlich Bio-Oss Pen® Granules 0.25–1 mm 0.5 g ~ 1.0 cm ³	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ		Ⓢ	
Geistlich Bio-Oss Pen® Granules 1–2 mm 0.5 g ~ 1.5 cm ³				Ⓢ	Ⓢ			
Geistlich Bio-Oss® Collagen 100 mg ~ 0.2–0.3 cm ³	Ⓢ	Ⓢ	Ⓢ			Ⓢ	Ⓢ	
Geistlich Bio-Oss® Collagen 250 mg ~ 0.4–0.6 cm ³	Ⓢ	Ⓢ				Ⓢ	Ⓢ	
Geistlich Bio-Oss® Collagen 500 mg ~ 0.9–1.1 cm ³				Ⓢ				
Membranes								
Geistlich Bio-Gide® 25 x 25 mm		Ⓢ	Ⓢ	Ⓢ	Ⓢ		Ⓢ	
Geistlich Bio-Gide® 30 x 40 mm		Ⓢ		Ⓢ	Ⓢ			
Geistlich Bio-Gide® Perio 16 x 22 mm						Ⓢ		
Combi								
Geistlich Combi-Kit Collagen Geistlich Bio-Oss® Collagen 100 mg + Geistlich Bio-Gide® 16 x 22 mm		Ⓢ	Ⓢ				Ⓢ	
Perio-System Combi-Pack Geistlich Bio-Oss® Collagen 100 mg + Geistlich Bio-Gide® Perio 16 x 22 mm						Ⓢ		
Matrices								
Geistlich Mucograft® Seal 8 mm diameter	Ⓢ							
Geistlich Mucograft® 15 x 20 mm, 20 x 30 mm								Ⓢ

RELY ON OUR PRODUCTS FOR PEACE OF MIND



Geistlich Bio-Oss®

- > Geistlich Bio-Oss® is the most used and - with over 800 studies - the most documented bone replacement material in regenerative dentistry.
- > The biofunctional biomaterial aids vascularisation and the formation of new bone.⁸ The slow resorption of Geistlich Bio-Oss® increases the stability of the augmentation material⁹ – the best prerequisite for a long-term high implant survival rate.³
- > Geistlich Bio-Oss® Collagen and the Geistlich Bio-Oss Pen® provide enhanced handling.



Geistlich Bio-Gide®

- > Geistlich Bio-Gide® is the first and globally the most documented collagen membrane in regenerative dentistry.
- > Alongside an optimum barrier duration and the associated reliable bone regeneration¹⁰ the unique bi-layer structure contributes to uneventful wound healing¹¹.
- > The variant Geistlich Bio-Gide® Perio provides an extended time window for precise placement at the defect due to its compressed structure.

Geistlich Mucograft®

- > Geistlich Mucograft® is a unique 3D collagen matrix which has been specially developed for soft tissue regeneration. It is indicated for augmenting keratinised tissue and for recession coverage and offers a painless alternative to autogenous soft tissue grafts.^{23,24}
- > Geistlich Mucograft® Seal is available in a convenient circular shape and indicated for use in combination with Geistlich Bio-Oss® Collagen for sealing extraction sockets with preserved buccal walls.

³ Jung R et al., Clin Oral Implants Res. 2013 Oct;24(10):1065–73.
⁸ Galindo-Moreno P et al., Clin. Oral Impl. Res. 21, 2010; 221–227.
⁹ Orsini G et al., Oral Diseases 2007; 19:357–368.

¹⁰ Schwarz F et al., Clin Oral Implants Res. 2014 Sep;25(9):1010–5.
¹¹ Becker J et al., Clin. Oral Implants Res. 2009; 20(7): 742–93.
²³ Cardaropoli D, et al. J Periodontol. 2012 Mar;83(3):321–8.
²⁴ Sanz M et al., J Clin Periodontol. Okt. 2009; 36(10):868–76.

Geistlich Biomaterials

As a result of its longstanding tradition the Swiss family firm Geistlich Biomaterials is now one of the leading global suppliers in regenerative dentistry. Dentists and dental specialists in nearly 80 markets on 6 continents place their faith in the reliable and peerless quality of Geistlich Bio-Oss® and Geistlich Bio-Gide®. More than 400 employees in 9 locations ensure that the pioneering products remain at the top of their field: Through intensive scientific research endeavours and the sustainable refinement of solutions with our users in mind.

From experts. For experts.



Manufacturer

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