[BIOMATERIALS]

Straumann® Biomaterials

Master any challenge.

Product portfolio

straumann

COMPREHENSIVE

Our comprehensive portfolio provides you with exactly the choice you need to master challenges from surgical/flapless periodontal regeneration, enhanced wound healing, bone regeneration, to soft-tissue management and wound care.

INDIVIDUAL SOLUTIONS

We understand that an all-rounder, one-size-fits all solution, does not always help you meet every challenge. That's why we provide individual solutions for your individual challenges.

POWERFUL

Whether it's better healing, volume preservation, speed or natural esthetic results, we provide exactly what you need to meet your challenges, backed by scientific evidence and powered by innovation.

Straumann® Biomaterials. What challenge are you going to master today?

Modern dentistry needs specific solutions to ensure maximum performance and security.

We understand that your cases are as individual as your patients. That's why we offer products you feel comfortable with and can depend on, day in, day out. You can trust in the experience and expertise, that is synonymous with Straumann®, to deliver the right solution for different situations. Whatever your patient needs: from a volume preserving xenograft, to the speed and natural results of an allograft, or a well-balanced combination, our innovative solutions provide you with exactly what you need to master your challenges.

Together with our strategic partners, Straumann® now provides a carefully selected and comprehensive portfolio in oral regeneration. Our unique biologics, complete GBR portfolio and innovative custom solutions are designed to help you master the challenges you might face in your daily practice.

BONE GRAFTS

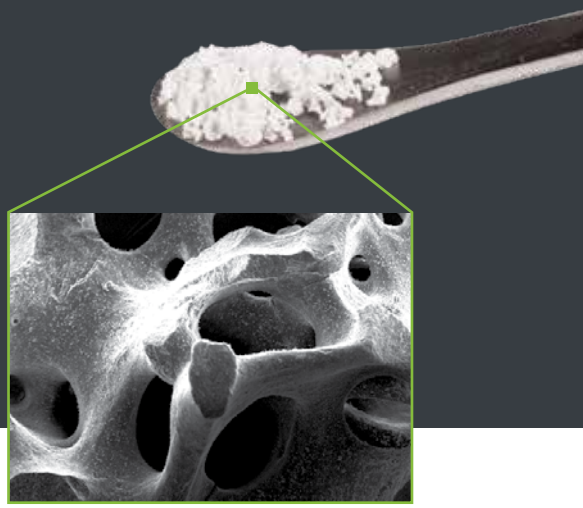
cerabone®

1200 °C safety: pure natural bone mineral

Bovine

cerabone® is one of the most commonly used bovine bone grafting materials in regenerative dental medicine. It is a dimensionally stable bone graft providing permanent structural support.

- Lifetime volume stability
- Over 1 million successful augmentations



FEATURES AND BENEFITS

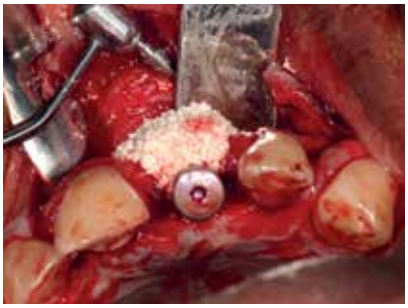
Safety + Purity	The unique 1200 °C manufacturing process of cerabone® removes all organic components for maximum safety and leads to a 100 % pure natural bone mineral – by utilizing heat and water only (free of chemical additives). Gamma-irradiation ensures final sterility of cerabone®.
Osteoconductivity	The human-like bone structure of cerabone® with its three-dimensional pore-network and bioactive surface result in excellent osteoconductive properties. It promotes the adhesion and invasion of bone forming cells resulting in complete integration of the granules into newly formed bone matrix.
Volume stability	Due to its exceptional high purity, cerabone® provides dependable volume stability of the augmented site, which is particularly advantageous for support of the soft tissue in the esthetic region, for preservation of the ridge shape and to protect autologous or allogenic bone from resorption.
Hydrophilicity + Depot-Effect	The interconnected pores and superior hydrophilic surface of cerabone® support the adhesion of proteins from the blood. cerabone® binds and gradually releases signaling molecules thereby providing a long-term depot-effect. In addition, the 100 % pure natural bone mineral acts as a calcium reservoir slowly releasing calcium ions important for bone remodeling.
Predictability + Evidence	The long-term success of cerabone® in regenerative dentistry has been proven by >1 Mio treated patients worldwide. Moreover, cerabone® has been in use for more than 15 years in various medical applications (e.g. craniofacial surgery, oncology and hand- and spine surgery).
Patient comfort	Because of its long-term stability, cerabone® may be specifically preferred in patients with less adequate bone quality.

botiss biomaterials GmbH
Hauptstrasse 28
15806 Zossen
Germany

Literature:
https://www.botiss-dental.com/pdf/cerabone_LiteratureList.pdf

PROPERTIES

Attribute	Description
Origin	Bovine cancellous bone
Composition	100 % pure natural bone mineral (calcium phosphate)
Porosity	65–80 %
Mean pore size	600–900 µm
Degradation kinetics	Only superficial degradation. Lifetime volume stability.
Healing/integration time	6–9 months
Storage temperature	5–25 °C
Shelf life	3 years



Courtesy of Dr. Hassan Maghaireh, Leeds/UK

APPLICATION AND HANDLING

Rehydration
Rehydration of cerabone® in blood from the defect site or saline solution is not required but recommended, as it facilitates handling and application of the particles.

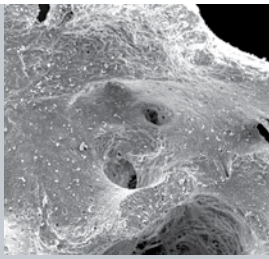
Application
- Avoid compressing the particles during application. Non compacted particles leave space for blood vessel ingrowth and formation of new bone matrix.
- Fill the defect as completely as possible.
- Ensure maximum contact between the graft material and viable bone in a well vascularized area.
- The granules should be secured with a membrane to prevent motion and migration and to ensure undisturbed bone regeneration.

Healing time and re-entry
The appropriate healing time is patient- and site-dependent and has to be decided by the clinician based on the assessment of the patient's individual situation. A minimum healing period of six months is recommended before re-entry to ensure stable integration of particles.

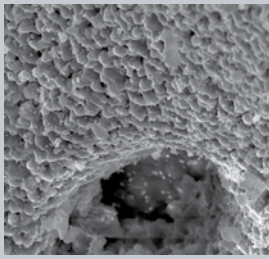
Particle size
Use of small granules gives better surface contouring, especially in the esthetic region. Use of large particles enables a better revascularization of larger defects.

Mixing with maxgraft® (allograft)
Mixing of cerabone® with allogeneic bone (maxgraft®) combines the advantages of both materials; the biological potential of maxgraft® and the long-term stability of cerabone® lead to fast regeneration of vital, strong bone.

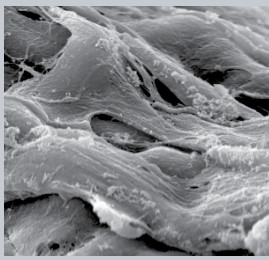
Mixing with autologous bone
Mixing of cerabone® with autologous bone adds a biological activity (osteoinductive and osteogenetic properties of autologous bone) and supports faster regeneration and improved formation of new bone.



Three-dimensional pore-network



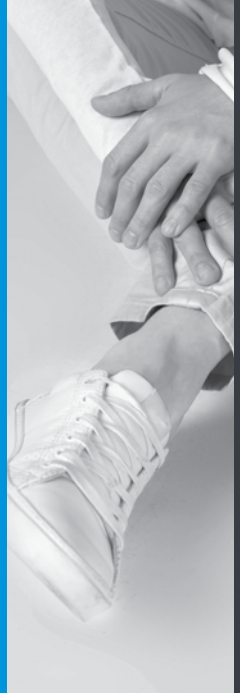
Hydrophillic, rough surface



Cellular osseous integration

Available in the following sizes

Code	Description	Product
BO-1510	0.5–1.0 mm, 1×0.5 cc (ml)	cerabone® small granules
BO-1511	0.5–1.0 mm, 1×1.0 cc (ml)	
BO-1512	0.5–1.0 mm, 1×2.0 cc (ml)	
BO-1515	0.5–1.0 mm, 1×5.0 cc (ml)	
BO-1520	1.0–2.0 mm, 1×0.5 cc (ml)	cerabone® large granules
BO-1521	1.0–2.0 mm, 1×1.0 cc (ml)	
BO-1522	1.0–2.0 mm, 1×2.0 cc (ml)	
BO-1525	1.0–2.0 mm, 1×5.0 cc (ml)	



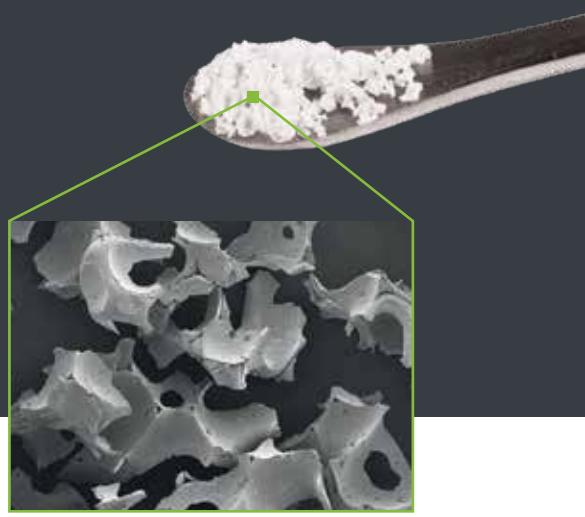
BONE GRAFTS

Straumann® BoneCeramic™

Biphasic calcium phosphate granules

Synthetic

One of the best documented alloplastics in the market, which offers a state-of-the-art scaffold with controlled resorption for vital bone regeneration without compromising on volume preservation.



FEATURES AND BENEFITS

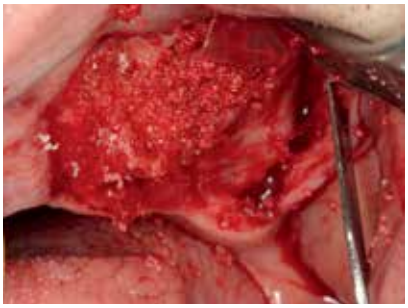
Safety and biocompatibility	The chemical process technology used in the production of Straumann® BoneCeramic™ ensures • reproducibility • batch to batch consistency • biocompatibility Because of its 100 % synthetic composition any risk of infection or disease transmission can be excluded.
Optimized morphology	Optimized 90 % porosity encourages vascularization, osteoblast migration and subsequent bone deposition. High porosity and minimum amount of material leave maximum space for new bone growth.
Homogenous composition	Biphasic calcium phosphate in homogenous composition: 60 % hydroxyapatite (HA) as a strong matrix for long-term bone volume preservation: • 60 % HA prevents excessive resorption and preserves the bone volume. • 40 % β-tricalcium phosphate (β-TCP) for rapid initial bone forming cell response: β-TCP resorbs faster and is replaced by natural bone.
Biofunctionality	The morphology of Straumann® BoneCeramic™ facilitates osteoconductivity, vascularization and osteoblast migration. Straumann® BoneCeramic™ serves as a scaffold for bone deposition during the bone formation process. The slow resorption rate of HA prevents excessive resorption and maintains the stability of the augmentate volume. Fast resorbing β-tricalcium phosphate (β-TCP) allows for regeneration of vital bone during healing time.

Institut Straumann AG
Peter-Merian-Weg 12
4002 Basel
Switzerland

Literature:
https://www.straumann.com/en/dental-professionals/science/literature/bone-substitutes.html

PROPERTIES

Attribute	Description
Origin	Synthetic
Composition	Biphasic calcium phosphate (60 % hydroxyapatite (HA), 40 % β-tricalcium phosphate (β-TCP))
Porosity	90 %
Pore size	100–500 µm
Degradation kinetics	Natural (cell-mediated) resorption process; fast resorption of β-TCP, slow resorption of HA
Healing/integration time	6 months
Storage temperature	Room temperature
Shelf life	5 years



Courtesy of Dr. A. Stricker, Konstanz/Germany

APPLICATION AND HANDLING

Rehydration
Rehydration in blood from the defect site or saline solution is recommended and facilitates handling and application.

Application
- Avoid compressing the particles during application; non compacted particles leave space for blood vessel ingrowth and formation of new bone matrix.
- Fill the defect as completely as possible.
- Ensure maximum contact between the graft material and viable bone in a well vascularized area.

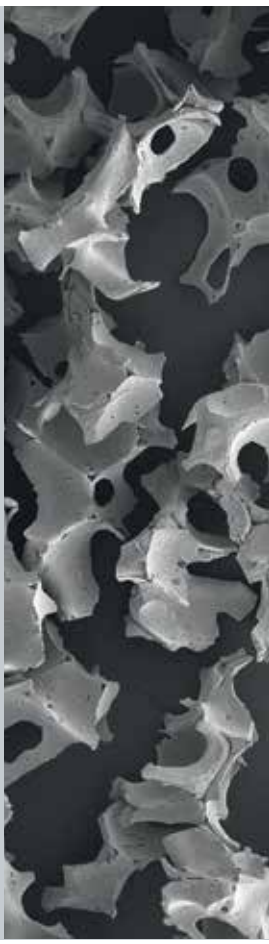
Covering
When working with particulate bone regeneration materials, the augmentation site should always be covered with a barrier membrane to ensure undisturbed osseous regeneration and to prevent migration of the particles into the oral cavity.

Wound closure
Ensure that soft tissue coverage of the grafted site is complete and free of tension.

Healing time and re-entry
The appropriate healing time is patient- and site-dependent and has to be decided by the clinician based on the assessment of the patient's individual situation. A healing period of six months is recommended before re-entry to ensure stable integration of particles.

Particle size
The small granules are preferably used in the esthetic region to give a better surface contouring. It is also beneficial to use smaller granules in smaller defect sites like periodontal defects.
The large granules enable enhanced revascularization of larger defects.

Mixing with autologous bone
Mixing of Straumann® BoneCeramic™ with autologous bone adds a biological activity (osteoinductive and osteogenetic properties of autologous bone) and supports faster regeneration and improved formation of new bone.



Available in the following sizes

Code	Size, amount	Product
070.198	0.4–0.7 mm, 0.25 g, 0.3 cc (ml)	Straumann® BoneCeramic™ granules
070.199	0.5–1.0 mm, 0.5 g, 0.95 cc (ml)	
070.200	0.5–1.0 mm, 1.0 g, 1.9 cc (ml)	

MEMBRANES

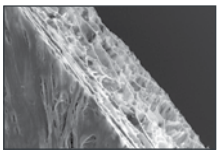
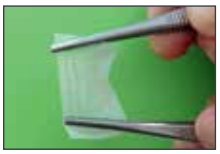
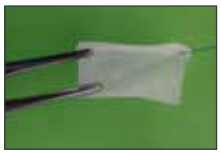
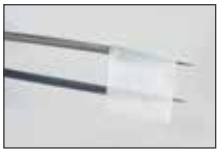
Jason® membrane

Pericardium membrane

Porcine

The Jason® membrane is a native collagen membrane obtained from porcine pericardium, developed and manufactured for dental tissue regeneration. The advantageous biomechanical and biological properties of the natural pericardium are preserved during the production process.

FEATURES AND BENEFITS

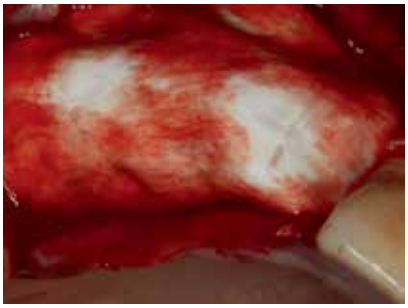
Native collagen structure preserved during the production process	High tensile strength due to the biomechanical properties of the pericardium. Allows a wide range of fixation methods, including pinning and suturing, despite the low thickness of only ~ 0.15 mm.   
Slow degradation time due to the natural honeycomb-like and multi-layered collagen structure with an increased content of collagen type III	The resulting prolonged barrier function makes the membrane the recommended choice particularly for large augmentative procedures.
Low thickness of only 0.15 mm	Facilitates soft tissue manipulation, particularly in challenging thin biotypes. 
Easy handling and application	Can be cut to shape and size in dry or wet conditions. Does not stick to itself and to instruments. Can be easily repositioned, if needed. Exceptional adaptability to surface contour after rehydration. 

botiss biomaterials GmbH
Hauptstrasse 28
15806 Zossen
Germany

Literature:
https://www.botiss-dental.com/pdf/Jason_LiteratureList.pdf

PROPERTIES

Attribute	Description
Origin	Porcine pericardium
Composition	Native collagen type I and III
Structure	Natural multilayered collagen structure, not side-specific
Thickness	0.05–0.35 mm (~ 0.15 mm)
Fixation	Generally not required due to good surface adaptation, but possible (pinning, suturing, screwing)
Degradation time	Slow degradation with prolonged barrier function (12 weeks)
Storage temperature	Room temperature (< 30 °C)
Shelf life	3 years



Courtesy of Prof. Dr. Dr. Daniel Rothamel, Mönchengladbach/Germany

APPLICATION AND HANDLING

Rehydration

The Jason® membrane can be applied dry or rehydrated in sterile saline solution or blood. The initial placement of the dry membrane with subsequent application of the graft material is particularly advantageous for lateral augmentation of defects outside the ridge contour. After rehydration the Jason® membrane exhibits an exceptional adaptability to surface contours. Since it is not sticky, it can be easily repositioned, if required.

Placement

One side of the Jason® membrane is slightly smoother and marked with "G" at the top right corner. This side is meant to be placed towards the gingiva or soft tissue. The slightly rougher side of the Jason® membrane should face the bone. However, there is no problem if the membrane is placed the other way around. The clinical effect, if present, will be minimal, mainly due to the long-term barrier function of the Jason® membrane. The Jason® membrane should be cut and placed to overlap the defect walls by at least 2–3 mm. This way, the membrane is in close contact with the bone, and lateral ingrowth of gingival connective tissue can be prevented.

Fixation

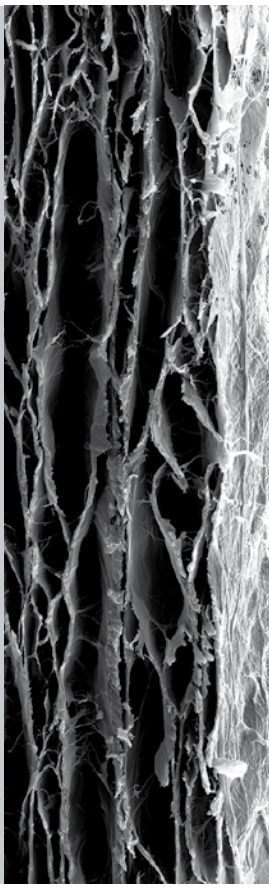
The Jason® membrane exhibits a remarkable multi-directional tear resistance. Therefore, it can easily be pinned, sutured or even screwed without rupturing. But the excellent adhesion of the membrane to the bony walls makes additional fixation unnecessary in most cases.

Exposure

Exposure of the Jason® membrane should be avoided, since fast bacterial resorption significantly reduces the barrier function of the thin membrane. In case of a dehiscence, the wound usually heals without complications by formation of free granulation tissue.

Shaping

The Jason® membrane can be cut to the desired shape and size with a pair of scissors – while maintaining sterility. It may be helpful to use appropriate templates for defining the required size of the membrane.



Available in the following sizes

Code	Description	Product
BO-681520	15 × 20 mm	Jason® membrane
BO-682030	20 × 30 mm	
BO-683040	30 × 40 mm	

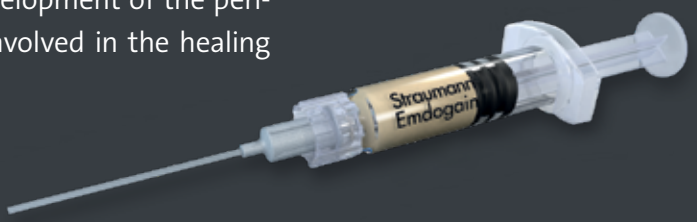
STRAUMANN® EMDOGAIN®

Straumann® Emdogain®

Periodontal surgery and oral wound healing

Porcine

Straumann® Emdogain® is a unique gel containing enamel matrix derivative. This mixture of natural proteins can induce biological processes that usually take place during the development of the periodontium and may stimulate certain cells involved in the healing process of soft and hard tissues.



Refer to the instructions for use available at ifu.straumann.com

FEATURES AND BENEFITS

Emdogain® induces true regeneration	By modulating the wound healing process, Emdogain® induces the regeneration of a functional attachment in periodontal procedures (as evidenced by human histological data[5,6])
Emdogain® improves wound healing in oral surgical procedures	By promoting angiogenesis[7,8], modulating the production of factors related to inflammation[9] and thanks to its anti-microbial effect toward oral pathogens[10], Emdogain® accelerates the wound healing process of oral surgical procedures[11]
Emdogain® increased the predictability of your periodontal procedures	Emdogain® leads to: • significantly improved clinical parameters in intra-osseous defects compared to open flap debridement procedures alone[12] • increased root coverage achieved when used in a coronally advanced flap (CAF) compared to CAF alone[13], and leads to results comparable to CAF + Connective Tissue Graft[14]
Emdogain® helps you achieve patient satisfaction	• When used to treat intra-osseous defects, Emdogain® contributes to improve your patients' dental prognosis • When used in oral surgical procedures in general, Emdogain® accelerates wound closure[15], and reduces post surgical pain and swelling[16] • When used in periodontal plastic procedures around teeth and implants, Emdogain® may improve the esthetics of the results thanks to improved wound healing
Emdogain® is easy to apply	Because Emdogain® is a gel, it is easy to apply, even in defects difficult to access
Emdogain® means peace of mind	Emdogain® is backed by extensive and long term clinical documentation. It is documented in over 1000 scientific publications including 600 clinical publications[17] and 10 year data[14,18]

Institut Straumann AG
Peter-Merian-Weg 12
4002 Basel
Switzerland

PROPERTIES

Attribute	Description
Origin	Porcine unerupted tooth buds
Composition	Enamel matrix derivative, Propylene Glycol Alginate (PGA), water
Structure	Ready to use gel
Storage temperature	Cool storage in fridge (2–8 °C)
Shelf life	2 years

APPLICATION AND HANDLING

Emdogain® in oral regeneration

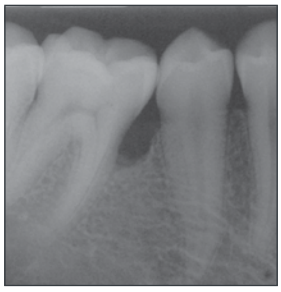
Periodontitis is associated with a loss of tooth-supporting tissues which is irreversible and the main reason for tooth loss if left untreated. Emdogain® is the golden standard when it comes to inducing the regeneration of lost periodontal tissues in a safe, easy and predictable way. Long-term clinical studies have demonstrated that Emdogain® can effectively help save teeth and revert gingival recessions.

Emdogain® in wound healing

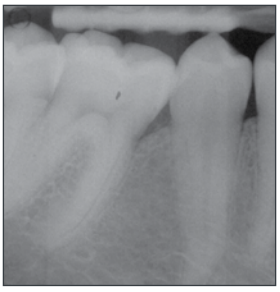
As esthetics, comfort and efficiency become more and more important when it comes to implant dentistry, Emdogain® is the solution you have been searching for. Emdogain® allows accelerated healing, minimizing discomfort for your patients through less swelling, less pain and faster recovery. Further it will initiate a natural rehabilitation that leads to esthetic outcomes.

TREATMENT

Courtesy of Prof. Carlos Nemcovsky

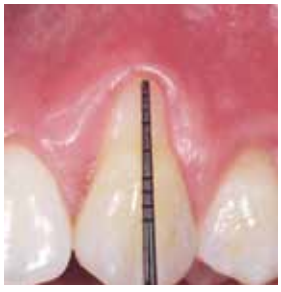


Before treatment
with Straumann® Emdogain®

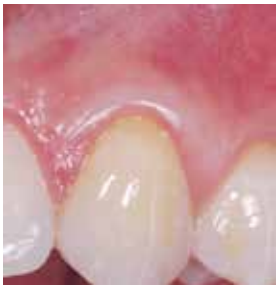


20 years after treatment
with Straumann® Emdogain®

Courtesy of Prof. Giovanni Zucchelli



Before treatment
with Straumann® Emdogain®



8 months after treatment
with Straumann® Emdogain®

Available in the following sizes

Product	Code
Emdogain® Singlepack	
1 × Straumann® Emdogain® 0.15 ml	075.127W
1 × Straumann® Emdogain® 0.3 ml	075.101W
1 × Straumann® Emdogain® 0.7 ml	075.102W
Emdogain® Multipack	
3 × Straumann® Emdogain® 0.3 ml 3 × Straumann® PrefGel® 0.6 ml	075.114W
3 × Straumann® Emdogain® 0.7 ml 3 × Straumann® PrefGel® 0.6 ml	075.116W
Emdogain® 5-Pack	
5 × Straumann® Emdogain® 0.15 ml	075.098W
PrefGel®	
5 × Straumann® PrefGel® 0.6 ml	075.203W

STRAUMANN® EMDOGAIN®

Straumann® Emdogain® FL

Flapless periodontal regeneration

Porcine

When applied to cleaned tooth root surfaces the unique protein composition in Straumann Emdogain® FL is able to induce the regeneration of all periodontal tissues: cementum, periodontal ligament, alveolar bone and gingiva.

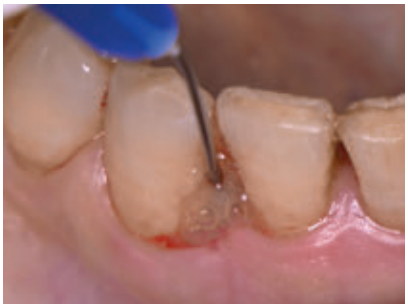
FEATURES AND BENEFITS

Less surgeries	Adding Emdogain® to the initial phase of periodontal therapy helps avoiding the surgery by solving 42 % of the pockets non-surgically[20]
More effective	Significantly improved pocket probing depth reduction compared to the SRP procedure without Emdogain[22]
More efficient	Similar results at 12 and 24 months as if the surgery would have been performed[21]
Less pain and inflammation	The wound healing properties of Emdogain® reduce pain reported by patients and overall inflammation markers[23]
Minimal invasive	A reduced invasiveness is allowed thanks to the new thinner cannula[20] that has a diameter similar to a periodontal probe
Thinner applicator for flapless use	True periodontal regeneration can now be achieved without open flap surgery for pockets with depth of 5–9 mm after Scaling and Root planning (SRP) procedures were performed[20]

Institut Straumann AG
Peter-Merian-Weg 12
4002 Basel
Switzerland

PROPERTIES

Attribute	Description
Origin	Porcine unerupted tooth buds
Composition	Enamel matrix derivative, Propylene Glycol Alginate (PGA), water
Structure	Ready to use gel
Storage temperature	Cool storage in fridge (2–8 °C)
Shelf life	2 years



Courtesy of Prof. Mario Aimetti, University of Turin, Italy

APPLICATION AND HANDLING

Expertize and outstanding clinical support

Following decades of clinical success in regenerative periodontal surgery and thanks to the introduction of a new applicator, Emdogain®, the unique gel containing enamel matrix derivative can now be applied flapless in periodontal pockets after scaling and root planning procedures.

Effective

Emdogain® FL renders procedures more effective and eliminates more periodontal pockets as part of periodontal debridement process.[20]

Reducing invasiveness

Using Emdogain® FL in a flapless approach leads to similar clinical results as when Emdogain® is applied with a flap surgery after 12 and 24 months.[22]

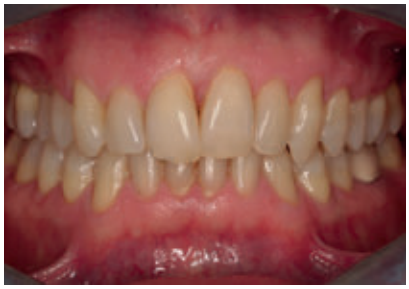
Patient comfort

Moreover, it improves the quality of life of patients by reducing pain, swelling and systemic inflammation.[20]

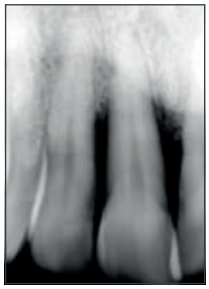
TREATMENT

3 year results after flapless periodontal regeneration with Emdogain® FL.

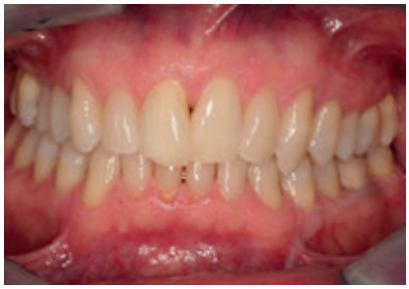
Pictures with courtesy of Dr. Orest G Komarnyckyj DDS, Phoenix AZ, USA



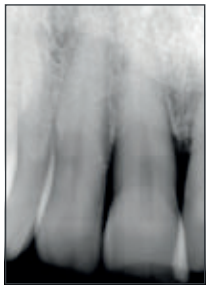
Left frontal incisor before treatment



PPD ≥ 9mm



3 years after treatment with Straumann® Emdogain® FL



PPD = 1–2 mm

Available in the following sizes

Product	Code
Emdogain® FL 0.15 ml	
1 × Emdogain® FL 0.15 ml 1 × PrefGel® 0.6 ml 2 × cannulas	075.130
Emdogain® FL 0.3 ml	
1 × Emdogain® FL 0.3 ml 1 × PrefGel® 0.6 ml 2 × cannulas	075.131

Master any challenge.

REFERENCES

1 Zirk et al. Prevention of post-operative bleeding in hemostatic compromised patients using native porcine collagen fleeces-retrospective study of a consecutive case series. Oral Maxillofac Surg. 2016. [E-Pub vor Print-Pub] http://www.ncbi.nlm.nih.gov/pubmed/27139018 **2** Pabst AM., Happe A., Callaway A., Ziebart T., Stratul SI., Ackermann M., Konerding MA., Willershausen B., Kasaj A. In vitro and in vivo characterization of porcine acellular dermal matrix for gingival augmentation. J Periodont Res 2014; Epub 2013 Jul 1. **3** Rothamel D., Benner M., Fienitz T., Happe A., Kreppel M., Nickenig HJ. and Zöller JE. Biodegradation pattern and tissue integration of native and cross-linked porcine collagen soft tissue augmentation matrices – an experimental study in the rat. Head and Face 2014, 10:10. **4** Kasaj A, Levin L, Stratul SI, Götz H, Schlee M, Rütters CB, Konerding MA, Ackermann M, Willershausen B. Pabst AM. The influence of various rehydration protocols on biomechanical properties of different acellular tissue matrices. Clin Oral Ivest. 2015. **5** McGuire MK, et al. A Prospective, Cased-Controlled Study Evaluating the use of Enamel Matrix Derivative on Human Buccal Recession Defects: A Human Histologic Examination. J Periodontol. 2016 Feb 1:1-34. **6** Sculean A, et al. Clinical and histologic evaluation of human intrabony defects treated with an enamel matrix protein derivative (Emdogain). Int J Periodontics Restorative Dent. 2000;20:374–381. **7** Aspriello SD, et al. Effects of enamel matrix derivative on vascular endothelial growth factor expression and microvessel density in gingival tissues of periodontal pocket: a comparative study. J Periodontol. 2011 Apr;82(4):606-12. **8** Guimarães et al. Microvessel Density Evaluation of the Effect of Enamel Matrix Derivative on Soft Tissue After Implant Placement: A Preliminary Study. Int J Periodontics Restorative Dent. 2015 Sep-Oct;35(5):733-8. **9** Sato et al. Enamel matrix derivative exhibits anti-inflammatory properties in monocytes J Periodontol. Mar 2008;79(3):535-40 **10** Arweiler et al. Antibacterial effect of an enamel matrix protein derivative on in vivo dental biofilm vitality. Clin Oral Investig. 2002 Dec;6(4):205-9. Epub 2002 Nov 14. **11** Maymon-Gil T, et al. Emdogain Promotes Healing of a Surgical Wound in the Rat Oral Mucosa. J. Periodontol. 2016 Jan 16:1-16. **12** Tonetti et al. Enamel matrix proteins in the regenerative therapy of deep intrabony defects – A multicenter, randomized, controlled clinical trial. J Clin Periodontology 2002;29;317-325 **13** Tonetti MS et al. Clinical efficacy of periodontal plastic surgery procedures: consensus report of Group 2 of the 10th European Workshop on Periodontology. J Clin Periodontol. 2014 Apr;41 Suppl 15:S36-43 **14** McGuire MK, et al. Evaluation of human recession defects treated with coronally advanced flaps and either enamel matrix derivative or connective tissue: comparison of clinical parameters at 10 years. J Periodontol. 2012 Nov;83(11):1353-62 **15** Villa O et al. J Periodontol. A Proline-Rich Peptide Mimic Effects of EMD in Rat Oral Mucosal Incisional Wound Healing. 2015 Dec;86(12):1386-95. **16** Jepsen S, et al. A randomized clinical trial comparing enamel matrix derivative and membrane treatment of buccal Class II furcation involvement in mandibular molars. Part I: Study design and results for primary outcomes.J Periodontol. 2004 Aug;75(8):1150-60. **17** According to PUBMED - search term "Emdogain" or "enamel matrix derivative". **18** Sculean A, et al. Ten-year results following treatment of intra-bony defects with enamel matrix proteins and guided tissue regeneration. J Clin Periodontol. 2008 Sep;35(9):817-24 **19** Almqvist et al. Effects of a melogenins on angiogenesis-associated processes of endothelial cells. J Wound Care. 2011 Feb;20(2):68, 70-5 **20** Graziani F, Gennai S, Petrini M, Bettini L, Tonetti M. Enamel matrix derivative stabilizes blood clot and improves clinical healing in deep pockets after flapless periodontal therapy: A Randomized Clinical Trial. J Clin Periodontol. 2019 Feb; 46(2):231-240. **21** Aimetti M, Ferrarotti F, Mariani GM, Romano F. A novel flapless approach versus minimally invasive surgery in periodontal regeneration with enamel matrix derivative proteins: a 24-month randomized controlled clinical trial. Clin Oral Investig. 2017 Jan;21(1): 327-337. **22** Straumann Sponsored Study, data on file, study ongoing **23** Wennström JL, Lindhe J. Some effects of enamel matrix proteins on wound healing in the dento-gingival region. J Clin Periodontol. 2002 Jan;29(1):9-14

490.561/en/A/00 12/19

Straumann Group Pty Ltd
7 Gateway Court
Port Melbourne VIC 3207
AU Toll Free 1800 660 330
NZ Toll Free 0800 408 370
customerservice.au@straumann.com

www.straumann.com.au

straumanngroup