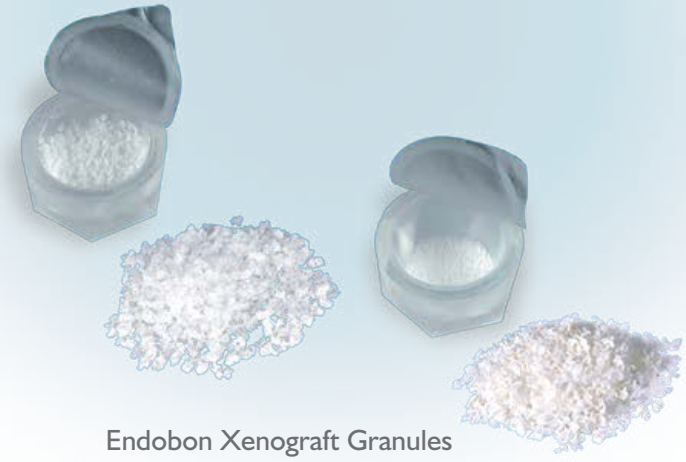
Comprehensive Tissue Management Treatment Solutions

Endobon® Xenograft Granules With OsseoGuard® & OsseoGuard Flex® Barrier Membranes

OsseoGuard Membrane

OsseoGuard Flex Membrane



Endobon Xenograft Granules

BIOMET 3i™

PROVIDING SOLUTIONS – ONE PATIENT AT A TIME™

Endobon® Xenograft Granules

- Bovine-derived hydroxyapatite that has been fully deproteinized by a two-step, high temperature process for safety.
- An essentially non-resorbable material that is ideally suited for regeneration of bone defects when effective space maintenance is required.
- Osseoconductive due to the interconnecting micro and macro pores for bony integration, which facilitate graft stability and vascular ingrowth[1].
- Packaged in easy to open dishes. Large volumes (5ml and 8ml) are individually packaged in 1ml containers for sterility.

➲ Endobon Xenograft Granules adhere to one another when hydrated for easy transfer to the defect.

1. Hing KA, Best SM, Bonfield W. Characterization of porous hydroxyapatite. J Mater Sci Mater Med. 1999 Mar;10(3):135-45.

Manufacturer: BIOMET® France Sarl

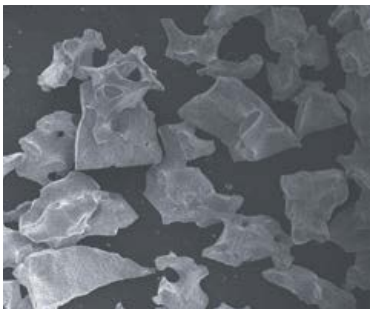
Bone Graft Substitute

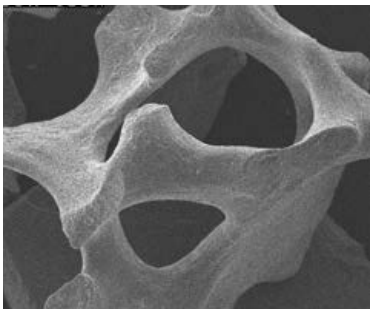
Small Granules

➲ 500–1000µm particle size typically preferred for grafting smaller defects, such as in extraction sockets.

Large Granules

➲ 1000–2000µm particle size typically preferred for grafting large defects, such as sinus elevations because less material is needed with larger-sized particles.





➲ SEM images of Endobon Xenograft Granules at 20x and 100x showing the micro and macro pores in the particles.

Endobon Xenograft Granules Are Indicated For Dental And/Or Oral Surgical Procedures, Such As:

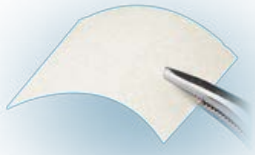
- Alveolar ridge augmentation/reconstruction
- Filling of bone defects after root resection, cystectomy and apicectomy
- Filling socket after tooth extraction
- Sinus elevation

OsseoGuard® Membranes

- Resorbable collagen membranes designed for optimal strength, resorption, handling and biocompatibility.
- Made of highly purified collagen from safe bovine sources.
- A unique manufacturing process provides both membranes with a long resorption profile (6–9 months); well suited for Guided Bone Regeneration (GBR) procedures.
- OsseoGuard Membranes provide a protective barrier against soft-tissue invasion of a defect space.
- Two different levels of flexibility for ease of use in various clinical scenarios.
- Ability to tack or suture if desired.
- Three sizes are supplied sterile and are in double peel pouches for different defect sizes.

Manufacturer: Collagen Matrix, Inc., Oakland, NJ

Barrier Membranes



OsseoGuard

➲ Slightly more rigid for space maintenance.

OsseoGuard Flex

➲ Less extrinsic crosslinking for a higher degree of flexibility.

Indications:

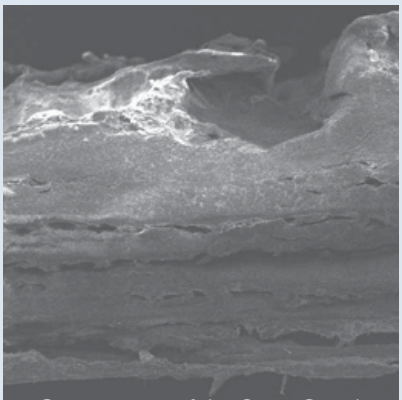
- Extraction sockets
- Coverage of sinus window and sinus membrane perforations
- Localized ridge augmentation
- Alveolar ridge reconstruction
- GBR in dehiscence defects
- GTR in periodontal defects

"The consistency and tear resistance are very good, even when wet."

– Dr. Roberto Cocchetto†, Italy

†Dr. Roberto Cocchetto has a financial relationship with BIOMET *3i* LLC resulting from speaking engagements, consulting engagements and other retained services.

OsseoGuard® Membrane



Cross section of the OsseoGuard Membrane at 200x magnification.

- The OsseoGuard Membrane is designed for optimal strength, resorption and handling.
- Made of highly purified Type I collagen, derived from bovine Achilles tendon.

This provides:

- Optimal strength to support suturing and good handling characteristics.
- A suture pull-out strength that is significantly higher than that of BioMend® due to its unique fibrillar matrix structure.[1]
- A long resorption profile (6–9 months) suited for the healing time required in many GBR procedures.[2]

Manufacturer: Collagen Matrix, Inc., Oakland, NJ

Posterior Mandible Recent Extraction Defects

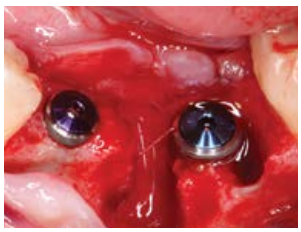


Fig. 1: Clinical appearance of the surgical site at the time of implant placement four weeks after tooth extraction.

Fig. 2 & 3: The osseous defects were grafted with autogenous bone and Endobon® Xenograft Small Granules. The surgical site was covered with an OsseoGuard 20x30mm Resorbable Collagen Membrane.

Fig. 4: The surgical site was closed with sutures.

Fig. 5: Clinical appearance one month post-implant placement. Good epithelialization of the soft tissue is observed.

Fig. 6: Three months post-implant placement, the soft tissue has healed completely. The implants are ready for second stage surgery and healing abutment connection.

Fig. 7: Placement of the definitive restoration five months post-surgery.

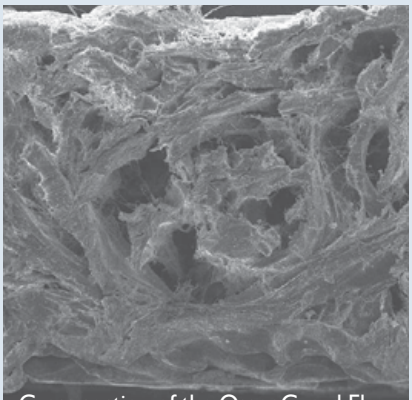
Fig. 8: Clinical appearance nine months post-surgery. Note the healthy soft tissues.

Fig. 9: Periapical radiograph taken nine months post-surgery. Note the regenerated bone and graft integration.

Clinical Images Provided By: Dr. Francisco Enrile, Huelva, Spain.

1. Yuen D, Junchaya C, Zuclich G, Ulreich JB, Homg-Ban L, Li S. Reconstituted type I collagen membrane for guided tissue regeneration and soft-tissue augmentation. Society for Biomaterials, 2000.
2. Yuen D, Ulreich JB, Zuclich G, Homg-Ban L, Li S. Prediction of in vivo stability of a resorbable, reconstituted type I collagen membrane by in vitro methods. Society for Biomaterials, 2000.

OsseoGuard Flex® Membrane



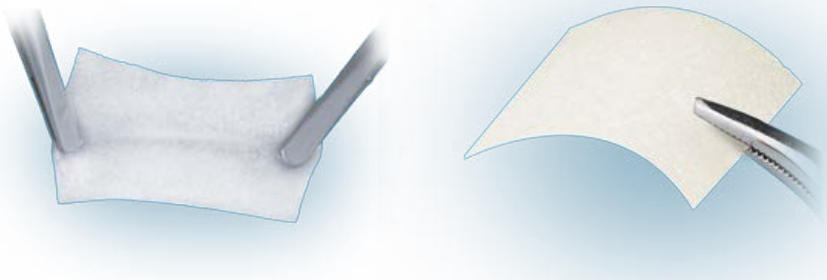
Cross section of the OsseoGuard Flex Membrane at 100x magnification.

- The OsseoGuard Flex Membrane is designed for optimal strength and drapability, resorption and handling.
- Made of Type I and Type III collagen, highly purified from intact bovine dermis.

This provides:

- Optimal flexibility to drape over the defects.
- A long resorption profile (6–9 months) suited for the healing time required in many GBR procedures.[1]
- The ability to aid in gingival healing even when left exposed in a posterior molar extraction site.[2*]

Manufacturer: Collagen Matrix, Inc., Oakland, NJ



➲ Image illustrates the strength of the OsseoGuard Flex Membrane.

Maxillary Molar Post-Extraction Defects

Fig. 1: Extraction socket of first maxillary molar.

Fig. 2: Extraction socket grafted with Endobon® Xenograft Small Granules and covered with an OsseoGuard Flex Membrane.

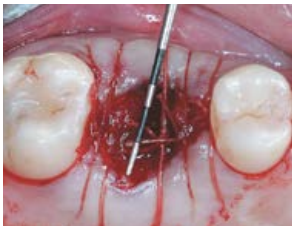


Fig. 3: The edges of the membrane were positioned under the soft tissue and secured with resorbable sutures.

Fig. 4: Healing was uneventful. The soft tissue was epithelializing over the OsseoGuard Flex Membrane two weeks postoperatively.

Fig. 5: The site was completely covered four weeks after the extraction.

Fig. 6: At four months postoperatively, a radiograph of the graft site showed excellent containment of the graft material.

Fig. 7: At four months postoperatively, the socket was healed and ready for implant placement.

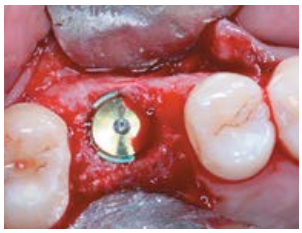


Fig. 8: A 6mm diameter BIOMET ***3i*** Implant with a 5mm platform was placed four months postoperatively.

Fig. 9: The implant was left submerged for two months of healing.

1. Yuen D, Ulreich JB, Zuclich G, Homg-Ban L, Li S. Prediction of in vivo stability of a resorbable, reconstituted Type I collagen membrane by in vitro methods. Society for Biomaterials, 2000.
2. del Castillo R†. Grafting of an extracted maxillary first-molar socket using a new, flexible resorbable collagen membrane for ridge preservation in advance of implant placement. Inside Dentistry, October 2011.94-96.

*Primary closure is recommended. If exposed, resorption time will be shorter.

Clinical images originally published by Dr. Robert del Castillo. Grafting of an extracted maxillary first-molar socket using a new, flexible resorbable collagen membrane for ridge preservation in advance of implant placement. Inside Dentistry, October 2011.94-96.

†Dr. del Castillo has a financial relationship with BIOMET ***3i*** LLC resulting from speaking engagements, consulting engagements and other retained services.

Anterior Ridge Augmentation

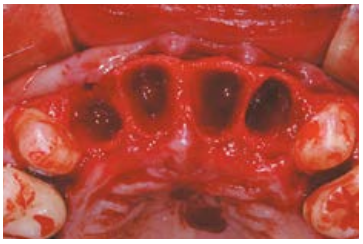


Fig. 1: Extraction sockets of the four maxillary incisors and immediate implant placement.

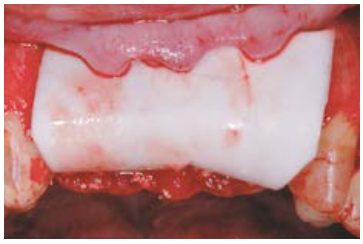


Fig. 2: Grafting with Endobon® Xenograft Small Granules covered by an OsseoGuard® Resorbable Collagen Membrane.

Fig. 3: The soft-tissue flaps were closed and sutured.

Fig. 4: Clinical appearance of soft tissue showing excellent soft-tissue healing after four months.

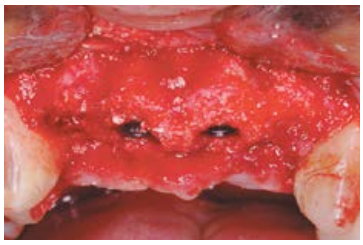


Fig. 5: Clinical appearance of the regenerated site at four months after removing the remnants of the membrane.

Fig. 6: Occlusal view after four months.

Post-Extraction Defects in the Aesthetic Zone

Fig. 7: Post-extraction defects in the maxilla right central and lateral incisor area.

Fig. 8: Occlusal view of the extraction site defects.

Fig. 9: Facial view of dehiscence defects after implant placement.

Fig. 10: Occlusal view of implants and defects.

Fig. 11: Grafting with Endobon Xenograft Small Granules covered by an OsseoGuard Resorbable Collagen Membrane.

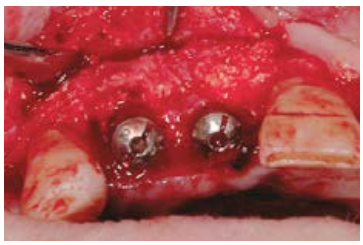


Fig. 12: Regeneration at four months after removing the remnants of the membrane.

Clinical Images Provided By: Dr. Xavier Vela†, Barcelona, Spain

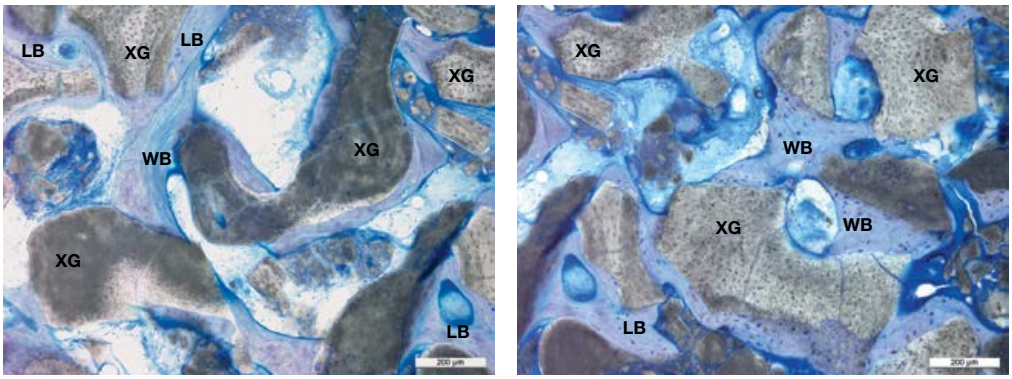
† Dr. Xavier Vela has a financial relationship with BIOMET ***3i*** LLC resulting from speaking engagements, consulting engagements and other retained services.

Histological Study of Endobon® Xenograft Granules in Sinus Floor Augmentation

"The Clinical and Histological Efficacy of Xenograft Granules for Maxillary Sinus Floor Augmentation", a study led by Dr. Myron Nevins† at the Harvard School of Dentistry published in The International Journal Of Periodontics & Restorative Dentistry (2011Jun;31(3):227-235), highlights the positive results that clinicians achieved when using Endobon Xenograft Granules in patients requiring sinus augmentation procedures prior to implant placement.

At six months postoperatively, the following observations were made:

- Bone formation at the osteotomy site ranging from 16.2% to 43.6% was observed in all patients.
- Histologic evaluation showed Endobon Xenograft Granules to be integrated and surrounded by woven bone and in close contact with the particles.
- No inflammatory cells were present and there were no signs of Xenograft resorption.
- Evidence was observed of woven bone undergoing remodeling and maturing to well-organized lamellar bone.



➲ Some areas of the newly formed bone were undergoing remodeling, maturing from woven bone (WB) to well-organized lamellar bone (LB). XG: Xenograft Granules.

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† These clinicians have current or past financial relationships with BIOMET ***3i*** LLC resulting from speaking engagements, consulting engagements and other retained services.

Ordering Information

OsseoGuard® And OsseoGuard Flex® Barrier Membranes		
Size (mm)	OsseoGuard Membrane	OsseoGuard Flex Membrane
15 x 20mm	OG1520	OGF1520
20 x 30mm	OG2030	OGF2030
30 x 40mm	OG3040	OGF3040

➲ Manufacturer: Collagen Matrix, Inc., Oakland, NJ

Endobon® Xenograft Granules		
Volume (ml)	Small Granules 500–1000µm	Large Granules 1000–2000µm
0.5ml	ROX05	N/A
1.0ml	ROX10	N/A
2.0ml	ROX20	ROXLG20
5.0ml	N/A	ROXLG50
8.0ml	N/A	ROXLG80

➲ Manufacturer: BIOMET® France, Sarl.

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