# OsseoGuard® & OsseoGuard Flex®

## Guided Bone & Tissue Regeneration


ZIMMER BIOMET
Your progress. Our promise.®

# OsseoGuard® & OsseoGuard Flex®

Resorbable Membranes

## Easy To Use For Site Protection And Clinically Manageable

### Choose between two levels of drapability for ease of use in various clinical procedures.

Today, clinicians are treating an increased number of patients using Guided Bone Regeneration (GBR) in conjunction with implant therapy, which has led to an increased use of resorbable membranes. In addition to providing graft material containment and a barrier to soft-tissue cell invasion, studies have shown that using a membrane in most GBR procedures can positively affect the outcome of those procedures.[1,2] Cases in which a membrane was used, have been linked to higher implant survival rates, as well as an increased percentage of vital bone formation in sinus grafts when compared to sinuses grafted without a membrane.[1,2]

In response to the growing need for a resorbable collagen membrane, Zimmer Biomet Dental offers OsseoGuard and OsseoGuard Flex Membranes for site protection. Clinicians have the opportunity to select a membrane based on their particular handling characteristic preferences. If a clinician prefers a membrane that has more space maintenance capability, OsseoGuard may be the membrane of choice. On the other hand, if a clinician prefers a membrane that has less memory and therefore a higher degree of conformance to a defect, OsseoGuard Flex may be the membrane of choice.

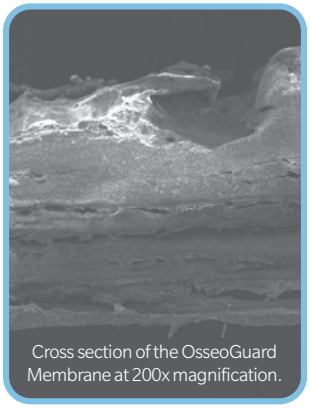
These membranes can be trimmed and placed dry or hydrated, and do not require side-specific placement. These membranes also have a pore size that allows them to be occlusive to gingival and epithelial cells, while still permeable to essential nutrients.

OsseoGuard and OsseoGuard Flex Membranes provide predictability, aesthetic soft-tissue healing, long resorption profiles and ease of use.

1. Wallace S, Froum S, Cho S, Elian N, Monteiro D, Kim B, Tarnow D†. Sinus Augmentation Utilizing Anorganic Bovine Bone (Bio-Oss®) with Absorbable and Nonabsorbable Membranes Placed over the Lateral Widow: Histomorphometric and Clinical Analyses. Int J Periodontics & Restorative Dentistry, Nov./Dec. 2005, Vol. 25, Issue 6, 551–559.
2. Wallace S, Froum S, Effect of Maxillary Sinus Augmentation on the Survival of Endosseous Dental Implants. A Systematic Review. Annals of Periodontology, December 2003, Vol. 8, No. 1, 328-343.
†Dr. Tarnow had a financial relationship with BIOMET 3i LLC resulting from speaking engagements, consulting engagements and other retained services.

# OsseoGuard® Membranes

## Resorbable Membranes



Cross section of the OsseoGuard Membrane at 200x magnification.

## Long-Term Yet Fully Resorbable

The OsseoGuard Membrane is designed for optimal strength, resorption and handling. This membrane is 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® Membrane due to its unique fibrillar matrix structure.[3]
- A long resorption profile (6-9 months)[4] suited for the healing time required in many GBR procedures.

## Posterior Mandible Recent Extraction Defects

Clinical images provided by Dr. Francisco Enrile, Huelva, Spain.

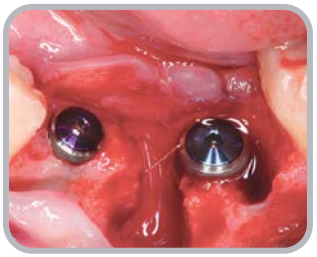


**Fig. 1:** Clinical appearance of the surgical site at the time of implant placement four weeks after tooth extraction.

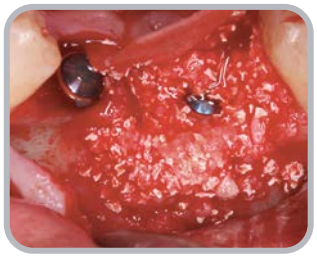


**Fig. 2 & 3:** The osseous defects were grafted with autogenous bone and Endobon® Xenograft Small Granules. The surgical site was covered with an OsseoGuard 20x30 mm Resorbable Collagen Membrane.

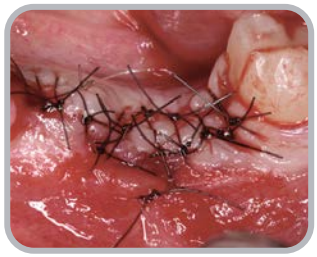


**Fig. 4:** The surgical site was closed with sutures.

**Fig. 5:** Clinical appearance one month post-implant placement showing epithelialization of the soft tissue.

**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.

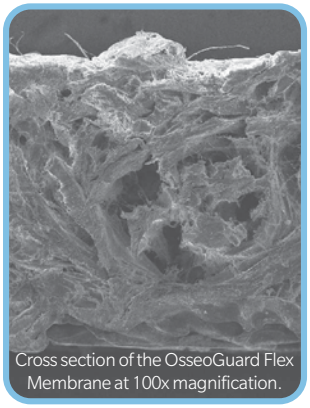
**Fig. 9:** Periapical radiograph nine months post-surgery. Note the regenerated bone and graft integration.


3. Yuen D, Junchaya C, Zuclich G, Ulreich J, Lin H, Li S. A Resorbable, Reconstituted Type I Collagen Membrane for Guided Tissue Regeneration and Soft-Tissue Augmentation. Society for Biomaterials, 2000.
4. Yuen D, Ulreich J, Zuclich G, Lin H, S Li. Prediction of In Vivo Stability of a Resorbable, Reconstituted Type I Collagen Membrane by In Vitro Methods. Society for Biomaterials, 2000.


Dr. Enrile has a financial relationships with Zimmer Biomet Dental resulting from speaking engagements, consulting engagements and other retained services at the time of their involvement.

# OsseoGuard Flex® Membranes

## Resorbable Membranes



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

## Flexibility Meets Strength

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

### This provides:

- Better flexibility to drape over the defects.
- A long resorption profile (6-9 months)[4] suited for the healing time required in many GBR procedures.
- The ability to aid in gingival healing even when left exposed in a posterior molar extraction site.[5]*

## Maxillary Molar Post-Extraction Defect

Clinical images provided by Dr. del Castillo†, FL, USA.

**Fig. 1:** Extraction socket of maxillary first molar.

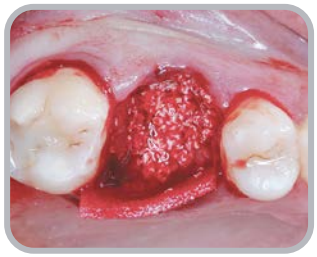


**Fig. 2:** Extraction socket grafted with Endobon Xenograft Small Granules and covered with an OsseoGuard Flex Membrane.

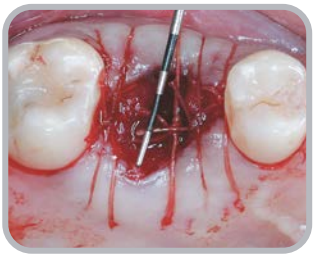


**Fig. 3:** The edges of the membrane were positioned under the soft tissue and were secured with resorbable sutures.

**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.

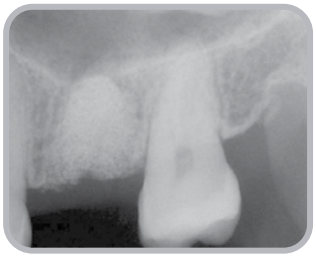


**Fig. 6:** At four months postoperatively, a radiograph of the graft site showed excellent containment of the graft material.

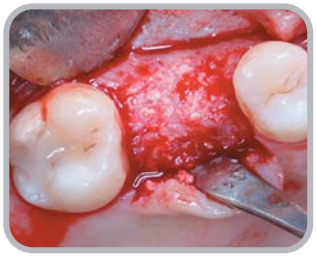


**Fig. 7:** At four months postoperatively, the socket was healed and ready for implant placement.

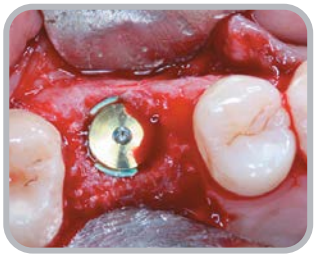


**Fig. 8:** Clinical appearance nine months post-surgery. Note the healthy soft tissues.

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

5. 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, Vol. 7, Issue 9, 94-96.

† Dr. del Castillo has a financial relationship with Zimmer Biomet Dental resulting from speaking engagements, consulting engagements and other retained services.

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

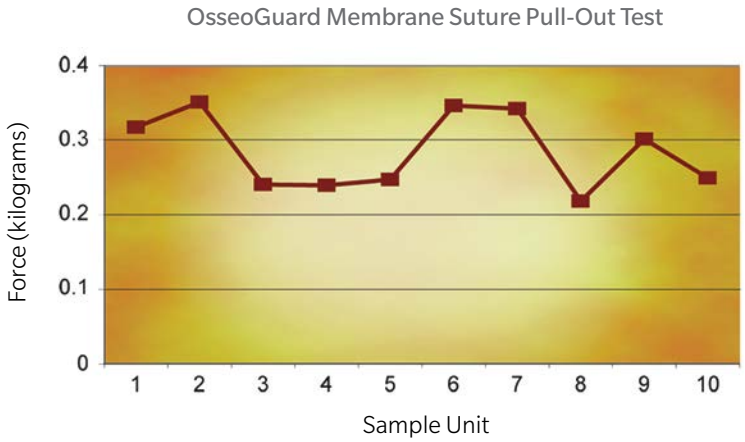
# Strength And Predictability

## Verified Lot-to Lot Strength

### Validated with years of clinical experience and documentation in scientific publications.[6]

In order to evaluate the strength of the OsseoGuard Membrane, a suture pull-out test is conducted by the manufacturer (Collagen Matrix, Inc.) on every lot of membranes produced.

A 3.0 suture is passed through the membrane at approximately 3 mm from the edge of the membrane. A knot is tied in the suture, leaving a loop to hook the suture onto a force gauge. The other end of the membrane is secured in a clamp. The suture is pulled at a rate of one inch per minute until the suture pulls out of the membrane. The average force required to pull a suture out of the OsseoGuard Membrane from ten suture pull-out tests is: 0.286 kg, +/- 0.090 kg. This consistently verifies the mechanical strength necessary to support suturing the membrane for stability.




## Predictable

- Protects site for consistent results during grafting procedures
- Highly purified collagen allows for a natural wound healing process
- Unique crosslinking techniques yield an ideal balance between handling and resorption
- Membranes are typically fully resorbed in six to nine months

## OsseoGuard & OsseoGuard Flex Membranes Recommended For Use In:

- Extraction sockets
- Localized ridge augmentations
- Alveolar ridge reconstruction
- Guided bone regeneration in dehiscence defects
- Guided bone regeneration in periodontal defects

6. Papaioannou KA, Markopoulou CE, Gioni V, Mamalis AA, Vayouraki HN, Kletsas D, Vrotsos IA. Attachment and Proliferation of Human Osteoblast-like Cells on Guided Bone Regeneration (GBR) Membranes in the Absence or Presence of Nicotine: An In Vitro Study. Int J Oral Maxillofac Implants, May/June 2011, Volume 26, Issue 3, 509-519.

# Want A Membrane That Is Easy To Use? Try An OsseoGuard Or OsseoGuard Flex Membrane Today!

## Ordering Information

Both OsseoGuard and OssoeGuard Flex Resorbable Collagen Membranes are available in three sizes with double sterile packaging.

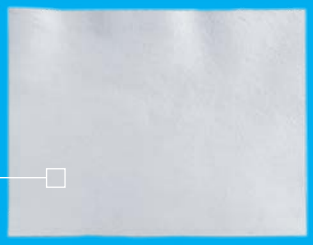
Size:
15 mm x 20 mm

OsseoGuard: OG1520
OsseoGuard Flex:
OGF1520

Size:
20 mm x 30 mm

OsseoGuard: OG2030
OsseoGuard Flex:
OGF2030

Size:
30 mm x 40 mm



OsseoGuard: OG3040
OsseoGuard Flex:
OGF3040

**Contact us at 1-800-266-9920 or visit zimmerbiometdental.com**


Zimmer Biomet Dental
Global Headquarters
4555 Riverside Drive
Palm Beach Gardens, FL 33410
Tel: +1-561-776-6700
Fax: +1-561-776-1272

ZB Dental India Pvt. Ltd.
904/905, A-Wing,
Damji Shamji Corporate Square,
Pant Nagar, Ghatkopar East,
Mumbai – 400075 (INDIA)
Tel.: +91-22-6901-3700
Email: customercare.indiadental@zimmerbiomet.com