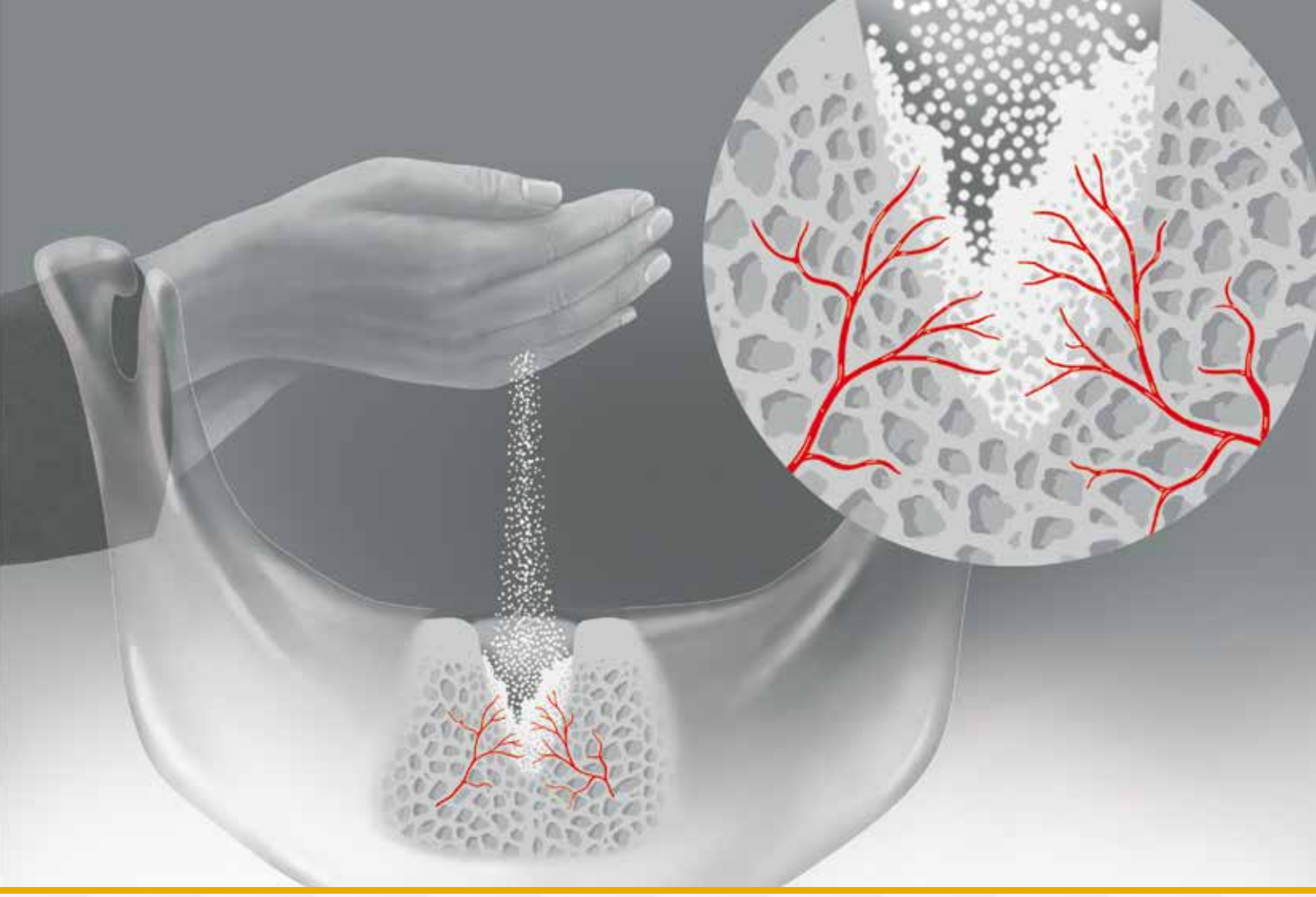


BEGO
BIOMATERIAL SYSTEM

Control the formation of new vital bone and healthy soft tissue

Partners in Progress

BEGO

“BEGO Biomaterial System –
Discover Osseointegration.”

Dr. rer. nat. Nina Rätscho
Product Manager

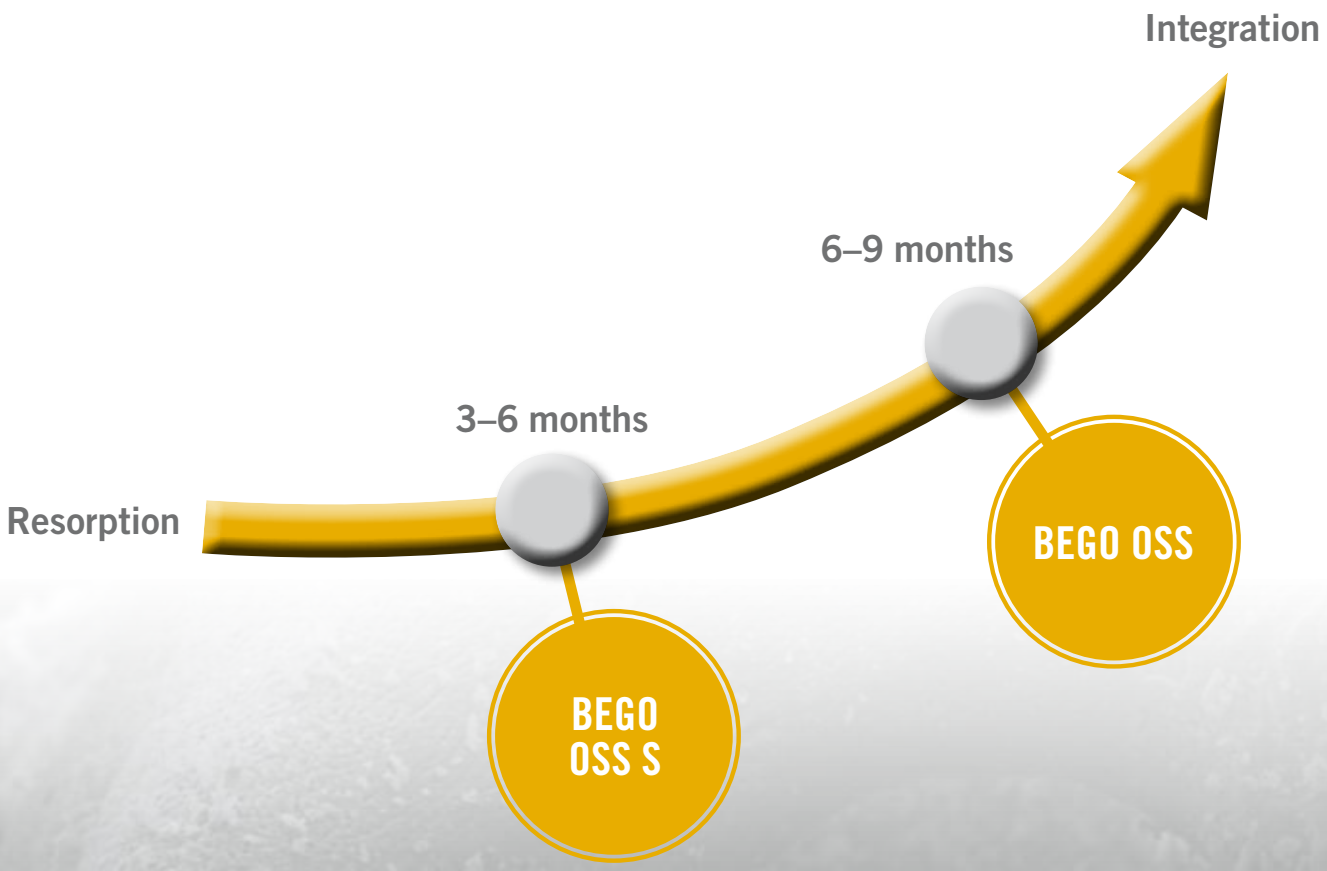
BEGO Implant Systems: Everything from a single source – the brand you can trust in!

A large variety of medical products are required when treating patients with implants and implant-borne dentures. We offer a wide range of products for both practitioners and patients – from bone substitute material, surgical instrument sets and implants through to prosthetic components.
The products in the BEGO Biomaterial System are produced in line with stringent quality standards and offer the reliability of tried and tested concepts in the field of biomaterials for controlled tissue regeneration.
The BEGO Biomaterial System comprises selected products from the following controlled tissue regeneration fields.

- Xenogenic bone substitute material – BEGO OSS
- Synthetic bone substitute material – BEGO OSS S
- Autogenous bone – Osseo^{Plus} Transfer
- Barrier membrane – BEGO Collagen Membrane
- Short-term matrix for tissue regeneration – BEGO Collagen Fleece

BEGO Implant Systems has made a name for itself as a system supplier capable of providing practitioners and patients holistic solutions for implantology and oral and maxillofacial surgery. Hi-tech products, a comprehensive service and ongoing opportunities for further training are the foundations upon which you can rely.

Contents


Integration
6–9 months
3–6 months
Resorption
BEGO OSS
BEGO OSS S

BEGO BONE REGENERATION RANGE

Bone is one of the key factors in achieving aesthetically pleasing implants. Bone reconstructions prior to implantology can allow the success of treatment to be predicted.

Reconstructive measures on the jawbone can be performed using a variety of concepts. The products in the BEGO bone regeneration range have been optimally designed to preserve the bone directly after tooth loss or, indeed, to promote the regeneration of vital bone even years after tooth loss. With the Osseo^{Plus} Transfer Tray from Dr. Dr. Roland Streckbein and Dr. Dr. Philipp Streckbein, the BEGO bone regeneration product range offers an instrument set for bone-preserving and regenerating treatments for standardised autogenous bone grafting and, with the BEGO Biomaterial System, reliable and volume-stabilising bone substitute materials of various origins.

BEGO OSS* –
“The classic choice”

Bone regeneration with natural bone mineral – BEGO OSS is a bovine bone substitute material with which the natural properties of the bone tissue are retained and, thanks to targeted modifications, optimised morphology for quick integration in new vital bone is achieved. Production in Germany ensures the very highest safety standards.

BEGO OSS features an interconnecting pore system which combines a high degree of porosity with simultaneous mechanical stability. The BEGO OSS 3D pore system is a highly complex network in which the macroporous dimensions of natural bone are preserved in order to ensure the optimal recruitment of bone cells. Micropores generate strong capillary forces for the complete penetration of BEGO OSS with blood. The nanoporous hydrophilic surface is ideal for binding highly effective proteins to BEGO OSS. The BEGO OSS properties have been optimised to achieve a high level of *de novo* osteogenesis.

Use of BEGO OSS is documented.[1, 2, 3]

Product specifications

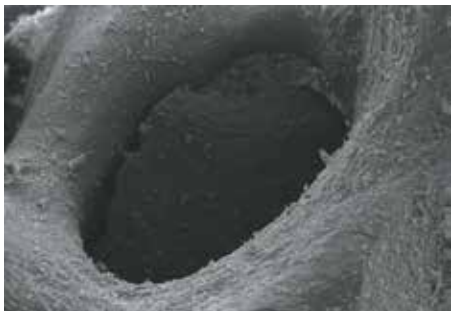
BEGO OSS	
Indication	**BEGO OSS**
Extraction socket	✓
Preservation of the alveolar ridge	✓
Furcation defect	✓
Fenestration defect	✓
Implant dehiscence	✓
Intraosseous defect	✓
Horizontal augmentation	✓
Vertical augmentation	✓
Sinus lift	✓

✓ first recommendation · ■ second recommendation

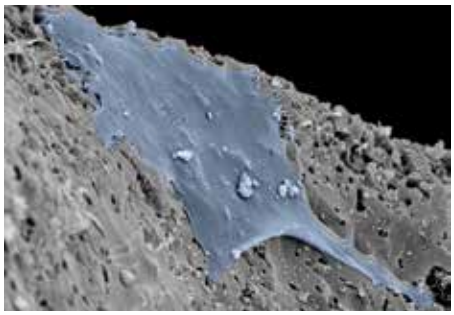
BEGO OSS · Particle size 0.5–1 mm	
Art. no.	**Contents**
57212	0.5 ml
57213	1 ml
57214	3 ml

BEGO OSS · Particle size 1–2 mm	
Art. no.	**Contents**
57215	2 ml
57216	5 ml

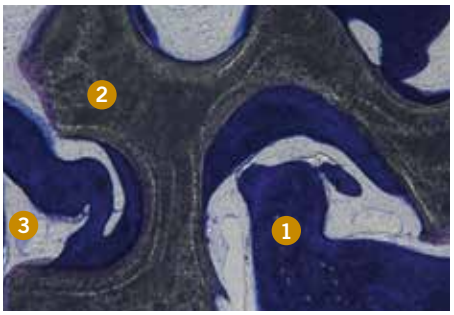
*Not all of these products are available worldwide. Please ask your dealer or, alternatively, contact BEGO Implant Systems GmbH & Co. KG.



Interconnecting 3D pore system and a large interior surface
- Good protein adhesion
- Strong capillary forces
- Ideal pore size for migrating bone cells



The highly osteoconductive guiding structure enhances the endogenous osteogenic potential and facilitates important contact osteogenesis on the surface.

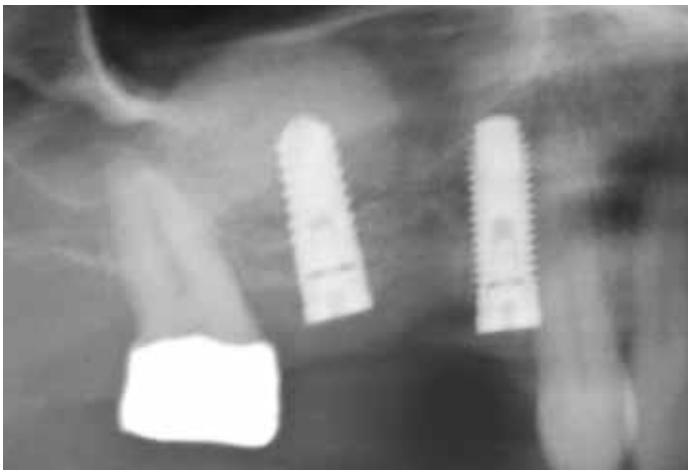


Vital, vascularised bone with long-term volume stabilisation thanks to integrated BEGO OSS.

1 Newly formed bone
2 BEGO OSS particles (integrated)
3 Blood vessel, extracellular matrix

Single-stage sinus floor elevation with simultaneous implantation of a BEGO Semados® RI implant
Images of case courtesy of Mr. Dr. med. dent. W. Maas, Cologne

Teeth 14 and 15 which are not worth preserving; 3 mm residual bone height in region 16



Post-operative X-ray image after single-stage sinus lift with BEGO OSS (particle size 0.5 - 1 mm) and simultaneous implantation of a BEGO Semados® RI implant

The advantages at a glance

- Preservation of the natural bone structure with improved mechanical properties
- Interconnecting pore system – 3D pore dimensions for excellent osteoconduction of the bone-forming cells, strong capillary effect and optimal adhesion of proteins and blood serum components
- The production process ensures the exclusion of organic components
- No immune reactions

BEGO OSS S* –
“The alloplastic option”

Highly developed technologies enable materials to be produced under strictly controlled conditions and the properties of natural structures to be replicated.
BEGO OSS S is an alloplastic bone substitute material which is produced in compliance with the most stringent development standards. The controlled formation of two homogeneously distributed phases (60% hydroxyapatite and 40% β-tri-calcium phosphate) is achieved in a precision production process.

The morphological structure of BEGO OSS S corresponds to a highly complex network of interconnecting pores in which the macroporous dimensions of natural bone are reproduced in order to guarantee the optimal recruitment of bone cells. Micropores and a nanostructure surface generate strong capillary forces and ensure the hydrophilic properties. Effective adhesion of proteins and the complete penetration of BEGO OSS S with blood are thus provided for.

BEGO OSS S was developed to facilitate a high degree of *de novo* osteogenesis. The resorption kinetics of BEGO OSS S ideally accommodate the demands for a resorbable, synthetic bone substitute material. Thanks to the innovative homogeneous distribution of both phases in the material, additional effective protection against premature resorption is offered.

Product specifications

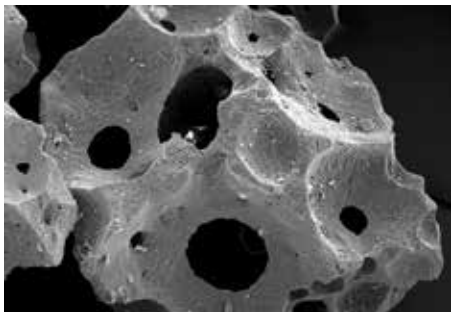
BEGO OSS S	
Indication	**BEGO OSS S**
Extraction socket	✓
Preservation of the alveolar ridge	✓
Furcation defect	✓
Fenestration defect	✓
Implant dehiscence	✓
Intraosseous defect	✓
Horizontal augmentation	✓
Vertical augmentation	✓
Sinus lift	✓

✓ first recommendation · ■ second recommendation

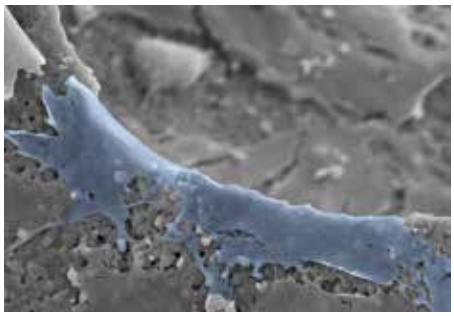
BEGO OSS S · Particle size 0.5 - 1 mm	
Art. no.	**Contents**
57217	0.5 ml
57218	1 ml

BEGO OSS S · Particle size 0.8 - 1.5 mm	
Art. no.	**Contents**
57219	2 ml

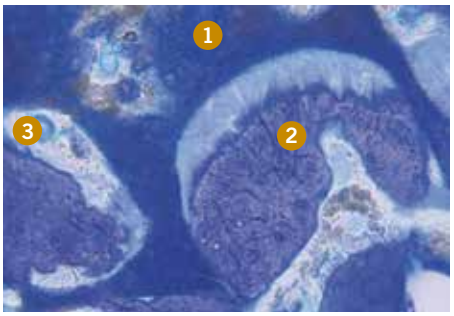
*Not all of these products are available worldwide. Please ask your dealer or, alternatively, contact BEGO Implant Systems GmbH & Co. KG.



Interconnecting 3D pore system
- Good protein adhesion
- Strong capillary forces
- Reliable guiding structure for bone cells



A highly osteoconductive guiding structure aids the endogenous osteogenetic potential and enables the desired contact osteogenesis



Vital, vascularised bone in already resorbed β-tri-calcium phosphate; hydroxyapatite as a long-term volume-stabilising component of BEGO OSS S

1 Newly formed bone
2 BEGO OSS S particles (integrated)
3 Blood vessel, extracellular matrix

Augmentation as part of guided implantation with BEGO Guide - Open Pilot
Images of case courtesy of Mr. Dr. med. dent. W. Maas, Cologne

Lateral augmentation plasty with BEGO OSS S as protection against resorption and for strengthening the buccal bone wall

Tight suture closure by means of continuous suture

Post-operative radiographic check

The advantages at a glance

- Advanced, synthetic homogeneous two-phase compound
- Gradually and completely resorbable
- Long-term volume-stable component to protect against premature resorption
- Interconnecting 3D pore system for ideal osteoconduction of the bone-forming cells

Osseo^{Plus} Transfer* – “The gold standard”

Given the large range of bone substitute materials which are now available, autogenous bone must also be mentioned.
The Osseo^{Plus} Transfer Tray designed by Dr. Dr. Roland Streckbein and Dr. Dr. Philipp Streckbein, is a **state-of-the-art** instrument set for standardised bone grafting for anatomically demanding applications.

Used in conjunction with the popular **bone spreading** and **bone condensing** instruments (Mini-/Osseo^{Plus} Tray) minimally invasive reconstructions of resorbed alveolar processes are possible, thereby creating the necessary conditions for successful implant-based restorations. The osteosynthesis screws in various lengths for secure fixation of the bone cylinder are included in the Osseo^{Plus} Transfer Tray. The instrument set has been optimised for the demands of routine use in modern surgery.

Efficient courses focusing on use of the Osseo^{Plus} Transfer instrument set can be attended at BEGO’s Academia Implantology in Limburg.

Product specifications

Osseo^{Plus} Transfer	
Indication	**Osseo^{Plus} Transfer**
Extraction socket	
Preservation of the alveolar ridge	✓
Furcation defect	
Fenestration defect	✓
Implant dehiscence	
Intraosseous defect	
Horizontal augmentation	✓
Vertical augmentation	✓
Sinus lift	

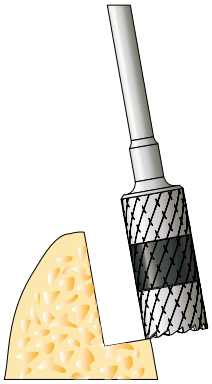
✓ first recommendation · ■ second recommendation

Osseo^{Plus} Transfer	
Art. no.	**Contents**
57224	1 set

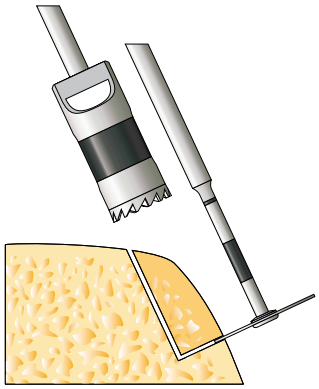
*Not all of these products are available worldwide. Please ask your dealer or, alternatively, contact BEGO Implant Systems GmbH & Co. KG.

All the instruments in the Osseo^{Plus} Transfer Tray are available individually. Please refer to the latest BEGO Implant Systems product catalogue.

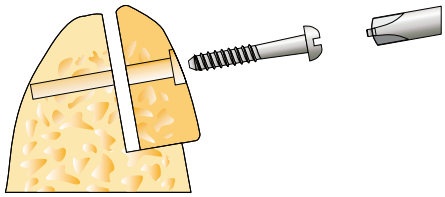
Horizontal bone augmentation with the Osseo^{Plus} Transfer instrument set



Preparation of the site with the Osseo^{Plus} Transfer Ablative H

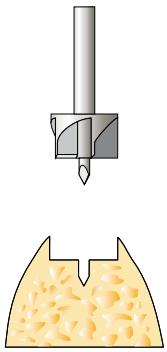


Removal of the graft using the Osseo^{Plus} Transfer Trepan and Disc

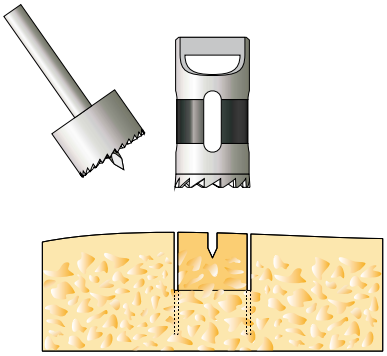


Traction screw principle to fix the graft at the site using the Osseo^{Plus} Transfer screws

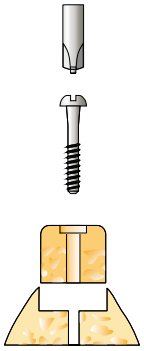
Vertical augmentation with the Osseo^{Plus} Transfer instrument set



Preparation of the site with the Osseo^{Plus} Transfer Ablative V



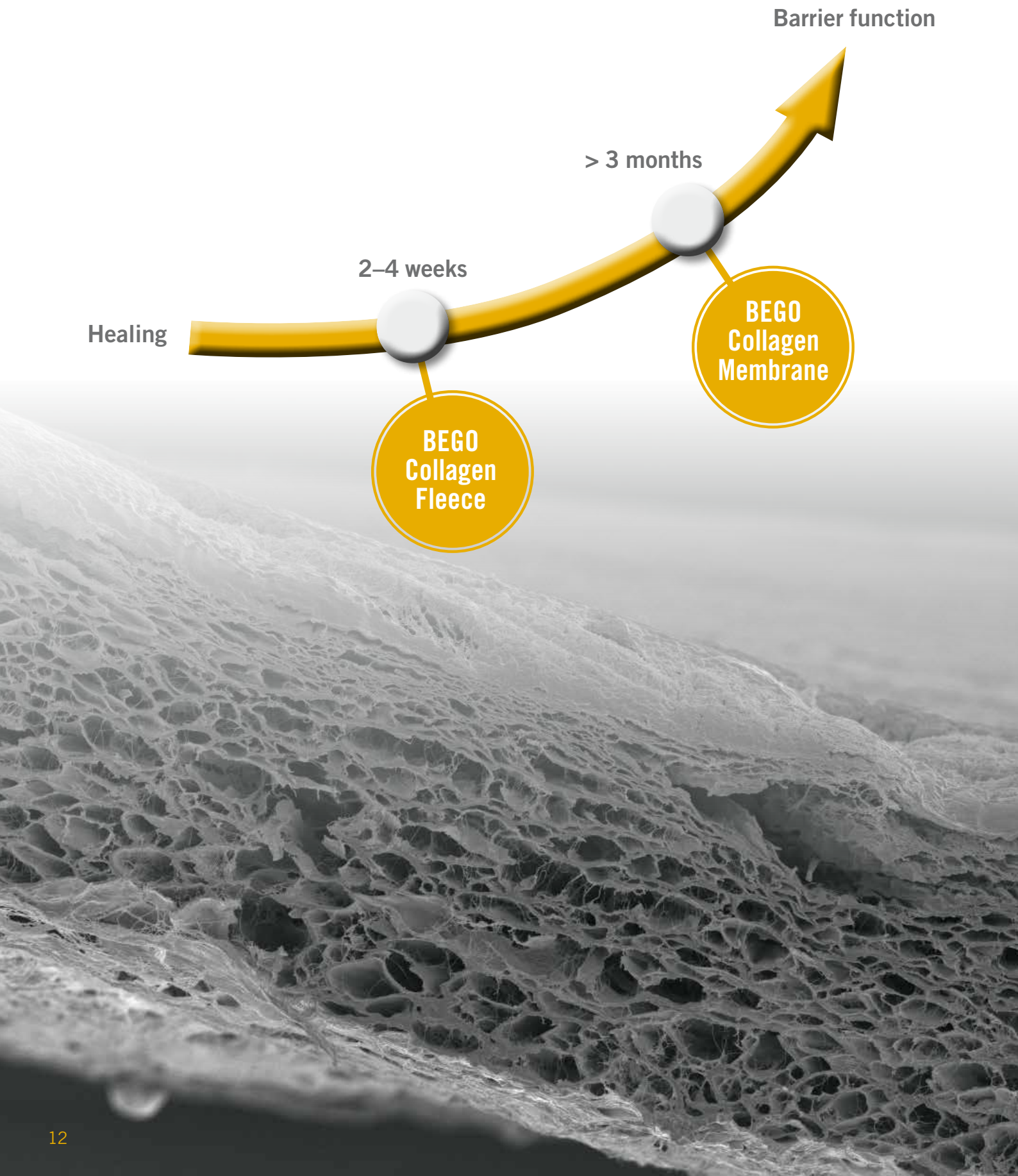
Predrilling with the Osseo^{Plus} Transfer Center Punch and extraction of the graft using the Osseo^{Plus} Transfer Trepan



Tension screw principle to secure the graft at the site with the Osseo^{Plus} Transfer screws

The advantages at a glance

- Standardised grafting of autogenous bone cylinder even under demanding anatomical conditions
- Vertical and horizontal bone grafts can be carried out
- High degree of contact between the bone graft and the site thanks to the effective instrument and screw design
- Optimised for modern surgical use


Barrier function
> 3 months
2–4 weeks
Healing
BEGO Collagen Membrane
BEGO Collagen Fleece

BEGO SOFT TISSUE REGENERATION RANGE

In terms of quantity, collagen is the most frequently found protein in the human body (more than 30% of total amount). There are a wide variety of different collagens which perform important support and structural functions in the connective tissue and the skin. The structure of collagen type I possesses great tensile strength but is virtually non-elastic.

In addition to the structural stability, the hemostatic effect is another important property of collagen. This is based on the binding and aggregation of thrombocytes and the subsequent release of coagulation factors. As a result of the release of these coagulation factors the coagulation cascade is triggered, the formation of a fibrin network initiated and, thus, cell migration for the formation of granulation tissue in the defect forced.

Since collagen is one of the most important structure proteins both in bones and soft tissue, the use of collagen products in guided tissue regeneration is expedient for a diverse range of indications.

As well as products which form an initial matrix for tissue regeneration, the BEGO soft tissue regeneration range also includes solutions which offer a stable long-term resorbable barrier function for classically guided tissue regeneration.

BEGO Collagen Membrane* –
“The 3D soft tissue analog”

This tissue of the pericardium, and in particular the **fibrous pericardium,** is essentially composed of collagen and boasts outstanding stability and resilience properties. To produce BEGO Collagen Membrane the pericardial tissue is prepared in a conservative manner so as to preserve the properties of native collagen. The natural cross-connections of the collagen fibres give the BEGO Collagen Membrane its multi-directional stability and resistance to tearing.
BEGO Collagen Membrane has the characteristics of natural soft tissue. The multi-layer structure of the BEGO Collagen Membrane provides a smooth side for optimal adaptation of the soft tissue and a rough surface which acts as the guiding structure for bone cells and blood vessels.

Use of BEGO Collagen Membrane is documented. [1, 2, 3]

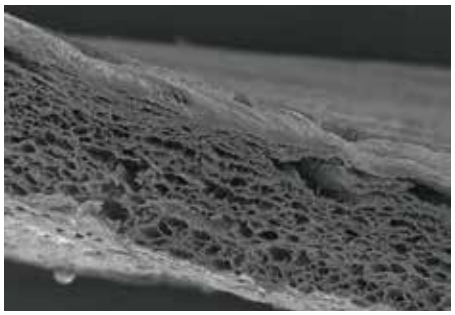
Product specifications

BEGO Collagen Membrane	
Indication	**BEGO Collagen Membrane**
Extraction socket	✓*
Preservation of the alveolar ridge	✓*
Furcation defect	✓*
Fenestration defect	✓*
Implant dehiscence	✓*
Intraosseous defect	✓*
Horizontal augmentation	✓*
Vertical augmentation	✓*
Sinus lift	✓*
Protection of the Schneiderian membrane	✓*

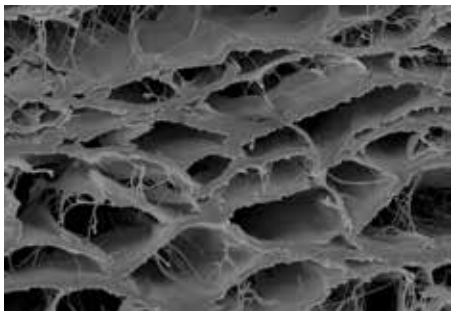
BEGO Collagen Membrane	
Art. no.	**Contents**
57221	15 x 20 mm
57222	20 x 30 mm
57223	30 x 40 mm

*Not all of these products are available worldwide. Please ask your dealer or, alternatively, contact BEGO Implant Systems GmbH & Co. KG.

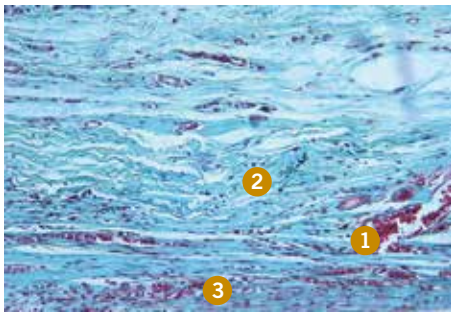
✓ first recommendation · ■ second recommendation · * in conjunction with bone substitute materials or as coverage



Various surface properties for optimal tissue adaptation
- Smooth side with dense structure
- Osteoconductive rough side



Porous 3D collagen fibre network of the BEGO Collagen Membrane serves as an osteoconductive guide for cells and blood vessels



Histology 8 weeks after implantation, perfect tissue integration of the BEGO Collagen Membrane without any inflammatory reaction

1 Blood vessel
2 3D multilayer collagen network which provides the structure
3 Integration in surrounding tissue, inflammation-free

Buccal defect following tooth extraction. Augmentation of exposed implant thread turns
Images of case courtesy of Mr. PD Dr. med. Dr. med. dent. D. Rothamel, Cologne

8 weeks after tooth extraction, extraction sockets 13 and 14 are not fully healed with buccal defect formation

Palatinal insertion of a BEGO Collagen Membrane which has been cut to size and application of BEGO OSS S on the exposed implant threads

Following rehydration, the BEGO Collagen Membrane adapts optimally to the contours in order to stabilise the augmentation

Stress-free wound closure following incision of the periosteum is facilitated by the minimal membrane thickness

The advantages at a glance

- Long-lasting barrier function, stabilisation of blood clotting in the defect
- Excellent cell proliferation, quick vascularisation, outstanding biocompatibility
- Multi-directional stability, tear-proof, ideal for draping, very good adhesion on the bone wall
- Convenient handling, can be used wet and dry, does not stick when wet

BEGO Collagen Fleece* –
“The all-rounder”

The formation of blood clots is an important part of wound healing and tissue regeneration. The BEGO Collagen Fleece is made from the connective tissue of the dermis and essentially comprises collagen. The open-pore 3-dimensional structure forces the aggregation of thrombocytes and stabilises blood clotting. The BEGO Collagen Fleece can thus act as a guide and matrix for initial tissue regeneration during the first healing period.
The 3D collagen network makes the BEGO Collagen Fleece a highly effective hemostatic agent. In addition to the outstanding adhesive properties, the Fleece retains its shape and structure when wet. When hydrated, the BEGO Collagen Fleece forms a smooth gel which can be easily draped. With the BEGO Collagen Fleece, soft-tissue wounds, extraction sites (biopsies) and small osseous defects, e.g., following a root tip resection or an extraction[2] can be treated. Since it can be simply cut to size, the BEGO Collagen Fleece is extremely versatile.

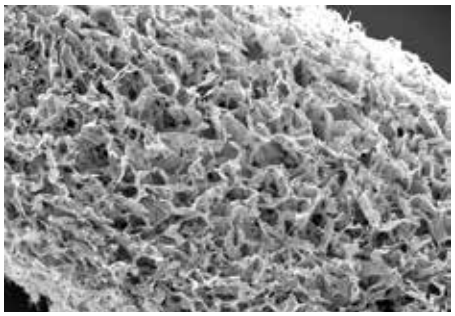
Product specifications

BEGO Collagen Fleece	
Indication	**BEGO Collagen Fleece**
Extraction socket	✓*
Preservation of the alveolar ridge	■*
Furcation defect	✓*
Fenestration defect	■*
Implant dehiscence	✓*
Intraosseous defect	✓*
Horizontal augmentation	■*
Vertical augmentation	
Sinus lift	■*
Protection of the Schneiderian membrane	✓*

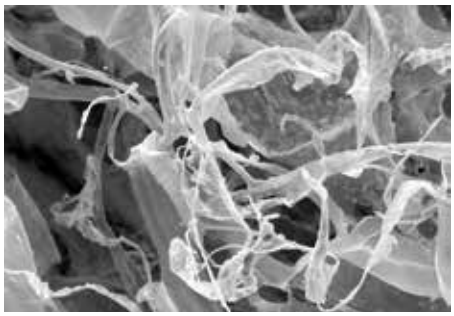
BEGO Collagen Fleece	
Art. no.	**Contents**
57220	12 units (20 x 20 mm each)

*Not all of these products are available worldwide. Please ask your dealer or, alternatively, contact BEGO Implant Systems GmbH & Co. KG.

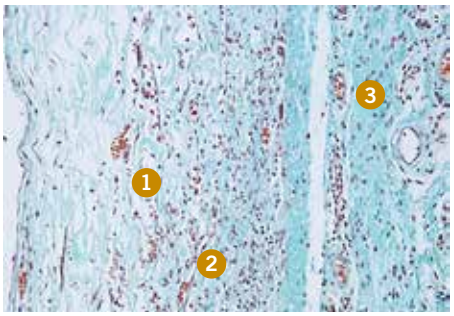
✓ first recommendation · ■ second recommendation · * in conjunction with bone substitute materials or as coverage



Highly porous 3D collagen network for optimal stabilisation of blood clots and formation of an initial matrix structure



The filigree collagen fibres aid haemostasis, force the aggregation of thrombocytes and the formation of the blood clot.



Good tissue integration 14 days after implantation – a vascularised fine-meshed collagen network is formed

1. Fine-meshed collagen network
2. Blood vessel
3. Integration in the surrounding tissue, inflammation-free

Treatment of a soft tissue graft extraction site with BEGO Collagen Fleece
Images of case courtesy of Mr. H. Thurm-Meyer, Bremen

The BEGO Collagen Fleece is fixed using sutures in the extraction site of the soft tissue graft

1 week after graft extraction, very good healing without any inflammatory reaction

Situation 17 days after surgery, very good healing result

The advantages at a glance

- Highly effective local hemostatic agent
- 3D guiding structure for stabilising blood clots
- Optimal protection of the defect against penetration of foreign bodies
- Convenient to use, can be cut to size and moulded, very good adhesive properties in the defect

BEGO bone and soft tissue regeneration ranges					
Indication	**BEGO OSS**	**BEGO OSS S**	**Osseo^{Plus} Transfer**	***BEGO Collagen Membrane**	***BEGO Collagen Fleece**
Extraction socket	✓ (0.5–1 mm/ 0.5 ml, 1 ml)	✓ (0.5–1 mm/ 0.5 ml, 1 ml)		✓* (15 x 20 mm)	✓* (20 x 20 mm)
Preservation of the alveolar ridge	✓ (1–2 mm/ 2 ml, 5 ml)	✓ (0.8–1.5 mm/ 2 ml)	✓	✓* (30 x 40 mm)	■* (20 x 20 mm)
Furcation defect	✓ (0.5–1 mm/ 0.5 ml)	✓ (0.5–1 mm/ 0.5 ml)		✓* (15 x 20 mm)	✓* (20 x 20 mm)
Fenestration defect	✓ (0.5–1 mm/ 0.5 ml, 1 ml)	✓ (0.5–1 mm/ 0.5 ml, 1 ml)	✓	✓* (20 x 30 mm)	■* (20 x 20 mm)
Implant dehiscence	✓ (0.5–1 mm/ 0.5 ml, 1 ml)	✓ (0.5–1 mm/ 0.5 ml, 1 ml)		✓* (20 x 30 mm)	✓* (20 x 20 mm)
Intraosseous defect	✓ (0.5–1 mm/ 0.5 ml)	✓ (0.5–1 mm/ 0.5 ml, 1 ml)		✓* (15 x 20 mm)	✓* (20 x 20 mm)
Horizontal augmentation	✓ (1–2 mm/ 2 ml, 5 ml)	✓ (0.8–1.5 mm/ 2 ml)	✓	✓* (20 x 30 mm, 30 x 40 mm)	■* (20 x 20 mm)
Vertical augmentation	✓ (1–2 mm/ 2 ml, 5 ml)	✓ (0.8–1.5 mm/ 2 ml)	✓	✓* (20 x 30 mm, 30 x 40 mm)	
Sinus lift	✓ (1–2 mm/ 2 ml, 5 ml)	✓ (0.8–1.5 mm/ 2 ml)		✓* (15 x 20 mm, 20 x 30 mm)	■* 20 x 20 mm
Protection of the Schneiderian membrane				✓* (15 x 20 mm, 20 x 30 mm)	✓* (20 x 20 mm)
Soft tissue extraction point					✓* (20 x 20 mm)

✓ first recommendation · ■ second recommendation · * in conjunction with granules/coverage

At a glance			
Indication	**Clinical requirements**	**BEGO solution**	**Advantages**
Volume preservation and increase in bone level	Bone substitute material	BEGO OSS	Integration, long-term volume stability, no immune reaction, unlimited availability
Quick bone regeneration	Autogenous bone	Osseo^{Plus} Transfer	Osteoinductive, quick regeneration, no immune reaction
Bone regeneration with resorbable material without surgical harvesting of the autogenous bone.	Bone substitute material	BEGO OSS S	Osteoconductive, volume-enhancing, gradually resorbable, unlimited availability
Wound treatment, stabilisation of blood clot	hemostatic agent, guide for tissue regeneration	BEGO Collagen Fleece	Local hemostatic agent, 3D collagen fibre network as a guide for migrating cells, quick resorption, short barrier function, protection of the wound cavity against external environment
Protection from soft-tissue healing of bone substitute materials	Barrier function	BEGO Collagen Membrane	Can be cut to size, perfect adaptation to the contours of the defect, long resorption time, guide for bone cells and blood vessels

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www.bego-implantology.com

BEGO Implant Systems GmbH & Co. KG
Wilhelm-Herbst-Str. 1 · 28359 Bremen · Germany
Phone +49 421 2028-246 · Fax +49 421 2028-265
E-mail: info@bego-implantology.com · www.bego-implantology.com

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