



OsteoBiol[®]
by Tecnos

Evolution

THE NATURAL EVOLUTION
OF COLLAGEN MEMBRANES

Heterologous mesenchymal tissue

REGENERATION SCIENCE

INSPIRED BY NATURE



A unique biotechnology

TECNOSS®: A UNIQUE PROCESS THAT ACCELERATES AND GUIDES NATURAL BONE REGENERATION

Tecnoss® developed and patented a unique biotechnology that prevents the ceramization phase of natural bone and preserves the tissue collagen, allowing an osteoclastic-type remodelling of the biomaterial similar to physiological bone turnover and delivering a product endowed with characteristics very similar to human mineral bone⁽¹⁾.

The combination of these factors allows a consistent new bone formation and a close contact between neo-formed bone and biomaterial granules.

COLLAGEN: A KEY FACTOR FOR BONE REGENERATION

Collagen has a key role in bone regeneration process in that:

- it acts as a valid substrate for platelet activation and aggregation
- it serves to attract and differentiate the mesenchymal stem cells present in the bone marrow⁽²⁾
- it increases the proliferation rate of the osteoblasts up to 2/3 times⁽³⁾
- it stimulates the activation of the platelets, osteoblasts and osteoclasts in the tissue healing process

OSTEOBIOL®: UNIQUE COLLAGENATED BIOMATERIALS

Thanks to the innovative Tecness® technology, the OsteoBiol® line has the following important characteristics:

- absence of a foreign body response⁽⁴⁾
- gradual resorption over time^(5,6)
- stimulation/acceleration of physiological tissue healing process⁽²⁾
- protection of the grafting site from infection (membranes)⁽⁷⁾
- capability of carrying medication to the surgical site⁽⁸⁾

The Tecness® new generation of biomaterials, thanks to a revolutionary technology, goes beyond the simple role of aiding natural bone regrowth by stimulating and accelerating this vital physiological process.

OsteoBiol®
by Tecness

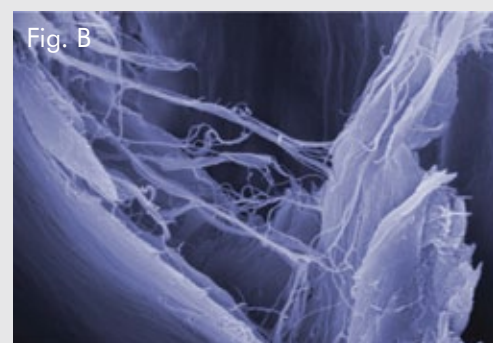
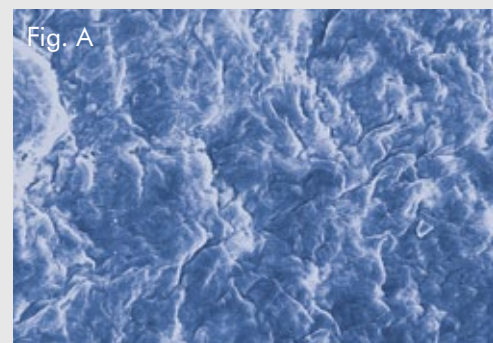


Fig. A - SEM image of an OsteoBiol® Evolution membrane. Courtesy of Prof. JL Calvo Guirado, Murcia, Spain

Fig. B - OsteoBiol® membrane collagenic structure. Courtesy of Nobil Bio Ricerche, Villafranca d'Asti, (AT) Italy

Fig. C - OsteoBiol® Evolution membrane

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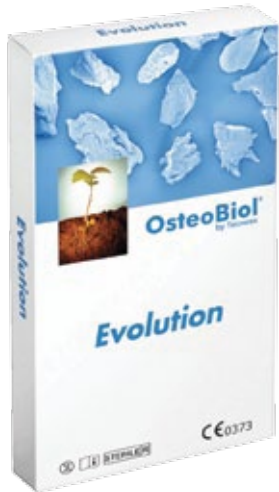
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The natural evolution of collagen membranes



CHARACTERISTICS

Obtained from mesenchymal tissue the *Evolution* membrane is gradually resorbable⁽⁵⁾. Its structure is made of dense collagen fibers of high consistency and of extraordinary resistance.

HANDLING

The membrane can be shaped with sterile scissors until the desired size is reached; unless the grafting site is already bleeding the membrane should be rehydrated with lukewarm physiological solution. Once it acquires the desired plasticity, it must be adapted to the grafting site.

CLINICAL INDICATIONS OVERVIEW

Experimental studies have shown histological evidence of the prolonged barrier effect of this membrane, which lasts at least eight weeks⁽⁵⁾.

The dense collagenic matrix of *Evolution* protects the graft from infection in case of accidental exposure: the membrane itself will also not be infected, allowing second intention healing^(9,10).

This property is particularly important in case of flapless regeneration of large posterior sockets⁽¹¹⁾; in these cases, the standard model is recommended. In lateral access sinus lift *Evolution* membranes are indicated to cover antrotomy (standard model)^(12,13,14) and to protect the sinus membrane from cutting risk due to graft pressure (fine model or OsteoBiol® *Special*)⁽¹⁵⁾.

Evolution is also ideal to protect peri-implant regenerations⁽¹⁶⁾ and periodontal grafts⁽¹⁷⁾. Furthermore, *Evolution* fine has been successfully used in combination with OsteoBiol® *Gel 40* for the treatment of gingival recessions⁽¹⁸⁾ and to protect *Sp-Block* in vertical augmentation with inlay technique⁽¹⁹⁾.

Tissue of origin

Heterogenous mesenchymal tissue

Tissue collagen

Preserved

Physical form

Dried membrane with one smooth side and one micro-rough side

Thickness

Fine: 0.3 mm (± 0.1 mm)

Standard: 0.5 mm (± 0.1 mm)

Estimated resorption time

Fine: about 3 months

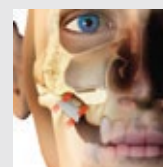
Standard: about 4 months

Packaging

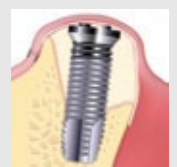
20x20 mm, 30x30 mm, 25x35 mm (oval)

GMDN code

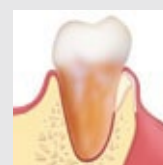
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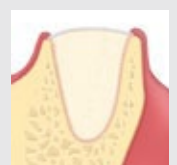
MAXILLARY SINUS FLOOR AUGMENTATION



PERI-IMPLANT DEFECTS



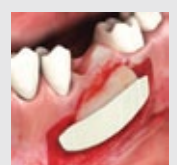
INTRABONY DEFECTS



POST EXTRACTIVE SOCKETS



TWO-WALL DEFECTS



VERTICAL AUGMENTATION INLAY TECHNIQUE

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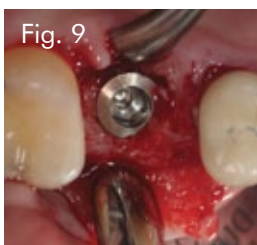
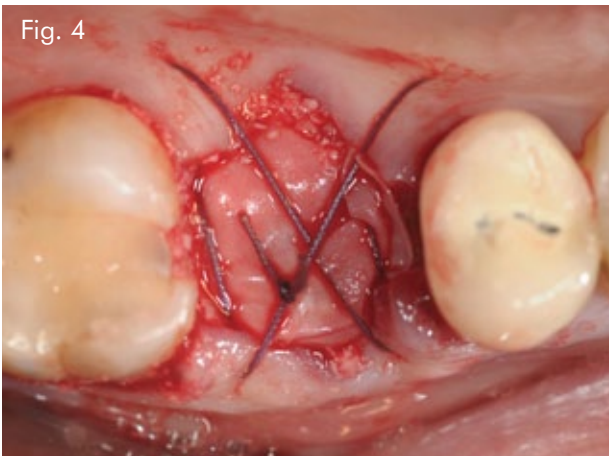
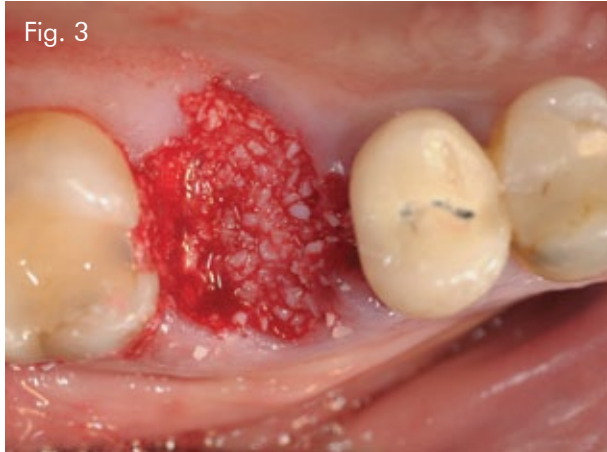
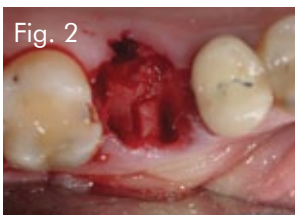
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Excellent clinical performances



CASE REPORT

Alveolar regeneration

Sex: **Female** | Age: **53**

Fig. 1 Pre-op x-ray

Fig. 2 Tooth extraction

Fig. 3 Socket filling with OsteoBiol® mp3

Fig. 4 Graft protection with OsteoBiol® Evolution membrane, left exposed to allow second intention healing

Fig. 5 Healing after 2 weeks

Fig. 6 Healing after 5 weeks

Fig. 7 Healing of the gum after 4 months

Fig. 8 Bone width measurement

Fig. 9 Implant insertion

Fig. 10 Final x-ray

Documentation provided by
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Bone substitute: **OsteoBiol® mp3**
Membrane: **OsteoBiol® Evolution**

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EUR J ORAL IMPLANTOL, 2015;8(3):233-244

Evolution

THE NATURAL EVOLUTION OF COLLAGEN MEMBRANES

Heterologous mesenchymal tissue



TecnoSS s.r.l. is an innovative, globally active company that develops, produces and documents premium-quality xenogenic biomaterials by the brands TecnoSS® and OsteoBiol®.

Its 20 years of research led to its patent-protected production process that ensures neutralization of antigenic components in order to achieve biocompatibility, while preserving the natural collagen matrix inside the biomaterial.

TecnoSS® products comply with highest quality standards such as ISO 10993, ISO 13485 (notified body Kiwa Cermet) and 93/42/EEC (notified body CE 0373).

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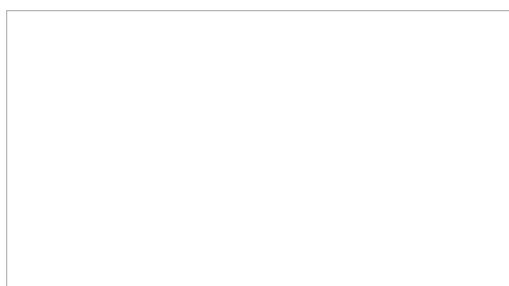
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