

# Bone void filling

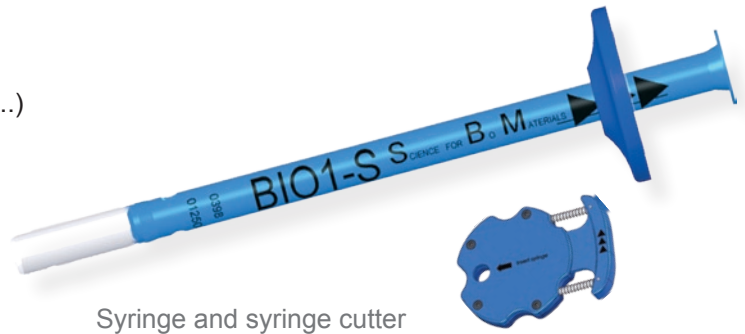
Syringes pre-loaded with  $\beta$ -TCP granules

B<sub>IO</sub>1-S<sup>®</sup>

Bio 1-S<sup>®</sup> is a pre-filled syringe containing absorbable Tricalcium Phosphate ( $\beta$ -TCP / Biosorb). It is designed for filling small volume cavities that are not subjected to mechanical stresses. Biosorb is used as cancellous bone to promote bone healing.

## Indications

Resection - filling of benign tumors (cysts, chondroma...)  
Post-traumatic reconstruction  
Foot and hand surgery



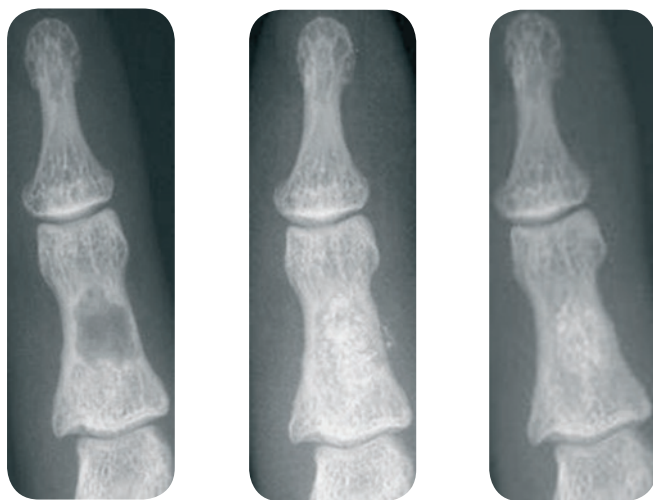
## Advantages

*In vitro* and *in vivo* studies have shown that Tricalcium Phosphate offers the following advantages:

- ▶ **Synthetic** <sup>1,3,5</sup>  
No risk of viral contamination of human or animal origin. No bone harvest on the patient. Operating time and postoperative morbidity are reduced.
- ▶ **Bioabsorbable** <sup>1,3-5</sup>  
The implant is absorbed and simultaneously replaced by new bone growth within 9 to 18 months.
- ▶ **Osteoconductive** <sup>1,3-6</sup>  
Promotes the proliferation and phenotypic expression of human osteogenic cells and serves as a scaffold for bone growth.
- ▶ **Biocompatible** <sup>1-8</sup>  
Reduces the risk of inflammation.
- ▶ **Bioactive** <sup>1-8</sup>  
A genuine chemical bond is developed with the bone without fibrous encapsulation.

## Results

Bone void filling using Bio 1-S<sup>®</sup> syringes:

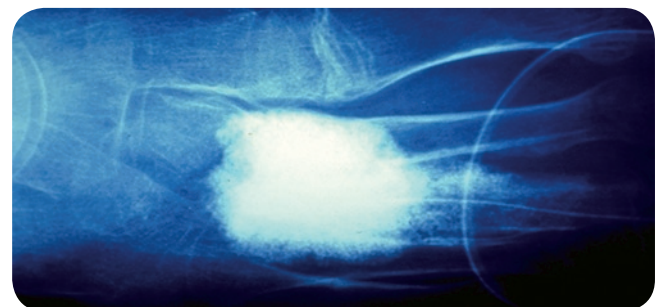


D-0

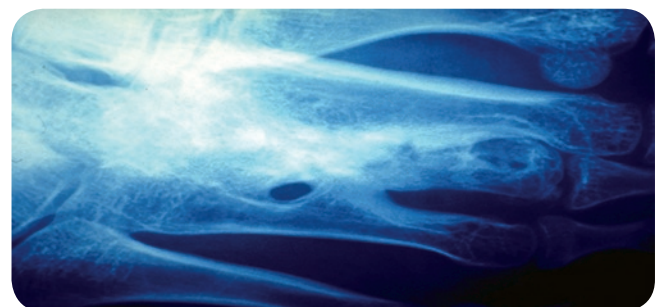
+ 1 year

+ 2 years

*Phalanx chondroma*



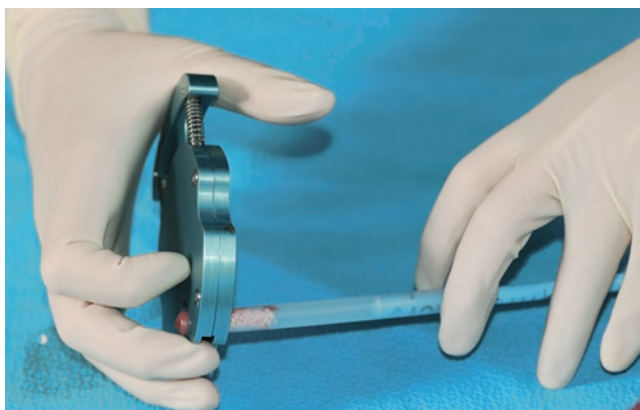
+ 1 year



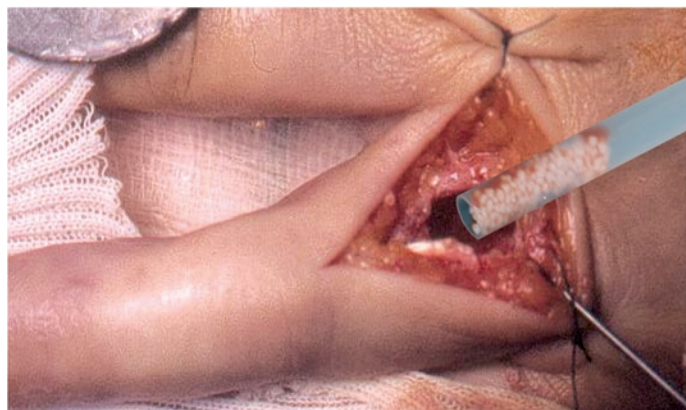
+ 2 years

*Metatarsus chondroma*

## Recommendations for use



Use the syringe cutter to cut off the tip of the syringe.



Phalanx Chondroma - Filling of  $\beta$ -TCP using Bio 1-S®.

Courtesy of Professor P. Bonneville from Purpan Hospital (Toulouse - France).

## Bibliography

<sup>1</sup> Use of  $\beta$ -tricalcium phosphate in foot and ankle surgery : a report of 20 cases.

L. Galois , D. Mainard, F. Pfeffer, R. Traversari, J-P Delagoutte. *Foot and Ankle Surgery*. 2001;7(4):217-27

<sup>2</sup> Potentiel ostéogénique de cultures de cellules issues du stroma de la moelle osseuse sur un support de phosphate tricalcique  $\beta$  chez le rat.

D. Clement, J-C Le Huec, A. Naji, B. Foliguet, M-F Harmand... *Actualités en Biomatériaux* (2002) - VI : 319-27

<sup>3</sup> The use of Tricalcium Phosphates, their biological properties.

J-C Le Huec, D. Clement, E. Lesprit, J. Faber... *Eur. J. Orthop. Surg. Traumatol.* (2000) - 10 : 223-29

<sup>4</sup> Influence de la taille des pores sur la réhabilitation osseuse de deux céramiques phospho-calciques : l'Hydroxyapatite et le Phosphate Tricalcique  $\beta$ .

L. Galois, D. Mainard, K. Bordji, H. Membre... *Actualités en Biomatériaux* (1996) - III : 361-80

<sup>5</sup> Comblement des pertes de substance osseuse par le Phosphate Tricalcique  $\beta$ .

L. Galois, D. Mainard, P. Cohen, F. Pfeffer... *Ann. Chir.* (2000) - 125 : 972-81

<sup>6</sup> Evolution du contenu en ions calcium au voisinage d'implants céramiques en  $\beta$ -TCP irradiés : étude in-vivo chez le lapin.

J-C Le Huec, D. Clement, B. Brouillaud, N. Barthe... *Actualités en Biomatériaux* (2000) - V : 253-60

<sup>7</sup> Cellular biocompatibility and resistance to compression of macroporous  $\beta$ -tricalcium phosphate ceramics.

M. Sous, R. Bareille, F. Rouais, D. Clement, J. Amedee, B. Dupuy, Ch. Baquey... *Elsevier Biomaterials* 19 (1998) 2147-2153

<sup>8</sup> Bone ingrowth into two porous ceramics with different pore sizes: an experimental study.

L. Galois, D. Mainard. *Acta Orthopaedica Belgica*, 70, 598-603, 2004.

## Ordering information

Codes	Designation	Packaging
B1S2692220	Pre-loaded syringe with $\varnothing$ 0,6 mm (0,5 cc) $\beta$ -TCP granules	1
B1S2692240	Pre-loaded syringe with $\varnothing$ 1 mm (0,5 cc) $\beta$ -TCP granules	1
B1S2692244	Pre-loaded syringe with $\varnothing$ 1 mm (1 cc) $\beta$ -TCP granules	1
B1S2692246	Pre-loaded syringe with $\varnothing$ 1 mm (1 cc) $\beta$ -TCP granules	2
B1S2692440	Pre-loaded syringe with $\varnothing$ 1.5 mm (2 cc) $\beta$ -TCP granules	1
B1S2692442	Pre-loaded syringe with $\varnothing$ 1.5 mm (2 cc) $\beta$ -TCP granules	2
B1S9000001	BIO 1-S® syringe cutter	1



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Carefully read the instructions for use that come with the medical device or labeling provided to medical professionals. Class III device.

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