



# TOOTH REPLACEMENT

COMMITTED TO  
**SIMPLY DOING MORE**  
FOR DENTAL PROFESSIONALS



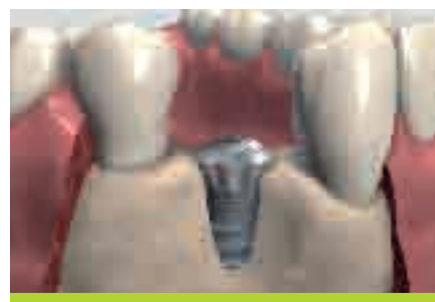
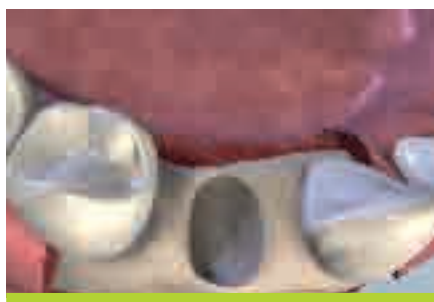
## REGENERATION OF ALVEOLAR BONE

Implant placement is not always possible because of insufficient bone volume. Recent advances in "Guided Bone Regeneration" (GBR) allows for the placement of dental implants in sites previously unsuitable for implantation procedures.

### INDICATIONS

Straumann® BoneCeramic is indicated for filling and/or augmenting intraoral/maxillofacial osseous defects, such as:

- Bony defect of the alveolar ridge
- Tooth extraction site
- Expanded sinus
- Intrabony periodontal osseous defect and furcation



## THE PRODUCTS

**Straumann® BoneCeramic** is a fully synthetic, osteoconductive bone substitute with an optimized morphology and resorption property, which favors the formation of new vital bone. It is composed of a biphasic calcium phosphate (BCP), a combination of 60% wt hydroxyapatite (HA) and 40% wt of the beta form of tricalcium phosphate (TCP).



**Straumann® Bone Block Fixation** is a modified Guided Bone Regeneration system with the proven quality of the Straumann® Dental Implant System. A small and compact set, it consists of a practical cassette that holds all the necessary instruments, drills and screws you need for your bone block fixation procedures.

It is used to stabilize and fixate bone grafts and bone filling materials for the regeneration of severely resorbed alveolar ridges. The screwdriver picks up the screw, securely places the bone block and then easily releases.



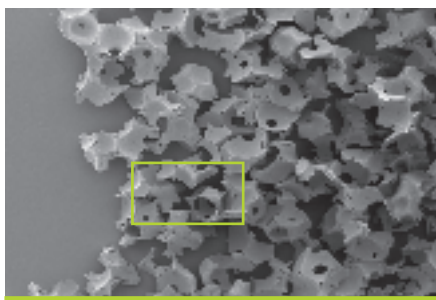
## TRUE FUNCTIONAL ADVANTAGES WITH STRAUMANN® BONECERAMIC



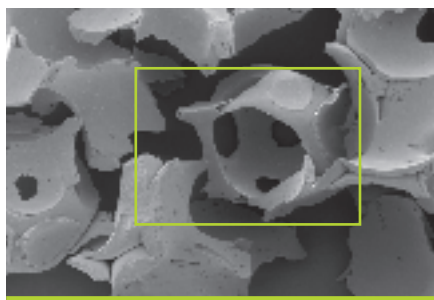
1. **Outstanding wettability:** Fluid is rapidly absorbed enhancing moldable granular putty.
2. **Exceptional handling:** The wetted granules adhere to the instrument.
3. **User-friendly design:** The triangular shape of the blister package facilitates the removal of the wetted granules.
4. **Safe** due to its chemically synthesized nature
5. **Batch-to-batch consistency** due to controlled manufacturing process
6. **Optimized morphology** favors vascularization, osteoblast migration and bone deposition.
7. **Strong homogeneous phase distribution** thanks to chemical synthesis
8. **Excellent bone formation** support based on optimized pore size
9. Interconnected pores favor **cell migration**.
10. **Maximum space** utilization for newly formed bone with only a **minimum amount of material**

### Outstanding wettability and handling

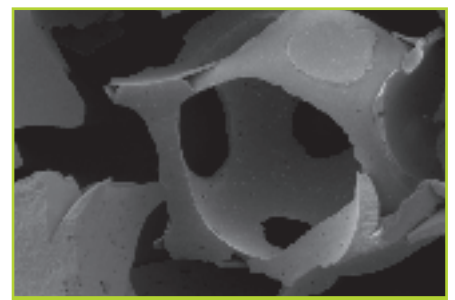
The characteristic morphology of the material is achieved by duplicating a spongy, polymer matrix. The resulting porous blocks of biphasic calcium phosphate are then grinded and sieved to separate the granules of different sizes.



*Homogeneity due to a controlled manufacturing process*



*Optimized pore size to support new bone formation.*



*Interconnected pores allow cell migration.*

## SAFE AND CLINICALLY PROVEN BONE SUBSTITUTES

	Evidence for	Indication	Material	End-points	Conclusion(s)
Pre-clinical <i>in vivo</i> (clinically relevant models)	Bone regeneration in peri-implant defect <sup>17</sup>	Dental implants placed in extraction sockets with mesial bone defect in dogs.	BCP compared with control (no material)	Histological and radiographic evaluation of bone regeneration and osseointegration of dental implants after 3 months healing	<ul style="list-style-type: none"> <li>■ BCP promotes bone regeneration around dental implants immediately placed in extraction sockets.</li> <li>■ Regenerated bone showed similar histological characteristics to bone at non-defect sites.</li> </ul>
	Bone ingrowth and substitute degradation <sup>18</sup>	Retrospective study; literature review		Various	<ul style="list-style-type: none"> <li>■ Bone ingrowth reached 2.5 mm during the first year.</li> <li>■ Approximately 50% of BCP material degraded (replaced by cortical lamellar bone) in less than 1 year.</li> </ul>
Clinical	Bone ingrowth <sup>19</sup>	Use of BCP in orthopedic indications (hip arthroplasty revision surgery, trauma and sequels, cold orthopedic indications)	BCP and HA/TCP	Clinical, radiological, histological evaluation of bone regeneration in 200 cases with more than six months follow-up	<ul style="list-style-type: none"> <li>■ BCP is just as safe and effective as an autologous bone graft when used in trauma situations.</li> <li>■ The use of BCP is recommended in almost all orthopedic and trauma surgery.</li> </ul>
	Bone ingrowth and substitute degradation <sup>20</sup>	Implantation in bony defects resulting from cyst enucleation in the anterior mandible	BCP	Clinical and histological evaluation after 6 months healing	<ul style="list-style-type: none"> <li>■ The use of BCP for augmentation of bony defects in the anterior maxilla underscores subsequent successful dental implant placement.</li> </ul>

<sup>17</sup> Boix D, Gauthier O, Guicheux J, Pilet P, Weiss P, Grimandi G, Daculsi G. Alveolar bone regeneration for immediate implant placement using an injectable bone substitute: an experimental study. *J. Periodontol* 2004; 75: 663-671

<sup>18</sup> Daculsi G, Goyenvalle E, Aguado E. Spongiuous and cortical bone substitution kinetics at the expense of macroporous biphasic calcium phosphate: animal and human evidence. In: Ohgushi H, Yoshikawa T, Hastings GW, editors. *Bioceramics volume 12: Proceedings of the 12<sup>th</sup> International Symposium on Bioceramics in Medicine*. Singapore: World Scientific; 1999; p. 287-290

<sup>19</sup> Schwartz C, Liss P, Jacquemaire B, Lecestre P, Frayssinet P. Biphasic synthetic bone substitute use in orthopaedic and trauma surgery: clinical, radiological and histological results. *J Mater Sci Mater Med* 1999; 821-825

<sup>20</sup> Piattelli A, Scarano A, Mangano C. Clinical and histologic aspects of biphasic calcium phosphate ceramic (BCP) used in connection with implant placement. *Biomaterials* 1996; 17: 1767-1770



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