

OSBONE®
Synthetic Hydroxyapatite Bone Filler

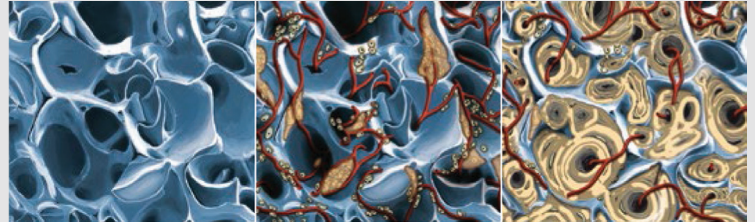
Optimized Hydroxyapatite

+ Hydroxyapatite re-imagined to provide results.

Hydroxyapatite (HA) is the mineral basis for bone—a natural choice for bone regeneration. However, allogeneic, bovine bone and most manufactured HAs are less than optimal product choices. Osbone® Synthetic Hydroxyapatite bone filler provides the answer for those applications that require volume and a highly stable implant bed.

Manufactured using a process that produces a $\geq 95\%$ pure phase product, Osbone boasts a high calcium concentration, which is essential for bone repair. With porosity of approximately 80% and a majority of pore sizes between 250-450 μm , Osbone is designed for cellular infiltration, rapid osseointegration and to offer optimal vascularization potential.

Osbone osseointegration

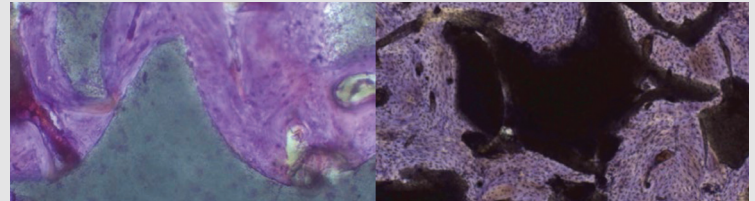


Interconnected open-porous structure of Osbone®.

Beginning vascularization and building new bone along the Osbone® structure.

Full osseointegration of Osbone® in the newly formed bone. Stable and functional implant bed.

Sheep Study³ Histology



3 month Histology
Active new bone formation, with strong bone-biomaterial particle contact.

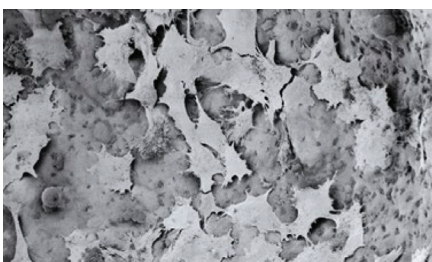
18 months Histology
Osbone integrated into new bone with on-going remodeling visible.

In vitro testing demonstrates that Osbone provides a biocompatible scaffold that yields better cell proliferation than bovine bone.

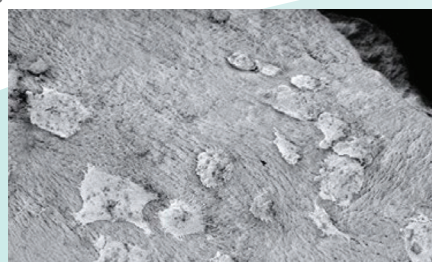
"It was demonstrated that the specific ALP activity of the cells increases throughout the entire cultivation period. The studied material Osbone® is thus able to support not only the adhesion and proliferation, but also the osteogenic differentiation of human osteoblasts."¹

Osbone® and bovine bone comparison (28 days of cell culture)

1000-fold magnification



High cell concentrations on Osbone®



Low cell concentrations on bovine bone

A Strong Foundation.

Osbone provides a highly stable implant bed, suitable for indications requiring increased mechanical stability or for patients who may have impaired bone healing factors.

In a prospective, multi-center clinical study² with 190 patients, Osbone[®] was found to have excellent biocompatibility and osseointegration and a slow resorption profile as designed.

With a $\geq 95\%$ phase purity Osbone[®] provides a stable implant bed during the bone defect healing process.

Timing is Everything.

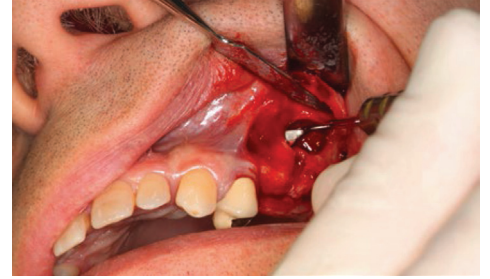
Osbone provides ideal flexibility: the choice of immediate or delayed implant placement.

Multi Center Study Details

- 32 centers
- 190 patients
- 12 month follow up
- 98.7% of the augmented implant areas, suitable at the time of implant placement.
- 117 implants, immediate placement was performed.

The conclusion was "never any loss of a dental implant, confirming the stability of the healed ceramic material."²

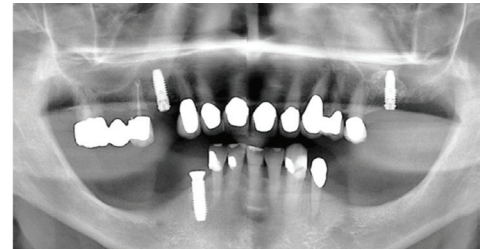
External Sinus Lift Procedure.



External sinus floor elevation preparation of the mucosa of the maxillary sinus.



Complete filling of the defect with Osbone[®] granules.



Six months post-operatively, prior to re-entry and final treatment: good osseointegration of the implants (residual granules visible at site 26).

Photos courtesy of Dr. Kay Pehrsson.

+ Summary:

Osbone offers an effective alternative to other bone graft extenders:

- $\geq 95\%$ pure HA synthetic
- Biocompatible
- Provides an optimal microenvironment for cellular action, including:
 - Cell adhesion
 - Optimized 80% porosity open-cell structure, that resembles human cancellous bone with pore sizes between 250-450 μm
 - Demonstrated Osseointegration
- Long term scaffold for a stable implant bed, particularly suitable for indications that require increased mechanical stability
- Flexibility for immediate or delayed placement

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PRODUCT TABLE

Item Number	Description	Volume
H05-V0250	Osbone 250-1000 µm	0.5 cc
H10-V0250	Osbone 250-1000 µm	1.0 cc
H20-V0250	Osbone 250-1000 µm	2.0 cc
H05-V1000	Osbone 1000-2000 µm	0.5 cc
H10-V1000	Osbone 1000-2000 µm	1.0 cc
H20-V1000	Osbone 1000-2000 µm	2.0 cc

Item Number	Description	Volume
H05-M0250	Osbone 250-1000 µm Multi Pack	5 vials per pack/0.5 cc
H10-M0250	Osbone 250-1000 µm Multi Pack	5 vials per pack/1.0 cc
H05-M1000	Osbone 1000-2000 µm Multi Pack	5 vials per pack/0.5 cc
H10-M1000	Osbone 1000-2000 µm Multi Pack	5 vials per pack/1.0 cc



Cover photo: Osborne® granules mixed with patient's blood before application to defect. Courtesy of Dr. Kay Pehrsson.

¹ Peters F, Bernhardt A, Lode A, Gelinsky M (2010): Osborne® eine neue, synthetische Biokeramik für den Knochenersatz. Regen. Med. 2010; 3 (1): 18-22.

² Holweg, Lerner and Pehrsson. Application of a synthetic hydroxyapatite in dental surgery. EDI Journal3/2012: 64-73.

³ Courtesy of Prof. C. Knabe, Comparative study of different Bone Graft Substitutes, Final Report March 2012 (publication in preparation)

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About curasan

curasan, is an innovative developer, manufacturer and marketer of biomaterials for bone and tissue regeneration for the world-wide dental, orthopedic and spine markets. Numerous patents and a comprehensive and expanding list of scientific studies demonstrate the clinical success of the innovative curasan product portfolio.

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