## How PerioGlas® Works:
## Sound Science, Proven Benefits

### Osteostimulation

The stimulation and acceleration of new bone formation in an osseous defect, resulting from multiple physical and chemical interactions between a graft material and the local tissue.[1]

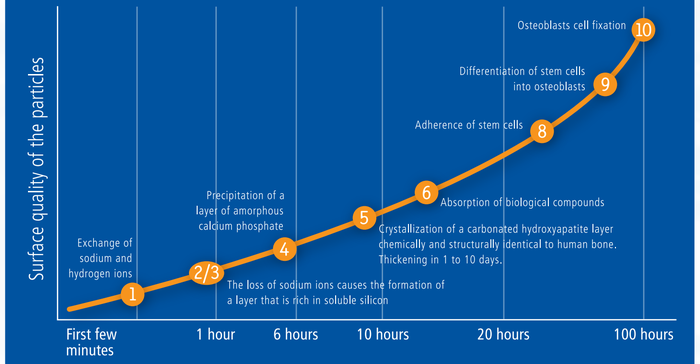
#### Osteoblast Recruitment and Attachment

In vitro studies have shown Perioglas® encourages the differentiation and proliferation of osteoblasts, the basis for new bone formation. In addition, the precipitation of calcium and phosphorous ions back onto the Bioglass particles and crystalize into a new HCA layer over a 1-10 day period. This new HCA layer is similar to normal bone mineral and is favorable to osteoblast attachment and eventual bone formation. Calcified bone nodule formation has been reported in as little as 6 days in cell cultures.[4]

#### Hemostasis

PerioGlas® has been shown to decrease clotting time in lab tests by 25% when compared to controls.[3] The presence of the PerioGlas® particles and the increased level of calcium ions are believed to stabilize the formed clot and provide a scaffold for tissue repair.

### Cellular activity in first 5 days[5]




PERIOGLAS®
DENTAL BONE GRAFTING

## A History of clinical success: Why clinicians all over the world are choosing PerioGlas®

- Perioglas® encourages the growth of new bone through its unique chemical reaction.
- PerioGlas® is more readily accepted by patients than animal-derived or human products,[7] and offers no risk of transgenic disease.
- PerioGlas® has been shown during in vivo implantation to generate faster and denser bone growth than hydroxyapatite and tricalcium phosphate.[8,9]
- PerioGlas® is clinically proven to resorb and become part of the natural bone remodeling process.
- PerioGlas® is easy to work with in situ where it is easily placed and stays in position.[11]

## Quick and Easy Placement

Although PerioGlas® can be mixed equally well with sterile water or a sterile saline solution, the process of osseous regeneration occurs more rapidly by using the patient's osteogenic blood.
DO NOT USE PERIOGLAS® IN A DRY STATE.


Manufactured by: Novabone Products, LLC
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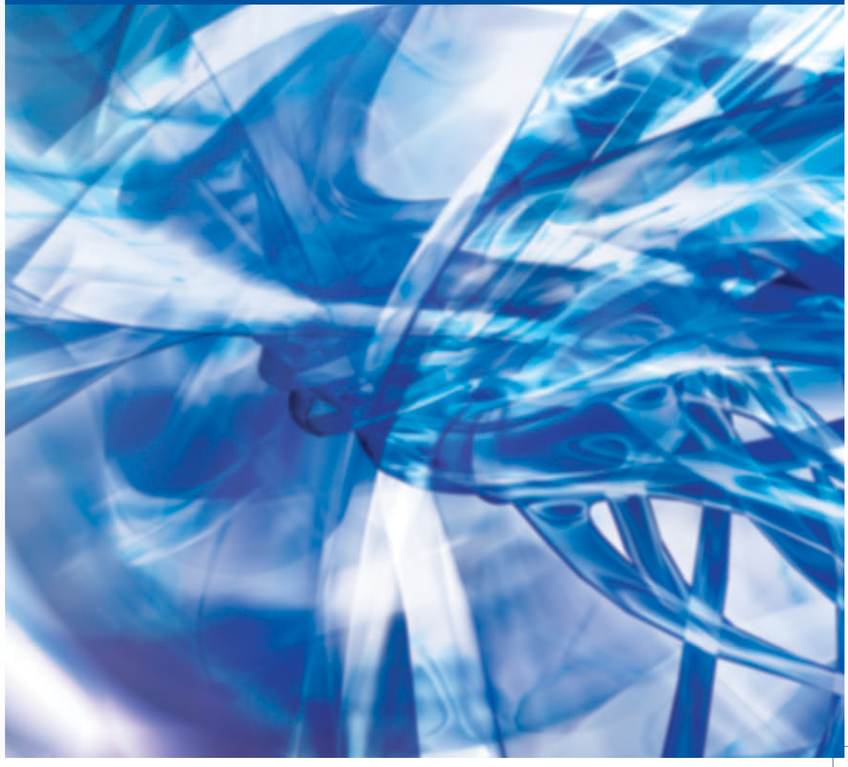
PERIOGLAS®
DENTAL BONE GRAFTING

# Osteostimulative Bone Regeneration Matrix



# PERIOGLAS®

## DENTAL BONE GRAFTING

## Osteostimulative Bone Regeneration Matrix

Perioglas is a synthetic, osteostimulative bone regeneration matrix that is indicated for periodontal and maxillofacial defects. It is not just a bone void filler but a material comprised of minerals found naturally in the body that allows for more rapid bone regeneration. As soon as Perioglas® interacts with blood, a natural process begins, which leads to a new layer of calcium phosphate that is favorable for the recruitment and proliferation of osteoblasts and new bone formation.

## Unique Synthetic Solution

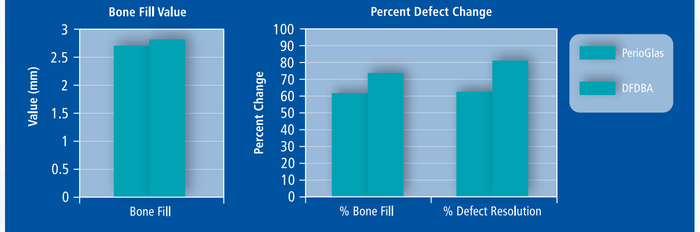
- **Osteostimulative –**
  Cascade reaction between Perioglas and the surrounding tissues is proven to stimulate osteoblast differentiation and proliferation resulting in increased rate of bone formation.[1]
- **Synthetic –**
  No reports of disease transmission or immune rejection in over 10 years of use. Eases patient concerns regarding safety of cadaver and bovine bone.*
- **Resorbable –**
  Clinically proven to resorb and become part of the natural bone remodeling process.[2]
- **Osteoconductive –**
  Facilitates bone formation by providing excellent scaffolding upon which new growth can take place.
- **Easy to use –**
  Adheres to instruments for easy placement; maintains its shape in the defect area.

* Data on file

## Clinically Effective

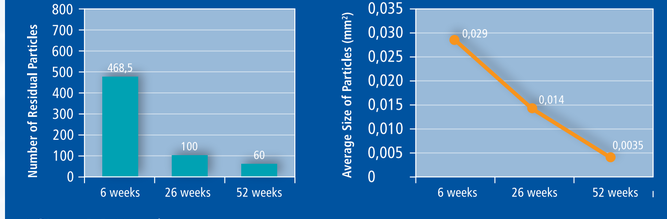
More than 12 years of clinical research and use by dentists demonstrates that PerioGlas® is equally effective in building new bone compared to the market leaders.

## Clinical Evaluation of Bioactive Glass In the treatment of Periodontal Osseous Defects in Human[7]




"The use of either a bioactive glass alloplast or DFDBA will produce significant soft and hard tissue improvements when compared to baseline. In addition, the bioactive glass is capable of producing results similar to DFDBA when used in moderate to deep infrabony defects."

## How Resorbable? Evaluation of bone and material at the site[6]




### After 26 Weeks (as measured against six(6) week data)

- The average particle size decreases by 50 percent.
- Less than 22 percent of the residual particles remain and are surrounded by new bone.

## Indicated for a variety of osseous defects:

- Extraction sites to preserve the alveolar ridge
- Periodontal defects
- Ridge augmentaion
- Sinus elevation
- Cystectomies
- Peri-implant defects

## Ridge Augmentation

Ridge before bone regeneration with PerioGlas®

6 months post surgery with PerioGlas®

## References


1. Osteostimulation is the active stimulation of osteoblast proliferation and differentiation as evidenced by increased levels of DNA synthesis and of the osteoblast markers osteocalcin and alkaline phosphatase. Through an ionic exchange, PerioGlas first acts of a scaffolding around and through which new bone forms. In vivo studies have demonstrated that the osteostimulative properties result in stimulation and acceleration of new bone formation in an osseous defect. (FDA 510(k) clearance, February 2006 for Perioglas. The supporting date for osteostimulation "has not been established in humans."

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3. Unpublished date: Lee-White Coagulation test

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5. Data on file.

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8. Froum SJ, Weinberg MA, Tarnow, D: Comparison of Bioglass Synthetic Bone Graft Particles and Open Debridement in the Treatment of Human Periodontal Defects. *J. Periodont.* 1998; 69: 698-709.

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## Additional References of Clinical Effectiveness


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