

# PRO-DENSE<sup>®</sup>

Injectable Regenerative Graft

 **WRIGHT**<sup>™</sup>  
FOCUSED EXCELLENCE





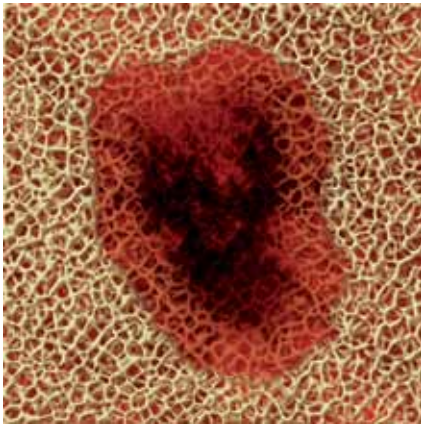
# Predictable Bone Regeneration.

## Dense, Direct Bone Deposition

PRO-DENSE® Injectable Regenerative Graft has a unique triphasic resorption profile that provides an ideal environment for the direct deposition of bone by binding growth factors<sup>1</sup> and by providing a slow-resorbing matrix that supports healing across the defect.

*The following illustrations describe the basic steps in the process of new bone formation.*

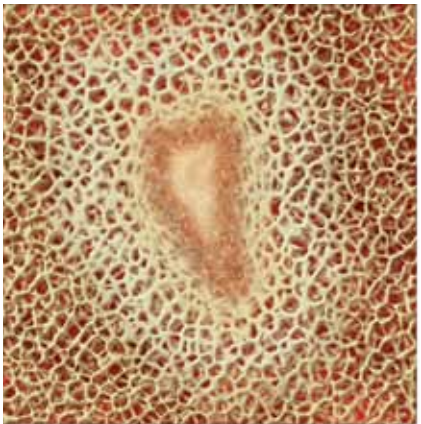
Bone with Void



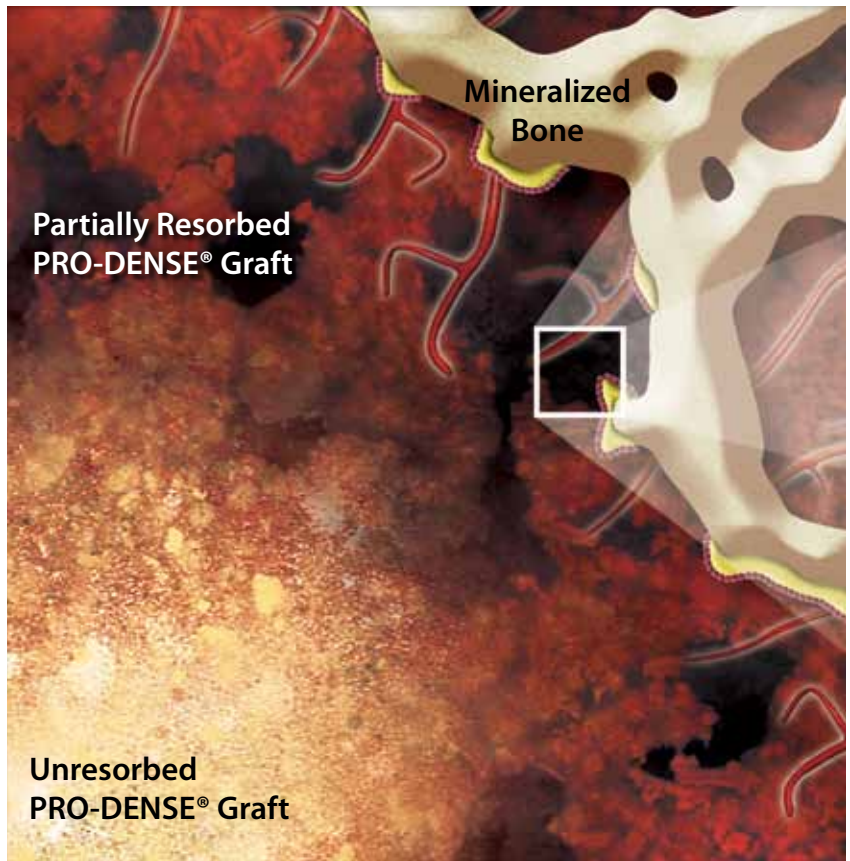
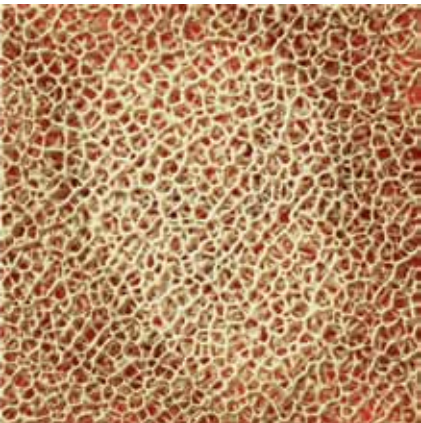
PRO-DENSE® Graft Applied



Resorption and Remodeling  
(Approximately first 6 months)



Bone Fully Remodeled  
(6-12 months)



All claims are based on a critically sized canine proximal humerus defect model. It is unknown how results from the canine model compare with clinical results in humans.

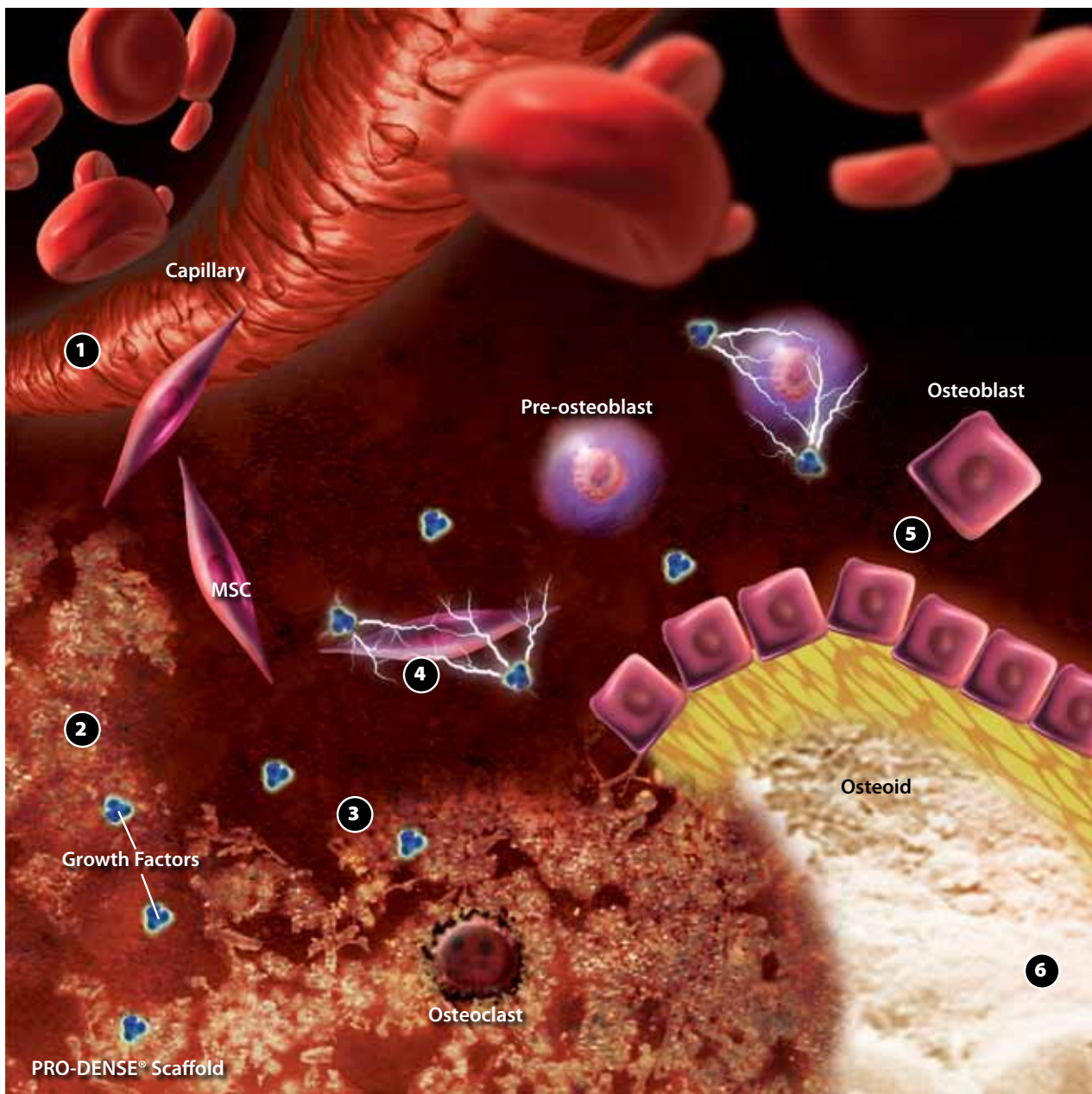
<sup>1</sup>Growth factor binding based on *in vitro* data of BMP-2 and VEGF. Data on file.



# Mechanism of Action

- 1 Angiogenesis is a key early event. The  $\text{CaSO}_4$  of the implant resorbs first, revealing a calcium phosphate scaffold conducive to vascular infiltration.
- 2 The resulting brushite/TCP scaffold with interconnecting pores binds free proteins such as VEGF and BMP-2, effectively concentrating them in the implant/defect interface region.
- 3 Resorption of the phosphate scaffold releases bound proteins. Active proteins recruit cells to the implant surface.
- 4 Growth factors in the implant/defect interface region, including BMPs, stimulate proliferation and differentiation of mesenchymal stem cells.
- 5 Differentiated osteoblasts lay down osteoid which then mineralizes to become newly woven bone.
- 6 The principles of Wolff's Law drive remodeling.

*The patient's own Growth Factors involved in the chemotaxis, proliferation, and differentiation of stem cells and bone forming cells include factors such as VEGF (vascular endothelial growth factor), PDGF (platelet-derived growth factor), IGFs (insulin-like growth factors), TGF- $\beta$  (transforming growth factor- $\beta$ ), FGFs (fibroblast growth factors), and BMPs (bone morphogenic proteins).*





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