

OraGRAFT® Prime

Optimized Handling

Uncompromised Performance

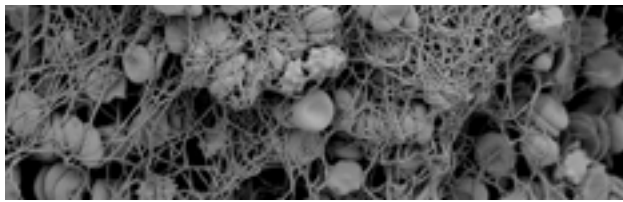


Studies have shown the benefits of demineralized bone matrix in the management of periodontal defects.



OraGraft Prime can be used in a variety of dental bone grafting procedures as per the dentist's preference and clinical judgement — such as socket preservation, ridge augmentation or as a graft enhancer in a sinus lift.

Comprised of 100 percent cortical bone fibers (no carrier), OraGraft Prime is demineralized to encourage bone formation. The interlocking demineralized fibers create a hospitable, osteoconductive scaffold.



Bowers GM1, Chadroff B, Carnevale R, Mellonig J, Corio R, Emerson J, Stevens M, Romberg E. Histologic evaluation of new attachment apparatus formation in humans. Part III. *J Periodontol.* 1989 Dec;60(12):683-93

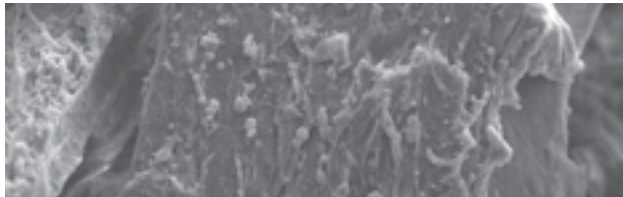
Lallier TE, Palaologou AA, Yukna RA, Layman DL. The putative collagen-binding peptide P-15 promotes fibroblast attachment to root shavings but not hydroxyapatite. *J Periodontol.* 2003 Apr;74(4):458-67

Periodontal Ligament Fibroblasts Prefer Human Bone

Natural bone matrix promotes cellular attachment and proliferation

There was a greater chance for regeneration of a new attachment apparatus and component tissues in grafted defects than in nongrafted defects.

Bone replacement graft (BRG) materials are often used to treat periodontal defects to promote cellular invasion, and to encourage bone regrowth. Results indicate that xenographic and synthetic BRG materials are inferior to human-derived bone (whether demineralized or non demineralized) in promoting Periodontal Ligament Fibroblasts (PDLF) cell attachment.



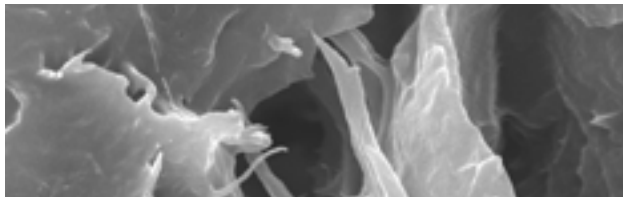
Miron, R.J., Sculean, A., Shuang, Y., Bosshardt, D., Gruber, R., Buser, D., Chandad, F., Zhang, Y. Osteoinductive potential of a novel biphasic calcium phosphate bone graft in comparison with autographs, xenografts, and DFDBA. *Clinical Oral Implants Research.* 2015: 668-675

Topography Can Affect Cell Proliferation

Interconnected cortical fibers allow cells to easily spread out and make connections with each other

These scaffold topographies dictate the differentiation down to the osteoblast lineage. The ability to recruit cells demonstrates that only autografts and allografts derive some of their osteoinductive potential from the release of factors to their surrounding environment.

Synthetic bone grafts and xenografts do not contain growth factors and, therefore, are not capable of recruiting cells limiting their osteoinductive potential.



Rodríguez RU, Kemper N, Breathwaite E, Dutta SM, Hsu EL, Hsu WK, Francis MP. Demineralized bone matrix fibers formable as general and custom 3D printed mold-based implants for promoting bone regeneration. *Biofabrication.* 2016 Jul 26;8(3):035007

Bone Fibers Support Cell Proliferation

Larger surface area provides many contact points for cellular attachment

This micro-hooked surface geometry enables fiber-to-fiber self-adhesion, which ameliorates the dissociation issues related to particulated DBM or synthetic biomaterials, and does so without adversely impacting the osteoinductive properties inherent to DBM.

Mesenchymal stem cells readily attached to the demineralized bone matrix (DBM) and showed increasing metabolic activity over time. DBM fibers further increased alkaline phosphatase activity in C2C12 cells. In vivo, DBM implants elicited osteoinductive potential in a mouse muscle pouch, and also promoted spine fusion in a rat arthrodesis model.

Additional Clinical Resources:

Froum S, Summerford KL; Dollars and sense: Saving teeth vs. placing implants February 26, 2015 Dental Economics.

Group Leader, Jan Lindhe; Chair, Robert Schallhorn; Secretary, Gerald Bowers; Reviewer, Steven Garrett; Burton Becker; Pierpaolo Cortellini; Robert Ferris; Thorkild Karring; Pamela McClain; Robert O'Neal; Edwin Rosenberg; Martha Somerman; Ulf Wikesjö; Raymond Yukna. Section 7 Consensus Report Periodontal Regeneration Around Natural Teeth JADA, Vol. 129, September 1998 43-S

Miron RJ, Sculean A, Shuang Y, Bosshardt DD, Gruber R, Buser D, Chandad F, Zhang Y Osteoinductive potential of a novel biphasic calcium phosphate bone graft in comparison with autographs, xenografts, and DFDBA. Clin Oral Implants Res. 2016 Jun;27(6):668-75. doi: 10.1111/clr.12647. Epub 2015 Jul 30.

Li, H., Pujic, Z., Xiao, Y. & Bartold, P.M. (2000) Identification of bone morphogenetic proteins 2 and 4 in commercial demineralized freeze-dried bone allograft preparations: pilot study. Clinical Implant Dentistry and Related Research 2: 110–117.



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