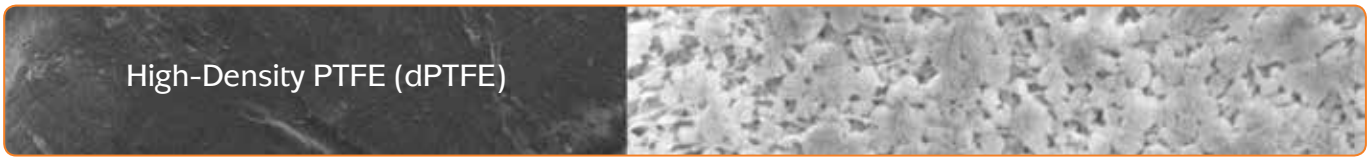
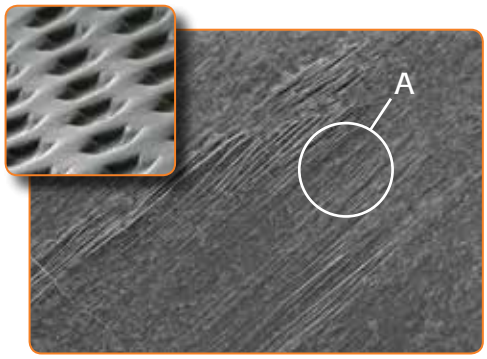
a closer look at Cytoplast™ High Density PTFE



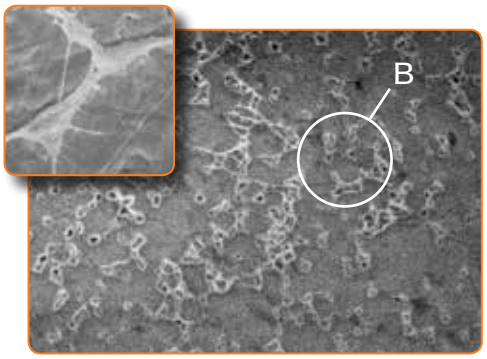
SEM 500X

SEM 20,000X

performance



SEM 1,500X (Inset: SEM at 100X)



SEM 20,000X (Inset: SEM at 6,000X)

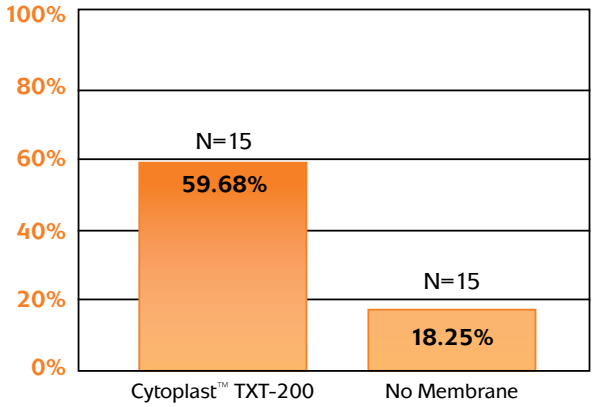
SEM views of Cytoplast™ TXT-200 textured high-density PTFE membrane. The hex shaped dimples increase the surface area available for soft tissue attachment. Parallel grooves and fibrils (A) play a role in cell migration and attachment. At high power, nanoscale pores (B) can be visualized. Pores less than 0.3 microns prevent the migration of bacteria into the membrane, yet allow diffusion of small organic molecules and oxygen and are important in facilitating cellular adhesion and spreading.

predictability

In two separate studies, treating a total of 696 extraction sites, there were zero reported infections using Cytoplast™ high-density PTFE membranes in an exposed technique.[1,2]

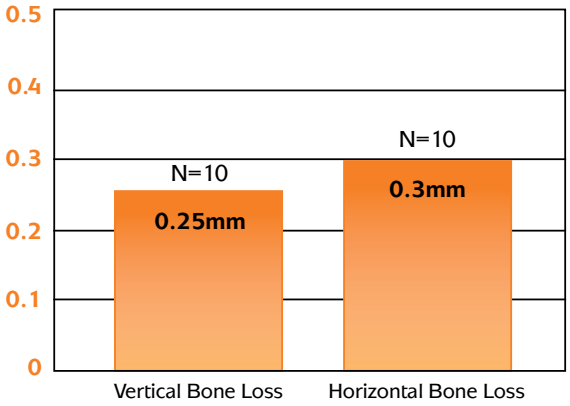
efficacy

Soft tissue regeneration after extraction using the Cytoplast™ Technique for socket preservation.[3]



Measurements taken at time of extraction and 90 days post extraction.

Bone loss 1-year post-extraction using the Cytoplast™ Technique for socket preservation.[4]



Loss of vertical bone height measured at crest. Loss of horizontal bone width measured from stent to buccal plate.

extraction site grafting without primary closure*

1) pre-op

Minimally invasive, atraumatic extraction technique should be used. The use of periotomes or surgical sectioning is encouraged to minimize mechanical trauma to the thin cortical bone.

All soft tissue remnants should be removed with a sharp curettage. Special care should be taken to remove residual soft tissues at the apical extent of the socket of endodontically treated teeth. Bleeding from the socket walls should be noted. If necessary, decortication of the socket wall should be done with a #2 round burr to increase early vascularization and access to osteoprogenitor cells.

2) create subperiosteal pocket

A subperiosteal pocket is created with a small periosteal elevator or curette, extending 3-5 mm beyond the socket margins (or defect margins) on the palatal and the facial aspect of the socket. In the esthetic zone, rather than incising and elevating the interdental papilla, it is left intact and undermined in a similar fashion. The Cytoplast™ high-density PTFE (d-PTFE) membrane will be tucked into this subperiosteal pocket.

3) place hard tissue graft material

Particulate graft material is placed into the socket with a syringe or curette. Ensure that the material is evenly distributed throughout the socket. However, the particulate should not be densely packed to preserve ample space for vascular ingrowth and subsequent bone formation.

4) membrane placement

Trim the Cytoplast™ d-PTFE membrane to extend 3-5 mm beyond the socket walls and then tuck subperiosteally under the palatal flap, the facial flap and underneath the interdental papilla with a curette. The membrane should rest on bone 360° around the socket margins, if possible. Note that minimal flap reflection is necessary to stabilize the membrane.

Ensure that there are no folds or wrinkles in the membrane and that it lies passively over the socket. Remove any stray bone graft particles which may be present between the membrane and flap. To prevent bacterial leakage under the membrane, take care to avoid puncturing the membrane and do not overlap two adjacent pieces.

5) stabilize membrane

The membrane is stabilized with a criss-cross Cytoplast™ PTFE suture. It is not recommended to suture through the membrane. Alternatively, interrupted sutures may be placed. The PTFE sutures, which cause minimal inflammatory response, are left in place for 10 to 14 days. If the exposed membrane becomes heavily contaminated with plaque, it may be cleaned with a Q-tip. Peroxide or chlorhexidine should be used as long as membrane is in place, but may be applied locally rather than used as a rinse.

6) membrane removal

The membrane is removed, non-surgically, in 21 - 28 days. With intact sockets, the membrane may be removed as early as 3 weeks. Sockets with missing walls may benefit from a longer time frame. Topical anesthetic is applied, then the membrane is grasped with a tissue forcep and removed with a gentle tug.

7) observe osteoid matrix

Immediately following membrane removal, a dense, highly vascular, osteoid matrix should be observed. The natural position of the gingival margin has been left intact because primary closure was unnecessary. The dense PTFE membrane has contained the graft material and prevented epithelial migration into the socket. Adjacent gingival epithelium migrates across the osteoid matrix upon removal of the membrane.

8) 6 weeks post-op

Thick keratinized gingiva should begin forming over the grafted socket. The natural soft tissue architecture should be preserved, including the interdental papillae. New bone will begin to form in the socket.

1) Hoffmann O, et al. Alveolar Bone Preservation in Extraction Sockets using Non-Resorbable dPTFE Membranes- 276 Cases. J Periodontol. 2008;79:1355-1369. 2) Barboza EP, Stutz B, Ferreira VF; Carvalho W. Guided bone regeneration using nonexpanded polytetrafluoroethylene membranes in preparation for dental implant placements-A report of 420 cases. Implant Dent 2010; 19(1):2-7. 3) Barboza EP, Francisco BS, Ferreira VF. Soft tissue enhancement using non-expanded PTFE membranes without primary closure [abstract]. Presented at the 2008 Research Forum Poster Session. Annual Meeting of the AAP in Seattle, WA, September 6-9, 2008. 4) Fotek PD, Neiva RF, Wang HL. Comparison of dermal matrix and polytetrafluoroethylene membrane for socket bone augmentation: A clinical and histologic study. J Periodontol 2009;80:776-785.

*This technique guide is an example of a suggested surgical technique for extraction site reconstruction and ridge preservation. Proper surgical procedures and techniques are the sole responsibility of the dental professional.

Cytoplast™ Dense PTFE Membranes

The micro-textured TXT-200 & TXT-200 Singles provide a textured surface to increase the area available for cellular attachment without increasing porosity. (200 microns thick)

- patented Regentex™ surface for increased stability
- impervious to bacteria (membrane pore size less than 0.3 microns)
- designed to withstand exposure
- non-surgical removal when left exposed
- for socket grafting and grafting where primary closure is not possible

ordering information

OG-TXT1224-1	Cytoplast™ TXT-200 Singles 12mm x 24mm
OG-TXT1224	Cytoplast™ TXT-200 Singles (pack of 10) 12mm x 24mm
OG-TXT2530-1	Cytoplast™ TXT-200 25mm x 30mm
OG-TXT2530	Cytoplast™ TXT-200 (pack of 4) 25mm x 30mm

TXT-200 Singles
12mm x 24mm

TXT-200
25mm x 30mm

Cytoplast™ Dense PTFE Membrane size reference

Cytoplast™ PTFE Sutures

- manufactured using 100% non-resorbable, medical grade PTFE for a biologically inert suture that prevents bacterial wicking into surgical sites
- 300 series stainless steel needle, provides a substantial increase in needle strength as well as initial and sustained needle sharpness
- soft monofilament ensures little to no package memory for excellent handling, secure knots and increased patient comfort

ordering information

OG-CS-0618RC	3/8 Circle Precision Reverse Cutting, USP 4-0 16mm
OG-CS-0618PREM	3/8 Circle Precision Reverse Cutting, USP 4-0 13mm
OG-CS-051819	3/8 Circle Reverse Cutting, USP 3-0 19mm
OG-CS-0518	3/8 Circle Reverse Cutting, USP 3-0 16mm

BIOHORIZONS®

shop online at

store.biohorizons.com

LD6001

REV A NOV 2017

CYTOPLAST®

SIMPLE | PREDICTABLE | PRACTICAL

ridge preservation technique guide

BIOHORIZONS®

SCIENCE • INNOVATION • SERVICE