

## The Cytoplast™ Ridge Preservation Technique

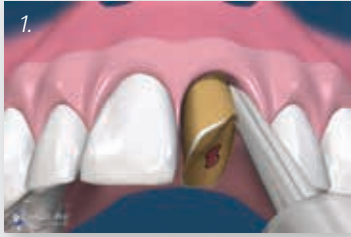


Figure 1. A minimally invasive, atraumatic extraction technique should be used. The use of periostomes or surgical sectioning is encouraged to minimize mechanical trauma to the thin cortical bone. All soft tissue remnants should be removed with a sharp curettage. Special care should be taken to remove residual soft tissues at the apical extent of the socket of endodontically treated teeth. Bleeding from the socket walls should be noted and, if necessary, decortication of the socket wall can be done with a #2 round burr to increase early vascularization and access to osteoprogenitor cells.

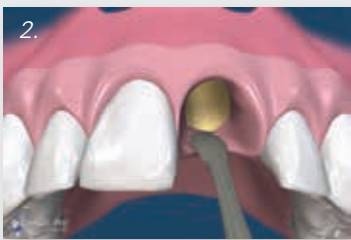
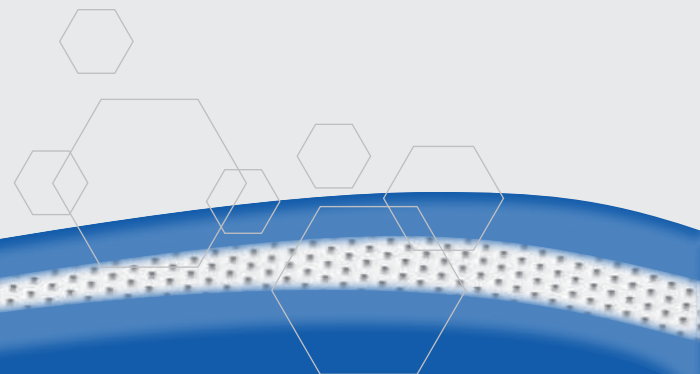


Figure 2. A subperiosteal pocket is created with a small periosteal elevator or curette, extending 3-5 mm beyond the socket margins (or defect margins) on the palatal and the facial aspect of the socket. In the esthetic zone, rather than incising and elevating the interdental papilla, it is left intact and undermined in a similar fashion. The d-PTFE membrane will be tucked into this subperiosteal pocket.



Figure 3 - 4. Particulate augmentation material is placed into the socket with a syringe or curette. Ensure that the material is evenly distributed throughout the socket, but not condensed or packed too tightly. This will only reduce the available space between particles, which is critical for vascular ingrowth and subsequent bone formation.



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Figure 5 - 6. The d-PTFE membrane is trimmed to extend 3-5 mm beyond the socket walls and then tucked 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. Prior to suturing, 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 that may be present between the membrane and the flap. To prevent bacterial leakage under the membrane, take care to avoid puncturing the membrane, and do not overlap two adjacent membranes.



Figure 7. The membrane is further stabilized with a criss-cross 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.



Figure 8. The membrane is removed, non-surgically, in 21 - 28 days. With intact sockets, the membrane may be removed as early as 3 weeks. Studies have shown that by 21-28 days there is a dense, vascular connective tissue matrix in the socket and early osteogenesis is observed in the apical 2/3 of the socket. Sockets with missing walls may benefit from a longer time frame. Topical anesthetic is applied, and then the membrane is grasped with a tissue forcep and simply removed with a gentle tug.



Figure 9 - 10. Immediately following membrane removal, a dense highly vascular osteoid matrix is observed filling the socket. Adjacent gingival epithelium migrates across the osteoid matrix upon removal of the membrane. At 6 weeks, thick keratinized gingiva is beginning to form over the grafted socket. The natural soft tissue architecture is preserved, including the interdental papillae. New bone is beginning to form in the socket.

