

Delta Dental of Virginia Clinical Policy # 406
Subject

Guided Tissue Regeneration

Originating Department

Clinical Professional Services

Signature Authority

Dental Director

Type: New Replacement Revision Clarification

Date: 11/15/2009 **Revision Date:**
Preamble:

The Clinical Policy Bulletin is an expression of Delta Dental of Virginia's (DDVA) determination regarding whether certain services or supplies are medically or dentally necessary. DDVA bases its conclusions on a review of currently available clinical literature. This includes, but is not limited to, clinical outcome studies published in the peer-reviewed medical and dental literature, regulatory status of the technology, evidence-based guidelines of public health and health research agencies, evidence-based guidelines and positions of leading national health professional organizations, views of physicians and dentists practicing in pertinent clinical areas, and other applicable information. DDVA reserves the right to revise these policies as new clinical information is available and we welcome submission of further relevant information.

A group may define covered dental services under their dental plan, as well as those services that may be subject to dollar caps or other limits. The plan documents outline covered benefits, exclusions and limitations. DDVA advises dentists and subscribers to consult the plan documents to determine if there are exclusions or other benefit limitations applicable to the service request. The conclusion that a particular service is medically or dentally necessary does not constitute an indication or warranty that the service requested is a covered benefit payable by DDVA. Some plans exclude coverage for services that DDVA considers either medically or dentally necessary. When there is a discrepancy between DDVA's clinical policy and the group's plan documents, DDVA is to defer to the group's plan documents as to whether the dental service is a covered benefit. In addition, if state or federal regulations mandate coverage then DDVA will adhere to the applicable regulatory requirement.

History:

As a component of periodontal surgery, guided tissue regeneration is a procedure utilized to regenerate the periodontal attachment apparatus including bone, cementum, and the periodontal ligament when the disease process is advanced and overcomes the limitations of more conventional therapy (1). Guided tissue regeneration involves the use of a barrier membrane which is placed over the osseous defect in an attempt to physically preclude or prevent in-growth or repopulation of the defect by gingival epithelium and connective tissue prior to formation of the new periodontal attachment apparatus. The physical barrier affords protection of the blood clot in the defect and allows subsequent migration of osteogenic (bone producing) cells from the alveolar bone process and periodontal ligament (2). The reflected mucoperiosteal flaps are replaced and adapted over the membrane and the surgery site. Barriers utilized in this procedure have been non-resorbable membranes, most commonly expanded polytetrafluoroethylene (ePTFE), and synthetic and natural bioabsorbable membranes (1,2). Processed collagen, gingival grafts, polylactic acid, polyglycolic acid, calcium sulfate, and other materials have been utilized as bioabsorbable membranes (1,2). Additionally, both osseous and non-osseous graft materials have been placed in the periodontal

	<p>defect as an attempt to enhance the regenerative process (1,2).</p> <p>Research has shown guided tissue regeneration to relatively improve measurements of clinical attachment levels, periodontal pocket depths, and bone fill when compared to open flap debridement procedures alone (1,2). When utilized for furcation defects, favorable results are generally found with mandibular class II furcations and less favorable results with class III and maxillary class II furcations (1). Studies have shown mixed results relative to the use of augmentation procedures utilizing osseous or non-osseous graft materials. Some research indicates augmentation with grafting materials in intrabony defects has little additional value, although broad defects, two wall defects, and mandibular class II defects show enhanced results. (1,2,3,4).</p> <p>Guided tissue regeneration techniques have also shown improved clinical attachment levels and probing depths, as well as evidence of formation of a new periodontal attachment apparatus when utilized for treatment of gingival recession defects (1). Comparisons of guided tissue regeneration procedures with free gingival grafts and subepithelial connective tissue grafts have shown similar clinical results, although the guided tissue regeneration procedures are less predictable and often resulted in less root coverage (1). Adequate flap thickness has been shown to be a critical factor in the success of guided tissue regeneration procedures when used for treatment of gingival recession (1).</p> <p>Many factors influence the success of guided tissue regeneration procedures, the most important being adequate coverage of the surgical site and maintenance of primary closure during the healing phase (1, 2). Other factors include the general physical status of the patient, inadequate plaque control, smoking status, occlusal trauma, premature plaque colonization, mechanical insult, and premature exposure or loss of the barrier membrane (1,2). Of these factors, poor oral hygiene (1,2,5,6) and smoking (1,2,5,7,8) almost always preclude a satisfactory outcome of guided tissue regeneration.</p>
<p>Policy:</p>	<p>DDVA Guidelines:</p> <ol style="list-style-type: none"> 1. The general physical and oral health status of the patient should be reviewed and any medical or dental problems that interfere with the healing process should be evaluated. 2. Patients who smoke or have poor oral hygiene are not candidates for guided tissue regeneration procedures. 3. Guided tissue regeneration procedures are limited to treatment of periodontal defects around natural teeth.
<p>Code(s):</p>	<p>D4266 – Guided tissue regeneration - resorbable barrier, per site D4267 – Guided tissue regeneration – non-resorbable barrier, per site (includes membrane removal)</p>
<p>References:</p>	<ol style="list-style-type: none"> 1. American Academy of Periodontology. AAP Position Paper. Periodontal regeneration. J Perio 2005;76:1601-1622. 2. American Academy of Periodontology. AAP Commissioned Review. Bone augmentation techniques. J Perio 2007;78:377-396. 3. Murphy K and Gunsolley J. Guided tissue regeneration for the treatment of periodontal intrabony and furcation defects. A systematic review. Annals Periodontol 2003;8:266-302. 4. Sculean A, Nikolidakis D and Schwarz F. Regeneration of periodontal tissues: a combination of barrier membranes and grafting materials - biologic foundation and preclinical evidence: A systematic review. J Clin Perio 2008;106-116.

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