Clinical UM Guideline

Subject: Bone Grafts for Dental and Oral Surgical Services
Guideline #: 07-901 **Current Effective Date: 07/01/2016**
Status: Revised **Last Review Date: 02/08/2017**

Description

This document addresses the clinical appropriateness for bone grafting and the type of grafting materials used with dental surgical procedures and also addresses the use of bone graft substitutes for all dental indications and procedures.

Note: Please refer to the following documents for additional information concerning related topics:

- **Dental Implants: 06-001**
- **Osseous Surgery: 04-205**

Clinical Indications

Medically Necessary:

In general, bone grafts are medically necessary when replacing missing bone of the maxilla or mandible as a result of congenital anomalies, infection, or trauma.

Medically/Dentally Necessary or Medical/Dental Necessity means Medical/Dental Services that are:

(1) Consistent with the Member's diagnosis or condition;

(2) Is rendered:

(A) In response to a life-threatening condition or pain; or

(B) To treat an injury, illness or infection related to the dentition; or

(C) To achieve a level of function to the dentition consistent with prevailing community standards for the diagnosis or condition.

Not Medically Necessary:

In general, the routine placement of bone grafts into extraction sites is considered not medically necessary.

Note: This benefit can be a covered service either under the dental or medical benefit plan. It is highly recommended that benefits, for any particular service, are checked or pre-determined prior to the start of treatment with the medical and/or dental plan. Included with a pre-determination for benefits request should be a clear explanation of the purpose for the bone graft indicating whether the tooth loss or reconstructive service is related to disease of teeth (periodontal disease and/or dental decay), pathologic (dental or medical tumor removal creating a bone defect) or the result of trauma (loss of teeth and bone creating a dysfunction

not treatable by dental means). An exception can be made for bone grafting of the sockets post removal of impacted third molar teeth dependent upon review (e.g. - bony defects must be noted as clinically significant where healing by secondary intention would have limited success and the patient is 26 years of age or older).

NOTE:

A group may define covered dental services under either their dental or medical plan, as well as to define those services that may be subject to dollar caps or other limits. The plan documents outline covered benefits, exclusions and limitations. The health plan advises dentists and enrollees 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 the health plan. Some plans exclude coverage for services that the health plan considers either medically or dentally necessary. When there is a discrepancy between the health plan's clinical policy and the group's plan documents, the health plan will 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 the health plan will adhere to the applicable regulatory requirement.

Criteria

General Policy – All requests for bone grafting procedures will be reviewed for appropriateness by dental directors. Submitting dentists must include any and all clinical information related to the procedural request including, but not limited to, recent, dated radiographic images, a letter of rationale explaining the necessity of the bone graft and whether related to another service, a recent patient health history, and a recent dated periodontal chart.

General Policy -- When the primary procedure is not a covered service, all related adjunctive procedures, including but not limited to, bone grafts and use of membranes even though covered by the plan for other services is not a covered benefit as it is related to a non-covered service.

General Policy: The use of platelet rich plasma is considered experimental and investigational. There are no long term longitudinal studies proving the efficacy of its use.

Note: A patient's medical history and current medical and dental status must be submitted for review. Patients with medical complications or contraindications, demonstration of poor oral hygiene, or habits that compromise the healing process, such as smoking cigarettes or cigars, are not candidates for bone graft procedures.

- Bone graft replacement should generally be confined to vertical, multi-walled or narrow defects with areas of horizontal bone loss or class III furcation (loss of bone between the roots typically of molar teeth) defects. It has been reported that broad interproximal defects do not respond well to bone graft procedures.

- Bone graft procedures are generally limited to treatment of periodontal disease defects around natural teeth and dental implants (dependent upon group contract). Bone graft procedures associated with endodontic therapies or with minor periradicular surgery are typically not necessary as bone heals by secondary intention.

- Documentation of the necessity of bone grafting for periodontal purposes must include all associated, diagnostic radiographic images demonstrating horizontal and/or vertical bone defects including evidence of loss of lamina dura

- Current, dated periodontal charting indicating minimum pocket depth recordings of a minimum of 5mm.

- Bone grafts are generally not considered in conjunction with soft tissue grafting procedures or with dental implants unless specified by group contract.

- The use of biologic materials for soft or osseous tissue regeneration will not be considered in conjunction with bone grafts.

- Bone graft procedures include all postoperative care and evaluations for three months.

- Any surgical re-entry procedures will not be considered for three years post initial treatment.

- For major bone graft (reconstructive) procedures, the patient’s medical plan should be checked for coverage.

Coding

CDT

	Including, but not limited to, the following:
D4263	Bone replacement graft – first site in quadrant
D4264	Bone replacement graft – each additional site in quadrant
D6103	Bone graft for repair of peri-implant defect – does not include flap entry and closure
D6104	Bone graft at time of implant placement
D7295	Harvest of bone for use in autogenous grafting procedure
D7951	Sinus augmentation via a lateral open approach
D7952	Sinus augmentation via a vertical approach
D7953	Bone replacement graft for ridge preservation
D7955	Repair of maxillofacial soft and/or hard tissue defect

CPT

	Including, but not limited to, the following:
20900	Bone graft, any donor are, minor or small (e.g. Dowel or button)
20902	Major or large
21127	Augmentation, with bone graft, onlay or interpositional (includes obtaining graft)
21194	Reconstruction of mandibular rami, horizontal, C or L osteotomy, with bone graft
21366	Open treatment of complicated (e.g. comminuted, or involving cranial nerve foramina) fracture(s) of malar area, including zygomatic arch and malar tripod, with internal fixation and multiple surgical grafting (includes obtaining graft)
21210	Graft, bone, nasal, maxillary or malar areas (includes obtaining graft)
21215	Mandible (includes obtaining graft)

ICD-10 Diagnosis

	Including, but not limited to, the following:
K08.20	Atrophy, atrophic – alveolar process or ridge (edentulous)
K08.21	Minimal atrophy of the mandible
K08.22	Moderate atrophy of the mandible
K08.23	Severe atrophy of the mandible
K08.24	Minimal atrophy of the maxilla
K08.25	Moderate atrophy of the maxilla
K08.26	Severe atrophy of the maxilla
Q67.4	Atrophy, hemifacial
K06.9	Disease, alveolar ridge, edentulous
K06.8	Disease, specified NEC
K08.9	Disease, alveoli, teeth
J34.9	Disease, nasal
K08.1	Complete loss of teeth
K00.0	Complete loss of teeth, congenital
K08.0	Complete loss of teeth, exfoliation of teeth due to systemic causes
K08.4	Partial loss of teeth
K08.40	Partial loss of teeth, unspecified
K08.401 – K08.404	Partial loss of teeth, unspecified (class I – class IV)
K08.101 – K08.104	Complete loss of teeth, unspecified causes
K08.11	Complete loss of teeth –due to trauma
K08.111 – K08.119	Complete loss of teeth due to trauma (class I, class II, class III, class IV)
K08.12	Complete loss of teeth due to periodontal disease
K08.121 – K08.129	Complete loss of teeth due to periodontal disease (class I – class IV)
K08.41	Partial loss of teeth due to trauma
K08.411 – K08.419	Partial loss of teeth due to trauma, (class I – class IV; unspecified class)

K08.42	Partial loss of teeth due to periodontal disease
K08.421 – K08.429	Partial loss of teeth due to periodontal disease (class I – class IV, unspecified class)
K08.43	Partial loss of teeth due to caries

The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

K08.431 – K08.439	Partial loss of teeth due to caries (class I – class IV, unspecified class)
K08.49	Partial loss of teeth due to other unspecified causes
K08.491 – K08.499	Partial loss of teeth due to other unspecified causes (class I – class IV, unspecified class)

Discussion/General Information

Bone grafts for dental surgical services may be necessary for a variety of reasons which includes, but are not limited to, pathologic tooth related bone loss and loss of the tooth and tooth bearing ridges that support the teeth resulting from trauma. A bone replacement graft or graft substitute is used to replace missing bone or stimulate the re-growth of bone. Grafts may be osseous (bone) autografts (patient's own bone), allografts (same species bone graft), xenografts (different species bone graft), or alloplasts (synthetic or manmade bone graft). The synthetically created graft materials investigated have been calcium phosphate, calcium sulfate, and hydroxyapatite. The use of bone graft substitutes composed of substances other than DBM (Demineralized Bone Matrix) [for example, beta tricalcium phosphate [β-TCP], bioactive glass, crystaline hydroxyapatite, etc.] is considered not medically necessary for all indications according to Anthem medical policy.

The biological rationale for the use of bone grafts is that the various graft materials contain either bone forming cells or bone-inducing substances, which serve as a scaffolding structure for new bone formation. The desired property of a bone graft material is that it is: osteogenic (a graft that contains cells that produce bone), osseoinductive (a graft that contains cells that induce new bone formation), or osseoconducive (a graft that contains cells that create an environment which is conducive to new bone formation). Bone replacement grafts may increase and/or maintain current bone levels, reduce crestal bone loss, increase clinical attachment levels of the soft tissues and reduce periodontal pocket probing depths. Some Class II molar tooth furcation defects respond to bone grafting as well. Studies show the repair process to be one of either formation of a new attachment apparatus or a long junctional epithelial attachment. The healing with alloplastic grafts almost universally shows junctional periodontal repair rather than regeneration of a new connective tissue attachment. Research literature clearly indicates bone replacement grafts result in relatively improved clinical parameters when compared to unenhanced surgical flap procedures.

There are several additional indications for bone grafting procedures other than for correction of periodontal defects. Bone grafts may be used for edentulous ridge augmentation procedures that increase height, width and/or volume of an alveolar ridge as well as for orthognathic reconstruction procedures or to replace bone missing as a result of oro-facial trauma. Augmentation (buildup) of the sinus cavity may be necessary to:

- **replace missing or atrophic bone increasing the height for the reconstruction of an edentulous or toothless upper jaw with a dental implant or implants**
- **to close a sinus opening**
- **or to replace missing bone for pre-prosthetic reconstruction.**

An autograft, allograft or non-osseous graft can be placed into an extraction site at the time of extraction to preserve the ridge integrity for later tooth replacement with dental implants or for reconstruction of surgical, traumatic or congenital defects of the facial bones in conjunction with soft tissue procedures to repair, replace and restore the facial bones to form and function. Bone grafts for bone preservation are not typically medically necessary as bone heals by secondary intention. If dental implant placement is covered by the dental plan, necessary bone grafting may also be a benefit.

Definitions

Alloplast: a non- biologic material such as metal, ceramic, and plastic.

Autograft: a graft of tissue from one point to another of the same individual's body.

Atrophic: a wasting or decrease in size of a body organ, tissue, or part owing to disease, injury, or lack of use

Bone: any of the pieces of hard, whitish tissue making up the skeleton in humans and other vertebrates.

Dental Implant: also known as an endosseous implant or fixture - is a surgically placed root form component that interfaces with the bone of the jaw or skull to support a dental prosthesis such as a crown, bridge, denture, facial prosthesis or to act as an orthodontic anchor.

Osseoconductive: Occurs when bone graft material serves as a scaffold for new bone growth, which is perpetuated by the native bone.

Osseoinductive: Involves stimulation of osteoprogenitor cells to differentiate into osteoblasts (bone forming cells) and then begins formation of new bone.

Osteogenic: occurs when vital osteoblasts originating from bone graft material contributes to the growth of new bone along with bone formation.

Platelet Rich Plasma: blood plasma that has been enriched with platelets.

References

Peer Reviewed Publications:

1. Bowers GM, Chadroff B, et al. Histologic evaluation of new attachment apparatus formation in humans. Part III. J Perio 1989; 60:683-693.
2. Hamilton D. On sponge grafting. Journal of Anatomical Physiology 1881; 27:385-414.
3. Laurell L, Gottlow J, et al. Treatment of intrabony defects by different surgical procedures. A literature review. J Perio 1998; 69:303-313.
4. McAllister BS and Haghighat K. Bone augmentation techniques. AAP-commissioned review. J Perio 2007; 78:377-396.
5. Garrett S. Periodontal regeneration around natural teeth. Annals Perio 1996; 1:621-666.
6. American Dental Association. *CDT 2016. Dental Procedure Codes*; 33-34; (©ADA 2015).
7. Reynolds MA, Aichelman-Reidy ME, et al. The efficiency of bone replacement grafts in the treatment of periodontal osseous defects. A systematic review. Annals Perio 2003; 8:227-265.
8. Brunsvold MA and Mellonig JT. Bone grafts and periodontal regeneration. Periodontal 2000; 1:80-91.
9. Bowers GM, Chadroff B, et al. Histologic evaluation of new attachment apparatus formation in humans. Part I. J Perio 1989; 60:664-674.