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Subject: Orthognathic Surgery

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

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DESCRIPTION:

Orthognathic surgery is the surgical correction of skeletal abnormalities of the mandible, maxilla or both. The underlying abnormality may be congenital (intrinsic), present at birth. These abnormalities may be recognized at birth or may not become obvious until the individual grows and develops. The dysmorphology may be extrinsic, the result of traumatic injuries or secondary to systemic diseases.

Intrinsic or congenital abnormalities include, but are not limited to, cleft lip and palate; dentofacial skeletal deformities (mandibular hyper or hypoplasia, maxillary hyper or hypoplasia, apertognathia, facial asymmetry, maxillary and mandibular transverse discrepancies); craniofacial macrosomia; dysmorphic syndromes such as Noonan and Treacher Collins; Pierre Robin sequence; and chromosomal anomalies, including 22q11.2 deletion syndrome.

Extrinsic, or acquired abnormalities include, but are not limited to, traumatic facial skeletal injuries; cysts and tumors of the jaws; obstructive sleep apnea; temporomandibular joint disorders resulting in skeletal malocclusion; rheumatoid arthritis; degenerative arthritis; condylar atrophy; growth disturbances; and condylar hyperplasia.

POSITION STATEMENT:

***NOTE: Per Florida statute:**

A health plan that covers a child under the age of 18 must provide coverage for treatment of **cleft lip and cleft palate** for the child. **See Florida Statutes, Section 627.66911** below ([OTHER](#) section).

1. A health plan that provides coverage for any diagnostic or surgical procedure involving bones or joints of the skeleton shall not discriminate against coverage for any similar diagnostic or surgical procedure involving bones or joints of the **jaw and facial region**, if, under accepted

medical standards, such procedure or surgery is medically necessary to treat conditions caused by **congenital or developmental deformity, disease, or injury**. See **Florida Statutes, Sections 627.419(7); 627.65735; 641.31094** below ([OTHER](#) section).

Orthognathic surgery to correct skeletal deformities of the maxilla or mandible **meets the definition of medical necessity** when the **(1.) skeletal deformity, (2.) functional impairment** and **(3.) documentation** requirements below are met.

1. Skeletal deformities, either A or B:

A. One or more of the following skeletal deformities exists:

Anteroposterior discrepancies:

- Maxillary/mandibular incisor relationship: horizontal overjet of +5 millimeters (mm) or more, **OR** horizontal overjet of zero to a negative value (established norm = 2mm), **OR**
- Maxillary/mandibular antero-posterior molar relationship discrepancy of 4mm or more (established norm = 0 to 1mm); **OR**

Vertical discrepancies:

- Open bite, demonstrated by **ONE** of the following:
 - No vertical overlap of anterior teeth; **OR**
 - Unilateral or bilateral posterior open bite greater than 2mm; **OR**
- Deep overbite with impingement or irritation of buccal or lingual soft tissues of the opposing arch; **OR**
- Supraeruption of a dentoalveolar segment due to lack of occlusion; **OR**

Transverse discrepancies:

- Total bilateral maxillary palatal cusp to mandibular fossa discrepancy of 4mm or greater, or a unilateral discrepancy of 3mm or greater, given normal axial inclination of the posterior teeth; **OR**

Asymmetries:

- Anteroposterior, transverse or lateral asymmetry greater than 3mm with concomitant occlusal asymmetry

B. There is a skeletal abnormality due to injury / trauma (e.g., fracture), disease or illness (e.g., neoplasm or osteonecrosis).

2. Physical functional impairment

One or more of the following physical functional impairments exists:

- Masticatory (chewing) dysfunction due to skeletal deformity (e.g., inability to incise/and or chew solid foods, loss of food through the lips, intra-oral trauma to soft tissue during chewing); **OR**

- Swallowing dysfunction (dysphagia) due to skeletal deformity (e.g., choking on incompletely chewed solid foods); **OR**
- Myofascial pain due to skeletal deformity that has persisted for at least 6 months and has not responded to conservative therapy such as physical therapy or splinting; **OR**
- Speech impairments (documented by a speech pathologist or therapist) due to skeletal deformity that do not respond to orthodontia or speech therapy; **OR**
- Obstructive sleep apnea, when **ALL** of the following are met:
 - Criteria for a positive airway pressure (PAP) device are met and the member is unable to tolerate PAP or has failed a trial of PAP (refer to [09-E0000-21, Positive Airway Pressure Devices](#)), **AND**
 - There is a skeletal deformity.

3. The following documentation is required:

- Medical history, physical examination and description of the skeletal deformity present; **AND**
- [Panorex](#) and [cephalometric](#) radiographs; **AND**
- Cephalometric tracings and analysis; **AND**
- Anterior posterior radiographs for asymmetry deformities; **AND**
- Medical records from treating physician documenting evaluation, diagnosis and previous management of the functional impairment(s); **AND**
- Photographs that demonstrate the skeletal deformity.

Orthognathic surgery when performed for cosmetic purposes **does not meet the definition of medical necessity**.

Genioplasty (surgery of the chin to correct a receding chin with an implant or reduce a prominent chin) when performed in conjunction with orthognathic surgery, for the sole purpose of improving appearance and/or profile, is considered cosmetic and **non-covered**.

Orthodontic treatment for congenital or developmental malformations related to or developed as a result of **cleft palate, with or without cleft lip, meets the definition of medical necessity**. The member must have a confirmed diagnosis of cleft palate, with or without cleft lip, with a demonstrated malocclusion.

The following are considered dental services that are subject to coverage available through dental benefits:

- [Endosteal \(dental\) implants](#), when used to serve as an abutment for teeth or orthodontic appliances
- Surgery for [torus mandibularis](#) and/or surgery for [torus palatinus](#) for fabrication of dentures
- Orthodontic treatment for conditions other than cleft palate (with or without cleft lip).

BILLING/CODING INFORMATION:

CPT Coding:

21120	Genioplasty; augmentation (autograft, allograft, prosthetic material) (non-covered)
21121	Genioplasty; sliding osteotomy, single piece (non-covered)
21122	Genioplasty; sliding osteotomies, two or more osteotomies (e.g., wedge excision or bone wedge reversal for asymmetrical chin) (non-covered)
21123	Genioplasty; sliding, augmentation with interpositional bone grafts (includes obtaining autografts) (non-covered)
21141	Reconstruction midface, LeFort I; single piece, segment movement in any direction (e.g., for Long Face Syndrome), without bone graft
21142	Reconstruction midface, LeFort I; 2 pieces, segment movement in any direction, without bone graft
21143	Reconstruction midface, LeFort I; 3 or more pieces, segment movement in any direction, without bone graft
21145	Reconstruction midface, LeFort I; single piece, segment movement in any direction, requiring bone grafts (includes obtaining autografts)
21146	Reconstruction midface, LeFort I; 2 pieces, segment movement in any direction, requiring bone grafts (includes obtaining autografts) (e.g., ungrafted unilateral alveolar cleft)
21147	Reconstruction midface, LeFort I; 3 or more pieces, segment movement in any direction, requiring bone grafts (includes obtaining autografts) (e.g., ungrafted bilateral alveolar cleft or multiple osteotomies)
21150	Reconstruction midface, LeFort II; anterior intrusion (e.g., Treacher-Collins Syndrome)
21151	Reconstruction midface, LeFort II; any direction, requiring bone grafts (includes obtaining autografts)
21154	Reconstruction midface, LeFort III (extracranial), any type, requiring bone grafts (includes obtaining autografts); without LeFort I
21155	Reconstruction midface, LeFort III (extracranial), any type, requiring bone grafts (includes obtaining autografts); with LeFort I
21159	Reconstruction midface, LeFort III (extra and intracranial) with forehead advancement (e.g., mono bloc), requiring bone grafts (includes obtaining autografts); without LeFort I
21160	Reconstruction midface, LeFort III (extra and intracranial) with forehead advancement (e.g., mono bloc), requiring bone grafts (includes obtaining autografts); with LeFort I
21181	Reconstruction by contouring of benign tumor of cranial bones (e.g., fibrous dysplasia), extracranial
21182	Reconstruction of orbital walls, rims, forehead, nasoethmoid complex following intra- and extracranial excision of benign tumor of cranial bone (e.g., fibrous dysplasia), with multiple autografts (includes obtaining grafts); total area of bone grafting less than 40 sq cm
21183	Reconstruction of orbital walls, rims, forehead, nasoethmoid complex following intra- and extracranial excision of benign tumor of cranial bone (e.g., fibrous dysplasia), with multiple autografts (includes obtaining grafts); total area of bone grafting greater than 40 sq cm but less than 80 sq cm

21184	Reconstruction of orbital walls, rims, forehead, nasoethmoid complex following intra- and extracranial excision of benign tumor of cranial bone (e.g., fibrous dysplasia), with multiple autografts (includes obtaining grafts); total area of bone grafting greater than 80 sq cm
21188	Reconstruction midface, osteotomies (other than LeFort type) and bone grafts (includes obtaining autografts)
21193	Reconstruction of mandibular rami, horizontal, vertical, C, or L osteotomy; without bone graft
21194	Reconstruction of mandibular rami, horizontal, vertical, C, or L osteotomy; with bone graft (includes obtaining graft)
21195	Reconstruction of mandibular rami and/or body, sagittal split; without internal rigid fixation
21196	Reconstruction of mandibular rami and/or body, sagittal split; with internal rigid fixation
21198	Osteotomy, mandible, segmental
21199	Osteotomy, mandible, segmental; with genioglossus advancement
21206	Osteotomy, maxilla, segmental (e.g., Wassmund or Schuchard)
21210	Graft, bone; nasal, maxillary or malar areas (includes obtaining graft)
21215	Graft, bone; mandible (includes obtaining graft)

REIMBURSEMENT INFORMATION:

Refer to section entitled [POSITION STATEMENT](#)

PROGRAM EXCEPTIONS:

Federal Employee Program (FEP): Follow FEP guidelines.

State Account Organization (SAO): Follow SAO guidelines.

Medicare Advantage products: No National Coverage Determination (NCD) and/or Local Coverage Determination (LCD) were found at the time of the last guideline reviewed date.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at [Coverage Protocol Exemption Request](#).

DEFINITIONS:

Anteroposterior: also referred to as A/P; from the front to the back of the body.

Asymmetries: lacking symmetry; parts of the body are unequal in shape and/or size.

Cephalometric: a scientific measurement of the head; the interpretation of lateral skull x-rays taken under standardized conditions.

Endosteal implant: dental implant made of metal, ceramic, or polymeric material, consisting of a blade, screw, pin, or vent, inserted into the jaw bone through the alveolar or basal bone, with a post protruding through the mucoperiosteum into the oral cavity to serve as an abutment for dentures or orthodontic appliances, or to serve in fracture fixation.

Malocclusion: imperfect contact of opposing teeth in the upper and lower jaws.

Mandible: the horseshoe-shaped bone forming the lower jaw.

Maxilla: a paired bone that forms the skeletal base of the upper face, roof of the mouth, sides of the nasal cavity and floor of the orbit (contains the eye); the upper jaw.

Maxillofacial: pertaining to the maxilla (upper jaw) and the face.

Occlusion: bringing the opposing surfaces of the teeth of the two jaws (mandible and maxilla) into contact with each other.

Panorex: a two-dimensional dental x-ray that displays the upper and lower jaws and teeth in the same film; also known as an orthopantomogram.

Supraeruption: the occurrence of a tooth continuing to grow out of the gum if the opposing tooth in the opposite jaw is missing.

Torus mandibularis: a bony prominence sometimes seen on the lingual aspect of the mandible at the base of its alveolar part.

Torus palatinus: a fixed nodule of bone occurring commonly in the midline of the hard palate.

Transverse: in a direction across the body from side to side.

Vertical: upright or straight up and down.

RELATED GUIDELINES:

[Reconstructive Surgery/Cosmetic Surgery, 02-12000-01](#)

[Diagnosis and Treatment of Temporomandibular Joint Disorder, 02/20000-12](#)

OTHER:

Mandated Coverage

Florida Statutes, Section 627.66911:

Required coverage for **cleft lip and cleft palate**. A health insurance policy that covers a child under the age of 18 must provide coverage for treatment of cleft lip and cleft palate for the child. The coverage must include medical, dental, speech therapy, audiology, and nutrition services only if such services are prescribed by the treating physician or surgeon and such physician or surgeon certifies that such services are medically necessary and consequent to treatment of the cleft lip or cleft palate. The coverage required by this section is subject to terms and conditions applicable to other benefits. This

section does not apply to specified-accident, specified-disease, hospital indemnity, limited benefit disability income, or long-term care insurance policies.

Florida Statutes, Section 627.419(7):

Construction of policies. No health insurance policy, health care services plan, or other contract which provides coverage for any diagnostic or surgical procedure involving bones or joints of the skeleton shall discriminate against coverage for any similar diagnostic or surgical procedure involving bones or joints of the jaw and facial region, if, under accepted medical standards, such procedure or surgery is medically necessary to treat conditions caused by **congenital or developmental deformity, disease, or injury**. This subsection shall not be construed to affect any other coverage under this part or to restrict the scope of coverage under any policy, plan, or contract. Nothing in this subsection shall be construed to discourage appropriate nonsurgical procedures or to prohibit the continued coverage of nonsurgical procedures in the treatment of a bone or joint of the jaw and facial region. Furthermore, nothing in this subsection requires coverage for care or treatment of the teeth or gums, for intraoral prosthetic devices, or for surgical procedures for cosmetic purposes. This section does not apply to accident only, disability income, specified disease, hospital indemnity, credit, Medicare supplement, or long-term care insurance policies.

Florida Statutes, Section 627.65735:

Nondiscrimination of coverage for surgical procedures. No group, franchise, or blanket health insurance contract or policy which provides coverage on a group or individual basis for any diagnostic or surgical procedure involving bones or joints of the skeleton shall discriminate against coverage for any similar diagnostic or surgical procedure involving bones or joints of the jaw and facial region, if, under accepted medical standards, such procedure or surgery is medically necessary to treat conditions caused by congenital or developmental deformity, disease, or injury. This section shall not be construed to affect any other coverage under this part or to restrict the scope of coverage under any policy, plan, or contract. Nothing in this section shall be construed to discourage appropriate nonsurgical procedures or to prohibit the continued coverage of nonsurgical procedures in the treatment of a bone or joint of the jaw and facial region. Furthermore, nothing in this section requires coverage for care or treatment of the teeth or gums, for intraoral prosthetic devices, or for surgical procedures for cosmetic purposes. This section does not apply to accident-only disability income, specified disease, hospital indemnity, credit, Medicare supplement, or long-term care insurance policies.

Florida Statutes, Section 641.31094:

Nondiscrimination of coverage for certain surgical procedures involving bones or joints. No health maintenance contract or policy which provides coverage for any diagnostic or surgical procedure involving bones or joints of the skeleton shall discriminate against coverage for any similar diagnostic or surgical procedure involving bones or joints of the jaw and facial region, if, under accepted medical standards, such procedure or surgery is medically necessary to treat conditions caused by congenital or developmental deformity, disease, or injury. This section shall not be construed to affect any other coverage under this part or to restrict the scope of coverage under any policy, plan, or contract. Nothing in this section shall be construed to discourage appropriate nonsurgical procedures or to prohibit the continued coverage of nonsurgical procedures in the treatment of a bone or joint of the jaw and facial

region. Furthermore, nothing in this subsection requires coverage for care or treatment of the teeth or gums, for intraoral prosthetic devices, or for surgical procedures for cosmetic purposes.

REFERENCES:

1. AHRQ National Guideline Clearinghouse. Guideline Summary NGC-8079: Guideline on acquired temporomandibular disorders in infants, children, and adolescents. Chicago (IL): American Academy of Pediatric Dentistry (AAPD); 2010.
2. Alolayan AB, Leung YY. Risk factors of neurosensory disturbance following orthognathic surgery. *PLoS One*. 2014 Mar 5;9(3):e91055.
3. American Association of Oral and Maxillofacial Surgeons. Guidelines to the Evaluation of Impairment of the Oral and Maxillofacial Region (2008). Accessed at <http://www.aaoms.org/>.
4. American Association of Oral and Maxillofacial Surgeons (AAOMS) Clinical Paper. Guidelines to the evaluation of impairment of the oral and maxillofacial region (2015). Accessed at <http://www.aaoms.org>.
5. American Association of Oral and Maxillofacial Surgeons Clinical Paper: Criteria for Orthognathic Surgery (2008). Accessed at <http://www.aaoms.org>.
6. American Association of Oral and Maxillofacial Surgeons (AAOMS) Clinical Paper. Criteria for orthognathic surgery (2015). Accessed at <http://www.aaoms.org>.
7. American Association of Oral and Maxillofacial Surgeons (AAOMS) Clinical Paper. Criteria for orthognathic surgery (2020). Accessed at <http://www.aaoms.org>.
8. American Association of Oral and Maxillofacial Surgeons Coding Paper: Coding for Orthognathic Surgery. Accessed at <http://www.aaoms.org>.
9. American Association of Oral and Maxillofacial Surgeons (AAOMS). Corrective Jaw Surgery. Accessed at <http://myoms.org>.
10. American Association of Oral and Maxillofacial Surgeons. Parameters of Care (PARCAR) 2012. *Journal of Oral and Maxillofacial Surgery*, VOLUME 70, NUMBER 11, SUPPL 3, NOVEMBER 2012.
11. American Association of Oral and Maxillofacial Surgeons. Statement by the American Association of Oral and Maxillofacial Surgeons Concerning the Management of Selected Clinical Conditions and Associated Clinical Procedures. March 2010.
12. American Association of Oral and Maxillofacial Surgeons. Parameters of Care: Clinical Practice Guidelines for Oral and Maxillofacial Surgery (AAOMS ParCare 2017). Accessed at <http://www.aaoms.org>.
13. American Cleft Palate-Craniofacial Association (ACPCA). Parameters for evaluation and treatment of patients with cleft lip/palate or other craniofacial anomalies. November 2009.
14. Baherimoghaddam T, Oshagh M, Naseri N, Nasrbadi NI, Torkan S. Changes in cephalometric variables after orthognathic surgery and their relationship to patients' quality of life and satisfaction. *J Oral Maxillofac Res*. 2014 Dec 29;5(4):e6.
15. Bonanthaya K, Anantanarayanan P. Unfavourable outcomes in orthognathic surgery. *Indian J Plast Surg*. 2013 May;46(2):183-93.
16. Cascone P, et al. Reconstruction of the Adult Hemifacial Microsomia Patient with Temporomandibular Joint Total Joint Prosthesis and Orthognathic Surgery. *Case Rep Surg*. 2018 Mar 15;2018:2968983.
17. Chanchareonsook N, Samman N, Whitehill TL. The Effect of Cranio-Maxillofacial Osteotomies and Distraction Osteogenesis on Speech and Velopharyngeal Status: A Critical Review. *Cleft Palate–Craniofacial Journal*, July 2006, Vol. 43 No. 4.

18. Choi DS, Garagiola U, Kim SG. Current status of the surgery-first approach (part I): concepts and orthodontic protocols. *Maxillofac Plast Reconstr Surg*. 2019 Mar 6;41(1):10. doi: 10.1186/s40902-019-0194-4. eCollection 2019 Dec.
19. Eslamipour F, et al. Impact of Orthognathic Surgery on Quality of Life in Patients with Dentofacial Deformities. *Int J Dent*. 2017;2017:4103905.
20. Espinar-Escalona E, et al. True vertical validation in facial orthognathic surgery planning. *J Clin Exp Dent*. 2013 Dec 1;5(5):e231-8.
21. Fariña R, Valladares S, Torrealba R, Nuñez M, Uribe F. Orthognathic surgery in craniofacial microsomia: treatment algorithm. *Plast Reconstr Surg Glob Open*. 2015 Feb 6;3(1):e294.
22. Gandedkar NH, Chng CK, Tan W. Surgery-first orthognathic approach case series: Salient features and guidelines. *J Orthod Sci*. 2016 Jan-Mar;5(1):35-42.
23. Heggie AA, Kumar R, Shand JM. The role of distraction osteogenesis in the management of craniofacial syndromes. *Ann Maxillofac Surg*. 2013 Jan-Jun; 3(1): 4–10.
24. Hoang TA, Lee KC, Chuang SK. The Surgery-first Approach to Orthognathic Surgery. *J Craniofac Surg*. 2020 Aug 26. doi: 10.1097/SCS.0000000000006942. Epub ahead of print. PMID: 32858614.
25. Iannetti G, Fadda TM, Riccardi E, Mitro V, Filiaci F. Our experience in complications of orthognathic surgery: a retrospective study on 3236 patients. *Eur Rev Med Pharmacol Sci*. 2013 Feb;17(3):379-84.
26. InterQual® 2013.2. CP: Procedures Adult. Bone Augmentation, Mandible/Maxilla; Osteotomy, LeFort I; Osteotomy, Mandible Ramus; Osteotomy, Anterior Segment, Mandible; Maxillary Buttress Osteotomies, +/- Mid Palatal Osteotomy.
27. InterQual® 2014. CP: Procedures Adult. Osteotomy, LeFort I; Osteotomy, Anterior Segment, Maxilla; Osteotomy, Sagittal Split, Mandible Ramus.
28. Jung HD, Kim SY, Park HS, Jung YS. Orthognathic surgery and temporomandibular joint symptoms. *Maxillofac Plast Reconstr Surg*. 2015 May 28;37(1):14.
29. Khechoyan DY. Orthognathic surgery: general considerations. *Semin Plast Surg*. 2013 Aug;27(3):133-6.
30. Kolokitha OE, Topouzelis N. Cephalometric methods of prediction in orthognathic surgery. *J Maxillofac Oral Surg*. 2011 Sep;10(3):236-45.
31. Kumari P, Roy SK, Roy ID, Kumar P, Datana S, Rahman S. Stability of Cleft maxilla in Le Fort I Maxillary advancement. *Ann Maxillofac Surg*. 2013 Jul;3(2):139-43.
32. Kwon TG, Han MD. Current status of surgery first approach (part II): precautions and complications. *Maxillofac Plast Reconstr Surg*. 2019 Jun 3;41(1):23. doi: 10.1186/s40902-019-0206-4. eCollection 2019 Dec.
33. Lindenmeyer A, et. al. Oral and Maxillofacial Surgery and Chronic Painful Temporomandibular Disorders—A Systematic Review. *J Oral Maxillofac Surg* 68:2755-2764, 2010.
34. Lonic D, Pai BC, Yamaguchi K, Chortrakarnkij P, Lin HH, Lo LJ. Computer-Assisted Orthognathic Surgery for Patients with Cleft Lip/Palate: From Traditional Planning to Three-Dimensional Surgical Simulation. *PLoS One*. 2016 Mar 22;11(3):e0152014.
35. Lye KW. Effect of Orthognathic Surgery on the Posterior Airway Space (PAS). *Ann Acad Med Singapore* 2008;37:677-82.
36. Malara P, Bierbaum S, Malara B. Outcomes and Stability of Anterior Open Bite Treatment with Skeletal Anchorage in Non-Growing Patients and Adults Compared to the Results of Orthognathic Surgery Procedures: A Systematic Review. *J Clin Med*. 2021 Dec 1;10(23):5682. doi: 10.3390/jcm10235682.
37. Marlière DAA, et al. Alteration of Occlusal Plane in Orthognathic Surgery: Clinical Features to Help Treatment Planning on Class III Patients. *Case Rep Dent*. 2018 May 9;2018:2495262.

38. National Institute of Dental and Craniofacial Research (NIDCR). NIH Publication No. 13-3487: TMJ Disorders. January 2013. Accessed at <http://www.nidcr.nih.gov/>.
39. National Institutes for Health and Clinical Excellence (NICE). Interventional Procedure Guidance 28: Exposed customised titanium implants for orofacial reconstruction. December 2003; last modified March 2013.
40. National Institutes for Health and Clinical Excellence (NICE). Interventional Procedure Guidance 449: Insertion of customized titanium implants, with soft tissue cover, for orofacial reconstruction. March 2013.
41. Park YW. Bioabsorbable osteofixation for orthognathic surgery. *Maxillofac Plast Reconstr Surg*. 2015 Feb 19;37(1):6.
42. Paulose J, Markose E. Photometric Evaluation of Soft Tissue Changes in CLP Patients: Le Fort I Advancement Osteotomy (ALO) Versus Anterior Maxillary Distraction (AMD). *J Maxillofac Oral Surg*. 2014 Dec;13(4):508-13.
43. Pereira-Filho VA, Castro-Silva LM, de Moraes M, Gabrielli MFR, Campos JADB, Juergens P. (2011). Cephalometric Evaluation of Pharyngeal Airway Space Changes in Class III Patients Undergoing Orthognathic Surgery. *J Oral Maxillofac Surg*, 69, e409-e415.
44. Piñeiro-Aguilar A, Somoza-Martín M, Gandara-Rey JM, García-García A. Blood loss in orthognathic surgery: a systematic review. *J Oral Maxillofac Surg*. 2011 Mar;69(3):885-92.
45. Rachmiel A, Emodi O, Aizenbud D. Management of obstructive sleep apnea in pediatric craniofacial anomalies. *Ann Maxillofac Surg*. 2012 Jul-Dec; 2(2): 111–115.
46. Rachmiel A, Even-Almos M, Aizenbud D. Treatment of maxillary cleft palate: Distraction osteogenesis vs. orthognathic surgery. *Ann Maxillofac Surg*. 2012 Jul;2(2):127-30.
47. Rao SH, Selvaraj L, Lankupalli AS. Skeletal stability after bilateral sagittal split advancement and setback osteotomy of the mandible with miniplate fixation. *Cranio-maxillofac Trauma Reconstr*. 2014 Mar;7(1):9-16.
48. Ronchi P, Cinquini V, Ambrosoli A, Caprioglio A. Maxillomandibular advancement in obstructive sleep apnea syndrome patients: a retrospective study on the sagittal cephalometric variables. *J Oral Maxillofac Res*. 2013 Jul 1;4(2):e5.
49. Ruf S, et. al. Orthognathic Surgery and Dentofacial Orthopedics in Adult Class II Division 1 Treatment: Mandibular Sagittal Split Osteotomy versus Herbst Appliance. *American Journal of Orthodontics and Dentofacial Orthopedics* Volume 126, Number 2.
50. Schwarz DA, et. al. Analysis of the Biomechanical Properties of the Mandible After Unilateral Distraction Osteogenesis. *Plast Reconstr Surg*. 2010 August ; 126(2): 533–542.
51. Seifi M, Matini NS, Motabar AR, Motabar M. Dentoskeletal Stability in Conventional Orthognathic Surgery, Presurgical Orthodontic Treatment and Surgery-First Approach in Class-III Patients. *World J Plast Surg*. 2018 Sep;7(3):283-293. doi: 10.29252/wjps.7.3.283.
52. Seo HJ, Choi YK. Current trends in orthognathic surgery. *Arch Craniofac Surg*. 2021 Dec;22(6):287-295. doi: 10.7181/acfs.2021.00598. Epub 2021 Dec 20.
53. Sharma VK, Yadav K, Tandon P. An overview of surgery-first approach: Recent advances in orthognathic surgery. *J Orthod Sci*. 2015 Jan-Mar; 4(1): 9–12.
54. Sundararajan S, Parameswaran R, Vijayalakshmi D. Orthognathic Surgical Approach for Management of Skeletal Class II Vertical Malocclusion. *Contemp Clin Dent*. 2018 Jun;9(Suppl 1):S173-S176.
55. The Florida Senate, Florida Statutes. Chapter 627; sections 31094, 419(7), 65735, and 66911. Accessed at <http://www.flsenate.gov/>.

56. Thiegen G, et al. Mandibular asymmetries and associated factors in orthodontic and orthognathic surgery patients. *Angle Orthod.* 2018 Sep;88(5):545-551. doi: 10.2319/111517-785.1. Epub 2018 Apr 18. PMID: 29667467.
57. Tulloch JFC, et. al. Outcomes in a 2-phase randomized clinical trial of early Class II treatment. *Am J Orthod Dentofacial Orthop* 2004;125:657-67.
58. Turvey TA, Proffit WP, Phillips C. Biodegradable fixation for craniomaxillofacial surgery: a 10-year experience involving 761 operations and 745 patients. *Int J Oral Maxillofac Surg.* 2011 Mar;40(3):244-9.
59. UpToDate. Syndromes with craniofacial abnormalities. 2021. Accessed at uptodate.com.
60. Wang C, Gui L, Liu J. A Practical Surgical Technique to Expose the Mental Nerve in Narrowing Genioplasty. *Plast Reconstr Surg Glob Open.* 2015 Nov; 3(11): e554.
61. Yun YS, et al. Bone and Soft Tissue Changes after Two-Jaw Surgery in Cleft Patients. *Arch Plast Surg.* 2015 Jul;42(4):419-23.
62. Zamboni R, et al. Impacts of Orthognathic Surgery on Patient Satisfaction, Overall Quality of Life, and Oral Health-Related Quality of Life: A Systematic Literature Review. *Int J Dent.* 2019 Jun 16;2019:2864216. doi: 10.1155/2019/2864216. eCollection 2019.

COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 12/08/23.

GUIDELINE UPDATE INFORMATION:

08/15/13	New Medical Coverage Guideline.
01/01/14	Revision; position statement updated. Reformatted guideline.
08/15/14	Scheduled review. Maintained position statement. Revised Other section (Florida Statutes). Updated references.
07/15/15	Scheduled review. Maintained position statement and updated references.
11/01/15	Revision: ICD-9 Codes deleted.
07/15/16	Scheduled review. Maintained Position Statement. Updated references.
10/01/16	Revision: Billing/Coding Information section updated.
07/15/17	Scheduled review. Maintained position statement and updated references. Reformatted guideline.
09/15/18	Scheduled review. Maintained position statement and updated references.
09/15/19	Scheduled review. Maintained position statement and updated references.
02/15/21	Scheduled review. Revised description, maintained position statement, and updated references.
11/15/22	Scheduled review. Maintained position statement and updated references.
05/23/23	Update to Program Exceptions section.
01/01/24	Position statements maintained.
09/15/24	Revision. Changed coverage designation for genioplasty from “does not meet the definition of medical necessity” to “non-covered”.