



Louisiana

Temporomandibular Joint Dysfunction

Policy # 00583

Original Effective Date: 01/01/2018

Current Effective Date: 10/01/2020

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc. (collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

Note: Electrical Nerve Stimulation is addressed separately in medical policy 00142.

Note: Intra-Articular Hyaluronan Injections for Osteoarthritis of the Knee is addressed separately in medical policy 00075.

Note: Low-Level Laser Therapy is addressed separately in medical policy 00194.

Note: Botulinum Toxins is addressed separately in medical policy 00012.

Note: Percutaneous Electrical Nerve Stimulation (PENS) and Percutaneous Neuromodulation Therapy (PNT) is addressed separately in medical policy 00144.

Diagnostic Procedures

When Services Are Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider **ANY** of the following *diagnostic procedures* in the diagnosis of temporomandibular joint dysfunction (TMJD) to be **eligible for coverage****:

- Diagnostic x-ray, tomograms, and arthrograms; **OR**
- Computed tomography (CT) scan (in general, computed tomography [CT] scans are reserved for presurgical evaluations); **OR**
- Magnetic resonance imaging (MRI) of the temporomandibular joint (TMJ) for evaluation of internal derangement or disc displacement when **ALL** of the following requirements are met:

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- Mechanical symptoms (such as locking, popping, or clicking) which have not improved after at least 3 months of conservative management, including nonsteroidal anti-inflammatory drugs or acetaminophen, a short-term trial of soft diet and proper chewing techniques, and an oral appliance (such as a bite block); **AND**
- Surgical intervention is being considered; **AND**
- Radiographs or ultrasound have not provided sufficient information to guide treatment. (*This requirement is waived when mechanical signs or symptoms are present and internal derangement is suspected*); **OR**
 - Cephalograms (x-rays of jaws and skull); **OR**
 - Pantograms (x-rays of maxilla and mandible).

Note: (Cephalograms and pantograms should be reviewed on an individual basis.)

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers *diagnostic procedures* in the diagnosis of temporomandibular joint dysfunction (TMJD), including but not limited to the following procedures, to be **investigational***:

- Electromyography (EMG), including surface electromyography (EMG);
- Kinesiography;
- Thermography;
- Neuromuscular junction testing;
- Somatosensory testing;
- Transcranial or lateral skull x-rays; intraoral tracing or gnathic arch tracing (intended to demonstrate deviations in the positioning of the jaws that are associated with temporomandibular joint dysfunction [TMJD]);
- Muscle testing;
- Standard dental radiographic procedures;
- Range-of-motion measurements;

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- Computerized mandibular scan (measures and records muscle activity related to movement and positioning of the mandible and is intended to detect deviations in occlusion and muscle spasms related to temporomandibular joint dysfunction [TMJD]);
- Ultrasound imaging/sonogram;
- Arthroscopy of the temporomandibular joint (TMJ) for purely diagnostic purposes;
- Joint vibration analysis.

Nonsurgical Treatments

When Services Are Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider **ANY** of the following *nonsurgical treatments* in the treatment of temporomandibular joint dysfunction (TMJD) to be **eligible for coverage****:

- Intraoral removable prosthetic devices/appliances (encompassing fabrication, insertion, adjustment); **OR**
- Pharmacologic treatment (e.g., anti-inflammatory, muscle relaxing, analgesic medications).

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers *nonsurgical treatments* in the treatment of temporomandibular joint dysfunction (TMJD), including but not limited to the following treatments, to be **investigational***:

- Electrogalvanic stimulation;
- Iontophoresis;
- Biofeedback;

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- Ultrasound;
- Devices promoted to maintain joint range of motion and to develop muscles involved in jaw function;
- Orthodontic services;
- Dental restorations/prostheses;
- Transcutaneous electrical nerve stimulation;
- Percutaneous electrical nerve stimulation;
- Acupuncture;
- Hyaluronic acid.

Surgical Treatments

When Services Are Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider **ANY** of the following *surgical treatments* in the treatment of temporomandibular joint dysfunction (TMJD) to be **eligible for coverage****:

- Arthrocentesis; **OR**
- Manipulation for reduction of fracture or dislocation of the temporomandibular joint (TMJ); **OR**
- Arthroscopic surgery in patients with objectively demonstrated (by MRI or CT imaging) internal derangements (displaced discs) or degenerative joint disease (DJD) who have failed conservative treatment, e.g., the individual tried and failed non-surgical therapies for at least 3 months with documented compliance. Therapies should include behavioral changes, pharmacological therapy, and/or reversible intraoral appliances; **OR**
- Open surgical procedures (when temporomandibular joint dysfunction [TMJD] is the result of congenital anomalies, trauma, or disease) including, but not limited to, arthroplasties; condylectomies; meniscus or disc plication, and disc removal in patients who have

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objectively documented abnormalities and who have failed conservative treatment, e.g., the individual tried and failed non-surgical therapies for at least 3 months with documented compliance. Therapies should include behavioral changes, pharmacological therapy, and/or reversible intraoral appliances.

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers all other *surgical treatments* in the treatment of temporomandibular joint dysfunction (TMJD) to be **investigational**.*

Background/Overview

Diagnosis of Temporomandibular Joint Disorder

In the clinical setting, Temporomandibular Joint Disorder (TMJD) is often a diagnosis of exclusion and involves physical examination, patient interview, and a review of dental records. Diagnostic testing and radiologic imaging are generally only recommended for patients with severe and chronic symptoms. Diagnostic criteria for TMJD have been developed and validated for use in both clinical and research settings.

Symptoms attributed to TMJD vary and include, but are not limited to, clicking sounds in the jaw; headaches; closing or locking of the jaw due to muscle spasms (trismus) or displaced disc; pain in the ears, neck, arms, and spine; tinnitus; and bruxism (clenching or grinding of the teeth).

Treatment

For many patients, symptoms of TMJD are short-term and self-limiting. Conservative treatments (eg, eating soft foods, rest, heat, ice, avoiding extreme jaw movements) and anti-inflammatory medication are recommended before considering more invasive and/or permanent therapies (eg, surgery).

Note that low-level laser therapy for TMJD is addressed in medical policy 00194, and botulinum toxin for TMJD is addressed in medical policy 00012.

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FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

Since 1981, several muscle-monitoring devices have been cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process. Some examples are the K6-I Diagnostic System (Myotronics), the BioEMG III^{TM†} (Bio-Research Associates), M-Scan^{TM‡} (Bio-Research Associates), and the GrindCare Measure (Medotech A/S). These devices aid clinicians in the analysis of joint sound, vibrations, and muscle contractions when diagnosing and evaluating TMJD. FDA product code: KZM.

Table 1. Muscle-Monitoring Devices Cleared by the U.S. Food and Drug Administration

Devices	Manufacturer	Date Cleared	510(k) No.	Indication
K6-I Diagnostic System	Myotronics, Inc	Jun 1994	K922456	Electromyography
BioEMG III TM	Bio-Research Associates, Inc	Feb 2009	K082927	Electromyography, Joint Vibration Recording
GrindCare Measure	Medotech A/S	Apr 2012	K113677	Electromyography, Nocturnal Bruxism
M-Scan TM	Bio-Research Associates	Jul 2013	K130158	Electromyography
TEETHAN 2.0	BTS S.P.A.	Dec 2016	K161716	Electromyography
GrindCare System	Sunstar Suisse S.A.	Sep 2017	K163448	Electromyography, Sleep Bruxism

FDA product code: KZM.

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Rationale/Source

Temporomandibular joint disorder (TMJD) refers to a group of disorders characterized by pain in the temporomandibular joint and surrounding tissues. Initial conservative therapy is generally recommended; there are also a variety of nonsurgical and surgical treatment possibilities for patients whose symptoms persist.

For individuals who have suspected TMJD who receive ultrasound, surface electromyography, or joint vibration analysis, the evidence includes systematic reviews of diagnostic test studies. Relevant outcomes are test validity and other performance measures. None of the systematic reviews found that these diagnostic techniques accurately identified patients with TMJD, and many of the studies had methodologic limitations. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have a confirmed diagnosis of TMJD who receive intraoral devices or appliances or pharmacologic treatment, the evidence includes randomized controlled trials (RCTs) and systematic reviews of the RCTs. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. A systematic review of intraoral appliances (44 studies) and meta-analyses of subsets of these studies found a significant benefit of intraoral appliances compared with control interventions. Other systematic reviews have found a significant benefit of several pharmacologic treatments (eg, analgesics, muscle relaxants, and anti-inflammatory medications [vs. placebo]). One RCT found little benefit and higher adverse events for methylprednisolone versus saline injection. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have a confirmed diagnosis of TMJD who receive acupuncture, biofeedback, transcutaneous electrical nerve stimulation, orthodontic services, or hyaluronic acid, the evidence includes RCTs, systematic reviews of these RCTs, and observational studies. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. The systematic reviews did not find that these technologies reduced pain or improved functional outcomes significantly more than control treatments. Moreover, many individual studies were small and/or had methodologic limitations. The evidence is insufficient to determine the effects of the technology on health outcomes.

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For individuals who have a confirmed diagnosis of TMJD who receive arthrocentesis or arthroscopy, the evidence includes RCTs, systematic reviews of the RCTs, and observational studies. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Only 1 review, which included 3 RCTs, compared arthrocentesis or arthroscopy with nonsurgical interventions for TMJD. Pooled analyses of the RCTs found that arthrocentesis and arthroscopy resulted in superior pain reduction compared with control interventions. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

Supplemental Information

Practice Guidelines and Position Statements

American Association for Dental Research

In 2010 (reaffirmed in 2015), the American Association for Dental Research policy statement recommended the following for the diagnosis and treatment of temporomandibular joint disorders (TMJDs):

“It is recommended that the differential diagnosis of TMDs [temporomandibular disorders] or related orofacial pain conditions should be based primarily on information obtained from the patient’s history, clinical examination, and when indicated, TMJ [temporomandibular joint] radiology or other imaging procedures. The choice of adjunctive diagnostic procedures should be based upon published, peer-reviewed data showing diagnostic efficacy and safety. However, the consensus of recent scientific literature about currently available technological diagnostic devices for TMDs is that except for various imaging modalities, none of them shows the sensitivity and specificity required to separate normal subjects from TMD patients or to distinguish among TMD subgroups....”

“It is strongly recommended that, unless there are specific and justifiable indications to the contrary, treatment of TMD patients initially should be based on the use of conservative, reversible and evidence-based therapeutic modalities. Studies of the natural history of many TMDs suggest that they tend to improve or resolve over time. While no specific therapies have been proven to be uniformly effective, many of the conservative modalities have proven to be at least as effective in providing symptomatic relief as most forms of invasive treatment....”

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American Society of Temporomandibular Joint Surgeons

In 2001, the American Society of Temporomandibular Joint Surgeons issued consensus clinical guidelines focused on TMJDs associated with internal derangement and osteoarthritis. For diagnosis of this type of TMJD, a detailed history and, when indicated, a general physical examination was recommended. Imaging of the temporomandibular and associated structures was also recommended. Options for basic radiography to provide information on temporal bone and condylar morphology included the use of plain films, panoramic films, and tomograms. Also recommended was imaging of the disc and associated soft tissue with magnetic resonance imaging or arthrography. Other diagnostic procedures indicated included computed tomography, magnetic resonance imaging (MRI), arthrography (for selected cases) and isotope bone scans.

Nonsurgical treatment was recommended as first-line therapy for all symptomatic patients with this condition. Recommended treatment options included a change in diet, nonsteroidal anti-inflammatory drugs, maxillomandibular appliances, physical therapy, injections of corticosteroids or botulinum toxin, and behavior modification. If adequate symptom relief did not occur within 2 to 3 weeks, surgical consultation was advised. The guideline stated the following surgical procedures were considered accepted and effective for patients with TMJDs associated with internal derangement or osteoarthritis:

- Arthrocentesis
- Arthroscopy
- Condylotomy
- Arthrotomy (prosthetic joint replacement may be indicated in selected patients who have severe joint degeneration, destruction, or ankylosis)
- Coronoidotomy/coronoidectomy
- Styloidectomy.

U.S. Preventive Services Task Force Recommendations

Not applicable.

Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

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Ongoing and Unpublished Clinical Trials

Some currently unpublished trials that might influence this review are listed in Table 2.

Table 2. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
<i>Ongoing</i>			
NCT03180671	The Effectiveness of Anterior Deprogrammers as a Tool for Reducing Pain and Masticatory Muscles	80	May 2019
NCT03029494	The Role of Oxidative Stress and Opio[r]phin in Temporomandibular Disorders	80	Sep 2019
<i>Unpublished</i>			
NCT02397070	Effectiveness of a Jaw Exercise Program in Temporomandibular Disorder Patients	30	Jul 2015 (unknown; updated 3/24/15)
NCT02637544	Treatment Efficacy of Acupuncture in Non-Chronified Pain Patients with TMDs	40	Aug 2016 (unknown; updated 2/3/16)
NCT02880774	Influence of Manual Therapy in Temporomandibular Joint on the Mandibular Movement: Clinical Trial, Randomized, Placebo-controlled and Blind	24	Aug 2016 (unknown; updated 8/26/16)
NCT02822469	Thermograph Evaluation of Masticatory Muscles Pre and Post Indirect Physiotherapeutic Treatment in TMD Subjects: A Randomized, Placebo-controlled Study	32	Dec 2016 (unknown; updated 7/4/16)

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NCT02602483 ^a	Randomized, Double-Blind, Placebo-Controlled Exploratory Study To Assess the Efficacy and Safety of a Triple Combination of Ibuprofen+Mg+Ascorbic Acid for Acute Pain Treatment in Temporomandibular Joint Disorder (TMJD) Patients	96	Dec 2016 (completed; updated 1/19/17)
NCT02437383	Effect of COMT (Catecholamine-O-methyltransferase) Genetic Polymorphisms on Response to Propranolol Therapy in Temporomandibular Disorder	200	April 2018 (completed; results posted but not published; updated 5/21/19)

NCT: national clinical trial.

^aDenotes industry-sponsored or cosponsored trial.

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- 12/07/2017 Medical Policy Committee review
- 12/20/2017 Medical Policy Implementation Committee approval. New policy.
- 08/01/2018 Coding update.
- 08/16/2018 Coding update
- 12/06/2018 Medical Policy Committee review
- 12/19/2018 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
- 12/05/2019 Medical Policy Committee review
- 12/11/2019 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
- 07/02/2020 Medical Policy Committee review
- 07/08/2020 Medical Policy Implementation Committee approval. Created a separate requirement bullet for temporomandibular joint dysfunction for MRI only with 3 sub-bullets to track AIM Guidelines. For MRI criteria, defined conservative management to be at least 3 months duration for mechanical symptoms.
- 08/25/2020 Coding update

Next Scheduled Review Date: 07/2021

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Louisiana

Temporomandibular Joint Dysfunction

Policy # 00583

Original Effective Date: 01/01/2018

Current Effective Date: 10/01/2020

Coding

The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)†, copyright 2019 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.

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CPT is a registered trademark of the American Medical Association.

Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	21010, 21050, 21060, 21085, 21240, 21242, 21243, 29800, 29804, 70336
HCPCS	D0370, D7840, D7850, D7852, D7854, D7856, D7858, D7860, D7865, D7872, D7873, D7874, D7875, D7876, D7877, D7899, E1700, E1701, E1702, S8948
ICD-10 Diagnosis	M26.00-M26.29, M26.0-M26.9, M79.11, R68.89, S02.412A-S02.412S

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*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

- A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
- B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
 1. Consultation with the Blue Cross and Blue Shield Association technology assessment program (TEC) or other nonaffiliated technology evaluation center(s);
 2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
 3. Reference to federal regulations.

**Medically Necessary (or “Medical Necessity”) - Health care services, treatment, procedures, equipment, drugs, devices, items or supplies that a Provider, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury, disease or its symptoms, and that are:

- A. In accordance with nationally accepted standards of medical practice;
- B. Clinically appropriate, in terms of type, frequency, extent, level of care, site and duration, and considered effective for the patient's illness, injury or disease; and
- C. Not primarily for the personal comfort or convenience of the patient, physician or other health care provider, and not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.

For these purposes, “nationally accepted standards of medical practice” means standards that are based on credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community, Physician Specialty Society recommendations and the views of Physicians practicing in relevant clinical areas and any other relevant factors.

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NOTICE: If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

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