BlueCross BlueShield Federal Employee Program.

FEP Medical Policy Manual

FEP 2.01.21 Temporomandibular Joint Disorder

Annual Effective Policy Date: July 1, 2026

Original Policy Date: December 2012

Related Policies:

1.01.09 - Transcutaneous Electrical Nerve Stimulation and Transcutaneous Afferent Patterned Stimulation
2.01.26 - Prolotherapy
2.01.56 - Low Level Laser Therapy
7.01.29 - Percutaneous Electrical Nerve Stimulation, Percutaneous Neuromodulation Therapy, and Restorative Neurostimulation Therapy

Temporomandibular Joint Disorder

Description

Description

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 individuals whose symptoms persist.

OBJECTIVE

The objective of this evidence review is to evaluate whether diagnostic testing and therapeutic interventions improve the net health outcome for individuals with temporomandibular joint disorder.

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POLICY STATEMENT

Diagnostic Procedures

The following diagnostic procedures may be considered **medically necessary** in the diagnosis of temporomandibular joint disorder (TMJD):

- Diagnostic x-ray, tomograms, and arthrograms;
- Computed tomography (CT) scan or magnetic resonance imaging (MRI) (in general, CT scans and MRIs are reserved for presurgical evaluations);
- Cephalograms (x-rays of jaws and skull);
- Pantograms (x-rays of maxilla and mandible).

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

The following diagnostic procedures are considered **investigational** in the diagnosis of TMJD:

- Electromyography (EMG), including surface 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 jaw that are associated with TMJD);
- Muscle testing;
- Standard dental radiographic procedures;
- Range-of-motion measurements;
- 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 TMJD);
- Ultrasound imaging/sonogram;
- Arthroscopy of the temporomandibular joint (TMJ) for purely diagnostic purposes;
- Joint vibration analysis.

Nonsurgical Treatments

The following nonsurgical treatments may be considered **medically necessary** in the treatment of TMJD:

- Intraoral removable prosthetic devices or appliances (encompassing fabrication, insertion, adjustment);
- treatment (eg, anti-inflammatory, muscle relaxing, analgesic medications).

The following nonsurgical treatments are considered **investigational** in the treatment of TMJD:

- 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;
- Platelet concentrates;
- Dextrose prolotherapy;
- Botulinum toxin A.

Surgical Treatments

The following surgical treatments may be considered **medically necessary** in the treatment of TMJD:

- Arthrocentesis;
- Manipulation for reduction of fracture or dislocation of the TMJ;
- Arthroscopic surgery in individuals with objectively demonstrated (by physical examination or imaging) internal derangements (displaced discs) or degenerative joint disease who have failed conservative treatment;
- Open surgical procedures (when TMJD results from congenital anomalies, trauma, or disease in individuals who have failed conservative treatment) including, but not limited to, arthroplasties; condylectomies; meniscus or disc plication, and disc removal.

POLICY GUIDELINES

None

BENEFIT APPLICATION

Experimental or investigational procedures, treatments, drugs, or devices are not covered (See General Exclusion Section of brochure).

Screening (other than the preventive services listed in the brochure) is not covered. Please see Section 6 General exclusions.

Benefits are available for specialized diagnostic genetic testing when it is medically necessary to diagnose and/or manage a patient's existing medical condition. Benefits are not provided for genetic panels when some or all of the tests included in the panel are not covered, are experimental or investigational, or are not medically necessary.

Plans may want to review their contract language on the diagnosis and treatment of temporomandibular joint disorder (TMJD) to ensure that the language is consistent with the Plan's medical policy on TMJD. Some contracts may exclude coverage for TMJD.

Dental contracts frequently exclude the diagnosis and treatment of TMJD. Services excluded may include, but are not limited to, orthodontics, equilibration of the teeth, dental radiographs, and dental prosthesis, whether performed by a dentist or a physician. Other Plans may limit TMJD

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diagnosis and treatment only to the dental portion of the contract.

Denial of the investigational procedure is applicable for contracts or certificates of coverage that maintain an exclusion for investigational services.

Claims may be received for psychiatric or psychological visits in relation to TMJD, because this condition may be psychosomatic in origin, resulting from tension or stress. Bruxism is a common symptom of tension, which may lead to symptoms suggestive of TMJD.

Plans should determine whether contract limitations for physical therapy are applicable to temporomandibular joint treatment.

Prognathism (protruding jaw), micrognathism (small lower jaw), or apertognathism (open bite) may be associated with TMJD in some people. Plans should review contracts to ensure coverage or exclusion of coverage, as well as medical-dental coverage in individual cases.

Claims may be received for the treatment of TMJD with, but not limited to, the following diagnoses and symptoms:

- Cranial-cervical syndrome;
- Myofascial pain/dysfunction syndrome;
- Asymmetrical motor neuropathy;
- Cervicalgia;
- Localized myospasm;
- Cephalgia;
- Musculoskeletal dysfunction;
- Neural entrapment;
- Myalgia/myositis.

FDA REGULATORY STATUS

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 K7x Evaluation System (Myotronics), the BioEMG III™ (Bio-Research Associates), M-Scan™ (Bio-Research Associates), and the GrindCare Measure (Medotech A/S) (see Table 1). 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
K7x Evaluation System	Myotronics, Inc	Nov 2000	K003287	Electromyography
BioEMG IIITM	Bio-Research Associates, Inc	Feb 2009	K082927	Electromyography, Joint Vibration Recording
GrindCare Measure	Medotech A/S	Apr 2012	K113677	Electromyography, Nocturnal Bruxism
M-ScanTM	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
Nox Sleep System	Nox Medical	Nov 2019	K192469	Electromyography, Sleep Bruxism

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FDA product code: KZM.

RATIONALE

Summary of Evidence

For individuals with suspected temporomandibular joint disorder (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 that the technology results in an improvement in the net health outcome.

For individuals with a confirmed diagnosis of TMJD who receive intraoral devices or appliances or treatment, the evidence includes randomized controlled trials (RCTs) and systematic reviews of 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. Several studies, meta-analyses, and systematic reviews exploring the effectiveness of stabilization splints on TMJD pain revealed conflicting results. Overall, the evidence shows that stabilizing splints may improve pain and positively impact depressive and anxiety symptoms. The evidence related to treatment varies because studies, systematic reviews, and meta-analyses lack consistency in evaluating specific agents. Some systematic reviews have found a significant benefit of several treatments (eg, analgesics, muscle relaxants, and anti-inflammatory medications [vs. placebo]), but other studies showed a lack of benefit with agents such as methylprednisolone and botulinum toxin type A. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals with a confirmed diagnosis of TMJD who receive acupuncture, biofeedback, transcutaneous electric nerve stimulation, orthodontic services, hyaluronic acid, platelet concentrates, or dextrose prolotherapy, 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. Systematic reviews evaluating acupuncture for TMJD have found inconsistent improvement in outcomes compared with sham or active controls. A 2023 meta-analysis of 22 RCTs failed to find improved pain or maximum mouth opening with acupuncture compared with active controls. Systematic reviews evaluating hyaluronic acid have found similar outcomes to corticosteroids or placebo. Platelet-rich plasma has been compared with hyaluronic acid in a number of systematic reviews and RCTs, but the studies are small and have methodologic limitations. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals with a confirmed diagnosis of TMJD who receive arthrocentesis or arthroscopy, the evidence includes RCTs, systematic reviews of RCTs, and observational studies. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. One 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. A network meta-analysis, which included 36 RCTs, revealed that arthroscopy and arthrocentesis improve pain control and maximum mouth opening. Two recent meta-analyses identified RCTs comparing arthrocentesis to various conservative management strategies. At 6 months, one analysis found improved maximum mouth opening with arthrocentesis while the other found similar outcomes between arthrocentesis and conservative treatments. Similarly, pain was improved with arthrocentesis in one analysis, but not the other. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

SUPPLEMENTAL INFORMATION

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American Association for Dental, Oral, and Craniofacial Research

In 2010 (reaffirmed in 2015), the American Association for Dental Research (now the American Association for Dental, Oral, and Craniofacial Research) policy statement recommended the following for the diagnosis and treatment of temporomandibular joint disorders (TMJDs)[54,]:

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"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...."

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. [55,] 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.

BMJ Rapid Recommendations

The BMJ Rapid Recommendations panel developed guidelines in 2023 for the management of patients with chronic pain (≥3 months) associated with TMJD.[56,] The international expert panel included representation from an academic center in the United States.

The panel favored the following therapies:

- Cognitive behavior therapy (strong recommendation);
- Therapist-assisted mobilization (strong recommendation);
- Manual trigger point therapy (strong recommendation);
- Supervised postural or jaw exercise (strong recommendation);
- Usual care including home exercises, stretching, reassurance, and education (strong recommendation);
- Manipulation (conditional recommendation);
- Supervised jaw exercise with mobilization (conditional recommendation);
- Cognitive behavior therapy with non-steroidal anti-inflammatory drugs (conditional recommendation);

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- Manipulation with postural exercise (conditional recommendation);
- Acupuncture (conditional recommendation).

The panel recommended against the following therapies:

- Reversible occlusal splints (conditional recommendation);
- Arthrocentesis (conditional recommendation);
- Cartilage supplement with or without hyaluronic acid injection (conditional recommendation);
- Low level laser therapy (conditional recommendation);
- Transcutaneous electrical nerve stimulation (conditional recommendation);
- Gabapentin (conditional recommendation);
- Botulinum toxin (conditional recommendation);
- Hyaluronic acid (conditional recommendation);
- Relaxation therapy (conditional recommendation);
- Trigger point injection (conditional recommendation);
- Acetaminophen (conditional recommendation);
- Topical capsaicin (conditional recommendation);
- Biofeedback (conditional recommendation);
- Corticosteroid injection (conditional recommendation);
- Benzodiazepines (conditional recommendation);
- Beta-blockers (conditional recommendation);
- Irreversible oral splints (strong recommendation);
- Discectomy (strong recommendation);
- Non-steroidal anti-inflammatory drugs with opioids (strong recommendation).

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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POLICY HISTORY - THIS POLICY WAS APPROVED BY THE FEP® PHARMACY AND MEDICAL POLICY COMMITTEE ACCORDING TO THE HISTORY BELOW:

Date	Action	Description
December 2012	New policy	
September 2013	Replace policy	Policy updated with literature review. References 4,7,13, and 18 added; others renumbered or removed. Joint vibration analysis added as not medically necessary diagnostic procedure. Low-level laser therapy removed from policy because of overlap with policy 2.01.56, low- level laser policy. In the statement on medically necessary treatments, intra-oral reversible prosthetic devices changed to intraoral removable prosthetic devices for clarification only.
September 2014	Replace policy	Policy updated with literature review; references 12 and 15-16 added. Policy statements unchanged
September 2015	Replace policy	Policy updated with literature review through June 1, 2015; no references added. Bullet point on biofeedback removed from investigational statement on nonsurgical treatments
June 2016	Replace policy	Policy updated with literature review through December 18, 2015; no references added. Policy statements unchanged
June 2018	Archive policy	Policy updated with literature review through December 11, 2017; references 15 and 24- 25 added; reference 33 updated. "Dysfunction€š changed to "Disorder€š in the policy statement and title. Policy statements otherwise unchanged except use of joint vibration analysis for the purpose of diagnosis of TMJD corrected from "not medically necessary€š to "investigational€š
June 2019	Reactivate policy	Policy reactivated to support prior approval requirement of FEP Blue Focus. Policy updated with literature review through December 6, 2018; reference 36 added. Policy statements unchanged.
June 2020	Replace policy	Policy updated with literature review through December 9, 2019; references added. Policy statements unchanged.
June 2021	Replace policy	Policy updated with literature review through January 8, 2021; references added. Investigational policy statement modified to include platelet concentrates.
June 2022	Replace policy	Policy updated with literature review through December 20, 2021; references added. Investigational policy statement modified to include dextrose prolotherapy.
June 2023	Replace policy	Policy updated with literature review through December 19, 2022; references added. Minor editorial refinements to policy statements; intent unchanged.
June 2024	Replace policy	Policy updated with literature review through December 13, 2023; references added. Policy statements unchanged.
June 2025	Replace policy	Policy updated with literature review through December 10, 2024; reference added. Policy statements unchanged.
June 2026	Replace policy	Policy updated with literature review through December 18, 2025; reference added. Policy statements unchanged.

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