Medical Policy

Blue Cross Blue Shield Blue Care Network of Michigan

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***Current Policy Effective Date: 3/1/25**
(See policy history boxes for previous effective dates)

Title: Surface Electromyography (SEMG)

Description/Background

Back Pain

Back pain is an extremely common condition, affecting most individuals at some point in their lives. Identifying the pathogenesis of back pain is a challenging task, in part due to the complex anatomy of the back, which includes vertebrae, intervertebral discs, facet joints, spinal nerve roots, and numerous muscles. For example, back pain may be related to osteoarthritis, disc disease, subluxation, or muscular pathology, such as muscle strain or spasm. Moreover, due to referred pain patterns, the location of the pain may not be anatomically related to the pathogenesis of the pain. For example, buttock or leg pain may be related to pathology in the spine. In addition to the diagnostic challenges of back pain is the natural history of acute back pain.

Diagnosis

Aside from physical examination, diagnostic tests include imaging technologies, such as magnetic resonance imaging (MRI), designed to identify pathology (e.g., bulging discs) or tests such as discography to localize the abnormality by reproducing the pain syndrome. However, due to their lack of specificity, all diagnostic tests must be carefully interpreted in the context of the clinical picture. For example, 5% of asymptomatic patients will have bulging discs as identified by MRI. Therefore, the presence of a bulging disc may only be clinically significant if well correlated with symptoms. Assessment of the musculature may focus on range of motion or strength exercises.

In contrast to anatomic imaging, SEMG, which records the summation of muscle activity from groups of muscles, has been investigated as a technique to evaluate the physiologic functioning of the back. A noninvasive procedure, SEMG is contrasted with needle electromyography, an invasive procedure in which the electrical activity of individual muscles is recorded. Paraspinal SEMG, also referred to as paraspinal EMG scanning, has been explored as a technique to evaluate abnormal patterns of electrical activity in the paraspinal

muscles in patients with back pain symptoms such as spasm, tenderness, limited ROM, or postural disorders. The technique is performed using 1 or an array of electrodes placed on the skin surface, with recordings made at rest, in various positions, or after a series of exercises. Recordings can also be made by using a handheld device, which is applied to the skin at different sites. Electrical activity can be assessed by computer analysis of the frequency spectrum (i.e., spectral analysis), amplitude, or root mean square of the electrical action potentials. In particular, spectral analysis that focuses on the median frequency has been used to assess paraspinal muscle fatigue during isometric endurance exercises. Paraspinal SEMG has been researched as a technique to establish the etiology of back pain and also has been used to monitor the response to therapy and establish physical activity limits, such as assessing capacity to lift heavy objects or ability to return to work.

SEMG is an office-based procedure. The following clinical applications of SEMG have been proposed:

- Clarification of a diagnosis (i.e., muscle, joint or disc disease)
- Selection of a course of medical therapy
- Selection of a type of physical therapy
- Preoperative evaluation
- Postoperative rehabilitation
- Follow-up of acute low back pain (LBP)
- Evaluation of exacerbation of chronic low back pain (LBP)
- Evaluation of pain management treatment techniques

Treatment

Most cases of acute LBP resolve with conservative therapy (e.g., physical therapy) while continuing normal activities within limits permitted by the pain. Therefore, initial imaging or other diagnostic testing is generally not recommended unless “red flag” warning signs are present or the pain persists for more than 4 to 6 weeks. Red flag findings include significant trauma, history of cancer, unrelenting night pain, fevers or chills, and progressive motor or sensory deficits.

Temporomandibular Joint (TMJ) and/or Craniomandibular Disorders (CMD)

TMJ (also known as temporomandibular joint syndrome) refers to a cluster of problems associated with the temporomandibular joint and musculoskeletal structures. Craniomandibular disorders are often called temporomandibular joint disorders (TMJD). The etiology of TMJ remains unclear and is believed to be multifactorial. TMJ is often divided into two main categories: articular disorders (e.g., ankylosis, congenital or developmental disorders, disc derangement disorders, fractures, inflammatory disorders, osteoarthritis, joint dislocation) and masticatory muscle disorders (e.g., myofascial pain, myofibrotic contracture, myospasm, neoplasia).

Diagnosis

In the clinical setting, TMJ 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 TMJ have been developed and validated for use in both clinical and research settings.[1,2,3] Symptoms attributed to TMJ 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 TMJ are short-term and self-limiting. Conservative treatments (e.g., eating soft foods, rest, heat, ice, avoiding extreme jaw movements) and anti-inflammatory medication are recommended before considering more invasive and/or permanent therapies (e.g., surgery).

Regulatory Status

SEMG devices approved by the U.S. Food and Drug Administration (FDA) include those that use a single electrode or a fixed array of multiple surface electrodes.

Several FDA-approved devices combine surface EMG along the spine with other types of monitors. For example, in 2007, the Insight Discovery (Fasstech; Burlington, MA) was cleared for marketing through the 510(k) process. The device contains 6 sensor types, 1 of which is surface EMG. The indications include measuring bilateral differences in surface EMG along the spine and measuring surface EMG along the spine during functional tasks. (Earlier Insight models had fewer sensor types.)
FDA product code: IKN.

Medical Policy Statement

Surface electromyography (SEMG) is considered experimental/investigational to evaluate and monitor back pain. There is insufficient evidence demonstrating how findings from paraspinal SEMG alter patient management and/or how use of this test improves health outcomes.

Surface electromyography (SEMG) is considered experimental/investigational to diagnose or monitor temporomandibular joint (TMJ) and/or craniomandibular disorders (CMD). There is insufficient evidence demonstrating how findings from SEMG alter patient management and/or how use of this test improves health outcomes.

Inclusionary and Exclusionary Guidelines

N/A

CPT/HCPCS Level II Codes *(Note: The inclusion of a code in this list is not a guarantee of coverage. Please refer to the medical policy statement to determine the status of a given procedure.)*

Established codes:

N/A

Other codes (investigational, not medically necessary, etc.):

S3900 95999

Rationale

Evidence reviews assess whether a medical test is clinically useful. A useful test provides information to make a clinical management decision that improves the net health outcome. That is, the balance of benefits and harms is better when the test is used to manage the condition than when another test or no test is used to manage the condition.

The first step in assessing a medical test is to formulate the clinical context and purpose of the test. The test must be technically reliable, clinically valid, and clinically useful for that purpose. Evidence reviews assess the evidence on whether a test is clinically valid and clinically useful. Technical reliability is outside the scope of these reviews, and credible information on technical reliability is available from other sources.

SURFACE ELECTROMYOGRAPHY FOR BACK PAIN

Surface electromyography (SEMG) has been used as a research tool to evaluate the performance of paraspinal muscles in patients with back pain and to further understand the etiology of low back pain.[1-4] Preliminary research has also been performed on which SEMG parameters best differentiate between patients with and without back pain.[5,6]

Clinical Context and Test Purpose

The purpose of paraspinal SEMG in patients who have back pain is to identify the pathogenesis of the pain (i.e., muscle, joint, or disc disease) to inform a decision on a treatment plan.

The question addressed in this evidence review is: Does paraspinal SEMG improve the net health outcome in individuals with back pain?

The following **PICOs** were used to select literature to inform this review.

Populations

The relevant population of interest is individuals with back pain.

Interventions

Paraspinal SEMG is a noninvasive technique that aggregates data on muscle activity from groups of muscles. One or more electrodes are placed on the skin surface, and recordings are taken at rest, in various positions, or during a series of exercises.

Comparators

Other noninvasive techniques to assess back pain include clinical examination and imaging technologies.

Outcomes

The general outcomes of interest are reduction in back pain and improvement in activities of daily living.

Both false-positive test results and false-negative results can lead to an incorrect recommendation for the type of treatment or no treatment at all. Some treatments are long-term programs, and if individuals are incorrectly referred to the program, resources will be used inefficiently and more appropriate therapy will be delayed.

Clinically Valid
A test must detect the presence or absence of a condition, the risk of developing a condition in the future, or treatment response (beneficial or adverse).

Review of Evidence
No articles that directly compare the results of SEMG (which tests groups of muscles) with needle electromyography (which tests individual muscles) for diagnosing any specific muscle pathology were identified in literature searches. However, the pathology of individual muscles (i.e., radiculopathy, neuropathy) may represent a different process than the pathology of muscle groups (i.e., muscle strain, spasm), and thus SEMG may be considered by its advocates as a unique test for which there is currently no criterion standard. Nevertheless, even if one accepts this premise, there are inadequate data to evaluate the diagnostic performance of SEMG. In some instances, the asymmetrical electrical activity may have been used to define abnormality; results may be compared with normative data. However, no published literature was identified defining what degree of asymmetry would constitute abnormality.

A study by du Rose and Breen (2016) looked into the relation between lumbar intervertebral range of motion and paraspinal muscle activity in healthy adults, as measured by SEMG and quantitative fluoroscopy, to establish “normal” measurements.[7] Fluoroscopic images and SEMG measurements were taken for 20 men with no history of LBP. What would be considered normal intervertebral ranges of motion were related to a diverse set of muscle activation patterns as measured by SEMG. The authors concluded that larger sample sizes and measurements from patients with LBP are needed to established standard criterion.

In the absence of a criterion standard diagnostic test, correlation with the clinical symptoms and physical exam is critical. De Luca (1993) published a series of studies investigating a type of SEMG called the Back Analysis System (BAS), consisting of surface electrodes and other components to measure the electrical activity of muscles during isometric exercises designed to produce muscle fatigue.[2] Using physical exam and clinical history as a criterion standard, De Luca found that the BAS accurately identified control and back pain patients 84% and 91% of the time, respectively, with the values increasing to 100% in some populations. (Accuracy is the sum of true positive and true negative results.) However, these studies were not designed as a clinical diagnostic tool per se but were intended to investigate the etiology of back pain and to investigate muscular fatigue patterns in patients with and without back pain.

Hu et al (2010, 2014) in Hong Kong published 2 articles on dynamic topography, an approach to analyzing SEMG findings.[8,9] The studies had similar protocols. Both included low back pain patients and healthy controls; all participants underwent SEMG at study enrollment and then back pain patients participated in a rehabilitation program. The first study found different dynamic topography at baseline between healthy people and people with back pain (e.g., a more symmetric pattern in healthy controls).[11] After physical therapy, the dynamic topography images of back pain patients were more similar to the healthy controls on some of the parameters assessed. In the second study, following rehabilitation, back pain patients

were classified as responders or nonresponders based on changes in back pain severity.[12] Some associations were found between baseline SEMG parameters and response to rehabilitation. SEMG was not repeated after the rehabilitation program, and thus it is not clear whether there are any significant associations between continued symptoms and SEMG abnormalities. Moreover, it is not clear how SEMG analysis would affect treatment decisions for low back pain patients.

Clinically Useful
A test is clinically useful if the use of the results informs management decisions that improve the net health outcome of care. The net health outcome can be improved if patients receive correct therapy, or more effective therapy, or avoid unnecessary therapy, or avoid unnecessary testing.

Direct Evidence
Direct evidence of clinical utility is provided by studies that have compared health outcomes for patients managed with and without the test. Because these are intervention studies, the preferred evidence would be from randomized controlled trials.

A number of studies have described SEMG as an aid in classifying low back pain.[10-14] Much of this research has focused on the use of SEMG to assess muscle fatigability rather than on how information from test findings could enhance patient management. While SEMG may be used to objectively document muscle spasm or other muscular abnormalities, it is unclear how such objective documentation would supplant or enhance clinical evaluation, or how this information would be used to alter the treatment plan. In part, the difficulty in clinical interpretation is understanding the extent to which the SEMG abnormalities are primary or secondary. In addition, as noted in the Background section, no specific workup is recommended for acute low back pain without warning signs.

The following studies have proposed using SEMG results to inform treatment decisions; however, none provided data to validate whether treatment based on SEMG results improved outcomes.

In a 2016 study of patients with chronic LBP (N=216) by Kienbacher et al, SEMG showed potential to discriminate between impaired and unimpaired neuromuscular regulation of back extensors, which would provide useful information for designing individualized exercise programs.[15]

In a 2017 study of patients with LBP (n=27) by Schabrun et al, and pain-free controls (n=23), SEMG detected a loss of discrete motor cortical organization of the paraspinal muscles among those with LBP.[16] The invasive technique of needle electromyography is usually performed to detect this pathology. Patients with cortical reorganization may benefit from motor skill training.

In 2 studies (1988, 1992), SEMG was shown to differentiate muscle spasm from muscle contracture. Muscle spasm would be treated with relaxation therapy, and contracture would be treated with stretching exercises.[17,18]

Chain of Evidence
Indirect evidence on clinical utility rests on clinical validity. If the evidence is insufficient to demonstrate test performance, no inferences can be made about clinical utility. Current evidence on clinical validity does not permit construction of a chain of evidence to support the use of SEMG as a diagnostic tool for evaluating and monitoring back pain.

SURFACE ELECTROMYOGRAPHY FOR TMJ OR CMD
Surface electromyography (SEMG) has been used as a research tool to diagnose TMJ. Preliminary research has also been performed on which SEMG parameters best differentiate between patients with and without TMJ.

Clinical Context and Test Purpose
The purpose of paraspinal SEMG in patients who have TMJ is to identify the pathogenesis of the pain (i.e., muscle or joint) to inform a decision on a treatment plan.

The following **PICOs** were used to select literature to inform this review.

Populations
The relevant population of interest is individuals with TMJ symptoms.

Interventions
Paraspinal SEMG is a noninvasive technique that aggregates data on muscle activity from groups of muscles. One or more electrodes are placed on the skin surface, and recordings are taken at rest, in various positions, or during a series of exercises.

Comparators
Other noninvasive techniques to assess TMJ include clinical examination and imaging technologies.

Outcomes
The general outcomes of interest are reduction in TMJ pain and improvement in activities of daily living.

Both false-positive test results and false-negative results can lead to an incorrect recommendation for the type of treatment or no treatment at all. Some treatments are long-term programs, and if individuals are incorrectly referred to the program, resources will be used inefficiently and more appropriate therapy will be delayed.

Clinically Valid
A test must detect the presence or absence of a condition, the risk of developing a condition in the future, or treatment response (beneficial or adverse).

Clinically Useful
A test is clinically useful if the use of the results informs management decisions that improve the net health outcome of care. The net health outcome can be improved if patients receive correct therapy, or more effective therapy, or avoid unnecessary therapy, or avoid unnecessary testing.

In 2013, Manfredini et al. researched whether there are any differences in the SEMG activity of muscles of the painful and nonpainful sides of patients with myofascial pain.[21] The study sample (N = 39; 64% F, mean age 35.7 ± 15 years) consisted of patients seeking for temporomandibular disorders Temporomandibular Disorders (TMD) treatment and meeting Research Diagnostic Criteria for TMD (RDC/TMD) diagnosis of myofascial pain, with pain referred only in muscles on one side. They underwent SEMG of jaw muscles to record levels of standardized SEMG activity at rest, as well as during maximum clenching on teeth for the four investigated muscles, viz., bilateral masseter and temporalis. The existence of differences between SEMG values of muscles of the painful and nonpainful sides during the standardization test (i.e., clenching on cotton rolls) at rest and during clenching on teeth was assessed. At the study population level, differences between the SEMG values of muscles of the painful and nonpainful sides were not significant in any conditions, viz., either at rest or during clenching tasks. At the individual level, the difference between the SEMG activity of painful and nonpainful sides was very variable. The above findings were not supportive of the existence of any detectable difference in SEMG activity between jaw muscles of the painful and nonpainful sides in patients with unilateral myofascial pain.

In another study, Santana-Mora et al (2014), the main objective is to determine the diagnostic accuracy of EMG to differentiate between healthy subjects and those with TMD.[22] This study evaluated 53 individuals with TMD who were referred to the university service and who fulfilled the eligibility criteria during the period of the study. Thirty-eight dental students were also recruited satisfying same eligibility criteria but without TMD. The inclusion criteria were to be fully dentate, have normal occlusion, and be righthanded. The exclusion criteria were periodontal pathology, caries or damaged dental tissues, orthodontic therapy, maxillofacial disease, botulinum A toxin therapy, and psychological disorders. The means of the masseter muscles, right (RM) and left (LM), and temporalis muscles, right (RT) and left (LT), and intraindividual indexes during resting and during clenching were calculated. Raw SEMG activity was used to determine the cutoff points and calculate the diagnostic accuracy of SEMG. The diagnostic accuracy of these variables for a diagnosis of TMD was evaluated by using the Receiver Operating Characteristic (ROC) curve and the area under it (AUC). A new transformed diagnostic variable was obtained by using the Generalized Additive Models (GAM). Optimal cutoff points were obtained where the sensitivity and specificity were similar and by the Youden index. The highest estimated AUC was 0.660 (95% CI 0.605-0.871) corresponding to the rLT variable during rest. When rLT and rACTIVITY (differences divided by sums of temporalis versus masseter muscles) were considered as a linear combination, the AUC increased to 0.742 (95% CI; 0.783-0.934). In conclusion, the raw SEMG evaluation of rest provided some sensitivity and specificity to discriminate between healthy individuals and those with TMD.

In 2014, Lodetti et al conducted a study to verify the characteristics of SEMG of masticatory muscles in patients with TMJ disorders with differing pathology.[23] A total of 24 patients with TMDs were categorized according to the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD); magnetic resonance imaging (MRI) classified the patients as having disk displacement alone (DD) (mean age, 22 years; SD, 5; 3 men, 6 women) or having osteoarthrosis with or without disk displacement (OA) (mean age, 37 years; SD, 10; 4 men, 11 women); SEMG was performed according to a standardized protocol. The MRI score was significantly correlated to the torque coefficient (r = 0.57) and the temporalis (r = 0.85) and masseter (r = 0.46) muscle standardized symmetry. The discriminating ability of participant age and SEMG scores in separating the 2 groups was assessed by receiver operating

characteristic analysis. Each of the SEMG scores showed an ability in discriminating between osteoarthrosis and disk displacement.

Berni et al (2015) studied the accuracy of the SEMG root mean square (RMS) processing for the diagnosis of myogenous TMJ.[24] One hundred twenty-three volunteers were evaluated using the Research Diagnostic Criteria for Temporomandibular Disorders and distributed into two groups: women with myogenous TMJ (n=80) and women without TMJ (n=43). The volunteers were then submitted to SEMG evaluation of the anterior temporalis, masseter and suprahyoid muscles at rest and during maximum voluntary teeth clenching (MVC) on parafilm. The accuracy, sensitivity and specificity of the muscle activity were analyzed. Differences between groups were found in all muscles analyzed at rest as well as in the masseter and suprahyoid muscles during MVC on parafilm. Some accuracy (AUC: 0.74-0.84) of the RMS SEMG was found in all muscles regarding the diagnosis of TMJ at rest and in the suprahyoid muscles during MVC on parafilm. Moreover, sensitivity ranging from 71.3% to 80% and specificity from 60.5% to 76.6%. In contrast, RMS SEMG did not exhibit acceptable degrees of accuracy in the other masticatory muscles during MVC on parafilm.

More recently, Sojka et al (2018) examined the relations between the results of complex clinical and neurophysiological examinations in patient with TMJ disorder symptoms.[25] Fifty women with myalgia diagnosis of Axis I DC/TMJ and the same number of healthy female volunteers were studied clinically and neurophysiologically by means of SEMG. Unilateral more than bilateral complex symptoms of TMJs were related to the non-neurogenic masticatory rather than neck and shoulder girdle muscles dysfunctions at rest. A strong negative correlation between masticatory muscles activity at rest and during maximal contraction was found (r = -0.778), mainly in the masseter muscle. SEMG may be a suitable tool for prosthodontists because it may provide some objective results on the stomatognathic system muscles function.

In 2019, Sommerfeld et al studied the diagnostic value of EMG in identifying patients with pain-related TMJ disorders.[26] A sample comprised 88 patients with cleft lip and palate and mixed dentition. TMJ has been recognized on the grounds of Axis I of the Research Diagnostic Criteria for TMJ (RDC/TMJ). To evaluate the electrical activity of the temporal and masseter muscles in the rest position and during maximum voluntary contraction, a DAB-Bluetooth Instrument (Zebris Medical GmbH, Germany) was used. The analysis of the receiver operating characteristic (ROC) curve gave information about accuracy, cut-off point value, sensitivity and specificity of the normalized SEMG data. The highest diagnostic efficiency of SEMG in terms of identifying subjects with TMJ and pain-related TMJ was observed for the mean values of temporal and masseter muscle activity as well as the Asymmetry Index of the masseter muscles in a rest position. A moderate degree of EMG accuracy in differentiating between pain-related TMJ and non-TMJ children was observed for the mean values of masseter muscle activity and the Asymmetry Index of the masseter muscles at rest. The authors concluded that the diagnostic usability in recognition of patients with pain-related TMJ and it may be used as an adjunctive tool in the identification of this disorder.

SUMMARY OF EVIDENCE

For individuals who have back pain who receive paraspinal surface electromyography (SEMG) for evaluation and monitoring, the evidence includes a systematic review of interrater reliability, a systematic review of validity and reliability, and several nonrandomized studies on

using findings to classify back pain. Relevant outcomes are test accuracy and validity, symptoms, functional outcomes, quality of life, and resource utilization. Addressing the technical performance of SEMG, systematic reviews of small nonrandomized studies have concluded that the validity and reliability of SEMG have not been established. Heterogeneity on how SEMG recordings of muscle activity are taken limit generalizability. Across studies, patients may be sitting or standing, and exercises are isometric or dynamic. In addressing diagnostic performance of SEMG, there have been no studies directly comparing SEMG with other noninvasive techniques for evaluating back pain, and standard criteria for normal and abnormal SEMG measurements have not been determined. Addressing clinical utility, SEMG has been proposed as a noninvasive technique providing objective measurements that would inform treatment decisions in patients with back pain. While the studies have shown that SEMG results have detected different pathologies in patients with back pain, none of the studies reported health outcomes. There are no data on the impact of SEMG for patient management or health outcomes. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individual who have TMJ or CMD who receive SEMG for diagnosis and monitoring, the evidence includes several nonrandomized studies. Addressing the technical performance of SEMG, a couple of small nonrandomized studies have concluded that the validity and reliability of SEMG have not been established. In addressing diagnostic performance of SEMG, there have been no studies directly comparing SEMG with other noninvasive techniques for evaluating TMJ disorder; in addition, standard criteria for normal and abnormal SEMG measurements have not been determined. While some studies have shown that SEMG results have detected different recordings of the masticatory muscle function, none of the studies reported health outcomes. There are no data on the impact of SEMG for patient management or health outcomes. The evidence is insufficient to determine the effects of the technology on health outcomes.

SUPPLEMENTAL INFORMATION

PRACTICE GUIDELINES AND POSITION STATEMENTS

American College of Occupational and Environmental Medicine

In 2019, the guideline from the American College of Occupational and Environmental Medicine on diagnostic tests for low back disorders does not recommend surface electromyography as a technique for diagnosing low back disorders, based on insufficient evidence of efficacy.[19]

North American Spine Society and American Academy of Pain Medicine

In 2020, the North American Spine Society with input from the American Academy of Pain Medicine issued guidelines on the diagnosis and treatment of low back pain.[20,20] When discussing the diagnostic accuracy of non-imaging tests, the guideline lacks any statement on surface electromyography.

U.S. Preventive Services Task Force Recommendations

Not applicable.

Ongoing and Unpublished Clinical Trials

A search of ClinicalTrials.gov did not identify any ongoing or unpublished trials that would likely influence this review.

Government Regulations

National:

There is no national coverage determination.

Local:

There is no local coverage determination.

(The above Medicare information is current as of the review date for this policy. However, the coverage issues and policies maintained by the Centers for Medicare & Medicare Services [CMS, formerly HCFA] are updated and/or revised periodically. Therefore, the most current CMS information may not be contained in this document. For the most current information, the reader should contact an official Medicare source.)

Related Policies

Temporomandibular Joint Disorder

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The articles reviewed in this research include those obtained in an Internet based literature search for relevant medical references through November 2024, the date the research was completed.

Joint BCBSM/BCN Medical Policy History

Policy Effective Date	BCBSM Signature Date	BCN Signature Date	Comments
3/1/07	N/A	1/17/07	Joint policy established
5/1/07	3/20/07	3/30/07	Routine maintenance
9/1/07	7/1/07	7/2/07	New “S” code added
7/1/08	5/17/08	6/27/08	References updated; S3905 code deleted will be added to the Automated Nerve Conduction Studies/devices policy.
11/1/10	8/28/10	8/17/10	Routine maintenance
12/1/12	9/27/12	9/27/12	Policy reformatted to mirror BCBSA policy. Title changed from “Surface Electromyography” to “Paraspinal Surface Electromyography (SEMG).”
9/1/14	6/20/14	6/23/14	Routine maintenance
7/1/15	4/24/15	5/8/15	Routine maintenance
7/1/16	4/19/16	4/19/16	Routine maintenance
7/1/17	4/18/17	4/18/17	Routine maintenance. Reference added. No change in policy status.
7/1/18	4/17/18	4/17/18	Updated rationale, added reference # 7, 18 and 19. No change in policy status.
7/1/19	4/16/19		Routine policy maintenance, no change in policy status.
3/1/20	12/17/19		Removed “to evaluate and monitor back pain,” and “Paraspinal” from title. Updated rationale section with TMJ information, added references. Added E/I statement to MPS to address TMJ.
3/1/21	12/15/20		Routine policy maintenance, no change in policy status.
3/1/22	12/14/21		Routine policy maintenance, no change in policy status.
3/1/23	12/20/22		Routine policy maintenance, no change in policy status.

3/1/24	12/19/23		Routine policy maintenance, no change in status. Vendor managed: N/A (ds)
3/1/25	12/17/24		Routine policy maintenance, no change in status. Vendor managed: N/A (ds)

Next Review Date: 4th Qtr. 2025

BLUE CARE NETWORK BENEFIT COVERAGE
POLICY: SURFACE ELECTROMYOGRAPHY (SEMG)

I. Coverage Determination:

Commercial HMO (includes Self-Funded groups unless otherwise specified)	Not covered
BCNA (Medicare Advantage)	See government section
BCN65 (Medicare Complementary)	Coinsurance covered if primary Medicare covers the service.

II. Administrative Guidelines:

N/A