

Corporate Medical Policy

Paraspinal Surface Electromyography (EMG)

File Name: paraspinal_surface_electromyography_(emg)
Policy Number: MED1302
Origination: 4/2005
Last CAP Review: 5/2009
Next CAP Review: 5/2011
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Description of Procedure or Service

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, spondylosis, or muscular pathology, such as muscle strain or spasm. In addition, 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. As reported in the guidelines from the Agency for Healthcare Research and Quality (AHRQ, formerly the Agency for Health Care Policy and Research, AHCPR) for the management of acute low back pain, the majority of cases of acute low back pain will resolve without specific therapy and thus no specific workup is recommended, unless “red flag” warning signs are present or the pain persists for longer than 1 month. Conservative therapy consists of physical therapy and a continuation of normal activities within the limits permitted by the pain.

Aside from the physical exam, 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, surface electromyography (SEMG), which records the summation of muscle activity from groups of muscles, has been investigated as a technique to evaluate the physiological functioning of the back. SEMG, a noninvasive procedure, 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 range of motion, 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 focusing 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.

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Paraspinal SEMG is an office-based procedure that may be most commonly used by physiatrists or chiropractors. 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. The following clinical applications of the paraspinal SEMG have been proposed:

- clarification of a diagnosis (i.e., muscle, joint, or disc disease)
- select a course of medical therapy
- select a type of physical therapy
- pre-operative evaluation
- postoperative rehabilitation
- follow-up of acute low back pain
- evaluation of exacerbation of chronic low back pain
- evaluation of pain management treatment techniques

*****Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

Policy

BCBSNC does **not** provide coverage for paraspinal surface electromyography (EMG). It is considered investigational. BCBSNC does not provide coverage for investigational services.

.Benefits Application

Please refer to Certificate for availability of benefits. This policy relates only to the services or supplies described herein. Benefits may vary according to benefit design, therefore certificate language should be reviewed before applying the terms of the policy.

When Paraspinal Surface Electromyography (EMG) is covered

Not applicable.

When Paraspinal Surface Electromyography (EMG) is not covered

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Policy Guidelines

The guidelines from the Agency for Healthcare Research and Quality (AHRQ) formally known as the Agency for Health Care Policy and Research has indicated that the majority of acute low back pain will resolve without specific therapy. SEMG has been used as a research tool to evaluate the performance of paraspinal muscles in patients with back pain and to better understand the cause of low back pain. However,

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there are no data that analyze how changes in SEMG correspond to the clinical response, whether continued SEMG abnormalities represents ongoing pathology, or if the persistent symptoms with normal SEMG indicate malingering . There are no data that demonstrates how the SEMG results compare to the clinical assessment such as determining recommended activity levels or the ability to return to work. There are no data to indicate that such treatment suggested by SEMG results in improved outcomes.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: S3900

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Scientific Background and Reference Sources

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.35, 1/5/2005
Specialty Matched Consultant Advisory Panel - 6/2005
BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.35, 3/7/2006
Specialty Matched Consultant Advisory Panel - 5/2007
BCBSA Medical Policy Reference Manual [Electronic Version]. 2.01.35, 2/14/08
Specialty Matched Consultant Advisory Panel - 5/2009

Policy Implementation/Update Information

4/21/05 New policy written. Paraspinal Surface Electromyography (EMG) is **not** covered. It is considered investigational. Notification given 4/21/05. Effective date of policy 7/7/05.
7/7/05 Specialty Matched Consultant Advisory Panel review 6/24/2005. No change to policy. Reference added.
6/18/07 Specialty Matched Consultant Advisory Panel review 5/23/2007. No change to policy statement. Reference added.
7/6/09 Specialty Matched Consultant Advisory Panel review 5/28/2009. "Description" section revised. No change to policy statement. Reference added. (btw)

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.