

Corporate Medical Policy

Electrical Stimulators, Neuromuscular

File Name: electrical_stimulators_neuromuscular
Policy Number: DME0240
Origination: 4/2004
Last Review: 5/2008
Next Review: 5/2010

Description of Procedure or Service

Neuromuscular electrical stimulators are divided into two broad categories: therapeutic and functional. Therapeutic electrical stimulation strengthens muscles weakened by disuse while functional electrical stimulation attempts to replace destroyed nerve pathways by electrical stimulation to the muscle in order to assist a functional movement. Procedures or services described in this policy include the following:

- **Section I - Neuromuscular Electrical Stimulation (NMES)**
- **Section II -Therapeutic/Threshold Electrical Stimulation (TES)**
- **Section III - Functional Neuromuscular Stimulation (FNS)**

Various electrical stimulation devices are marketed to relieve a wide range of conditions including, but not limited to, muscle or joint pain, stress, insomnia, depression, back pain, migraines, and disuse [atrophy](#). These devices employ forms of electrical stimulation such as monophasic pulsed electric field therapy, microcurrent therapy or other forms of electrotherapy.

Please refer to the following policies as necessary:

- Interferential Stimulation, DME0155
- TENS (Transcutaneous Electrical Nerve Stimulation), SUR6770

Policy

BCBSNC will not provide coverage for Neuromuscular Electrical Stimulation (NMES), Therapeutic Electrical Stimulator (TES), or Functional Neuromuscular Stimulation (FNS) because they are considered investigational. BCBSNC does not cover investigational services or products.

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.

Section I - Neuromuscular Electrical Stimulation (NMES)

Neuromuscular electrical stimulation (NMES) is used primarily in the orthopedic setting as treatment before and after orthopedic procedures to strengthen or rehabilitate muscles. The major use of NMES is for prevention and retardation of disuse [atrophy](#) in conditions that causes immobilization of a joint or extremity such as post surgical hip or knee [arthroplasty](#).

This device uses electrodes placed on the skin to stimulate motor nerves to alternately contract and relax the muscle. This treatment requires that an intact nerve is available to the muscle that is being rehabilitated.

When Neuromuscular Electrical Stimulation (NMES) is covered

Not applicable.

When Neuromuscular Electrical Stimulation (NMES) is not covered

All indications for neuromuscular electrical stimulation (NMES) including disuse [atrophy](#) are not covered. Neuromuscular Electrical Stimulation is considered investigational. BCBSNC does not cover investigational services or supplies.

Note: Form-fitting conductive garments used with NMES are considered a convenience item and are not covered.

Policy Guidelines

Study results in peer-reviewed literature are insufficient to prove that NMES for disuse atrophy is effective.

Billing and 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: A4595, E0731, E0745, L8680, L8681, L8682, L8683, L8685, L8686, L8687, L8688, L8689

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.

Section II - Therapeutic/Threshold Electrical Stimulation (TES)

Therapeutic (or threshold) electrical stimulation (TES) is described as the delivery of low intensity electrical stimulation to target [spastic](#) muscles during sleep. The stimulation is not intended to cause muscle contraction. Although the mechanism of action is not understood, it is thought that low intensity stimulation may increase muscle strength and joint mobility, leading to improved voluntary motor function. The technique has been used most extensively in children with [spastic](#) diplegia related to cerebral palsy (CP), but also in those with other motor disorders, such as [spina bifida](#).

The TES device is a small battery powered unit with two electrodes that are attached to the skin over weakened muscles. Small electrical stimuli is delivered to the "weakened" muscles (usually muscles opposite the [spastic](#) muscles). The application of TES is intended to help the muscles that have [atrophied](#) grow and become stronger and better able to counteract effects of [spastic](#) muscles. TES is usually applied 6 nights a week for 2-4 years and is used in conjunction with a regular physical therapy program

Although TES has been utilized for many years, there is little data in the medical literature that demonstrates its effectiveness.

When Therapeutic Electrical Stimulation (TES) is covered

Not applicable.

When Therapeutic Electrical Stimulation (TES) is not covered

Therapeutic/threshold electrical stimulation (TES) is not covered. It is considered investigational. BCB-SNC does not cover investigational services or supplies.

Policy Guidelines

A recent literature search identified the results of a trial by Dali and colleagues of a randomized study of 57 children with cerebral palsy using either therapeutic electrical stimulation or a sham device. They concluded that there was no significant effect in terms of motor function, range of motion, or muscle size with the use of therapeutic electrical stimulation.

Billing and Coding/Physician Documentation Information

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Applicable code(s): A4595, E0731, E0745.

Policy: Electrical Stimulators, Neuromuscular

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Section III - Functional Neuromuscular Stimulation (FNS)

Functional neuromuscular stimulation (FNS) is a treatment procedure that attempts to replace destroyed nerve pathways with computer controlled electrical stimulation of muscles. This enables spinal cord injured patients to stand or walk independently, as well as use their upper extremities. Generally only patients with lesions in the thoracic area of the spine (T-4 to T-12) are considered candidates. Only one device, the Parastep® Ambulation System, has been FDA approved.

This treatment system is not designed to be an alternative to a wheel chair and offers, at best, limited, short-term ambulation. Final health outcomes, such as the ability to perform activities of daily living or quality of life have not been reported.

Functional Neuromuscular Stimulation is covered

Not applicable.

When Functional Neuromuscular Stimulation is not covered

Functional neuromuscular stimulation (FNS) is not covered. It is investigational. BCBSNC does not cover investigational services.

Policy Guidelines

Clinical trials continue to investigate the potential of functional electrical stimulation to provide a degree of ambulation, to improve a patient's ability to perform activities of daily living, and improve their quality of life. Studies have been small and the findings are inconclusive due to the trial design. Final health outcomes have not been reported therefore the lack of scientific evidence prevents conclusions on the effectiveness of this therapy.

Billing and 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: 64565, 64580, E0764, E0770

Policy: Electrical Stimulators, Neuromuscular

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.

Policy Key Words

Key Words: Neuromuscular Stimulator, Therapeutic, TES, Mayatek, Mayatek One 2 One, Threshold Electrical Stimulation, ThES, Functional Neuromuscular Stimulation, Electrical, Muscle, NMES, Electrical, Muscle, DME0240.

Medical Term Definitions

Arthroplasty

surgical repair of a joint.

Atrophy

wasting away; a decrease in the size of a cell, tissue, organ, or part of the body.

Spastic

hypertonic or excessive tone of a muscle so that the muscles are stiff and movements are awkward.

Spina Bifida

is a developmental defect characterized by defective closure of the bony encasement around the spinal cord, through which the cord and it's covering may or may not protrude.

Scientific Background and Reference Sources

Policy entitled: Therapeutic Electrical Stimulation (TES)

Plan Consultant - 12/96

Physician Advisory Group Review 2/97

Medical Policy Advisory Group Review 3/99

Specialty Matched Consultant Advisory Panel - 10/2000

Medical Policy Advisory Group - 10/2000

Specialty Matched Consultant Advisory Panel - 7/2002

BCBSA Medical Policy Reference Manual, 1.01.19; 10/08/02

ECRI Hotline Response: Neuromuscular Electrical Stimulation for Cerebral Palsy and Spina Bifida. (Updated June 11, 2002); accessed 7/18/03 at www.ecri.org

ECRI Hotline Response: Neuromuscular Electrical Stimulation for Disuse Atrophy. (Updated on 9/3/02); accessed 7/18/03 at www.ecri.org

United Cerebral Palsy website regarding "Therapeutic Electrical Stimulation" and "The Use of Electrical Stimulation of Spastic Muscles" accessed 7/18/2003 at www.ucp.org

Policy: Electrical Stimulators, Neuromuscular

Policy entitled: Functional Neuromuscular Stimulation (FNS)

BCBSA Medical Policy Reference Manual - 3/96

MEDLINE search January 1996 through July 1997

MEDLINE search July 1997 through August 1999

Medical Policy Advisory Group 12/2/1999

BCBSA Medical Policy Reference Manual, 8.03.01; 4/30/2000

Specialty Matched Consultant Advisory Panel, 8/2001

BCBSA Medical Policy Reference Manual, 8.03.01; 12/18/02

Specialty Matched Consultant Advisory Panel - 7/2003

New Policy entitled: Electrical Stimulators, Neuromuscular

BCBSA Medical Policy Reference Manual [Electronic Version], 1.01.19, 2/25/2004.

BCBSA Medical Policy Reference Manual [Electronic Version], 8.03.01, 2/25/2004.

Specialty Matched Consultant Advisory Panel - 6/2004

Fehlings, D.L., Kirsch, S., McComas, A., Chipman, M., Campbell, K. (2002, November) Evaluation of therapeutic electrical stimulation to improve muscle strength and function in children with types II/III spinal muscular atrophy. *Developmental Medicine and Child*, 44(11), 741-4. Retrieved 4/16/04 from <http://212.49.218.200/newgenMB/asp/Document.asp?docNo=25919>.

BCBSA Medical Policy Reference Manual [Electronic Version], 12/14/2005.

BCBSA Medical Policy Reference Manual [Electronic Version], 8.03.01, 12/14/2005.

Specialty Matched Consultant Advisory Panel - 5/2006

BCBSA Medical Policy Reference Manual [Electronic Version], 1.01.19, 12/12/2006.

BCBSA Medical Policy Reference Manual [Electronic Version], 8.03.01, 12/13/2007.

Specialty Matched Consultant Advisory Panel - 5/2008

Policy Implementation/Update Information

Policy entitled: Therapeutic Electrical Stimulation (TES)

2/97 Original Policy issued: Physician Advisory Group Review

4/99 Reaffirmed based on Medical Policy Advisory Group

8/99 Reformatted, Medical Term Definitions added.

5/00 System coding change.

10/00 Specialty Matched Consultant Advisory Panel. No change recommended in criteria. System coding changes. Medical Policy Advisory Group review. No change in criteria. Approve.

2/02 Coding format change.

8/02 Specialty Matched Consultant Advisory Panel review 7/12/2002. No changes.

8/03 Description and Benefits Application sections revised. Key words added.

Policy entitled: Functional Neuromuscular Stimulation (FNS)

Policy: Electrical Stimulators, Neuromuscular

- 3/80 Original Policy: Experimental/Investigative
- 6/83 Reaffirmed
- 8/88 Reviewed: Investigational
- 9/99 Reformatted, Medical Term Definitions added.
- 12/99 Reaffirmed, Medical Policy Advisory Group
- 3/01 System changes.
- 9/01 Specialty Matched Consultant Advisory Panel, 8/2001. Format changes.
- 7/03 Specialty Matched Consultant Advisory Panel, 7/15/03. No changes to criteria. Benefits Application section revised.
- 4/04 Billing/Coding section updated for consistency.

New Policy created entitled: Electrical Stimulators, Neuromuscular

- 7/29/04 Combined policies on Therapeutic Electrical Stimulation (TES) and Functional Neuromuscular Stimulation (FNS) and added section related to Neuromuscular Electrical Stimulation (NMES) for disuse atrophy. Therapeutic Electrical Stimulator (TES), Functional Neuromuscular Stimulation (FNS), and Neuromuscular Electrical Stimulation (NMES) for disuse atrophy are considered investigational. Specialty Matched Consultant Advisory Panel review 6/22/2004. References added. Notification given 7/29/2004. Effective date 10/14/2004.
- 1/5/06 Added 2006 HCPCS code E0764 to "Billing/Coding" section. Deleted HCPCS code E0752 from "Billing/Coding" section.
- 6/5/06 Specialty Matched Consultant Advisory Panel review 5/3/2006. No changes to policy intent. Removed "for disuse atrophy" from title in the "Neuromuscular Electrical Stimulation" section. Added statement to "When Neuromuscular Electrical Stimulation is Not Covered" to state; "All indications for neuromuscular stimulation (NMES) including disuse atrophy are not covered." Rationale added to "Policy Guidelines" for all sections. References added.
- 9/18/06 Added statement "Note: Form-fitting conductive garments used with NMES are considered a convenience item and are not covered." to the "When Not Covered" section.
- 1/17/07 Added HCPCS codes L8680, L8681, L8682, L8683, L8685, L8686, L8687, L8688, and L8689 to the "Billing/Coding" section.
- 6/30/08 Specialty Matched Consultant Advisory Panel review 5/29/08. No change to policy statement. References added.
- 1/5/09 Added new HCPCS code E0770 to "Billing/Coding" section.

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.