

# Neuromuscular Electrical Stimulator and Functional Electrical Stimulators

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<u>Effective Date</u>	06/2002
<u>Next Review Date</u>	09/2024
<u>Coverage Policy</u>	DME 17
<u>Version</u>	8

**Member-specific benefits take precedence over medical policy and benefits may vary across plans. Refer to the individual's benefit plan for details <sup>\*</sup>.**

**If adjunct as a part of PT evaluation, or when not directly done as a part of PT, pre-certification by the Plan is required.**

**Limitation: The Plan will rent for a 3-month trial, then convert to purchase if the therapy is effective.**

## Purpose:

This policy addresses Neuromuscular Electrical Stimulator and Functional Electrical Stimulators.

## Description & Definitions:

Neuromuscular electrical stimulation (NMES) is a device that sends electrical through electrodes placed on the skin, to aid in muscles contraction.

NMES is used to treat disuse atrophy due to a condition such as limb casting or hip replacement surgery, where the nerve supply to the muscle is intact. The NMES device includes a portable stimulator with electrodes that are placed on the skin over targeted muscle or muscle group.

The current passes through the electrodes into the body, and the motor nerves are stimulated, causing a muscle contraction. The intensity and frequency of stimulation can vary based on the level of muscular function and response to treatment. NMES targets the muscle itself, specifically through the motor nerves. This allows the NMES machine to create a muscle contraction to recruit more muscle fibers when training, warming up or recovering. The use of NMES for the treatment of disuse atrophy is considered effective therapy when the cause of the muscle disuse is not permanent and there is no nervous system involvement.

The type of NMES that is used to enhance the ability to walk is commonly referred to as functional electrical stimulation (FES). These devices are surface units that use electrical impulses to activate paralyzed or weak muscles in precise sequence. FES has been used in the setting of spinal cord injury (SCI), foot drop, and cerebral palsy. There is inconclusive evidence to support the superiority of FES over ankle-foot orthosis for the treatment of foot drop.

## Criteria:

Neuromuscular stimulator devices are considered medically necessary for **one or more of the following**:

- For **disuse atrophy** in an individual with intact nerve supply to the muscle (including the brain, spinal cord, and peripheral nerves) with **1 or more of the following**:
  - Previous casting or splinting of a limb when unable to participate in physical therapy.
  - Contractures due to scarring of soft tissue (e.g. burn scarring).
  - Hip replacement prior to initiation of physical therapy.
  - Major knee surgery (e.g., total knee replacement) when there is failure to respond to physical therapy.
- For spinal cord injury where restoration of walking is the goal, and the individual has the ALL of following characteristics:
  - Intact lower motor units (L1 and below) (both muscle and peripheral nerve).
  - Muscle and joint stability for weight bearing at upper and lower extremities that can demonstrate balance and control to maintain an upright support posture independently.
  - Brisk muscle contraction to NMES and sensory perception of electrical stimulation sufficient for muscle contraction.
  - High motivation, commitment and cognitive ability to use such devices for walking.
  - Ability to transfer independently and independent standing tolerance for at least 3 minutes.
  - Hand and finger function to manipulate controls.
  - At least 6-month post recovery spinal cord injury and restorative surgery.
  - No evidence of hip and knee degenerative disease and no history of long bone fracture secondary to osteoporosis.
  - Willingness to use the device long-term.

The following neuromuscular stimulator devices **do not meet the definition of medical necessity**, to include but not limited to:

- Autonomic dysreflexia
- Bell's palsy
- Cardiac conditioning
- Cerebral palsy
- Chronic Obstructive Pulmonary Disease
- Congestive Heart Failure
- Dysphagia as a result of physiological dysfunction
- Erectile dysfunction
- Foot drop
- General muscle strengthening in healthy individuals.
- High-voltage galvanic stimulator (HVG)
- Improving ambulatory function and muscle strength for progressive diseases (e.g., cancer, chronic heart failure, chronic obstructive pulmonary disease, multiple sclerosis) in persons without spinal cord injury
- Individuals with cardiac pacemakers
- InterX 1000 neurostimulator
- Irreversible contracture
- Masseter muscle oral dysfunction after stroke
- Muscle atrophy after stroke
- Pain caused by necrosis of the femoral head.
- Nexwave by Zynex
- Percutaneous Implantation of a neurostimulator electrode array
- Persons with cardiac pacemakers
- Severe scoliosis or severe osteoporosis (for spinal cord injury)
- Skin disease or cancer at area of stimulation
- Threshold/Therapeutic Electrical stimulation (TES)
- Treatment of denervated muscles
- Treatment of knee osteoarthritis
- Upper extremity hemiplegia

## Coding:

Medically necessary with criteria:

Coding	Description
A4556	Electrodes (e.g., apnea monitor), per pair
A4558	Conductive gel or paste, for use with electrical device (e.g., TENS, NMES), per oz
E0731	Form - fitting conductive garment for delivery of TENS or NMES (with conductive fibers separated from the patient's skin by layers of fabric)
E0745	Neuromuscular stimulator, electronic shock unit
E0763	Functional neuromuscular stimulator, transcutaneous stimulation of muscles of ambulation with computer control, used for walking by spinal cord injured, entire system, after completion of training program
E0770	Functional electrical stimulator, transcutaneous stimulation of nerve and / or muscle groups, any type, complete system, not otherwise specified

Considered Not Medically Necessary:

Coding	Description
64555	Percutaneous implantation of neurostimulator electrode array; peripheral nerve (excludes sacral nerve)

## Document History:

Revised Dates:

- 2021: November
- 2020: November
- 2019: October, November
- 2016: April, May
- 2013: October
- 2012: June
- 2011: February
- 2010: November
- 2008: February, March
- 2007: October
- 2005: November
- 2003: July, November

Reviewed Dates:

- 2023: September
- 2022: September
- 2018: December
- 2017: November
- 2015: May
- 2014: May
- 2012: November
- 2011: November
- 2010: December
- 2009: January, December
- 2008: January
- 2006: October
- 2004: June, July

- 2003: June

Effective Date:

- June 2002

## References:

Including but not limited to: Specialty Association Guidelines; Government Regulations; Winifred S. Hayes, Inc; UpToDate; Literature Review; Specialty Advisors; National Coverage Determination (NCD); Local Coverage Determination (LCD).

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Functional Electrical Stimulation (FES) and Multiple Sclerosis. (2023). Retrieved Sep 06, 2023, from National Multiple Sclerosis Society: [https://www.nationalmssociety.org/Treating-MS/Rehabilitation/Functional-Electrical-Stimulation-\(FES\)](https://www.nationalmssociety.org/Treating-MS/Rehabilitation/Functional-Electrical-Stimulation-(FES))

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Neuro20 Technologies. (2023, Feb 23). Retrieved Sep 06, 2023, from U.S. Food and Drug Administration: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/brca-related-cancer-risk-assessment-genetic-counseling-and-genetic-testing>

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Sec. 882.5810 External functional neuromuscular stimulator. (2023, Jun 07). Retrieved Aug 24, 2023, from Code of Federal Regulations (National Archives): <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=882.5810>

### Special Notes: \*

Medical policies can be highly technical and complex and are provided here for informational purposes. These medical policies are intended for use by health care professionals. The medical policies do not constitute medical advice or medical care. Treating health care professionals are solely responsible for diagnosis, treatment, and medical advice. Sentara Health Plan members should discuss the information in the medical policies with their treating health care professionals. Medical technology is constantly evolving, and these medical policies are subject to change without notice, although Sentara Health Plan will notify providers as required in advance of changes that could have a negative impact on benefits.

Services mean both medical and behavioral health (mental health) services and supplies unless We specifically tell You otherwise. We do not cover any services that are not listed in the Covered Services section unless required to be covered under state or federal laws and regulations. We do not cover any services that are not Medically Necessary. We sometimes give examples of specific services that are not covered but that does not mean that other similar services are covered. Some services are covered only if We authorize them. When We say You or Your We mean You and any of Your family members covered under the Plan. Call Member Services if You have questions.

### MUST SEE MEMBER BENEFIT FOR DETERMINATION.

We only cover DME that is Medically Necessary and prescribed by an appropriate Provider. We also cover colostomy, ileostomy, and tracheostomy supplies, and suction and urinary catheters. We do not cover DME used primarily for the comfort and wellbeing of a Member. We will not cover DME if We deem it useful, but not absolutely necessary for Your care. We will not cover DME if there are similar items available at a lower cost that will provide essentially the same results as the more expensive items.

Pre-Authorization is Required for All Rental Items.

Pre-Authorization is Required for All Repair and Replacement.

### Keywords:

SHP Neuromuscular Electrical Stimulator, SHP DME 17, SHP Durable Medical Equipment 17, Dysphagia, atrophy, scarring, burns, NMES, therapeutic electrical stimulation, threshold electrical stimulation, TES, InterX 1000 neurostimulator, Nexwave by Zynex