MEDICAL MUTUAL®

MedicalPolicy

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| **Policy:** | **200604** | | |
| **SUBJECT:** | **Functional Electrical Stimulation (FES) and Neuromuscular electrical stimulators (NMES)**<br><br>**- Post-Spinal Cord Injury (SCI) Rehabilitative Walking**<br>**- Muscular Atrophy** | **Initial Effective Date:** | **07/10/2006** |
| | | **Annual Review Date:** | **09/17/2018** |
| | | **Last Revised Date:** | **09/17/2018** |

**Definition:** Functional electrical stimulation (FES) is the direct application of electric current to intact nerve fibers in a coordinated fashion to cause involuntary but purposeful muscle contraction. In surface FES, the electrodes are completely external. In implantable FES systems, the electrodes and a stimulator are surgically implanted. The treatment is intended to improve functional recovery in neurologically impaired individuals.

FES devices produce muscle contractions that mimic normal voluntary gait movement (lifting the foot and achieving correct placement on the ground) by applying electrical pulses to the common peroneal nerve through the skin surface. In skin-surface FES, electrodes placed over the nerve are connected by leads to a stimulator unit and sometimes controlled with a foot switch or by remote programming. Surface applications of FES have been developed primarily to generate grasping or walking abilities, (e.g., NESS L300 Foot Drop System, Bioness Inc.; WalkAide System, Innovative Neurotronics, Inc.).

FES for post-spinal cord injury (SCI) (e.g., Parastep I System, Sigmedics, Inc.) is used to restore gait function and to enable functional use of partially or completely paralyzed limbs, through exercise, in order to improve general health and fitness.

**Medical Necessity:**

I. **Post-SCI rehabilitative walking:** The Company considers FES **(HCPCS Code E0764) medically necessary** and eligible for reimbursement providing that ***all*** of the following medical criteria are met:

- Device will be utilized for rehabilitative walking following lower extremity paralysis due to SCI; and
- Most recent SCI restorative surgery performed $\geq$ 6 months ago; and
- Prerequisite functioning: Ability to stand $\geq$ 3 minutes and transfer independently; and
- Adequate hand and finger function to manipulate controls; and
- Intact lower extremity motor units (L1 and below) with brisk muscle contraction following FES; and
- Sufficient upper extremity muscle strength and adequate upper and lower joint stability and function to permit weight-bearing and independent maintenance of an upright posture; and
- Sensory perception of electrical stimulation is sufficient for muscle contraction; and

- No history of long bone fracture secondary to osteoporosis; and
- Adequate cognitive ability to effectively and safely use the device for walking; and
- Highly motivated and expresses commitment to long-term use of the device; and
- Successful completion of device training program;

**AND**

The following clinical condition is present:

- Paraplegia

The Company considers functional neuromuscular stimulation for ***all*** other clinical conditions including Post-stroke upper extremity rehabilitation: **(HCPCS Code E0770) investigational** and **not** eligible for reimbursement.

**II. Neuromuscular electrical stimulators (NMES):** The Company considers NMES **(HCPCS Code E0745**) and supplies (**HCPCS Code A4595**) are considered **medically necessary** for the treatment of disuse atrophy for the following conditions

- Contractures due to burn scarring; or
- Major knee surgery with failure to respond to physical therapy; or
- Recent hip surgery when there is a medical delay in starting physical therapy; or
- Muscle atrophy develops despite physical therapy.

In all cases, nerve supply to the muscle must be intact and repose to treatment should be documented every 4 weeks.

**Note:** NMES longer than two hours per day is considered not medically necessary. NMES are contraindicated in persons with cardiac pacemakers.

The Company considers functional electrical stimulation (FES) and neuromuscular electrical stimulators (NMES) **investigational** and **not** eligible for reimbursement for ***all*** other clinical conditions.

**III. Form-fitting conductive garments:** The Company considers a form-fitting conductive garments (**HCPCS Code E0731**) medically necessary for FDA approved garments that have been prescribed by a physician when the following criteria is met:

- The conductive area is large or requires numerous sites to be stimulated, and use conventional electrodes, adhesive tapes, and lead wires is not feasible; or

- The member has a medical condition that makes the application of conventional electrodes, adhesive tapes, and lead wires impractical; or
- The member requires electrical stimulation beneath a cast; or

The Company considers form-fitting conductive garments **investigational** and **not** eligible for reimbursement for ***all*** other clinical conditions because its effectiveness for indications other than the ones listed above has not been established.

**Documentation Requirements:**

The Company reserves the right to request additional documentation as part of its coverage determination process. The Company may deny reimbursement when it has determined that the services performed were not medically necessary, investigational or experimental, not within the scope of benefits afforded to the member, and/or a pattern of billing or other practice has been found to be either inappropriate or excessive. Additional documentation supporting medical necessity for the services provided must be made available upon request to the Company. Documentation requested may include patient records, test results, and/or credentials of the provider ordering or performing a service. The Company also reserves the right to modify, revise, change, apply, and interpret this policy at its sole discretion, and the exercise of this discretion shall be final and binding.

**Sources of Information:**


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- Centers for Medicare & Medicaid Services: national coverage determination for neuromuscular electrical stimulation (NMES) (160.12). Retrieved from https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=175&ncdver=2&DocID=160.12&bc=gAAAAAgAAAAAAA%3d%3d&.
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- Management of Stroke Rehabilitation Working Group. VA/DoD Clinical Practice Guidelines: Management of Stroke Rehabilitation (2010). October 2010. Retrieved from http://www.healthquality.va.gov/guidelines/Rehab/stroke/.
- National Institute for Health and Care Excellence (NICE). *Functional electrical stimulation for drop foot of central neurological origin*. London, UK: National Institute of Health Care Excellence; January 2009. Interventional Procedure Guidance No. 278. Retrieved from http://www.nice.org.uk/guidance/ipg278.
- National Institute of Neurological Disorders and Stroke (NINDS). Spinal Cord Injury: Hope Through Research. Retrieved from http://www.ninds.nih.gov/disorders/sci/detail_sci.htm.
- Yan, T., Hui-Chan, C.W., & Li, L.S. Functional electrical stimulation improves motor recovery of the lower extremity and walking ability of subjects with first acute stroke: a randomized placebo-controlled trial. *Stroke*. 2005;36(1):80-85.


| **Applicable Code(s):** | |
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| **CPT:** | **N/A** |
| **HCPCS:** | **E0764, E0770, E0745 and A4595** |
| **ICD-10-CM Procedure:** | **N/A** |