KAISER PERMANENTE®

Review Criteria
Georgia Region

Title:	**NEUROMUSCULAR ELECTRICAL STIMULATION NEMS/FES**		
Department:	QUALITY RESOURCE MANAGEMENT	**Page:**	1 of 5
Section:	UTILIZATION MANAGEMENT	**Policy Number:**	03-32
Type:	( ) New	**Effective Date:**	9/30/2008
	(X) Reviewed / Revised	**Date:**	2/23/2018 2/7/2019 1/13/2020 1/21/2021 1/11/2022 2/28/2023

Purpose

This policy provides the indications and contraindications necessary for the Quality Resource Management staff to make the most appropriate decision related to the medical necessity of the procedure listed.

DIAGNOSIS/CONDITION: Muscle Atrophy ICD-10 M62.50
CPT-4/ HCPCS CODE AND DESCRIPTION: INDICATORS E0762, E0764

1.0 INDICATIONS

1. Coverage of NMES to treat muscle atrophy is limited to the treatment of patients with disuse atrophy where the nerve supply to the muscle is intact, including brain, spinal cord and peripheral nerves
2. Other non-neurological reasons for disuse atrophy
3. To enhance the ability to walk of SCI patients 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. Coverage for the use of NMES/FES is limited to SCI patients (Spinal Cord Injury) * Medicare Covers for SCI patients to enhance ability to walk – see criteria below
4. Coverage for the use of NMES/FES is limited to SCI patients, for walking, who have completed a training program, which consists of at least 32 physical therapy sessions with the device over a period of 3 months.
5. Coverage for NMES/FES for walking will be limited to SCI patients with all of the following:

    1) persons with intact lower motor units (L1 and below) (both muscle and peripheral nerve);
    2) persons with 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;
    3) persons that demonstrate brisk muscle contraction to NMES and have sensory perception of electrical stimulation sufficient for muscle contraction;
    4) persons that possess high motivation, commitment and cognitive ability to use such devices for walking;

5) persons that can transfer independently and can demonstrate independent standing tolerance for at least 3 minutes;
6) persons that can demonstrate hand and finger function to manipulate controls;
7) persons with at least 6-month post recovery spinal cord injury and restorative surgery;
8) persons without hip and knee degenerative disease and no history of long bone fracture secondary to osteoporosis; and
9) persons who have demonstrated a willingness to use the device long-term.
10) The member has completed training program, with the device over a 3-month period.

2.0 CONTRAINDICATIONS

1) persons with cardiac pacemakers
2) severe scoliosis or severe osteoporosis
3) skin disease or cancer at area of stimulation
4) irreversible contracture
5) autonomic dysreflexia.

3.0 VIEWS OF THE SOUTHEAST PERMANENTE MEDICAL GROUP

NMS/FES is covered for patients that have failed rehab therapy and meet the indications outlined in Section 1.0.)

- (1) treatment of disuse atrophy where nerve supply to affected muscles is intact or where recovery of nerve function is expected, including brain, spinal cord, and peripheral nerves, OR
- (2) disuse atrophy caused by other non-neurological reasons (e.g., casting or splinting of limb, soft tissue contracture or burn),
- 3) NMS/FES is covered for spinal cord injury patients to enhance walking ability if they meet the indications outlined in Section 1.0.

4.0 CLINICAL SUMMARY:

Neuromuscular electrical stimulation (NMES) involves the use of a device that transmits an electrical impulse to activate muscle groups by way of electrodes. There are two broad categories of NMES. One type of device stimulates the muscle when the patient is in a resting state to treat muscle atrophy. The second type is used to enhance functional activity of neurologically impaired patients.

5.0 REVIEW OF THE LITERATURE:

1. Center for Medicare and Medicaid Services (CMS). Neuromuscular electrical stimulation (NMES) for spinal cord injury. Decision Memorandum #CAG -00153R. Baltimore, MD: CMS; July 22, 2002.

2. Center for Medicare and Medicaid Services (CMS). Neuromuscular electrical stimulation (NMES) for spinal cord injury. National Coverage Analysis (NCA). Baltimore, MD: CMS; effective April 1, 2003. Available at: http://www.cms.hhs.gov/mcd/search.asp.

3. Aetna-10/2011, 11/2012, 2/2015, 1/2018

7.0 REFERENCES:

1. Cochrane review on electrostimulation for promoting recovery of movement or functional ability after stroke, Pomeroy et al (2006) concluded that "at present, there are insufficient robust data to inform clinical use of electrostimulation for neuromuscular re-training."
2. The Agency for Health Care Policy and Research's clinical guideline on “Post-stroke Rehabilitation” maintains that neither research evidence nor expert consensus adequately supports recommendation concerning the use of FES in the rehabilitation of stroke patients
3. The New Zealand Guidelines Group's guideline for management of stroke (2003) stated that the use of FES and transcutaneous electrical nerve stimulation for post-stroke patients is not recommended.
4) CMS NCD 12/08 -The CMS IOM Pub. 100-03 National Coverage Determination (NCD) Manual, section 160.12, addresses coverage criteria for **functional electrical stimulators. Coverage is limited to those devices which enhance the ability to walk and are used by spinal cord injury patient**s (ICD-9 diagnosis codes 806.00-806.9, 907.2, 952.00-952.9) with all of the following characteristics:

5) Aetna Guidelines for NMS/FES updated, October 2020

1. Aetna considers functional electrical stimulation (FES) (e.g., Parastep I System) medically necessary durable medical equipment (DME) to enable members with spinal cord injury (SCI) to ambulate when all of the following criteria are met:

    1. Member has intact lower motor units (L1 and below) (both muscle and peripheral nerve); *and*

    2. Member has joint stability to bear weight on upper and lower extremities, and has balance and control to maintain an upright posture independently; *and*

    3. Member demonstrated brisk muscle contraction to neuromuscular electrical stimulation and has sensory perception of electrical stimulation sufficient for muscle contraction; *and*

    4. Member has the cognitive ability to use such devices for walking and is highly motivated to use the device long term; *and*

    5. Member can transfer independently and stand for at least 3 minutes; *and*

    6. Member possesses hand and finger function to manipulate the controls; *and*

    7. Member is at least 6 months post recovery of spinal cord injury and restorative surgery; *and*

    8. Member does not have hip and knee degenerative disease and has no history of long bone fracture secondary to osteoporosis; *and*

9. The member has successfully completed a training program, which consists of at least 32 physical therapy sessions with the device over a 3-month period.

Aetna Neuromuscular Stimulation(NMS/FES) November 2021

1. Aetna considers neuromuscular electrical stimulators (NMES) medically necessary DME for disuse atrophy where the nerve supply to the muscle is intact and the member has any of the following non-neurological reasons for disuse atrophy:

    1. Contractures due to burn scarring, *or*
    2. Major knee surgery (e.g., total knee replacement) when there is failure to respond to physical therapy, *or*
    3. Previous casting or splinting of a limb (arm or leg), *or*
    4. Recent hip replacement surgery before physical therapy begins (NMES is considered medically necessary until physical therapy begins).

NMES are specifically contraindicated and considered unproven in persons with cardiac pacemakers.

6) **INTC 12/2012**- Decision--

Functional Electrical Stimulation for Foot Drop

There is insufficient evidence to determine that functional electrical stimulation is medically appropriate for any patient with foot drop. The evidence is of insufficient quantity and quality. The evidence is limited by a paucity of comparative studies, vendor involvement in many of the studies, small population sizes, heterogeneous populations and protocols, and short-term follow-up.

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Approval

2/24/11

_____ Date

Rhoda Sharp, MD, MBA
Physician Program Director, Quality Resource Management

_____ Date_____