Medical Policy

Neuromuscular Electrical Stimulation (NMES) Devices

Description

Neuromuscular Electrical Stimulation (NMES) is the transcutaneous application of electrical currents to activate muscle contractions using surface electrodes attached to the neuromuscular stimulator device. The goal of NMES is to stimulate the muscle when the member is in a resting state to increase muscle strength, prevent or retard disuse atrophy, relax muscle spasms, increase joint mobility and promote voluntary control of muscles in members who have lost muscle function due to surgery, neurological injury or a disabling condition.

Neuromuscular electrical stimulation (NMES) is **reasonable and necessary** for Members meeting coverage criteria.

Policy Guidelines

Coverage Criteria:

1. Must be ordered by the Member's treating physician.
2. NMES devices may be considered medically necessary for the treatment of disuse atrophy when the nerve supply to the muscle is intact and the member has anon-neurological etiology for disuse atrophy that include but are not limited to:
    a. Prolonged (greater than 12 weeks) casting or splinting of joint
    b. Contractures due to scarring of soft tissue by burns
    c. Following hip replacement surgery prior to orthotic training

Limitations:

1. Due to the short-term nature of the treatment, the authorization of NMES unit will be limited to rental only.
2. Supplies are included in the rental of the NMES unit and cannot be billed separately (e.g., A4556, A4557, A4558, A4595, A4620, E0731)

The following electrical stimulation devices are considered experimental and investigational and include but are not limited to:

- **FNS** - Functional Neuromuscular Stimulation. Also known as functional electrical stimulation (**FES**) and EMG-triggered neuromuscular stimulation, this type of stimulation is the application of electrical currents to the muscles using a computer controlled device that attempts to replace stimuli from destroyed nerve pathways. **FES**- (for upper extremities) is considered investigational as a means to improve hand and arm function after stroke-related paralysis or spinal cord injury. **FES**-This type of stimulation is proposed to also assist spinal cord injured members with standing and walking by maintaining healthy muscle tone and strength.

- **Galvanic** - (or High Voltage Galvanic Stimulation (HVG), The application of high voltage, pulsed stimulation using surface electrodes attached to the galvanic stimulator that is used primarily for the reduction of local edema. This treatment is proposed to reduce edema by displacing charged proteins away from the edematous site.

- **H-wave** - The application of electrical H-wave stimulation using surface electrodes attached to the H-wave stimulator. H-waves are used to stimulate muscles and nerves to promote circulation and relieve pain and have been used to treat diabetic neuropathy, muscle sprains, temporomandibular joint dysfunctions, reflex sympathetic dystrophy, and diabetic ulcers. H-wave is classified as a powerful muscle stimulator that produces rhythmic muscle contractions that increase local circulation and lymphatic drainage.

- **Interferential/sequential -** Also known as sequential stimulation, this type of stimulation is the application of small electrical currents to the affected region of the body using surface electrodes attached to the interferential stimulator device. Sequential Stimulation first uses interferential current to relieve deep chronic pain and simultaneously applies muscle stimulation to treat underlying muscle conditions.

- **MENS** - Micro current Electrical Nerve Stimulation is the application of micro current (very small micro amp electrical charges that are 1/1000 of milliamp current) using surface electrodes attached to the MENS device. MENS is proposed to aid in the healing process and relieve pain by working on a more cellular level and acting on the naturally occurring electrical impulses. Because the current is so small, the member barely feels the stimulation.

- **PNT -** Percutaneous Neuromodulation Therapy is a variant of PENS where up to ten fine filament electrodes are temporarily placed at specific areas of the back for the relief of chronic intractable pain or as an adjunct treatment in the management of post-surgical or post traumatic pain. In PNT, the electrical stimulation is applied by a physician through needles inserted 2cm to 4 cm into the tissues surrounding the spine. Electrical currents applied through the needles are thought to stimulate peripheral nerves. These nerves in turn may alter the activity of the spinal nerves transmitting the pain signal, resulting in reduced pain.

- **PENS -** Percutaneous Electrical Nerve Stimulation is the application of electrical current through the insertion of a needle under the skin that is attached to the PENS device. The needle insertion is adjacent to a nerve. PENS is generally reserved for members who fail to obtain relief from TENS units.

- **Sympathetic -** The application of electrical stimulation to peripheral nerves using surface electrodes in an effort to “normalize” the autonomic nervous system and alleviate chronic pain. Sympathetic therapy is designed to induce a systemic effect on sympathetically induced pain and does not treat local pain.

- **TEJS -** Transcutaneous Electrical Joint Stimulation or Pulsed Electrical Stimulation is the application of electrical current using surface electrodes to the joint tissue for the treatment of osteoarthritis symptoms of the knee. The electrode patches are worn for 6 – 10 hours daily while the member is sleeping.

- **TES -** Threshold Electric Stimulation is the application of low intensity electrical stimulation as a treatment for motor disorders used to target spastic muscles during sleep.

HCPCS Level II Codes and Description

E0745		Neuromuscular stimulator, electronic shock unit
E0762		Transcutaneous electrical joint stimulation device system, includes all accessories
E0764		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.
E1399		Durable medical equipment, miscellaneous (use for sequential/inferential stimulator)

Important Note:

Northwood's Medical Policies are developed to assist Northwood in administering plan benefits and determining whether a particular DMEPOS product or service is reasonable and necessary. Equipment that is used primarily and customarily for a non-medical purpose is not considered durable medical equipment.

Coverage determinations are made on a case-by-case basis and are subject to all of the terms, conditions, limitations, and exclusions of the member's contract including medical necessity requirements.

The conclusion that a DMEPOS product or service is reasonable and necessary does not constitute coverage. The member's contract defines which DMEPOS product or service is covered, excluded or limited. The policies provide for clearly written, reasonable and current criteria that have been approved by Northwood's Medical Director.
The clinical criteria and medical policies provide guidelines for determining the medical necessity for specific DMEPOS products or services. In all cases, final benefit determinations are based on the applicable contract language. To the extent there are any conflicts between medical policy guidelines and applicable contract language, the contract language prevails. Medical policy is not intended to override the policy that defines the member's benefits, nor is it intended to dictate to providers how to direct care. Northwood Medical policies shall not be interpreted to limit the benefits afforded to Medicare or Medicaid members by law and regulation and Northwood will use the applicable state requirements to determine required quantity limit guidelines.

Northwood's policies do not constitute medical advice. Northwood does not provide or recommend treatment to members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

Documentation Requirements:

Items in this policy may be subject to the Affordable Care Act (ACA) 6407 requirements.

The Affordable Care Act (ACA) 6407 requires that the treating physician conduct a face-to-face examination during the six month period preceding the written order. The documentation must be received by the provider prior to delivery for certain DME items. The documentation must describe a medical condition for which the DME is being prescribed.

NH MEDICAID

Neuromuscular electrical stimulation (NMES) and functional electrical stimulation (FES) (e.g.Parastep I system), is considered reasonable and necessary to enhance the ability to walk in individuals with spinal cord injury (SCI) who meet **all** of the following characteristics:

1. Individuals with intact lower motor units (L1 and below) (both muscle and peripheral nerve);

2. Individuals 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. Individuals that demonstrate brisk muscle contraction to NMES and have sensory perception electrical stimulation sufficient for muscle contraction;

4. Individuals that possess high motivation, commitment and cognitive ability to use such devices for walking;

5. Individuals that can transfer independently and can demonstrate independent standing tolerance for at least 3 minutes;

6. Individuals that can demonstrate hand and finger function to manipulate controls;

7. Individuals with at least 6-month post recovery spinal cord injury and restorative surgery;

8. Individuals without hip and knee degenerative disease and no history of long bone fracture secondary to osteoporosis; and

9. Individuals who have completed a training program which consists of at least 32 physical therapy sessions with the device over a period of three months; and

10. Individuals who have demonstrated a willingness to use the device long-term.

References

1. Hayes, Inc. Medical Technology Directory, Neuromuscular Electrical Stimulation for Muscle Rehabilitation.
2. Lansdale, PA: Hayes, Inc. January 3, 2008.
3. Hayes, Inc. Search and Summary, Functional Electrical Stimulation (FES) for Upper Limb Rehabilitation Post-
4. Stroke. Landsdale, PA: Hayes, Inc. September 5, 2007.
5. Hayes, Inc. Medical Technology Directory, Functional Electrical Stimulation for Rehabilitation of Paralyzed
6. Lower Limbs. Lansdale, PA: Hayes, Inc. May 23, 2003.
7. Ring, H., Rosenthal, N. Controlled study of neuroprosthetic functional electrical stimulation in sub-acute poststroke
8. rehabilitation. J Rehabil Med. 2005 Jan; 37(1):32-6.
9. Hara Y., Ogawa S., Tsujiuchi K., Muraoka Y. A home-based rehabilitation program for the hemiplegic upper
10. extremity by power-assisted functional electrical stimulation. Disabil Rehabil, 2008; 20(4):296-304.
11. Berner YN, Lif Kimchi O, Spokoinv V, Finkeltov B. The effect of electric stimulation treatment on the finctional
12. rehabilitation of acute geriatric patients with stroke—a preliminary study. Arch Gerontol Geriatr, 39(2):125-
13. 32, Sept-Oct 2004.
14. Hausdorff JM, Ring H. Effects of a new radio frequency-controlled neuroprosthesis on gait symmetry and
15. rhythmicity in patients with chronic hemiparesis. Am J Phys Med Rehabil. 2008 Jan;87(1): 4-13
16. Hayes, Inc. Health Technology Brief: BioniCare® Bio-1000™ System for Osteoarthritis of the Knee.
17. Lansdale, PA: Hayes, Inc. April 20, 2005.
18. Zizic TM, Hoffman KC, Holt PA, et al. The treatment of osteoarthritis of the knee with pulsed electrical
19. stimulation. J Rheumatol. 1995; 22(9):1757-1761.
20. Farr J, Mont MA, Farland D, Caldwell JR, Zizic TM. Pulsed electrical stimulation in patients with osteoarthritis
21. of the knee: follow up in 288 patients who had failed non-operative therapy. Surg Technol Int. 2006; 15:
22. 227-33.
23. Stein, RB., Everaert, DG., Thompson, AK., Chong, SL., Wittaker, et al. Long-term therapeutic and orthotic
24. effects of a foot drop stimulator on walking performance in progressive and nonprogressive neurological
25. disorders. Neurorehabil Neural Repai. 2010; 24(2): 152-67.
26. Barrett, CL., Mann, GE., Taylor, PN., Strike, P. A randomized trial to investigate the effects of functional

27. electrical stimulation and therapeutic exercise on walking performance for people with multiple sclerosis.
28. Mult Scler. 2009; 15(4): 493-504.
29. Paul, L., Rafferty, D., Young, S., Miller L., et al. The effect of functional electrical stimulation on the
30. physiological cost of gait in people with multiple sclerosis. Mult Scler. 2008; 14(7): 954-61.

Applicable URAC Standard

Core 8	Staff operational tools and support

Change/Authorization History

Revision Number	Date	Description of Change	Prepared/Reviewed by	Approved by	Review Date:
A	Nov.2006	Initial Release	Rosanne Brugnoni	Ken Fasse	n/a
01		Annual Review / no revisions	Susan Glomb	Ken Fasse	Dec.2008
02	12-22-09	Annual Review/ no changes	Susan Glomb	Ken Fasse	Dec.2009
03	12-03-10	Annual Review – No changes	Susan Glomb	Ken Fasse	Dec.2010
04	02-18-11	Policy updated to reflect current practice	Susan Glomb	Ken Fasse	
05	07-20-11	Added Important Note to all Medical Policies	Susan Glomb	Dr. B. Almasri	
06	11-1-11	Added Supporting Documentation to policy for Experimental and Investigational.	Susan Glomb	Dr. B. Almasri	
07	11-14-11	Annual Review. Added References to Policy	Susan Glomb	Dr. B. Almasri	Nov. 2011
08	04-04-12	Added reference to NH Medicaid	Susan Glomb	Dr. B. Almasri	
09	11-29-12	Annual Review – No changes	Susan Glomb	Dr. B. Almasri	Nov 12
10	12-18-13	Annual review. No changes	Susan Glomb	Dr. B. Almasri	
11	12-18-14	Annual Review. Added Affordable Care Act (ACA)	Susan Glomb	Dr. B. Almasri	

		6407requirements.			
12	12-14-15	Annual Review. No changes	Susan Glomb	Dr. B. Almasri	12-14-15
13	12-19-16	Annual Review. No Changes.	Lisa Wojno	Dr. B. Almasri	December 2016