Neuromuscular Electrical Stimulators (NMES)

Medical Coverage Policy

Original Effective Date: 11/06/2000
Revised Date: 12/01/2011
Review Date: 12/01/2011
Policy Number: CLPD-0413-004

Change Summary: Updated Disclaimer, Description, Background, Provider Claims Codes, Medical Terms, References

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Description
Neuromuscular electrical stimulators (NMES) are small electronic devices that are affixed externally by the patient to the skin by way of electrodes to provide direct stimulation of affected muscles. NMES differ from transcutaneous electrical nerve stimulation (TENS) units and interferential current stimulation (ICS), which are used for pain management therapy (please refer to Electrical Stimulators for Pain and Associated Conditions Medical Coverage Policy). They also differ from functional electrical stimulators (FES), which are used for spinal cord injury patients to enhance the ability to stand or walk (please refer to Functional Electrical Stimulators Medical Coverage Policy).

A NMES stimulates muscle to maintain its tone during temporary extremity immobilization. The goal for use of NMES for an immobilized extremity following a documented injury or surgical intervention is to control edema, increase local blood circulation, maintain muscle tone, or retard the development of disease atrophy. NMES has also been proposed for other indications (refer to Coverage Limitations section) including treatment for...
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Muscle atrophy seen in cerebral palsy, congestive heart failure, and upper extremity hemiplegia (such as seen in a stroke).

Examples of a NMES would include, but may not be limited to:

- The RS-2m® muscle stimulator.
- The RS-4i® sequential stimulator (also referred to as a combination unit) which first provides an interferential treatment followed by the muscle stimulation. (Refer to Coverage Limitations Section).
- Care ETS™ device is an electromyography (EMG)-triggered NMES. This device is designed to detect any EMG signals (nerve impulses from the brain to the muscles) that are supposed to stimulate a muscle contraction but are too weak to do so. When the device detects these signals, it applies stimulation to the muscle and induces a contraction, in the hope that the brain and muscle will be retrained to coordinate contractions and movement properly. This device is also proposed for use for relaxation of muscle spasms, and prevention or retardation of disuse atrophy. (Refer to Coverage Limitations Section).
- VitalStim® Therapy is a type of NMES that uses a mild electrical current that is intended to treat dysphagia by re-educating the muscles and improving swallowing. (Refer to Coverage Limitations Section).

**Coverage Determination**

Humana members may be eligible under the Plan for NMES for the following indications:

- **NMES for muscle disuse atrophy** due to an immobilized extremity (unrelated to a neurological condition, with an intact nerve supply to the muscle) may be covered for **ANY** of the following indications:
  - Contractures due to burn scarring; **OR**
  - Major knee surgery with failure to respond to physical therapy; **OR**
  - Previous casting or splinting of a limb (arm or leg); **OR**
  - Recent hip replacement surgery before physical therapy begins.

**Note:** It is the Plan’s option to determine if the DME item shall be rented or purchased. If the cost of renting the item is more than the cost to buy it, only
the cost of the purchase is considered to be a covered expense. In either case (rent or purchase), total covered expenses shall not exceed the purchase price. In the event the Plan determines to purchase the DME, any amount paid as rent for such equipment will be credited toward the purchase price.

- A form-fitting conductive garment for use in delivering NMES, when prescribed by a physician and the above criteria is met, may be covered for ANY of the following indications:
  - A skin problem or other medical condition that prevents the application or use of conventional electrodes, adhesive tape, etc.; OR
  - Due to the number or frequency of treatments it is not feasible to use conventional electrodes, adhesive tapes, and lead wires; OR
  - Requires electrical stimulation beneath a cast to treat disuse atrophy, where the nerve supply to the muscle is intact; OR
  - Traditional electrodes cannot be used due to the large area or large number of sites that need to be stimulated.

**Note:** This criteria for NMES is not consistent with the NMES portion of the Medicare National Coverage Policy for Neuromuscular Electrical Stimulation, and therefore may not be applicable to Medicare members. Refer to the CMS website at http://www.cms.hhs.gov/ for additional information.

**Coverage Limitations**

Humana members may NOT be eligible under the Plan for the use of NMES for any indications other than those listed above. All other indications are considered experimental/investigational or NOT medically necessary if not utilized in accordance with nationally recognized standards of medical practice and/or identified as safe, widely used and generally accepted as effective for the proposed use as reported in nationally recognized peer-reviewed medical literature published in the English language.

Humana members may NOT be eligible under the Plan for the use of any of the following neuromuscular electrical stimulators:

- **Combination and sequential units**, including, but not limited to, the RS-4i®, OR
EMG-triggered NMES, including, but not limited to, the Care ETS™ device; OR

NMES for the treatment of dysphagia, including, but not limited to, VitalStim® Therapy.

These technologies are considered experimental/investigational as they are not identified as widely used and generally accepted for the proposed use as reported in nationally recognized peer-reviewed medical literature published in the English language.

**Background**

You can learn more about muscular/disuse atrophy and dysphagia from the following sites:

- National Institute on Deafness and Other Communication Disorders (NIDCD) - [www.nidcd.nih.gov](http://www.nidcd.nih.gov)

**Medical Alternatives**

Alternatives to NMES include but may not be limited to the following:

- Occupational therapy (please refer to Physical Therapy (PT) and Occupational Therapy (OT) Medical Coverage Policy).
- Physical therapy (please refer to Physical Therapy (PT) and Occupational Therapy (OT) Medical Coverage Policy).
- Speech therapy for dysphagia (please refer to Speech Therapy Medical Coverage Policy).

To make the best health decision for your individual needs, consult your physician.

**Provider Claims Codes**

All provider claims codes surrounding this topic may not be included in the following table:

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<td>Percutaneous implantation of neurostimulator electrodes; neuromuscular</td>
<td>Not covered for combination, sequential, or EMG triggered units or for dysphagia</td>
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<td>Conductive gel or paste, for use with electrical device (e.g., TENS, NMES), per oz</td>
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<td>Electrical stimulator supplies, 2 lead, per month, (e.g., TENS, NMES)</td>
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<td>Form-fitting conductive garment for delivery of TENS or NMES (with conductive fibers separated from the patient’s skin by layers of fabric)</td>
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<td>Neuromuscular stimulator, electronic shock unit</td>
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**Medical Terms**

- **Atrophy** - Refers to the decrease in size or wasting away of a body part or tissue.

- **Cerebral Palsy** - Neurological disorder occurring before, during or right after birth resulting in difficulties of coordination, movement and/or speech.

- **Conductive** - Able to conduct electrical current or heat.

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Contracture - Fibrosis (hardening) of the connective tissue in skin, muscle, or joint capsule that prevents normal mobility of the affected joint.

Dysphagia - Refers to any kind of difficulty in swallowing.

Edema - Excessive accumulation of serous fluid in tissue spaces or a body cavity.

Electrodes - Electrical lead or wire through which current may flow in and out.

Electromyography (EMG) - Diagnostic test that assesses the health of the muscles and the nerves controlling the muscles by recording the electrical activity of the muscles.

Externally - On the outside; in this case, on the skin.

Interferential Current Stimulation (ICS) - Type of electrical stimulation used for pain management, similar to a transcutaneous electrical stimulator (TENS), but allows the electrical impulses to have a deeper penetration of the tissue.

Muscle Spasm - A sudden, involuntary muscle contraction.

Muscle Tone - The amount of tension or resistance to movement in a muscle.

Neurological - Pertaining to the nerves or nervous system.

Occupational Therapy - Type of therapy or rehabilitation to assist patients to improve their ability to perform daily activities; most often is focused on the arms or hands.

Parkinson’s Disease - Slowly progressing disorder caused by damage to brain cells. Symptoms include tremor, or involuntary and rhythmic movements of the hands, arms, legs, and jaw, stiffness of the limbs, loss of spontaneous movement, and an unsteady walk.

Physical Therapy - Treatment of physical dysfunction or injury by the therapeutic exercise and the application of modalities, intended to restore or facilitate normal function or development.

Serous - Thin and watery.
Sequential - Consecutive; in regular succession without gaps.

Stroke - A cerebrovascular accident (CVA); death or injury to brain cells as a result of inadequate oxygen to the brain due to either blockage or rupture in a blood vessel that supplies blood to the brain.

Transcutaneous - To enter through the skin.

References


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