Functional Neuromuscular Electrical Stimulation and Other Electrical Stimulators

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Disclaimer

Highmark Health Options medical policy is intended to serve only as a general reference resource regarding coverage for the services described. This policy does not constitute medical advice and is not intended to govern or otherwise influence medical decisions.

POLICY STATEMENT

Functional neuromuscular electrical stimulation (NMES) involves the use of a device that transmits electrical impulse to the skin over selected muscle groups by way of electrodes. There are two categories of NMES. One is used to treat muscle atrophy and stimulates the muscle when the individual is in a resting state. The other, also known as functional electrical stimulation (FES), is used to enhance functional activity of neurologically impaired and spinal cord injured (SCI) patients.

H-wave stimulation is a form of electrical stimulation that differs from other forms of electrical stimulation, such as transcutaneous electrical nerve stimulation (TENS), in terms of its wave form. H-wave stimulation has been used for the treatment of pain related to a variety of etiologies, such as diabetic neuropathy, muscle sprains, temporomandibular joint dysfunctions, or reflex sympathetic dystrophy. H-wave stimulation has also been used to accelerate healing of wounds, such as diabetic ulcers.

Interferential stimulation is a type of electrical nerve stimulation that uses paired electrodes of two independent circuits carrying medium-frequency alternating currents. The electrodes are aligned on the skin so that the current flowing between each pair intersects at the underlying target. This maximizes the current permeating the tissues while minimizing unwanted stimulation of cutaneous nerves.

DEFINITIONS

Highmark Health Options (HHO) – Managed care organization serving vulnerable populations that have complex needs and qualify for Medicaid. Highmark Health Options members include individuals and families with low income, expecting mothers, children, and people with disabilities. Members pay nothing to very little for their health coverage. Highmark Health Options currently serves Delaware Medicaid: Delaware Healthy Children Program (DHCP) and Diamond State Health Plan and Health Plan Plus members.

POLICY POSITION

Use for Walking in Patients with Spinal Cord Injury (SCI)

A functional electrical stimulator (FES) for SCI (e.g., Parastep® Ambulation System) may be considered medically necessary for individuals with a diagnosis of paraplegia and who meet ALL of the following criteria:

- Individuals with intact lower motor units (L1 and below) (both muscle and peripheral nerve); and
- 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; and
- Individuals that demonstrate brisk muscle contraction to NMES; and
- Individuals that possess high motivation, commitment and cognitive ability to use such devices for walking; and
- Individuals that can transfer independently and can demonstrate standing tolerance for at least 3 minutes; and
- Individuals that can demonstrate hand and finger function to manipulate controls or have an attendant available that can manipulate the controls; and
- Individuals with at least 6-month post recovery spinal cord injury and restorative surgery; and
- Individuals without severe, untreated hip and knee degenerative disease that prohibits them from the joint range of motion necessary for ambulation and no history of long bone fracture secondary to osteoporosis; and
- Individuals that have demonstrated a willingness to use the device long-term.
- Individuals with SCI must have completed a training program which consists of physical medicine sessions with the device, (Parastep® Ambulation System) over a period of three (3) months.

FES for SCI individuals is contraindicated for ANY ONE of the following:

- Cardiac pacemakers; or
- Severe scoliosis or severe osteoporosis; or
- Skin disease or cancer at the area of stimulation; or
- Irreversible contracture; or
- Autonomic dysreflexia triggered by FES or the ambulation system.

FES for SCI individuals not meeting the above criteria is considered not medical necessary.

FES is considered experimental/investigational and therefore noncovered for all FES devices except for the Parastep System because the safety and/or effectiveness of this service cannot be established by the available published peer-reviewed literature.

Treatment of Muscle Atrophy

Functional neuromuscular electrical stimulation (NMES) may be considered medically necessary for treatment of disuse atrophy where nerve supply to the muscle is intact, including brain, spinal cord and peripheral nerves, and other non-neurological reasons for disuse are causing atrophy. Some examples would be casting or splinting of a limb, contracture due to scarring of soft tissue as in burn lesions, and hip replacement surgery (until orthotic training begins). NMES for any other indication is considered experimental/investigational and, therefore, noncovered.

Supplies

Supplies for NMES may be considered medically necessary when NMES is considered medically necessary and annual documentation is noted in the individual's medical record. Supplies for NMES for any other indication is considered not medically necessary and therefore, noncovered.

NONCOVERED SERVICES

H-wave Electrical Stimulation

H-wave stimulation is considered experimental/investigational and therefore, noncovered, because the safety and/or effectiveness of this service cannot be established by the available published peer-reviewed literature.

Interferential stimulation is considered experimental/investigational and therefore noncovered because the safety and/or effectiveness of this service cannot be established by the available published peer-reviewed literature.

ELIGIBLE PROCEDURE CODES

A4595	Electrical Stimulator supplies, 2 Lead, Per Month (e.g., Tens, Nmes).
E0745	Neuromuscular Stimulator, Electronic Shock: unit, Nonclinical Model.
E0764	Functional neuromuscular Stimulation, Transcutaneous Stimulation Of Sequential Muscle Groups 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.

Noncovered Procedure Codes

A4556	Electrodes, (e.g., Apnea Monitor), Per Pair.
A4557	Lead Wires, (e.g., Apnea Monitor), Per Pair.
S8130	Interferential Current Stimulator, 2 Channel.
S8131	Interferential Current Stimulator, 4 Channel.

Eligible Diagnosis Codes for Procedure Code E0764

G04.1	G82.20	G82.21	G82.22	

References

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