Functional electrical stimulation for rehabilitation following spinal cord injury

HAYES, Inc

Record Status
This is a bibliographic record of a published health technology assessment. No evaluation of the quality of this assessment has been made for the HTA database.

Citation

Authors' conclusions
Health Problem: Spinal cord injury (SCI) is typically the result of trauma. Automobile accidents are the most common cause, with falls and violence (primarily gunshot wounds) next in frequency. Various studies of the prevalence of SCI in the United States for the year 2016 have reported estimates between 243,000 and 347,000 persons. Although SCI used to occur primarily in young adults, the current average age at injury is 42.0 years. Cases are reported predominately in men (80%). Technology Description: Functional electrical stimulation (FES) is the direct application of safe levels of electric current to intact nerve fibers in a coordinated fashion to cause involuntary, but purposeful, muscle contraction. FES has 2 primary clinical applications in patients with SCI – therapeutic and functional. Therapeutic FES enables exercise, typically resistive, with the goal of preventing muscular atrophy and promoting cardiovascular conditioning. Functional FES enables or enhances standing, ambulation, grasping, pinching, reaching, respiration, bowel or bladder voiding, and ejaculation. The 2 goals of FES are mutually supportive. Controversy: Although there is some positive evidence that FES may lead to improved health outcomes in adult patients with complete SCI, the data are mixed in incomplete SCI and pediatric populations. In addition, well-designed studies reporting the effectiveness and safety of long-term use of FES are needed. Key Questions: Does functional electrical stimulation (FES) improve physical status, function, and quality of life (QOL) in patients with spinal cord injury (SCI)? How does FES compare with standard therapy alone (e.g., physical therapy [PT] or occupational therapy [OT]) for improving physical status, function, and QOL in patients with SCI? Is FES safe? Have specific patient selection criteria for FES been established?

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Address for correspondence
HAYES, Inc., 157 S. Broad Street, Suite 200, Lansdale, PA 19446, USA. Tel: 215 855 0615; Fax: 215 855 5218 Email: hayesinfo@hayesinc.com

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