

# Kinesiotherapy

The results of [kinesiotherapy](#) treatment in patients after [incomplete spinal cord injury](#) (iSCI) are inconclusive, mostly due to different, subjective evaluation methods. A study aimed to evaluate the range of functional regeneration in long-term 13 months follow-up using comparative neurophysiological tests after uniform kinesiotherapy in patients with thoracic iSCI.

Material and methods: Comparative tests were performed of sensory perception in dermatomes Th1-S1, electromyography (at rest-rEMG and during maximal contraction-mcEMG) in the muscles of the trunk and lower extremities, electroneurography (ENG) of the motor fibers of the lower extremities, and motor-evoked potential induced transcranially (MEP) before and after treatment in 25 iSCI patients. All subjects were treated with the same kinesiotherapeutic procedures.

A moderate increase was found in amplitudes in rEMG and mcEMG recordings from the rectus abdominis and rectus femoris muscles, MEPs amplitudes, and amplitudes after peroneal nerve stimulations in ENG studies. There was no improvement in sensory perception.

Following the proposed kinesiotherapy [algorithm](#), patients after thoracic iSCI presented a moderate more motor than sensory functions improvement. Applied neurorehabilitation evoked normalization of muscle tension, moderate improvement of rectus abdominis and rectus femoris muscles motor units activity, and motor central and peripheral neural impulses transmission. The comparative neurophysiological assessment provides more precise and objective insight into the functional status of afferent and efferent systems than the classical clinical approach in iSCI patients <sup>1)</sup>.

<sup>1)</sup>

Wincek A, Huber J, Leszczyńska K, Fortuna W, Okurowski S, Tabakow P. Results of a long-term uniform system of neurorehabilitation in patients with incomplete thoracic spinal cord injury. *Ann Agric Environ Med*. 2022 Mar 21;29(1):94-102. doi: 10.26444/aaem/135554. Epub 2021 Apr 15. PMID: 35352911.

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