Functional Magnetic Stimulation propelled cycling of paretic patients
(Comparison of FES with FMS)

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Abstract

Since surface magnetic stimulation (FMS) of the leg musculature achieved torques comparable to those achieved by electrical stimulation, but at a lower level of pain, the question arises whether FMS produces more work or improves the smoothness of stimulation-supported or -assisted cycling of paralyzed legs with and without preserved sensibility. Eight patients with complete SCI and six patients with hemiplegia and preserved sensibility underwent isometric measurement and ergometric cycling experiments using FES and FMS stimulation of the legs. Different patterns of applicability of FMS could be outlined: 1) patients with complete SCI did not benefit from FMS (compared to FES, torque and work did not increase), 2) patients with hemiplegia and preserved sensibility could improve their torque output, and the smoothness of pedaling, and to a lesser extent the ergometric work produced.

References


Acknowledgements

This work was supported by the Else-Kröner-Fresenius Foundation.