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**USING THE HUBER TECHNIQUE IN PHYSICAL
MEDICINE AND REHABILITATION**

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PURPOSE Rehabilitation using the HUBER® device allows for a global muscular strengthening and important proprioceptive work. Various neurological and orthopedic pathologies are considered to be able to benefit from this unique device. The study (randomized controlled trial) evaluated the possibilities of using HUBER® in a rehabilitation centre. Neurological and locomotor pathologies were the targets for this trial. A specific benefit of this training method for multiple sclerosis (MS) rehabilitation was also assessed.

MATERIAL AND METHODS The first step consisted of realizing simple treatment protocols intended for various pathologies in order to establish specific training protocols (more than 60 patients undertaking more than 400 training sessions). The pathologies studied at the CNRF were: multiple sclerosis, Parkinson disease, lower limbs amputations, hip and knee arthroplasty. During this phase, the patients' performance capacity on the HUBER® device was evaluated.

EVALUATION OF RESULTS: clinical evaluation and basic tests (particularly the MIF, the walking test and the stabilometric test) were evaluated.

The second phase consisted in a randomized, controlled, cross-over clinical trial in order to specify the effect of this rehabilitation technique on patients with multiple sclerosis (20 patients suffering from multiple sclerosis in non-active periods with weak or moderate motor deficits: EDSS < 7 ; 10 training sessions; 1 session/week). Evaluation of results: stabilometric test; 10m walking test; neurological assessment; evaluation scale: EDSS, FIM; patient performance with HUBER®.

RESULTS For the first step: training on HUBER® is possible in a satisfactory and efficient safety context for persons over 80 years of age and with severe motor disabilities. Positive effect on balance, important proprioceptive training for the trunk and the 4 limbs, global work of trunk and limbs

musculature (recruitment of all muscular chains) and intense solicitation of psychomotor functions were the main observations. The technique was very well accepted by the patients (a rewarding training program).

For the second step: after training on HUBER® MS patients showed significant improvements in walking ability (walking speed) and a net negative correlation was noticed between walking improvement, and both sensory impairment and functional level before the study.

CONCLUSION In addition to global muscular work, the training with HUBER® system allows for the improvement of proprioception and balance in a very specific way. An intense and unique call for psychomotor function was also demonstrated. The range of applications of HUBER® in physical and rehabilitation medicine is, therefore, very broad. Specifically, for patients with multiple sclerosis, an improvement of walking speed is noticed after 10 light training sessions with HUBER®.