

## Liste-17

### **THE HANDMASTER NMS1 SURFACE FES NEUROPROSTHESIS IN HEMIPLEGIC PATIENTS**

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Purpose: To evaluate the efficacy of a new treatment modality for the plegic upper limb and correlate the outcome and benefits of the treatment with the initial condition of the patient.

Method: The Handmaster NMS1 is a surface FES system comprising a hand/forearm orthosis and portable control box. It activates the plegic hand, and is intended for use in the home or clinic. It is designed to be simple and fast to don and to operate. The device is programmed to provide three phased-patterned, therapy protocols, a functional hand "open" mode, and two hand prehension - release patterns for functional grasp/ release of objects. Clinical trials are ongoing in Israel, Europe and the USA on chronic hemiplegic patients. These are being conducted with similar protocols on neurologically stable patients in CVA, TBI, MS, and CP.

Results: to date of the multicenter "metastudy" have demonstrated a significant average reduction in spasticity (Ashworth scale), improvements in limb posture, improvements in both passive and active ROM, and functional gains in some cases (Franchay, Jebson-Taylor, Fugl-Meyer). Correlation is made between the pretreatment condition of the patient and the expected outcomes and benefits. Compliance in long-term device use is very high. In addition trials are ongoing in Israel on orthopaedic patients suffering hand trauma and surgery, and in the USA on restoration of upper limb function in SCI.