

Fletcher-Smith, Joanna C., et al, 2019 Abstract

Early ES To Prevent Post-Stroke Complications In The Paretic Arm

Objective

To establish the feasibility of initiating **electrical stimulation (electrostimulation ES)** treatment of wrist extensors and flexors in patients early after stroke to prevent painful muscle contractures.

Results

The study was able to demonstrate that it is feasible to recruit patients early after stroke (within 72 hours) and for physiotherapists and occupational therapists to initiate **ES** treatment of the wrist and finger extensor and flexor muscles with considerable improvement in function. Furthermore, once treatment was initiated it was possible to continue to deliver treatment in a way that was compliant with the protocol.

Participants and Researchers

Forty patients (mean age was 72) with stroke and arm hemiparesis, recruited within 72 hours after stroke, participated in the study.

The researchers were: *Joanna C Fletcher-Smith, Kate Allatt, Nikola Sprigg, Marilyn James, Sonia Ratib, Carla Richardson and Janet Boadu*, all from the Faculty of Medicine and Health Sciences, University of Nottingham, Nottingham, England; *Dawn-Marie Walker*, School of Health Sciences, Highfield Campus, University of Southampton, Southampton, England; and *Anand Pandyan*, School of Health and Rehabilitation, Keele University, Keele, England.

Methods

Participants were randomised to receive usual care or usual care and **ES** to wrist flexors and extensors for 30 minutes, twice a day, five days a week for three months. Initial treatment was delivered by an occupational therapist or physiotherapist who trained the patient to self-manage subsequent treatments.

For the electrical stimulation treatment the researchers and therapists used **NeuroTrac Rehab** devices (Verity Medical) to perform the intervention treatment.

The outcome data on wrist range of motion, pain, arm function, independence, quality of life and resource use were measured at three, six, and 12 months post-randomisation, with the results finding significant improvement among the participants.

The full abstract can be found at <https://pubmed.ncbi.nlm.nih.gov/31423822/>.