

Early non-invasive brain stimulation with modified constraint-induced movement therapy for motor and functional upper limb recovery in stroke patients: Study protocol

By: [Garrido, MA](#) (Garrido, Maricel A.)^[1]; [Alvarez, EA](#) (Alvarez, Evelyn A.)^[2]; [Acevedo, FL](#) (Acevedo, Fabrizio)^[3]; [Moyano, AI](#) (Moyano, Alvaro)^[1]; [Castillo, NP](#) (Castillo, Natalia)^[1]; [Cavada, GA](#) (Cavada, Gabriel)^[4]

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Abstract

Introduction

Upper limb motor impairment after a stroke is an important sequela. Constraint-induced movement therapy is a rehabilitation approach that has strong evidence. The incorporation of transcranial direct-current stimulation has been proposed; however, there is a lack of studies that confirm its benefits. The principal aim is to compare the effectiveness of 7 days of active versus sham bi-hemispheric transcranial direct-current stimulation, combined with modified constraint-induced movement therapy, for motor and functional recovery of the hemiparetic upper limb in subacute stroke patients.

Method/design

Randomized, double blind, sham-controlled, parallel group clinical trial in two stroke units. Participants: adults over 18 years, at least 2 days post unihemispheric stroke event, with hemiparesis, and without severe pain, aphasia or cognitive impairment. Intervention: Patients will receive 7 days of continuous therapy and be assigned to one of the treatment groups: active bi-hemispheric transcranial direct-current stimulation or sham bi-hemispheric transcranial direct-current stimulation. Measurement: Evaluations will take place at days 0, 5, 7 and 10, and at 3rd months. The Fugl-Meyer Assessment - Upper Extremity, Wolf Motor Function Test, Functional Independence Measure and Stroke Impact Scale are considered.

Discussion

Modified constraint-induced movement therapy plus transcranial direct-current stimulation in subacute stroke patients with hemiparesis could maximize motor and functional recovery.

Keywords

Author Keywords:[Stroke](#); [non-invasive brain stimulation](#); [upper limb](#); [constraint-induced movement therapy](#); [occupational therapy](#); [early rehabilitation](#)

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Author Information

Reprint Address: Garrido, MA (reprint author)

Serv Med Fis & Rehabil, Ave Santos Dumont 999, Santiago 8380456, Chile.

Addresses:

- + [1] Univ Chile, Hosp Clin, Phys Med & Rehabil Med Serv, Santiago, Chile
- + [2] Univ Chile, Occupat Therapy & Occupat Sci Dept, Santiago, Chile
- [3] Hosp Clin San Jose, Phys Med & Rehabil Med Serv, Santiago, Chile
- + [4] Univ Chile, Sch Publ Hlth, Santiago, Chile

E-mail Addresses:mgarridom@hcuch.cl

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