

**Effect of immediate hand training post transcranial  
magnetic stimulation on hand weakness in patients with  
stroke**

A thesis submitted for partial fulfillment  
of Master degree in Neurology

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## **Abstract**

**Background** : Hand dysfunction is a common long lasting disability after stroke affecting the daily life activities .Transcranial magnetic stimulation (TcMS) improve hand motor recovery . **Aim of the work** :to identify whether immediate hand exercise post TcMS improve hand recovery more than TcMS alone and its relations to risk factors and stroke site. **Patients and Methods:** One Hundered patients with ischemic stroke were assigned into two groups. The group 1 received combined low frequency / high frequency (LF/HF) repetitive transcranial magnetic stimulation followed immediately by hand exercise .The patients in the group 2 received combined LF/HF repetitive transcranial magnetic stimulation only ,three sessions per week, for 3 weeks .Hand power was assessed by medical research council of muscle power (MRCS). Hand function was assessed by hand grip dynamometer. Assessment was done pre and 1 , 3 months post treatment for both groups.

**Results:**Hand grip power significantly improve post transcranial magnetic stimulation more when combined with immediate exercise post TcMS p (0.04).

**Conclusion:** Repetitive Transcranial Magnetic Stimulation combined with immediate hand exercise significantly improve power and function of affected hand of patients with acute ischemic stroke.

**Keywords** : Repetitive transcranial magnetic stimulation,Hand exercise , Hand grip dynamometer, ischemic stroke.