Title	Repetitive transcranial magnetic stimulation as a treatment for articulatory dysfunction in Parkinson's disease
Author(s)	Murdoch, BE; Ng, ML; Barwood, CHS
Citation	The Conference on Motor Speech, Santa Rosa, CA., 29 February-4 March 2012.
Issued Date	2012
URL	http://hdl.handle.net/10722/160640
Rights	Creative Commons: Attribution 3.0 Hong Kong License

Repetitive transcranial magnetic stimulation as a treatment for articulatory dysfunction in Parkinson's disease

B. E. Murdoch, M. L. Ng, C. H. S. Barwood

Neuroimaging has demonstrated that improved speech outcomes in Parkinson's disease (PD) subsequent to behavioral treatment approaches is associated with increased activity in the motor and pre-motor cortex. High frequency repetitive transcranial magnetic stimulation (rTMS) is capable of modulating cortical activity and has been reported to have significant benefit to general motor function in PD. It is possible therefore, that high frequency rTMS may also have beneficial outcomes on speech production in PD. High frequency (5Hz) rTMS was applied to 10 active stimulation and 10 sham placebo participants with idiopathic PD for 10 min per day (3000 pulses) for 10 days and speech outcome measures and lingual kinematic parameters recorded at baseline, 1 week, 2 months and 12 months post-stimulation. The findings demonstrated positive treatment-related changes observed in the active rTMS group when compared to the sham placebo control group at 2 months and 12 months post-stimulation in speech intelligibility, communication efficiency ratio, maximum velocity of tongue movements and distance of tongue movements. The results support the use of high frequency rTMS as a therapeutic tool for the treatment of articulatory dysfunction in PD.