

## RTMS OF THE DORSOMEDIAL PREFRONTAL CORTEX ACHIEVES ROBUST AND DURABLE IMPROVEMENTS IN REFRACTORY OBSESSIVE-COMPULSIVE DISORDER

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Patients with Obsessive-Compulsive Disorder (OCD) often show minimal response to either pharmacotherapy or psychotherapy. Repetitive transcranial magnetic stimulation (rTMS) is being explored as a new treatment for OCD. rTMS targeting the dorsolateral prefrontal cortex (DLPFC) has not shown robust efficacy; however, neuroimaging studies of OCD have shown more consistent volumetric grey matter reductions along the medial rather than the lateral prefrontal cortex, specifically in the dorsomedial prefrontal cortex (DMPFC). rTMS targeting medial motor areas such as the supplementary motor area (SMA) and pre-SMA has shown some efficacy in OCD. However, the DMPFC proper, just anterior to the pre-SMA, has not previously been targeted. We have previously used a novel rTMS technique to target DMPFC with robust effects in refractory depression. Here we apply this technique in an open-label series of 10 consecutive patients with refractory OCD. Under MRI-guidance, patients received bilateral DMPFC-rTMS at 10 Hz, 120% resting motor threshold, 6000 pulses per day for 20 - 30 sessions over 4-6 weeks. Robust improvements were achieved, with YBOCS scores dropping by more than half in the large majority of cases and full remission achieved in several cases. Scores continued dropping after treatment in some cases, suggesting durable improvements in capacity to suppress intrusive thoughts and behaviours. Improvements were durable at 3-6 months. Pre- and post-treatment functional MRI revealed changes in resting-state connectivity to DMPFC following treatment. A sham-controlled trial may be warranted as a next step. If successful, DMPFC-rTMS may represent a new, effective therapeutic option in refractory OCD.