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REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION INFLUENCES MOOD IN HEALTHY MALE VOLUNTEERS

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Introduction: The influence of repetitive transcranial magnetic stimulation (rTMS) on mood in healthy people is uncertain, as former studies show divergent results. Previous studies in healthy volunteers focused exclusively on the immediate effect of a single session of rTMS on mood.

Aims: The aim of this study was to analyse the influence on mood of a series of 9 High Frequency (HF) rTMS stimulations of the left dorsolateral prefrontal cortex (DLPFC).

Methods: 44 young healthy male volunteers were randomly assigned to receive 9 sessions of active HF-rTMS (n = 22) or sham rTMS (n = 22) over the left DLPFC. Each session in the active group consisted of 15 trains of 25 Hz starting with 100% of motor threshold. Sham stimulation was performed following the same protocol, but using a sham coil. The variables of interest were the Beck Depression Inventory (BDI) and Visual Analogue Scales (VAS) which quantified "mood", "enjoyment" and "energy".

Results: We found a significant reduction of the BDI score in the active group (GLM, $p < 0.001$) whereas no significant changes of the BDI score were caused by sham stimulation (GLM, $p = 0.109$). We did not find significant differences caused by active or sham stimulation in VAS scales except for the VAS labelled lively/gloomy immediately after stimulation. The active group was found to be more "gloomy" ($p = 0.001$).

Conclusions: Our data support the hypothesis that a 9-day long series of HF-rTMS of the left DLPFC improves mood, analysed by BDI in healthy young men.