

## 治療によりうつ病患者の認知機能が改善する

経頭蓋磁気刺激 (TMS) 療法は大うつ病患者の認知機能を改善する

Transcranial magnetic stimulation (TMS) therapy improves cognitive function in patients with major depressive disorder

経頭蓋磁気刺激 (TMS) 療法は大うつ病患者の総合的な認知機能および短期の言葉の記憶を改善したと第162回American Psychiatric Association学会で発表された。認知機能は薬物治療に抵抗性の大うつ病患者におけるNeuroStar TMS療法の多施設無作為化コントロールトライアルにおいて評価した (有効なTMS群155人、シャムTMS群146人)。全体的な認知機能、短期および長期の記憶に関する特異的な計測 (それぞれMini Mental Status Examination、Buschke Selective Reminding Test、Autobiographical Memory Interview-Short Form) を初回治療前、TMSを毎日施行する集中治療コース期間中の4および6週の時点で行った。6週終了後に各治療群の臨床経過で分類した。TMS群のみにおいては、TMSが有効であった者において無効であった者と比較し、Buschke Selective Reminding Testにおける短期記憶 (4週目 $P=0.0116$ ; 6週目 $P=0.0038$ ) および長期記憶 (4週目 $P=0.0463$ ; 6週目 $P=0.0012$ ) が統計学的に有意に改善した。この認知機能改善はプラセボ投与患者では認められなかった。

### Full Text

Transcranial magnetic stimulation (TMS) therapy improved both overall cognitive function and short-term verbal memory in patients with major depressive disorder according to research presented at the 162nd Annual Meeting of the American Psychiatric Association.

Diminished ability to think, concentrate, and make decisions is a core symptom of depression. This is often further worsened by some common depression treatments, such as some classes of medications. Most notably, electroconvulsive therapy (ECT), while extremely effective, has high rates of cognitive impairment and long-term or even permanent memory loss.

"In this study, NeuroStar TMS Therapy demonstrated no negative effect on cognition, and evidence suggests that it may even improve certain cognitive functions in depressed patients," said psychiatrist Phil Janicak, M.D., Professor of Psychiatry at Rush University-Chicago and a principal investigator of the trial. "Many patients, by virtue of their depression, already have diminished cognitive functioning. Receiving an effective treatment like TMS, which appears to have no adverse cognitive effects, may benefit millions of people who require alternate treatment options," Janicak added.

Cognitive function was examined in a multi-site, randomized controlled trial of NeuroStar TMS Therapy in patients with pharmacoresistant major depressive disorder (N=155 active TMS, N=146 sham TMS). Specific measures of global cognition (Mini Mental Status Examination), short-term (Buschke Selective Reminding Test) and long-term memory (Autobiographical Memory Interview-Short Form) were obtained prior to first treatment, and at four and six weeks during an acute treatment course of daily TMS. The results showed no significant difference between active TMS and placebo TMS treatment conditions on any of these measures of cognitive function, which indicates that NeuroStar TMS Therapy had no negative effect on cognition.

Additionally, each treatment group was stratified by clinical outcome (HAMD24 responder) at the end of six weeks. Within the TMS group only, there was a statistically significant improvement on the Buschke Selective Reminding Test in the TMS responders compared to TMS non-responders for both short-term recall ( $P = 0.0116$  at four weeks;  $P = 0.0038$  at six weeks) and delayed recall ( $P = 0.0463$  at four weeks;  $P = 0.0012$  at six weeks). This improvement in cognitive function was not seen in placebo-treated patients.

"We believe that the reason for the lack of negative cognitive effects with NeuroStar TMS Therapy is likely due to the focused stimulation of a key brain region, rather than the whole brain effects of both medications and ECT," said Mark A. Demitrack, M.D., Chief Medical Officer for Neuronetics Inc., a psychiatrist, and the study's lead author. "The fact that NeuroStar caused no negative effects on cognition, and appeared to improve some measures of cognition in some patients, is a testament to the safety of this new non-systemic and non-invasive treatment option."

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