

TMS TRENDS

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GLOBAL TMS RECOGNITION

Over the past few years, TMS has been gaining traction both in the US as well as on the global scale. Recently, the South Korea Ministry of Food and Drug Safety (MFDS) has adopted the use of NeuroStar TMS Therapy for major depressive disorder in Korea. In total, NeuroStar TMS treatment is now available in 550 sites worldwide. In addition to Korea, NeuroStar TMS Therapy is now offered in Japan and Dubai and, most recently, Singapore.

LEARNING MORE ABOUT HOW TMS WORKS

TMS has proven to be clinically effective in the treatment of major depressive disorder as well as anxiety, PTSD, and other neurological disorders. The underlying mechanisms for this improvement, however, remain largely unclear.

A recent study by Lee et al. (2013) published in the journal *Brain Research* looked at the use of repetitive transcranial magnetic stimulation (rTMS) on an animal model of Parkinson's disease (PD). Treating rats with PD using rTMS protocols for four weeks, researchers noted significant improvement on behavioral assessments as well as overall energy level, measured through the use of a treadmill.

The most pivotal implication, however, arose from the cellular-level findings (Lee et al., 2013). Brain-derived neurotrophic factor (BDNF) is a protein that acts on brain cells to support their growth and survival; in this study, it is suggested that the use of rTMS increased the effects of BDNF, leading to the improvement in motor and behavioral health in the rats. Although further research is needed, the overall outcomes of this study provide insight into how TMS functions and its promise for further clinical application.

DIVORCE: A RISK FACTOR FOR MEN'S HEALTH

Although from a cultural standpoint men are typically viewed as less affected by psychological or social trauma than women, studies have shown that they may not be as unaffected as once thought. According to a recent article published in *Journal of Men's Health*, divorced men are at significantly higher risk for depression, substance abuse, social isolation, and even mortality.

These findings indicate the need for further study into the psychosocial impacts of divorce and other marital disruptions on men, and how to provide the most effective support and treatment for affected individuals.

ANTIDEPRESSANTS INCREASE RISK OF TYPE 2 DIABETES

Although antidepressant medications are not without side effects and potential risk factors, risk of developing diabetes is not typically considered when electing to start treatment for depression. A review of several studies published in *Diabetes Care* now points to heightened risk of compromised glucose metabolism in users of certain antidepressant medications. This is especially concerning in the US, in which a third of all prescribed medications are antidepressants.

More research is needed; however, one study found that this risk nearly doubled with the concurrent use of tricyclic antidepressants (TCAs) with selective serotonin reuptake inhibitors (SSRIs). These findings are vital for both doctors and patients: physicians should inform patients of and monitor for diabetes symptoms, and patients should be aware of the potential risks of the drugs they are prescribed. Additionally, it may be more important than ever to consider lower-risk alternatives to drugs in the treatment of depression, such as TMS Therapy.

Happy Thanksgiving from the TMS Institute of Pennsylvania!