

**NEURO  
MODULATION**

neuroConn   
Technology

## Transcranial Magnetic Stimulation (rTMS) Sustainable help - even in therapy-resistant depression

non-medication and evidence-based, according to  
international guidelines on unipolar depression

### What is rTMS and how does it work?

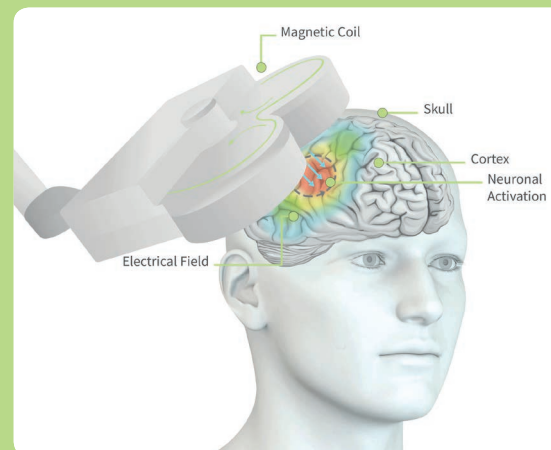
Scientific research shows that depression is linked to an underarousal of the frontal lobe (the dorsolateral prefrontal cortex - DLPFC), and a disruption in communication between the DLPFC and the deeper anterior cingulate cortex (sgACC). Repeated sessions of repetitive Transcranial Magnetic Stimulation (rTMS) of the DLPFC can improve the communication between these two structures, thereby decreasing depressive symptoms for up to 6 - 12 months. A noticeable antidepressant effect is usually achieved within 10 to 12 sessions of rTMS.

rTMS therapy works equally well in patients who do not respond to medication, presenting a real alternative for these patients, in particular.

In rTMS, a strong magnetic field is applied to the target area of the cerebral cortex via a coil from outside the head. This causes the electrical activity of the region to be either increased or inhibited.

rTMS is an internationally recognized method of non-invasive neuromodulation. The method has been approved by US and UK health authorities for several years and Dutch health insurance funds have covered the costs since 2017. In Germany, rTMS is now part of the S3 guidelines on unipolar depression therapy.

Please find a list of the most important studies on the back.



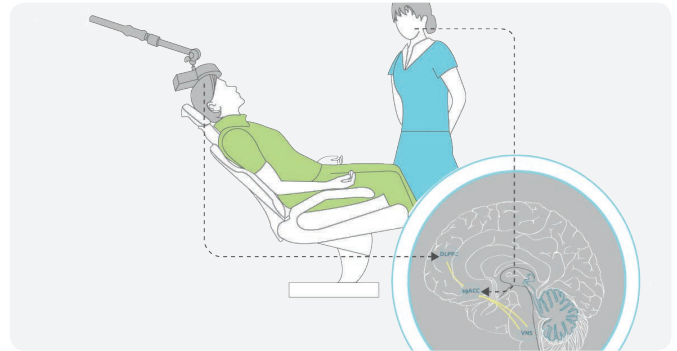
rTMS is non-invasive. The magnetic coil is positioned over the head.

### Safety of rTMS

- is regarded as a safe and well-tolerated treatment with only scarce and mild side effects
- known side effects are: mild discomfort at place of stimulation, mild headache, extremely rare epileptic seizures
- suitable for all patients with unipolar depression and dysthymia
- application only in conscious adult patients
- application only by physicians and psychologists educated in the use of rTMS in humans



Our rTMS systems meet the requirements of the health authorities in several countries.



rTMS can strengthen and stabilize the effect of CBT for long-term results.

## rTMS technology for depression therapy in your clinic

neuroCare has been offering rTMS in the treatment of psychiatric disorders since 2006 in our own international network of Clinics and has gained a lot of experience in the clinical application of rTMS. We can help you successfully incorporate rTMS into your clinical practice, offering:

- expert advice on equipment for your practice and your specific needs: Deymed DuoMAG XT, MagVenture MagPro®, Brainsway Deep TMS, rTMS chair
- expert advice on methodological procedures: high frequency rTMS, low frequency rTMS, intermittent Theta Burst Stimulation (iTBS), deep TMS (dTMS), navigated TMS with Brainsight® TMS or with neuro-cardiac guided rTMS
- specialized courses and clinical supervision

### COURSES TRAINING

neuroCademy  
Training & Science



neuroCademy offers rTMS courses at different locations.

The **2-days-course rTMS** is for clinicians and academics who consider using rTMS combined with psychotherapy in the treatment of depression, OCD and other indications or in research settings. In addition to the theoretical part, there is time dedicated to hands-on training with different types of rTMS equipment.

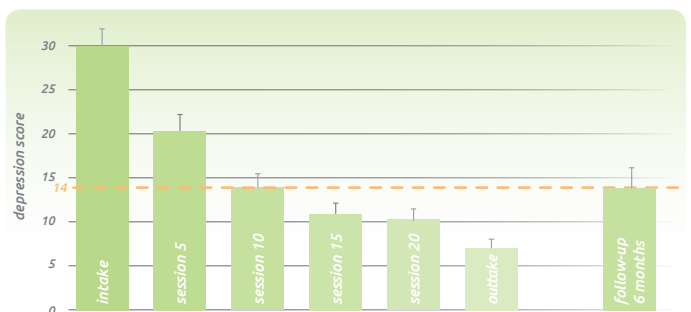
This course is accredited by Bayerische Landesärztekammer and Bayerische Landespsychotherapeutenkammer in Germany and by the Dutch Association for Psychiatry (NVVP) and Psychology (FGzP).

Details and dates: [www.neurocademy.com](http://www.neurocademy.com)

## Highly effective combination: rTMS and cognitive behavioural therapy (CBT)<sup>1</sup>

The combination of rTMS und CBT leads to better results than both stand-alone methods:

- 196 patients; rTMS with 10 Hz or 1 Hz, 1,200 – 1,500 pulses per session; simultaneous CBT; at least 10 sessions à 50 min.
- **outtake: 66 % response rate** (vs. monotherapies with rTMS 58 % and with CBT 48 %) and **56 % of patients in remission** (vs. monotherapies with rTMS 37 % and with CBT 43 %)
- **6 months follow-up: still 63 % response rate and 53 % of patients in remission**



Values below 14 points on the Beck-Depression-Inventory suggest that no clinical relevant depression is currently present.

## Overview of most important publications on rTMS in depression

- efficacy/safety of TMS in the Acute Treatment of MDD. O'Reardon et al., Biol. Psychiatry 2007
- daily left prefrontal TMS of MDD. George et al., Arch Gen Psychiatry 2010
- evidence-based guidelines on therapeutic use of rTMS. Lefaucheur et al., Clin. Neurophysiol. 2014
- cost effectiveness: rTMS vs. antidepressants after first treatment failure for MDD - lifetime analysis. Voigt et al., PLoS One 2017
- 1 simultaneous rTMS and psychotherapy in MDD. Donse et al., Brain Stimul. 2017
- efficacy/safety of dTMS in MDD. Levkovitz et al., World Psychiatry 2015
- More studies at: [www.neurocademy.com](http://www.neurocademy.com)

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