Doelgroep: gezonde proefpersonen

Title of the study	rTMS induced Brain-Heart Coupling: Implications for site selection and frontal thresholding?
Describe your study in two sentences (max. 500 characters)	rTMS-induced brain-heart coupling (BHC), or neuro-cardiac-guided (NCG) TMS 2.0, might be used to optimize rTMS target engagement and probing of the frontal threshold. We will investigate NCG TMS 2.0 in 10 healthy subjects, after which we will implement this method in a 3-site prospective trial to investigate whether BHC will increase the effectiveness of rTMS treatment for depression.
Principle investigator (PI) + Instituut	Alexander Sack, University of Maastricht
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Co-investigators + Institutes	Martijn Arns, Brainclinics
Study period	2021-2024
Status of project	Recruitment finished but follow-up ongoing
Funding	None
Number of participating centers	1
Link to study website	n.a.
Link to trial registration	n.a.
Research question(s)	Can rTMS-induced brain-heart coupling be used for site selection and frontal thresholding?
Study population (disorder)	Healthy subjects
Total sample size (as in METC protocol)	10
Neuromodulation modality	rTMS (including TBS)
TMS hardware	MagVenture, Deymed
Coil type	Butterfly coil, MCF-B70
Sample size	10
Stimulation target	DLPFC
Method used for coil placement	Beam F3/F4, CM rule
Coil orientation	45 degrees
Frequency	10 Hz
Inter-train interval	11 seconds
Train duration	5 seconds
Number of pulses per session	1400
% of resting motor threshold	variable
Number of sessions	1

Frequency of sessions	n.a.
Primary outcome	Brain-heart coupling measure and heart rate deceleration
Secondary outcomes	heart rate variability measures
Inclusion criteria	Age 18-65
Exclusion criteria	All contra-indications for rTMS