NEUROTREND

***Neuro**logical MRI-based biomarkers for **tre**atment **n**avigation in **d**epression*

Introduction and objective

Major depressive disorder (MDD) is a severe neuropsychiatric disorder with a global *lifetime prevalence of 15% to 18%* [1]. Two-third of MDD patients remains symptomatic after first-line treatment and about one-third will not achieve remission after finishing four subsequent treatments [1,2]. We aim to:

- Identify MRI-based biomarkers to improve treatment decision-making using longitudinal outcome of major depressive disorder
- Conduct psychiatric evaluation of depression and related comorbidity using questionnaires and history taking
- Evaluate cognition using eye-tracking methods and psychometric assessment

MRI Protocol*

Type of MRI sequence	Purpose
Survey	Localization and planning
T1-weighted (MPRAGE)	Anatomy
T2-weighted (FLAIR)	White matter lesions, anatomy
T2-weighted (TSE)	High-resolution subcortical anatomy
T2*-weighted (SWI/QSM)	Iron, mircobleeds, large vessels, anatomy
Diffusion-weighted Imaging (DWI)	Anatomical connectivity
Resting-state fMRI (EPI)	Functional connectivity
Task-based fMRI (EPI)	Evoked brain activity
Microvascular MRI (IVIM)	Blood flow / micro vessels
	Estimated total time: 59 minutes

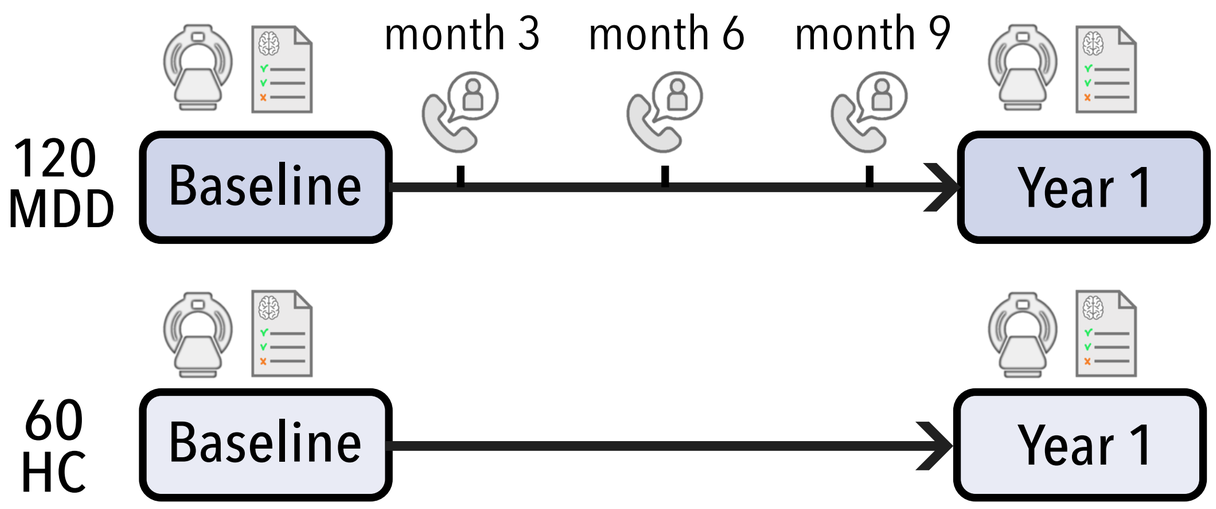
** Scanned with a Philips 3T Achieva scanner using compressed SENSE*

Psychiatric evaluation and cognitive assessments

- *History taking including medication*
- *DSM-5 Diagnosis and Specifiers*
- *Hamilton Depression Rating Scale (17 items)*
- *Hamilton Anxiety Rating Scale (14 items)*
- *Cognitive Emotional Regulation Questionnaire*

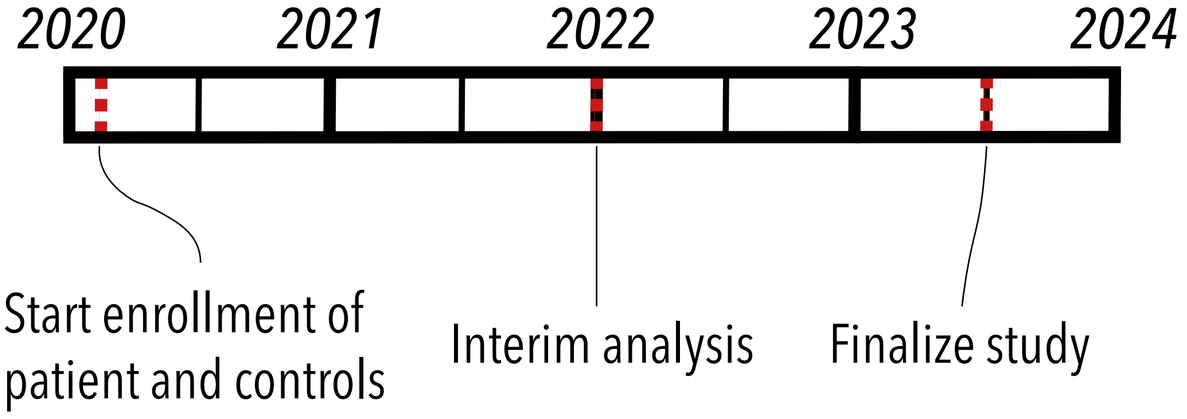
- *Eye-tracking*
- *Functional level of intelligence (RAVEN)*
- *Information processing speed (FEPSY)*
- *Episodic declaritive memory (RAVLT)*

Study design



= MRI Scan = Psychiatric evaluation, cognitive assessments = Remote follow-up

Milestones



Inclusion criteria

- *DSM-5 diagnosis of MDD*
- *Unipolar depression*
- *Age: 18-65 (m/f)*

Contact information

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[1] *Malhi, G. S., & Mann, J. J. (2018). Depression. The Lancet, 392(10161).*
[2] *Holtzheimer, P. E., & Mayberg, H. S. (2011). Stuck in a rut: Rethinking depression and its treatment. Trends in Neurosciences, 34(1).*