



Master thesis available!

Brain age in help-seeking individuals with risk factors for bipolar disorder

Bipolar disorder is a severe psychiatric disorder characterised by alternating depressive and manic episodes. Using current methods, patients are not correctly diagnosed until 8.7-12.4 years after the onset of symptoms, which can be associated with serious harms. Early-BipoLife (www.bipolife.org) is a multi-centre, longitudinal study of adolescents and young adults at risk of bipolar disorder¹. Brain magnetic resonance imaging (MRI) data were acquired at seven participating German university hospitals with early detection facilities.

Our group aims to search for biomarkers and predict the 2-year outcome². Bipolar disorder was associated with increased brain age³. On the other hand, brain age was not increased in young people with familial risk. Our cohort includes participants with multiple risk factors beyond familial risk. Are multiple risk factors for bipolar disorder associated with brain age? Is brain age associated with the 2-year outcome?

We provide...

- A **ready-to-use**, Freesurfer-preprocessed multi-site dataset of 276 MRI scans
- Intensive supervision and interaction with other master and/or PhD students
- Insights into the activities of the Early Recognition Center
- Participating on educational activities within the Transcampus Project IRTG "Risks and Pathomechanisms of Affective Disorders" (<https://transcampus.eu/>)

We require...

- Willingness to implement the brain age calculation with **photon-ai** (www.photon-ai.com), direct contact persons in the photon-ai lab will be provided
- Basic programming skills
- Willingness to write a publication for a journal with IF in English language

If you are interested, please send a short application to Pavol Mikolas, PhD, Department of Psychiatry and Psychotherapy: pavol.mikolas@uniklinikum-dresden.de

References:

- 1 Martini J, Bröckel KL, Leopold K, Berndt C, Sauer C, Maicher B *et al*. Young people at risk for developing bipolar disorder: Two-year findings from the multicenter prospective, naturalistic Early-BipoLife study. *European Neuropsychopharmacology* 2024; **78**: 43–53.
- 2 Mikolas P, Marxen M, Riedel P, Bröckel K, Martini J, Huth F *et al*. Prediction of estimated risk for bipolar disorder using machine learning and structural MRI features. *Psychol Med* 2023; : 1–11.
- 3 Van Der Markt A, Klumpers U, Dols A, Korten N, Boks MP, Ophoff RA *et al*. Accelerated brain aging as a biomarker for staging in bipolar disorder: an exploratory study. *Psychol Med* 2023; : 1–10.