

Phd/Postdoc position

Title of the position: Towards a mechanism-specific intervention of thalamo-limbic pain processing

Job position: Phd or Postdoc

Deadline of the application: 30th September 2023

Starting date: Fall / Winter 2023

Contract length: 3+ years

City: Mannheim

Country: Germany

Institute: Central Institute of Mental Health

Department: Psychiatry and Psychotherapy

Contact details:

Name of the PI: Prof. Dr. med. Dr. phil. Heike Tost

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Website of your institute/department: <https://www.zi-mannheim.de/en/research/departments-research-groups-institutes/psychiatry-psychotherapy/researchgroups-psychiatry-e/systems-neuroscience-psychiatry-e.html>

Description:

1. Project Summary: Adverse childhood experiences (ACEs) facilitate chronicity of pain and comorbidity with psychiatric disorders. The human-rodent tandem project B04 has already found that ACE-dependent thalamolimbic circuits facilitate chronic pain and psychiatric comorbidity. Now, we will investigate whether noninvasive bilateral stimulation (Eye Movement Desensitization and Reprocessing, EMDR) can desensitize thalamolimbic circuits and influence chronic pain and psychiatric symptoms in fibromyalgia patients through multimodal neuroimaging and daily life (e-diary and sensor-based) assessments. Findings from this project will help inform mechanism-based interventions for chronic pain patients with ACE.
2. References (3-5):
Bilek, E., Itz, M.L., Stossel, G., Ma, R., Berhe, O., Clement, L., Zang, Z., Robnik, L., Plichta, M.M., Neukel, C., Schmahl, C., Kirsch, P., Meyer-Lindenberg, A., Tost, H., 2019. Deficient Amygdala Habituation to Threatening Stimuli in Borderline Personality Disorder Relates to Adverse Childhood Experiences. *Biol Psychiatry* 86, 930-938.
Gan, G., Ma, R., Reichert, M., Giurgiu, M., Ebner-Priemer, U.W., Meyer-Lindenberg, A., Tost, H., 2021. Neural Correlates of Affective Benefit From Real-life Social Contact and Implications for Psychiatric Resilience. *JAMA Psychiatry* 78, 790-792.
Holz, N.E., Berhe, O., Sacu, S., Schwarz, E., Tesarz, J., Heim, C.M., Tost, H., 2023. Early Social Adversity, Altered Brain Functional Connectivity, and Mental Health. *Biol Psychiatry* 93, 430-441.

Renz, M.P., Zidda, F., Andoh, J., Prager, M., Sack, M., Becker, R., Ruf, M., Schmitgen, M.M., Wolf, R.C., Meyer-Lindenberg, A., Tost, H., 2023. Practical challenges of continuous real-time functional magnetic resonance imaging neurofeedback with multiband accelerated echo-planar imaging and short repetition times. *Hum Brain Mapp* 44, 1278-1282.

Tost, H., Reichert, M., Braun, U., Reinhard, I., Peters, R., Lautenbach, S., Hoell, A., Schwarz, E., Ebner-Priemer, U., Zipf, A., Meyer-Lindenberg, A., 2019. Neural correlates of individual differences in affective benefit of real-life urban green space exposure. *Nat Neurosci* 22, 1389-1393.

3. Methods that will be used: Structural and functional magnetic resonance imaging (sMRI, fMRI, fMRI-neurofeedback, DTI), real-life ambulatory assessments (e-diaries, accelerometry, ECG), psychological and clinical assessments
4. Cooperation partners: Prof. Dr. med. Jonas Tesarz, Dr. Sebastian Wieland, Prof. Dr. Andreas Meyer-Lindenberg, Prof. Dr. Rolf-Detlef Treede
5. Eligible qualifications: We are searching for a highly motivated and qualified M.Sc. student or Postdoc in cognitive neuroscience, psychology or neurobiology to fill a TV-L salary scale, pay grade E13, 65% (PhD student) or 100% (Postdoc) for up to 4 years to forge collaborative work within the Pain Sfb1158 community and abroad along with interest in translational neuroscience. We provide an international working environment with the working language of English (fluency required) but highly recommend a background in German as well. It is important the student has obtained (Postdoc) or will obtain (PhD student) profound method skills in multimodal neuroimaging and/or ambulatory assessments as this will be a requirement for the work proposed here. This candidate will be closely supervised by the PI, but must also demonstrate a high level of enthusiasm and independence.
6. Desirable skills: Programming skills (e.g. Matlab, R, PsychoPy, Presentation), experimental designs (psychological, fMRI), experience with MRI analysis packages (e.g., SPM, FSL), statistical analyses (e.g., SPM, SPSS, SAS), clinical skills
7. Key words: trauma, chronic pain, depression, anxiety, multimodal MRI, ambulatory assessment
8. Enclosures: The following documents must be enclosed with your application as a **single pdf file**: updated CV with publications, motivation letter, copies of degree certificates

Information for the applicant: For any updates and further information (for e.g: change of deadline of the application), please visit the consortium website career section:

<https://www.sfb1158.de/index.php/career-eng>