



Datum: 07.03.2012
Ort: Binzmühlestrasse 14, Raum BIN 3.D.27
Uhrzeit: 12.30 –13.30Uhr

Titel: Reactivation of Emotional Memories During Sleep

Referent: Julia Rihm

Abstract:

Memories are consolidated and reprocessed during sleep. While strengthening of neutral declarative memories is particularly associated with slow-wave sleep (SWS), emotional memory consolidation is associated with rapid eye movement (REM) sleep. However, the underlying mechanisms of emotional memory consolidation during REM sleep are not well understood.

We aim at experimentally testing the hypothesis that reprocessing of emotional memories during REM sleep strengthens emotional memory traces. Participants will learn tone-odor associations in a classical conditioning procedure before sleep. During subsequent REM sleep, emotional memories will be externally reactivated by re-exposure to the conditioned auditory cues. “Negative Odor” expectancy ratings as well as skin conductance response and heart rate will be used as measure of emotional memory strength and arousal the next day. In addition, high density EEG capable of source localization will be recorded during learning, sleep, and retrieval. We expect that re-exposure to memory cues during REM sleep increases fear responses after sleep. No effect is expected after emotional memory reactivation during SWS.

The project will greatly enhance our understanding of the function of reprocessing of emotional memory during sleep and its role for later memory strength and arousal. In addition, the results of the project have important implications for the role of sleep-related memory processes in certain affective disorders and in post-traumatic stress disorder.