

# Abstract

## Neuronale Grundlagen der Emotionswahrnehmung und Emotionsregulation bei Mädchen und Jungen

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-> Vortrag via Zoom, auf Deutsch

In my talk, I will review typical and atypical developmental brain trajectories of emotion processing and regulation in female and male adolescents. I will review some of the key findings from national and international studies on adolescent conduct disorder (e.g., as part of the FemNAT-CD project). Finally, I aim to critically discuss similarities and differences that may result from such neuroimaging studies. **Specific Background:** Conduct disorder (CD) is a psychiatric disorder of childhood and adolescence characterized by severe aggressive and antisocial behavior. Behavioral evidence strongly suggests that emotion processing and regulation deficits are key features of CD. First fMRI evidence indicates alterations in brain regions which form the emotion regulation brain network in CD females compared to typically developing controls (TD). **Methods:** To date, we employed fMRI during emotion regulation in >200 adolescents (average age 14y; range=9-18y) with a diagnosis of CD (N=94; 70 females) as well as TD controls (N=109; 71 females) as part of the FemNAT-CD project. Additionally, a small subgroup of female CD adolescents further participated in a group-based behavioral skills training (START NOW) and was invited for an MRI session prior to and post treatment. **Hypothesis & Preliminary Findings:** Preliminary findings based on region of interest analyses for areas associated with emotional reactivity (e.g., limbic brain regions) and emotion regulation (e.g., prefrontal brain regions, angular and temporal gyrus) indicate reduced activation during emotion regulation in adolescents with CD compared to TD controls. Furthermore, we expect regionally specific linear and non-linear functional changes across age. These may differ across sex and diagnosis. Finally, we hypothesize that girls with CD who improved from the START NOW training (therapy responder) show amelioration in the neuronal correlates of emotion regulation. This may be mirrored by increases in neuronal activation of emotion regulation areas of the brain previously found to be disrupted in CD (e.g., prefrontal cortex and angular gyrus). **Significance:** An increased understanding of the development and neuronal correlates of emotion regulation across adolescence will complement past neuroimaging work in healthy youths and add to our understanding of affective disorders in childhood and adolescents, such as CD, ultimately informing diagnosis and treatment.