

МАТЕРИАЛЫ КОНФЕРЕНЦИИ  
И ШКОЛЫ

HOW THE SOCIAL CLIMATE AT SCHOOL IS ASSOCIATED  
WITH STUDENTS' AMYGDALA GRAY MATTER VOLUME

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The amygdala, known to be the central region of emotion processing, plays an essential role when handling social stimuli. It is therefore not surprising that the amygdala has been described as an “intensity detector” of relevant stimuli (Zald, 2003) which shape the amygdala. However, research on social stimuli in conjunction with testing amygdala grey matter volume rarely map onto real world constructs, such as students’ perceived school belonging, classroom support and competition. In school, students spend a large amount of their time interacting with classmates and teachers which shape the social climate at school and interact with the structure and function of the brain.

However, until today, less is known about how social climate at school relates to students’ amygdala grey matter volume and how to foster middle adolescent’s healthy amygdala development in the school context. The present study was conceptualized to contribute to the emerging research field of educational neuroscience by examining healthy adolescent students combining Magnetic Resonance Imaging (MRI) and questionnaire data.

In this study, 75 healthy secondary school students participated in a questionnaire (9th grade,  $M_{age} = 15.26$  years,  $SD = 0.43$ ) and MRI (10th grade) study. Voxel-based morphometry and path analysis in Mplus revealed that greater classroom competition was related to larger right amygdala volume class ( $\beta = 0.33$ ,  $SE = 0.11$ ,  $p = 0.00$ ), while feelings of belonging to school were related to smaller right ( $\beta = -0.27$ ,  $SE = 0.11$ ,  $p = 0.01$ ) and left amygdala volume ( $\beta = -0.27$ ,  $SE = 0.13$ ,  $p = 0.03$ ). Results indicate that social stimuli at school differently relate to student’s amygdala volume.

Teacher trainings are encouraged to integrate these findings into their curriculum to support teachers to put this knowledge into practice. By “teaching with the brain in mind” (Jensen, 2005), the current results may support educators to foster a healthy brain development and strengthen students’ ability to cope with negative emotions and subsequently increase their well-being, health, and life satisfaction long lastingly.

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