

Mathematisch-Naturwissenschaftliche Fakultät

Der Dekan

## Promotionsvortrag am 04.07.2024, 14:00 Uhr

Gebäude: Schleichstr. 4 Raum: 4.327

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## Towards a Better Understanding of Children's and Adolescents' Everyday Life: Physical Activity and its Association to Executive Function and Well-Being

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Living a physically active life is linked to positive psychological outcomes, such as executive functioning and well-being. However, most previous research has implemented interventional study designs. Findings from such study designs cannot necessarily be transferred to physical activity in individuals' everyday day life, which includes different types of physical activity and strongly varies between and within individuals over time. With youth's lifestyle becoming increasingly sedentary, it is important to better understand the relevance of everyday physical activity for psychological corelates in children and adolescents, and for this, more observational research is necessary. Ambulatory assessment presents a unique opportunity for the examination of real-life associations between individuals but also short-term associations within individuals. Therefore, this dissertation aimed to investigate the role of everyday physical activity in developmentally important age groups of childhood and youth (e.g., preschoolers, adolescents) by specifically implementing observational ambulatory assessment study designs.

To this end, this dissertation includes three empirical studies assessing physical activity in the everyday life of three independent samples (Study 1: N = 68 preschoolers; Study 2: N = 64 preadolescents; Study 3: N = 125 adolescents). Studies 1 and 2 showed that the association between everyday physical activity objectively measured with accelerometers and executive function measured with computerized tasks differs between age groups, with a negative association in preschoolers. The diverse result pattern in Study 2 measuring executive function multiple times per day with ambulatory assessment further suggests that the association differs between times of day. Findings from Study 3 employing ambulatory assessment confirm a positive link between questionnaire-assessed everyday physical activity and well-being in adolescents. Importantly, this positive link was evident between individuals as well as within individuals on the daily level. In conclusion, the difference between previous findings from interventional study designs and the novel findings presented in this dissertation emphasize the importance of specifically investigating physical activity in children's and adolescents' everyday lives with its variability. Further, future research focusing on everyday physical activity should employ ambulatory assessment, as it offers unique possibilities for examining short-term within-person associations between physical activity and psychological correlations. Such findings can potentially inform the development and implementation of future individualized and timely interventions for the promotion of everyday physical activity and its psychological correlates in childhood and youth.