

# Ambulatory Assessment to analyse the association of physical behaviours and health: current topics and innovative approaches

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Keywords: ecological momentary assessment, within-subject associations, just-in-time adaptive interventions, triggered ambulatory assessments

## Introduction

Ambulatory Assessment (AA) recently received increasing interest within exercise, sport, and movement science (von Haaren-Mack et al., 2022). Its strength is to supply novel insights into within-person associations between physical behavior and physiological, psychological as well as biological and behavioral factors. AA collects real time self-reported and objectively measured information on time-varying constructs using smartphones or other mobile devices up to multiple times per day. Such an approach results in intensive longitudinal data, which provide the opportunity to analyse changes in time-varying variables.

AA offers a huge potential to deepen the understanding of the association between physical behavior and health with its situation-specific moderators like the social and physical environment. It also enables researchers to offer intervention strategies in everyday life exactly when a person needs support (e.g. just-in-time adaptive interventions, JITAI). New and innovative AA-approaches have been developed so far. The aim of this Arbeitskreis is first to present such innovative AA-approaches and second to discuss its methodological impact.

**Janis Fiedler** present a JITAI, which contains a prompt when the participant has been inactive for at least 60 minutes. He will evaluate if engaging with such an intervention is suitable to enhance physical activity in the subsequent hour.

**Birte von Haaren-Mack** will investigate how affect during daily life varies with the occurrence of stressors (academic, general) and how situation specific context factors moderate the association between physical activity and affective stress reactivity.

**Martina Kanning** will examine the accuracy of walking triggered e-diaries, which allow to examine time-varying associations between environmental and individual factors. Such a triggered AA-approach increases knowledge about person-place interactions that could be used to create health enhancing environments.

**Carina Nigg** addresses the importance of disentangling the influence of physical activity and sedentary behaviors on mental health. She will analyze different types of everyday life behaviors and how they are related to affective states.

**Markus Reichert** will expand on the ecological fallacy, showing that between- and within-subject associations can be of opposite nature. Importantly, both levels (between & within subject) are crucial to improve our understanding of real-life associations.

## References

Von Haaren-Mack, B., Kanning, M., Ebner-Priemer, U., Reichert, M. (2022). Capturing live as it is lived – Ambulatory Assessment for physical activity, sport, and exercise research. *Ger J Exerc Sport Res* 52, 215–217. <https://doi.org/10.1007/s12662-022-00824>