

## **Sustainability | Individual communication**

### **IC - (21065) - TAKING THE PSYCHOPHYSIOLOGY LAB OUTDOORS**

Caroline Hägerhäll<sup>1</sup>; Gunnar Cerwén<sup>1</sup>

1 - Swedish University of Agricultural Sciences SLU, Department of People and Society

#### **Background and objectives**

There is a convincing body of theory and research showing that experiencing nature have positive effects on human health and well-being. Often distinctly different, green versus built environments are compared by assessing still images in an indoor laboratory setting. Although this approach has given insights on a general level, it neglects important factors of how people experience the outdoor environments in everyday life, potentially limiting our insight about processes and content that can promote wellbeing. In real life, outdoor experiences are multisensory, temporal and dynamic. We discuss how the development in sensor technology in real life settings could change the scene.

#### **Process and methods (for empirical research)**

We present results from the newly established SLU Multisensory Outdoor Lab illustrating potentials and obstacles in methodology. A pilot study compared the performance of three wearable device systems (Bionomadix, Empatica E4 and Polar H10) in both indoor and outdoor settings in both sedentary and active walking conditions. Sessions were video recorded to assist the analysis.

#### **Main results (or main arguments in the case of critical reviews)**

The analysis show that data quality varied. Heart data gathered with PPG sensor (Bionomadix and Empatica E4) is sensitive to movement and light, while heart data gathered with ECG (Bionomadix and Polar H10) is resistant to such disturbances. Skin conductance data (Empatica E4 and Bionomadix) is potentially fruitful in all tested settings, but temperature and activity level needs to be given consideration. Conclusively, the study highlights obstacles as well as potentials for psychophysiological research in situ. With modification, the method employed could be used to design a large-scale experiment.

#### **Implications for research and practice/policy | Importance and originality of the contribution**

The use of wearable sensors can enable research on new topics as well as shed new light on established knowledge. It possibly also fosters collaborations with practice since wearable technology can be applied directly in field settings. The increased ecological validity of real-life data could increase the relevance and impact of results in policy and practise.

**Palavras-chave : wearable technology, nature experience, restorative environments**