Title

Subtitle (optional)

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**Abstract:** Across the animal kingdom, individuals have been shown to show consistent individual differences (CID) in their levels of activity. However, activity can be measured on multiple timescales, and measures of activity are commonly reported without reference to the timescale. As a result, little is known about how the timescale affects the conclusions and whether environmental effects affect activity CIDs selectively. Here we record activity of the ground beetle, *Nebria brevicollis* (Fabricius, 1793), over 24 hours twice, two weeks apart. This experiment was repeated in three different lighting conditions, 12:12 light/darkness, continuous light and continuous darkness. We used a hierarchical activity segmentation method to label activity states on both a slow timescale (active state vs. passive state) and on a fast timescale (moving vs. idle). This allowed us to quantify levels of activity on both the slow timescale as the proportion of time spent in the active state, and on the fast timescale as the proportion of time spent moving in both the active and passive state separately. We find that ground beetles exhibit CIDs in activity on both timescales. We also find that continuous darkness decreases CIDs especially on the slow timescale. Finally, we show that the activity proportion and the movement proportion during active states are uncorrelated. Our findings highlight the need to consider the hierarchical nature of behaviour when quantifying CIDs and makes a novel distinction between two measures of activity.

**Keywords:** Animal, plant

# Introduction

# Methods

# Results