## Associations Over Time Between Fatigue, Stress, Pain, Sleep and Activities in Rheumatoid Arthritis: A Citizen Science and Experience Sampling study

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Introduction: People with rheumatoid arthritis (RA) are experts in terms of living with this condition on a daily basis. Using a citizen science approach, we collaborated with people with RA to ensure that the research question matches their interests, is scientifically relevant, and that data collection is feasible.
Methods: The research topic, question and protocol were developed together with people with RA, using a combination of interviews, a survey, and focus groups. Fatigue and its predictive factors were identified as research topic, given its huge impact on everyday life for people with RA. In the subsequent experience sampling study, people with RA reported data on fatigue, stress, and pain using a VAS-scale, as well as the number of hours sleep, rest, physical and cognitive activities on 21 consecutive days. Data was collected through an online platform and participants were able to see their own data in graphs. Multilevel linear regression modelling will be performed to explore associations between stress, pain, sleep, activities and fatigue on consecutive days, between and within individuals.
Results: 63 participants were included (5 drop-outs; adherence = 87.9% for the 58 remaining participants). Data analyses of the experience sampling study will be finished before June and included in the presentation.
Discussion: This citizen science study showed high adherence and low drop-out in a study that matches the interests of people with RA. Outcomes of the study will provide indications for predictive factors of symptoms of fatigue in RA, which are important for treatment plans and disease management.

## Initial feasibility and validation of HRV-triggered EMA prompts to capture episodes of emotional arousal in daily life

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There is increasing interest in leveraging ambulatory psychophysiology with ecological momentary assessment (EMA) methods to assess emotional processes in daily life. These methods include both random and physiologically-triggered prompts, though little is known about the validity of using physiological triggers. We collected data on N=286 participants (24% male, 65% White) aged 18-65 (M=36.2, SD=13.9) who completed a 10-day EMA protocol assessing momentary affect and continuous electrocardiogram (ECG) activity measured with a chest strap using the Movisens ECGMove4 sensor and MovisensXS Android app. Heart rate variability (root mean successive squared deviation of R-R intervals, RMSSD) was calculated minute-by-minute and used to determine physiological prompts based on overall activity level and significant drops in RMSSD (i.e., greater physiological arousal). Average sensor wear time was 9.3/10 days with overall 87% compliance for EMA report completion, with no difference in compliance for random vs. physiological-