

Measuring Everyday Stress

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Why study everyday stress?

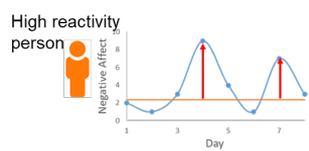


Dynamics of everyday experiences can elucidate how stress impacts health over the long term

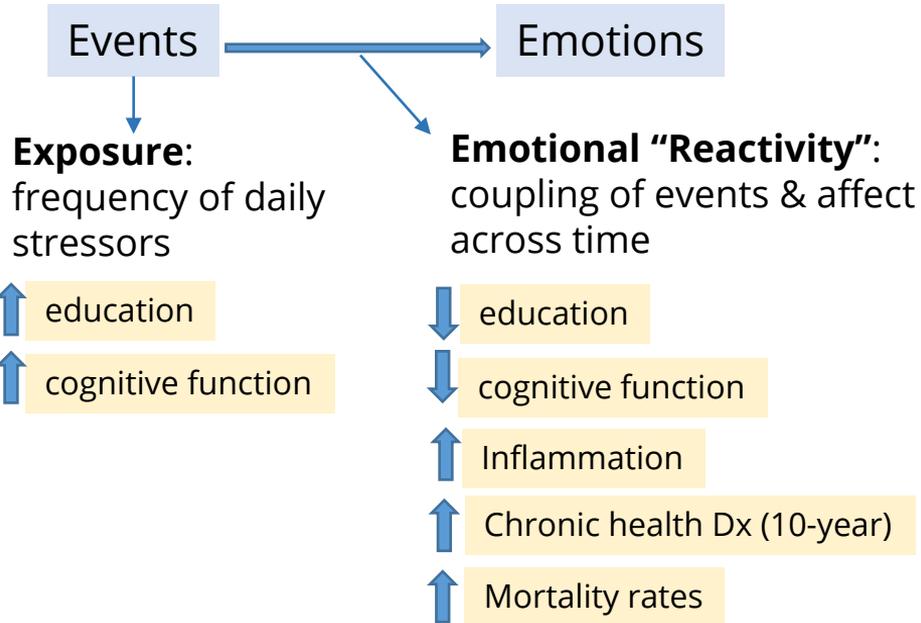
Goals

#1 Describe how to conceptualize & measure everyday stress

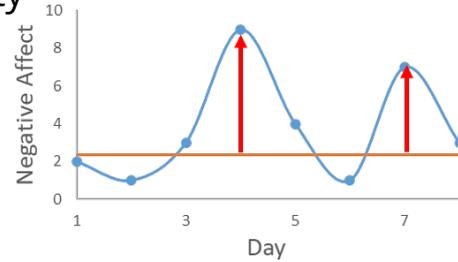
#2 Leverage mhealth/digital approaches for stress phenotyping



Daily Stress Phenotyping (v 1.0)

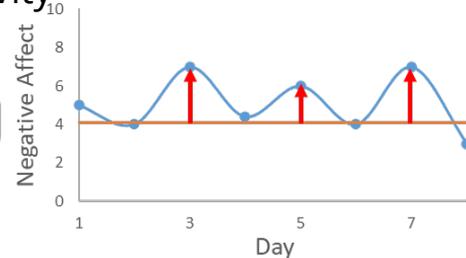


High reactivity person



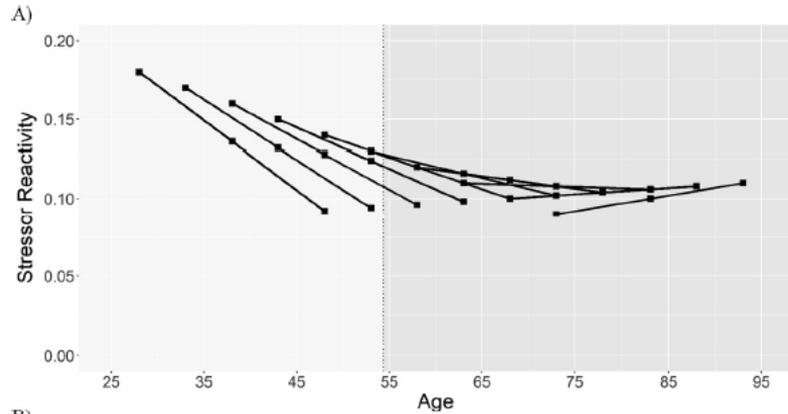
Daily stress signatures relate to current and predict future functioning, health, and well-being

Low reactivity person



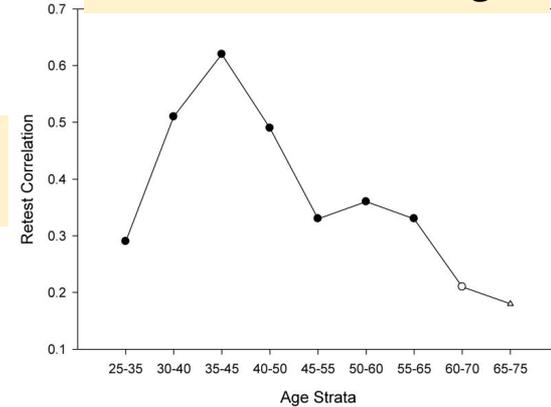
Daily Stress phenotypes are dynamic

Longitudinal Change in Stressor Reactivity

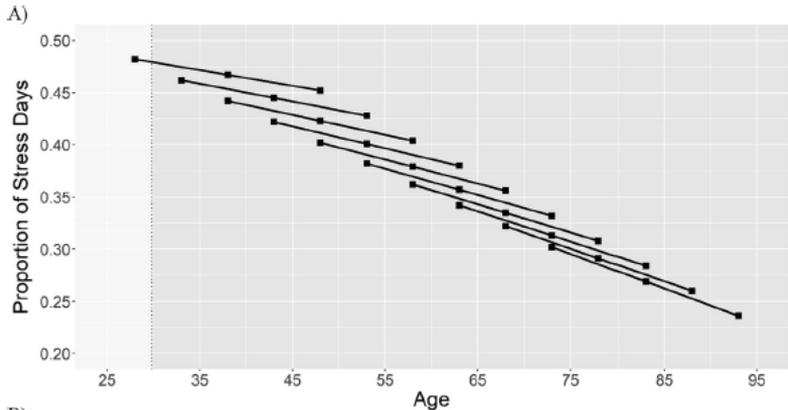


Changes non-monotonically across life course

Less stable at older ages



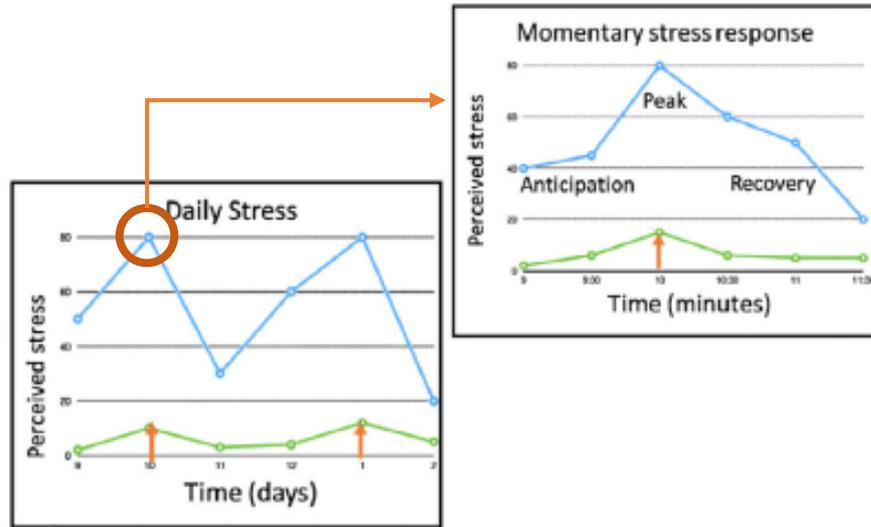
Longitudinal Change in Stressor Exposure



Daily stress signatures are embedded in and vary across developmental, social, and personal contexts

Everyday Stress Phenotyping (v 2.0)

Ambulatory measurements (e.g., EMA, passive sensing) permits finer temporal resolution



Epel et al., 2018

Components of Everyday Stress Responses

Anticipation: effects prior to stressor onset

Reactivity: peak of the initial increase

Recovery: persistent effects

Stress anticipation negative impacts working memory
Stress anticipation prolongs recovery of negative affect
Prolonged recovery predicts chronic health conditions

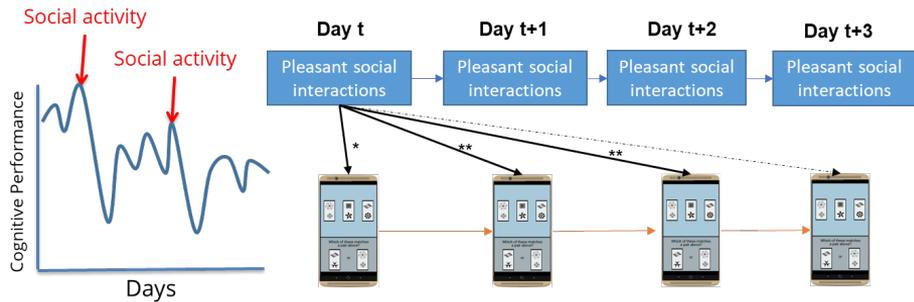
Hyun et al., 2018; Kramer et al., 2022; Leger et al., 2018

Exposure to Disappointment and Deprivation

Lack of positive social interactions → worse cognitive performance



Having positive social interactions → better cognitive performance



Everyday stress can come from bad things happening OR from **not meeting basic human social (or material) needs**

Effects of positive interactions larger for individuals with fewer overall interactions



Effects are larger for individuals with fewer overall interactions (a window into daily effects of ***social deprivation/isolation?***)

3 Daily Stress Knowledge Gaps

1. Over-reliance on self-report exposure assessment

Geographically linked social context; (e.g., Twitter feeds, crime reports) sensor-based exposomics (e.g., air quality, noise, traffic, weather, “crowdsensing”)

2. Little is known about stability and variability of daily stress

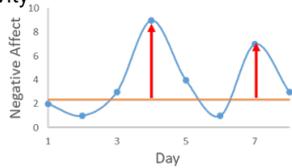
Time-varying effects of social, personal, and environmental contexts
Bridging the “temporal gap” from days to decades

3. “Non-events” that trigger and prolong stress are understudied

For example, social deprivation and material (e.g., food) insecurity

Key Take Home Points

High reactivity person



Contemporary approaches to measuring everyday stress

Prioritize **"data streams and parameters"** over **"data points and scores"** from questionnaires

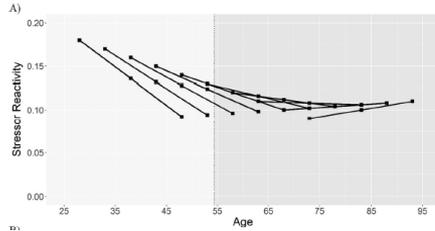
Daily Stress Phenotypes

Reflect **multiple features** (e.g., anticipation, reactivity, recovery)

Related to function and well-being in **the short-term and long-term**

Vary and change across developmental, social, and personal contexts

Longitudinal Change in Stressor Reactivity



Knowledge gaps in measurement of everyday stress

More **"objective"** exposure assessments of social and physical context

Capture daily effects of **deprivation, resource insecurity, impactful non-events**

Thank you!

Investigative Team

- David Almeida
- Stacey Scott
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