

INVESTIGATING THE (IN)STABILITY OF RESTING BASELINE MEASURES OF CARDIAC ACTIVITY

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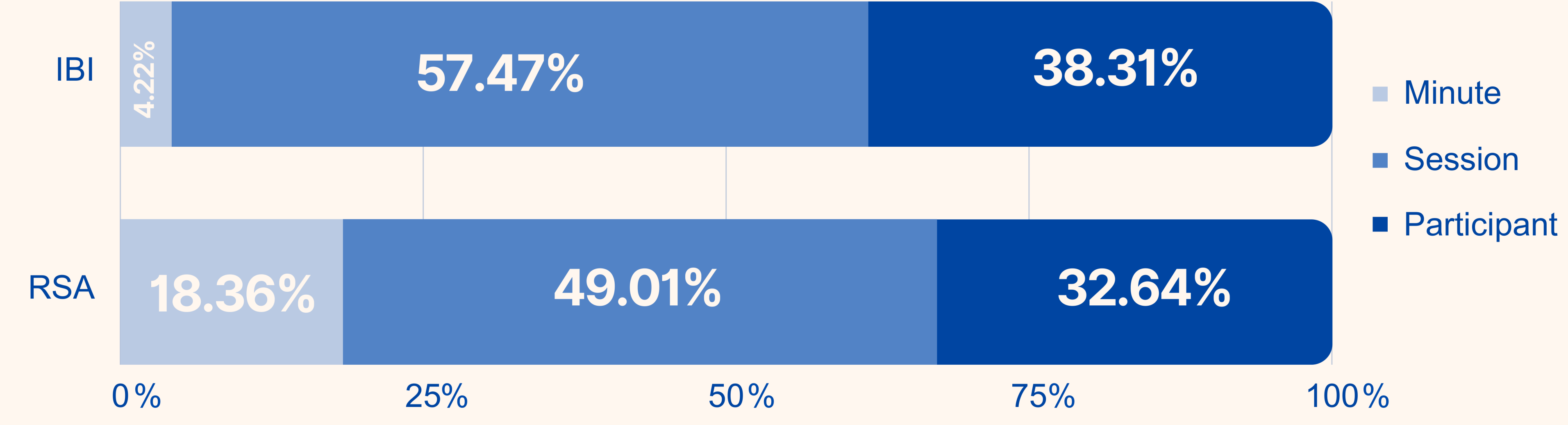
INTRODUCTION

- Standard practice for collecting and analyzing cardiac activity data involves establishing a resting baseline of cardiac activity and assessing deviations from this baseline. [1,5]
- This assumes individual baselines are representative of a resting state that is relatively stable within individuals.
- There is debate about what constitutes “best practices” for baseline collection, particularly when it comes to type [2,3,5], duration [4,5], and number of baselines. [5]

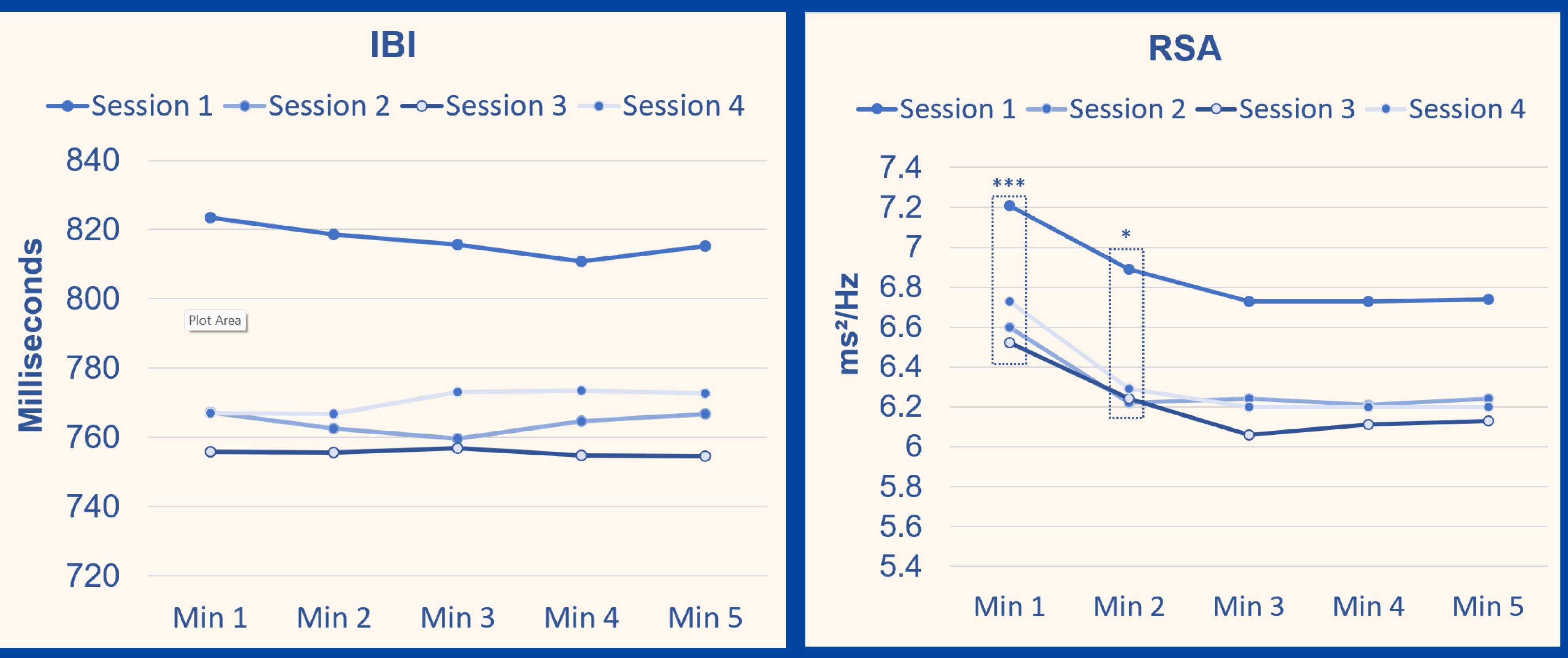
METHODS

- **Procedure:**
 - Respiration and electrocardiogram data were collected during four separate 5-minute resting baseline sessions over a 6-week period.
 - We derived minute-by-minute estimates of interbeat interval (IBI) and respiratory sinus arrhythmia (RSA) for each session.
- **Participants:**
 - Adults recruited from the community, predominantly students at UNH (N = 124; 76.6% female)
- **Experimenters:**
 - Predominantly white undergraduate and graduate students at UNH, between the ages of 18 - 26 (N = 11; 81.82% female)
- **Analysis:**
 - Data were analyzed using 3-level mixed effects models (minute nested within session nested within participant)

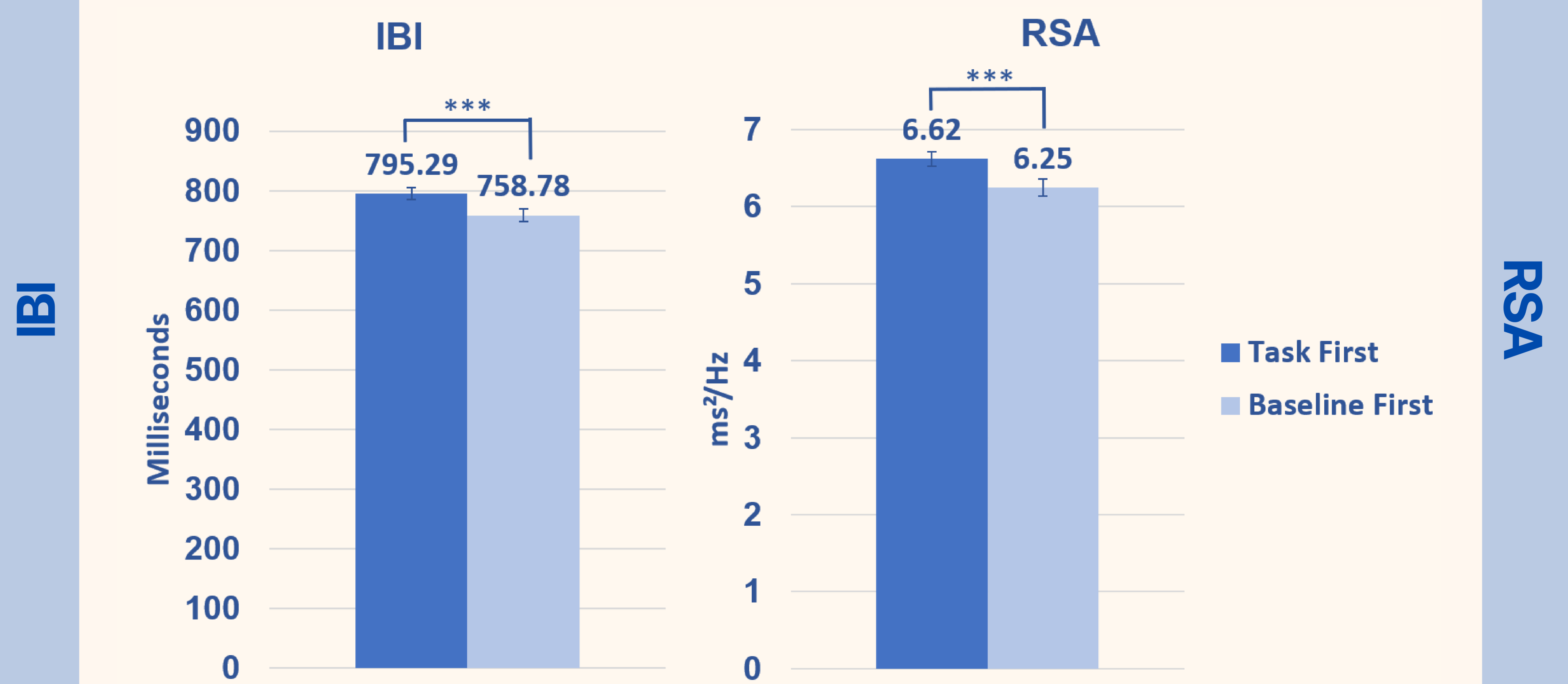
PROPORTION OF VARIANCE BY MINUTE, SESSION, & PARTICIPANT



MINUTE-TO-MINUTE STABILITY WITHIN SESSIONS



DIFFERENCES BY BASELINE-TASK ORDER



PREDICTORS ASSESSED

Level	Variable	IBI	RSA
Minute-Level	Minute	No	Yes
	Task first	Yes	Yes
Session-Level	Time of Day	No	No
	Temperature	No	No
Participant-Level	Number of experimenters	No	No
	Experimenter gender	No	No
Participant-Level	Experimenter familiarity	No	No
	Race	No	No

RESULTS & DISCUSSION

- Consistent with recent work finding non-significant associations between baseline activity and experimenter race/gender [6]
- Substantial within-subject variability was related to when in the session the baseline was taken, but not other contextual factors.
- Suggests the point during the session at which baseline data is collected is influential.
- Baseline estimates were only moderately stable within participants over time.
- Minute-to-minute estimates were surprisingly stable, particularly for IBI, supporting the use of shorter resting baselines.

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