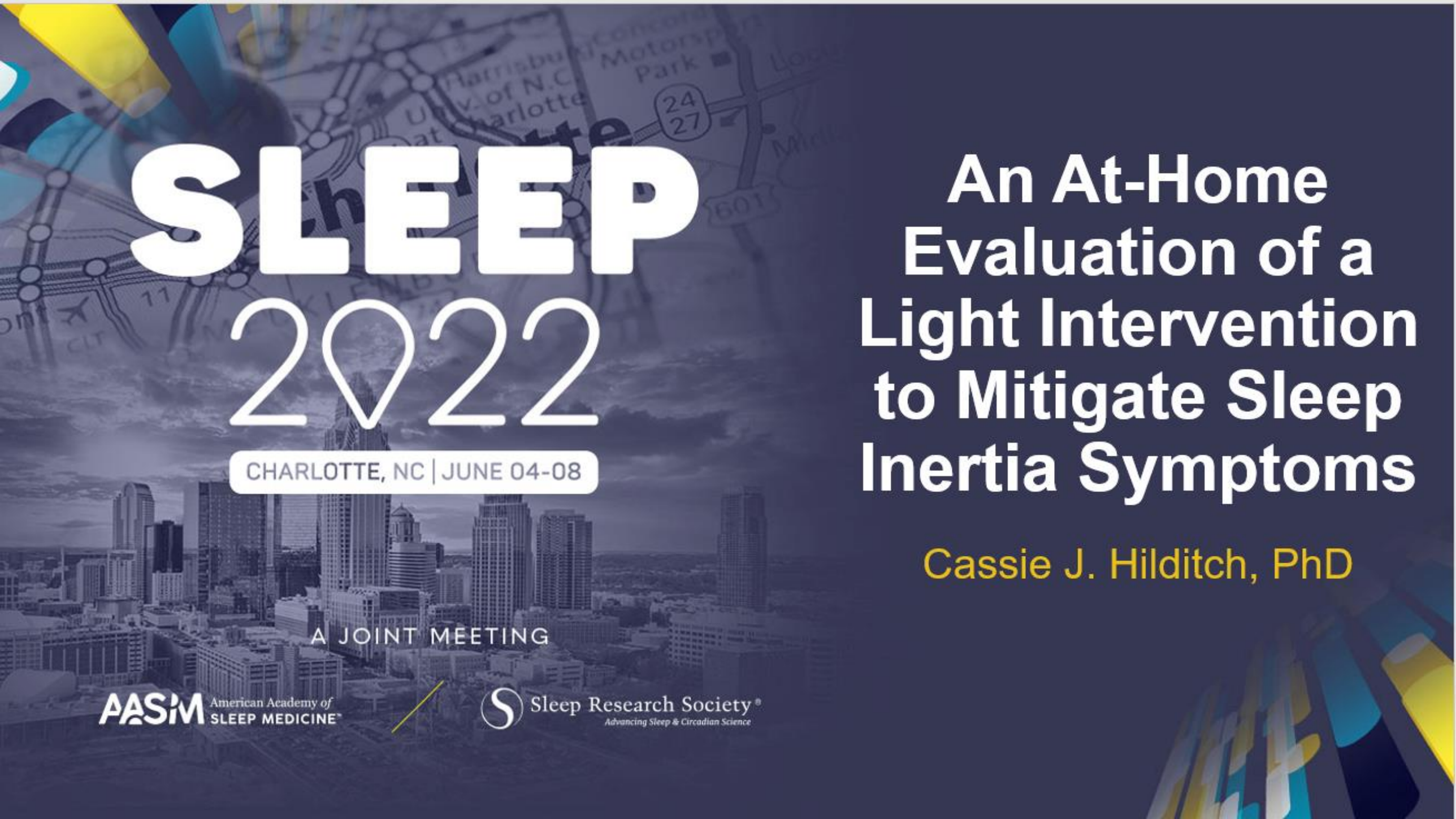

An At-Home Evaluation of a Light Intervention to Mitigate Sleep Inertia Symptoms

Cassie J. Hilditch, PhD

Conflict of Interest Disclosures for Speakers

[X] 1. Within the past 24 months, I have not had/do not currently have any relationships with any ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients, **OR**

[ ] 2. Within the past 24 months, I have had/currently have the following relationships with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

The Nature of the Relationship(s)	The Name(s) of the Ineligible Company(ies)
Royalties/Patient Beneficiary	
Intellectual Property Rights/Ownership Interest	
Stock/Stockholder	
Grand/Research	
Speaker/Speaker's Bureau	
Consultant, Employee Advisor, Independent Contractor, Executive Role	
Investigational Device/Drug	
Salary	
Other Financial/Material Support	

[ ] 3. The material presented in this lecture has no relationship with any of these potential conflicts, **OR**

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1.
2.
3.

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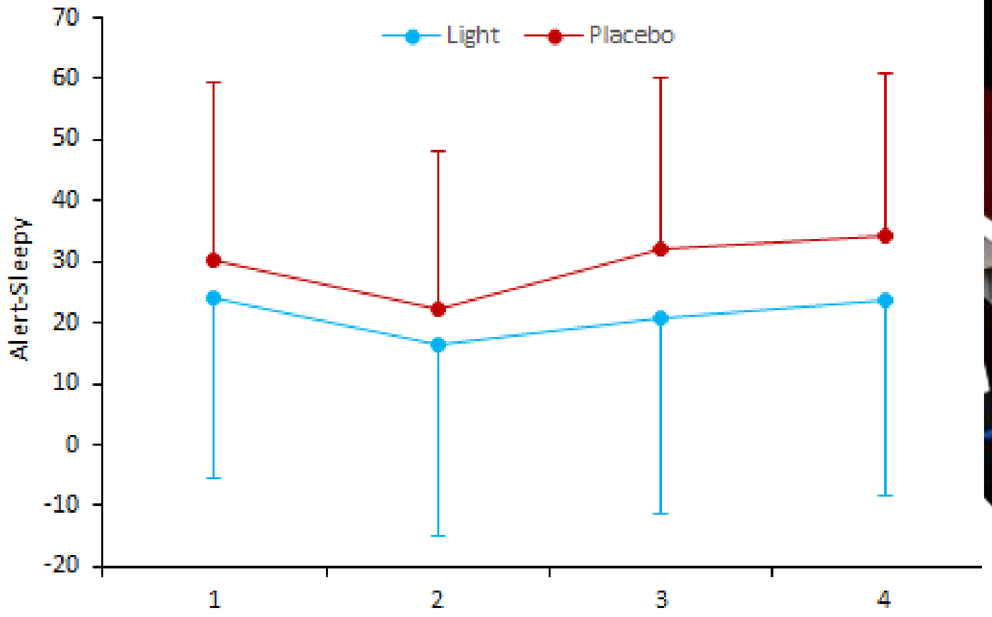
- Photography of slides featuring the icon on the left **is not permitted.**
- Photographs from this lecture are only allowed for personal, social, or non-commercial use.
- Attendees may not use flash photography or otherwise distract the presenters and/or attendees.

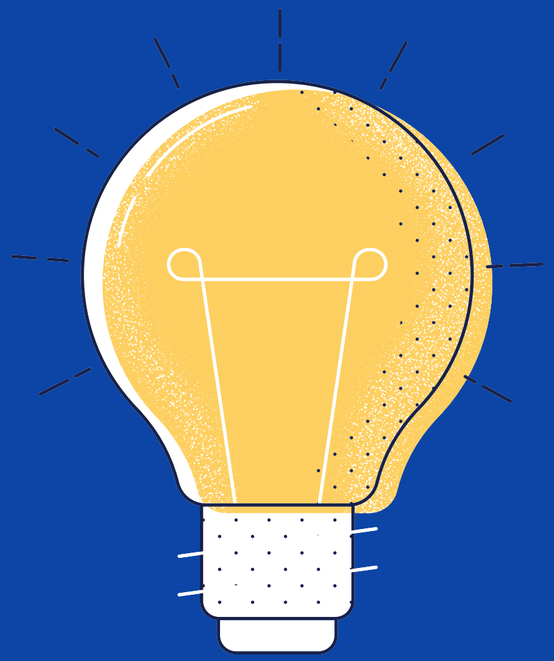
Background

- Light has acute alerting properties
- Improved PVT lapses, alertness, mood <u>in-lab</u> following slow wave sleep

(Hilditch et al., 2022 *J Sleep Res*)



Personal photo



Aim:

To test the efficacy of exposure to a blue-enriched light upon waking from sleep at night to improve alertness, mood, and cognitive performance in an at-home setting

Participants

n = 36 completed

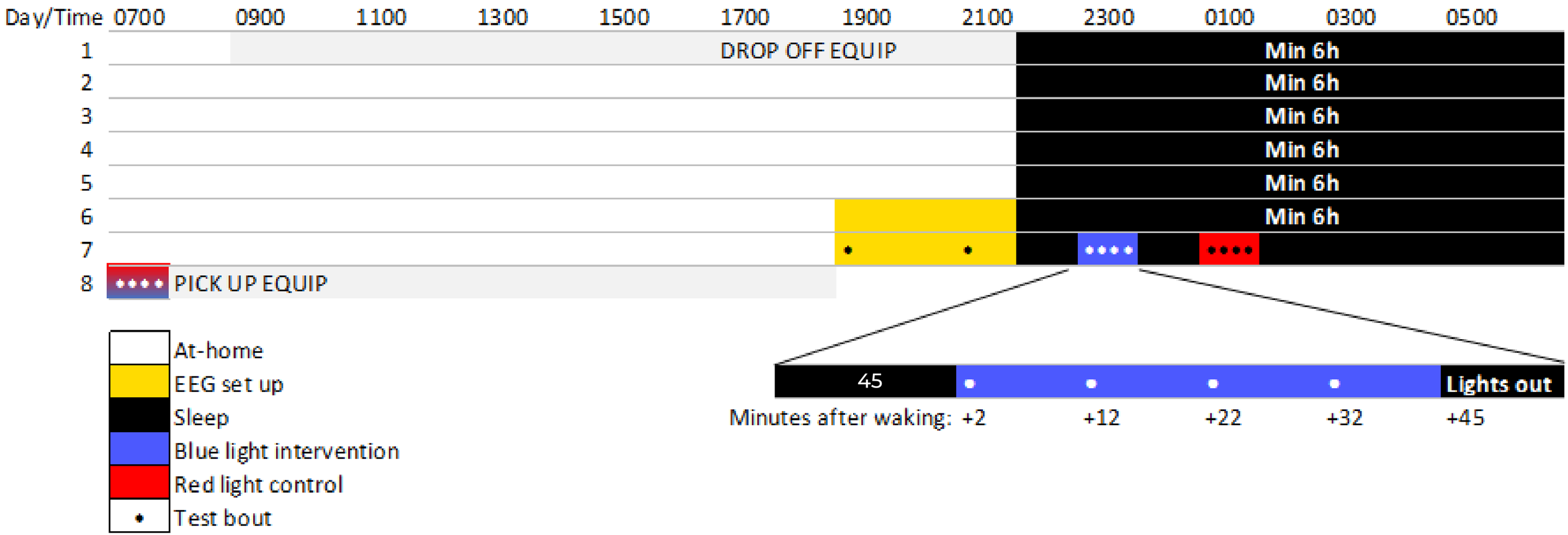
- 18 F, 17 M, 1 NB
- 18-40 y
- General Health Questionnaire, psychiatric questionnaires (e.g., BDI, STAI)
- Min. 6h time-in-bed; bedtime 9am-3am

n = 8 excluded

- screening questionnaires (*n* = 6)
- incomplete data (*n* = 2)

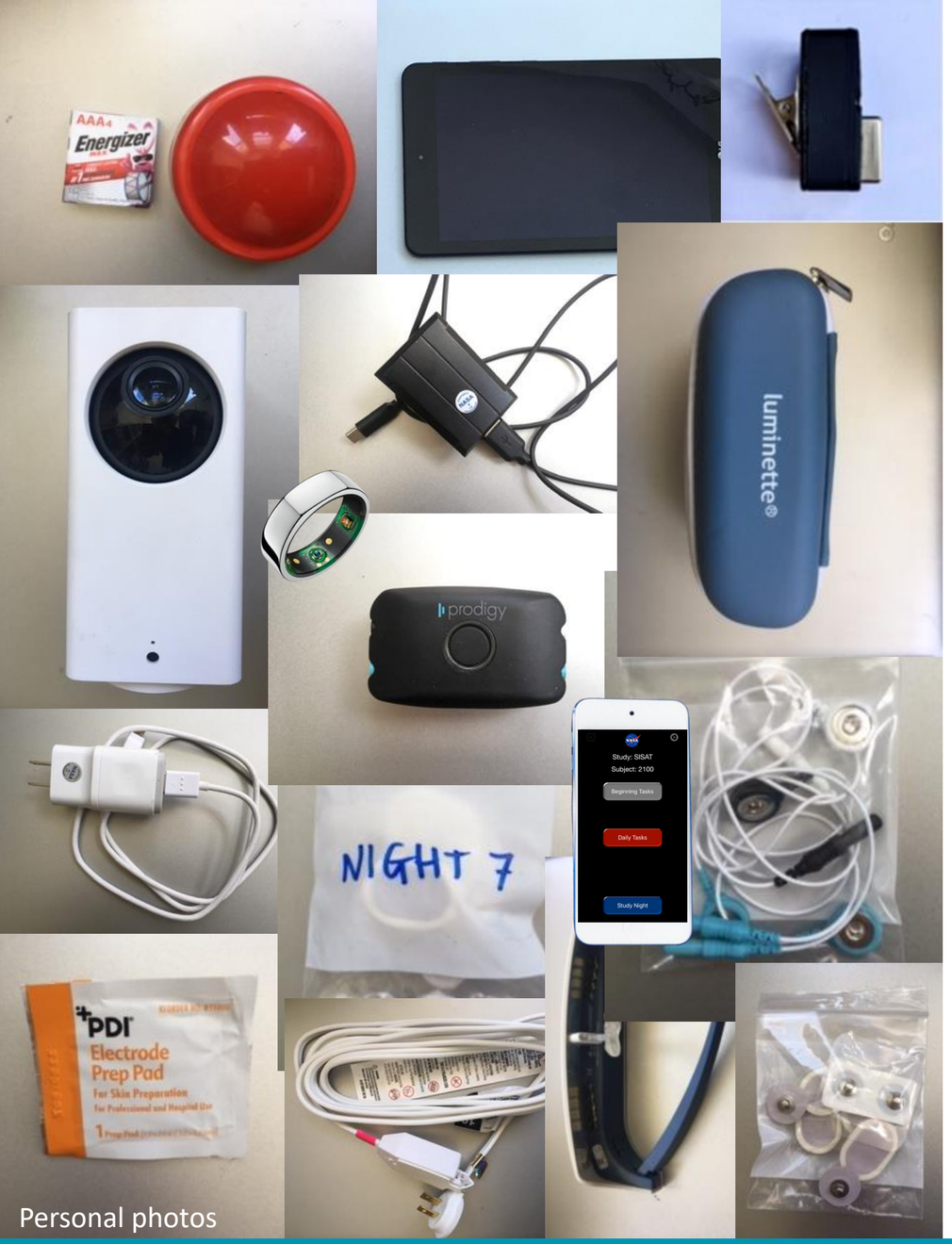
One-week at-home study

- Nights 1-7: Actiwatch, sleep diary
- Night 6: EEG habituation, set up equipment, practice tests
- Night 7: BL, intervention, testing, EEG



Translation to the field

Personal photos



Personal photos

Outcome measures

- PVT (pending latency correction)
- Descending Subtraction Task (DST)
- Mood (visual analog scales)
- Karolinska Sleepiness Scale (KSS)

Analysis

- Mixed-effects models
- Fixed effects: Condition, Test, C*T
- Random effect: Participant
- Covariates: Order, Sex, BL

Results: Sleep

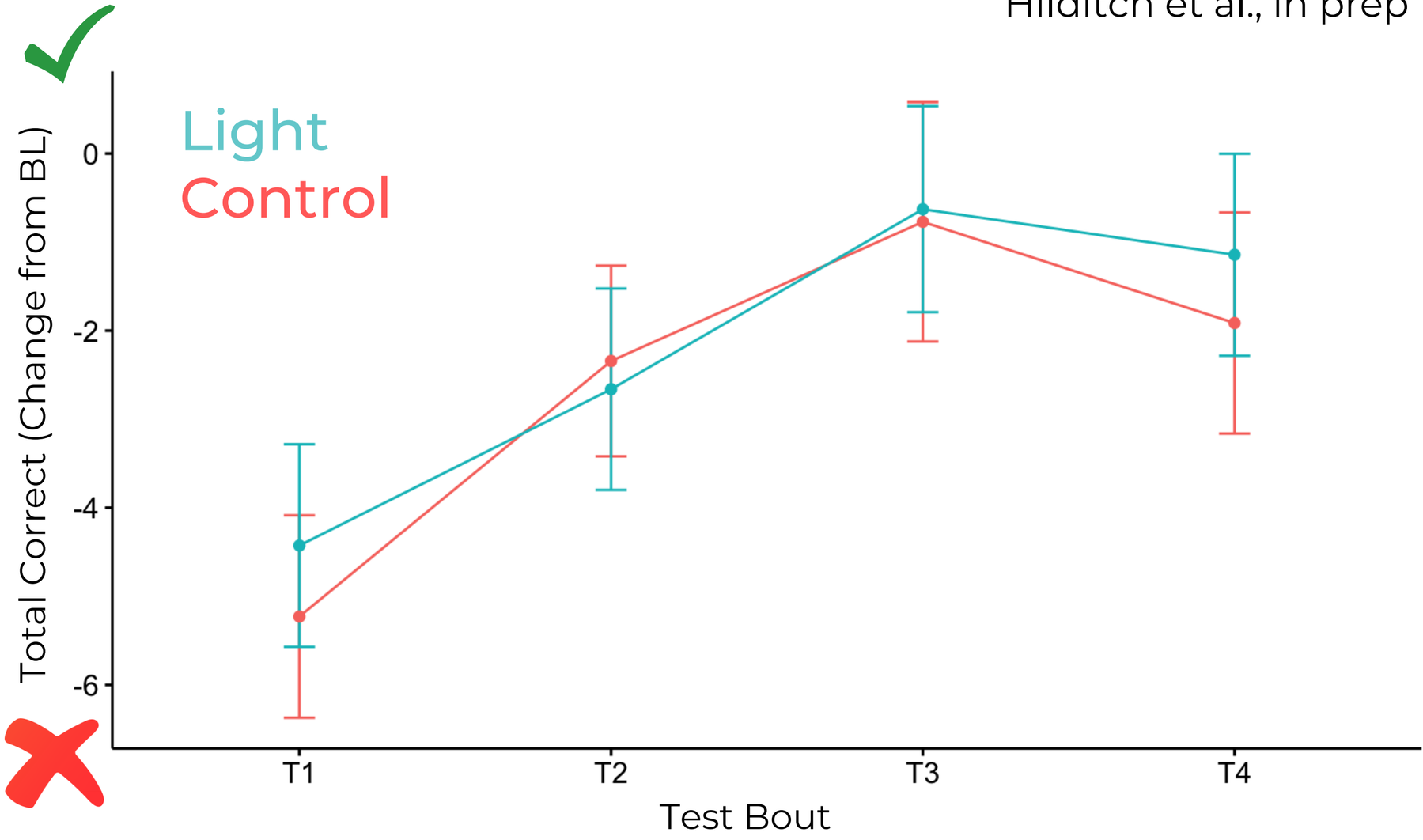
Hilditch et al., in prep

Sleep stage at wake-up

	Light	Control
N1	6	4
N2	9	10
N3	19	19
REM	1	1
Wake	1	2

Results: DST (by cond)

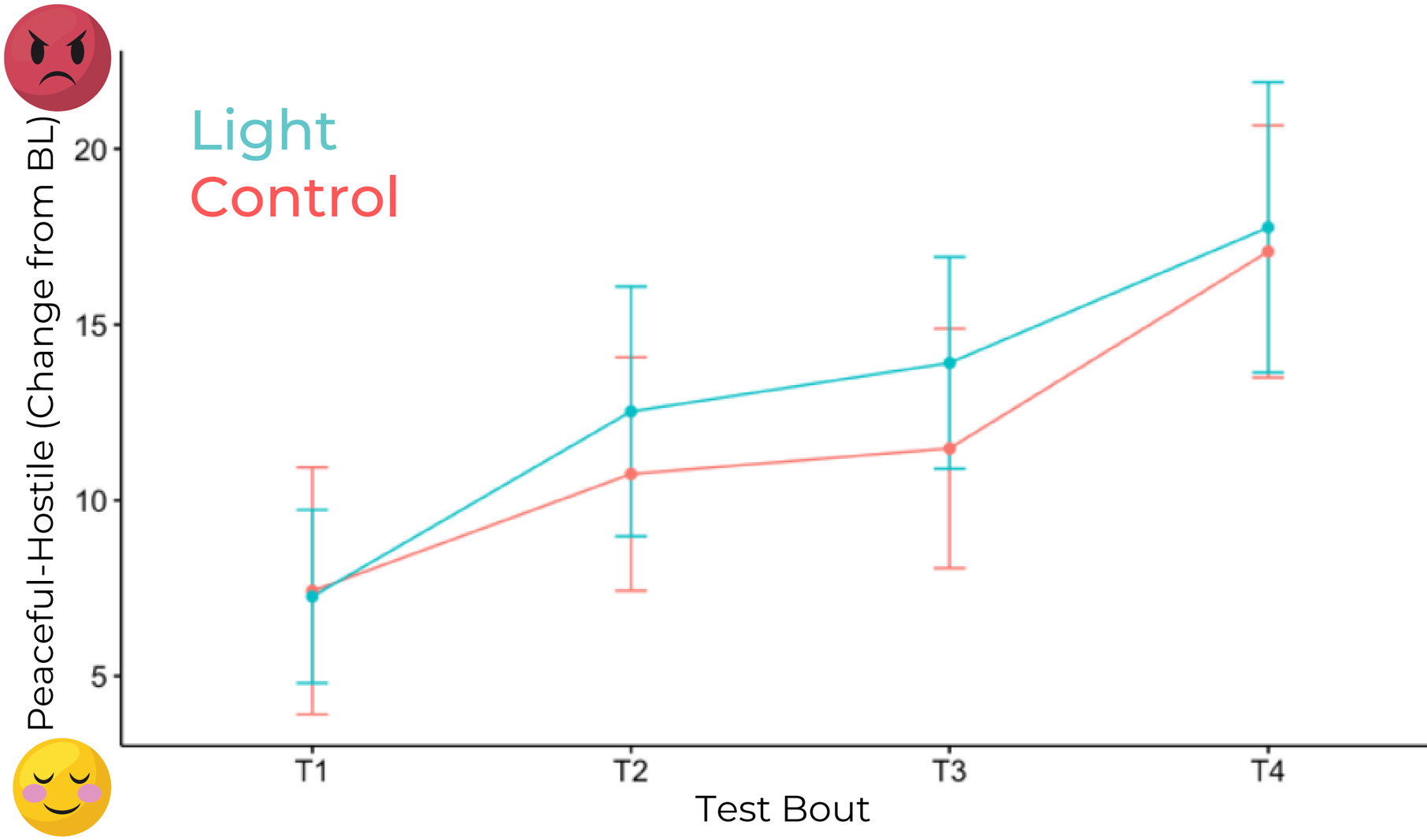
Hilditch et al., in prep



Test: $\chi 2$ [3] = 17.42; p < .001

Results: Mood (by cond)

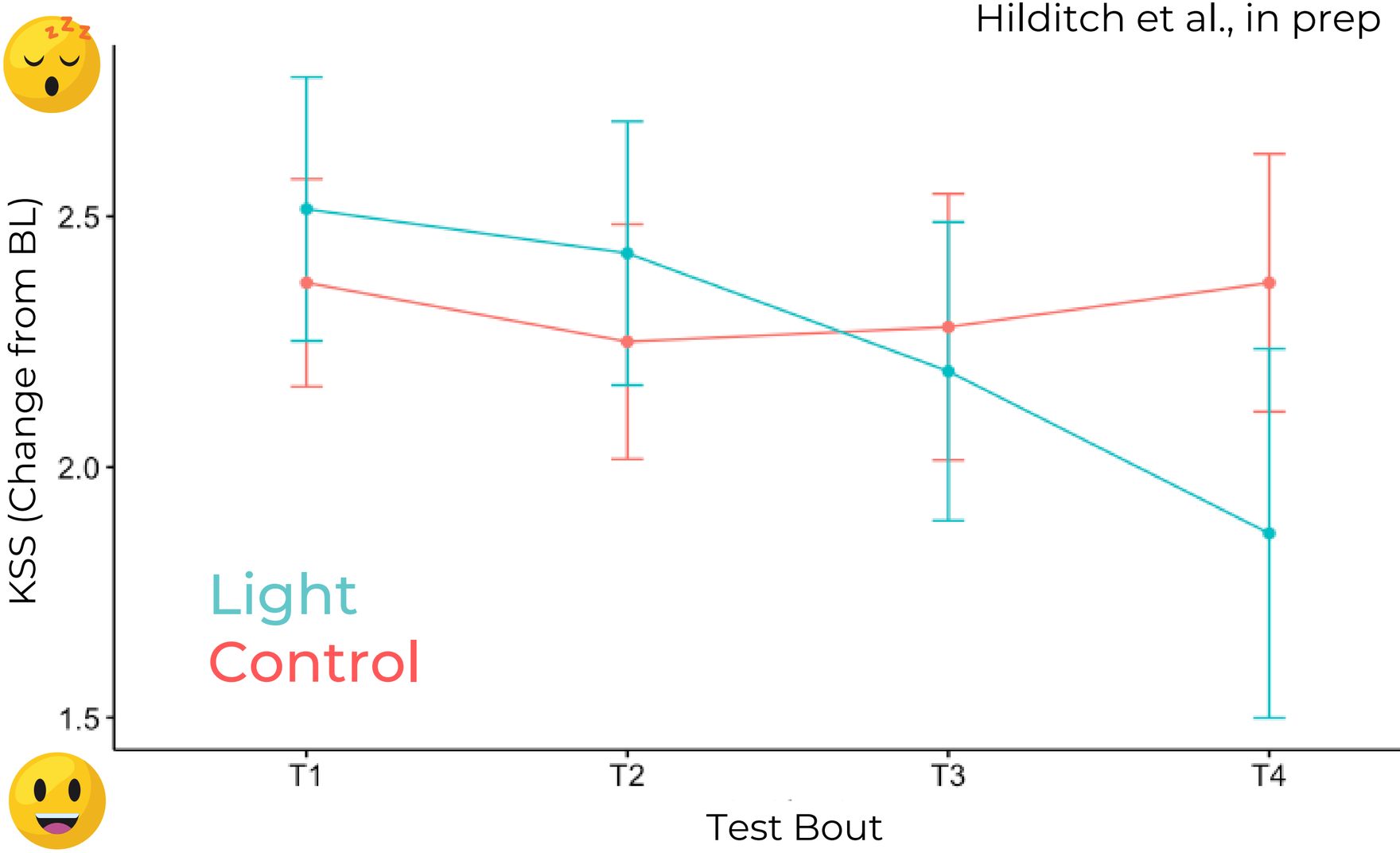
Hilditch et al., in prep



Test: $F(3, 238) = 6.10$; $p < .001$

Results: KSS (by cond)

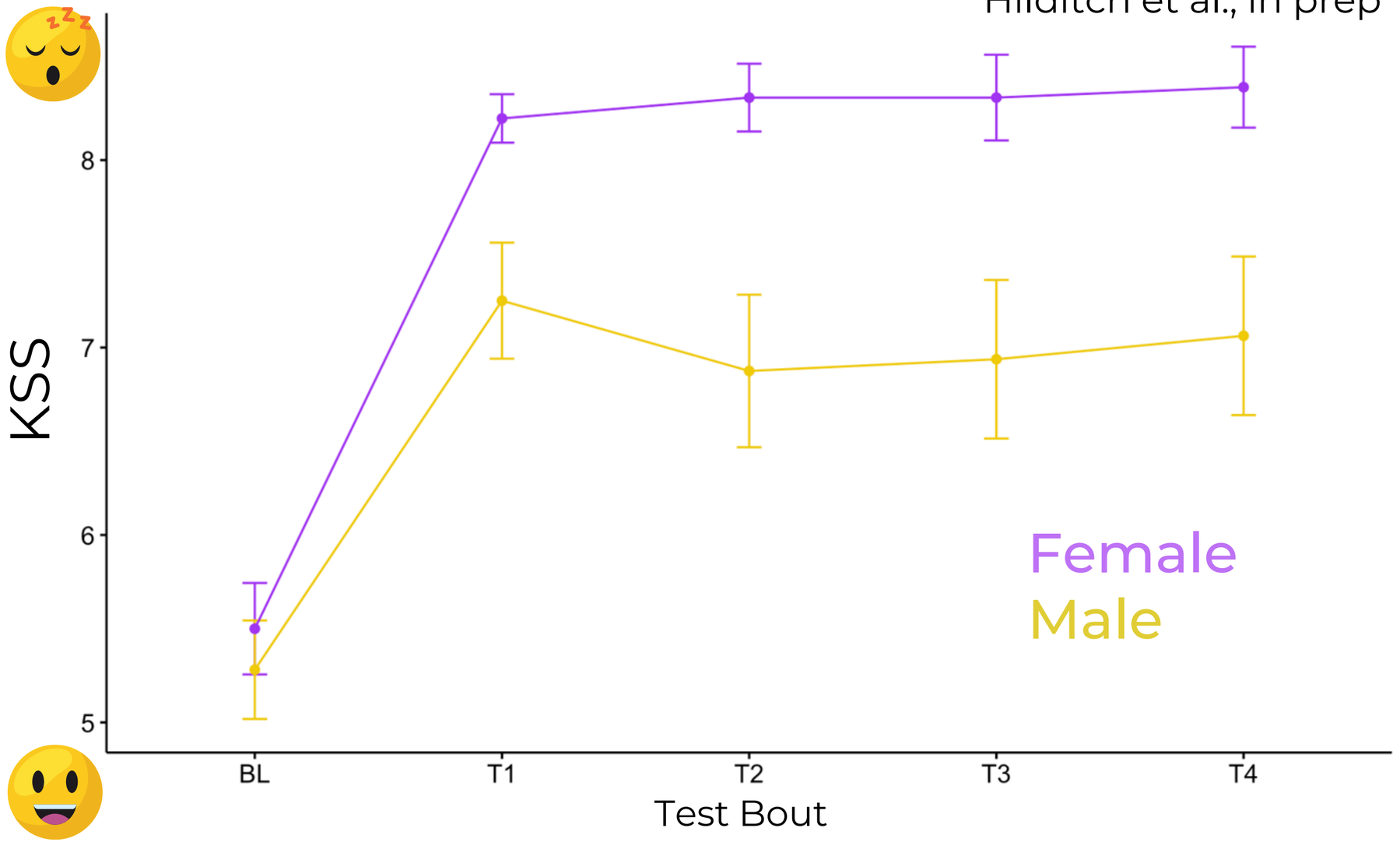
Hilditch et al., in prep



NSD for cond, test, cond*test
Sex significant predictor: $F(1, 30) = 10.26$; $p = .003$

Results: KSS (by sex)

Hilditch et al., in prep



Sex: $F(1, 32) = 11.46$; $p = .002$
Test: $F(4, 165) = 58.22$; $p < .001$
Sex*Test: $F(4, 165) = 4.10$; $p = .003$

Discussion

- Light does not appear to improve DST, KSS, or mood in at-home setting
  - Other neurobehavioral domains?
  - Different device/exposure?

- Sex differences in the perception of sleep inertia?

- Influence of sleep?

THANK YOU

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