

Sleep Reactivity as a Vulnerability to Posttraumatic Stress Disorder: Identifying Patients at Risk of Acute Insomnia Within the Immediate Aftermath of Trauma (Reffi et al., 2025)

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Insomnia

- Characterized by:
 - Primary complaint of dissatisfaction with sleep quantity or quality
 - Difficulty initiating sleep
 - Difficulty maintaining sleep
 - Early awakenings with inability to return to sleep
 - Daytime impairment
 - Chronic insomnia:
 - Frequency: ≥ 3 nights per week
 - Duration: ≥ 3 months

PTSD and Insomnia

- High comorbidity
 - 63% of patients with PTSD have insomnia
 - Difficulty sleeping falls under the PTSD Alterations in Arousal and Reactivity symptom cluster
- Bidirectional relationship
 - Insomnia symptoms prior to trauma exposure predict development of PTSD
 - PTSD symptoms predict sleep disturbances

Introduction

- Acute insomnia after trauma predicts PTSD development
- Sleep reactivity is a trait vulnerability to sleep disturbance in response to stressors
- Sleep reactivity predicts PTSD development

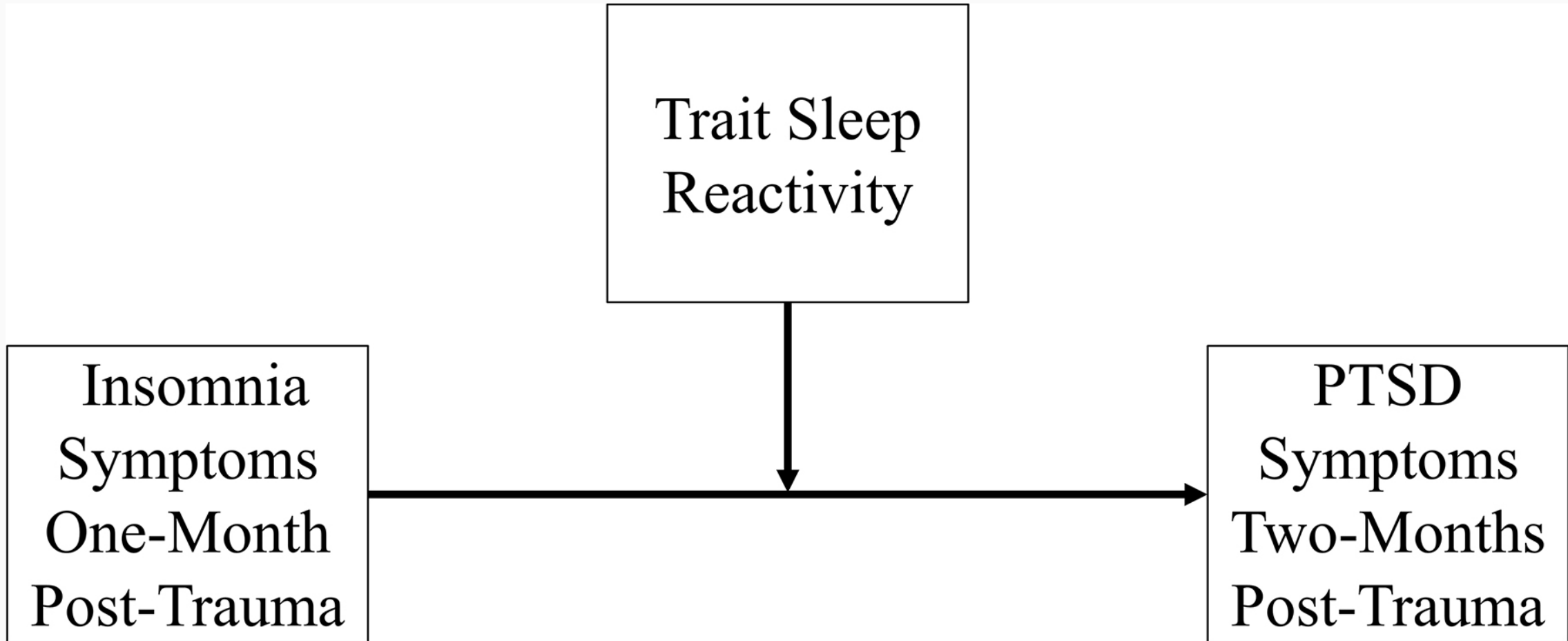
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Hypothesis 1

1. Acute trauma patients with HIGH trait sleep reactivity will be more vulnerable than patients with low sleep reactivity to
 1. Acute insomnia one - month post - trauma
 2. PTSD two months post - trauma

Hypothesis 2



Timeline

T1 - Hospitalization
Post-trauma
N=88

Sleep Reactivity

T2 - 1-Month Post-Trauma
N=61

Insomnia Severity PTSD Symptom Severity

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Inclusion and Exclusion Criteria

Inclusion Criteria

- ≥ 18 years old
- Experienced traumatic injury

Exclusion Criteria

- Traumatic brain injury
- Intubated or sedated
- Actively recovering from anesthesia
- Experiencing delirium

Participants

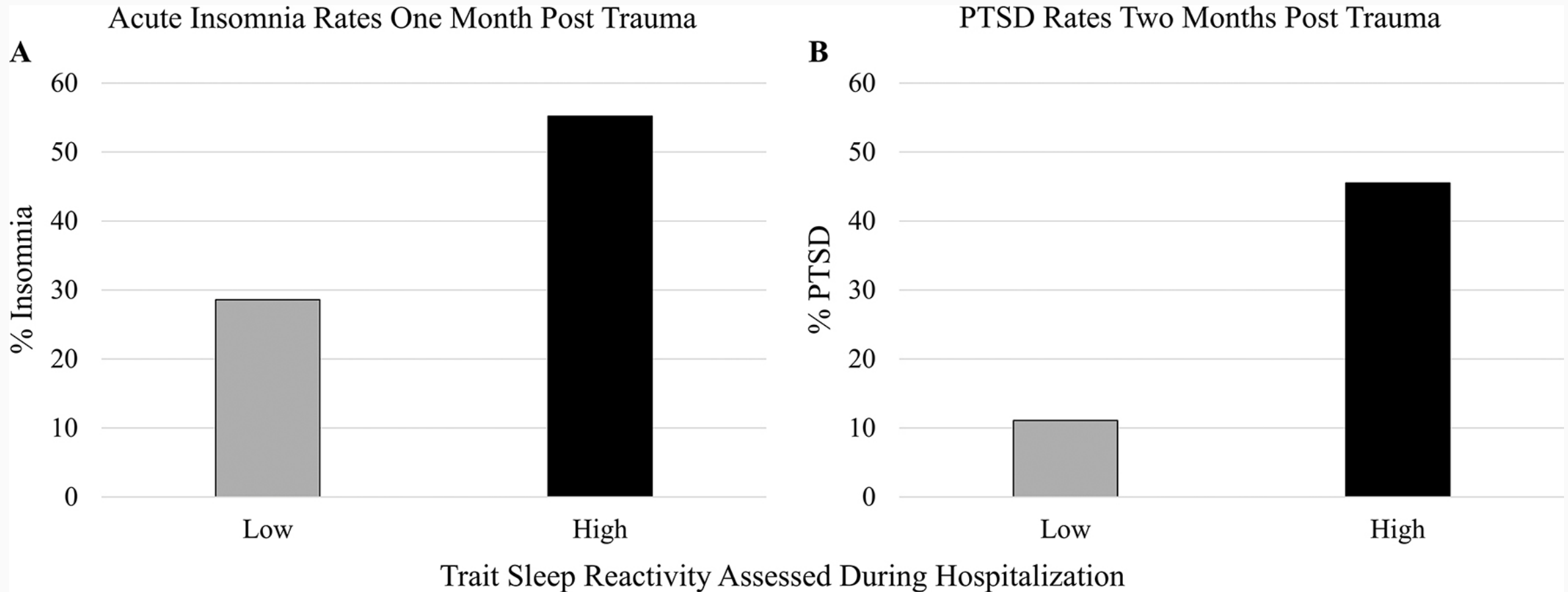
- Age = 39.5 ± 14.3
- 67.0% Male
- 67.0% Black / African American
- 47.7% Annual Household Income $\leq$ \$20,000

Table 2.

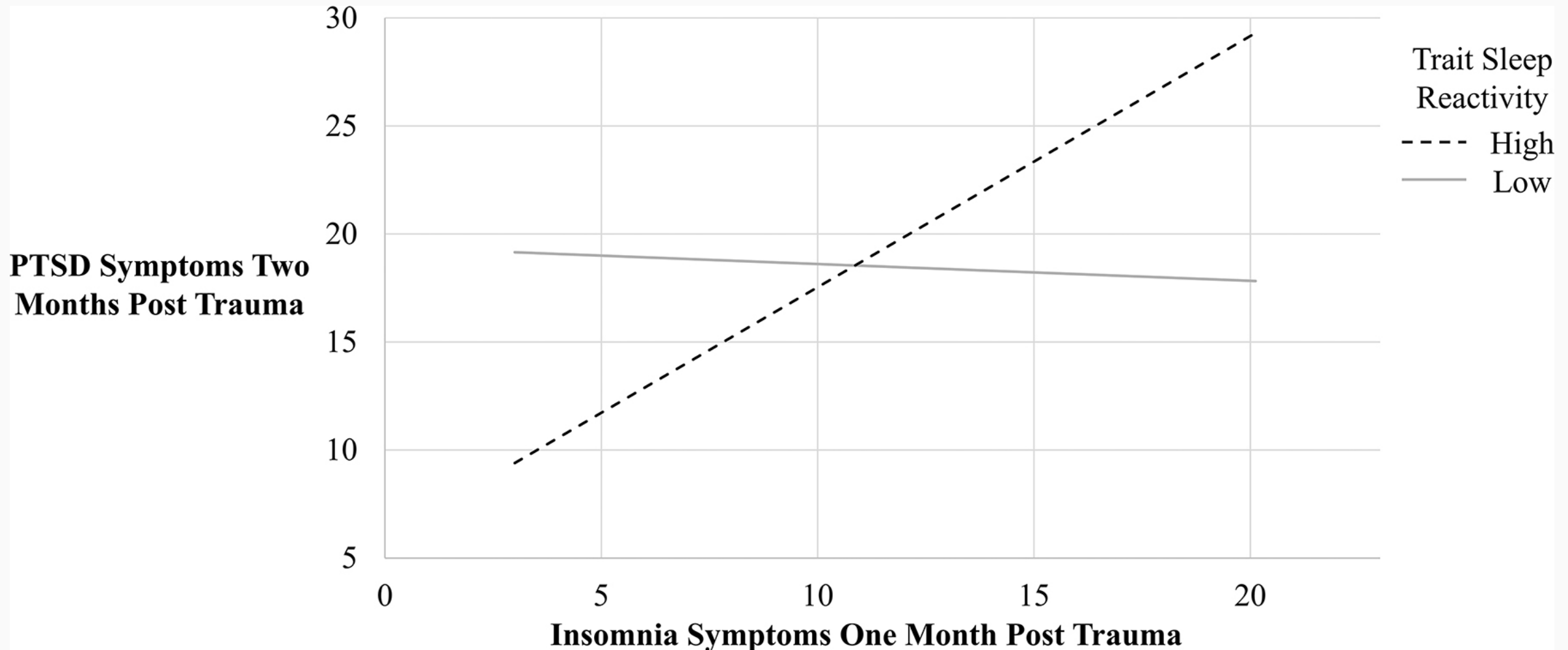
Trauma types that precipitated patients' hospitalization ($N = 88$)

Traumatic event	<i>n</i> (%)
Motor vehicle collision	37 (42.0%)
Assault with a weapon (e.g., shot, stabbed)	27 (30.7%)
Fall	8 (9.1%)
Physical assault (e.g., hit, beaten up)	6 (6.8%)
Self-injury (i.e., attempted suicide)	2 (2.3%)
Sexual assault (e.g., rape, attempted rape)	1 (1.1%)
Any other event	7 (8.0%)

Results: Hypothesis 1



$$r \geq 1 \quad \hat{\sigma} \sim \mathbb{G}^{1/4} \hat{\sigma}^0 f \geq \Delta \quad A_t$$



$$r \geq 1 - \frac{1}{\sqrt{N}} \approx 0.97 \gg \frac{1}{4}$$

- High sleep reactivity:
 - Two- fold risk for insomnia 1 - month after traumatic injury (55.2% vs. 28.6%)
 - Four- fold risk for PTSD 2- months after traumatic injury (45.5% vs. 11.1%)
- Participants with high sleep reactivity with acute insomnia 1 - month after traumatic injury reported more severe PTSD symptoms.

Discussion

- Patients with high sleep reactivity should be a future target for sleep-focused interventions immediately post - trauma
- Limitations:
 - Trait sleep reactivity was measured immediately after trauma (could not collect prior to trauma exposure)
 - Insomnia disorder lifetime diagnosis used as a covariate, rather than baseline pre-trauma insomnia severity
 - Traumatic injury sample

References

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Thank you for your attention!

- <https://www.ucl.ac.uk/healthcare>