After 2 nights of sleep restriction, lapses increased, median reaction time slowed, and mean response rate decreased from baseline in a dose-dependent manner.

**RESULTS**

- Attention outcomes worsened the more sleep was restricted (Fig 1).
- Final DLMO was shifted after the phase advancing protocol. See companion poster here:
- Morning performance (2.5 h after wake) was better when it occurred at a later circadian phase (Fig 2) even when sleep was restricted.

**DISCUSSION**

- Attention decrements occurred when sleep opportunity was 5.5h or 7h (average sleep duration for high school students).
- Advanced DLMO phase may be protective to morning attention when sleep is restricted.

**STUDY PROTOCOL**

- Baseline sleep opportunity at home (days 1-7): 10 h
- Lab sleep opportunity (days 9-13): 10h, 8.5h, 7h, or 5.5h.
- Phase advancing protocol (days 11-13): sleep/dark gradually shifted earlier with 90 mins morning intermittent bright light.
- Simple reaction time (SRT) tests: 2.5h, 5.5h, 8.5h, and 11.5h after wake.
- Dim Light Melatonin Onset (DLMO) – a circadian phase marker – measured in lab on days 8 & 14.

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