Science Advances

NAAAS

Supplementary Materials for

Sleep*more* in Seattle: Later school start times are associated with more sleep and better performance in high school students

Gideon P. Dunster, Luciano de la Iglesia, Miriam Ben-Hamo, Claire Nave, Jason G. Fleischer,
Satchidananda Panda, Horacio O. de la Iglesia*

*Corresponding author. Email: horaciod@uw.edu

This PDF file includes:

Table S1. Demographics of students in each of the high schools included in the study.
Fig. S1. Probability of a light measurement (among all individuals recorded) being below a threshold (X in legend) throughout the day.
Fig. S2. Probability distribution of light measurements across all watch data from Seattle high school students in 2016 and 2017.
Fig. S3. Representative actogram of a student in which the Actiwatch algorithm for sleep offset detection missed a sleep offset (white arrow).

Supplementary Materials:

Table S1. Demographics of students in each of the high schools included in the study.

School	RHS		FHS	
Year	**2016**	**2017**	**2016**	**2017**
Students	51	41	41	41
% Female	53	49*	56	58
% White	76	75	2	19
% Asian	10	5	54	46
% Hispanic	6	5	7	7
% African American	8	5	32	22
% Unknown/other	0	10	10	10
Age (mean ±SEM)	16.08 ± 0.05	16.27 ± 0.08	16.13 ± 0.05	16.13 ± 0.06

*Percent calculated over a total of 37 students, 4 students did not disclose sex.
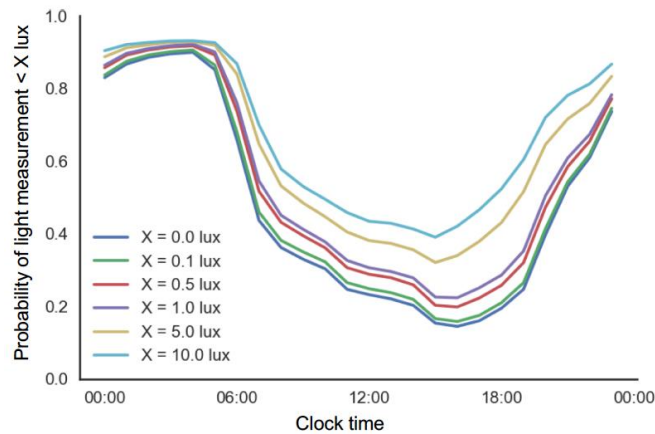

Fig. S1. Probability of a light measurement (among all individuals recorded) being below a threshold (X in legend) throughout the day. Probabilities are calculated over all student data irrespective of day of the week or year.
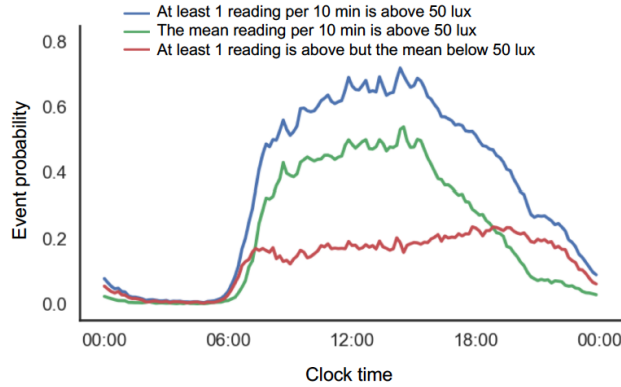
Fig. S2. Probability distribution of light measurements across all watch data from Seattle high school students in 2016 and 2017. Lines show the probability of a 50lux illuminance threshold criterion being met. Probabilities are calculated separately for each 10min bin across student-days data. Blue line shows the probability of at least a single measurement being above 50 lux. Green line shows the probability of the mean of the measurement within the 10min bin being above 50 lux. Red line represents the blue line minus the green line: the probability that at least one reading is above 50 lux but the mean reading is below 50lux.
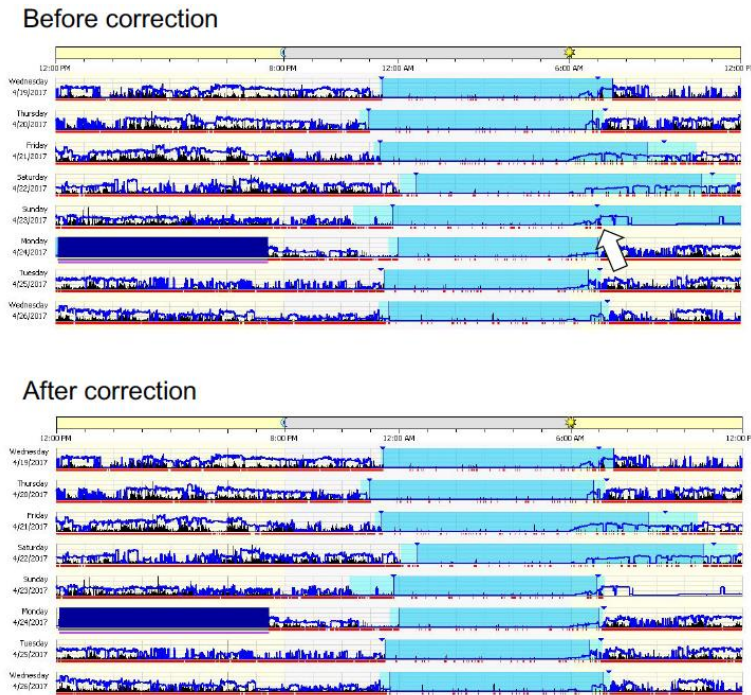

Fig. S3. Representative actogram of a student in which the Actiwatch algorithm for sleep offset detection missed a sleep offset (white arrow). Each row represents a 24h day and successive days are stacked vertically. The same actogram is shown after the error was corrected by the experimenter. Light blue rectangles represent sleep episodes, the dark blue rectangle represents a time window when the Actiwatch was off-wrist. Black markings on each day represent activity intensity, blue contours represent light exposure to blue light. Top bars represent natural day (yellow between sunrise and sunset) and natural night (gray between sunset and sunrise.