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**Supplemental Figure 1.** Screenshots of NHS3 smartphone app.

Nurses’ Health Study 3 (NHS3) participants:

48,809

Not transmitting substudy data:

65 (14%)

Transmitting substudy data:

435 (86%)

Eligible to participate:

597 (80%)

Completed eligibility screener: 743 (56%)

NHS3 participants invited to complete the Mobile Health Substudy eligibility screener: 1,337

Mobile Health Substudy participants:

500 (99%)

Completed substudy consent form, mailed Fitbit:

506 (88%)

 Withdrew from substudy:
6 (1%)

Did not complete substudy consent form:
70 (12%)

Ineligible to participate:

Did not have an iPhone:
128 (17%)

Had a doctor diagnosed sleep disorder:
24 (3%)

Did not complete eligibility screener:
594 (44%)

**Supplemental Figure 2.** CONSORT Diagram of Participation Rates Across Recruitment Stages



**Supplemental Figure 3.** Hours of missing heart rate data per participant week. Green represents high compliance, yellow medium compliance, and red poor compliance. White areas represent sampling periods that have not yet begun.



**Supplemental Figure 4.** Map of Participant GPS data



Frequency

Number of GPS observations

GPS observations per participant in Sampling Week 1

**Supplemental Figure 5.** GPS Observations per participant in Sampling Week 1