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Background

Sleep regularity plays an essential role in children's well-being. Social Jetlag (SJL) quantifies sleep timing regularity across the week as the difference between habitual mid-sleep times on school/work days and free days. Little is known about associations between SJL in preadolescent children with their habitual sleep duration and chronotype, and mother's sleep.

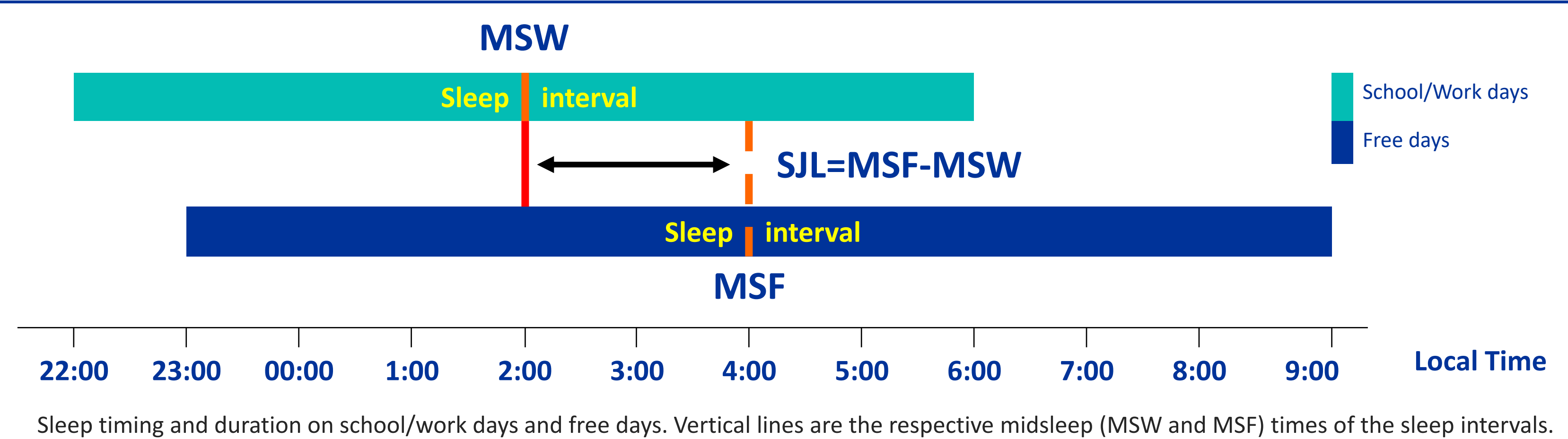
Methods

Castiglione-Fontanellaz et al., 2023, Martínez-Lozano et al., 2020

An internet-based **Mom-Child 24/7 (MCH24/7)** survey queried sleep-wake behaviors on work/school and free days of mothers and their children (4-10 years of age) using the ultra-short Munich ChronoType Questionnaire (μ MCTQ). Between February 2022 – March 2023, 1951 Israeli women anonymously filled the MCH24/7, reporting data about their own and their children's sleep habits. Ethics approval: AU-HEA-YF-20221025.

972 mom-child pairs comprised the analytic sample after excluding partial data, mothers reporting bad health condition for themselves or for the child, extreme short (<3h) and long sleepers (>14h).

Mean age: mothers – 37.1±5.7, children - 5.8±1.7 (47.7% girls).

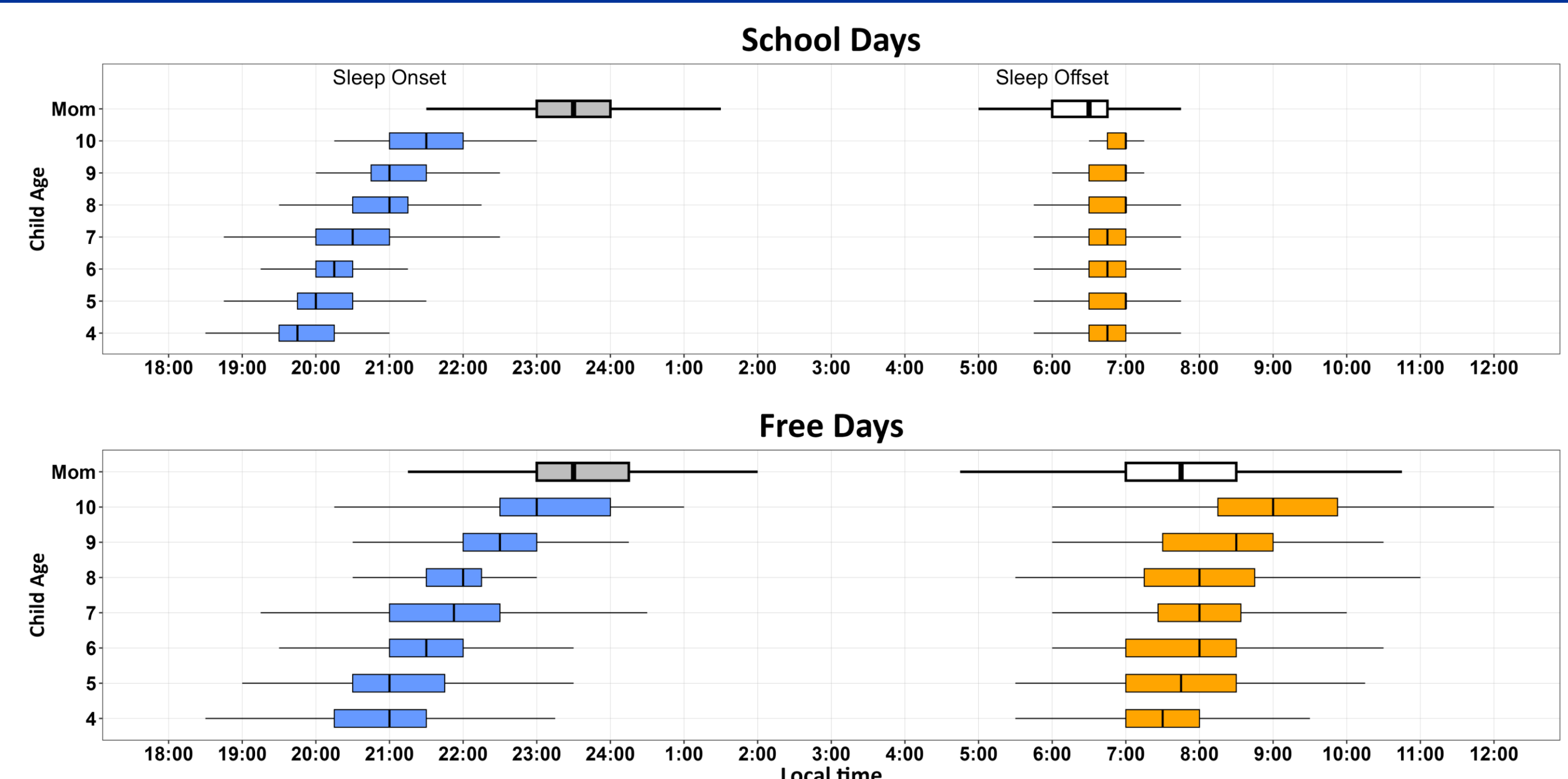


SJL - the difference between the mid-sleep times on workdays and free days, a measure of sleep timing irregularity.
Chronotype, MSFsc - the mid-point of sleep interval on free days corrected for sleep deficit on workdays.
SleepDuration_{week} – the weighted average of the sleep duration on workdays and free days [$5 * SDW + 2 * SDF / 7$].

Roenneberg et al., 2019

Results

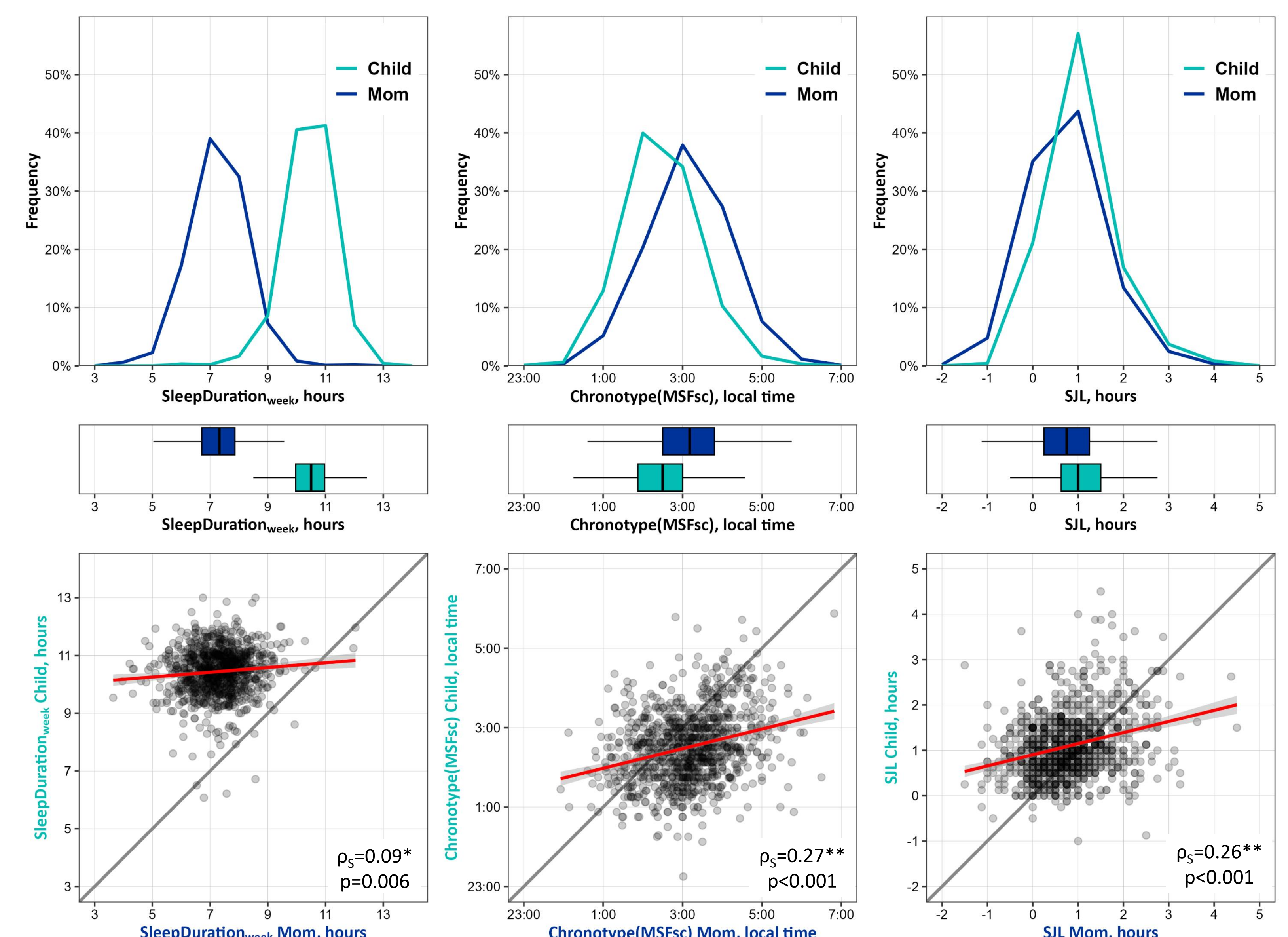
- ✓ Mothers reported that on school days, both the sleep onset and the sleep offset times were earlier than on free days (mean difference: 68.2±48.3min and 63.0±63.1min, respectively). Mean difference in school vs. free days sleep duration was 5.1±70.4min.
- ✓ On school days, sleep onset times but not sleep offset times were age-dependent. On free days, both sleep onset and offset times were age-dependent and delayed compared to work days.
- ✓ The mean SJL in children was high - 64.9±47.7min, reflecting robust differences in sleep timing across the week.



Grey/white boxplots – mothers, blue/orange - children

- ✓ SJL was strongly associated with the chronotype of children.
- ✓ SJL was also weakly negatively associated with sleep duration of children.

- ✓ Mothers reported that on average they sleep 7.3±0.9h and their children sleep 10.4±1.1h.
- ✓ The chronotype of mothers was later (3:12±1:18) than of children (2:30±1:04), as expected.
- ✓ **The SJL of children (64.9±47.7min) was unexpectedly higher than the SJL of mothers (46.6±52.9min).** The SJL and the chronotypes of mothers and children significantly correlated, while sleep durations negligibly correlated.



Conclusions

Although sleep duration of children was within age-norms, they presented high SJL, reflecting habitual irregularity in sleep timing between school and free days. Higher child SJL was associated with later chronotypes and shorter sleep duration, but also with higher SJL of their mothers, providing insights into the contribution of family context to sleep irregularity in children. Further exploration of these associations is warranted to promote sleep health of children.