

## Changes in children's sleep and physical activity during a 1-week versus a 3-week break from school: a natural experiment

R Glenn Weaver, Michael W Beets, Michelle Perry, Ethan Hunt, Keith Brazendale, Lindsay Decker, Gabrielle Turner-McGrievy, Russell Pate, Shawn D Youngstedt, Brian E Saelens ... [Show more](#)

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### Abstract

#### Study Objectives

To examine changes in elementary aged children's sleep and physical activity during a 1-week and a 3-week school break.

#### Methods

Sleep and physical activity of elementary children ( $n = 154$ , age = 5–9 years, 44.8% female, 65.5% African American) were collected over 7 weeks that included a 1-week break in two schools and a 3-week break in a single school. Mixed regression models estimated sleep and physical activity changes within and between groups (i.e. 1-week vs. 3-weeks) during school and school break weeks.

#### Results

Compared to school weeks, bed times shifted 72.7 (95% CI = 57.5, 87.9) and 75.4 (95% CI = 58.1, 92.7) minutes later on weekdays during the 1-week and 3-week break, respectively. Wake times shifted 111.6 (95% CI = 94.3, 128.9) and 99.8 (95% CI = 80.5, 119.1) minutes later on weekdays during 1-week and 3-week breaks. On weekdays during the 3-week break, children engaged in 33.1 (95% CI = 14.1, 52.2) more sedentary minutes and –12.2 (–20.2, –4.2) fewer moderate-to-vigorous physical activity minutes/day. No statistically significant changes in children's sedentary, light, or moderate-to-vigorous physical activity (MVPA) minutes were observed on weekdays during the 1-week break. Between-group differences in the change in time sedentary (32.1—95% CI = 5.8, 58.4), and moderate-to-vigorous (–13.0—95% CI = –23.9, –2.0) physical activity were observed.

#### Conclusions

Children's sleep shifted later on both 1-week and 3-week breaks. Children's activity changed minimally on weekdays during a 1-week school break and more during a 3-week school break. Displaced sleep and reductions in activity are intervention targets for mitigating unhealthy weight gain during extended breaks from school.

[overweight](#), [obesity](#), [health](#), [weight](#)

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