

# Changes in pediatric movement behaviors during the COVID-19 pandemic by stages of lockdown in Ontario, Canada: A longitudinal cohort study

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## Introduction

- Healthy movement behaviors including increased physical activity time, and limited screen time, have been associated with favorable child health outcomes
- Children's movement behaviors have been affected by the Coronavirus disease 2019 (COVID-19) pandemic and associated public health preventative measures
- However, little is known regarding movement behavior patterns over time by government-issued lockdowns

## Objective

To assess how children's movement behaviors changed during COVID-19 by stages of lockdown and reopening and whether these trends were modified by child age (<5 years vs ≥ 5 years), sex, and parent-reported annual household income (\$0 to \$79,999 vs. \$80,000+)

## Methods

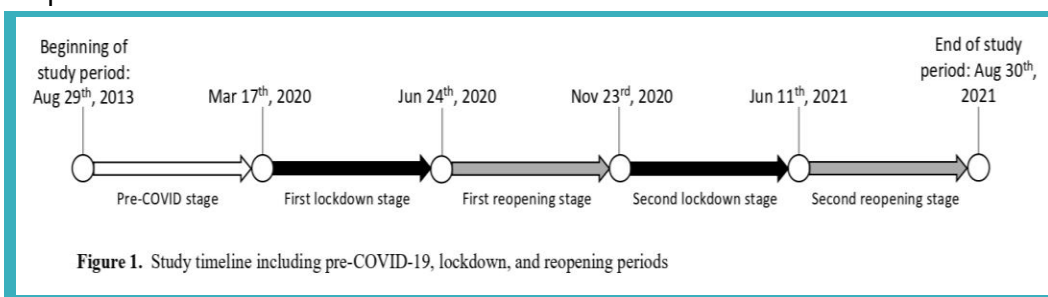
**Data source:** TARGet Kids! COVID-19 Study of Children and Families

**Design:** Longitudinal cohort study with repeated measures of exposure and outcomes and lockdown/reopening dates included as knot locations in spline model

**Exposure:** Dates from before and during COVID-19 when child movement behavior questionnaires were completed

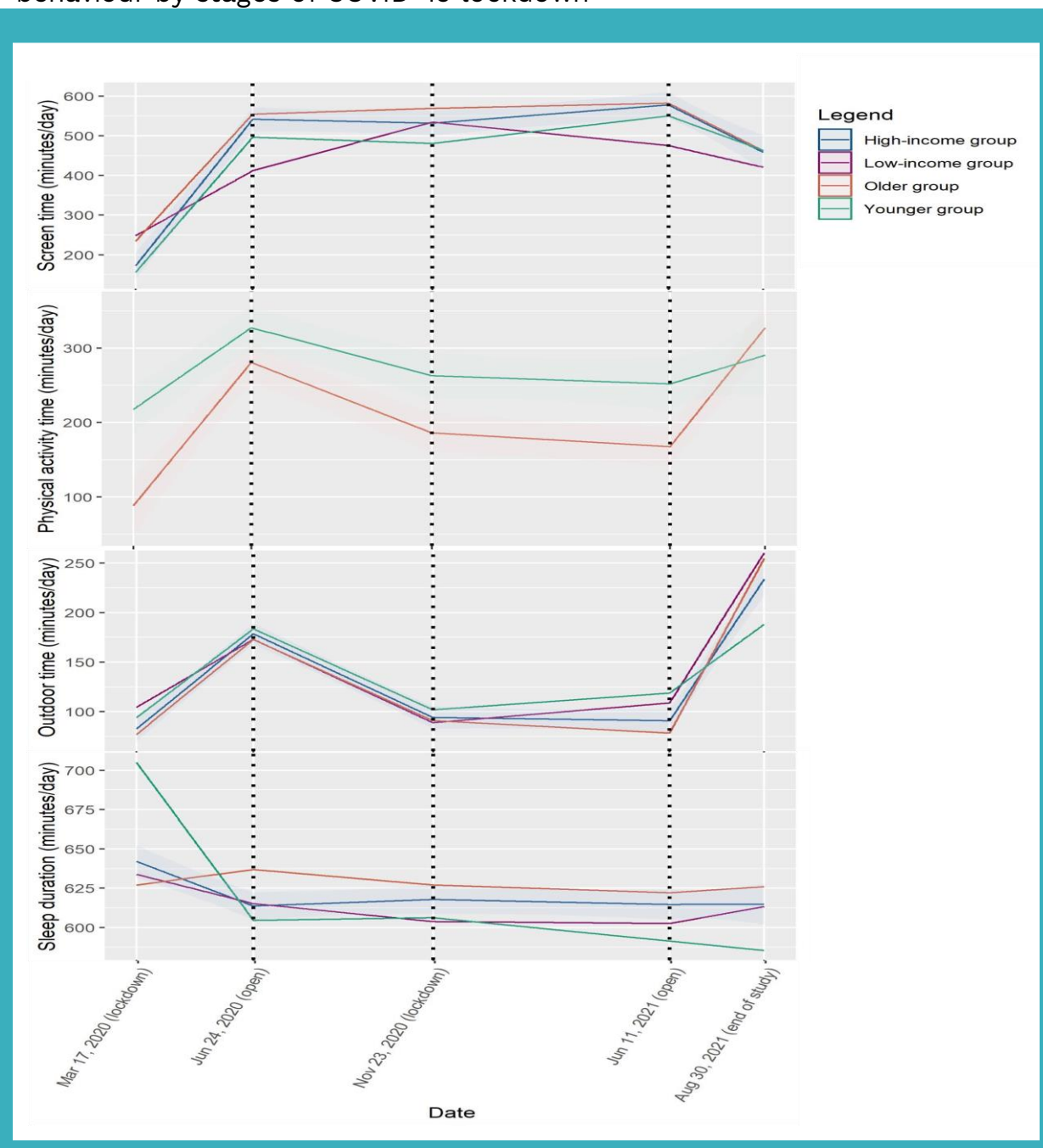
**Outcomes:** Daily screen, physical activity, outdoor, and sleep time

**Covariates:** Child age child sex, maternal ethnicity, parent-reported annual household income



## Results

**Figure 2.** Adjusted age- and income-stratified change in movement behaviour by stages of COVID-19 lockdown



## Discussion

- Observed increase in screen time during lockdown and decrease during reopening may be attributable to the lack of alternative activities available during lockdown
- Unexpected greater increase of lockdown screen time and greater decrease of reopening screen time in the high-income group
- Observed increase in physical activity and outdoor time during the first lockdown contrasts with much of existing literature
- Younger group experienced greater increase in screen time lower increases in physical activity and outdoor time than the older group perhaps because younger children have less freedom than older children to occupy their time with unsupervised non-screen-based activities such as outdoor physical activity

## Conclusions

- When developing lockdown-related restrictions, policy makers may consider seeking to limit barriers to healthy movement behavior
- These interventions may include a focus on younger children

## References

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