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Using Linked Health and Education Data to Examine Growth, Screen Use, and Academic Achievement Among Children in Ontario, Canada: A Longitudinal Cohort Study

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Background

Collaboration between healthcare and education sectors is essential for advancing pediatric research, yet it is often limited by disciplinary silos and the lack of high-quality linked data. Few child health cohorts have been able to link individualized health information with academic achievement.

Objectives

To examine whether early child growth and screen time were associated with academic achievement in elementary school in Ontario, Canada.

Methods

A prospective cohort study was conducted among children participating in the TARGet Kids! primary care practice-based cohort (www.targetkids.ca) in Ontario, Canada between 2008 and 2023. TARGet Kids! collects repeated measures of child growth (direct anthropometric measurements) and health behaviours (parent-reported screen use) since birth and has access to participants' electronic medical record. Through a data sharing partnership with the provincial testing agency (EQAO), participants have been linked to their Grade 3 and Grade 6 annual standardized assessments in reading, writing, and math since 2012. Proportional odds models were used to examine associations between child growth, daily screen time, and academic achievement, adjusting for covariates.

Results

Linked data were available for 3322 Grade 3 and 2084 Grade 6 students. Each additional hour of screen time was associated with 10 % lower odds of achieving a higher academic level in reading and math. Underweight and overweight status were also associated with lower academic achievement.

Conclusions

Strengthening collaboration and data linkage between health and education sectors is important. Early interventions that promote healthy behaviours and growth should be developed and tested to support academic success in elementary school.

