

what we know...

Introduction

Tracking physical activity (PA) has never been more convenient than it is today. It is common to study PA in adults, teens and children however, very few studies have investigated exercise levels of preschool aged children.

The **purpose** of this study was to address the following questions:

- How much and what type of exercise are children aged 18 months to 5 years completing daily?
- Can these levels be impacted by our lifestyle intervention?

Background

This research study is part of the Guelph Family Health Study where we are investigating ways for children to develop healthy habits early. This is essential as it has been shown that both positive and negative lifelong habits develop in children at a very young age¹. Although it is well known that exercise decreases the risk of childhood obesity² and chronic disease,³ obesity rates continue to rise and we are unsure why.

Methods

53 children (18 months - 5 years) were recruited as part of the Guelph Family Health Study. Children wore an ActiGraph accelerometer (measures PA) for several days at baseline testing and again 6 months later. The data from 29 children was analyzed to see how much light (LPA), moderate-to-vigorous (MVPA), and sedentary activity was completed during 2 testing periods: before and after a lifestyle intervention.

All study procedures were completed after parents provided written, informed consent. The study was approved by the University of Guelph Research Ethics Board.



Limitations

A few limitations of this study included a small sample size and difficulty getting such young children to wear the monitors for the duration of the study. Currently, there is no gold standard algorithm for calculating physical activity in this age group which also presents difficulties.

References

- ¹ Malina. Res Q Exerc Sport. S48; 1996
- ² Guinhouya et al. Int J. Pediatr Obes. 361; 2011
- ³ Janssen et al. Int. J. Behav. Nutr. Phys. Act. 40; 2010
- ⁴ Tremblay et al. Appl. Physiol Nutr Metab. S311; 2016

“By the age of 5 or 6, your kids will form eating, exercise and sleep habits that can last a lifetime.”

TRACKING EXERCISE IN KIDS



Research Findings

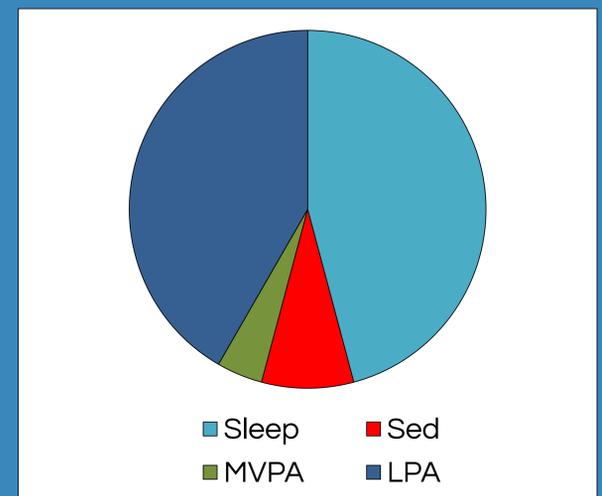
What We Already Know:

- Canadian Society for Exercise Physiology (CSEP) recommends that:
 - Toddlers (1-2 years) and preschoolers (3-4 years) get a minimum of **180 minutes** of any level of physical activity each day⁴
- Children within the Guelph Family Health study are not meeting these recommendations

Next Steps:

- Select a set of calculations that accurately captures physical activity levels in preschool aged children
- Determine if our **lifestyle intervention** impacts the duration and intensity of exercise
- Compare physical activity data to other health outcomes such as body mass index (BMI)

CSEP: Canadian Society for Exercise Physiology recommendations (ages 5-11)



24-hour movement guidelines⁴:

- 9-11 hours sleep
- 2 hours of sedentary behaviour (Sed)
- Several hours of Light Physical Activity (LPA)
- 1-hour moderate-vigorous physical activity (MVPA)

Conclusions:

- Children enrolled in the Guelph Family Health Study aged 18 months to 5 years old are not meeting the current Canadian recommendations for daily physical activity and time spent in being sedentary
- We need to work to find ways to reduce sedentary behaviour and increase physical activity duration and intensity of children within our study
- Continue to investigate methods for tracking exercise in young children, which will allow us to compare physical activity to other health outcomes
- In the long term, this information may be used to help develop new physical activity guidelines for preschool aged children

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