



Differences in Physical Activity between Children with and without Siblings

Siblings serve a unique influence on the health habits of young children, since they serve both as a family and as a peer influence.¹ Siblings are influential to the development of health behavior,² including nutrition and physical activity, which are related to healthy growth. Preliminary studies have indicated starting at around 8 years old children without siblings (only children) start to have higher rates of excess weight gain compared to children with siblings.³

A study involving mothers and their 5.0-7.9 year old children, both with and without siblings (only children), was conducted to determine if children with younger siblings had different health behaviors than only children. The children with siblings in this study must have one sibling between the ages on 2.0-4.9 years old, since youngest born children tend to have similar health habits to only children. In this study, we gathered information on growth and physical activity from 33 children with siblings and 23 only children and compared the differences.

Measuring Growth and Physical Activity

- Children were weighed on a digital scale and height was measured using a portable height meter. Children were measured around the waist (at the belly button). The child's age and sex was reported by the mother, and the child's growth was compared to national standards.⁴
- Children were asked to wear an activity monitor, similar to a fit bit, on their ankle for 7 days of at least 10 hours. Mothers were asked to keep a daily log of the child's general activities throughout the day, including times the activity monitor was not worn.
- Parents completed a questionnaire related to family and child physical activity and screen time habits.⁵
- For completing growth measurements, wearing, and recording the activity monitor days, mothers and children received a beach ball and a basketball.



Calculating Intensity of Physical Activity

- Physical Activity can be classified by different intensities including sedentary behavior (SB, such as sitting), light physical activity (LPA, such as walking), or moderate-to-vigorous physical activity (MVPA, such as fast running or vigorous exercise)
- More sedentary behavior and less MVPA is associated with excess weight gain in children.⁶
- To calculate intensity of physical activity, the activity monitor amounts were compared to thresholds for SB, LPA, and MVPA.
- The recommendation for MVPA in children is 60 minutes per day, though only 42% children ages 6-11 years old in the United States meet that requirement.⁷



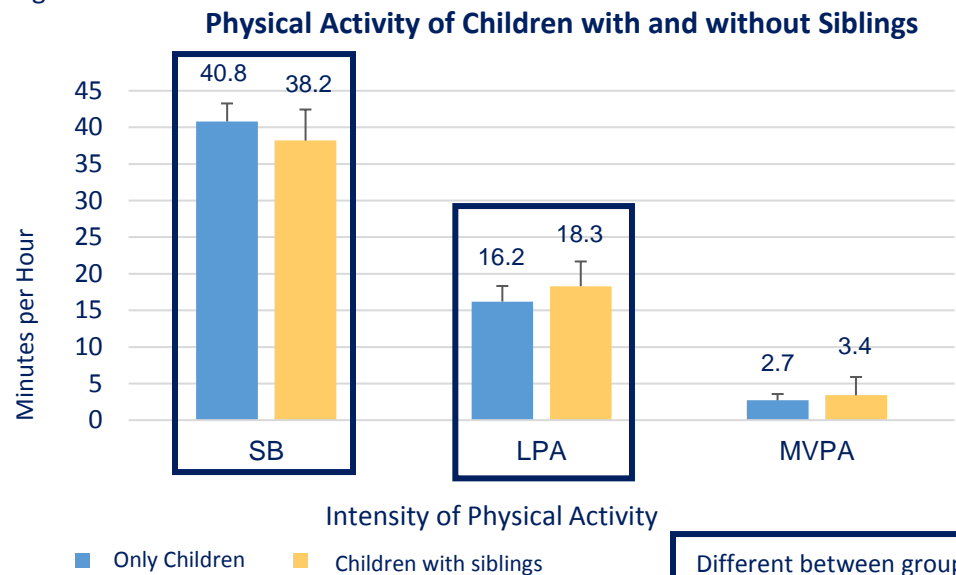
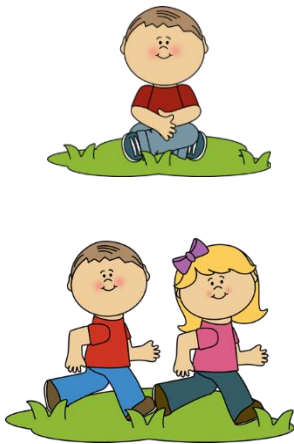
Findings presented are from the *Siblings Influence on Subsiding Behaviors Related to Obesity (SISBRO)* study, which took place between April 2017 and December 2017.

Growth Differences between Children with and without Siblings

- When comparing children with siblings and only children, more children with siblings (79%) were in a healthy growth range than only children (47%).
- In both groups, we noticed there is still a spectrum of growth at this age and all children benefit from healthy habits.

Physical Activity between Children with and without Siblings

- There was no difference in family or child physical activity involvement, or child screen time between groups.
- In total, children with siblings had fewer minutes of sedentary behavior (-38.0 ± 16.5) per day compared to only children.
- Children with siblings had more minutes of LPA (38.1 ± 19.1) per day compared to children without siblings. It may be suggested that siblings convert sedentary behavior opportunities into light physical activity.
- There was no difference in MVPA between groups, which may be attributed to similar sports participation patterns at this age.



Summary of Findings

Overall, children with siblings had a healthier growth trajectory than only children. There was no difference in family behaviors, but children with siblings had less sedentary behavior and more light physical activity compared to children without siblings. All children can benefit from increasing physical activity, which can help healthier growth patterns.

References

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This report was prepared by Dr. Chelsea Kracht on behalf of the Behavioral Nutrition and Physical Activity Laboratory directed by Dr. Susan Sisson. Data were collected as part of the Sibling Influence on Subsiding Behaviors Related to Obesity (SISBRO). If you have questions or comments, please contact us at nutritionandactivitylab@ouhsc.edu or 405.271.8001x41173