

# Motor Skills, Screen Time, and Physical Activity

Fundamental Motor Skills   Physical Activity   Preschools

Screen-time

Read the published, peer-reviewed paper here: <https://pubmed.ncbi.nlm.nih.gov/30997257/>

## Citation

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## General Summary

Developing fundamental motor skills (FMS) is important for kids' health. Running, hopping, throwing, and catching seem simple, but need practice to get good at. Kids who feel good about these skills are more likely to play and be active. Many kids aren't as active as they should be. One reason may be due to using screens. This study looked at information from 126 children to explore the connections between fundamental motor skills, physical activity, and screen time behaviors. Our findings indicate that motor skills are related to vigorous physical activity and increases in motor skills meant less time using screens.

## When did the study take place?

This is the baseline data from the overall "Pause and Play" study.

## How will the results help children, parents of children, and those who care for them?

Educating parents on the importance of finding a balance between screens and physical activity is an important message to give them.



## What was unique about this study? How were patients given a voice in research?

One benefit of this study is that we were able to take a snapshot of child screen habits and motor skills, but we were also able to have more than one snapshot of the kids' activity levels.

## What is the purpose of the study?

The purpose of this study was to collect measurements of young children's fundamental motor skills (FMS), screen-time practices, physical activity (PA) levels, and sedentary behaviors to determine how they are all related to one another.

## Who was involved?

Children between the ages of 3-4 attending early childcare education centers were involved in this study. The children had to attend the center full-time and plan to return back to the same center the following year. We had 126 children who completed motor skills tests, and 88 of those wore the activity monitor. Fifty-four percent of participants were female; 46% were white, and 42% African American. A total of 48% lived in households at or below the poverty line.



**126**  
Children

**3-6**  
Years of Age

**54%**  
Female

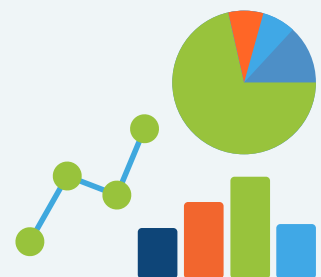
**42%**  
African American

**46%**  
Caucasian

**46%**  
≤ Poverty Line

## How did we get the results and findings?

We looked at information from 126 children on how long they spent using screens, and whether kids differed in their motor skills ability based on how long they used screens. We then looked at 88 of those same kids to look at their physical activity information to see how long they were active.





## What were participants asked to do during the study?

Parents completed a written demographic questionnaire that included their child's date of birth, sex, race, ethnicity, household income, and total number of people in the child's house. Parents also answered questions on child's screen time usage. Children wore an activity monitor, which is a device that measures movement. It was placed on their right hip by a trainer researcher. They wore this activity monitor for 24-hours a day for 7-days. These 7 days did not overlap with the days for motor skills assessments. Trained researchers administered the test to measure motor skills in preschoolers (it's called the Test of Gross Motor Development-3rd Edition (TGMD-3)). They did this in small groups of 3-4 kids at a time and it lasted about 30 minutes for each group. First, the researcher would demonstrate a skill and then children had to practice and perform that same motor skill. These assessments were video recorded and later coded by researchers. Researchers measured children's height and weight. A second measure of child movement was used (it's called the Movement Assessment Battery for Children-2nd edition). This is measured individually and takes about 10 minutes to complete. A trained research assistant conducted this test in kids.



## Why is this research important to patients, clinicians, and other researchers?

As we know, there is widespread use of screen-based devices among young children. Knowing this provides a unique opportunity to use screen-based devices to improve children's health.

## What did we learn?

There is an adverse relationship between screen-time and manual dexterity skills but not for any other fundamental motor skills or physical activity. But a question remains: is all screen-time bad for children's development? Are there ways to make screen-time healthier for kids? Our future research plans to look at this!



## Were there any limitations to the study?

One limitation of the present study is that the information we collected was taken at a single point in time. This means we cannot make any assumptions about what is the cause and what is the effect. Our results DO provide us with initial information on how screen-time, physical activity, and fundamental motor skills are related. Also, our sample size was small. It included diversity across different levels of household income, but future studies should be larger in size.



## What's next?

The American Academy of Pediatrics has reported concerns about negative effects of too much screen time for young children. Our study did find that as screen time increased, manual dexterity skills decreased, but we did not find any other relationships to motor skills or physical activity. Longer observations would be helpful to determine the extent of these potential relationships. Since there is widespread use of screens among children, thinking of ways to make screen time healthier for kids is an aim of our future research.

