

App boosts preschoolers' motor skills

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Preventing childhood obesity could soon take a major "hop" forward with an app that teaches kids to do just that, and to skip, run and throw a ball.

"Fundamental motor skills like hopping, running and throwing a ball are

critical to physical activity, and [physical activity](#) is a crucial part of preventing [childhood obesity](#)," said Amanda Staiano, Ph.D., Associate Professor at Pennington Biomedical Research Center. "But these [movement skills](#) don't emerge naturally. They must be taught, practiced and reinforced."

Almost all preschoolers are physically active at least part of the day. The problem is that preschoolers who don't get a chance to kick or throw a ball or jump and play hopscotch don't develop the basic skills they need to get involved in more organized sports and activities in grade school. As they get older, [children](#) drift into more sedentary behavior, depriving them of opportunities to build strong hearts and muscles and raising their risk of obesity and other [chronic illnesses](#).

"Unfortunately, 77 percent of preschoolers are far below average when it comes to basic motor skills," Dr. Staiano said. "Improving those skills usually means waiting until more formalized physical education is available or attending programs that might have instructors with motor expertise, but this approach delays the onset of structured opportunities or limits the number of children who can get help."

Apps may be the answer.

A 12-week app program boosted children's motor skills an average of 15.5 percentage points, taking them from below average to average rating, according to a new study published in the journal *Pediatrics*.

The study enrolled 72 children, whose ages ranged from 3 to 5 years old. The preschoolers were randomly divided into two groups. In both groups, parents downloaded a study app to their phones. One group of parents received an app that provided 3 months of activities, lessons, and games to promote children's "[free play](#)" routines. The other group had parents download an app that provided a 3-month program of structured

activities that focused on six motor skills—hopping, throwing, sliding, kicking, jumping and catching—for 12 minutes a day through the app.

Children in the motor skill app group significantly improved their motor skills when compared to the free play app preschoolers.

In addition, three months after the structured activities ended, the children in the motor skill app group still maintained their higher motor skill levels. Meanwhile, the children in the free-play group saw their motor skills decline.

The study shows that app-based, in-home programs can help children improve their [motor skills](#), said Dr. Staiano, who co-led the project along with Dr. Kip Webster an Assistant Professor in the Institute of Public and Preventive Health at Augusta University.

"Clinicians and educators should encourage parents to take part in activities that reinforce their children's motor skill development, especially during the preschool years and as they prepare for kindergarten," Dr. Webster said. "Apps provide an excellent avenue to reach a large number of families that might otherwise be limited in time or access to participate in these types of early motor skill programs and gives children an early start on developing these critical skills."

"The overwhelming majority of children with obesity become adults with obesity. Breaking this cycle is vitally important to the future of Louisiana and the United States. It's part of Pennington Biomedical's mission," said Executive Director John Kirwan, Ph.D. "It's difficult to overstate the value of research that helps us achieve this goal."

More information: Amanda E. Staiano et al, mHealth Intervention for Motor Skills: A Randomized Controlled Trial, *Pediatrics* (2022). [DOI: 10.1542/peds.2021-053362](https://doi.org/10.1542/peds.2021-053362)

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