

Good motor skills may enhance reading skills in obese children

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Excess body weight has been linked to poor academic performance in children in several previous studies. A new Finnish study now shows that a high body fat percentage is associated with poor reading skills in 6–8-year-old boys. However, these associations are largely explained by poor motor skills.

The results published in the *Journal of Sports Science* are part of the Physical Activity and Nutrition in Children (PANIC) Study conducted in the University of Eastern Finland and the First Steps Study conducted at the University of Jyväskylä.

The study investigated the associations of [body fat percentage](#) and other cardiometabolic risk factors with academic achievement among 175 Finnish 6–8-year-old children. Body fat percentage was assessed by DXA and other cardiometabolic risk factors from blood samples. Reading and arithmetic skills were measured using standardised tests. Various confounding factors including [motor skills](#), cardiorespiratory fitness, physical activity, and sedentary behaviour were also measured.

A higher body fat percentage and a higher concentration of leptin, a hormone secreted by adipose tissue, were inversely associated with reading skills in boys. However, these associations were explained by poorer motor skills linked to adiposity.

In girls, the level of gamma-glutamyltransferase, a marker of fatty liver, was inversely related to reading fluency. This association was

independent of body fat percentage, motor skills, [cardiorespiratory fitness](#), physical activity, and socioeconomic status.

"Although adiposity was linked to poorer reading skills in boys, these associations were mainly explained by poorer motor skills that often accompany adiposity. These results suggest that motor skill training during early childhood may contribute to reading skills in boys during the first grades of primary school," says Dr. Eero Haapala from the University of Jyväskylä.

"Cardiometabolic risk factors may be more important correlates of academic achievement in girls than in boys, but this warrants more research."

The results suggest that children's daily [physical activity](#) should include various opportunities to practice and rehearse motor skills.

More information: Eero A. Haapala et al. Mediating effects of motor performance, cardiorespiratory fitness, physical activity, and sedentary behaviour on the associations of adiposity and other cardiometabolic risk factors with academic achievement in children, *Journal of Sports Sciences* (2018). [DOI: 10.1080/02640414.2018.1449562](https://doi.org/10.1080/02640414.2018.1449562)

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