

Children's physical activity levels are not enough to counteract sedentary lifestyles

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Children who spend more than three-quarters of their time engaging in sedentary behaviour, such as watching TV and sitting at computers, have up to nine times poorer motor coordination than their more active peers, reveals a study published in the *American Journal of Human Biology*.

The study, involving Portuguese children, found that [physical activity](#) alone was not enough to overcome the negative effect of sedentary behaviour on basic motor coordination skills such as walking, throwing or catching, which are considered the [building blocks](#) of more complex movements.

"Childhood is a critical time for the development of motor coordination skills which are essential for health and well-being," said lead author Dr Luis Lopes, from the University of Minho. "We know that sedentary lifestyles have a negative effect on these skills and are associated with decreased fitness, lower self-esteem, decreased [academic achievement](#) and increased [obesity](#)."

Dr Lopes' team studied 110 girls and 103 boys aged nine to ten from 13 urban [elementary schools](#). The children's sedentary behaviour and physical activity were objectively measured with [accelerometers](#) (a small device that children attach to their waist that quantifies movement counts and intensities) over five consecutive days. Motor coordination was evaluated with the KTK test (Körperkoordination Test für Kinder), which includes balance, jumping laterally, hopping on one leg over an obstacle and shifting platforms.

The tests were supplemented with a questionnaire for parents to assess health variables, before the authors compiled the results into three models to calculate odd ratios for predicting motor coordination. These were adjusted for physical activity and accelerometer wear time, waist to height ratio and home variables.

On average the children spent 75.6% of their time being sedentary, but the impact on motor coordination was found to be greater on boys than girls.

Girls who spent 77.3% or more of their time being sedentary were 4 to 5 times less likely to have normal motor coordination than more active girls. However, boys who were sedentary for more than 76% of their time were between 5 to 9 times less likely to have good or normal motor coordination than their active peers.

"It is very clear from our study that a high level of sedentary behaviour is an independent predictor of low motor coordination, regardless of physical activity levels and other key factors" said Lopes. "High sedentary behaviour had a significant impact on the children's motor coordination, with boys being more adversely affected than girls."

Until now there has been little research into the links between sedentary behaviour and motor coordination, but these findings reveal that physical activity did not counteract the negative effects that high levels of sedentary behaviour had on [motor coordination](#).

"The results demonstrate the importance of setting a maximum time for sedentary behaviour, while encouraging children to increase their amount of physical activity," concluded Lopes. "We hope that our findings will make a valuable contribution to the debate on child health and encourage future investigations on this subject."

More information: Lopes. L, Pereira. B, Santos. R, Lopes.V, 'Associations between Sedentary Behavior and Motor Coordination in Children', *American Journal of Human Biology*, July 2012, [DOI 10.1002/ajhb.22310](https://doi.org/10.1002/ajhb.22310)

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