

# Increased exercise could boost children's cognitive skills, study suggests

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Research by sports scientists at Nottingham Trent University showed that on average primary school pupils who were fitter—measured by those that ran the furthest on a fitness test—had better response times in

tasks than those who did not run as far.

The study aimed to investigate the effect on [children's learning](#) and memory following the 'Daily Mile', a school-based physical activity which is implemented in schools across the UK and sees pupils run or jog at their own pace, usually via laps of the playground or sports pitch.

Pupils aged nine to 11 undertook a series of [cognitive](#) function tasks following exercise and rest.

The cognitive tasks were attempted by pupils immediately after exercise and 45 minutes after exercise.

The researchers found that, while exercise did not improve cognition overall, executive function—a set of mental skills that includes working memory, flexible thinking and self-control—tended to improve immediately after exercise.

In addition, the pupils classed as most fit showed superior cognition to their peers, completing tasks on average 5-10% faster and just as accurately.

The study also explored children's enjoyment of the Daily Mile, finding that they particularly liked the self-paced nature of the activity, the social aspect and the fact that it was outdoors.

"A consistent finding of our work was that the children who were able to run the furthest during the multi-stage [fitness test](#) displayed superior cognition to their counterparts," said lead researcher Dr. Simon Cooper, Associate Professor in Exercise, Cognition and Health in Nottingham Trent University's School of Science and Technology.

"Our work shows the importance of regular opportunities for physical

activity in schools, not just for health and wellbeing but also cognition and academic achievement."

"The study also showed some really important evidence that young people enjoy taking part in the Daily Mile and enjoy the fact that they can [exercise](#) at their own pace and with friends. This suggests that The Daily Mile could be an effective and sustainable way to increase physical [activity](#), and subsequently fitness, in children."

Dr. Joseph Lovett, Research Coordinator for The Daily Mile, said that "this study helps confirm what we experience first-hand, that children enjoy participating in The Daily Mile outside with their peers."

"The indication that fitter children demonstrate superior cognition is extremely encouraging. One of the core aims of the foundation is to give children the opportunity to enjoy regular [physical activity](#) to help improve fitness. The knowledge that improved [fitness](#) can improve cognitive ability is a hugely important message for us."

The study is published in the journal *Psychology of Sport and Exercise*.

**More information:** Lorna M. Hatch et al, The Daily Mile™: Acute effects on children's cognitive function and factors affecting their enjoyment, *Psychology of Sport and Exercise* (2021). [DOI: 10.1016/j.psychsport.2021.102047](#)

Provided by Nottingham Trent University

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