

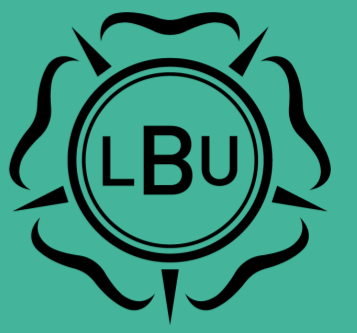
The Daily Mile™ Initiative: Exploring Physical Activity and the Acute Effects on Executive Function and Academic Performance in Primary School Children

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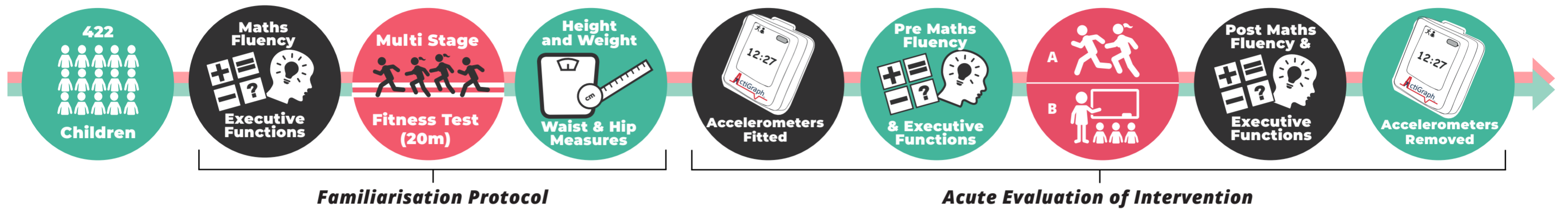
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What we did



Final sample size

The Daily Mile Group
The Daily Mile Condition
 n=158, age=8.99 (0.5) years old; 56% girls;
 Y3 n=1, Y4 n=112 and Y5 n=45; overweight or obese n=39.

Control Group
The Control Condition
 n=145, age=8.99 (0.5) years old; 57% girls;
 Y3 n=4, Y4 n=101 and Y5 n=40; overweight or obese n=42.

Results: Physical activity

Multi-level modelling revealed that the 15-minute Daily Mile averaged 10 minutes more MVPA and 9 minutes less sedentary time compared to a classroom based lesson.

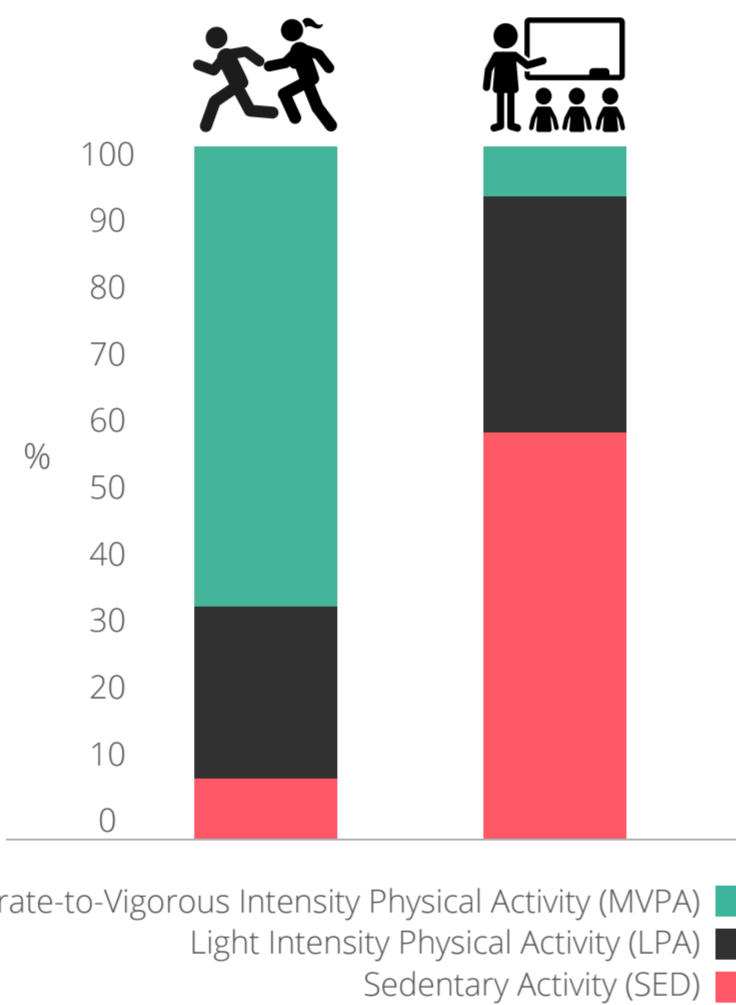
The Daily Mile Group:

Spent 0.72±0.93 minutes (5%) being sedentary, 3.45±2.03 minutes (23%) in LPA and 10.67±2.74 minutes (72%) in MVPA.

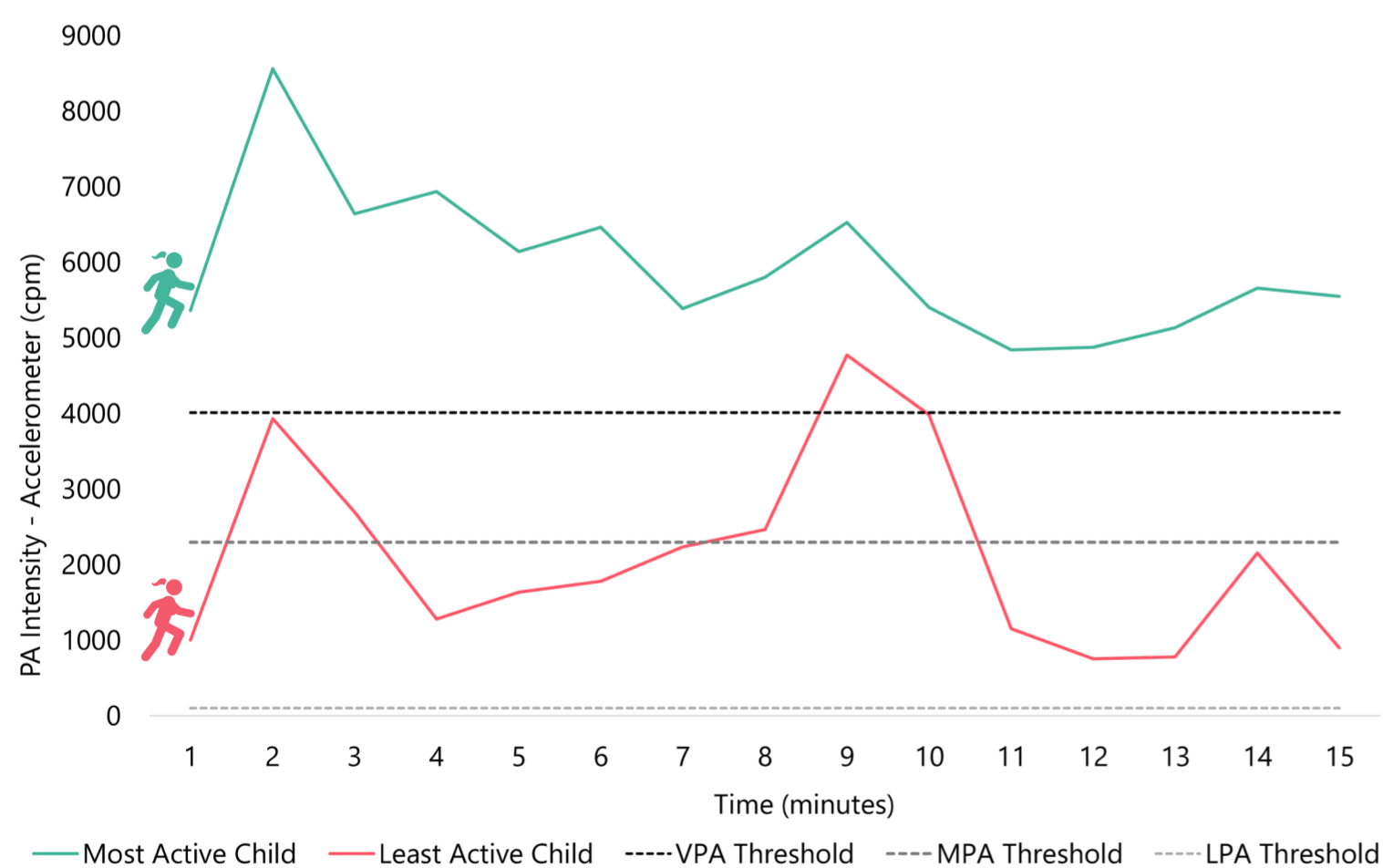
The Control Group:

Spent 9.91±3.5 minutes (68%) being sedentary, 4.32±2.79 minutes (29%) in LPA and 0.44±0.95 (3%) in MVPA.

The Daily Mile contributes to 10.67 minutes towards the guidelines of 30 minutes MVPA within the school day.



Large variability in physical activity levels at participant level



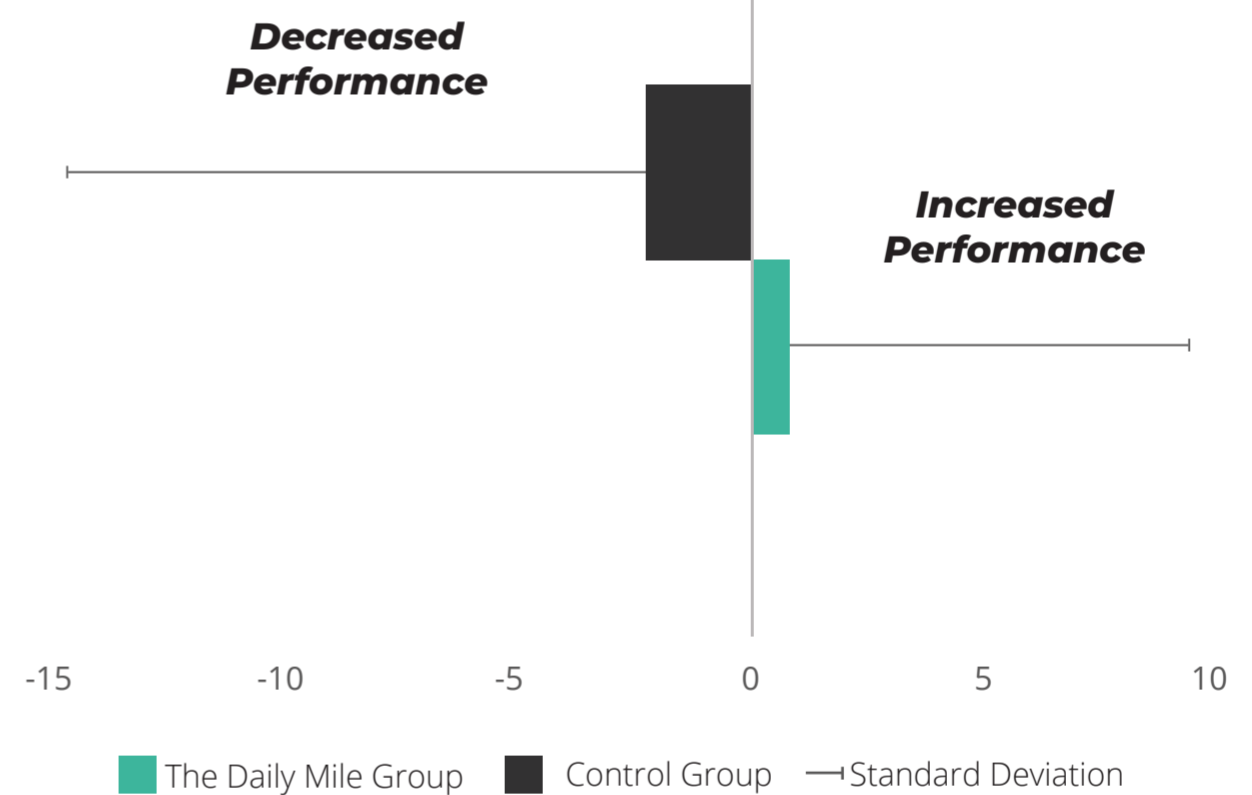
MVPA accumulation within TDM varied greatly, from 5 minutes by the least active child to 15 minutes by the most active child.

Key summary points

- The Daily Mile enables children to accumulate 10 minutes of MVPA more than classroom time. MVPA accumulation during TDM varied greatly.
- Caution should be warranted as findings only provide a snapshot of the PA potential, not giving answers on PA over time or varied implementation approaches.
- While there were some interactions with maths fluency performance, in favour of The Daily Mile, in isolation the improvements were not significant.
- No effect was found on Executive Functions. This may be due to using individual tests on sub-domain processes, a learning effect or a lack of counterbalancing the tests.
- Future investigations should look to overcome challenges assessing Executive Function in school-based settings and move towards multiple measures of academic performance.

Results: Maths fluency performance

Significant interaction was revealed between conditions and time, in favour of The Daily Mile condition for maths fluency performance.



The Daily Mile condition scores increased post-intervention, and the control condition scores decreased post-intervention.

However, neither condition secured significance, suggesting the interaction was due to a magnitude of change in the two conditions.

Results: Executive Function

The Daily Mile revealed no significant interactions in Executive Functions – irrespective of the individual dose of moderate-to-vigorous physical activity (MVPA), as demonstrated through the 10-minute threshold analysis.

Why was there no effect of Executive Function?

- Small effects not being detectable by individual tests of Executive Function.
- Irrespective of familiarisation protocol, a learning effect occurred.
- Order of the Executive Function tests were not counterbalanced.