



Benefits of The Daily Mile Research Studies

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Student Physical Health

The Daily Mile Specific Research

1. [The Daily Mile makes primary school children more active, less sedentary and improves their fitness and body composition: a quasi-experimental pilot study](#) (2018 – Scotland, Chesham)
 - a. “The Daily Mile reduces body fat and promotes healthy body composition.”
 - b. “The Daily Mile™ was found to lead to increases in moderate-to-vigorous physical activity (MVPA) and fitness, reduction in time spent being sedentary, and improvements in body composition”
 - c. “the implementation of The Daily Mile results in a relative increase of approximately 9 min per day in MVPA together with a decrease of approximately 18 min per day in sedentary behavior over time”
2. [The Daily Mile: 15 Minutes Running Improves the Physical Fitness of Italian Primary School Children](#) (2019 – Italy, Brustio)
 - a. “After correction for age and gender, significant group × time interactions were observed in the 6-min run test and standing long jump results. In the post-test period, the experimental group showed improvement in the 6-min run test and standing long jump results.”
3. [The Daily Mile: teachers’ perspectives of the barriers and facilitators to the delivery of a school-based physical activity intervention](#) (2019 – UK, Malden & Doi)
 - a. “Teachers were positive and enthusiastic about the Daily Mile and perceived it to be beneficial to children’s health and fitness.”
4. [The Daily Mile as a public health intervention: a rapid ethnographic assessment of uptake and implementation in South London, UK](#) (2019 – UK, Hanckel)
 - a. Children also saw these links between weight loss, participation and fitness (“if you are very tubby, or fat, or whatever, then I recommend the Daily Mile to you to get fit” Participant 36, Student)
 - b. The link anticipated between TDM participation and health, or health literacy, was confirmed in interviews and focus groups with children (“because you feel your heart is racing and it’s burning all the fat that you’re eating ... so your heart races, you feel healthier”, Participant 26, Student)
5. [The Daily Mile Is Able to Improve Cardiorespiratory Fitness When Practiced Three Times a Week](#) (2020 – Italy, Brustio)
 - a. “A significant difference was observed in favor of the experimental compared to the control group in the 6 Minute Run Test ($F = 13.932, p = 0.008$). Moreover, the improvement of the 6-minute run test was more pronounced for 3_times (effect size = 0.51) rather than for the 2_times subgroup (effect size = 0.29).”
6. [The Effect of The Daily Mile on Primary School Children’s Aerobic Fitness Levels After 12 Weeks: A Controlled Trial](#) (2020 – The Netherlands, de Jonge)
 - a. “Compared with the control group, significant intervention effects of TDM on SRT score were observed for the intervention group ($\beta = 1.1; 95\% \text{ CI: } 0.8; 1.5$) and the intervention-plus group ($\beta = 0.6; 95\% \text{ CI } 0.3; 0.9$).”
 - b. “These results suggest that performing TDM at least three times per week for approximately 12 weeks increases primary school children’s aerobic fitness.”

7. [The Impact of the Daily Mile™ on School Pupils' Fitness, Cognition, and Wellbeing: Findings From Longer Term Participation](#) (2022 – UK, Booth)
 - a. “Participants in the present study who had been taking part for 3 months or more, had significantly greater fitness levels than participants who had been taking part for a short term, or who did not participate at all.”
8. [Effect of 5-weeks participation in The Daily Mile on cognitive function, physical fitness, and body composition in children](#) (2022 – Dring)
 - a. In conclusion, five-weeks of The Daily Mile enhanced inhibitory control and physical fitness in children, but did not affect working memory, attention, or adiposity.
9. [A systematic review of the effect of The Daily Mile™ on children's physical activity, physical health, mental health, wellbeing, academic performance and cognitive function](#) (2023 – Breslin)
 - a. Overall, both acute and longer-term participation in TDM was found to increase MVPA by approximately ten minutes per-day [19, 34]. This is a relatively greater increase in MVPA than found by other PA interventions in primary school children [42, 43].
 - b. higher levels of MVPA have been associated with improved cardiometabolic health in children [44].
 - c. These results suggest there may be a dose-response associated with TDM, requiring implementation according to the core principles (performed at least 3x/week) to maximize improvements in physical fitness.
 - d.

General Physical Activity Impact on Physical Health

1. [2020 WHO guidelines on physical activity and sedentary behaviour for children and adolescents aged 5–17 years: summary of the evidence](#) (2020 – Chaput)
 - a. “The evidence shows that greater amounts and higher intensities of physical activity are associated with multiple beneficial health outcomes, including cardiorespiratory fitness, muscular fitness, bone health, and cardiometabolic health.”
 - b. “Physical activity is also favorably associated with adiposity in children and adolescents.”

Time Outdoors Impact on Physical Health

1. [Nature and the Outdoor Learning Environment: The Forgotten Resource in Early Childhood Education](#)
 - a. Children who play outdoors are generally more fit than those who spend the majority of their time inside. Children who play outside in natural areas also show a statistically significant improvement in motor fitness with better coordination, balance, and agility (Fjortoft 2001).
 - b. More time spent outdoors is related to reduced rates of myopia (nearsightedness) in children and adolescents (Rose et al 2008).

Student Mental Health

The Daily Mile Specific Research

1. [The Daily Mile™: Acute effects on children’s cognitive function and factors affecting their enjoyment](#) (2021 – Hatch)
 - a. “The Daily Mile promotes enjoyment, particularly through social relatedness and autonomy. However, future research could consider whether adding variety into the initiative may help to sustain engagement in the children experiencing boredom.”
2. [The Daily Mile as a public health intervention: a rapid ethnographic assessment of uptake and implementation in South London, UK](#) (2019 – UK, Hanckel)
 - a. “... it had the reported effect of addressing tensions between students to “run off any problems”(Participant 06, Teacher), it was positive for peer relationships between children, within their class, as well as peer relationships across year-groups, which we observed as classes across the school would undertake TDM together.”
3. [Mental health outcomes of the Daily Mile in elementary school children: a single-arm pilot study](#) (2022, Arkesteyn)
 - a. Small but significant increase in perceived global self-worth ($p = .041$)
 - b. Children with low baseline SPPC scores showed significant increases with large effect sizes for global self-worth ($p < .001$), scholastic competence ($p = .001$), social competence ($p = .003$), athletic competence ($p = .002$), physical appearance ($p < .001$) and behavioral conduct ($p = .003$)
 - c. Significant reductions over time reported by parents for total difficulties ($p < .001$), hyperactivity ($p = .004$), peer problems ($p = .008$) and emotional symptoms ($p < .001$)

General Physical Activity Impact on Mental Health in Children

1. [Physical activity and mental health in children and adolescents: An updated review of reviews and an analysis of causality](#) (2019 – Biddle)
 - a. “there is widespread evidence demonstrating the positive impact which physical activity has on pupil mental health”
2. [2020 WHO guidelines on physical activity and sedentary behaviour for children and adolescents aged 5–17 years: summary of the evidence](#) (2020 – Chaput)
 - a. “The evidence also shows that physical activity reduces the risk of experiencing depression, and that physical activity interventions reduce depressive symptoms in children and adolescents with and without major depression.”
3. [Physical activity, screen time and subjective well-being among children](#) (2020 – Garcia-Hermoso)
 - a. “Our findings suggest that physical activity is related with positive feelings and LS [Life Satisfaction]”
4. [The Daily Mile: Whole-school recommendations for implementation and sustainability. A mixed-methods study](#) (2020, Marchant)
 - a. “Children report feeling happier and less stressed after completing The Daily Mile.”

Time Outdoors Impact on Mental Health

1. [Nature and the Outdoor Learning Environment: The Forgotten Resource in Early Childhood Education](#)
 - a. Time spent in green spaces, including parks, play areas, and gardens, has been shown to reduce stress and mental fatigue (Taylor 2001)
 - b. In one study children who were exposed to greener environments in a public housing area demonstrated less aggression and violence and less mental stress (Kuo & Sullivan 2001).
 - c. Just viewing nature reduces physiological stress response, increases level of interest and attention, and decreases feelings of fear and anger or aggression (Burdette & Whitaker 2005.)
 - d. Children who spent time playing outside are more likely to take risks, seek out adventure, develop self-confidence and respect the value of nature (UKSDC 2007).
 - e. Green spaces outside the home can increase concentration, inhibition of initial impulses, and self-discipline (Taylor et al 2001).

Classroom Performance

The Daily Mile Specific Research

1. [The Impact of the Daily Mile™ on School Pupils' Fitness, Cognition, and Wellbeing: Findings From Longer Term Participation](#) (2022 – UK, Booth)
 - a. "...examination of the impact of fitness found that for those who had been participating in The Daily Mile™ for a short term, there was a positive association between fitness levels and visual-spatial working memory performance, whereby increased fitness was associated with better working memory performance."
2. [The Daily Mile: teachers' perspectives of the barriers and facilitators to the delivery of a school-based physical activity intervention](#) (2019 – UK, Malden & Doi)
 - a. "while other benefits were also identified including increased teacher–child rapport and perceived enhanced classroom concentration levels."
3. [The Daily Mile™ initiative: Exploring physical activity and the acute effects on executive function and academic performance in primary school children](#) (2019 – Morris)
 - a. "Statistical outcomes suggest a time by condition interaction in maths fluency total score; favorable improvements were revealed over time in TDM condition. These changes may be explained by a reduction in the number of errors made, due to a similar interaction, favoring the intervention"
4. [The Daily Mile as a public health intervention: a rapid ethnographic assessment of uptake and implementation in South London, UK](#) (2019 – UK, Hanckel)
 - a. They reported using TDM as an opportunity to discuss "geography ... and of course numbers, [and] maths ... I talk to them about, you know, well in a week what sort of average are we doing" (Participant 04, Headteacher)
 - b. In addition teachers indicated it contributed to, at times, better concentration in class, and made contributions to other parts of the curriculum, which they believed enhanced learning outcomes.
5. [The Daily Mile™: Acute effects on children's cognitive function and factors affecting their enjoyment](#) (2021 – Hatch)

- a. “The Daily Mile does not significantly influence children’s immediate or delayed (45 min) cognition. However, there was a tendency for improved accuracy in visual working memory and inhibitory control immediately following The Daily Mile”
- 6. [A citizen science study of short physical activity breaks at school: improvements in cognition and wellbeing with self-paced activity](#) (2020 – Booth)
 - a. “[Students] completed tasks of cognition (inhibition, verbal, and visuo-spatial working memory) and the Children’s Feeling Scale and Felt Arousal Scale before and after three different outdoor activities: a classroom break of 15 min of self-paced activity, a near maximal exhaustion activity (the bleep test), and a no-exercise control group where pupils sat or stood outside. Fifteen minutes of self-paced outdoor activity was beneficial for pupils’ cognition and wellbeing in comparison to both other activities.
 - b.

General Physical Activity Impact on Classroom Performance

- 1. [Physical Activity and Academic Achievement: An Umbrella Review](#) (2020 – Barbosa)
 - a. “Chronic physical activity showed a medium positive effect on academic achievement”
- 2. [2020 WHO guidelines on physical activity and sedentary behavior for children and adolescents aged 5–17 years: summary of the evidence](#) (2020 – Chaput)
 - a. “Physical activity has positive effects on cognitive function and academic outcomes (e.g., school performance, memory and executive function) in children and adolescents.”

Time Outdoors Impact on Classroom Performance

- 1. [Nature and the Outdoor Learning Environment: The Forgotten Resource in Early Childhood Education](#)
 - a. The “richness and novelty” of being outdoors stimulates brain development (Rivkin 2000). Research shows that “direct, ongoing experience of nature in relatively familiar settings remains a vital source for children’s physical, emotional, and intellectual development” (Kellert 2004). Proximity to, views of, and daily exposure to natural settings increases children’s ability to focus and enhances cognitive abilities (Wells, 2000).
 - b. Studies in the US show that schools that use outdoor classrooms and other forms of nature-based experiential education show significant student gains in social studies, science, language arts, and math. Students in outdoor science programs improved their science testing scores by 27% (American Institutes for Research, 2005).
 - c.

Lessens Symptoms of ADD

- 1. [Nature and the Outdoor Learning Environment: The Forgotten Resource in Early Childhood Education](#)
 - a. Spending time outdoors reduces the severity of symptoms of children with ADHD. Even short walks in urban parks increase concentration and lessen ADHD related symptoms (Kuo & Taylor 2004, Taylor et al 2001)
- 2. [Coping with ADD: The Surprising Connection to Green Play Settings](#)

- a. "...a number of other studies have shown that exposure to natural environments can be effective in restoring directed attention from fatigue (Canin, 1991; Cimprich, 1990; Hartig, Mang, & Evans, 1991; Kuo, in press; Lohr, Pearson-Mims, & Goodwin, 1996; Miles, Sullivan, & Kuo, 1998; Ovitt, 1996; Tennessen & Cimprich, 1995)."
- b. "In one study, exposure to natural environments through leisure activities was shown to be related to attentional functioning in adults. A study of AIDS caregivers found that nature activities and quiet activities were associated with robust attentional functioning, whereas activities such as TV watching, shopping, and watching or playing organized sports were associated with poorer attentional functioning (Canin, 1991)"
- c. "Several analyses suggest that contact with nature is systematically related to lessened attention deficit symptoms... Children who played in windowless indoor settings had significantly more severe symptoms than children who played in grassy outdoor spaces with or without trees did."
- d.

Teacher Wellness & Retention

Teacher – Student Relatedness

1. [The Daily Mile: teachers' perspectives of the barriers and facilitators to the delivery of a school-based physical activity intervention](#) (2019 – UK, Malden & Doi)
 - a. "while other benefits were also identified including increased teacher–child rapport and perceived enhanced classroom concentration levels."
2. [Teacher burnout explained: Teacher-, student-, and organisation-level variables](#) (2021 – Finland, Saloviita & Pakarinen)
 - a. Teacher burnout has been shown to have significant negative implications not only for teachers' well-being in terms of their self-rated health (Hakanen, Bakker, & Schaufeli, 2006), mental health (Schonfeld & Bianchi, 2016), and job satisfaction (Klassen, Usher, & Bong, 2010; Robinson, Bridges, Rollins, & Schumacker, 2019; Skaalvik & Skaalvik, 2009; 2011) but also for student achievement (Herman, Hickmon-Rosa, & Reinke, 2018; Klusmann, Richter, & Lüdtke, 2016) and adjustment (Jennings & Greenberg, 2009; Oberle & Schonert-Reichl, 2016). Among teachers, burnout has also been related to high absenteeism, retirement, and turnover rates (Ingersoll & May 2012; Schonfeld, 2001) and a lower quality of job performance (Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008).
 - b. Teacher burnout has been found to be related in particular to the quality of the social interactions occurring within the school community (Fernet, Guay, Senécal, & Austin, 2012).
 - c. It has been suggested that teachers' relatedness with students is also important for teachers' own well-being (Milatz, Lüftenegger, & Schober, 2015; Spilt, Koomen, & Thijs, 2011).
 - i. Relationships with students can be an important source of positive energy, enjoyment, and reward and can guide teachers' daily emotions and cognitions in the classroom (Milatz et al., 2015).

- ii. Positive relationships are facilitated by structures, which give teachers the possibility of developing standing relationships with each student
- iii. Warm and supportive relationships between teacher and students foster positive classroom climates (Klassen, Perry, & Frenzel, 2012) and increase positive learning outcomes (Cornelius-White, 2007; Kiuru et al., 2012; Lerkkanen et al., 2016).
- iv. Teachers' relatedness with their students was associated with lower emotional exhaustion (Klassen, Perry, & Frenzel, 2012; Virtanen et al., 2018), higher work enthusiasm (Aldrup et al., 2018), and increased job satisfaction (Virtanen et al., 2018).
- v. ... higher burnout was associated with more negative attitudes towards inclusion, a lower sense of self-efficacy, and weaker relatedness with the students.

Student Behavioral Problems

1. [Teacher burnout explained: Teacher-, student-, and organisation-level variables](#) (2021 – Finland, Saloviita & Pakarinen)
 - a. In particular, students' behavioural problems have been associated with higher levels of teacher dissatisfaction and stress (Aloe, Shisler, Norris, Nickerson, & Rinker, 2014; Organization for Economic Co-operation and Development [OECD], 2014).
 - b.

Diversity & Inclusion

The Daily Mile Specific Research

1. [The Daily Mile as a public health intervention: a rapid ethnographic assessment of uptake and implementation in South London, UK](#) (2019 – UK, Hanckel)
 - a. So everyone's getting something out of it, however, children that tend to live in say flats, that don't have garden space, that don't go out to the park, their weekly news, which is "I went to Saver Centre" week-after-week-after-week, they benefit a great deal (Participant 13, Teacher)

Children with Disabilities

1. [Sports and Recreation for Children with Disabilities](#) (2016 – Wenner)
 - a. Opportunities to interact with others, with and without disabilities, in a social environment such as through sports, impacts a child's overall development and also provides them an opportunity to learn from their non-disabled peers through these programs (Coward et al., 2004). Sports also provide an interactive environment 58 where children with disabilities are able to practice their social skills while having fun (Alexander et al., 2011)