

Research in Brief: Physical Activity and School Engagement in Youth

There is increasing pressure placed on educators to increase academic performance scores. This can translate to the perception that time spent in the classroom is more beneficial to academic performance, compared to time spent promoting and doing physical activity. This systematic review suggests that this perspective is flawed because providing opportunities for physical activity benefits academic achievement by improving school engagement.

The results suggest that the best practice for implementing physical activity for students, both children and adolescent, is one session of moderate or vigorous physical activity between academic lessons, such as providing 10-minute breaks for physical activity focusing on dance or sport movements.

What is a systematic review?

The purpose of a systematic review is to sum up the best available research on a specific question. This is done by bringing together the results of a number of studies. Studies included in a review are screened for quality, so that the findings of a large number of studies can be combined.

What did the researchers do?

The researchers searched for articles related to physical activity and engagement on several databases (e.g. PubMed, Scopus, Sport-Discus). They also contacted authors to invite them to provide unpublished articles.

The researchers then screened the titles and abstracts of studies for their suitability based on the following criteria: examine youth (5-18 years), not examine special populations,



Why does this matter?

- ⇒ It is worth while learning whether physical activity has academic benefits in youth - Important to establish best practices for implementing physical activity to optimize benefits.
- ⇒ School engagement is one of the most critical factors underpinning academic performance and the successful development of youth in society .
- ⇒ Students who are actively engaged in school are more likely to perform well academically, successfully transition into post-secondary education and achieve occupational and economic success.
- ⇒ Providing opportunities for physical activity benefits academic achievement by improving school engagement.

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quantitatively assess behavioural, emotional or cognitive school engagement, quantitatively assess the association between physical activity and school engagement, involve an experimental, cohort, or cross-sectional study design and provide full-text in English.

After reviewing the titles and abstracts of 8,195 studies, the researchers obtained and reviewed full-text versions of 399 potentially relevant studies. Overall, 38 studies met the inclusion criteria and were included in the systematic review.

The researchers then extracted the data from the studies and evaluated the following factors that could influence the relationship between physical activity and engagement:

- Age of participants (children vs. adolescents)
- Physical activity intervention method (before school vs. integrated into classroom lessons vs. classroom lesson breaks vs. during Physical Education vs. during recess or lunch)
- Frequency (single bout vs. regular physical activity) - Intensity (low vs. moderate vs. vigorous)
- Study design type (experimental: randomized controlled trials or quasi-experimental vs. cohort vs. cross-sectional study)
- Publication bias: when the results of the study influence the decision to publish it (published vs. unpublished articles)
- Risk of bias: risk of overestimating/underestimating the intervention effect (high vs. low)
- Physical activity measures (subjective: individuals recall and report their physical activity vs. objective: evidence through observation)
- Association between different dimensions of engagement (behavioural, emotional, cognitive)

What did they learn?

As students participate in more physical activity, they become more engaged in school.

Although both children and adolescents benefit from physical activity, adolescents benefit more.

Of all intervention methods, physical activity was most effective when implemented as a break between academic classroom lessons. However, it is uncertain whether it is the break or the physical activity that improves engagement.

Regular and a single bout of physical activity equally increase school engagement. The optimal intensities for implementing physical activity are moderate and vigorous.

Study design impacted the association between physical activity and school engagement. Studies that employed a randomized controlled trial design were more likely to find that physical activity influenced school engagement. This supports the finding that physical activity improves engagement because randomized controlled experiments are the highest quality for evidence.

The measurement tools used to assess physical activity influenced the association between physical activity and school engagement. Studies that used objective and subjective measures of physical activity both reported that physical activity improves engagement.

Due to an insufficient number of studies examining emotional and cognitive engagement, the researchers did not analyze the influence of different dimensions of engagement on physical activity individually. Future research should explore the effects of physical activity on the behaviour, cognitive and emotional dimensions of school engagement.

Overall, the results from this study suggest that promoting physical activity could improve school engagement in youth. Promoting physical activity in children and adolescents should be a priority for policymakers, educators and parents.

This brief summary was prepared from: Owen, K. B., Parker, P. D., Van Zanden, B., MacMillan, F., Astell-Burt, T., & Lonsdale, C. (2016). Physical activity and school engagement in youth: a systematic review and metaanalysis. *Educational Psychologist*, 51(2), 129-145. <http://dx.doi.org/10.1080/00461520.2016.1151793>

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