



OVERVIEW SUMMARY OF INTERNATIONAL RESEARCH ON PHYSICALLY ACTIVE LEARNING (PAL)

Research on the use of physical activity and Physically Active Learning (the integration of physical activity into lessons in learning areas other than physical education(PE)¹) has shown the following:

- Children who have a higher level of physical fitness and are more physically active do better in maths, reading and overall academic scores.²
- Physically Active Learning does not have a detrimental impact on academic performance, and in many cases has shown to improve academic performance.³
- Longer term studies, where children have learnt in active ways have shown four months of additional learning gains in maths and spelling compared to those who learn while sat down.⁴
- Studies have also established that Physically Active Learning can benefit all demographic subgroups⁵, and in particular benefit boys and low academic performing girls⁶.
- Immediately after being physically active, children have a greater focus on the task in hand.⁷

¹ Daly-Smith AJ, Zwolinsky S, McKenna J, et al/ Systematic review of acute physically active learning and classroom movement breaks on children's physical activity, cognition, academic performance and classroom behaviour: understanding critical design features *BMJ Open Sport & Exercise Medicine* 2018;4:e000341. doi: 10.1136/bmjsem-2018-000341

² De Greeff, J.W.; Bosker, R.J.; Oosterlaan, J.; Visscher, C.; Hartman, E. Effects of physical activity on executive functions, attention and academic performance in preadolescent children: a meta-analysis. *J. Sci. Med. Sport* 2018, 21, 501–507.

³ Norris E, van Steen T, Direito A, et al/ Physically active lessons in schools and their impact on physical activity, educational, health and cognition outcomes: a systematic review and meta-analysis *British Journal of Sports Medicine* 2020

⁴ Mullender-Wijnsma MJ, Hartman E, de Greeff JW, Doolaard S, Bosker RJ, Visscher C. Physically Active Math and Language Lessons Improve Academic Achievement: A Cluster Randomized Controlled Trial. *Pediatrics*. 2016;137(3):e20152743. doi:10.1542/peds.2015-2743

⁵ J.B. Bartholomew, E.M. Jowers, G. Roberts, A.M. Fall, V.L. Errisuriz, S. Vaughn Active learning increases children's physical activity across demographic subgroups *Transl J Am Coll Sports Med*, 3 (2018), pp. 1-9

⁶ G.K. Resaland, V.F. Moe, J.B. Bartholomew, L.B. Andersen, H.A. McKay, S.A. Anderssen, E. Aadland, Gender-specific effects of physical activity on children's academic performance: The Active Smarter Kids cluster randomized controlled trial, *Preventive Medicine*, Volume 106, 2018, Pages 171-176, ISSN 0091-7435, <https://doi.org/10.1016/j.ypmed.2017.10.034>.

⁷ Daly-Smith AJ, Zwolinsky S, McKenna J, et al/ Systematic review of acute physically active learning and classroom movement breaks on children's physical activity, cognition, academic performance and classroom behaviour: understanding critical design features *BMJ Open Sport & Exercise Medicine* 2018;4:e000341. doi: 10.1136/bmjsem-2018-000341