# Physical Activity and Academics

When children and adolescents participate in the recommended level of physical activity—at least 60 minutes daily—multiple health benefits accrue.[1] Most youth, however, are not engaging in recommended levels of physical activity.

Schools provide a unique venue for youth to meet the activity recommendations, as they serve nearly 56 million youth. At the same time, schools face increasing challenges in allocating time for physical education and physical activity during the school day. The Healthy Schools Program supports schools in their efforts to increase opportunities for physical activity throughout the school day.

Research focused on the association between school-based physical activity, and academic performance among school-aged youth indicates:

- Schools that offer intense physical activity programs see positive effects on academic achievement including increased concentration; improved mathematics, reading and writing test scores; and reduced disruptive behavior, even when time for physical education classes reduces the time for academics.[2] [3]
- Students performed better on reading comprehension, math and spelling when they had a 20-minute period of physical activity immediately preceding the test.[4]
- Providing more opportunity for physical activity (by reducing class time) leads to increased test scores. In one program, a reduction of 240 minutes per week in class time for academics, to enable increased physical activity, led to higher mathematics scores.[5]
- The relationship between academic achievement and fitness was greater in mathematics than in reading, particularly at higher fitness levels.[6]
- Providing elementary school students with a daily 10-minute physical activity break increased on-task behavior significantly, while a break without physical activity decreased on-task behavior.[7]
- MVPA or moderate to vigorous physical activity has the greatest positive effect on student performance and academic achievement.[8]
- Raising the heart rate gets more blood to the brain, feeding it necessary nutrients and oxygen for heightened alertness and mental focus.
- Girls who were enrolled in PE for 70 or more minutes per week had significantly higher achievement scores in mathematics and reading than did girls who were enrolled in PE for 35 or fewer minutes per week.[9]

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[1] Centers for Disease Control and Prevention. *The association between school based physical activity, including physical education, and academic performance.* Atlanta, GA: U.S. Department of Health and Human Services; 2010.
[2] California Department of Education, "The Relationship Between Physical Fitness and Academic Achievement," 2001 PFT/SAT-9 Study, Sacramento, CA., 2002.
[3] Centers for Disease Control and Prevention. *The association between school based physical activity, including physical education, and academic performance.* Atlanta, GA: U.S. Department of Health and Human Services; 2010
[4] Hillman, C.H., Pontifex, M B, Raine, L.B., Castelli, D.M., Hall, E.E., & Kramer, A.F. "The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children," Neuroscience, 2009,159(3):1044-54.
[5] Centers for Disease Control and Prevention. *The association between school based physical activity, including physical education, and academic performance.* Atlanta, GA: U.S. Department of Health and Human Services; 2010.
[6] Centers for Disease Control and Prevention. *The association between school based physical activity, including physical education, and academic performance.* Atlanta, GA: U.S. Department of Health and Human Services; 2010.
[7] Mahar, M., Murphy, S., Rowe, D., et al. "Effects of a classroom-based program on physical activity and on-task behavior," *Medicine and Science in Sports and Exercise*, 2006, 38(12): 2086-2094.
[8] Keays, J.J., & Allison, K.R. "The effects of regular moderate to vigorous physical activity on student outcomes: a review," *Canadian Journal of Public Health*, 1995, 86:62-66.
[9] Gordon-Larsen P, McMurray RG, Popkin BM. Adolescent physical activity and inactivity vary by ethnicity: the National Longitudinal Study of Adolescent Health. J Pediatr 1999;135:301– 6.

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