

## 'Strong Evidence' of Link Between Physical Activity, Academic Success

By Bryan Toporek on January 3, 2012 10:25 AM

Children who participate in physical activity also tend to benefit in the classroom, according to a new systematic review of 14 studies from the past few decades.

The **review**, published online Monday in the *Archives of Pediatrics & Adolescent Medicine*, sought to discover a potential link between childhood physical activity and improved academic performance.

The review authors, based out of the EMGO Institute for Health and Care Research in Amsterdam, the Netherlands, examined 10 observational and four intervention studies, mostly from the United States and mostly focusing on physical education or school sports.

The sample sizes of the studies ranged from 53 to roughly 12,000 participants, anywhere from 6 to 18 years of age. The researchers highlighted two of the 14 studies as particularly **"high-quality."**

As it turned out, those two studies appeared to confirm the authors' suspicions.

"According to the best-evidence synthesis, we found strong evidence of a significant positive relationship between physical activity and academic performance," the authors wrote. "The findings of one high-quality intervention study and one high-quality observational study suggest that being more physically active is positively related to improved academic performance in children."

In total, three of the four intervention studies and three of the 10 observational studies (including both of the "high-quality" studies) suggested a positive correlation between physical activity and academic performance of students.

As the authors write in the background section of the review, this link could be caused by many factors: increased blood and oxygen flow to the brain, boosts in hormones such as norepinephrine and endorphins which help improve mood, and "increased growth factors that help create new nerve cells and support synaptic plasticity."

However, there's much more work to be done in this field.

The authors stress that only two of the 14 studies that they examined were deemed "high-quality," and thus, more high-quality studies that use objective measures of physical activity—rather than students' or teachers' reports—need to be conducted.

"More high-quality studies are needed on the dose-response relationship between physical activity and academic performance and on the explanatory mechanisms, using reliable and valid measurement instruments to assess this relationship accurately," the authors write.

In short: Based on the literature they reviewed, the authors believe they've discovered a "significantly" positive correlation between physical activity and academic performance. Now, it's just a matter of confirming their findings and figuring out *how* the two are interrelated.

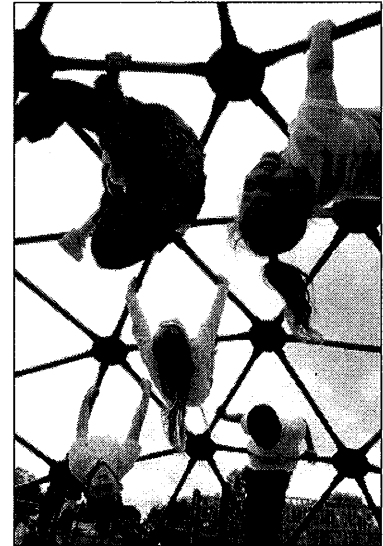
Armed with that knowledge, schools could tailor their physical education and sports programs to benefit both their students' bodies and their minds.

Photo: Students enjoy the playground during part of their physical education class last September at Northeast Elementary Magnet School in Danville, Ill. The curriculum at the public school is focused on health and wellness, and families have to sign a contract agreeing to abide by that. School lunches are low-fat or no-fat, with fresh fruit or veggies every day, and no dessert. (Seth Perلمان/AP-File)

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