

Reading, writing, arithmetic, and aerobics: Evaluating the new 'R' in academic performance

February 28 2013

Although the long-term consequences of childhood obesity are well documented, some school districts have reduced physical education classes to devote more time to the 3 Rs in education—reading, writing, and arithmetic. However, there is new evidence that leaving out an important fourth R—aerobics—could actually be counterproductive for increasing test scores. A new study scheduled for publication in *The Journal of Pediatrics* studied the associations between aerobic fitness, body mass index (BMI), and passing scores on standardized math and reading tests.

Dr. Robert R. Rauner and colleagues from Lincoln Public Schools and Creighton University in Nebraska analyzed scaled scores from standardized tests for math and reading, as well as PACER (15-20 meter timed shuttle run), BMI, and free/reduced lunch data from all students enrolled in elementary and middle schools in Lincoln, NE. They found that aerobically-fit children had a 2.4 times greater chance of passing math tests and a 2.2 times greater chance of passing reading tests compared with aerobically-unfit children. Among those receiving free/reduced lunch, the odds of passing the tests were still greater than those of students who were aerobically-unfit, but not as high as those not receiving free/reduced lunch. They also found that BMI, although an important indicator for overall general health, did not have a significant effect on academic success.

Although obesity is a concern for children, this study shows that aerobic fitness can have a greater effect on academic performance than weight. The authors found that both aerobic fitness and socioeconomic status have a similar impact on academic performance. Because [aerobic fitness](#) can be easier to improve than [socioeconomic status](#), and it is easy to implement in a school setting, schools should think twice before taking minutes from physical education classes and recess. According to Dr. Rauner, "Schools sacrificing physical education and physical activity time in search of more seat time for math and reading instruction could potentially be pursuing a counterproductive approach."

More information: "Evidence that Aerobic Fitness Is More Salient than Weight Status in Predicting Standardized Math and Reading Outcomes in Fourth- through Eighth-Grade Students," by Robert R. Rauner, MD, MPH, Ryan W. Walters, MS, Marybell Avery, PhD, and Teresa J. Wanser, MA, appears in *The Journal of Pediatrics*, [DOI 10.1016/j.jpeds.2013.01.006](#)

Provided by Elsevier

Citation: Reading, writing, arithmetic, and aerobics: Evaluating the new 'R' in academic performance (2013, February 28) retrieved 28 April 2024 from <https://medicalxpress.com/news/2013-02-arithmetic-aerobics-academic.html>

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