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## **Vigorous Exercise = Better Academics**

*"Physical education and activity during the school day reduce boredom and help keep kids' attention in the classroom"*

Middle school students who perform more vigorous physical activity than their more sedentary counterparts tend to do better in school, according to a study published today by researchers from Michigan State University and Grand Valley State University. The research is published in the August issue of *Medicine & Science in Sports & Exercise*, the official journal of the American College of Sports Medicine. For one academic year, the study tracked more than 200 sixth graders. For one semester, half of the students took the general physical education class offered by the school, while the other half took part in a non-physical education course. Halfway through the school year they switched. The researchers found that students taking the physical education course did no better or worse in their academic classes. However, they also found that students who took part in more vigorous physical activities - such as organized sports like soccer or football, or non-organized after-school activities such as skateboarding - did approximately 10 percent better in core classes such as math, science, English and social studies. "We have precious few studies that link activity or fitness to measurable academic outcomes," said Jim Pivarnik, an MSU professor with appointments in kinesiology, epidemiology, and physical medicine and rehabilitation who is one of the study's co-authors. "Considering all the factors that go into what determines students' grades in school, a 10 percent increase by the most physically active kids is huge." It's long been speculated that fitness and improved academic performance go hand in hand, said Dawn Podulka Coe, the study's lead author who was a Michigan State University doctoral student when she led the project. "Physical education and activity during the school day reduce boredom and help keep kids' attention in the classroom," said Coe, who is now an assistant professor in the Department of Movement Science at Grand Valley State University. "We were expecting to find that students enrolled in PE would have better grades because of the opportunity to be active during the school day. But enrollment in PE alone did not influence grades. The students who performed better academically in this study were the most active, meaning those who participated in a sport or other vigorous activity at least three times a week." It's important to note, said Pivarnik, that the grades of the students taking the physical education course did not change for either the good or the bad. This is noteworthy because in this day of "No Child Left Behind" and standardized testing, many public school boards think physical education is a luxury they just can't afford. "If kids have PE every day, is it going to hurt grades? The answer is no," Pivarnik said. "But, maybe if we pump up the volume a little bit, if they are a little more vigorously active, it might make a difference." The difference between vigorous activity and moderate activity is heart rate. Moderate activities, such as walking or raking leaves, don't get the heart rate up or make the person breathe harder. Vigorous activities, such as running or swimming for exercise, increase heart rate, causing the exerciser to breathe harder. The fitness levels aspired to in this project are derived from federal government guidelines for health-related behaviors known as "Healthy People 2010." Developed from these guidelines, which range from limiting alcohol use to wearing seatbelts to avoiding violent behavior, was a list of leading health indicators that can be targeted for change. "No. 1 on the list: physical activity; No. 2: obesity," Pivarnik said. "These are highest on the list because they are modifiable and they are related to so many diseases."