

between-subjects factors in E% and CP. This suggested that improvements in attention and concentration following a physically active recess did not differ from that following a non-activity recess. Also, the impacts of physically active recess on attention did not differ in gender, as well as not in grade.

**Conclusions:** A single bout of 25-min physically active recess could improve the attention performance in children, although such improvement does not differ from that following a non-activity recess. This study suggests that schools should consider implementing physically active recess to promote children's PA during school days and to improve children's attention and concentration.

### **Cardiorespiratory Fitness Performance in Middle School Years: Changes and Correlates**

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**Background/Purpose:** Improving/maintaining cardiorespiratory endurance is found to be associated with lower risk for all-cause mortality in adults (Lee et al., 2012). Cardiorespiratory endurance is also a reliable marker for habitual physical activity (Gulati et al., 2005). While cardiorespiratory endurance is often assessed in schools as a part of fitness testing effort (Morrow et al., 2008), there is a dearth of reports on its changes and correlates in the literature. When it is reported, there is usually a lack of curricular control. Using a large scale dataset, this study examined the correlates and changes of student cardiorespiratory fitness performance during middle school years, under a consistent curriculum condition (Five for Life, Focused Fitness, 2015; Spokane Valley, WA).

**Method:** The participants were 71,362 sixth, seventh, and eighth graders (47.8% female) from 65 middle schools in an Eastern state. The participants ranged from 11 to 15 years old. The Five for Life—Intermediate curriculum (Focused Fitness, 2015) was implemented in these middle schools throughout the testing process. A repeated measure design was used in all schools. Physical educators conducted health-related fitness tests in accordance with the guidelines (Plowman & Meredith, 2013). The test items included body composition extrapolated through height and weight, progressive aerobic cardiovascular endurance run (PACER, 20 m), pushup, curl-up, trunk lift, and back-saver sit-and-reach. Student gender, age, and grade level were also collected. The data collection

took place from Jun 2011 to Jun 2015, simultaneously in these schools.

**Analysis/Results:** Because of the varied testing intervals among schools, for each year we only used the posttest scores if pretests were also conducted. We used hierarchical linear modeling to accommodate for the varied testing interval and the two level data structure (Raudenbush & Bryk, 2002), where the PACER test performance was a dependent variable. The results showed that on average student PACER performance improved 3.29 laps during middle school years ( $p < .01$ ). Males averaged 7.71 more laps than females ( $p < .01$ ). Body mass index (BMI) was negatively associated with PACER performance ( $\beta = -.23, p < .01$ ), while curl-up ( $\beta = .17, p < .01$ ) and pushup scores ( $\beta = .34, p < .01$ ) were positively associated with it. The other tested variables were not significant correlates of PACER performance. Overall, the model explained about 41.4% of the variances in PACER performance in middle school years.

**Conclusions:** The results showed that students were able to improve their cardiorespiratory endurance under the curriculum condition of Five for Life. Specifically, the improvement was 3.29 laps per year. This finding provides a reference point for comparison with future studies. Consistent with the criteria (Plowman & Meredith, 2013), males had higher performance than females. It is unique that pushup and curl-up scores were significant positive correlates for PACER. This finding is reasonable as doing well in these tests would benefit running mechanically.

### **Youth Perspectives About Their Risk Behaviors and Mental Health Needs**

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**Background/Purpose:** According to the Centers for Disease Control and Prevention (2016), suicide is the second leading cause of death for ages 10 to 24. Furthermore, suicide continues to affect youth as 17.7% considered suicide attempts and 14.6% made a plan as to how this attempt will be executed (CDC, 2015). The Pennsylvania Youth Survey (PAYS) is a biennial survey administered to adolescents in grades 6th, 8th, 10th, and 12th and aims to collect information about knowledge, attitudes, and behaviors toward alcohol, tobacco, and other substance abuse, as well as mental health