



## Moving Away from Overweight/Obesity Prevention and Toward Increasing Metabolic Fitness

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### Editorial

Most researchers agree that prevention may be key to reducing the current obesity pandemic and its associated co-morbidities. It is estimated that 32.1% of children and adolescents in the United States are overweight or obese [1]. However, if prevention is key, then greater emphasis should be directed toward programs that focus on youth in this country. Childhood and early adolescence represent a critical period of growth and maturation when youth are transitioning toward making their own decisions regarding lifestyle behaviors. This includes food choices as well as physical activity selection and participation. It also reflects a time of significant physical, physiological, and mental development before behaviors become so ingrained, they cannot change. Therefore, targeting children or early adolescents is key to the prevention of obesity and unhealthy lifestyle habits in the future. Schools provide an excellent opportunity to influence our nation's youth because of the great amount of contact and infrastructural support they provide to nurture and educate students while communicating the right health messages to them. However, facing significant pressure to improve language arts, math and science scores, the attention to physical activity and obesity prevention has taken a back seat. The President's Council of Advisors on Science and Technology has called for a 33% increase in Science, Technology, Engineering, And Mathematics (STEM) bachelors' degrees each year [2] and this college trend has trickled down to the public schools. However, public schools must learn how to be creative in integrating both physical activities and academics into the classroom in order to advance cognitive gains without sacrificing physical activity participation and improved metabolic fitness. By balancing both elements, schools can get the right health message across to students to help them maintain active, healthy lifestyle behaviors.

In the take 10 program, teachers implemented 10-min physical activity sessions integrated into the academic lessons. The 10-min sessions increased physical activity levels while also reinforcing academic skills and concepts learned in the classroom [3]. The "Physical Activity across the Curriculum" program was a 3-year expansion of this integrative curriculum. In programs providing >75 min/week of physical activity, body mass index declined. Significant gains in composite reading, math, and spelling scores were also observed [4]. Using accelerometers in a similar Texas-I can study, students in the experimental group showed a significant increase in physical activity compared to controls along with a 20% increase in moderate-vigorous-physical activity. Furthermore, times on task or attention to the academic lessons were improved following the physical activity sessions [5]. These types of active lessons using activities such as "cardiac relays" and "spelling freeze tag" not only improved physical and metabolic fitness but also enhanced academic learning. In the middle schools, Planet Health [6] and a N.Y. program [7] possessed integrative elements of academic instruction and physical activity; however, they were used in a different manner. In Planet Health, health-related units and brief sessions of physical activities were integrated into traditional classes such as language arts, math, and science. In both programs, the physical activities did not possess an academic component as implemented at the elementary level, however, physical activities did support health-related concepts taught in class. In the N.Y. program, after one semester, insulin resistance, inflammatory markers, and percent body fat, were reduced. Future research should be directed toward finding the optimal types of physical activities for youth, whether they require an academic component for optimal results or not, and/or whether they should consider implementing an independent nutrition and exercise science curriculum incorporating physical activity.

It's time to move away from citing overweight and obesity statistics for every age, state, and race or sending home report cards of BMI to parents and their children. This information can be very psychologically distressing to children and adolescents. It's well known that an increase in physical activity is associated with greater self-esteem, less body size dissatisfaction, and better academic performance [8]. More emphasis is needed on how active lessons that integrate physical activities

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into the classroom can be interfaced in public school settings, in after-school settings, and/or in summer programs. The latest study among 1.7 million adults showed that those meeting cardiovascular and muscle strengthening guidelines also possessed lower rates of obesity [9]. Finding creative solutions to improve metabolic health and habitual physical activity in youth is where we should be headed and the obesity problem will take care of itself. Incorporating physical activity into the classroom daily teaches our youth it's that important to incorporate it into their everyday lifestyle behaviors. Dropping or reducing physical activity or exercise conducted on a regular basis, sends the opposite and wrong health message. It's time we get it right for the future of our nation's youth.

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