

MYTHBUSTERS

Myth: Increasing Physical Education in Schools Will Alone Decrease the Prevalence of Childhood Obesity

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In Nova Scotia, 32.9% of grade 5 students are overweight, and 9.9% are obese.¹ Atlantic Canadian children and youth have the highest rates of obesity in the country, increasing over 5 times over the past 15 years.² Consequently, there have been increases in disorders related to obesity such as type 2 diabetes, hypertension, dyslipidemia, and obstructive sleep apnea. Additionally, obesity contributes to psychosocial disorders such as poor self-esteem³, depression⁴, and eating disorders.⁵ This translates into significantly higher health care costs by obese children over their normal weight peers.⁶

Clearly, childhood obesity is a problem, and has been recently publicized in the news.⁷ One commonly touted treatment to this is to increase physical education at school.⁸ Indeed, provincial public policy has reflected this sentiment: Alberta has made 30 minutes of daily gym mandatory for all elementary and secondary school students in an effort to curb childhood obesity.⁹ The B.C. government pledged \$15.5 million for all B.C. students between kindergarten and Grade 9 to get 150 minutes of exercise each week.¹⁰ Newfoundland made physical education classes mandatory for every high school student through Grade 12.¹¹

And in the United States, medical, public health, and education organizations have appealed for students to spend more time in physical education classes. These include the President's Council on Physical Fitness and Sports, the Department of Health and Human Services, the Department of Education, and the American

Academy of Pediatrics. In 2005 alone, legislatures in 44 states introduced bills to increase or reform physical education in schools.¹²

How does increased physical education affect BMI?

A meta-analysis of 18 studies involving over 18,000 children found that Body Mass Index (BMI) did not improve with physical activity interventions. The children were mostly in grade 3-6.¹³

Findings in a Cochrane systematic review of 26 studies found no effects on body mass index from school-based interventions aimed at increasing physical activity in subjects aged 6-18.¹⁴

These two studies suggest that increasing physical education in schools does not have a positive effect on BMI. What might be some reasons behind this?

Does more gym class actually mean more physical activity for kids?

The basis for any weight-loss program uses the energy balance equation. That is, energy (i.e. calories) in equals energy out. If one takes in more calories than one expends, then they will gain weight, and vice versa. The reasoning behind increasing physical education classes is to increase the amount of physical activity, or energy out. So, does it actually accomplish this?

A study of 37,000 high school students found that adding more time in gym class does not make a difference in the physical activity rates.¹² Girls show small increases in activity, but boys did not. However, for the increases in vigorous physical activity in girls, there was a decrease in light activity. The researchers speculate that the increased mandatory gym class reduced the amount of physical activity outside of class. The girls may have a set amount of time they desire to spend physically active, so if they are have more mandatory gym class at school, they cut back on physical activity outside of school. Another possible reason is might be that the students found the gym class so unpleasant that they do not want to have that experience again after class¹⁵.

Researchers in a study of how much actual physical activity middle school children were getting in physical education class found that less than 35% of class was spent doing moderate to vigorous physical activity. About 8.3% of physical education time was spent doing vigorous physical activity, which translates to roughly 3.9 minutes for a 50 minute class.¹⁶ This makes sense when you consider the time it takes to get changed, set up the activities, explain the activities, and wait in line. If that amount of physical activity in class seems low, it could be explained by the policies surrounding physical education. Indeed, studies on state policies on physical education found that of the 10 that addressed percentage of gym class spent physically active, 9 specified 50%.¹⁷

More physical education class does not necessarily mean more physical activity. Overall, evidence is mixed that increasing gym class time actually increases the amount of physical activity that children get. Any increases seem to be minimal and not enough to affect BMI significantly.

In addition, kids identified by teachers as high-ability were more active than kids of average or low ability.¹⁶ So kids that were likely already in shape and athletic got more physical activity than kids of average or low ability, who likely are more likely to be or become obese. Simply stated, the kids who needed increased activity the most got less of it.

Conclusions

Studies suggest that merely increasing the amount of physical education classes will not decrease BMI in schoolchildren. They do not change the amount of physical activity children get outside of school, and in some cases decrease it. They do increase the duration of physical activity in school, but the amount doesn't look like enough to affect the BMI. Perhaps tweaking the current format of gym classes to increase the amount of vigorous activity children perform will have a more positive effect. Or, BMI may not be the best measure to track the success of obesity-reducing in children. Other measures such as skin-fold thickness to measure fat may show different results.


Alternatively, perhaps focusing on interventions that change the dietary habits of children and their parents, the "energy in" part of the equation, will have the greatest effect on reducing childhood obesity. It is, after all, at least half of the equation. And in reality, the 21st century North American diet is probably the biggest culprit in childhood obesity. Having said that, there are still many other positive benefits to physical education,

such as increasing aerobic fitness¹⁴, decreasing blood pressure¹⁸ and increasing bone density.¹⁹ Therefore, gym class should still be part of any public health strategy to reduce obesity.

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