

Summary of the Health Impact Assessment of Potential Modifications to Physical Education Requirements in California

UCLA School of Public Health
Health Impact Assessment Project¹
<http://www.ph.ucla.edu/hs/health-impact>
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Summary of Project

Over the past two years a number of proposals have been introduced by the California State Legislature and the California Department of Education to improve the quality and quantity of P.E. in California. This Health Impact Assessment (HIA) examines state policies that aim to increase physical activity levels for students in grades K-12.

A spreadsheet-based model was developed in order to predict potential changes in physical activity from three P.E. policy scenarios for middle and high school students in California.

These scenarios were chosen because of their potential to affect students' short-term levels of physical activity and because they reflect the types of policy recommendations presented by State Superintendent O'Connell in 2004.

Summary of Health Impacts

Approximately 15% of all U.S. children were classified as overweight in 2000. Rates of childhood obesity and sedentary lifestyle have increased rapidly in the past decade, contributing to a growing burden of lifelong chronic disease, disability and early death.

The growth of obesity and sedentary lifestyle is largely attributed to environments where calorically-dense foods are readily available and widely advertised, and physical activity is no longer a part of daily living. For children, the school environment can have a large impact on their eating and activity patterns. Consequently, poor eating and consumption patterns at school have received a great deal of attention and have prompted a number of successful measures to alter the nutrition environment of schools.

The State of California mandates a minimum number of minutes of physical education instruction in public schools, but compliance is substandard, particularly in the elementary grades. The trend in schools has been towards less physical education, not more. Furthermore, in a typical P.E. class most students are not active most of the time.

Of the different policy options available to remedy this situation, we sought to determine which are most likely to have the biggest impact on students' physical activity levels, particularly among inactive students.

Health Impacts Examined

As part of the California Endowment's Healthy Eating Active Communities (HEAC) Initiative, this HIA examines state policies that aim to increase physical activity levels for students in grades K-12 by increasing the quality and quantity of physical education (P.E.) provided by their schools at every grade level.

A spreadsheet-based model was developed to predict what potential changes in physical activity would occur if three P.E. policy scenarios for middle and high school students in California were altered:

1. Increase the percent time in moderate-to-vigorous physical activity (MVPA) during P.E. in secondary grades where P.E. is mandatory (i.e. grades 6-10);
2. Increase compliance with state P.E. requirements (i.e. 400 minutes every 10 school days in secondary grades);
3. Require P.E. in 11th and 12th grades (assumed 11th and 12th graders are currently exempt).

Data from various sources were combined to estimate how each policy scenario would affect levels of moderate-to-vigorous physical activity (MVPA) among California's secondary school students. These effects were assessed over the entire target population and between those classified as overweight versus normal weight.

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Potential Benefits of Expanded/Enhanced PE

Physical activity and P.E. in school can provide significant opportunities to increase total physical activity. Expanding the quantity and quality of school P.E. has become an important focus of comprehensive strategies that promote physical activity among youth. Based on a systematic review of evidence, the Guide to Community Preventive Services strongly recommends school-based, activity-focused P.E. as an effective method of increasing physical activity and fitness. Additionally, Healthy People 2010 identifies improving P.E. as a national health objective, aiming to increase the number of schools scheduling daily P.E., the proportion of students participating, and the number of students who are physically active for at least 50% of lesson time.

There is considerable evidence in the literature supporting the diverse benefits of physical activity, including those that are short- and long-term. Some of these health impacts include:

- ***Body fat:*** Physical activity can help achieve and maintain a healthy body weight in both normal weight and overweight children
- ***Bone density:*** Weight-bearing physical activities have been shown to be stimuli for bone structure and has the potential to increase bone mass in children as much as 7 to 8%
- ***Asthma:*** Increased levels of asthma-related symptoms are multi-factorial, and a decrease in physical activity may be a potential contributor to the increase in asthma prevention and severity

- ***Mental health:*** Physical activity is not only beneficial to a child's physical health, but there is also evidence that it benefits their mental health as well

- ***Teen pregnancy:*** Studies have shown that physical activity can play a significant role in preventing teen pregnancy. For instance, female athletes are less likely to get pregnant than female non-athletes (5% and 11% respectively); more likely to report never having sexual intercourse; more likely to have their first intercourse at a later age; and more likely to use contraceptives

Key findings:

- **Targeting the percent time spent in MVPA during P.E. has the greatest potential for increasing health-inducing physical activity levels among secondary school students.** Based on the comparative analysis of the three scenarios, percent time spent in MVPA during P.E. has the greatest potential particularly for overweight children. Further analyses might take into account the costs of each policy scenario to be able to make statements regarding their relative cost-effectiveness.
- **P.E. policies by themselves are unlikely to lead to significant reductions in morbidity and mortality related to sedentary lifestyle and obesity.** Activity achieved during P.E., however, is an essential component of efforts to combat these conditions; in part because young people spend so much of their waking hours in school and because increasing physical activity in P.E. has the potential to reach the students who are at greatest risk.

- **Requiring that at least 50% of P.E. time be spent in MVPA requires commitment in securing resources that enable students to meet recommendations and the ability to monitor school compliance.** P.E. classes have a number of characteristics that are associated with time spent in MVPA, e.g.- large class size is associated with more time managing and less time in MVPA; certain activities such as softball provide less MVPA than soccer, and smaller spaces and lack of P.E. equipment also reduces time in MVPA.
- **If activity levels increase only among students who are already highly active, then the population health impact of these changes will be minimal.** Therefore, it is essential that policy-makers consider adopting policies that impact sedentary students the most if the goal of changes to P.E. requirements is to decrease the rise in sedentary lifestyle, obesity, and other health risks.

What is a Health Impact Assessment?

Health Impact Assessment is a "multidisciplinary process within which a range of evidence about the health effects of a proposal is considered in a structured framework. . .based on a broad model of health which proposes that economic, political, social, psychological, and environmental factors determine population health."

Northern and York Public Health Observatory, 2001

Why use HIA?

- Influence decision-makers using a broad understanding of health and a wide range of evidence
- Highlight potentially significant health impacts that are unknown, unrecognized or unexpected
- Assess how proposals will affect all members of the community, particularly the most vulnerable
- Promote sustainable development, considering short and long-term impacts