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Evidence-based Programs to Promote Physical Activity among Youth Prepared for Senator Tom Torlakson in relation to SB 564

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Obesity and related health conditions such as diabetes are increasing among children. A lack of physical activity and unhealthy eating habits contribute to the rise of obesity. This issue is of even greater concern for children of color. For instance, Latino and African-American children experience higher rates of overweight than children of other racial/ethnic groups, and Asian children get less physical activity. Not only do obesity and related conditions pose a significant health risk, they are costly to individuals and society. In 2000, physical inactivity, overweight and obesity cost California an estimated $21.7 billion in direct and indirect medical care, worker's compensation, and lost productivity with $13.3 billion of that total attributable to physical inactivity.[1]

Although both a healthful diet and physical activity are important to promoting health and preventing overweight and obesity, there has been more funding and attention devoted to policies for improving diet and the nutrition environment than there has been to promoting physical activity. Promoting physical activity among children can help to prevent childhood obesity and related conditions. In addition, studies have shown that children who are physically fit perform better in school. Furthermore, after engaging in physical activity children perform better on tasks requiring concentration.[2]

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Below, we outline some evidence-based approaches to promote physical activity among the youth of California. Basing practices on the best available evidence is expected to make the most efficient and effective use of resources. For each approach, we provide a brief description of the program and an overview of the available evidence on its effectiveness. The evidence base for promoting physical activity is strong for school-based physical education and for the creation of or enhancement of access to places for physical activity so we have emphasized these types of approaches.

These recommendations are not intended to be an exhaustive list of steps to increase physical activity and prevent overweight and obesity among California youth. Rather, we have selected those evidence-based programs that are likely to be the most effective and have the most impact in terms of promoting physical activity and that could be implemented with appropriate grant funding.

A high priority is to develop a grants program with a menu of options. Schools, parks and recreation departments, municipalities or community-based organizations will apply for funds to implement programs promoting physical activity. Programs need to be evidence-based (except for those supported under the innovation fund) and need to support state standards for health and physical education. In addition, programs should be implemented in conjunction with existing state and local programs whenever possible. Language should be included to ensure that the grants program does not favor schools with more resources. Wording such as "The grants program will promote physical activity in underserved communities and schools that disproportionately serve low-income children and children of color" could be used.

These recommendations reflect the expert views of the authors and do not necessarily represent the UCLA Center for Health Policy Research, the Regents of the University of California, or the organizations to which the authors are affiliated.

1. Improve the quality of physical education (PE) in school in accordance with recently enacted standards with the primary goal of increasing physical activity among all students during PE classes.

Despite state mandates requiring a certain number of minutes spent in physical activity during PE classes, many school-age youth in California are not getting sufficient amounts of physical activity.[3] Nationally, daily participation in PE classes has dropped in recent years from 42% in 1991 to 28% in 2003.[4] In addition, PE classes often involve periods of time with no physical activity at all.[5] The school environment in general and PE classes in particular offer a unique opportunity for increasing children's physical activity levels. School-based PE has been shown to be effective in increasing levels of physical activity and improving physical fitness.

We recommend the following:

a. Provide funding to support adoption and implementation of programs that will increase the intensity level of activity or the amount of time that students spend engaging in moderate or vigorous physical activity during PE class. The Task Force on Community Preventive Services[6] found strong evidence of the effectiveness of these types of programs in increasing levels of physical activity and physical fitness (based on a systematic review of 14

studies).[7] Most studies reviewed increased activity in already scheduled PE classes by changing the activities taught or modifying the rules of the games/activities so that students are more active. The Task Force found no evidence that time spent in PE impairs academic performance. Some examples of programs include the Child and Adolescent Trial for Cardiovascular Health (CATCH) [8]; Sports, Play, and Active Recreation for Kids (SPARK)[9], Middle School Physical Activity and Nutrition (M-SPAN)[10], Lifestyle Education for Activity Program (LEAP)[11] and Physical Best.

b. Provide funding to support training and professional development of teachers for use of evidence-based PE programs. The implementation of a standardized physical education curriculum and staff development program in CATCH increased children's moderate-to-vigorous physical activity in existing PE classes in four geographic and ethnically diverse communities.[12]

c. Provide funding to support adoption of new evidence-based programs. Programs for which scientific evidence is lacking but that demonstrate potential for incorporating physical activity into the daily routine of children and adolescents will receive funding only if they incorporate a strong evaluation component.

2. Promote being physically active throughout the day for every school-age child, in school and school-related activities.

Many school-age youth in California are not getting sufficient amounts of physical activity.[13] Currently, it is recommended that children and adolescents participate in at least 60 minutes of moderate physical activity on most days of the week, preferably daily.[14] Although physical education classes offer a convenient and effective venue for implementing programs to increase physical activity, PE programs by themselves cannot provide sufficient amounts of physical activity for children. In addition to activity during PE, children need to be active throughout the day, every day to achieve the minimum amounts of physical activity recommended for optimal health.

We recommend the following:

a. Provide funding to support adoption and implementation of programs that incorporate short periods of physical activity into the academic curriculum. Examples of programs include Take 10! and Physical Activity Across the Curriculum (PAAC). These programs provide short periods of physical activity, approximately 10 minutes long, that also help achieve academic goals. These programs entail minimal teacher training that can be provided as part of regular in-service training.

b. Provide funding to support teacher training and purchase of equipment to provide supervised activity during recess or lunch breaks. Recess periods offer additional opportunities to promote physical activity during the school day. The activity children get during recess or lunch breaks contributes to meeting suggested activity guidelines for health, particularly for girls.[15] Extended lunch breaks with supervised physical activity were used effectively in M-SPAN to increase physical activity and could be implemented in all grades.[16] Research also suggests that recess activities can contribute over 20 minutes of activity toward meeting the recommendations for total minutes of physical activity each day, although much of this activity is low intensity.[17]

c. Provide funding to support development, operations and maintenance of school grounds, facilities and equipment that facilitate and encourage physical activity.

d. Provide funding to support programs that increase active commuting to school. There is evidence of a decline in active commuting to school (walking, bicycling, etc.) over the past few decades.[18] Because the journey to school is a daily behavior, it has the potential to provide substantial opportunity for physical activity during the course of the school year. There is some evidence, from a study of Filipino students, that boys and girls who walked to school expended more calories per day than their peers who were driven. [19] This could account for a 2-3 pound difference over a school year, demonstrating the relevance of this behavior to preventing overweight and obesity. Examples of programs that promote active commutes to school include "Safe Routes to School" and "Walking School Buses." "Safe Routes to School" involves improving street designs for pedestrians and slowing or restricting traffic around schools. "Walking School Buses" organize volunteers to supervise children in a neighborhood as they walk to school. Caltrans currently provides grants to schools for Safe Routes to Schools, and two evaluations of improvements funded by this program support the effectiveness of the approach.[20] Funding could be provided to supplement the Caltrans funds and to support promotional activities. Promotion of active transportation to school programs should be included and should occur both in schools and in the community.

e. Support development and implementation of health curriculum programs designed to promote physical activity among children and adolescents. Several studies have reported that school-based health curricula designed to promote physical activity did increase physical activity outside of school (based on self-report of activity).[21] Examples of successful programs include CATCH[22], SPARK[23], Planet Health[24], and Physical Best.

f. Provide funding to support adoption of new evidence-based programs. Programs for which scientific evidence is lacking but that demonstrate potential for incorporating physical activity into the daily routine of children and adolescents will receive funding only if they incorporate a strong evaluation component.

3. Promote the development and maintenance of walkable neighborhoods.

There is a growing body of evidence demonstrating that people who live in communities conducive to walking are more physically active than those who do not live in these types of communities, particularly for adults. [25] Walkable neighborhoods have mixed land use with shops close to homes, streets connected in a grid-like pattern, relatively high density, and a good sidewalk network. Walkable neighborhoods are also connected with schools, which can facilitate walking and biking. Suburban neighborhoods, which tend to separate residential areas from shops and other destinations, have poorly connected streets, and often lack sidewalks, are generally considered less walkable. Although there are few, if any, studies that examine the direct relationship between community design and adolescent health, several indirect associations have been made. Mixed use (development that entails a mix of residential and commercial design) is likely to be effective for youth because it places homes within walking and biking distance of schools, stores, and other destinations. Recent analyses provide some evidence that living in walkable neighborhoods may also be beneficial for adolescents.[26] Youth ages16-17 living in walkable neighborhoods did much more total physical activity than those living in suburbs. The development and promotion of walkable neighborhoods will require collaboration among local health departments, planning officials, transportation departments and parks and recreation departments.

We recommend the following:

a. Support the development of infrastructure in local health departments and parks and recreation departments to support and advocate for policies that promote safe, walkable and health-promoting neighborhoods. Grants should fund and support local health departments and parks and recreation departments to work with planners and transportation departments to develop, promote and pass planning approaches and/or zoning/building codes that encourage physical activity. Members of these departments will receive training in environmental and policy aspects of physical activity (such as CDC's Physical Activity and Public Health Practitioner Course). One goal is to establish infrastructure to advocate for obesity prevention policies and health promoting design, transportation, and land use. Members of these departments will work collaboratively across jurisdictions and across agencies within jurisdictions.

b. Support should be available to Local Health Departments to evaluate and provide timely recommendations to decision makers regarding the health impact of specific projects or policies which are likely to have significant or unexpected impacts on human health (so called Health Impact Assessments).

c. Support the implementation of approaches that support physical activity and provide safe and convenient environments for walking, running, bicycling and other activities as part of all street designs and renovations. This includes the availability of lighted sidewalks, bike lanes and bike paths. Emphasize coordination among local, state, and federal agencies to leverage complementary funding sources such as the Safe-Routes-to-School program.

d. Support community design characteristics that promote active transportation to school. These characteristics include traffic calming devices and protected crosswalks. These types of programs work in conjunction with programs designed to promote active transportation to school (such as "safe routes to school" and walking school buses mentioned previously).

e. Provide funding to support adoption of new evidence-based programs. Programs for which scientific evidence is lacking but that demonstrate potential for improving the walkability of neighborhoods will receive funding only if they incorporate a strong evaluation component.

4. Increase the availability of and access to parks, public recreational facilities and programs to reduce disparities in access to public recreational facilities.

The availability of places to engage in physical activity is an important characteristic of the environment that influences levels of physical activity. In California, many adolescents lack access to safe places to be physically active.[27] This problem is more pronounced for children of color and those living in low-income families.[28] In addition, the majority of Californians recognize these disparities in access to places for activity. Sixty-four percent of Californians say that poorer communities have less than their fair share of well-maintained parks and recreational facilities.[29]

There is strong evidence that increasing the availability of places to be active can have a positive impact on physical activity. The Task Force on Community Preventive Services[30] found that creating or improving access to places for physical activity is effective in increasing physical activity (based on a systematic review of 10 studies).[31] Many of the studies also reported weight loss or decreases in body fat. In addition, correlational studies provide evidence that young people with access to recreational facilities are more active than those without access.[32]

We recommend the following:

a. Support the availability of school recreation facilities for use by the community after school and on weekends. This includes support of both community-use and joint-use of recreation facilities. To develop and maintain these types of programs, funding is needed to support operations and maintenance of facilities. Co-locating schools with parks and other recreational facilities can reduce some of the barriers to joint-use and community-use. In addition, joint- and community-use of school property saves money by making the most use of scarce resources.

b. Provide funding to improve the quality of recreational facilities, especially in low-income neighborhoods in conjunction with state bond funding.

c. Support programs, staffing and maintenance for parks and other recreational facilities, especially in low-income neighborhoods.

d. Develop criteria to guide and evaluate implementation of community and joint use of park and school recreational facilities, analogous to CHPS (Collaborative for High Performance Schools) or LEEDS (Leadership for Energy and Environmental Design) standards.

e. Incentivize implementation of community and joint use of park and school recreational facilities.

f. Provide funding to support adoption of new evidence-based programs. Programs for which scientific evidence is lacking but that demonstrate potential for increasing the availability of and/or access to recreational facilities will receive funding only if they incorporate a strong evaluation component.

5. Support innovation, evaluation, and dissemination of programs promoting physical activity.

Continued research and development can lead to improved strategies for promoting youth physical activity and reducing obesity. An innovation, evaluation, and dissemination fund would support the types of projects indicated below. This would be in addition to the promising programs that currently lack scientific evidence that would be supported under each topic above.

a. A relatively small number of evidence-based policies for promoting youth physical activity have been evaluated and been found to be effective. The priority with these is to promote widespread use, and this fund should be used to evaluate improved methods of dissemination.

b. There are numerous PE, health education, and other physical activity and obesity prevention programs that are available but have not been evaluated. These should be supported only if they are being evaluated by qualified investigators.

c. There are many other opportunities for promoting youth physical activity that have not been evaluated, and an innovation and evaluation fund to support development and evaluation of promising approaches would be of great value. New approaches supported by an innovation fund would not only benefit the children of California, but they could stimulate economic development when sold to other states.

d. This fund should support periodic (i.e., every 5 years) evaluations of the adoption, implementation, and maintenance of evidence-based approaches and programs that are being evaluated.

e. Create a university/college and community partnership to generate research, synthesize results, recommend enhancements and evaluate outcomes of health promoting activities.

f. Support research studies that advance the understanding of effective policy interventions to promote physical activity including geospatial analysis of social and environmental factors at the community level.

6. Support a mechanism to assess accountability and effectiveness of programs at the program level and at the population level.

Funding to assess the effectiveness of specific programs as well as to monitor and track progress over time is critical to the success of obesity prevention efforts. Information that allows for comparison of rates of change in key indicators such as level of physical activity, measures of physical fitness and prevalence of overweight and obesity will allow the assessment of the success or lack thereof of these programs in combating childhood obesity and physical inactivity.

We recommend the following:

a. Fund the assessment and evaluation of funded programs to assess the effectiveness of implementation and assess effects on intended outcomes.

b. Fund the inclusion of relevant topics and questions in the California Health Interview Survey (CHIS) and analyses of data collected by CHIS. CHIS will provide comparisons of rates of change in overweight and obesity, physical activity and related topics across different communities taking into account differences in program characteristics, population characteristics and community resources. CHIS will assure that the Los Angeles County sample is designed to provide Service Planning Area estimates. Funding should be provided directly to the University of California for these purposes. If it is not feasible for the funds to be administered through the University of California, then the California Department of Health Services should administer the funds with the proviso that this stream of funding must *supplement, not replace*, current DHS funding for CHIS.

Notes

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topics such as physical activity. Although convened by the U.S. Department of Health and Human Services, the Task Force is an independent decision-making body.

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