Salud America!
The Robert Wood Johnson Foundation Research Network to Prevent Obesity Among Latino Children

RESEARCH BRIEF
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Community-Based After-School Programs and Youth Physical Fitness

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PEER REVIEW
Peer review for this research brief was conducted by *Salud America!* National Advisory Committee Member Charlotte Pratt, Ph.D., program director for the Division of Prevention and Population Sciences at the National Heart, Lung, and Blood Institute.

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Introduction

Obesity and its health complications are a growing problem among Mexican-American children.[1] Given that the Hispanic population is expected to grow by 188 percent from 2000 to 2050,[2] the health and well-being of Mexican-American children is an important policy consideration. Comprehensive childhood obesity prevention programs that recruit entire families to participate, rather than just children, could help Latino children and adults lead healthier lives.[3] But building family resiliency and strength, and acknowledging how existing patterns of daily life may foster healthy habits, have been strikingly absent from past research and program and policy development.[4] Research focusing on the Latino family unit would benefit efforts to reduce childhood obesity, especially given Latinos' strong cultural belief in family strength and unity.

PRELIMINARY RESEARCH RESULTS

Our *Salud America!* pilot research project, "Linking After-School Program Participation With Latino Youths' Obesity and Physical Fitness Outcomes," examines the link between participation in community-based after-school programming and physical fitness and overweight status among adolescents in a San Francisco Bay Area community. We used individual-level administrative data from public and private agencies in Redwood City, Calif., to ask the following questions: 1) What is the extent of participation in primarily fitness-focused and other types of after-school programs? Which students are most likely to participate in each?; and 2) What are the effects of participation in after-school programs on students' physical fitness and overweight trajectories over time? Are there differences in the effects of fitness-focused programs and other types of programs? To answer these questions,

[1] Ogden CL, Carroll MD, Curtin LR, Lamb MM and Flegal KM. "Prevalence of High Body Mass Index in US Children and Adolescents, 2007–2008." *Journal of the American Medical Association*, 303(3): 242–249, 2010.
[2] U.S. Census Bureau, 2004.
[3] Gruber KJ, Haldeman LA. "Using the family to combat childhood and adult obesity." *Preventing Chronic Disease*, 6(3): 2009. http://www.cdc.gov/pcd/issues/2009/jul/08_0191.htm. (Accessed January 2011).
[4] Fiese B H. Family Routines and Rituals. New Haven, CT: Yale University Press, 2006.

we examined the fitness and overweight status of 1,105 5th and 7th grade students. We followed the same students over four years to analyze whether participating in after-school programs had an effect on whether a student was physically fit, and on whether he or she was overweight two years later, when they were in 7th and 9th grades, respectively. Models controlled for a host of background characteristics, including demographic and socioeconomic characteristics as well as whether the student was initially physically fit prior to after-school participation.

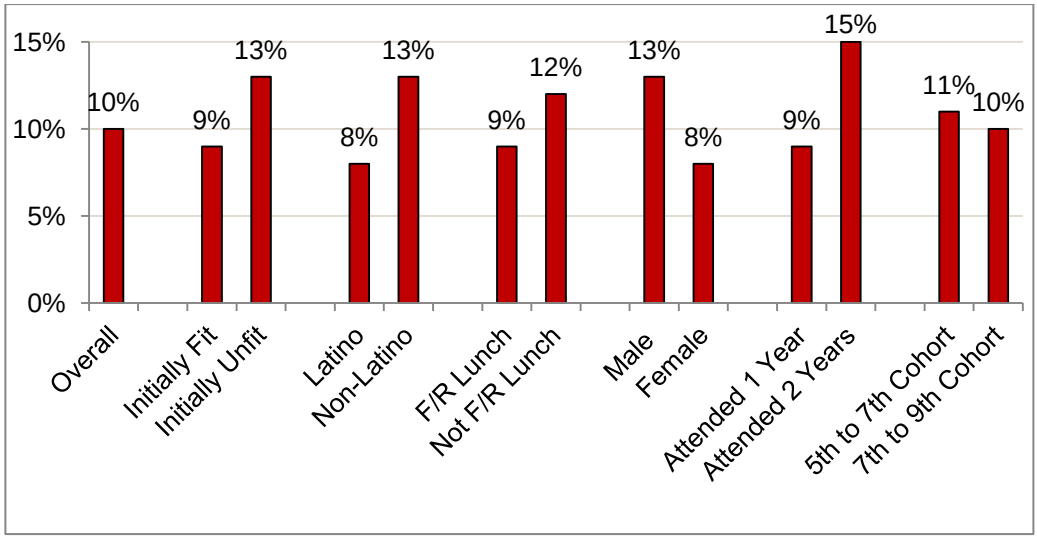
Students were mostly Latino (63%) and mostly low-income (61% received free or reduced-price lunches). We used the body mass index (BMI) component of the California Physical Fitness Test (PFT), taken by students in 5th, 7th and 9th grade, to determine a student's overweight status. Students who passed five of six components of the PFT were considered physically fit. We examined participation records from seven local after-school program providers, matched individually to students' PFT scores. Some programs had an explicit fitness focus and others primarily focused on other areas of enrichment, but may also have incorporated some fitness components. Preliminary findings include:

- **Latino students and "initially unfit" students were less likely to participate in primarily fitness-focused programs after school.** Slightly more than one-third (36%) of students in the 5th and 7th grade cohorts participated in at least one primarily fitness-focused after-school program over the two-year period. Latino students were less likely to participate in fitness-focused programs (31%) than non-Latino students (45%), and those who were initially unfit (27%) were less likely to participate than initially fit students (42%). There were only small differences in these same groups' participation in other after-school enrichment programs.

- **Participation in primarily fitness-focused after-school programs—but not other types of enrichment programs—increased the likelihood of being physically fit.** After controlling for initial fitness level, socioeconomic status and other factors that might influence students' fitness trajectories, we found that participating in primarily fitness-focused programs was associated with a statistically significant increase (10%) in the likelihood of being physically fit for all students overall. However, there is some variation in the magnitude of influence for different student subgroups. For instance, we find that for Latinos and those receiving free or reduced-price lunches, participating in fitness-focused programs is associated with smaller but still positive influences on fitness outcomes. Males and those who participated in two years of fitness programs experienced larger positive influences. Although the likelihood of fitness improvement varied between subgroups, all subgroups experienced positive and statistically significant increases in likelihood of physical fitness (see figure). We also found that participating in fitness-focused programs reduced the likelihood of being

overweight by 3 percent, but the results were statistically insignificant overall and for each subgroup.[5]

Increased Likelihood of Being Physically Fit After Participating in Primarily Fitness-Focused After-School Programs



Conclusion and Policy Implications

Findings from this study point to the importance of identifying and engaging youth in fitness-focused activities after school, and if possible, focusing on student populations less likely to participate. Our work shows that children's health can be improved by existing local youth-serving organizations that promote youth fitness after school.

Programs may need to consider targeting strategies, however, because findings show lower rates of participation in fitness-focused programs and smaller effects of participation on fitness among the highest risk groups—low-income and Latino students. To combat this problem, programs may need to consider targeting strategies to increase participation among these groups. A number of factors may be influencing participation, including the cost of sports and fitness programs and geographic barriers that prevent young people from attending programs in other neighborhoods. Elementary students who struggle in school, and who were more likely to be low-income or "English learner" students, who were still learning

[5] Lauer PA, Akiba M, Wilkerson SB, Apthorp HS, Snow D, and Martin-Glenn ML. "Out-of-School-Time Programs: A Meta-Analysis of Effects for At-Risk Students." *Review of Educational Research,* 76(2): 275-313, 2006.

English, were more likely to attend academic enrichment programs after school, which include fitness only as a secondary component, if at all. Lack of fitness and need for academic support are themselves linked.[6] The co-occurrence of these problems can be a challenge, but programs and the policies and regulations that support them could overcome this challenge with targeted after-school programs designed to improve both academic and fitness outcomes.

The research supports the focus of the national *Let's Move!* campaign, which aims to eliminate childhood obesity by increasing children's physical activity and improving access to healthy foods. In our study region, the San Mateo County Health System is already moving in this direction; in 2010 it released a report that described the need to "improve food and physical activity in the school environment."[7] Redwood City has begun to address these challenges by adopting a set of goals to improve young people's wellness through collaborations among community agencies, schools and families. To that end, the city has begun a policy of providing a "walking school bus" —a group of children walking to school with one or more adults—and encouraging school-based community garden programs.

In collaboration with the California School Boards Association (CSBA), we disseminated our findings as widely as possible at the state level; we presented to the CSBA Health Advisory Committee, made up of school board members and superintendants. CSBA also facilitated a presentation and webinar to state after-school and youth health stakeholders. Our research was written up in the CSBA newsletter, and the CSBA body that reviews sample board policies is currently considering including notes in currently policies that reference our research. These have been and will be shared with local school boards. We have also shared our findings with local policy-makers, including the programs and agencies that contributed data to this study. By sharing our preliminary and final results with local policy-makers, we intend to create an awareness of the need for fitness policies and programs that help low-income and Latino youth.

[6]London RA and Castrechini S. "A Longitudinal Examination of the Link Between Youth Physical Fitness and Academic Achievement." *Journal of School Health,* 81(7): 400-408, 2011.
[7]County of San Mateo. *Strategies for Improving Food & Physical Activity Environments in San Mateo County.* Get Healthy San Mateo County, 2010.