

The Impact of State Laws and District Policies on Physical Education and Recess Practices in a Nationally-Representative Sample of U.S. Public Elementary Schools

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Background and Significance

- 1 in 3 U.S. kids is overweight or obese
- The prevalence of obesity increases as youth move into adolescence.
- 21.2 percent of Latino and 24.3 percent of Black children and adolescents are obese in comparison to 14 percent of white youth
- The prevalence of obesity is found to be significantly higher among low- versus high-income groups, and, lower-educated versus higher-educated individuals.

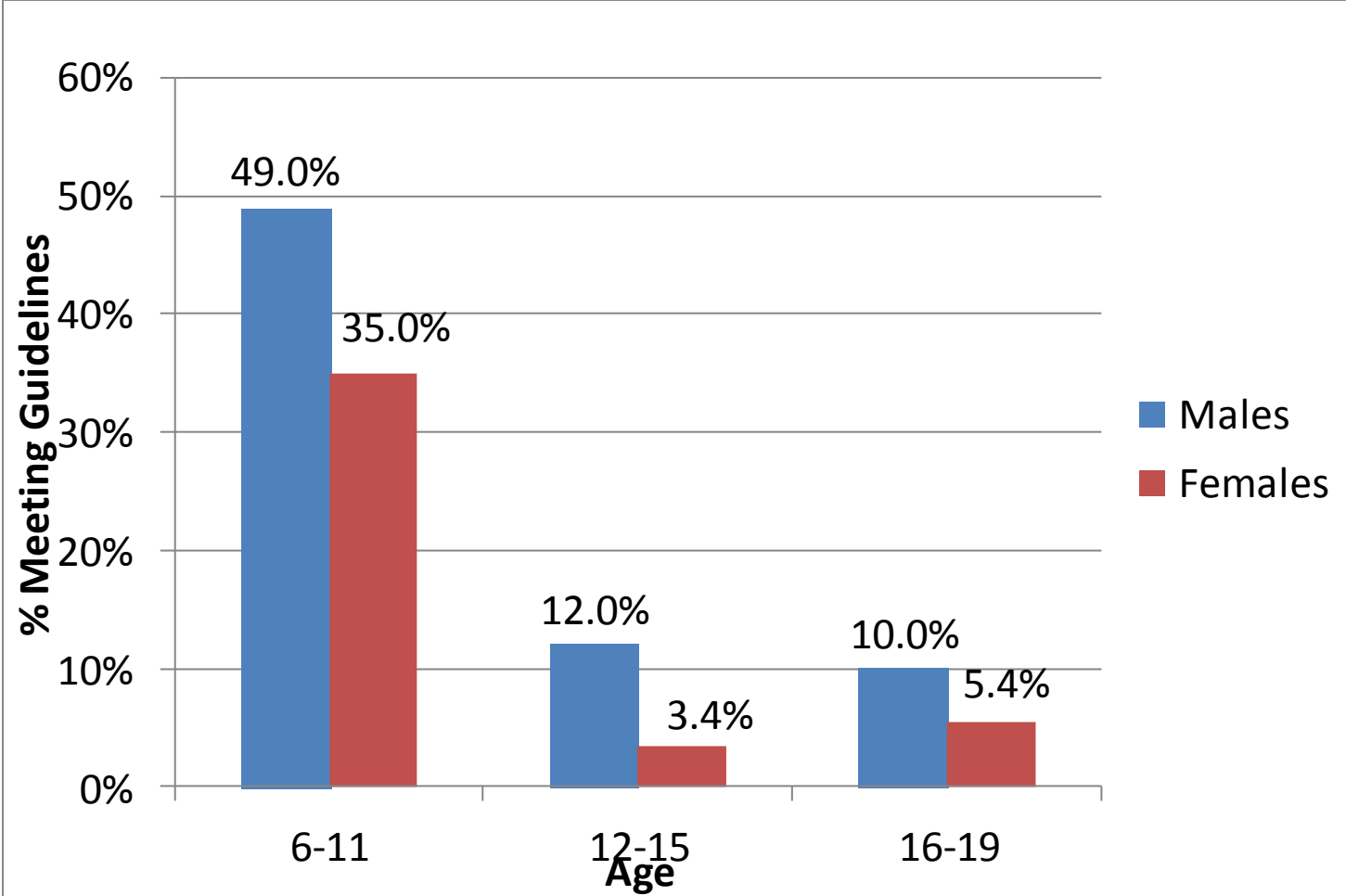
(Ogden et al 2012; Ogden et al. 2008)

Disparities in Youth Physical Activity

- White youth are more physically active than Hispanic youth.
- Girls are less physically active than boys.
- Lower-income youth have lower levels of physical activity
- Rural youth participate less in physical activity.
- As youth move into adolescence their participation in physical activity decreases.

(Singh et al. 2008, Hanson and Chen 2007, Joens-Matre et al. 2008)

Percent of Youths Meeting Physical Activity Guidelines Declines with Age



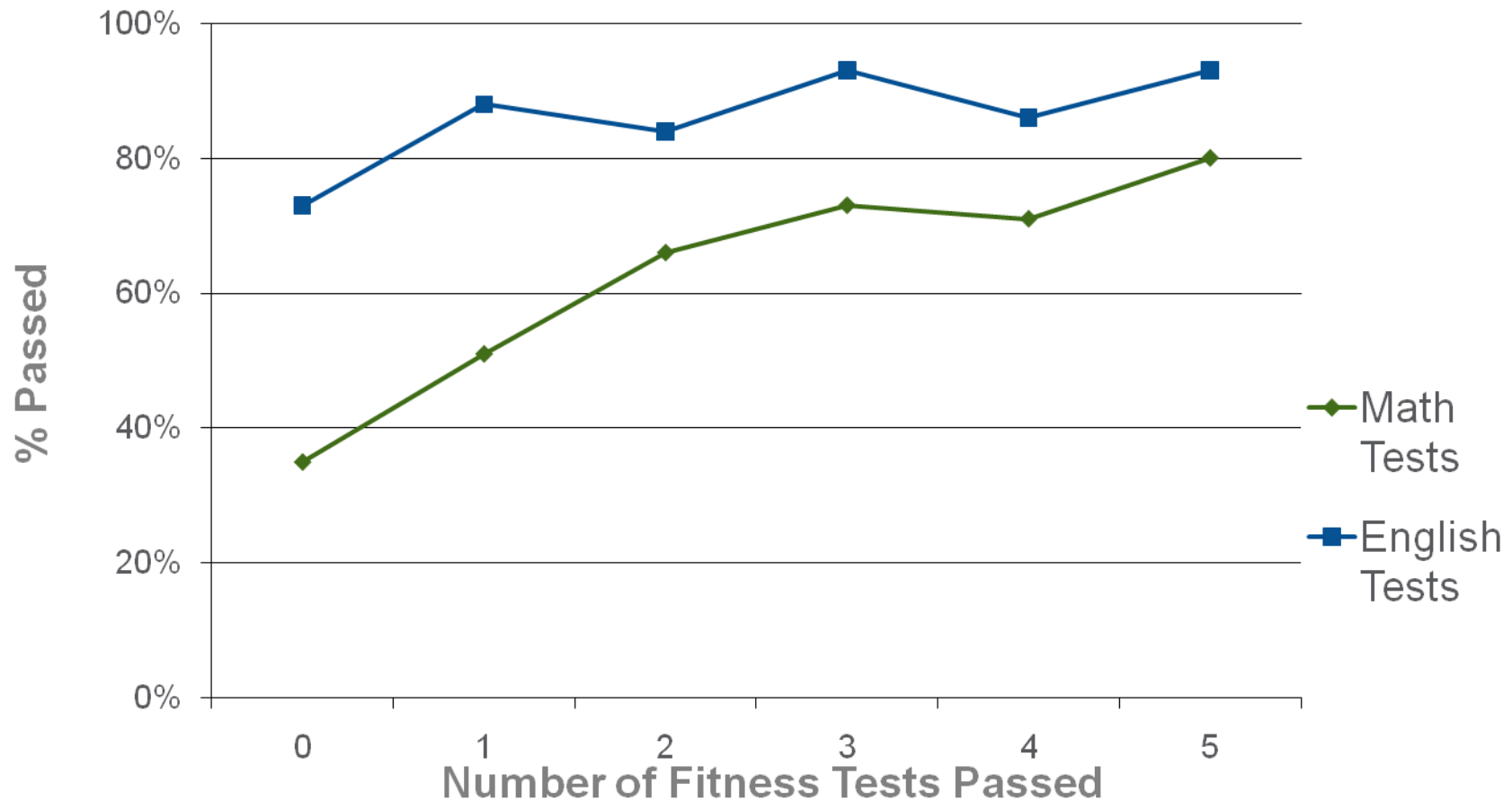
Troiano R, Berrigan D, Dodd K, et al. "Physical Activity in the United States Measured by Accelerometer." *Medicine & Science in Sports & Exercise*, 40(1): 181-188, January 2008.

This data was measured by accelerometers.

Youth Physical Activity Guidelines

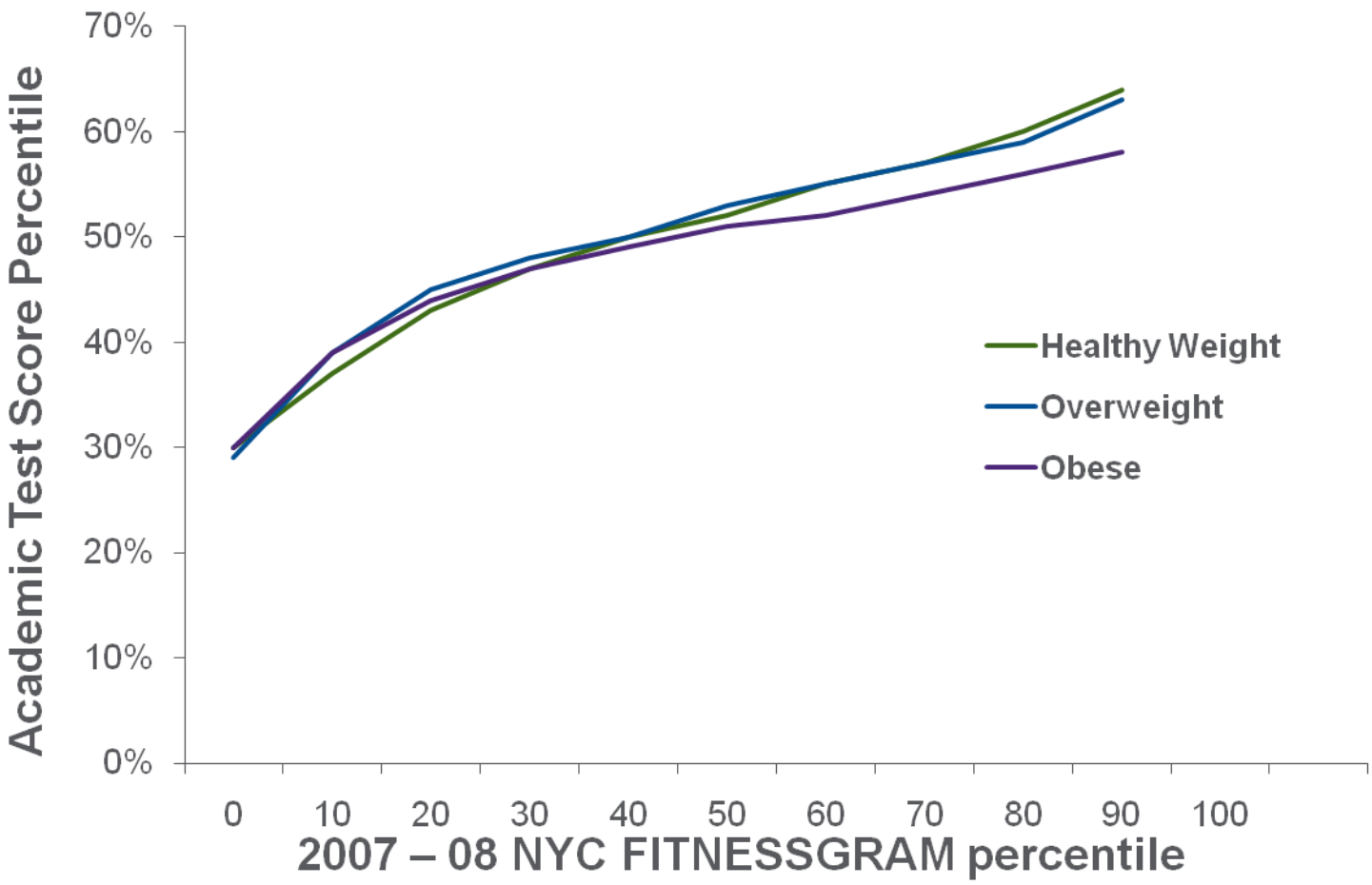
- Children ages 6 to 17 should be physically active at least one hour a day.
- The National Association of Sport and Physical Education (NASPE) <http://www.aahperd.org/naspe/> recommends that elementary school students:
 - receive at least 150 minutes of physical education class a week
 - 20 minutes of daily recess (100 minutes a week)
- This is an average of about 50 (~84%) minutes of activity each school day

Likelihood of Passing Academic Tests For Each Fitness Test Passed by Massachusetts Students in Grades 4 to 8



Chomitz V, Slining M, McGowan R, et al. "Is There a Relationship Between Physical Fitness and Academic Achievement? Positive Results From Public School Children in the Northeastern United States." *Journal of School Health*, 79(1): 30-37, January 2009.

Academic Test Scores Increase with Physical Fitness Scores Among New York Students in Grades K to 8



Egger J, Bartley K, Benson L, et al. "Childhood Obesity is a Serious Concern in New York City: Higher Levels of Fitness Associated with Better Academic Performance." *NYC Vital Signs*, 8(1): 1-4, June 2009.

Physical education/activity time does not negatively impact academic performance

- 4th/5th grade students in British Columbia who received an extra 50 minutes/week of in-school PA time had similar standardized test scores for mathematics, reading and language arts as did students in the control group
- Analyses of standardized achievement tests among 4th/5th grade students in CA were not adversely affected by an intensive PE program that doubled or tripled PE time and in several cases they performed better than students in control groups

See: Active Living Research Program

http://www.activelivingresearch.org/files/Active_Ed_Summer2009.pdf

Physical education/activity time does not negatively impact academic performance

- Girls who were enrolled in ≥ 70 mins/week of PE \rightarrow significantly higher achievement scores in mathematics and reading than girls enrolled in PE for ≤ 35 mins/week, according to data from the National Early Childhood Longitudinal Study.
- A study of more than 200 sixth-grade students in Michigan, conducted in 2006, found that students enrolled in PE had similar grades and standardized test scores as students who were not enrolled in PE, despite receiving 55 fewer minutes of daily classroom instruction.

See: Active Living Research Program

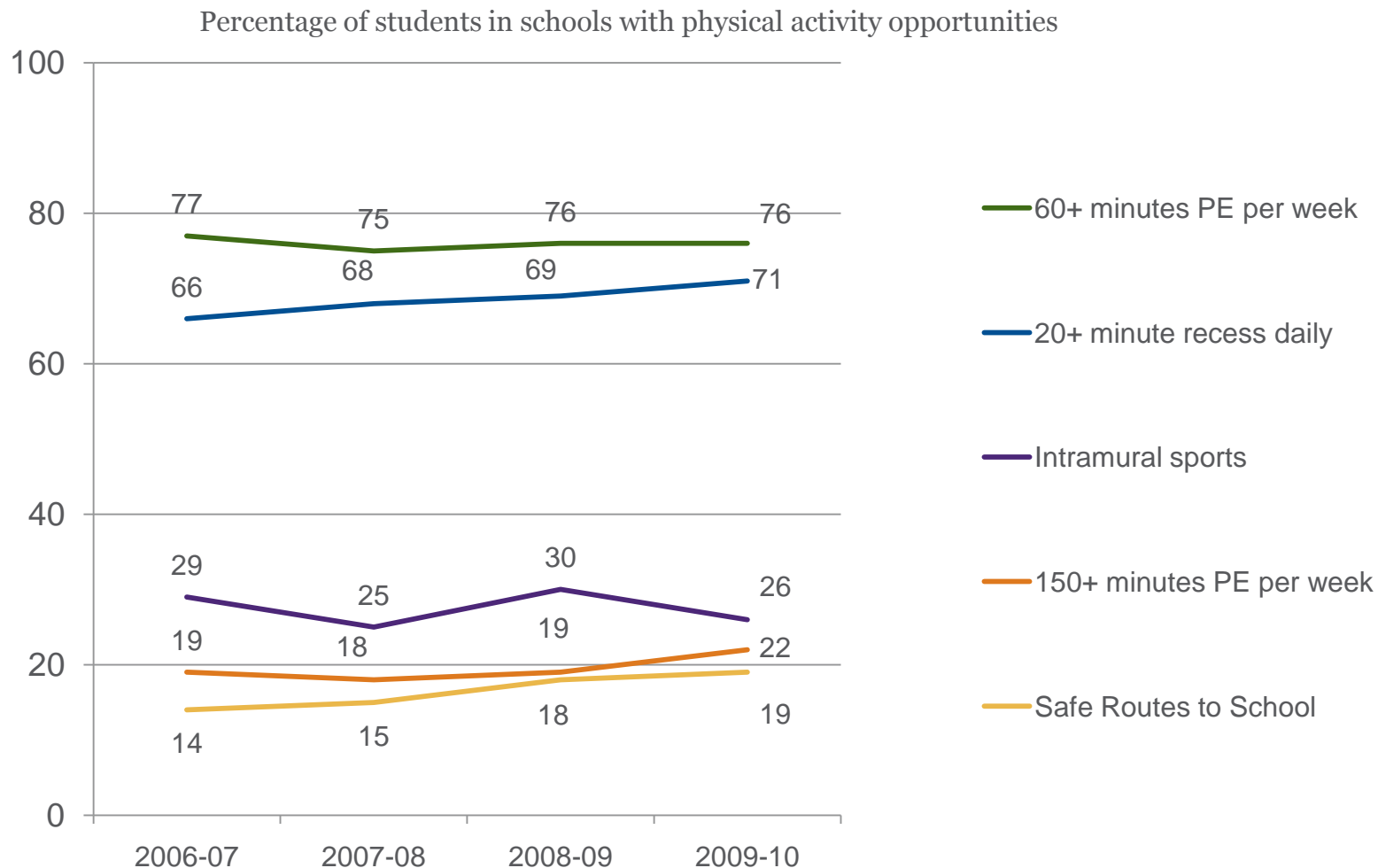
http://www.activelivingresearch.org/files/Active_Ed_Summer2009.pdf

The Benefits of Recess

- Providing recess breaks during the day can improve students' classroom behavior and attentiveness.
- Children can accumulate up to 40 percent of their total daily physical activity during recess.
- Unstructured physical play can reduce stress
- Recess allows children an opportunity to develop social skills

See: Pellegrini and Glickman (1989); Active Living Research Program
http://activelivingresearch.org/files/ALR_Brief_Recess.pdf;

Physical Activity in Primary Schools

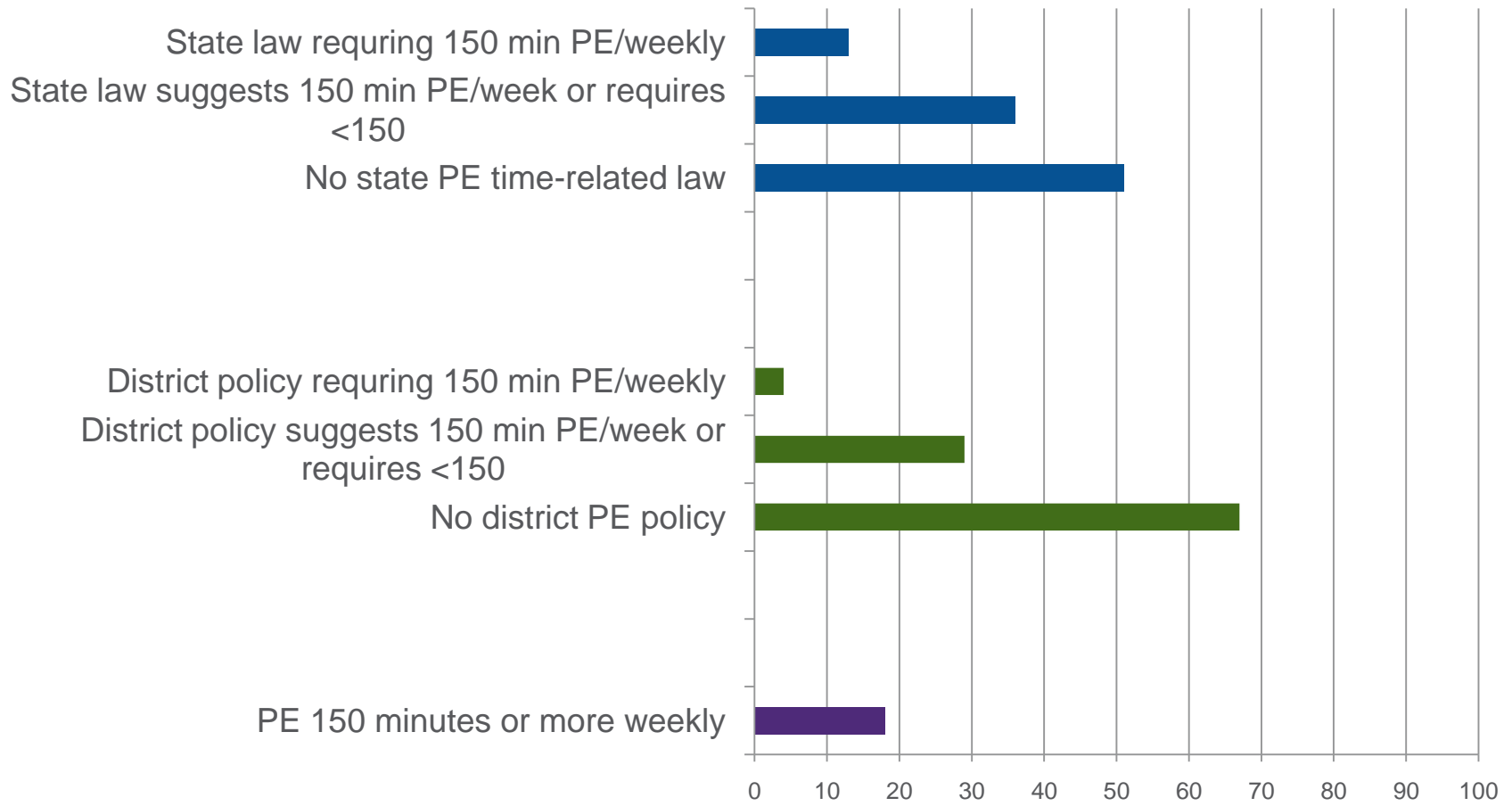


Turner, et al. (2010) and updates from 2009/10 and 2010/11 Food & Fitness surveys

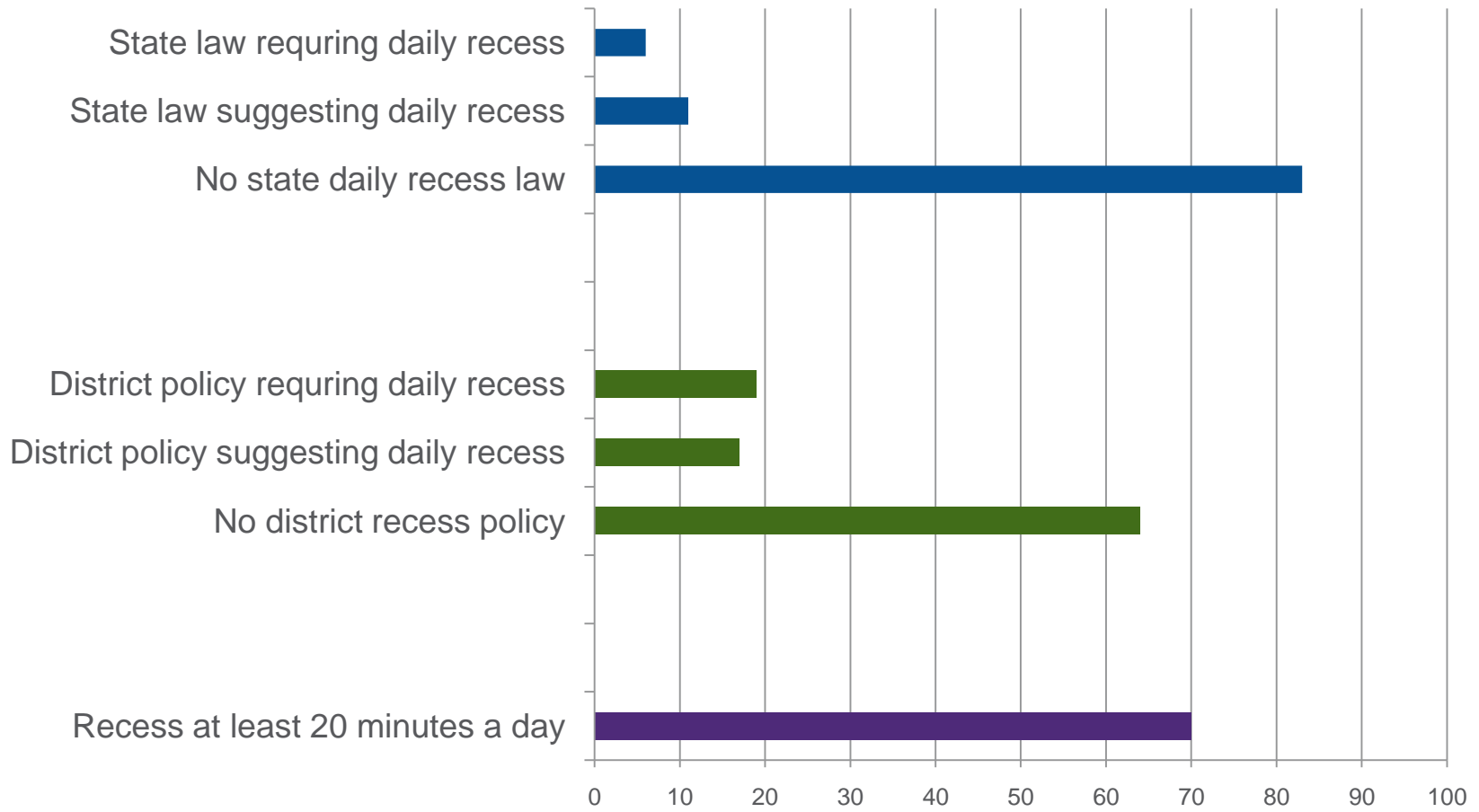
The Food and Fitness Survey Data

- This is the first study to examine the impact of state and school district-level policies on physical education and recess practices in a nationally representative sample of U.S. public elementary schools.
- The Food and Fitness Project was launched in 2007 to assess obesity-relevant policies and practices among US elementary schools and their corresponding schools districts.
- Data on PE and recess practices and programs were obtained from annual mail-back surveys of school administrators at nationally representative samples of public elementary schools in 2006-07, 2007-08, and 2008-09.
- State laws and district wellness policies were obtained through primary legal research.
- Stacked cross-sectional analysis of 1,761 public elementary schools, nested within 690 districts, and 47 states.
- All models controlled for region, school locale, racial composition, free-reduced lunch, total number of students, and school year.

State, District, and ES PE: Average Policy Prevalence



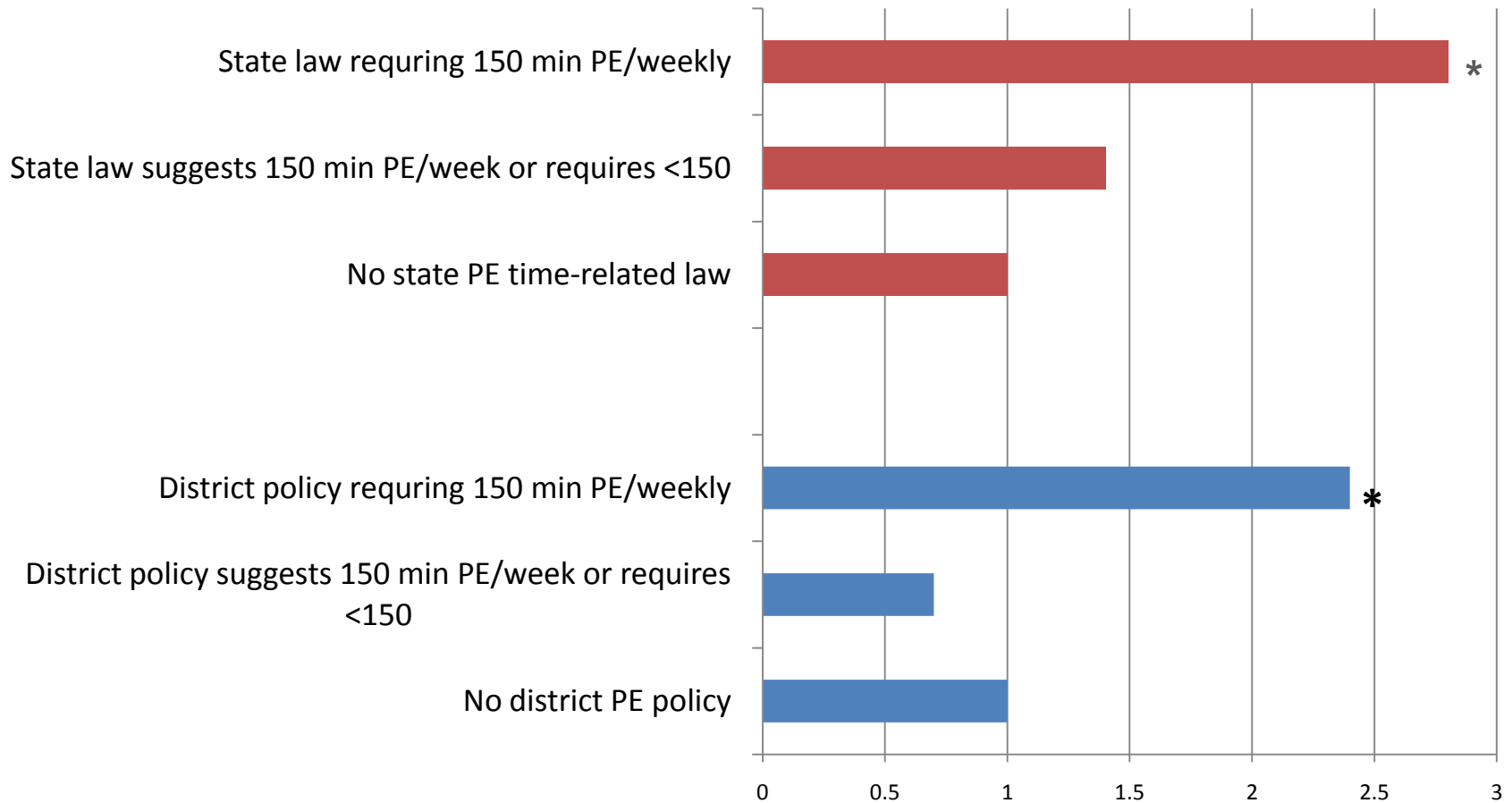
State, District, and ES Recess: Average Policy Prevalence



The Study Results

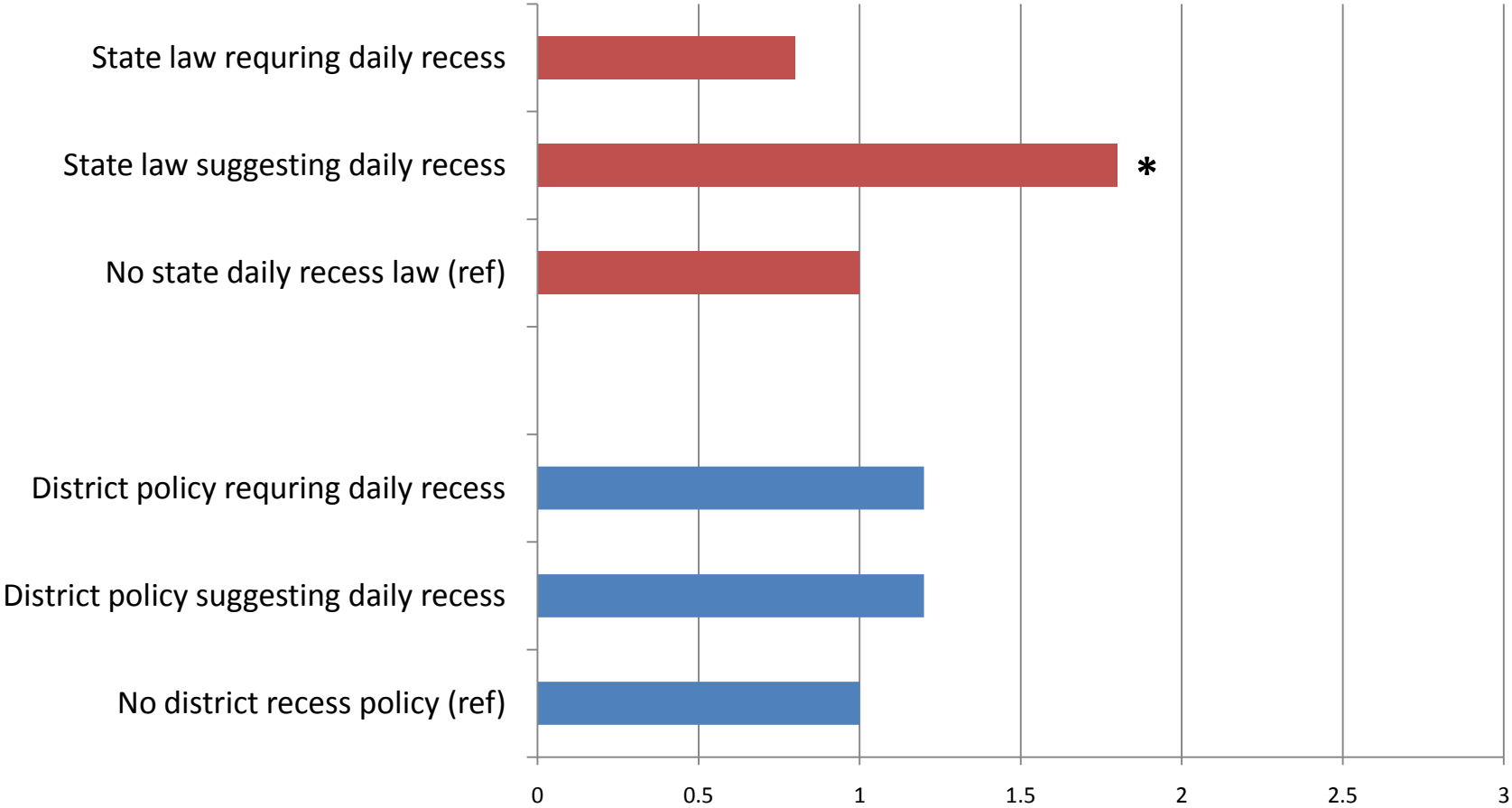
- On average, across the three-year period, less than one in five schools (18 percent) offered 150 minutes of PE per week; only 13 percent of states and 4 percent of school districts had a law that required it.
- About 70% of schools offered recess for at least 20 minutes per day. Only 11% of states in the sample encouraged daily recess, and an additional 6% of states required it.

Multilevel, Multivariate Associations between State and District Policy and ES PE ≥ 150 mins/week



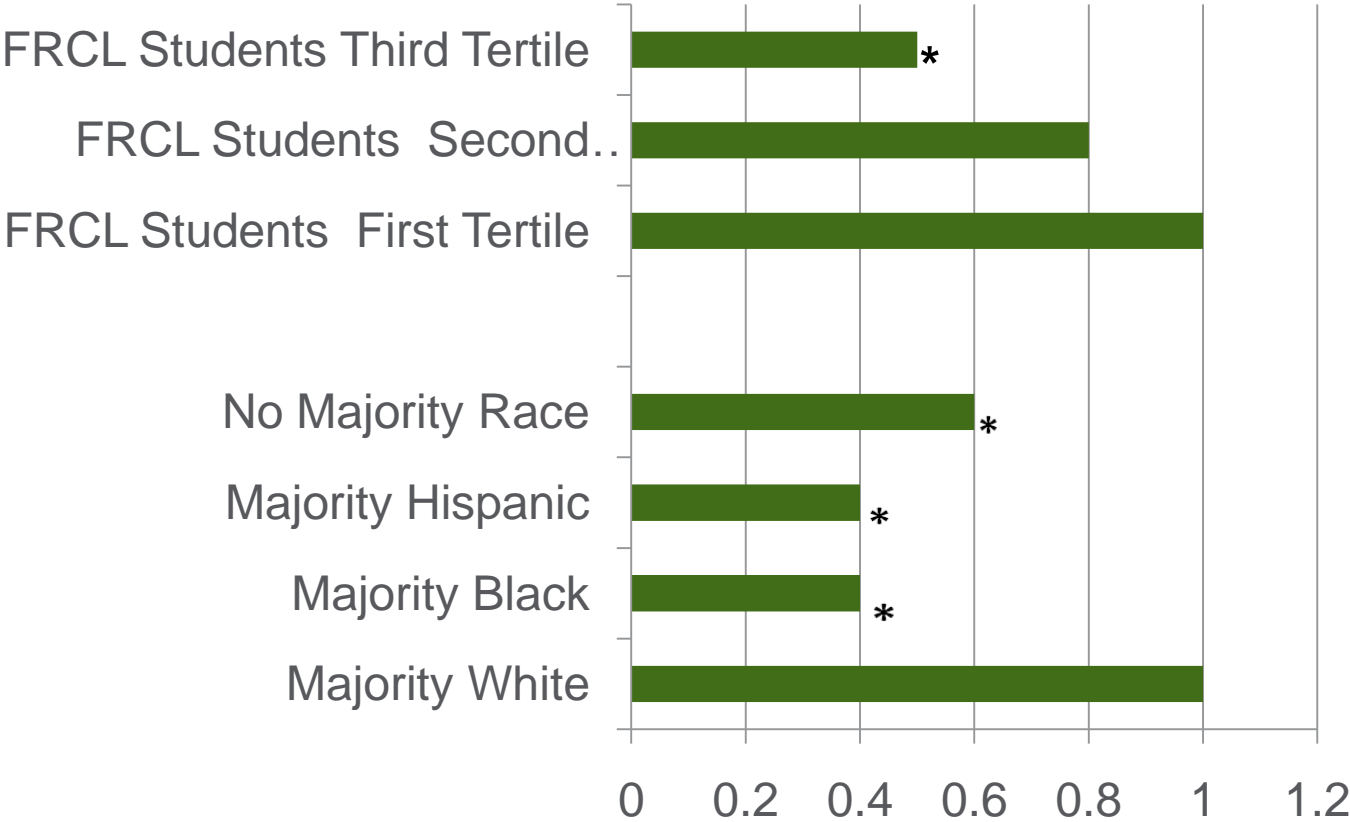
* Indicates significant difference from reference, $p < .05$

Multilevel, Multivariate Associations between State and District Policy and ES offering 20 mins of recess daily



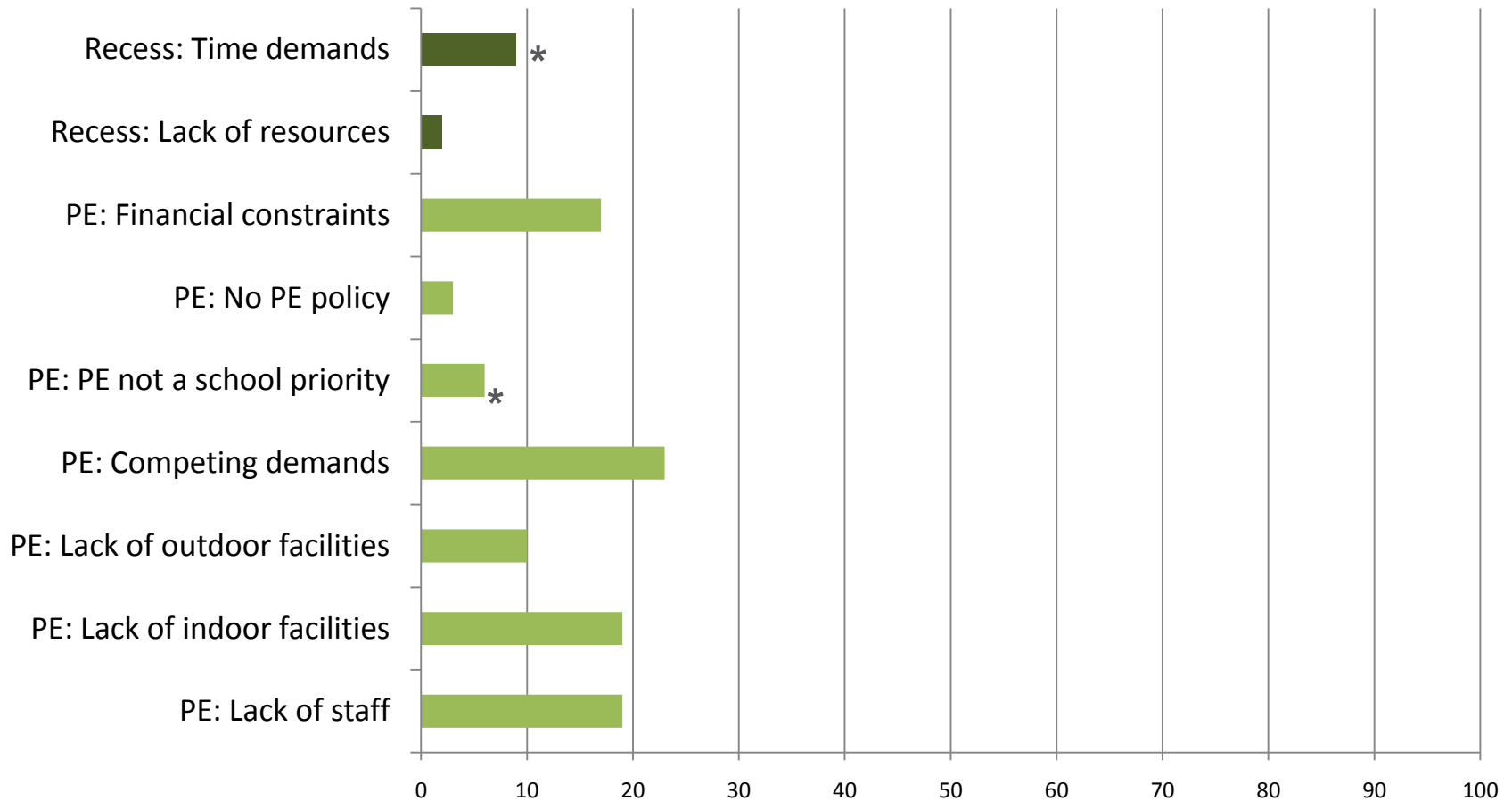
* Indicates significant difference from reference, $p < .05$

Multilevel, Multivariate Associations between State and District Policy and ES offering 20 mins of recess daily



* Indicates significant difference from reference, $p < .05$

Average Percentage of Schools (n=1761) with Barriers to Recess & PE



The Study Results cont'd

- Schools that offered 150 minutes of weekly PE or 20 minutes of daily recess were less likely to offer the other. This suggests that schools are substituting one opportunity for another instead of providing the recommended amount of both.
- Schools with a longer day were more likely to meet the national recommendations for both PE and recess.

Conclusions

- We found that mandates for both physical education and recess are needed to help elementary school students meet the national recommendations for physical activity.
- Given competing time demands and other issues schools face, increasing the amount of time for physical activity during the school day may be challenging.
- Two strategies schools can use to help more kids get the exercise they need to promote overall health and reduce risk for obesity are:
 - increase the amount of time kids spend in moderate-to-vigorous activity during PE, recess and brief classroom breaks; and
 - offer intramural sports and physical activity clubs before or after school.

Questions?