Who has access to physical education teachers in California public schools?

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Physical Activity

Moderate-to-Vigorous Physical Activity (MVPA)
Benefits of MVPA

Evidence-based recommendation

60 minutes of MVPA during school
School-based opportunities for MVPA

Comprehensive School Physical Activity Program
Physical Education (PE)

Madsen et al, Arch Ped Adol Med, 2009; Institute of Medicine, 2013; Trudeau, Sports Medicine, 2005
National elementary PE recommendation

30 mins/day

SHAPE America, 2017
California elementary PE law

20 mins/day

CA Dept of Ed, Ed Code 51210
California elementary PE law compliance

> 3 million public elementary students in California

Sanchez-Vaznaugh et al, AJPM, 2012
Barriers to elementary PE law compliance
Barriers to elementary PE law compliance
Classroom teacher vs. Single-subject credentialed PE teacher
How many PE teachers are there in California elementary schools?
Methods

• Called all California school districts in 2016-17 with elementary students
  – 75% of districts responded (n = 669)
• How many single-subject credentialed elementary PE teachers are in your district?
• Calculated the ratio of PE teachers to students in each district
Determined if the district-level PE teacher to student ratio was associated with student cardiorespiratory fitness.
What did we learn?

Half of California school districts don't have single subject credentialed elementary PE teachers on staff.

Thompson, *Prev Med*, 2019
What did we learn?

PE teachers are disproportionately lacking in districts with more African American and Latinx youth.

Thompson, *Prev Med*, 2019
What did we learn?

Having more PE teachers per students is associated with increased student fitness.

Thompson, *Prev Med*, 2019
What did we learn?

Each additional PE teacher per 500 students was associated with a 3% increase in aerobically fit students (95% CI: 1%, 4%).

Thompson, *Prev Med*, 2019
Implications

Half of California school districts serving elementary students (n=725,000) don't have single subject credentialed elementary PE teachers on staff.

Having more PE teachers per students was associated with increased student fitness

Disparities in PE teacher availability exist, with PE teachers disproportionately lacking in districts with more students of color

Access to elementary PE teachers in California is lacking and may be negatively impacting student health

Thompson, *Prev Med*, 2019
Creative action is needed to fund improvements in PE to ensure youth from all backgrounds are physically active.
Opportunities for increased PE funding
Creative Solutions in Action
Creative Solutions in Action
Creative Solutions in Action
Creative Solutions in Action
Opportunities for increased PE funding
Thank you

Bhaani Singh
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Robert Wood Johnson Foundation
Evidence for Action Program
Weighing the Options:
Strategies Associated with Lower Obesity and Improved Fitness in Low-Income Schools

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July 16, 2019
Roadmap for Today

- Background
- What is Intervention Dose?
- Study Methods
- Study Results
- Next Steps
What is FitnessGram?

- Testing used for Presidential Youth Fitness Program
- In CA, students are tested in 5th, 7th, and 9th grades
- Assesses six “Healthy Fitness Zones” (HFZ)
  - Aerobic capacity
  - Abdominal strength and endurance
  - Upper body strength and endurance
  - Body composition
  - Trunk extensor strength and flexibility
  - Flexibility
Overweight and Obesity 2013-2017: California

Rates adjusted for grade, gender, race/ethnicity, SED, and school FRPM

FitnessGram trends analyzed by John Pugliese, PhD, California Dept of Public Health
Aerobic and Overall HFZ 2013-2017: California

Rates adjusted for grade, gender, race/ethnicity, SED, and school FRPM

FitnessGram trends analyzed by John Pugliese, PhD, California Dept of Public Health
California’s CalFresh Healthy Living Program (SNAP-Ed)

- Four State Implementing Agencies
- Provide information and support for healthy eating and physical activity to low-income Californians
- Network of local health departments, volunteers, non-profits, area agencies on aging, and other local partners
California Department of Public Health CalFresh Healthy Living:
-60 local health departments
-57 of 58 California counties
-3 city health departments
FFY 16 LHD Efforts in School Setting

PSE: 688 schools

Direct Education: 1.26 million students (duplicated count)

Indirect Education: 1.5 million students (duplicated count)
California School SNAP-Ed Intervention Efforts: 2016

- N=3,530
- N=906

- No SNAP-Ed intervention
- LHD SNAP-Ed intervention
Combinations of School Interventions

N = 906 schools with LHD SNAP-Ed PA interventions
*District-level PSE interventions are also counted above in the PSE only number.
Frequency of PA-Related PSEs

- Wellness policies
- Classroom PA
- Active transport
- Before/after school PA
- PA facilities
- Recess PA
- Physical Education

District-Level PSE (n=288) vs. School-Level PSE (n=96)
FIGURE 4 Calculating population dose.  Schwartz, Rauzon, & Cheadle, NAM Perspectives, 2015
How is dose calculated?

**PSE (40%)**  
Intensity (# of PSE change domains) * Reach (% of students)

**Direct Education (40%)**  
Sum of [Intensity (Hours) * Reach (% of students)]

**Indirect Education (20%)**  
Sum of [Intensity (weighted sum of activities) * Reach (% of students)]

*Full methods in manuscript: Hewawitharana, Kao, Rider, et al. under development*
SNAP-Ed Dose (FFY 16):
Schools where LHDs delivered SNAP-Ed with PA focus

Outcomes (FFY 17) from FitnessGram:
5th and 7th graders
- BMI z-score
- # of HFZ achieved
- Aerobic fitness (VO2 Max)
Analysis

Models
• Linear multilevel model (BMI z, VO2 max)
• Poisson multilevel model (HFZ)

Covariates
• School level (urbanicity, FRPM, enrollment)
• Student level (age, gender, race/ethnicity)

Cluster variable
• School
Results: Weight

Students in schools with any LHD SNAP-Ed programming had lower BMI z-scores than those attending schools with no SNAP-Ed ($b = -0.0307, p = 0.0006$).
Results: Healthy Fitness Zones

There was **no difference** in the # of Healthy Fitness Zones met by students in schools with or without LHD SNAP-Ed programming.
Results: Aerobic fitness

Students in schools with LHD SNAP-Ed programming had **higher VO2 max** than those attending schools with no SNAP-Ed programming (b = 0.2211, p = 0.0013).
School-based interventions with a physical activity component are associated with:

- improved student cardiovascular fitness
- modestly lower student BMI
What's Next?

Additional years of dose & outcome data

Types & combinations of interventions

Nutrition intervention dose & outcomes
Thank you!

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Questions? Email me!
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Integrating Classroom Physical Activity

Putting Strategies into Action
Special Thanks

National Collaboration to Promote Health, Wellness, and Academic Success of School-Age Children

Cooperative Agreement CDC-RFA-DP16-1601 with the Centers for Disease Control and Prevention (CDC)
Objectives

Introduce Springboard to Active Schools.

Articulate the link between classroom physical activity and improved academic achievement.

Define classroom physical activity and the national guidance and strategies for supporting classroom physical activity.

Identify key resources for classroom physical activity.
About Springboard to Active Schools

Support CDC’s Healthy Schools Funded States to create environments supportive of physical education and physical activity via:
1. Professional Develop and Technical Assistance
2. Education and Dissemination
3. Partnership and Collaboration

www.nnphi.org
www.hria.org
www.schoolspringboard.org
Creating a Culture Supportive of Physical Activity
Comprehensive School Physical Activity Program Roadmap

Active Students = Better Learners
www.cdc.gov/healthyschools/PEandPA

Recess
Classroom Physical Activity
Classroom Physical Activity: Definition and Policies
Definition of Classroom Physical Activity

Any physical activity done in the classroom

- Takes place at any time
- Occurs in one or several brief periods
- Occurs at all school levels
- Offered in addition to PE and recess
Approaches to Classroom Physical Activity

• *Integrated into* planned academic instruction

• *Outside of* planned academic instruction
Vote in Motion

In your schools or districts, most people think that physical activity will cause children to not pay attention in class.

In your schools or districts, most teachers and administrators understand that physical education and physical activity enhances academic achievement.

In your schools or districts, physical activity is integrated into subjects other than physical education.
Benefits of Classroom Physical Activity

- Improves concentration and ability to stay on-task
- Reduces disruptive behavior
- Improves motivation and engagement
- Improves academic performance
- Increases daily physical activity
National Perspective: School Practice

Students participate in regular physical activity breaks* during the school day

43% of Elementary Schools
64% of Middle Schools
27% of High Schools

*For elementary schools, this is defined as “outside of physical education class and recess.”
For middle schools and high schools, this is defined as “outside of physical education class.”
National Guidance for Classroom Physical Activity

• Incorporate classroom physical activity in CSPAP

• Do not replace physical education and recess

• Integrate physical activity into academic instruction

• Provide physical activity outside of academic instruction
National Guidance for Classroom Physical Activity (continued)

• Reinforce skills learned in physical education

• Minimize barriers

• Do not withhold classroom physical activity

• Provide ongoing professional development
Strategies for Classroom Physical Activity
Strategies for Classroom Physical Activity in Schools

Describes 10 strategies for promoting and planning classroom physical activity

www.schoolspringboard.org/classroomphysicalactivity
Strategies for Classroom Physical Activity in Schools

1. Identify who to engage and how to involve them in planning for classroom physical activity
2. Identify what classroom physical activity policies and practices currently exist
3. Provide professional development or in-service training on classroom physical activity
4. Identify approaches to incorporate classroom physical activity
5. Identify opportunities and appropriate times for classroom physical activity
6. Identify materials, technology, and resources to promote classroom physical activity
7. Identify ways to create and use classroom space for classroom physical activity
8. Ensure that classroom physical activity is appropriate and safe for all students by setting and communicating safety and behavioral expectations
9. Collect information on classroom physical activity
10. Share successes, challenges, and lessons learned from classroom physical activity
Integrate Physical Activity in Schools:
A Guide for Putting Strategies into Practice

• Assess current classroom physical activity practices
• Identify opportunities to enhance or sustain classroom physical activity
• Take practical steps to integrate physical activity into the classroom

www.schoolspringboard.org/classroomphysicalactivity
Online Platform: Integrate Classroom Physical Activity in Schools

www.schoolspringboard.org/classroomphysicalactivity
Additional Classroom Physical Activity Resources

Data Brief: Integrate Classroom Physical Activity in Schools

Ideas for Parents: Classroom Physical Activity

PowerPoint Presentation: Integrate Classroom Physical Activity: Getting Students Active During School

www.schoolspringboard.org/classroomphysicalactivity
Additional CDC Key Resources to Support PE and PA

- Just updated, will be updated every year
- Will start to be updated in late 2019
- Will start to be updated in late 2019
Thank you!

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Follow us on Twitter: @Springboard2AS

Visit us at www.schoolspringboard.org

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