

School-based physical activity interventions that include policy changes together with improving physical activity opportunities may be the most effective approach for improving student fitness

Background

The California Department of Public Health's (CDPH) CalFresh Healthy Living (CFHL) program is a substantial source of ongoing funding for nutrition education and obesity prevention in schools across the state. School-based physical activity interventions may be an effective way of improving youth cardiorespiratory fitness and health, especially at an age when establishing healthy behaviors is pivotal. Given the range of evidence-based interventions that are available to Local Health Departments (LHDs) to implement, researchers from Nutrition Policy Institute (NPI), CDPH, University of California Berkeley, and Arizona State University sought to understand which CFHL intervention combinations may be most effective in improving students' fitness levels.

What We Evaluated

Utilizing secondary data from Fitnessgram and PEARS, this study aimed to:

- Identify and describe patterns of CFHL physical activity interventions implemented in CFHL-eligible CA public schools during Federal Fiscal Year 2016 (FFY16) (n=904 intervention schools, 93,716 students; 3,367 comparison schools; 349,027 students)
- Determine the association between identified intervention combinations and student VO_2 max the following school year (2016-17), to identify which intervention combinations are associated with the highest student VO_2 max values.

Latent class analysis (LCA), a type of modeling that identifies underlying subgroups within a population with shared characteristics¹⁻³, was used to categorize combinations of physical activity intervention components into intervention classes.

What is VO_2 Max? ⁴⁻⁶

The maximum volume (V) of oxygen (O_2) effectively used by a person during exercise.



Influenced by physical activity habits, body composition, age, gender, and heredity.



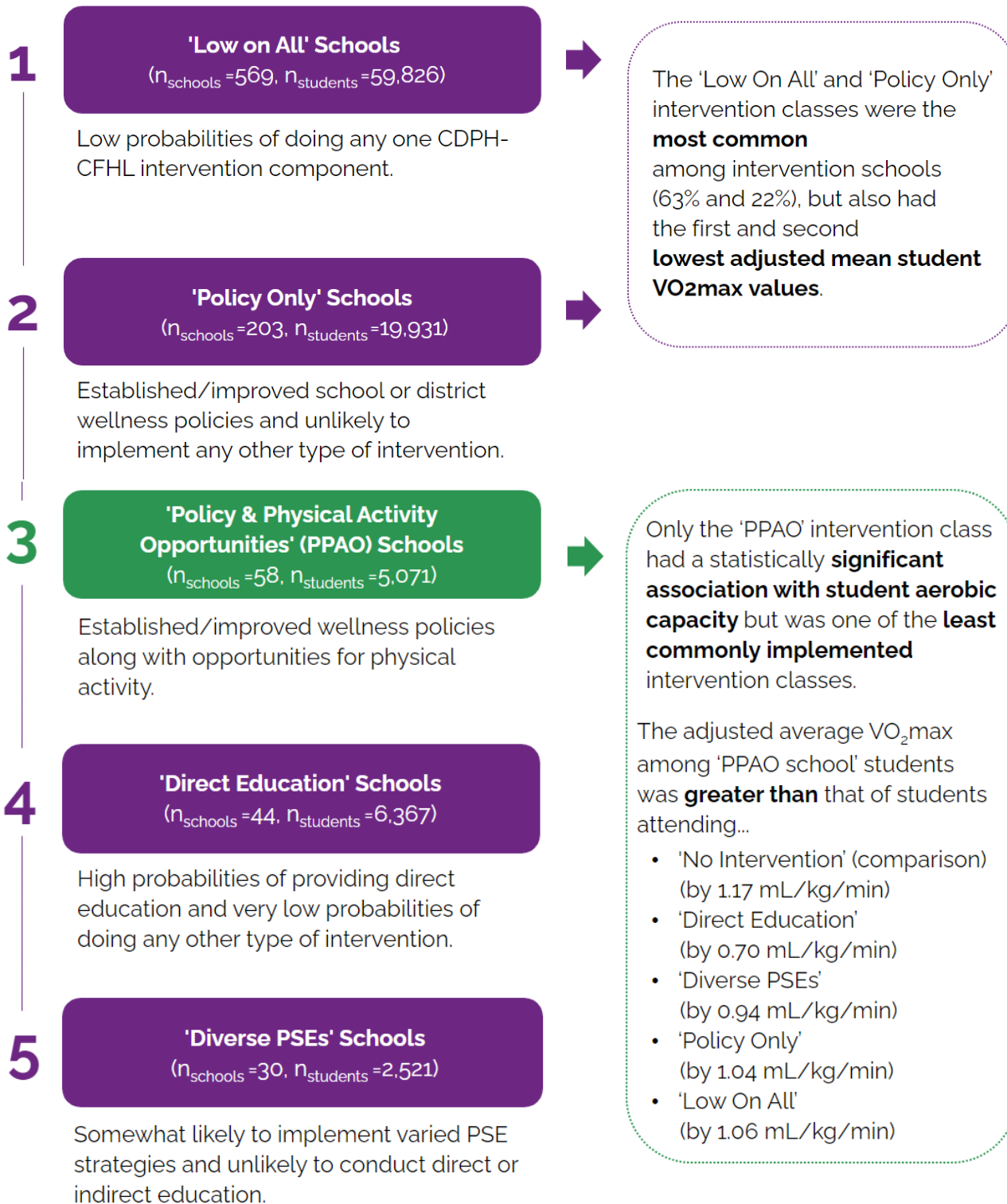
Considered a reliable predictor of cardiovascular fitness and aerobic endurance.



Positively associated with lower risk of obesity and type 2 diabetes in young adulthood.

What We Found

Five intervention classes were identified:



Implications for CFHL Program Delivery and Future Research

This study found that students attending schools with interventions focused on improving both wellness policies and physical activity opportunities had, on average, greater aerobic capacity than students attending 'no intervention' (comparison) or other LCA class schools. These findings highlight:



Concentrating intervention efforts on both policy and physical activity opportunities may have a synergistic effect on improving and sustaining a school physical activity environment conducive to student health.



Working more intensely with schools to ensure effective intervention combinations are implemented and sustained may be more fruitful than expanding interventions to a greater number of schools if resources are limited.



Demographic differences between schools across LCA classes suggest that schools with greater percentages of students eligible for free and reduced-price meals, schools with greater percentages of Hispanic/Latinx students, and rural schools may benefit from more support for comprehensive physical activity interventions.

For More Information

- ✓ Read the full [peer-reviewed research article](#)
- ✓ Learn more about our [CFHL evaluation research](#)
- ✓ Contact us at EvaluateSnapEd@ucanr.edu

References

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