

# CalFresh Healthy Living Interventions Increase Students' Fruit and Vegetable Consumption During Covid-19 School Closures

## Background

For many school-aged children in the United States, school closures prompted by the COVID-19 pandemic resulted in the loss of consistent and reliable access to nutritious meals and opportunities for physical activity.<sup>1-3</sup> To help minimize the negative impact of school closures on students' diet and physical activity, local health departments (LHDs) implementing the CalFresh Health Living (CFHL) program adapted their program delivery to continue to reach children with interventions to promote healthy eating and active living.

Evaluators at the Nutrition Policy Institute (NPI) conducted a study to assess the impact of modified CFHL program delivery on students' dietary intake and physical activity.

## Impact of COVID-19 on School-Based CFHL Program Delivery

Key modifications that LHDs across California adopted to reach children in their homes and communities during pandemic-related school closures included:



Delivering live nutrition & physical activity classes via **online platforms like Zoom or Google Classroom**



Using **pre-recorded educational videos** shared with students via YouTube or other video platforms



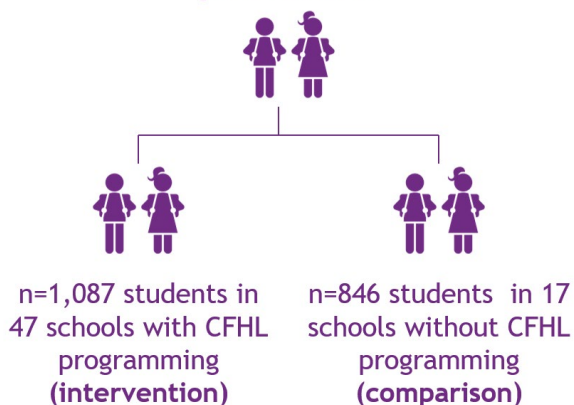
Refocusing policy, systems, and environmental change efforts on **improving food access & distribution**

## What We Evaluated

LHDs surveyed 4th and 5th grade students (n=1,933) in 64 public schools in California during the 2020-2021 school year. Forty seven schools were partnering with LHDs to implement CFHL programming during the study period (intervention schools), while 17 schools were eligible but not currently implementing CFHL programming (comparison schools).

Surveys collected self-reported diet and physical activity behaviors before and after the CFHL intervention period.

Sample: n=1,933 4<sup>th</sup> and 5<sup>th</sup> grade students



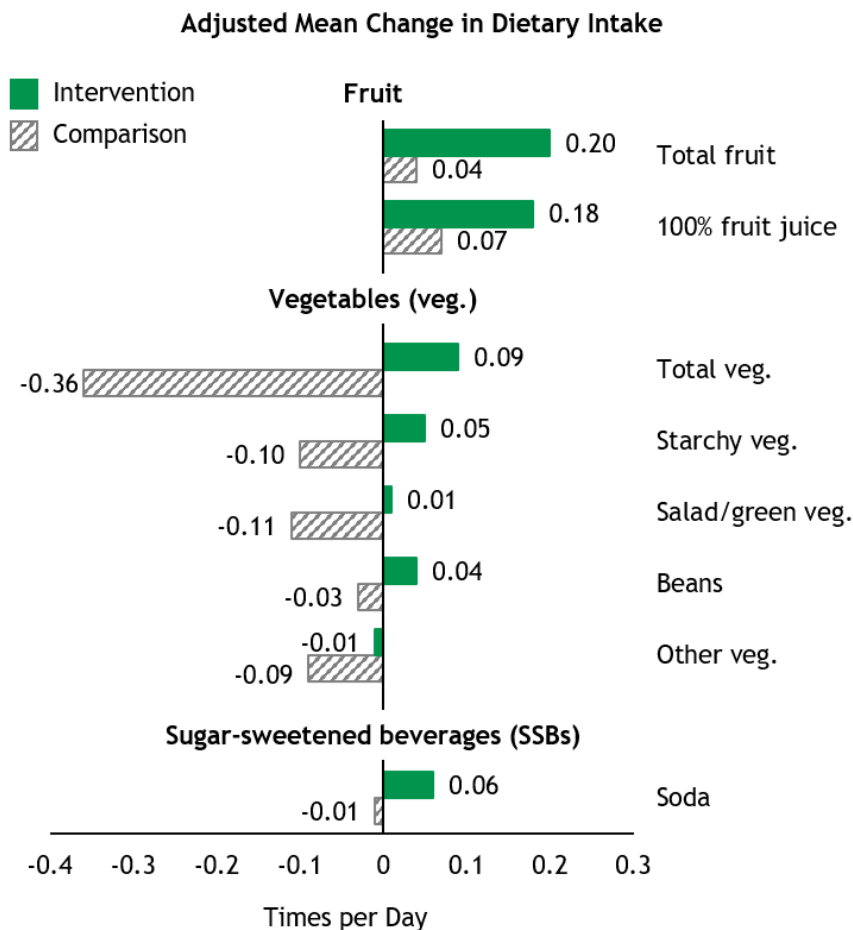
## What We Found

CFHL interventions at all intervention schools included both nutrition and physical activity education curricula. **In most intervention schools (85%), nutrition and physical activity curricula were delivered exclusively online.** Less than half of intervention schools implemented policy, systems, and environmental change strategies.

Compared to students in schools without CFHL interventions, **students attending schools with CFHL interventions reported greater increases in consumption of fruits and vegetables** (Figure 1).

- The increase in fruit consumption among intervention students was driven primarily by increased intake of 100% fruit juice
- Comparison schools reported decreased intake of total vegetables and all vegetable sub-groups, students in schools with CFHL interventions reported increased total vegetable consumption and increased intake of most vegetable sub-groups

Figure 1. Dietary intake measures with statistically significant differences in frequency of consumption from pre- to post-intervention period between intervention and comparison students.



There were no differences between intervention and comparison groups in any physical activity behaviors, including the number of days students were active for at least 60 minutes or the number of days they had a structured PE class. One surprising finding was that students in schools with CFHL interventions had greater increases in consumption of soda compared to students in comparison schools (Figure 1).

## Implications for CFHL Program Delivery and Future Research



CFHL interventions delivered in a largely virtual environment during the COVID-19 pandemic had a **positive impact on students' fruit and vegetable intake**. The program adaptations can serve as a model for future public health emergencies, or other times when children are out of school, such as the summer months.



Students in schools with CFHL interventions reported increased intake of soda and 100% fruit juices, suggesting that **intentional selection of nutrition education curricula with a focus on healthy beverage choices and whole fruit consumption may benefit students' dietary intake** and health outcomes.



Though all intervention schools implemented physical activity curricula, no differences were seen in physical activity outcomes between students in intervention and comparison schools. **More research is needed to understand how to successfully adapt CFHL physical activity curricula for virtual delivery.**



LHDs and their school partners may want to **consider implementing policy, systems, and environmental change strategies that can reach children when they are out of school** by increasing access to healthy foods and opportunities for physical activity in the communities surrounding the school.

### For More Information

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

### References

[1] Tadayon A. USDA allows school districts to resume serving free grab-and-go meals through 2020. *EdSource*. 2020; <https://edsources.org/2020/usda-allows-school-districts-to-resume-serving-free-grab-and-go-meals-through-2020/639431> (accessed December 2021) [2] Dombrowski RD, Bode B, Knoff KAG et al. Nutrition supports deconstructed and disrupted: an evaluation of a multilevel school-based intervention during the time of COVID. *International Journal of Environmental Research and Public Health*. 2021;18:11006. [3] Pavlovic A, DeFina LF, Natale BL et al. Keeping children healthy during and after COVID-19 pandemic: meeting youth physical activity needs. *BMC Public Health*. 2021;21:485.

**Figure 1 Text Description:** Graph of adjusted mean change in dietary intake (times/day). Intervention group observed a 0.2 increase in total fruit, 0.18 increase in 100% fruit juice, 0.09 increase in total veg, 0.05 increase in starchy veg, 0.04 increase in beans, 0.01 increase in salad/green veg, and a 0.01 decrease in other veg. Comparison group observed a 0.04 increase in total fruit, 0.07 increase in 100% fruit juice, 0.36 decrease in total veg, 0.1 decrease in starchy veg, 0.03 decrease in beans, 0.11 decrease in salad/green veg, and 0.09 decrease in other veg. Soda increased by 0.06 in the intervention group and decreased by 0.01 in the comparison group.