Impact of Covid-19: Association between school meal intake and fruit, vegetable, and sugary drink consumption

Research Brief – February 2025

Background

Child nutrition security and diet quality is a top priority of the California Department of Public Health's CalFresh Healthy Living (CFHL) program. As part of this program, local health departments (LHDs) partner with public schools where at least 50% of their student population is eligible for free or reduced-priced meals (FRPM) and deliver nutrition and physical activity interventions. When the pandemic forced schools to close nationwide, access to school meals was disrupted, affecting the nutrition security of millions of children. Continued delivery of CFHL interventions was essential to sustaining child nutrition during this public health crisis.

What We Evaluated

This study aimed to inform CFHL efforts by understanding:

1. The dietary intake of students attending schools eligible for the CFHL program.
2. The relationship between school meal consumption and student dietary intake during the 2020-21 school year.

Nutrition Policy Institute researchers partnered with LHDs to survey 3,297 fourth and fifth grade students from 67 CFHL-eligible schools in California. Students self-reported their demographics, school attendance on the previous day, and dietary behaviors including if and where they ate school breakfast and lunch. Students also reported dietary intake of fruits, vegetables, sugar-sweetened beverages (SSBs), and water.

What We Found

Fifty-two percent of students were female, and, on average, students were 9.8 years old. On average, 81% of students enrolled in the sampled schools were FRPM-eligible, and sampled schools were mostly comprised of students identifying as Latino (71.1%), followed by white (11.6%) and black (7.4%).

Sugar-sweetened beverage consumption

- On average, students consumed SSBs 2.3 times/day.
- Compared to students who did not eat school meals, SSB consumption frequency was 13% greater among those who ate one school meal and 30% greater among those who ate two school meals.
    - Consumption of one school meal was associated with increased flavored milk and fruit drink intake.
    - Consumption of two school meals was associated with increased flavored milk, fruit-flavored, sports and energy drink intake.

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Fruit consumption

- On average, students ate fruit 2.4 times/day.
  - 100% fruit juice accounted for 40% of fruit consumption.
- Compared to students who did not eat school meals, the frequency of whole fruit consumption was 20% greater for those who ate one school meal and 28% greater for those who ate two meals.
- School meals were also associated with increased consumption of 100% fruit juice compared to those who did not eat school lunch; 26% greater for those who ate one school meal and 34% greater for those who ate two meals.

Vegetable consumption

- On average, students ate vegetables 3.2 times/day.
- Compared to those not eating school meals, consumption of one school meal was associated with a 13% higher vegetable consumption frequency and two school meals were associated with a 30% higher vegetable consumption frequency.

Implications for CFHL Program Delivery and Future Research

- **School meals were an important contributor to student whole fruit and vegetable intake** during COVID-19-related school closures and were vital to preserving equitable access to a nutritious diet during a health and safety emergency.
- **School meals were associated with an increased intake of 100% fruit juice and SSBs**, suggesting promotion of healthy beverage consumption should be addressed through policy, practice, and intervention in the school setting.
- California schools continue to face temporary closure as a result of fire, poor air quality, flooding, and communicable disease outbreaks.[1,2] As such**, schools should be prepared to make meals both accessible and nutritious when students cannot attend in person**.

For More Information

✓ Read the full peer-reviewed research article

✓ Learn more about our CFHL evaluation research

✓ Contact us at EvaluateSNAPEd@ucanr.edu

References:

1. California Governor's Office of Emergency Services. (n.d.). School facilities vulnerability assessment. California Governor's Office of Emergency Services. Retrieved February 14, 2025, from https://www.caloes.ca.gov/office-of-the-director/operations/planning-preparedness-prevention/planning-preparedness/school-emergency-planning-safety/school-facilities-vulnerability-assessment/
2. Centers for Disease Control and Prevention. (2023, October 4). *Operational guidance for K-12 schools and early care and education programs to support safe in-person learning*. U.S. Department of Health and Human Services. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-childcare-guidance.html

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