

What are the Impacts of School Gardens, Cooking Classes, and Food Education on Childhood Obesity?

1. LA Sprouts: A Gardening, Nutrition, and Cooking Intervention for Latino Youth Improves Diet and Reduces Obesity

by Jaimie N. Davis, Emily E. Ventura, Lauren T. Cook, Lauren E. Gyllenhammer and Nicole M. Gatto (2011)

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Article Details

- Study objectives were to test the effects of nutritional, gardening, and cooking interventions on dietary intake and obesity risk among mostly overweight, primarily Hispanic elementary school students.
- The LA Sprouts pilot program implemented an intervention to 104 students:
 - Students received 45-minute cooking and nutrition lessons focused on increasing fruit and vegetable consumption once a week for 12 weeks, totaling at 12 classes.
 - Students received the lessons in a community garden located approximately 2 miles from the school, in addition to 45-minute gardening lessons.
 - Students also participated in monthly visits to farmers markets.

Program Outcomes

- Intervention participants experienced a 22% increase in fiber intake compared to only 12% among students in the control group, as well as a 5% decrease in diastolic blood pressure among the former and only 3% among the latter (pg. 1227).
- Among the overweight participants, intervention students only experienced a 1% increase in weight gain compared with the overweight participants in the control group who experienced a 4% increase in weight gain (pgs. 1227-1228).
- BMI changes reflected similar results: overweight intervention participants had a 1% decrease in BMI, while overweight control participants had a 1% increase (pg. 1228).

Main Findings

- Researchers concluded that “a 12-week intervention focused on gardening, nutrition, and cooking can lead to dietary improvements and reductions in blood pressure and the rate of weight gain in Latino children” (pg. 1229).

2. A Community Intervention Reduces BMI z-score in Children: Shape Up Somerville First Year Results

by Christina D. Economos, Raymond R. Hyatt, Jeanne P. Goldberg, Aviva Must, Elena N. Naumova, Jessica J. Collins and Miriam E. Nelson (2007)

<http://onlinelibrary.wiley.com/doi/10.1038/oby.2007.155/full>

Article Details

- The article discusses the need for before-, during-, and after-school environments that facilitate “obvious and favorable settings for obesity prevention in children.”
- Conducted “Shape Up Somerville: Eat Smart, Play Hard” as a collaborative community-based approach to address obesity in elementary school-aged children and to see whether these environmental changes (increase in physical activity and healthy eating/learning) would “prevent a rise in BMI z-scores.”
- The intervention consisted of:
 - 3 participant communities, 3-year period, participants in grades 1-3 experienced physical and nutritional components of the intervention.
 - Before school: increase in fresh fruits in breakfast program, taste tests.
 - During school: increase in fruits and vegetables in school food service, monthly taste tests.
 - After school: cooking lessons, promote healthy snacks, farm trips.
- Specific components of the intervention focused on “the availability of foods of lower energy density, with an emphasis on fruits, vegetables, whole grains, and low-fat dairy...”

Program Outcomes

- The authors estimate that for an 8-year old child in the 75th BMI percentile and 50th height percentile, undergoing the intervention for 8 months would decrease expected weight gain by 0.8 and 0.9 pounds (for a boy and girl, respectively).
- They also estimate that for an 8-year old child in the 85th BMI percentile and 50th height percentile, prevention of 1.1 and 1.3 pounds (for a boy and girl, respectively) would result from the intervention.

Main Findings

- The authors conclude that “This study effectively decreased BMI z-score in a group of high-risk children through a community-based environmental change intervention.”

3. A Prospective Multifactorial Intervention on Subpopulations of Predominately Hispanic Children at High Risk for Obesity

by Andrew G. Alexander, Wanda L. Grant, Kyndra J. Pedrino, and Paul E. Lyons (2014)

<http://onlinelibrary.wiley.com/doi/10.1002/oby.20557/epdf>

Article Details

- The study objectives were to evaluate impact of multiple interventions on 6-8 year olds, particularly through impact on BMI.
- The intervention consisted of:
 - 749 1st & 2nd graders in 4 elementary schools participating in a year-round intervention.
 - The two intervention schools received additional nutritional, educational, and physical interventions; in particular, the cooking and nutrition components included:
 - Two 30-minute cooking classes per week after school to make recipes from “Harvest of the Month” program.
 - Weekly 45-minute nutritional classes utilizing various curricula (e.g. My Plate, Team Nutrition).
 - Bi-monthly “Chef in the Classroom” program teaching participants how to cook healthy foods.

Study Outcomes

- Recorded BMI in control and intervention students over 6-months using a standard formula.
- “From the 25th to the 95th percentiles, all subgroups of children in the intervention groups demonstrated significantly less BMI gain than those of the control groups” (pg. 251).

Main Findings

- Those at greatest risk for obesity (75th-95th percentiles) had the “greatest relative reduction” in BMI growth as a result of the intervention (pg. 252).

4. CAN DO Houston: A Community-Based Approach to Preventing Childhood Obesity

by Nancy Post Correa, Beverly Jean Gor, Nancy G. Murray, et al. (2010)

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2901586/>

Program Details

- A pilot program in Houston, Texas called “Children And Neighbors Defeat Obesity” (CAN DO) was developed to target childhood obesity through community collaboration and increase in physical activity and healthy eating in 2 low-income neighborhoods.
- The intervention was comprised of:
 - School having a community garden with access to fresh produce, and students receiving cooking classes and nutritional education via a non-profit organization (“Recipe for Success”).
 - Students and community members participating in wellness activities, including physical components.
 - Community members identifying “nutrition education as the primary need to prevent childhood obesity.”

Program Outcomes

- The pilot program was able to collect students’ BMI measurements, but had not yet compared these to students with similar demographics in communities that did not receive the CAN DO intervention.
- Reported receiving positive feedback about the intervention, as well as active participation in the physical and nutritional components.

Main Findings

- Suggested that by implementing such an obesity prevention intervention, obesity prevention is feasible even in an urban setting.

