

# Fruit and Vegetable Intake and Taste Preference Concordance Between Low-Income 4th Graders and Their Parents

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## ABSTRACT

To explore over a 12 month period similarities and differences in fruit and vegetable (FV) intake and taste preferences among low-income fourth grade children and their parents. Design, Setting and Participants: A school-based cohort study of 32 low-income fourth grade student and their parents. This study is part of a larger investigation examining influences of school and family influences. Intervention: Students participated in classroom-centered, ten lesson nutrition education. Parental participation in two school FV-focused events was optional. Outcome Measures and Analysis: Daily FV intake and preference scores. Frequency distributions and means of all variables, Chi-squared and correlation tests. Results: At Time One, very little concordance between parent and child on FV intake or preference. At baseline, 84.4% of students and 78.1% of parents reported eating vegetables on the previous day ( $p<0.01$ ). Among the students (90.6%) and parents (59.4%) reported eating fruit ( $p<0.05$ ). For students and parents, Time 1 and Time 2 FV intakes did not change. Between Time One and Time Two (12 months) most parents (73.4%) did not change their FV intake. Of the 9.7% of students who increased their FV intake, none of their parents changed their FV. Over 50% of both students and parents increased their FV preference scores. Student FV preference scores at Time One were positively correlated with Time Two parent FV preference scores ( $r=0.40$ ,  $p<0.05$ ). Conclusions: School-based interventions alone may not be sufficient to impact parent FV intake and preference. Future studies should increase the sample size and consider a parent education component.

## DATA COLLECTION

- Data from Project FRESH—a family, school & community systems education & research project designed to increase fruit and vegetable (FV) intake.
- Study approved by the University of Maryland IRB. Parent consent & student assent collected.
- Student baseline and 1-year follow-up data
  - Student questionnaire completed during class before lunch with a trained facilitator.
  - Data collected on FV intake, taste preference, demographics
- Parent data baseline and 1-year follow-up data
  - Parent questionnaire sent home with consent and assent forms
  - Data collected on parent FV intake and taste preference
- Analysis
  - Means, standard deviations and frequency distributions calculated for all variables. Concordance between parent & child data used Pearson Correlation and Chi-square statistics.

## PROJECT FRESH

- Created by Maryland Food Supplement Nutrition Education (FSNE)
- Implemented by an FSNE Educator
- Integrated 10 classroom lessons with taste-testing, cooking, measurement and worksheets
- Emphasis on lessons related to fresh fruits and vegetables local to Maryland and served in the school cafeteria.



## Integrating Nutrition Into the Curriculum

- FSNE provided intensive training to prepare teachers to integrate nutrition into the curriculum.

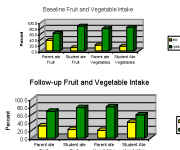
## School-based Family and Community Activities

- FRESHtival – Community and Family Night focused on Maryland fruits and vegetables with taste testing
- Farmer's Market and Community Picnic on the school-campus

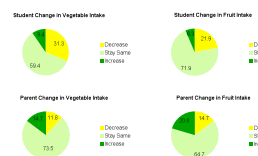
## MEASURES

- Daily Average Fruit and Vegetable Intake
  - FV intake measured using CATCH (Edmundson, Parcel, Perry, et al., 1996) food frequency questions for FV intake
  - Estimated for FV Intake at Baseline and Follow-up
- Change in FV Intake
  - Assessed by subtracting baseline daily average FV intake from follow-up daily average FV intake
- Three-level Change in FV Intake Variable
  - Increase in, or maintenance of high level of, FV intake from baseline
  - No change in FV intake from baseline
  - Decrease in FV Intake from baseline (Methodology suggested by Tak, Velde and Brug, 2008)
- FV Taste Preference Score
  - 8 items targeted by Maryland's FSNE
    - 2 general items - Fruits and vegetables
    - 3 fruits (peaches, pears, berries and cherries)
    - 3 vegetables (sweet potatoes, tomatoes, squash)
  - Response categories: a) like a lot, b) like a little, c) dislike d) don't know
  - Score ranging from 0-16 calculated as a sum of items
- Change in Total Taste Preference Score
  - Continuous measure calculated by subtracting baseline total taste preference score from follow-up total taste preference score.
- Three-level Change in FV Taste Preference Variable
  - Increase in taste preference score or remained high.
  - No change in taste preference score or stayed the same
  - Decrease in taste preference score (reference level)

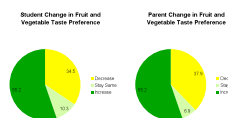
Fruit and Vegetable Intake Baseline and One Year Follow-up



Change in Fruit and Vegetable Intake Baseline to 1 year follow-up



Taste Preference Change Baseline to Year One



## RESULTS

- Taste Preference
  - Over 50% of both students and parents increased their FV preference scores.
  - Student FV preference scores at baseline were positively correlated with year one parent FV preference scores ( $r=0.40$ ,  $p<0.05$ ).

## CONCLUSIONS

- School-based interventions alone may not be sufficient to impact parent FV intake.
- Nutrition education programs should consider a parent education component.
- Future studies should increase the sample size.



## ACKNOWLEDGEMENTS

- Project FRESH host site collaborators (principal, teachers, food service workers).
- Participating students and parents.
- The FSNE Family & Consumer Science education & research team: Mary Concannon, Lisa Lachenmayr, Susan Gross, Stephanie Gutzmacher, Haylee Stark, Bonnie Braun, many students in the Department of Family Science and Dave Martin, Agricultural Extension Educator.



Funding for the SNAP-Ed program provided by USDA in cooperation with the Maryland Department of Human Resources and the University of Maryland. It is the policy of the University of Maryland, College of Agriculture and Natural Resources, Maryland Agricultural Experiment Station, and University of Maryland Extension that all persons have equal opportunity and access to programs and facilities without regard to race, color, gender, religion, national origin, sexual orientation, age, marital or parental status, or disability.