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Conclusions and Implications: Overall, parents reported positive behavior changes by their families because of their child's participation in the program; with the greatest area of improvement in family awareness of the importance of good nutrition.

Funding: USDA-NIFA Project 2011-67001-30011

P86 Brain Breaks: Physical Activity in the Classroom for Elementary School Children

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Objective: To evaluate "Brain Breaks", an exercise DVD, for promoting physical activity during classroom education in elementary school children.

Target Audience: Elementary school children.

Theory, Prior Research, Rationale: We previously reported that 92% of Oregon elementary schools do not meet the recommended amount of physical education for at least 150 minutes per week and daily recess. To increase students' physical activity level in schools, we developed an exercise DVD ("Brain Breaks") that provides short physical activity breaks during classroom education.

Description: "Brain Breaks" consists of short segments of physical activity breaks demonstrated by Oregon State University students and athletes and local school children. The segments are subdivided into strength, endurance, and relaxation and stretching activities that can be done in classrooms. Classroom teachers play parts of the DVD at least once per week.

Evaluation: An anonymous mail survey was sent with the exercise DVD to participating Oregon school districts and was returned by 43 elementary school classroom teachers.

Conclusions and Implications: Most elementary school classroom teachers (74%) played the DVD at least 2-3 times/week; the relaxation and stretching segment was played most often (60%). Nearly all teachers perceived that classes understood the instructions and responded to them at least adequately (98%) and that students were excited and engaged in participating (95% for the relaxation and stretching segment). 91% of teachers plan to continue using the DVD. In conclusion, "Brain Breaks" was effective in increasing physical activity in elementary school children during classroom education.

Funding: Linus Pauling Institute, USANA

P87 Banking on Strong Bones Curriculum Promotes Behavior Change

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Objective: The curriculum is designed to increase knowledge/awareness of the role calcium-rich and weight-bearing activities play in building and maintaining strong bones among children and to improve food and beverage choices based on Dietary Guidelines recommendations.

Target Audience: Fourth-grade children and their families have participated in the program.

Theory, Prior Research, Rationale: Informed by social cognitive theory, this curriculum uses peer modeling, environmental support and goal-setting to promote behavior change.

Description: An estimated 70% of pre-teen girls and 60% of pre-teen boys do not meet the daily calcium recommendation, which places them at risk of developing osteoporosis as adults. A 5-lesson curriculum was designed for use in school classrooms during a 5-week time frame. The program includes hands-on activities, calcium tracking, educational displays, follow-up activities for the teacher, participation incentives using "cow coins" and "cow banks", and optional taste testing activities. Parents/caregivers were provided with weekly newsletters summarizing their child's activities, along with nutrition information, recipes and goal-setting activities.

Evaluation: Pre- and post-surveys of children and parents assessed knowledge gain and achievement of nutrition-related goals. Participants (n=9,163; 49.7% male) significantly increased their knowledge of calcium sources, indicated preference for milk over soda/pop, increased their self-reported consumption of calcium-rich foods and decreased their consumption of sweetened beverages (p <.05). About 51% of parents/caregivers reported a positive change in the children's eating habits at home.

Conclusions and Implications: Classroom nutrition education with parent involvement can promote behavior change to increase calcium consumption.

Funding: None

P88 School Food Environment Factors Affecting Fruit and Vegetable School Lunch Waste in Wisconsin Elementary Schools

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Objective: Assess factors impacting fruit and vegetable (FV) consumption and waste in school lunch.

Study Design, Setting, Participants, and Intervention: Multi-year cross-sectional study in Wisconsin 3rd-5th-graders from schools participating in Farm to School (F2S) programs at differing stages of implementation

Outcome, Measures and Analysis: Digital photographs of student school lunch trays were used to estimate FV items and to calculate cups and percent waste. School lunch menus were used to verify items; preparation types (cooked, raw); menu or salad bar; meal component (entrée,

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side, topping); local/conventional sourcing. Trays were identifiable by grade; schools were categorized according to number of prior years of F2S; item frequency served as proxy for exposure. The percent of students reporting trying and liking selected items were incorporated from a Knowledge & Attitudes survey. Analyses were performed using a Tobit model to assess within-category differences in cups of waste.

Results: Many factors indicated differences in waste overall, for FV separately, and/or across time. Cooked fruits were wasted less than raw, while cooked vegetables were wasted more than raw. Where identified, locally-sourced items were wasted more than conventional (0.1 vs 0.2 cups wasted, $p < .0001$). Salad bar items were wasted more than main menu items (0.01 cups, $p < .0001$). FV sides and toppings were wasted less than entrees. Item frequency did not influence waste amount. Finally, length of time in F2S decreased waste.

Conclusions and Implications: Some factors were significantly associated with elementary-aged children's waste of school lunch FV items. These factors may be helpful to consider in terms of menu and food service environment offerings and their implications for school meal program solvency.

Funding: Center for Disease Control and Prevention

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P89 Super Tasters and Mighty Movers: Connecting Nutrition and Activity Messages From the School to the Home

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Objective: To extend and reinforce messages from The Food Friends program with elementary-aged children in the classroom, cafeteria/gym, and home to sustain behavior changes made in preschool.

Target Audience: Students attending 2 elementary schools in rural Colorado participated in the 5 month program in both kindergarten and 1st grade.

Theory, Prior Research, Rationale: A 5-unit "booster" program, based on Social Cognitive Theory and Social Marketing principles, was developed with The Food Friends' characters and themes of "Super Tasters" and "Mighty Movers".

Description: Classroom-based lessons, and signage for the cafeteria and gym, were implemented in 34 classrooms (~800 students). A home-based component, The Super Taster and Mighty Mover Club, was developed and 5 monthly packages were mailed to 1st grade study participants ($n=98$) to promote school-based messages in the home environment. Mailings consisted of a child newsletter, a bilingual parent newsletter, and educational enhancer (e.g. spatula, jump rope, cookbook).

Evaluation: Child intercept interviews were conducted to determine if children could recall key program messages. A parent survey was sent home to gauge impressions of materials and understanding and incorporation of messages/materials in the home. Overall, the program was very well received by both children and parents. The majority (80%) of children could articulate program messages without prompting (100% with prompting). Parents (93%) reported that materials encouraged their children to partake in targeted behaviors; ~50% of families did the suggested activities/recipes and 20% planned to in the future.

Conclusions and Implications: The efficacy of The Food Friends elementary component on behaviors will be evaluated as part of a larger longitudinal study.

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P90 Development and Evaluation of a Textbook for Reducing Sugar Intake of Schoolchildren: Eat Smart Sweets

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Objective: This study was conducted to develop and evaluate a textbook for reducing sugar intake of 1st-3rd grade school children. Also, we tried to apply the more affecting factor for behavior motivation. Although the amount of sugar intake is still lower than Korean recommended dietary allowance, it would need to be treated as prevention.

Target Audience: 1st-3rd grade school children.

Theory, Prior Research, Rationale: The social cognitive theory was applied on this study. Prior to designing the textbook, the needs of the learner were analyzed. The textbook was designed based on analysis of previous studies. The study was approved by Institutional Review Board of Sungshin Women's University (swuirb2013-028).

Description of Program Intervention: In prior survey, self-efficacy was the most important factor in self-control to refrain from sweets. Therefore, we designed the textbook focused on improving self-efficacy for consuming less sweet foods. Improving self-efficacy, education activities, such as the sensory exposure, peer's observation, experience for snack choice and positive feedback were chosen. The book consisted of three parts. The themes of the parts were 'Understanding the sweet preference', 'Behavioral assessment for the sweet food intake' and 'Eat less sweet foods'.

Evaluation: For evaluation of the education effect, we have conducted classes for 187 schoolchildren. After education, sweet food frequency ($p < 0.05$), self-efficacy ($p < 0.001$), outcome expectation ($p < 0.001$) and nutrition knowledge ($p < 0.001$) were significantly improved whereas attitude and environment were not changed. The score of education satisfaction was 3.84 ± 0.72 (total score-5).

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