

## Nudging Students toward More Healthful Food Choices

### Abstract

The *Healthy, Hunger-Free Kids Act* requires the United States Department of Agriculture (USDA) to develop stronger school meal standards and ensure they are consistent with the current Dietary Guidelines for Americans. The final meal requirements, released earlier this year, will take effect for the 2012-13 school year. They include an increased variety of vegetables, a daily fruit choice, only low fat or fat free milk and no trans fats. At the same time, school meal programs are expected to maintain or increase their customer base (the students) while controlling costs and remaining financially solvent. To successfully implement the new standards, it is important for school nutrition programs to understand students' food choices and consumption patterns. The purpose of this project was to: 1) evaluate consumption patterns and food choices of K-8 students who participated in the National School Lunch Program (NSLP) and, 2) compare students' average nutrient intake from lunch to the 2010 and new USDA school lunch standards.

Students from 3 elementary (K-5) and 2 middle (6-8) schools in one northern Colorado school district participated in this study in the fall of 2010. Plate waste was measured using a previously validated digital photography method. Percent waste was estimated to the nearest 10%, for the entrée, canned fruit, fresh fruit, vegetable, grain, and milk. Univariate ANOVA was conducted to determine differences in percent waste between schools, grades, and genders. Daily nutrient intake was calculated using the district's menu analysis and percent waste.

Plate waste was estimated from 899 student lunch trays; 535 elementary and 364 middle school students. Less than 56% of elementary and 39% of middle school students took fresh fruit with lunch. Only 45% of elementary and 34% middle school students selected a vegetable. Elementary students wasted more than a third of grain, fruit, and vegetable menu items. Middle school students left nearly 50% of fresh fruit, 37% of canned fruit and nearly a third of vegetables unconsumed. Less than half of students met 2010 NSLP lunch recommendations for Vitamins A, C or iron and even fewer met 2012 targets.

#### Applications for School Nutrition Programs and Next Steps

The key finding from this study was few students' lunch consumption met 2010 NSLP meal guidelines or the new meal standards. Due to the relatively low intake of fruits and vegetables, intake of vitamins A and C were of particular concern. The next phase of this project will evaluate the effectiveness of targeted behavior economics-based strategies implemented in middle school cafeterias. Strategies will be designed to encourage students to make more healthful choices from cafeteria options, specifically vegetables and fresh fruit. Each strategy will be evaluated by comparing data on plate waste, food choices, food production records, and average daily participation rates before and after implementation.