Break Fast for Academic Success

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Food Insecurity Overview
Impact of Food Insecurity on Academic Performance
Strategies for Improving School Breakfast
  - Focus on Chefs in Schools

Agenda
Food Insecurity Overview
Defining Food Insecurity

- **Food Security** is an economic indicator that refers to a household’s ability to access nutritionally adequate food.

  - **Food Insecurity** = *limited or uncertain access* to adequate food due to lack of money

- **Hunger** is a physiological consequence of food insecurity.
Levels of Food Security

- **High food security**: No reported food-access problems or limitations.

- **Marginal food security**: Anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.

- **Low food security**: Reduce quality, variety, of diet. Don’t reduce food intake

- **Very low food security**: Disrupt eating patterns and reduce food intake due to lack of money
Measuring Food Insecurity

- Started measuring in 1995
- Annual supplement to the US Census Bureau’s Current Population Survey – about 50,000 households surveyed
- Annual food security statistics released by USDA in the fall of following year (September)

![Bar chart showing percentage of households reporting indicators of adult food insecurity, by food security status, 2014](image)

US Households by Food Security Status 2014

- **17.4 million** food insecure households
- **6.9 million** households with very low food security

Nearly **7.5 million** food insecure households with children

- Children experience food insecurity in about half of these households (~**3.7 million** hh)
9.6% of MA households experience food insecurity

- Food Secure: 90.4%
- Low Food Security: 5.5%
- Very Low Food Security: 4.1%

Impact of Food Insecurity on Academic Performance

- Among 6-11 year olds, FI associated with poorer reading and math scores. FI students were much more likely to repeat a grade.

- FI 12-16 year olds similar to 6-11 year olds, plus absent and tardy more frequently than food secure teenagers, had more psychosocial issues that affected behavior, and were suspended more often.

- FI kindergarten students had lower math scores than food insecure students at the beginning and end of the school year. And FI had a negative impact on learning during the year.

- Impact of FI evident even with marginal food security.

Sources: K. Alaimo; C Olson; E Frongillo; Food Insufficiency and American School-Aged Children’s Cognitive, Academic, and Psychosocial Development; Pediatrics; 2001; 108 (1):44-53
Benefit of School Breakfast for FI Households

- Extensive research showing benefits of breakfast participation on academic outcomes

- School Breakfast is an important resource for FI households:
  - Kids get nutritious food
  - Families save on food costs
  - SBP alleviates anxiety about food access and sufficiency

- Research shows that SBP is especially important for marginally food secure families.

Strategies for improving school breakfast
Access
BIC, CEP

Nutrition
↑ Whole grains
↑ Fruit requirements
↓ Juice

Breakfast Appeal
and Palatability
Chefs in Schools
Smarter Lunchroom
Project Bread’s Chefs in Schools Program
Kids will eat healthy school meals that are appealing and palatable.

- 17% greater participation at chef schools compared to control schools
- Less food waste at chef schools (1/5 of plate vs 1/3 of plate)

<table>
<thead>
<tr>
<th>Food Component</th>
<th>Chef School</th>
<th>Control School</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>White only</td>
<td>White and flavored</td>
<td>Same amount consumed</td>
</tr>
<tr>
<td>Grains</td>
<td>Whole grain</td>
<td>Refined white</td>
<td>Same amount consumed</td>
</tr>
<tr>
<td>Fruit</td>
<td>Fresh or frozen</td>
<td>Canned in light syrup</td>
<td>Similar amount consumed</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Fresh or frozen</td>
<td>Canned</td>
<td>Ate 3x more</td>
</tr>
</tbody>
</table>
Sweet Potato Muffins

BY CHEF NICK SPEROS, SCHOOL FOOD CHEF, PROJECT BREAD’S CHEFS IN SCHOOLS INITIATIVE

These stay nice and moist because of the yogurt and sweet potatoes. You may also vary the baking spices depending on your taste and that of the kids. Other spice ideas include nutmeg, all spice, mace, star anise, and cardamom. These muffins make a great breakfast with some chilled milk and fresh fruit, or an on-the-go snack for after school. They were a huge hit with the kids that tasted these with me. They all commented on how sweet they tasted; this without the addition of much sugar…win, win. —Chef Nick, Project Bread’s School Food Chef

YIELD 100, 3-ounce muffins

INGREDIENTS

| 12 cups cooked sweet potato puree | 2 tablespoons baking soda | 12 large eggs |
| 8 cups whole wheat flour | 1 1/2 teaspoons salt | 1 1/2 cups olive oil |
| 6 cups all-purpose flour | 2 tablespoons ground cinnamon | 1/4 cup pure vanilla extract |
| 3 cups packed light brown sugar | 2 tablespoons ground ginger | 3 cups low-fat, plain Greek yogurt |
| 3 tablespoons baking powder | 2 tablespoons ground cloves | 2 cups orange juice |
## Plate Waste Results: Post USDA Changes

<table>
<thead>
<tr>
<th>Food Component</th>
<th>Selection</th>
<th>Consumption</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td>↑ 23%</td>
<td>No change</td>
<td>More kids take fruit overall. Kids who take fruit eat same amount of the fruit on their plate as before USDA changes. More fruit consumed overall</td>
</tr>
<tr>
<td>Vegetable</td>
<td>No change</td>
<td>↑ 15.6%</td>
<td>Students who take veg eat more of the veg on their plate</td>
</tr>
<tr>
<td>Entrée</td>
<td>No change</td>
<td>↑ 16.2%</td>
<td>Students who take entrée eat more of the entrée on their plate</td>
</tr>
</tbody>
</table>

Source: J.F.W. Cohen, ScD; S. Richardson, MBA; E. Parker, MBA, MSW; P. Catalano, ScD; E.B. Rimm, ScD; Impact of the new USDA school meal standards on food selection, consumption, and waste; American Journal of Preventive Medicine, 2014; 46(4):388-394
Smarter Lunchroom Techniques to Improve School Breakfast

**PRODUCT**
Increase variety of healthier choices

**PLACEMENT**
Prominently place healthier options
Deemphasize unhealthy choices by making them more difficult to access

**PROMOTION**
Use lighting and attractive presentation to highlight healthier options
Smarter Lunchroom vs Meal Palatability

- Fruit and vegetable *selection* increased significantly both in schools that used smarter lunchroom and those that had a chef. However, fruit and vegetable *consumption* only increased in chef schools.

- Changes in student consumption seen after 7 months of exposure. Therefore, schools should not abandon healthier options if they are initially met with resistance.

Source: J.F.W. Cohen, ScD; S. Richardson, MBA; S. Cluggish, MBA; E. Parker, MBA, MSW; P. Catalano, ScD; E.B. Rimm, ScD; Effects of Choice Architecture and Chef-Enhanced Meals on the Selection and Consumption of Healthier School Foods: A Randomized Clinical Trial; *JAMA Pediatrics*; 2015; 169(5):431-437
• Food Insecurity has a significant impact on academic performance—even among students with marginal food security.

• School breakfast is an important resource for all students, especially those who are food insecure, and it has positive impact on academic performance.

• Chefs in Schools plate waste research shows that kids will eat healthy school meals that are appealing and palatable.

• Schools can introduce healthier, more palatable breakfast recipes
  Check out “Let’s Prepare Healthy School Breakfast” resource

Take home messages
Thank you