



***Current State of School Meals & Snacks:
School Nutrition Dietary Assessment Study IV***

Wednesday March 13, 2013

2-3 p.m. EDT

Current State of School Meals & Snacks: School Nutrition Dietary Assessment Study IV

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**Background on the
USDA Food and Nutrition Service-Sponsored
School Nutrition Dietary Assessment (SNDA)
Report Series**

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Director, Special Nutrition Staff
Office of Research and Analysis
USDA Food and Nutrition Service**

***NANA Webinar
Wednesday, March 13, 2013***



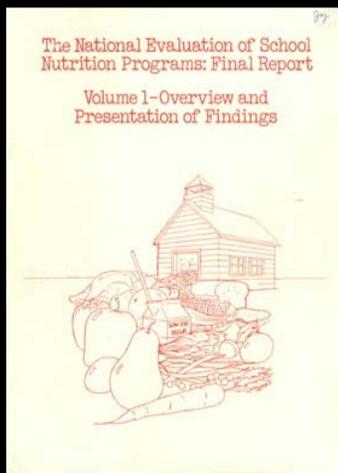
Participation in NSLP is much greater than SBP

Total FY2010 Federal Investment of \$13 Billion

- **National School Lunch Program (NSLP)**
 - Available
 - ◆ 96,000 schools
 - ◆ 50 million students enrolled
 - 63% participate (averages about **32 million** per school day)
- **School Breakfast Program (SBP)**
 - Available
 - ◆ 84,000 schools
 - ◆ 44 million students enrolled
 - 26% participate (averages about **12 million** per school day)

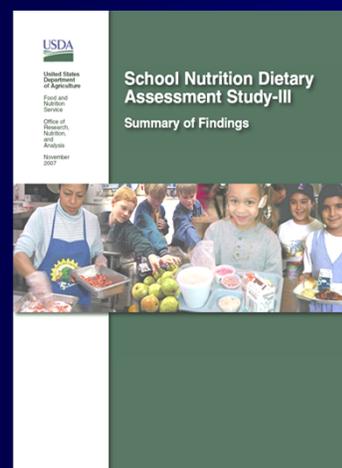
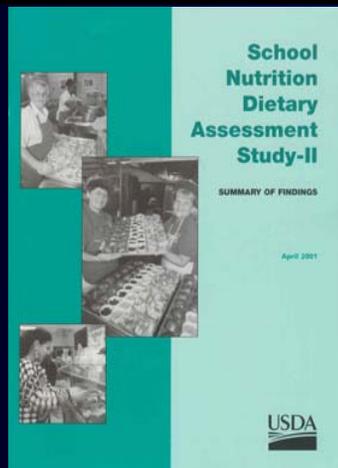
Both programs are available about 180 days per year
In FY2010, a total of 7 Billion NSLP+SBP meals were served

Long Tradition of Monitoring School Meals



National Evaluation of the School Nutrition Programs (1980-81) first national FNS study to assess the effects of school meals in the U.S.

SNDA-I (SY 1991-92) highlighted high fat content of school meals and helped motivate the 1995 “*School Meals Initiative for Healthy Children*” (SMI).



SNDA-II (SY 1998-99) provided an early look at SMI implementation

SNDA-III (SY 2004-05) provided updated data to assess SMI and directions for the future

SNDA-IV (SY 2009-10) provides baseline information before the January 2012 rule changes

SNDA Study Designs

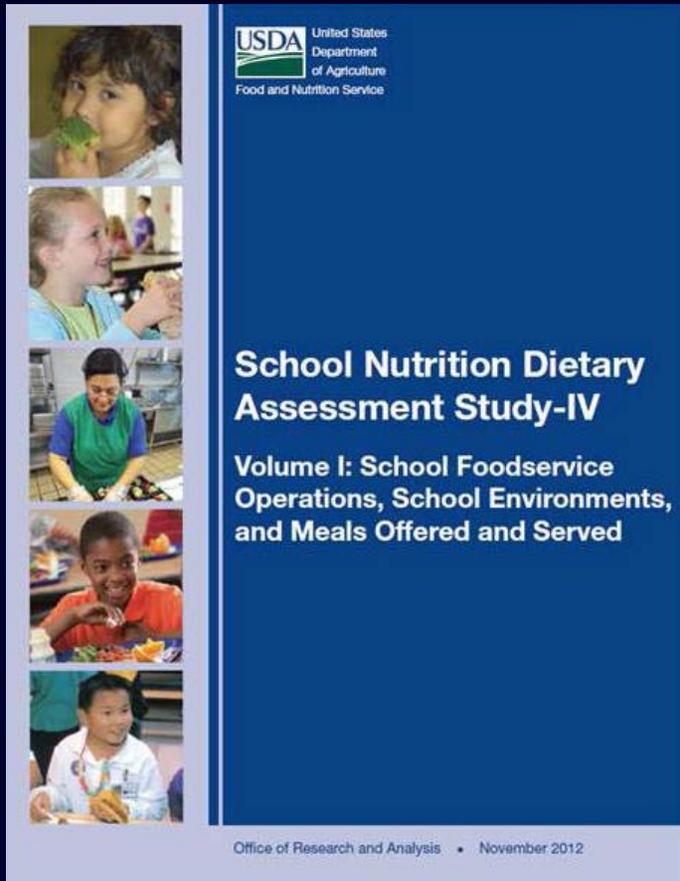
Final sample available for analysis

<u>SNDA-I</u>	<u>SNDA-II</u>	<u>SNDA-III</u>	<u>SNDA-IV</u>
SY 1991-92	SY 1998-99	SY 2004-05	SY2009-10
340 SFAs	430 SFAs	129 SFAs	578 SFAs
544 Schools	1,075 Schools	397 Schools	882 Schools
3,349 Students	No Students	2,314 Students	No Students
<ul style="list-style-type: none"> ✓ Offered ✓ Eaten 	<ul style="list-style-type: none"> ✓ Offered ✓ Served 	<ul style="list-style-type: none"> ✓ Offered ✓ Served ✓ Eaten 	<ul style="list-style-type: none"> ✓ Offered ✓ Served

Monitoring School Meals in the US

- **Routine Administrative Monitoring** – States monitor local school food authorities (5-year cycle)
 - **Coordinated Review Effort (CRE):** All meal components offered
 - **SMI Reviews:** Meals must meet all meal pattern and nutrition standards
- **Periodic nationally representative studies** - *School Nutrition Dietary Assessment (SNDA)* series (every 5 to 7 years)
 - Meals offered
 - Meals selected by students (“served”)
 - Dietary intake at school and over 24 hours (SNDA-1 and III)

School Nutrition Dietary Assessment Study - IV



- Sponsored by USDA Food and Nutrition Service
- Conducted under contract by Mathematica Policy Research
- Collected data on national sample of public schools in SY 2009-2010
- Authors: MK Fox, E Condon, MK Crepinsek, *et al*

SNDA-IV: approx. 1,000 pages; many topics

- Student participation
- Meal prices
- Menu planning & meal production
- Meal service practices
- Food safety & sanitation
- Staff Education, Experience & Credentials
- School Wellness Policies & Practices (includes Classroom-based nutrition education)
- Meal Scheduling
- Competitive foods
- Foods offered in NSLP, SBP & Afterschool Snacks
- Calorie & nutrient content of school meals & afterschool snacks
- Availability of meals that meet standards (*the old standards in place at the time of the data collection!*)
- Potential contribution of meals to USDA Food Patterns
- Changes in school meals since implementation of SMI
- Schools participating in HUSSC



Office of Research and Analysis (ORA)

**The SNDA reports are available for free download
on the FNS web site**

General: www.fns.usda.gov

**Research/Studies:
<http://www.fns.usda.gov/research-and-analysis>**

Highlights from the Fourth School Nutrition Dietary Assessment Study (SNDA-IV)

Mary Kay Fox and Mary Kay Crepinsek
March 13, 2012

MATHEMATICA
Policy Research

Study Design

- **Representative of all public NSLP schools in the 48 contiguous states and the District of Columbia**
- **Samples**
 - 578 School Food Authorities (SFAs)
 - 895 Schools (884 completed detailed menu survey)
- **Data collected January–June 2010**
- **Instruments**
 - Menu Survey
 - Surveys of SFA directors, foodservice managers, and principals
 - Competitive foods checklists

Key Findings Presented Today

- **Calorie and nutrient content of school lunches**
- **Contribution of school lunches to USDA Food Patterns**
- **School food and physical activity environments**
 - Nutrition education
 - Physical education
 - Opportunities for physical activity during the school day
 - Availability of competitive foods

SNDA-IV Did Not Assess Compliance With New Nutrition Standards and Meal Pattern Requirements

- **New requirements were not in effect at the time SNDA-IV data were collected**
- **New requirements were not finalized until January 2012, after SNDA-IV analyses were completed**
- **Where possible, we comment on potential implications of SNDA-IV findings**

Assessing Calorie and Nutrient Content



Assessed Lunches as *Offered* and as *Served*

- **Lunches *Offered***
 - Assumes all offered meal components are present
 - Equal weight given to choices within a meal component group
- **Lunches *Served***
 - Reflects students' food selection patterns
 - Greater weight given to frequently selected items
- **Estimates reflect *weekly averages***



School Meals Initiative (SMI) Nutrition Standards

- **Based on 1989 Recommended Dietary Allowances and 1995 Dietary Guidelines for Americans**
- **Calories, protein, vitamins A and C, calcium and iron**
 - At least 1/3 of daily needs
- **Total fat**
 - No more than 30 percent of calories
- **Saturated fat**
 - Less than 10 percent of calories

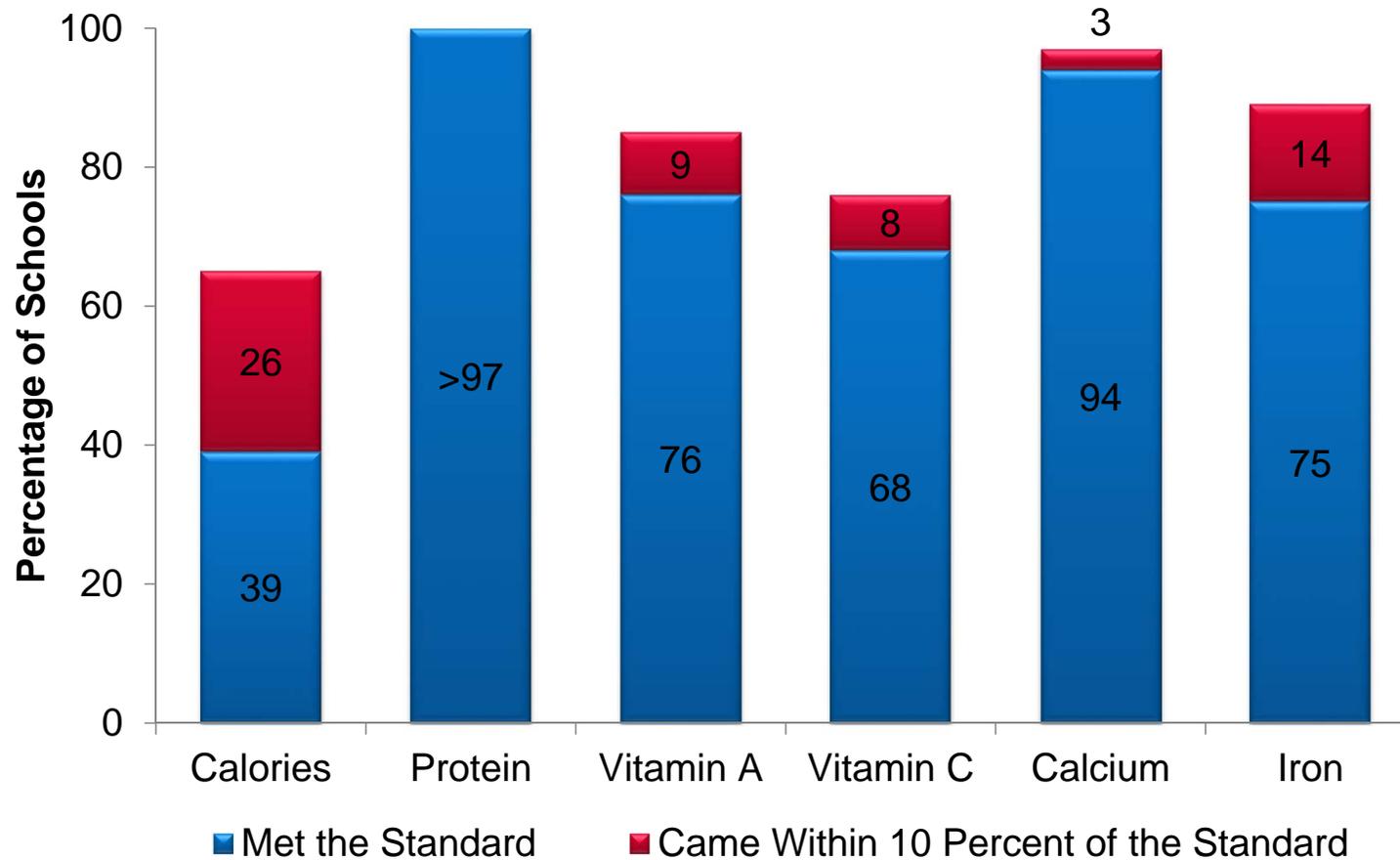
2010 Dietary Guidelines Recommendations

- **Total fat**
 - 25 to 35 percent of calories
- **Cholesterol and Sodium**
 - Less than 1/3 of daily limits
- **Dietary fiber**
 - At least 14 gm per 1,000 calories
- **Research purposes only—schools were not required to meet these standards**

Nutrient and Calorie Content of NSLP Lunches



Lunches Served in Most Schools Met or Came Close to SMI Standards for Calories and Nutrients



Source: SNDA-IV, Menu Survey, SY 2009–2010.

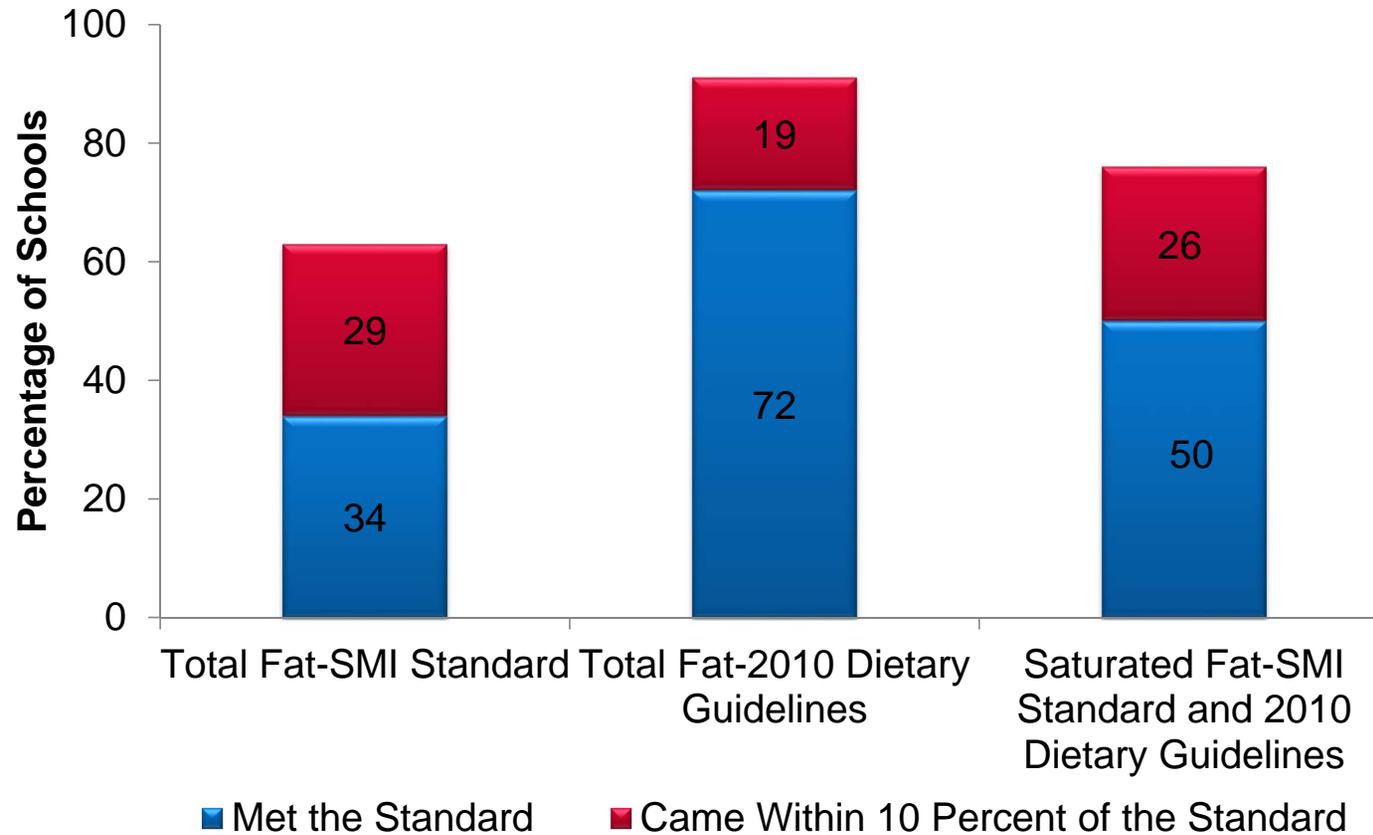
New Calorie Requirements Substantially Different From SMI Calorie Standards

	Elementary Schools	Middle Schools	High Schools
SMI Calorie Standards (minimums; K-6 and 7-12)	664	825	
New Calorie Requirements (ranges)	550-650	600-700	750-850

Lunches Served in Many Schools in SY 2009-2010 Would Not Meet New Calorie Requirements

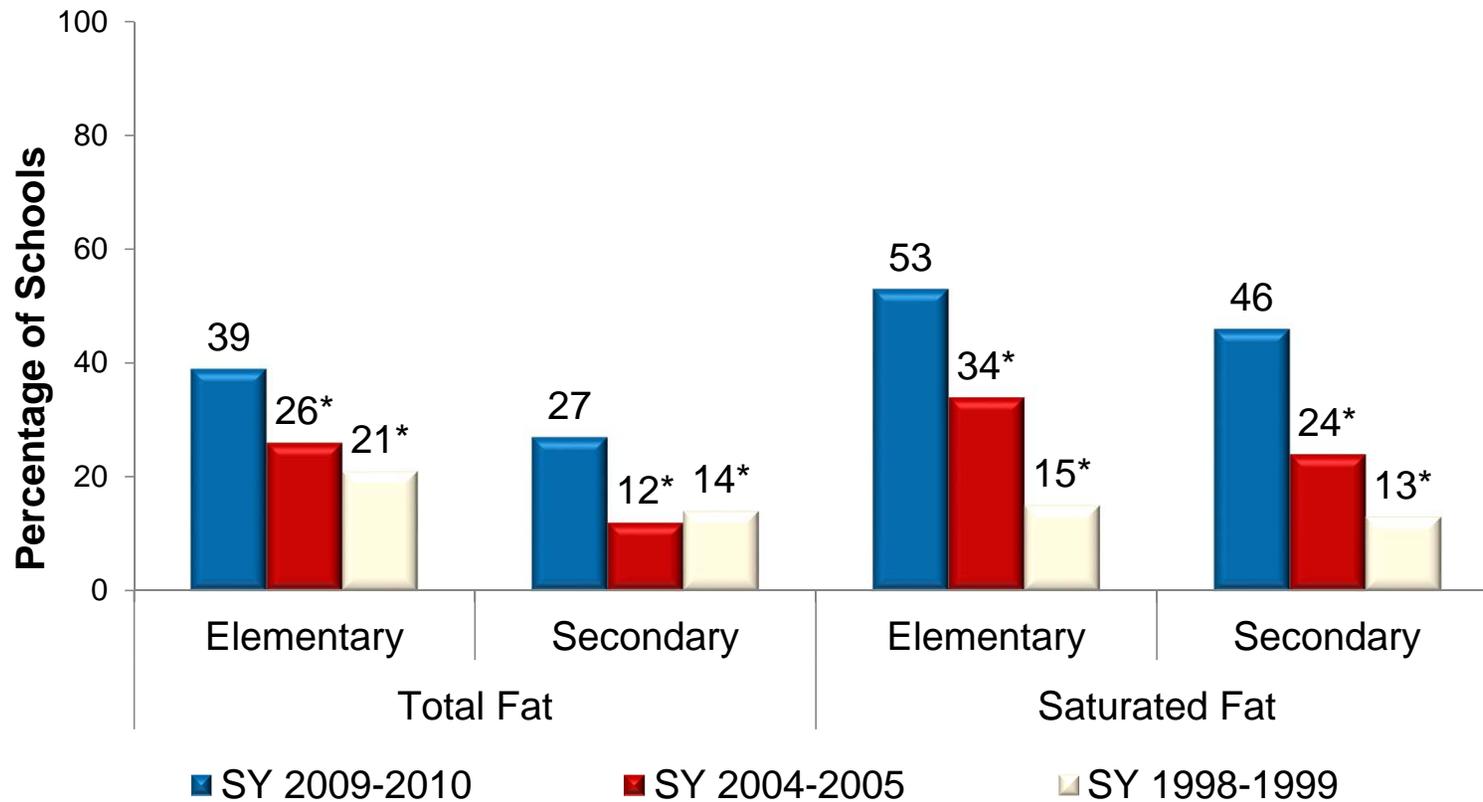
	Elementary Schools	Middle Schools	High Schools
New Calorie Requirements	550-650	600-700	750-850
	SNDA-IV Percentiles for Calories		
5 th	505	486	517
10 th	533	529	557
25 th	587	607	654
50 th	654	681	712
75 th	721	750	825
90 th	793	841	923
95 th	846	892	963

Most Schools *Served* Lunches that Met the 2010 Dietary Guidelines Recommendation for Total Fat, but Not the SMI Standard for Total Fat



Source: SNDA-IV, Menu Survey, SY 2009–2010.

The Percentage of Schools *Serving* Lunches that Met the SMI Standard for Total Fat and Saturated Fat Has Increased Over Time



Sources: SNDA-IV, Menu Survey, SY 2009–2010; SNDA-III, Menu Survey, SY 2004–2005; and SNDA-II, Menu Survey, SY 1998–1999.

* Proportion is significantly different from SY 2009–2010 at the .05 level.

Nutrition Standards Based on the 2010 Dietary Guidelines

- **Cholesterol**
 - Essentially all schools *served* average lunches that met the standard

- **Dietary fiber**
 - Very few schools *served* average lunches that met the standard
 - In most schools, average dietary fiber content of lunches was 25 percent below the standard

- **Sodium**
 - Very few schools *served* average lunches that met the standard
 - In most schools, average sodium content of lunches exceeded the standard by more than 50 percent

Source: SNDA-IV, Menu Survey, SY 2009–2010.

New Nutrition Standards Require a Gradual Reduction in Sodium Content

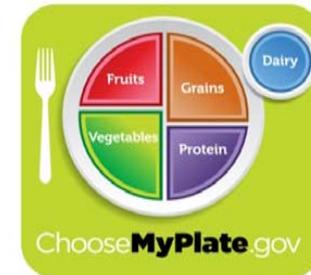
	Elementary Schools	Middle Schools	High Schools
Average Sodium Content of Lunches Served in SY 2009-2010 (mg)	1,324	1,392	1,515
	Goals for Maximum Sodium Content		
SY 2014-2015 (mg)	1,230	1,360	1,420
% Reduction, Relative to SY 2009-2010	7.1%	2.2%	6.3%
SY 2017-2018 (mg)	935	1,035	1,080
% Reduction, Relative to SY 2009-2010	29.4%	25.6%	28.7%
SY 2022-2023 (mg)	640	710	740
% Reduction, Relative to SY 2009-2010	51.2%	49.0%	51.2%

Potential Contributions of NSLP Lunches to USDA Food Patterns

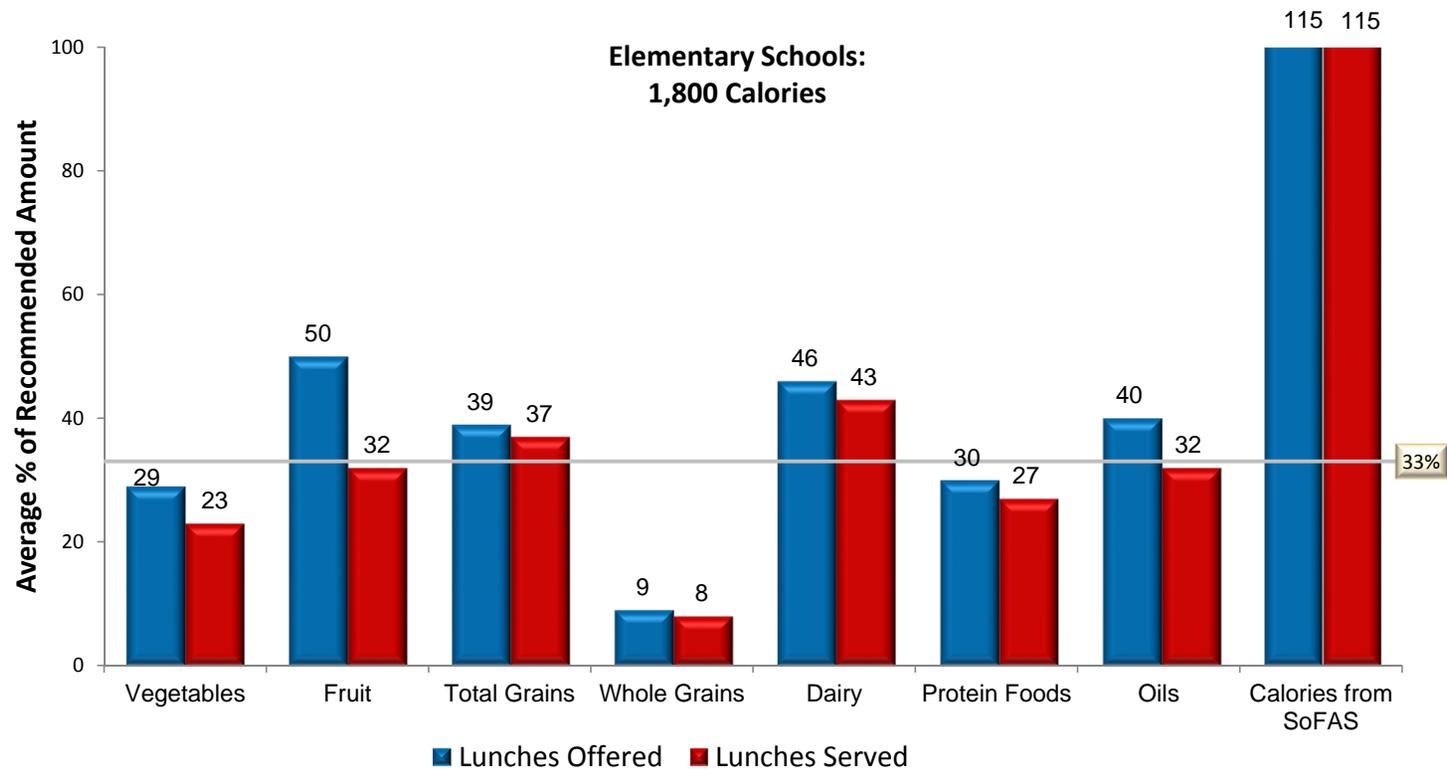


Methods Used to Assess Contributions of School Meals to USDA Food Patterns

- **Used MyPyramid Equivalent Database to estimate food group content**
- **Compared food group content of average meals to USDA Food Patterns**
 - 1,800 calories for elementary schools
 - 2,000 calories for middle schools
 - 2,400 calories for high schools
- **Applied SMI benchmarks to USDA Food Patterns**
 - 1/3 for lunches



Lunches *Offered* and *Served* Were Low in Whole Grains and High in Calories from Solid Fats and Added Sugars, Relative to USDA Food Pattern Recommendations



Source: SNDA-IV, Menu Survey, SY 2009–2010.

Calories from Solid Fats and Added Sugars in NSLP Lunches

- **Percentage contribution of average lunches to maximum limit**
 - 115 percent for elementary schools
 - Maximum limit = 160 calories
 - 59 to 74 percent for middle and high schools
 - Maximum limit = 260 and 330 calories, respectively

- **Leading contributors**
 - Flavored 1% milk (10%)
 - Cookies, cakes, and brownies (8%)
 - Pizza and pizza products (6%)
 - Condiments, toppings, and spreads (6%)
 - Flavored skim/nonfat milk (5%)

Source: SNDA-IV, Menu Survey, SY 2009–2010.

Food and Physical Activity Environments



Nutrition Education

- **64 percent of schools require nutrition education**
- **89 percent of these schools require nutrition education in every grade**
- **Wide range in required hours**
 - **<5 to more than 100 hours per year**
 - **Missing data was an issue, especially in middle and high schools**

Source: SNDA-IV, Principal Survey, SY 2009–2010.

Physical Education and Physical Activity

■ Physical Education

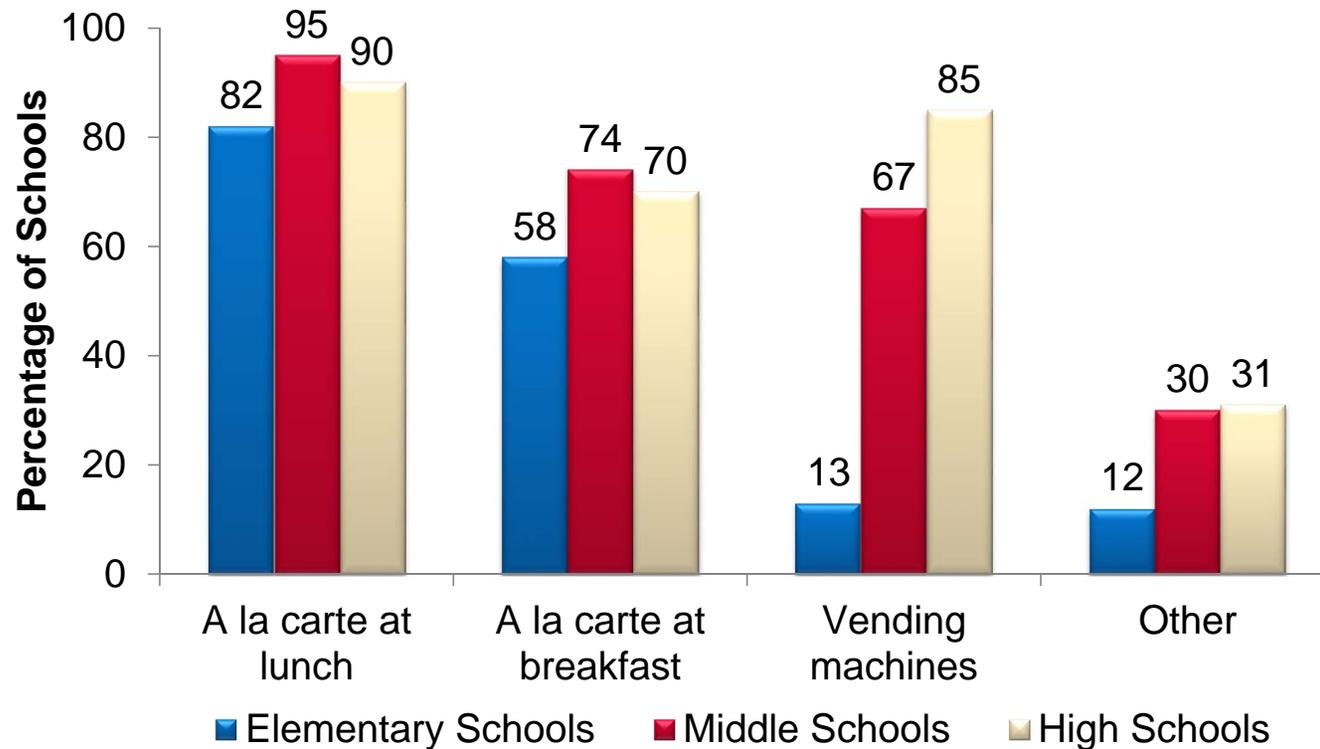
- 95 percent of schools require physical education
- Few schools meet National Association for Sport and Physical Education (NASPE) guidelines
 - 15 percent of elementary schools (goal=150 min/week)
 - 20 percent of middle schools and 26 percent of high schools (goal=225 min/week)

■ Opportunities for Physical Activity

- Varied widely by school type
 - 86 percent of elementary schools
 - 45 percent of middle schools
 - 28 percent of high schools

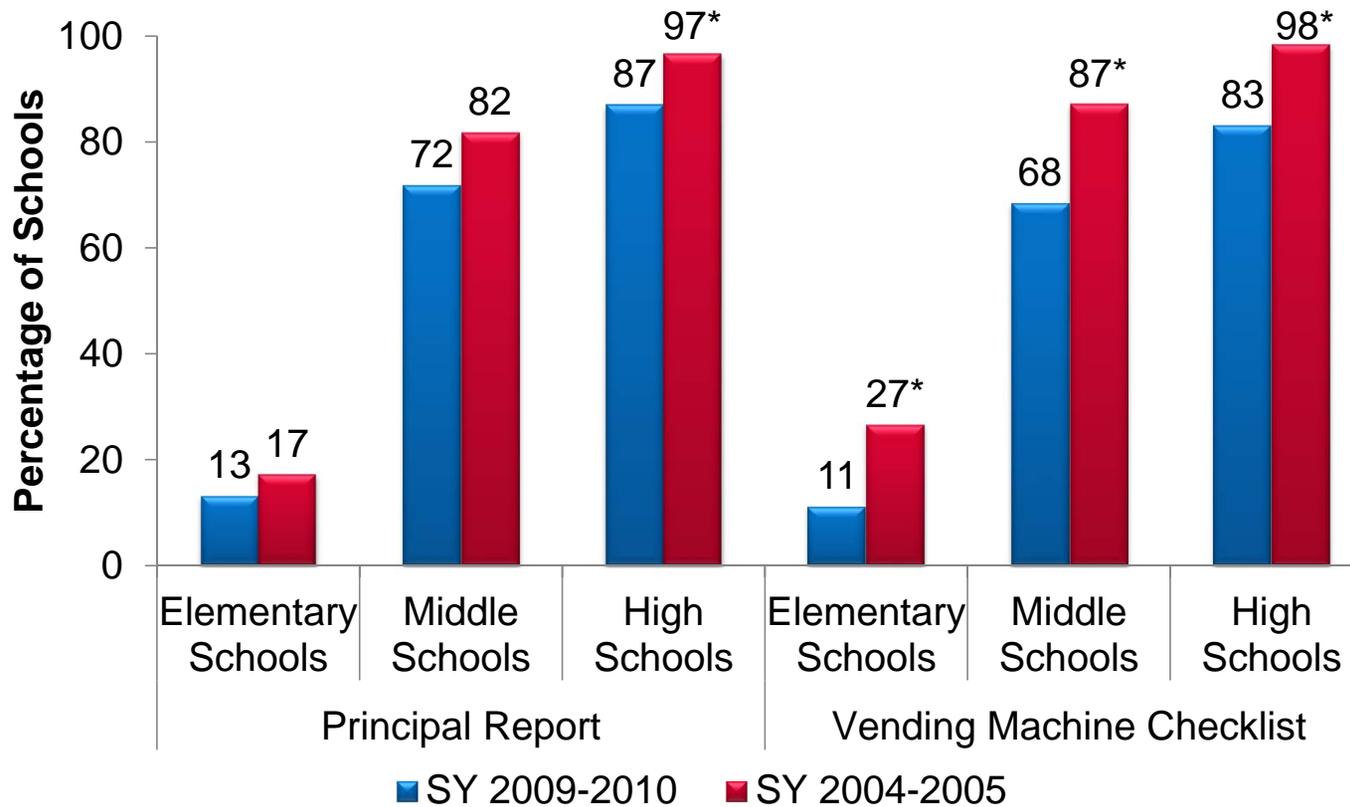
Source: SNDA-IV, Principal Survey, SY 2009–2010.

Competitive Foods Were Widely Available, Especially Among Middle and High Schools



Sources: SNDA-IV, Foodservice Manager Survey, Principal Survey, A la Carte Checklist, Vending Machine Checklist, and Other Sources Checklist, SY 2009–2010.

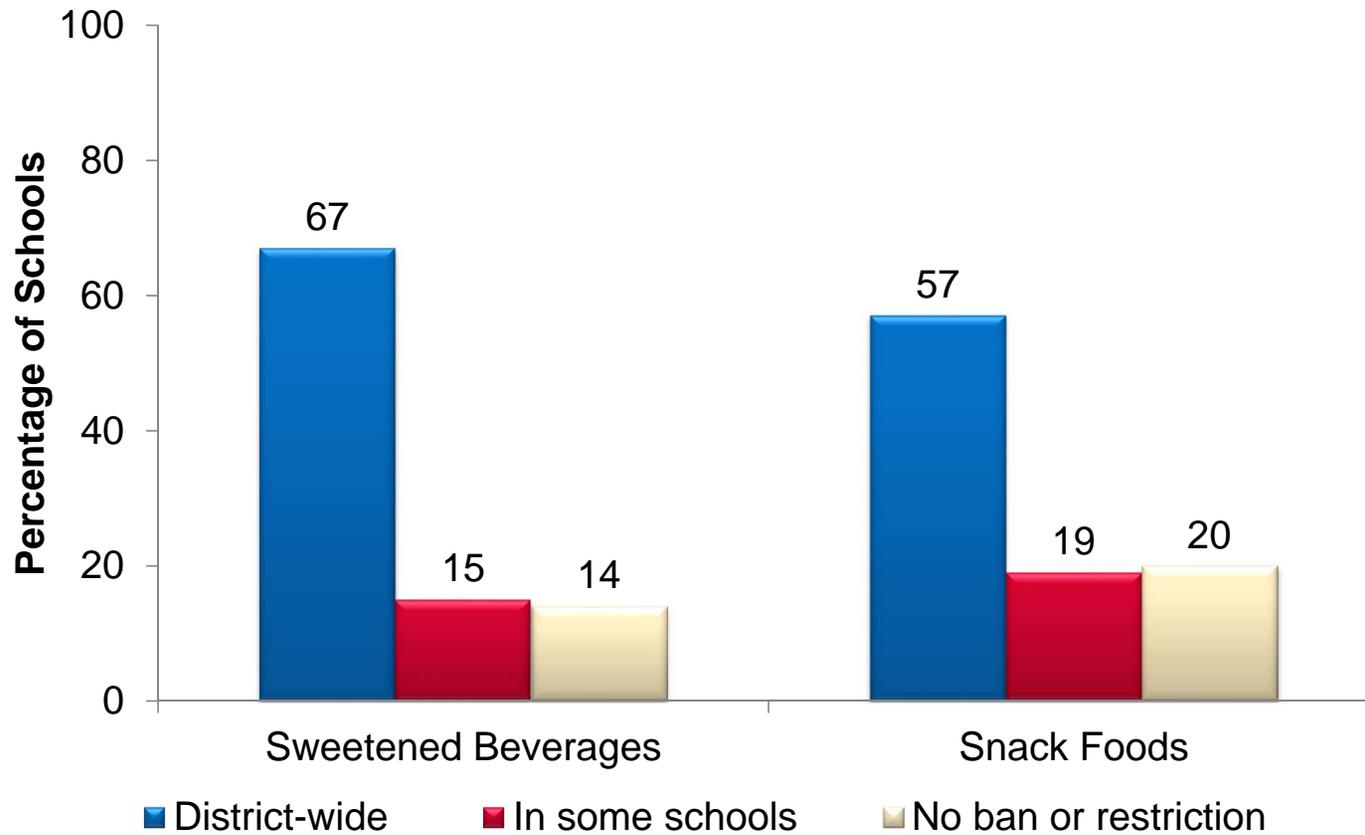
Vending Machines May Have Been Less Available in SY 2009-2010 than in SY 2004-2005, but Findings Varied by Respondent



* Proportion is significantly different from SY 2009–2010 at the .05 level.

Sources: SNDA-IV, Vending Machine Checklist, and Principal Survey, SY 2009–2010; and SNDA-III, Vending Machine Checklist and Principal Survey, SY 2004–2005.

Most Districts Had Bans or Restrictions on Availability of Sweetened Beverages and Snack Foods



Source: SNDA-IV, SFA Director Survey, SY 2009–2010.

Acknowledgements

- **SFA and school respondents—Thank You!**
- **FNS**
 - Fred Lesnett, Jay Hirschman, Melissa Abelev (ORA), Margaret Applebaum, Laura Walter, Eileen Ferruggiaro, Gabrielle Serra, and other Child Nutrition staff
- **Mathematica**
 - Liz Condon, Katie Niland, Denise Mercury, Sarah Forrestal, Charlotte Cabili, Vanessa Oddo, Anne Gordon, Nathan Wozny, Alexandra Killewald, Nora Paxton, Will Crumbley, Jessica Galin and others

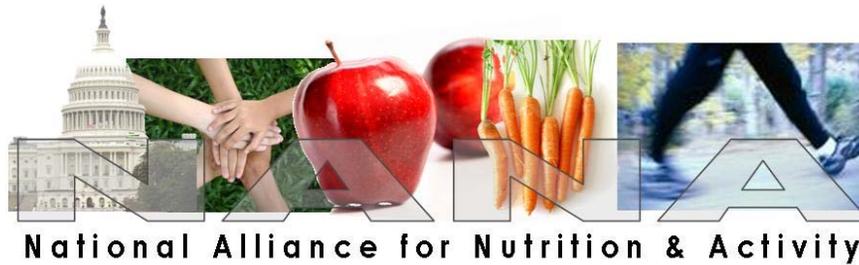
School Nutrition and Meal Cost Study

- **Contract just awarded by FNS**
- **Fully integrated study will assess nutritional quality and cost of meals, student participation and satisfaction, and students' dietary intakes**
- **First-time opportunity to address many important questions, such as:**
 - Do healthy meals cost more?
 - What is the relationship between nutritional quality of meals and student participation?
- **Data will be collected in SY 2014-2015**

For More Information

- **SNDA-IV reports available on the FNS website (www.fns.usda.gov/ora):**
 - Summary Report
 - Volume I—School Foodservice Operations, School Environments, and Meals Offered and Served
 - Volume II—Sampling and Data Collection Methods

- **Public Use data files available upon request:**
 - Contact FNS, Office of Research and Analysis



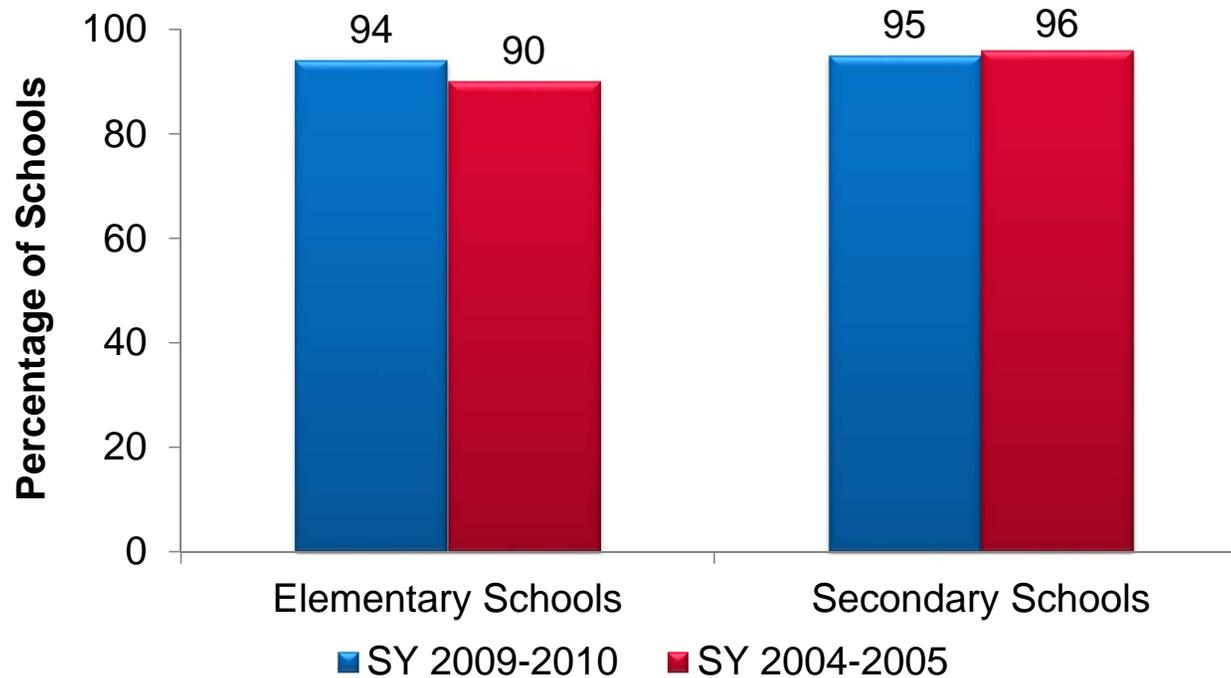
Questions?

*Please use the chat function to the right
to submit your questions.*

For more information, email nana@cspinet.org.

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- **Additional slides**

In Both SY 2009-2010 and SY 2004-2005, Virtually All Schools *Offered* Students the Opportunity to Select a Lunch that Met the SMI Standard for Saturated Fat



Sources: SNDA-IV, Menu Survey, SY 2009–2010; and SNDA-III, Menu Survey, SY 2004–2005.

Prices for Full-Price Meals and Participation

- **Healthy, Hunger-Free Kids Act of 2010 required schools to gradually increase prices until revenue for full-price meals matches Federal reimbursement for free meals.**
- **We estimated price elasticity of paid meal participation, controlling for key factors that could affect participation decision**
- **Modest impacts associated with 10 percent increase in price:**
 - Overall decrease in participation rate of 1.5 percentage points
 - Range from 0.5 percentage points in high schools to 2.1 percentage points in middle schools

NSLP/SBP: Reimbursable Meals

- Key issue is defining the food and nutrient requirements for a *reimbursable meal*
- Reimbursable meals
 - meals served through NSLP and SBP that meet the food and nutrient requirements outlined in regulation are eligible for federal reimbursements;
 - foods served outside of NSLP/SBP (e.g. a la carte, vending) are not reimbursable.

Since 1995, USDA has had regulatory nutrition standards for NSLP/SBP

Nutrients

- **Nutrients** in meals are averaged over a school week; weekly averages must meet regulatory standards
 - 1/3 of **1989** RDA for protein, calcium, iron, vitamin A and vitamin C at lunch; 1/4 of RDA for these nutrients at breakfast
 - Appropriate level of calories for age/grade groups
 - Consistent with the **1995** DGA
 - ◆ Limit the percent of calories from total fat to 30% of the actual number of calories offered
 - ◆ Limit the percent of calories from saturated fat to less than 10% of the actual number of calories offered
 - ◆ Reduce sodium and cholesterol levels (no current quantitative standard)
 - ◆ Increase the level of dietary fiber



NSLP/SBP: Current Requirements for Reimbursable Meals Adopted in 1995

Foods

- **Four menu planning options**
 - Two food-based systems
 - ◆ schools must *offer* at least five food items
 - ◆ specified quantities of milk, meat/meat alternates, fruits/vegetables, and grains
 - Two nutrient-based systems
 - ◆ reimbursable meals must contain a minimum of three menu items
 - ◆ specific food requirements include an entrée and fluid milk
- **Offer vs. Serve (OVS)**
 - Students may refuse certain menu items, as long as they accept the minimum number of components