

***Results of the  
School Nutrition Dietary  
Assessment Study (SNDA-III)***

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## **SNDA studies measure changes in the nutritional quality of school meals.**

- **SNDA-I (SY 1991-92)** highlighted high fat content of school meals and helped motivate SMI.
- **SNDA-II (SY 1998-99)** provided an early look at SMI implementation
- **SNDA-III (SY 2004-05)** provides updated data to assess SMI and directions for the future

# Key Questions We'll Be Discussing Today

1. Are USDA school meals meeting SMI nutrition standards?
2. What progress has been made since SNDA-II (SY1998-99)?
3. What do we know about the diets of participants and nonparticipants?

# SNDA-III Study Design

- **Nationally representative of all public schools participating in the NSLP in the 48 contiguous States and DC**
- **Data on meals offered and meals served as well as student's 24-hour dietary intake**
- **129 SFAs in 36 States**
- **398 Schools**
- **Approximately 2300 Students in 287 of those schools**
- **Data collected in Spring 2005**

# The report offers many different types of comparisons. What one concludes depends on what one looks at.

- Lunch or breakfast,
- Meals offered vs. meals served,
- School level,
- Nutrient,
- Current level vs. comparison to 1998-1999;
- Participant vs. nonparticipant, and
- Other breakdowns (big schools, rural schools, results by gender, etc.).

## Three concepts to keep in mind:

- **Average Meals as Offered**
  - Unweighted analyses
  - Equal weight to items within menu choice
- **Average Meals as Served** (*Selected by students*)
  - Weighted analysis
  - More weight to frequently selected items
- **“Standards”** (*DRIs, RDAs, DGAs, “benchmarks”*)

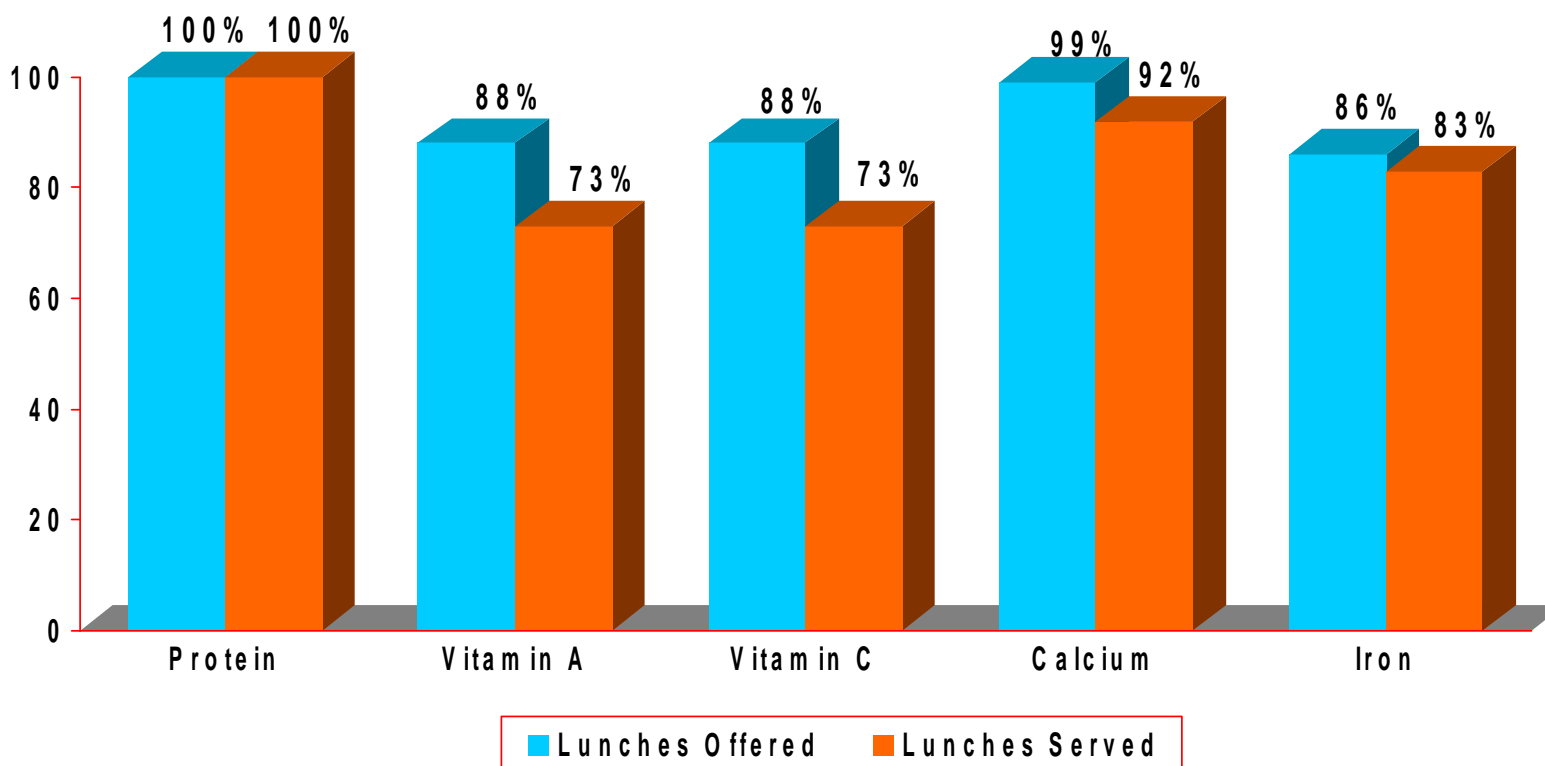
# NSLP/SBP: Current Requirements for Reimbursable Meals *Nutrients*

- **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
    - ◆ Increase the level of dietary fiber

# **1. Are School Meals Meeting SMI Nutrition Standards?**

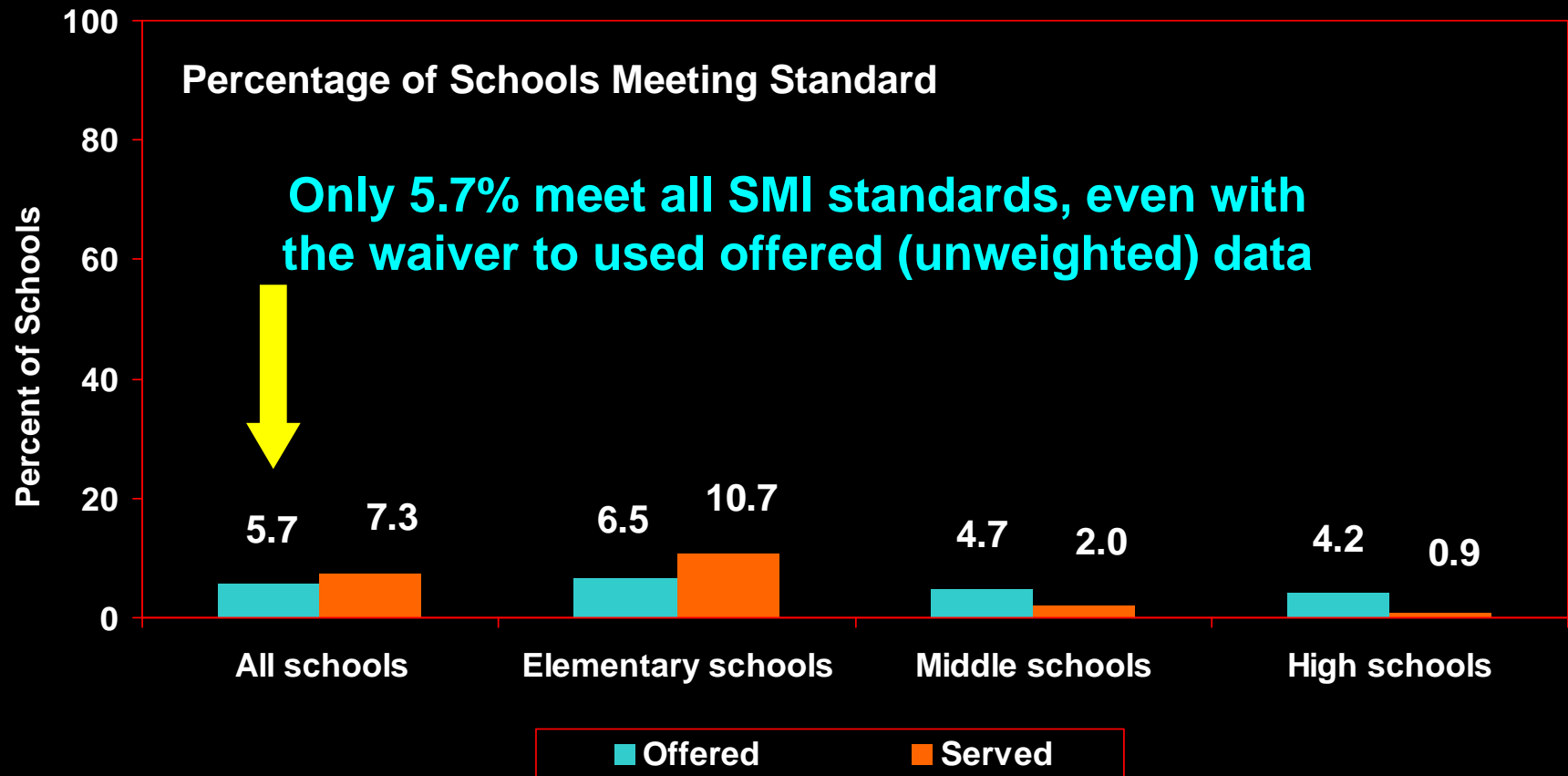
# Most Schools Served Lunches that Met Standards for Key Nutrients that Contribute to a Healthy Diet

Percentage of Schools Meeting Standards



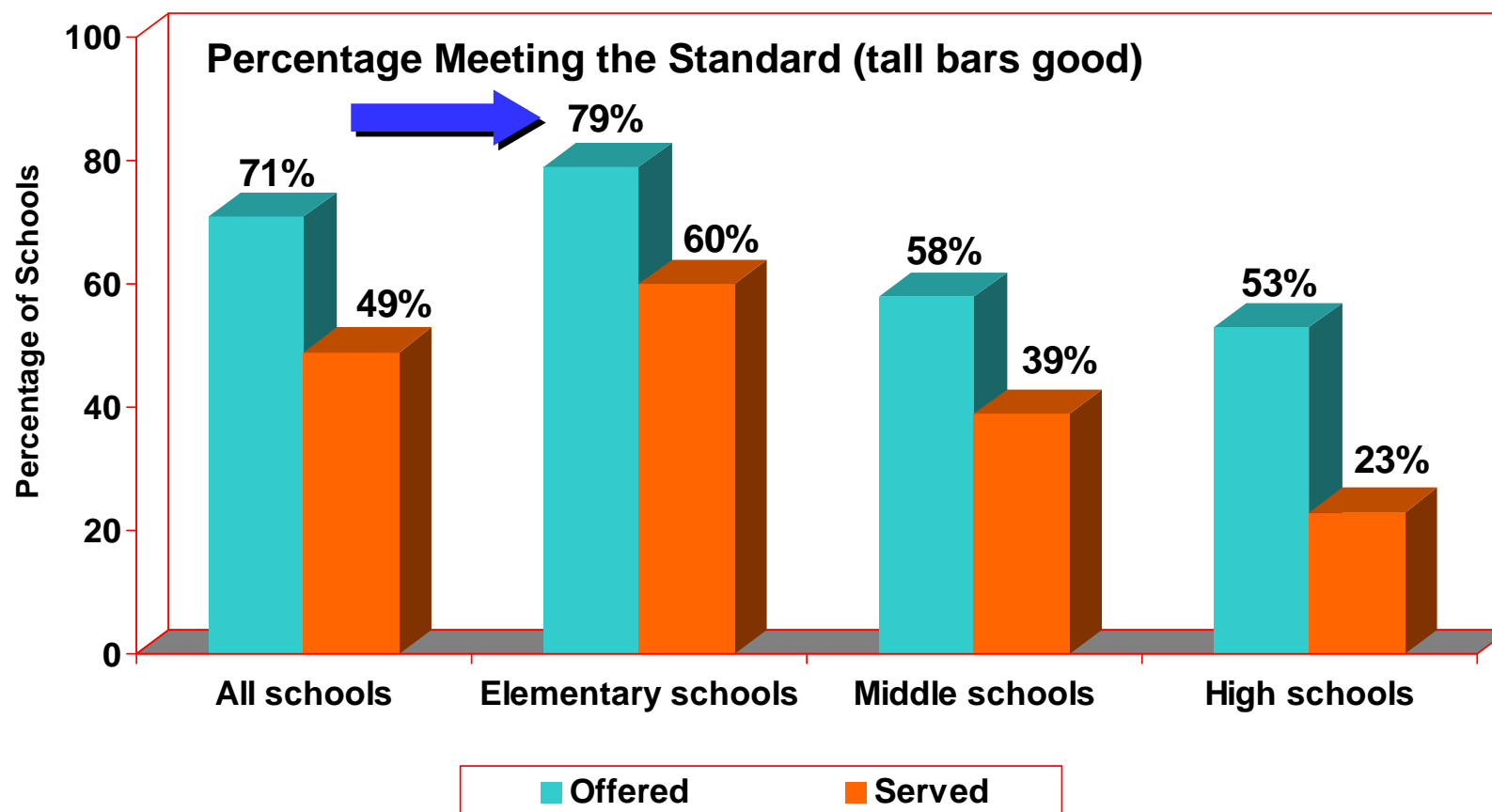
Source: School Nutrition Dietary Assessment-III, Menu Survey, SY 2004-2005.

# Few Schools Met All SMI Standards for a Reimbursable Lunch



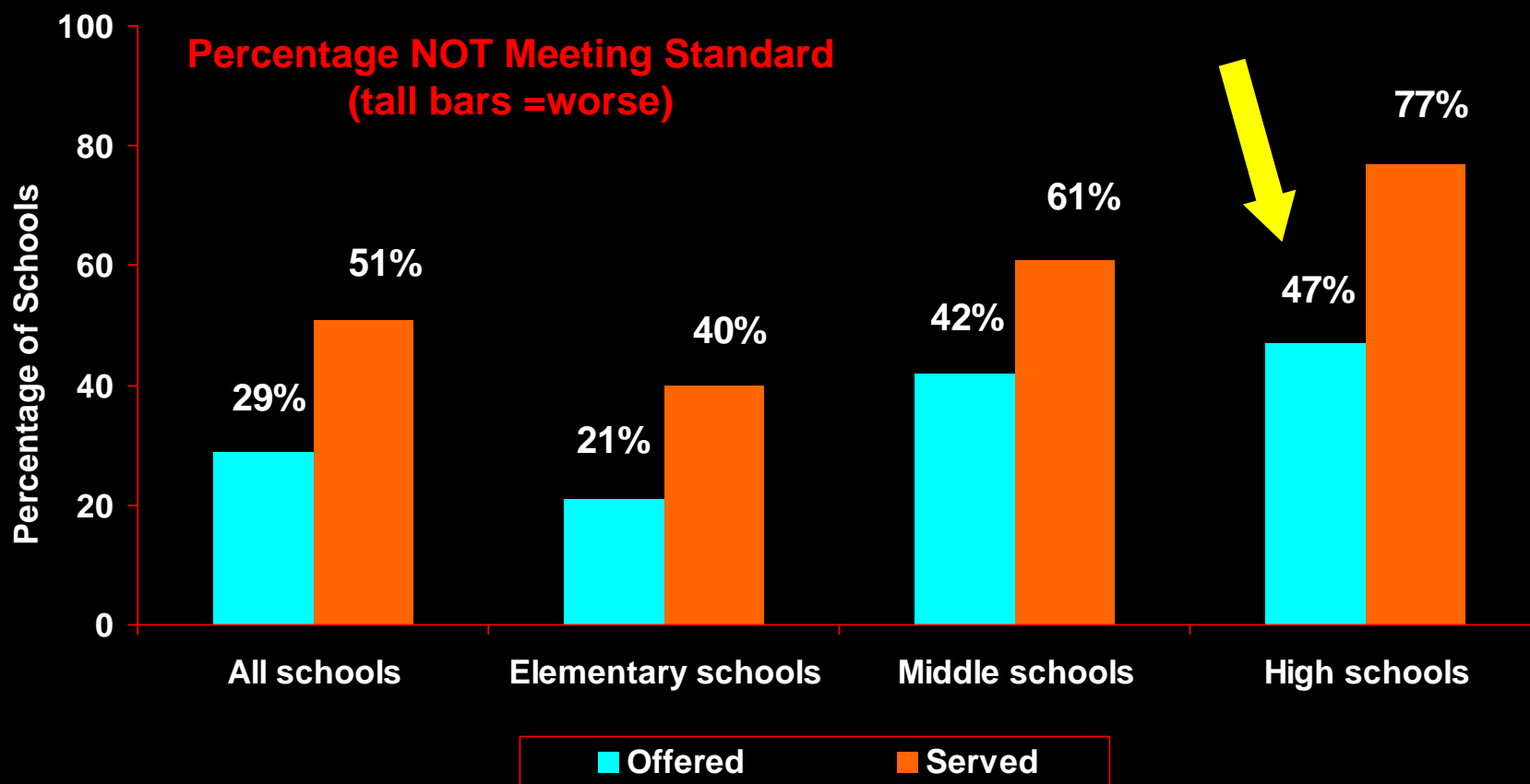
SOURCE: SNDA-III, Menu Survey, school year 2004-05.

# Seventy-nine Percent of Elementary Schools Offered Lunches that Met the Calorie Standard



SOURCE: SNDA-III, Menu Survey, school year 2004-05.

# About Half of High Schools Offered Lunches that *Failed* to Meet the Calorie Standards for Reimbursement

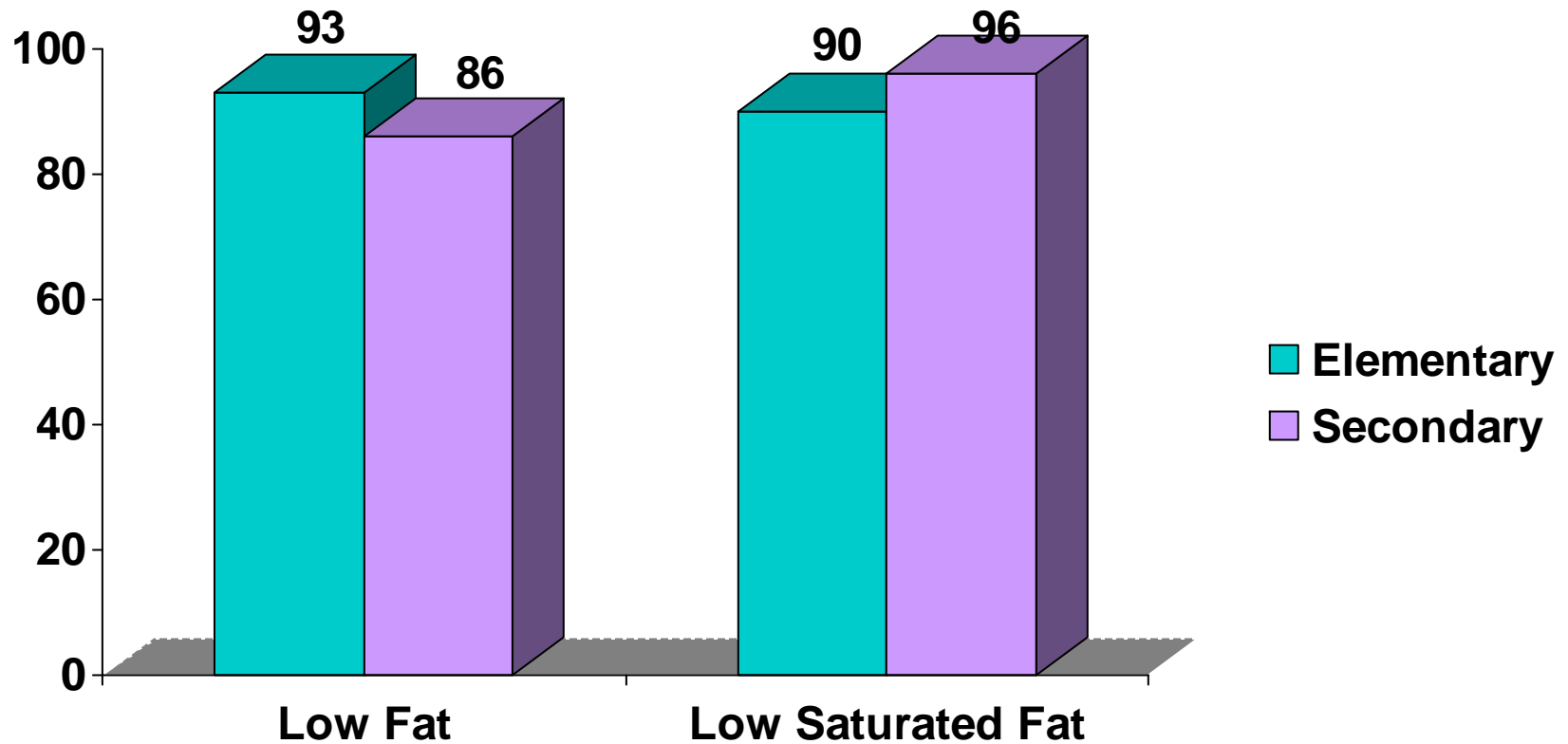


SOURCE: SNDA-III, Menu Survey, school year 2004-05.



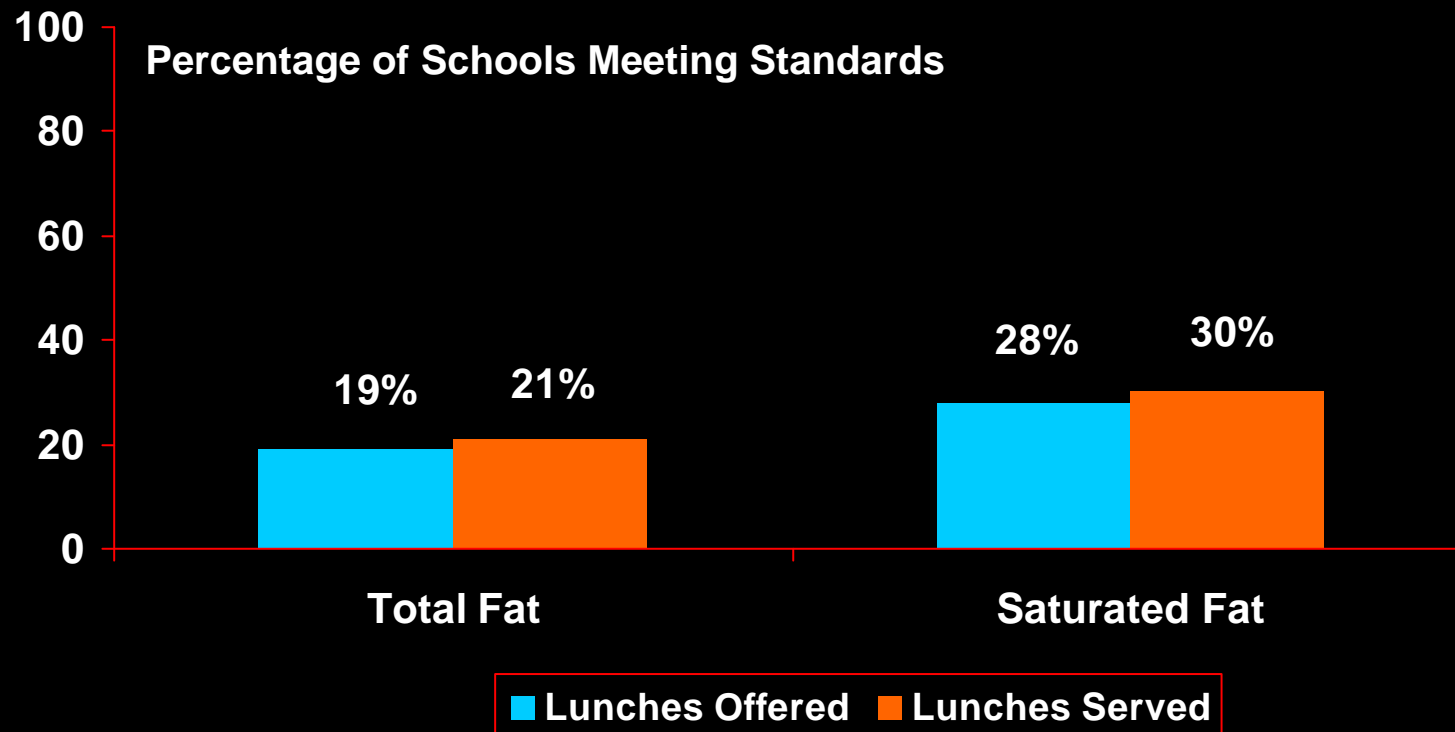
# Low Fat and Low Saturated Fat Lunch Options Were Widely Available

Percentage of Schools Offering Students *Opportunity to Select*



Source: School Nutrition Dietary Assessment-III, Menu Survey, SY 2004-2005.

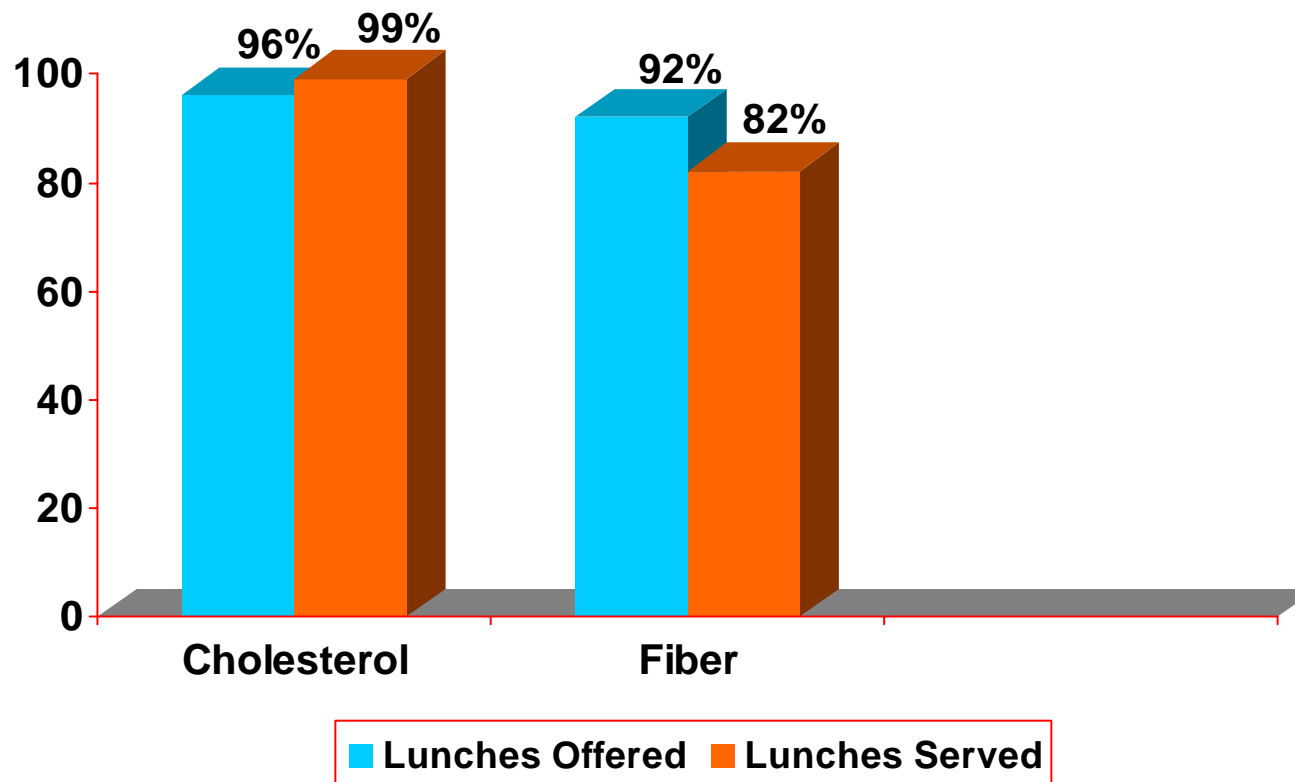
# Less than One-Third of Schools Met *Standards for Reimbursable Meals* for Total Fat or Saturated Fat



Source: School Nutrition Dietary Assessment-III, Menu Survey, SY 2004-2005.

# Almost All Schools Satisfied the Benchmark for Cholesterol and Fiber

Percentage of Schools Meeting Standards (tall bars good)

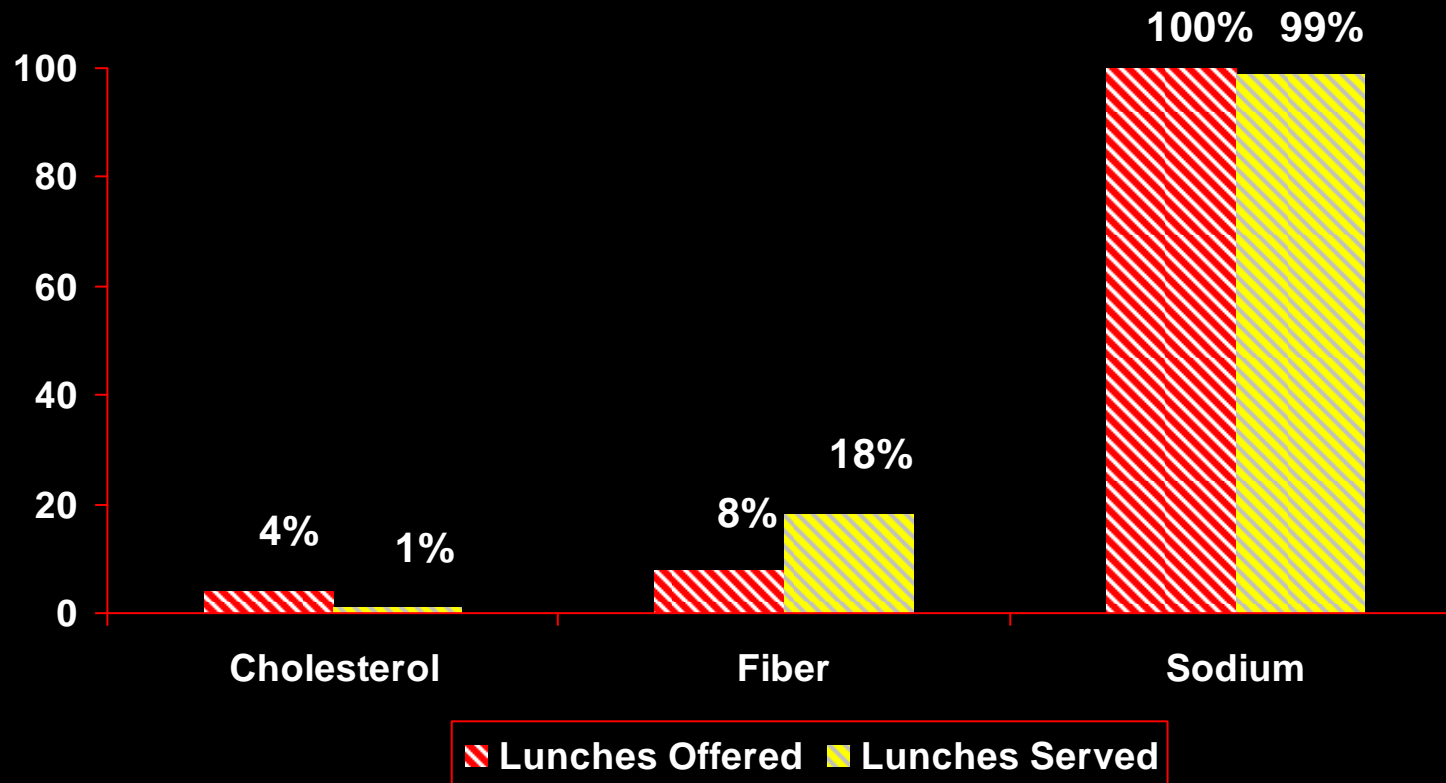


Source: School Nutrition Dietary Assessment-III, Menu Survey, SY 2004-2005.

Note: Benchmarks are not requirements under SMI.

# Almost All Schools Failed to Satisfy the Benchmarks for Sodium

Percentage of Schools NOT Meeting the Benchmarks  
(tall bars = worse)

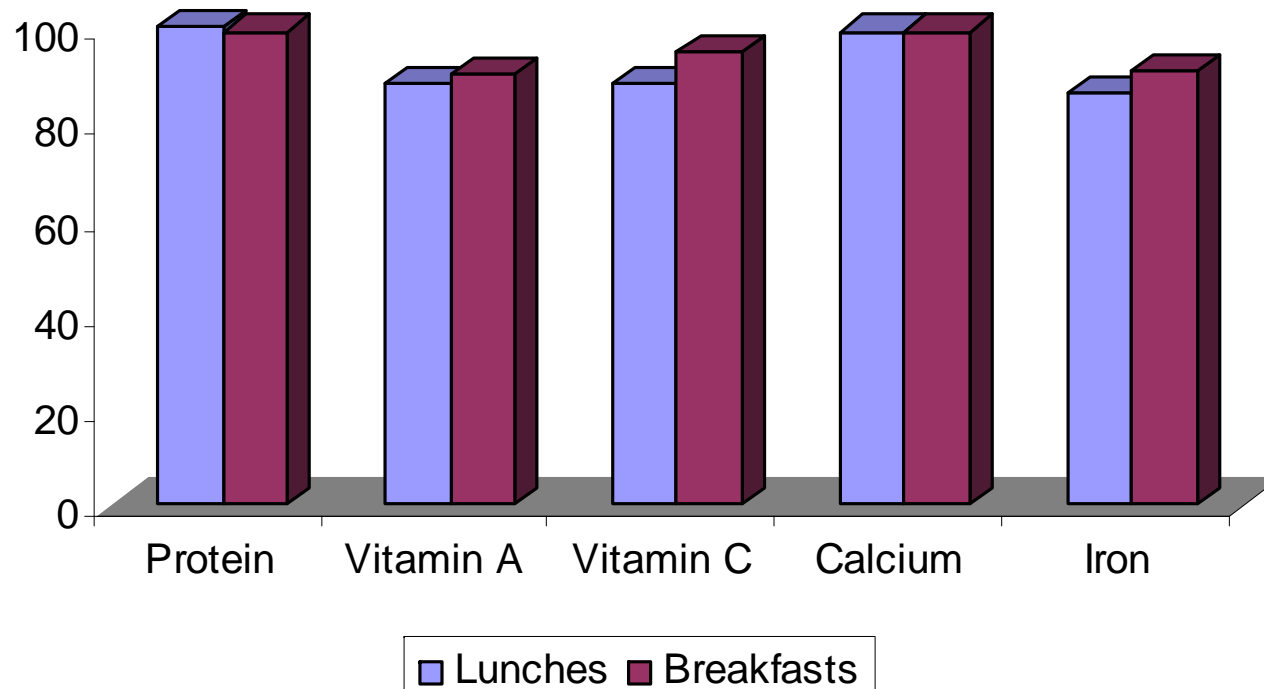


Source: School Nutrition Dietary Assessment-III, Menu Survey, SY 2004-2005.

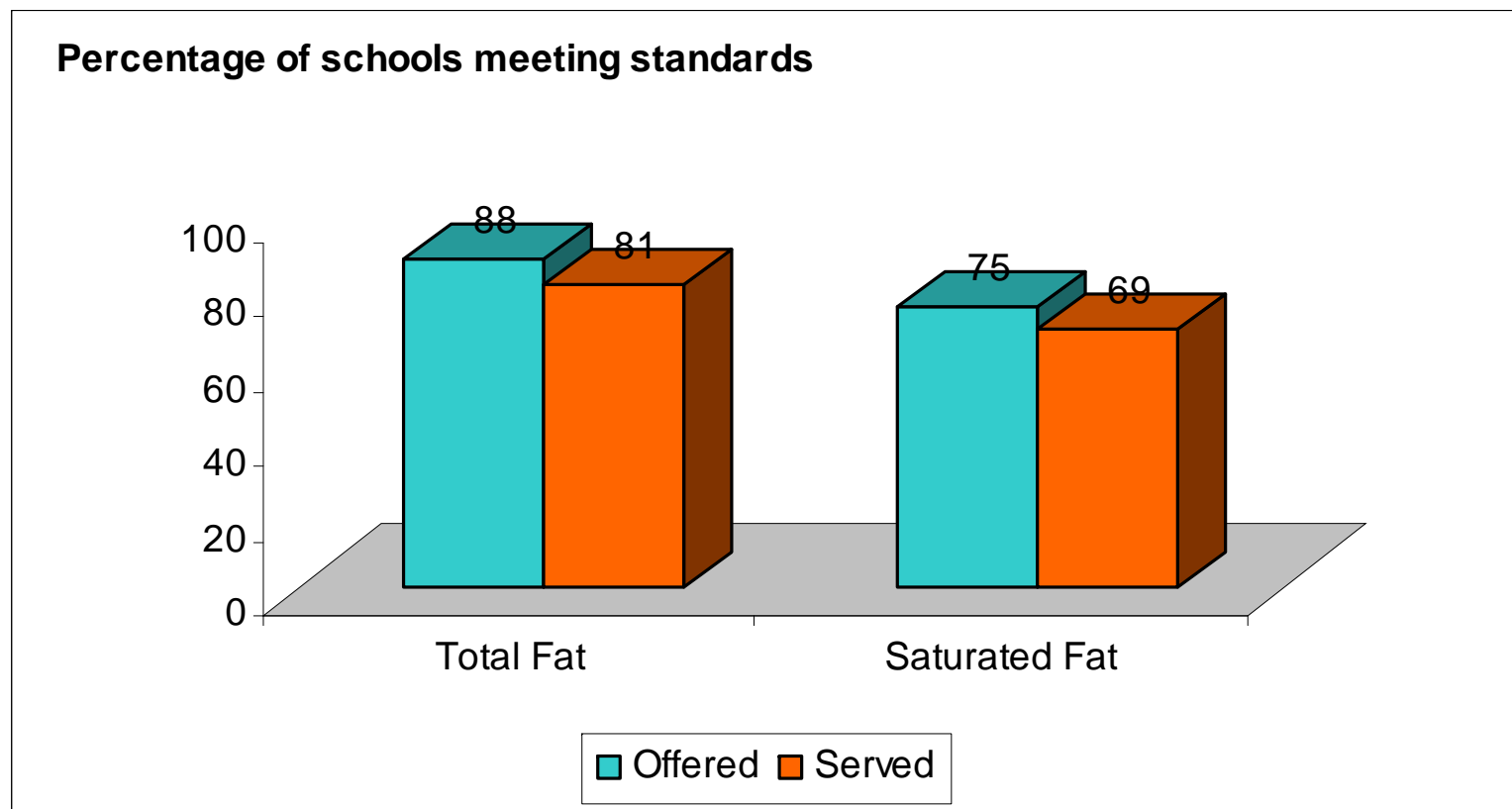
Note: Benchmarks are not requirements under SMI.

# School Breakfasts and Lunches Were Similar on the Key Nutrients.

Percentage of schools meeting standards (offered)



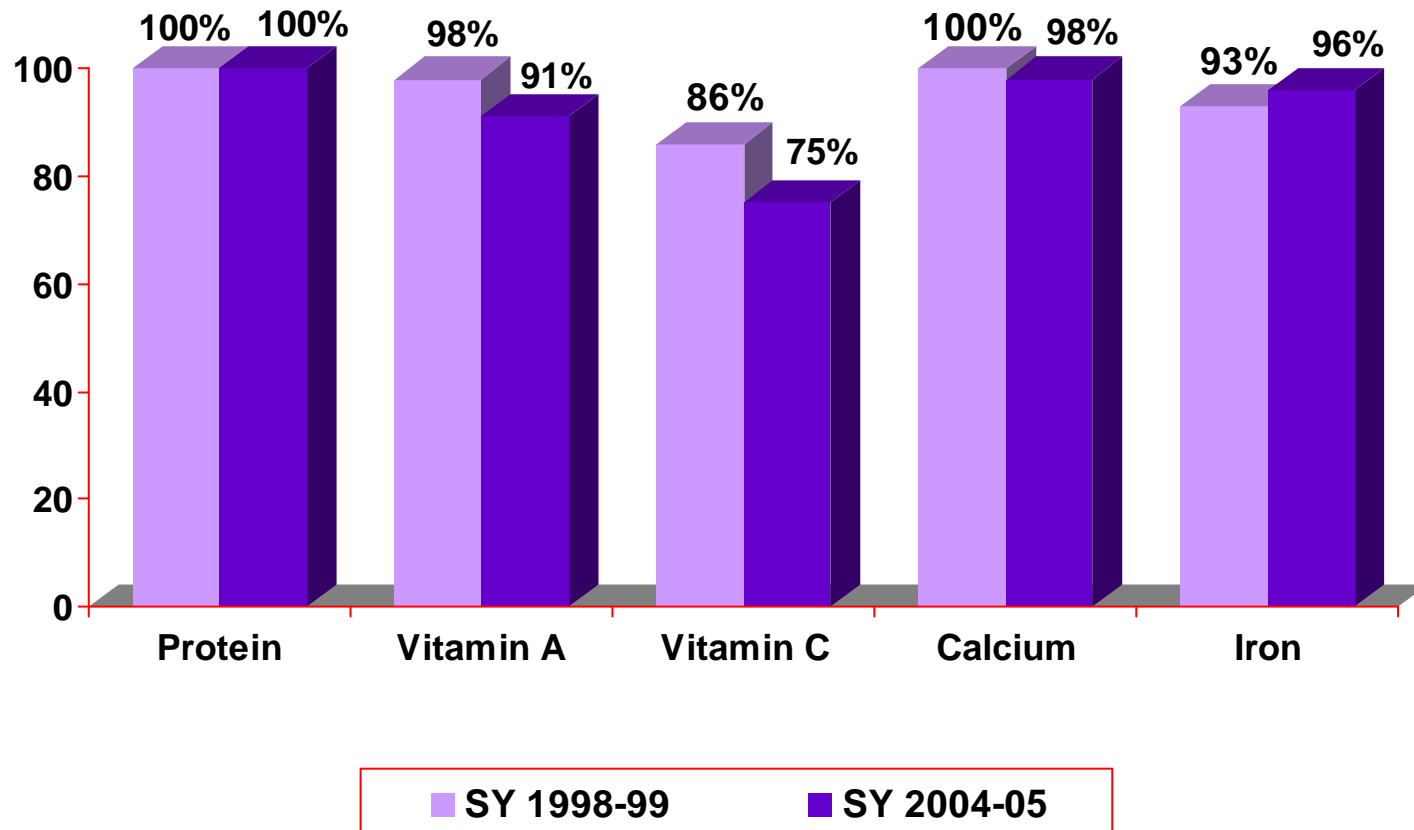
# At Breakfast, Schools Usually Met SMI Standards for Fat and Saturated Fat



**2. Have Schools Made Progress  
Toward Meeting SMI Standards  
Since 1998-99?**

# A High Proportion of Elementary Schools Continue to Meet SMI Standards for Key Nutrients Served at Lunch

Percentage of Elementary Schools Meeting Standards

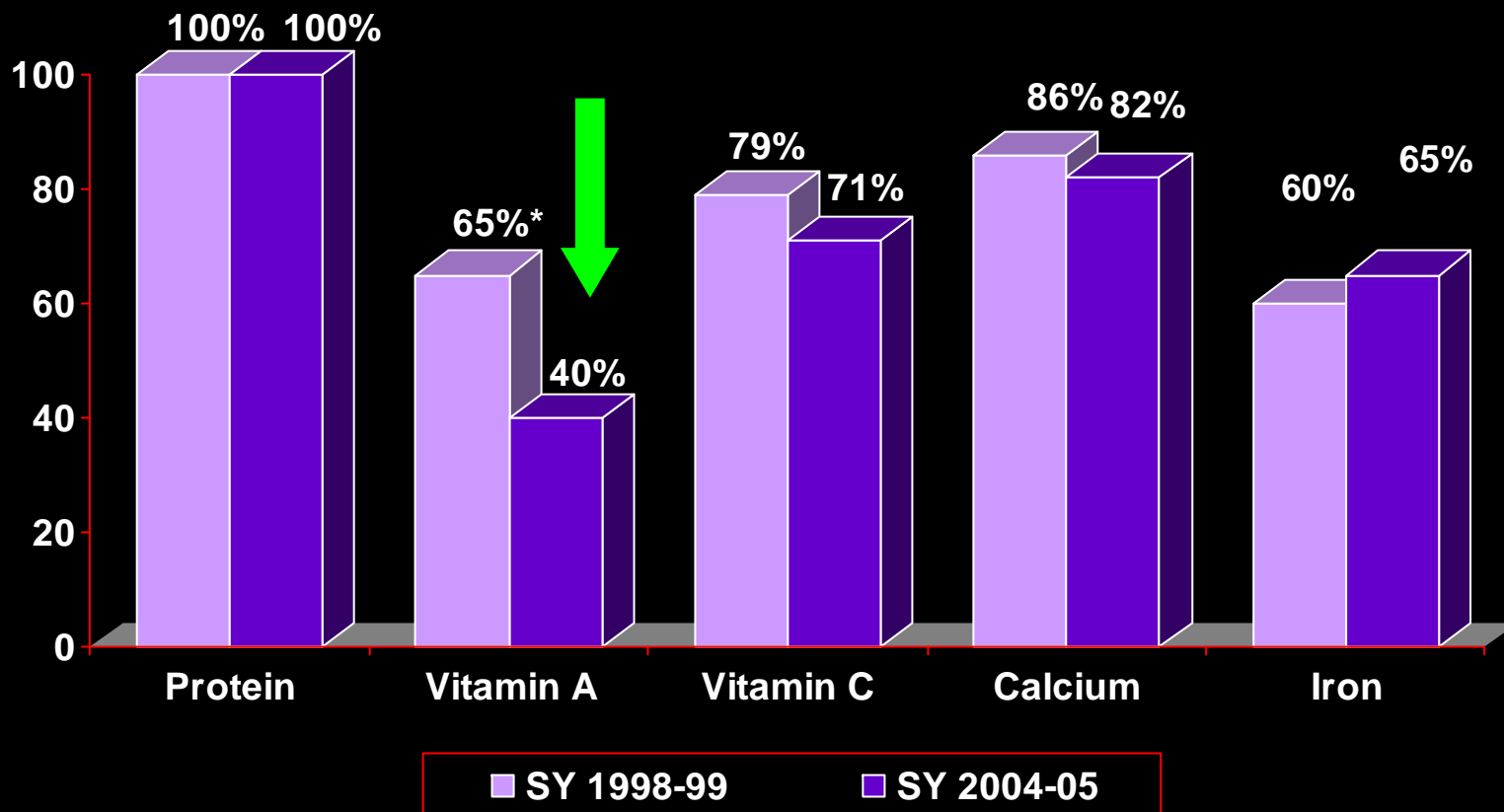


Sources: School Nutrition Dietary Assessment-III, Menu Survey, and School Nutrition Dietary Assessment-II, Menu Survey, SY 1998-99 (Fox et al. 2001).

# There was No Improvement in the Proportion of Secondary Schools Meeting SMI Standards for Most Key Nutrients Served at Lunch

*Significantly Fewer Met the Vitamin A Standard in SNDA-III*

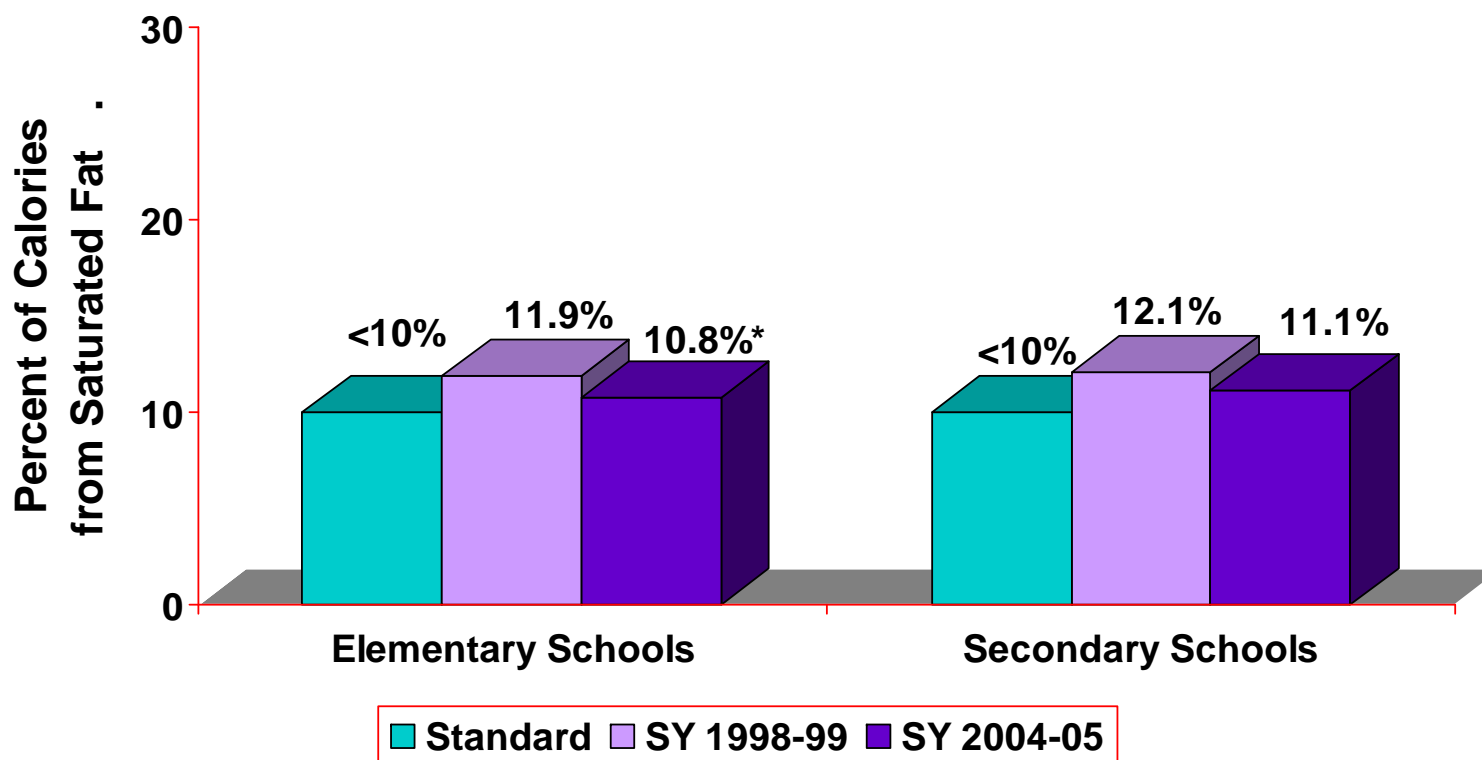
Percentage of Secondary Schools Meeting Standards



Sources: School Nutrition Dietary Assessment-III, Menu Survey, SY 2004-05 and School Nutrition Dietary Assessment-II, Menu Survey, SY 1998-99 (Fox et al. 2001).

\*Difference is statistically significant at .05 level.

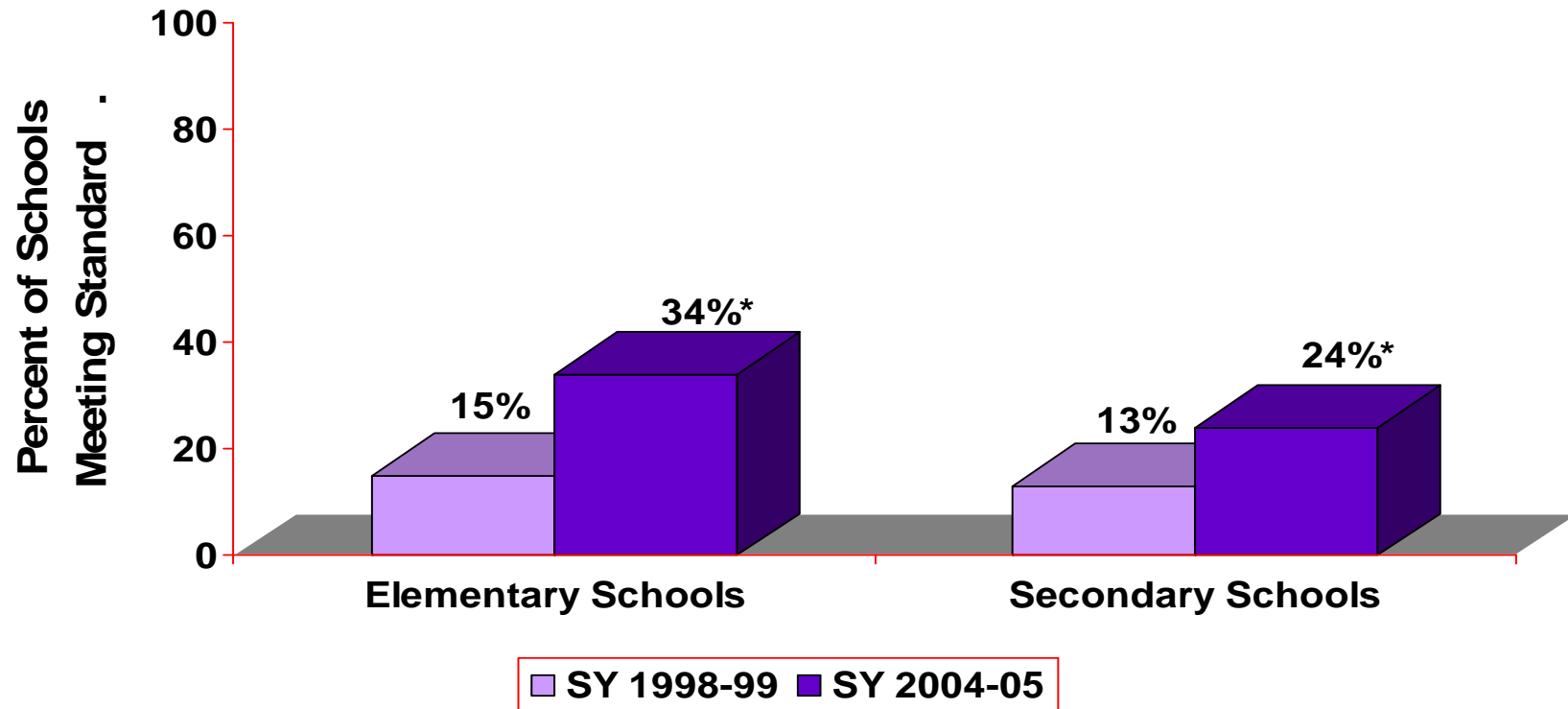
# Average Calories from Saturated Fat Declined between SY 1998-99 and SY 2004-05 in Lunches as Served



SOURCES: SNDA-III, Menu Survey, SY 2004-05 and SNDA-II, Menu Survey, SY 1998-99.

\*Difference is statistically significant at 0.05 level.

# AND More Schools Met Saturated Fat Standard in Lunches *Served* in SY 2004-05

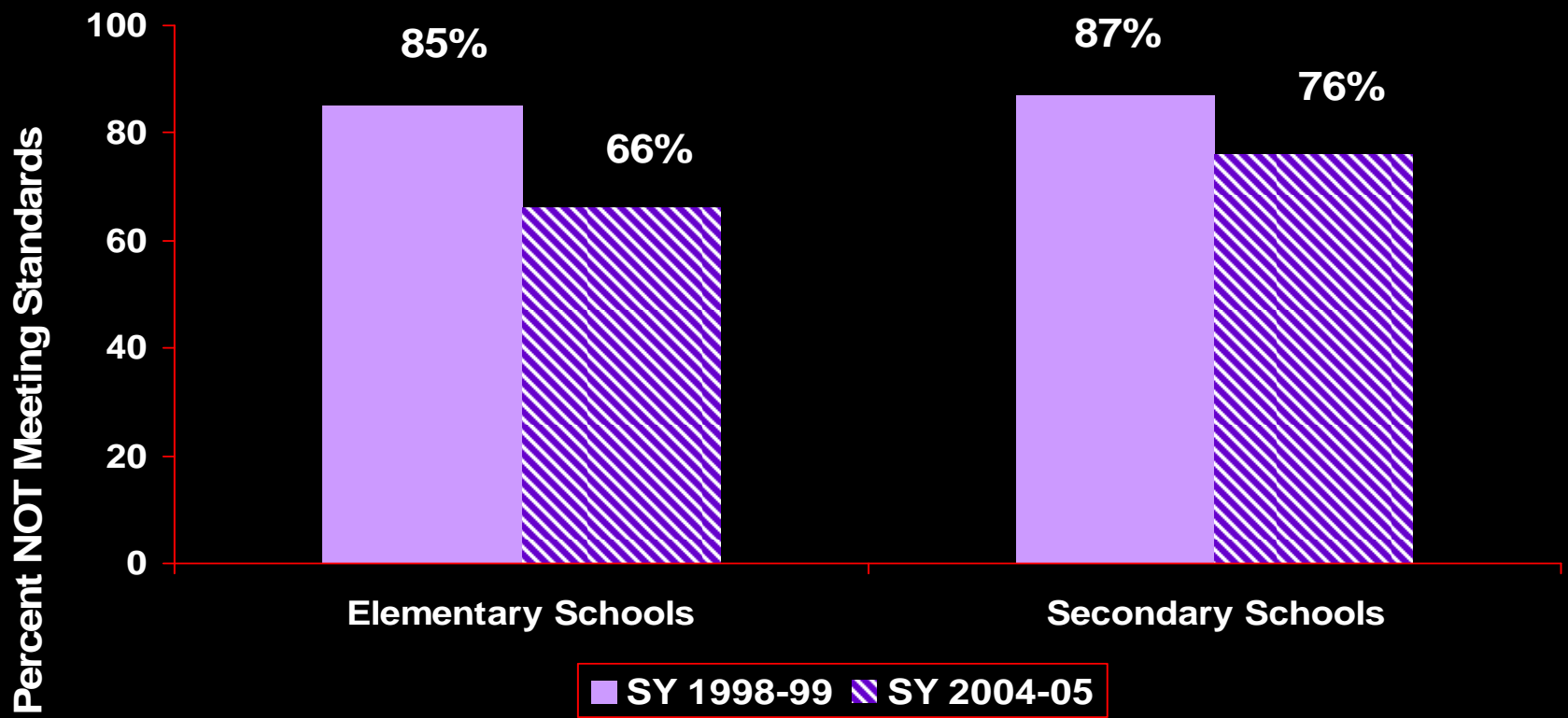


SOURCES: SNDA-III, Menu Survey, SY 2004-05 and SNDA-II, Menu Survey, SY 1998-99.

\*Difference is statistically significant at 0.05 level.

# But More than Two-thirds of Schools Still Do Not Meet the Meal Reimbursement Standards for Saturated Fat

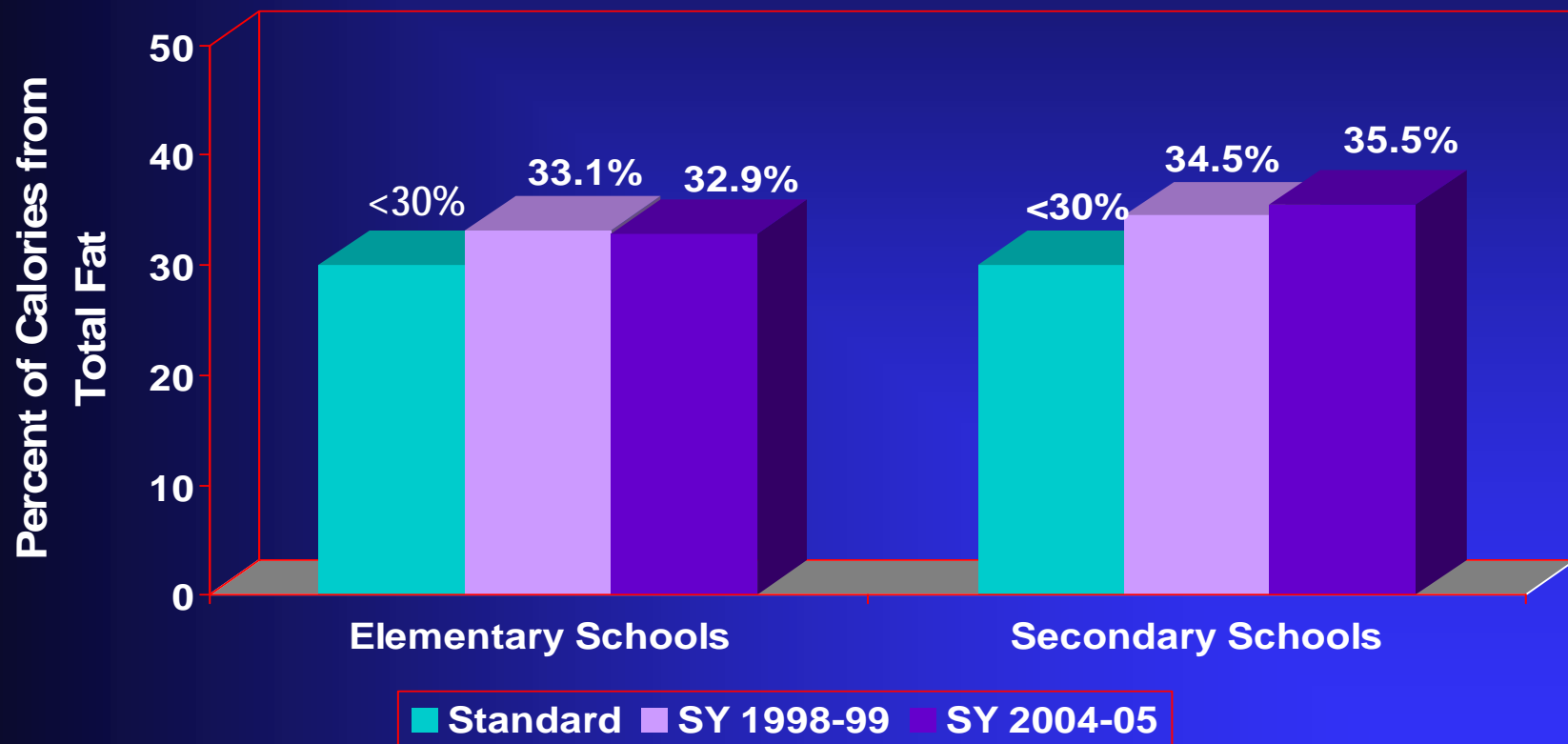
Percentage of Schools NOT Meeting Standard (high bar = worse)



SOURCES: SNDA-III, Menu Survey, SY 2004-05 and SNDA-II, Menu Survey, SY 1998-99.  
\*Difference is statistically significant at 0.05 level.

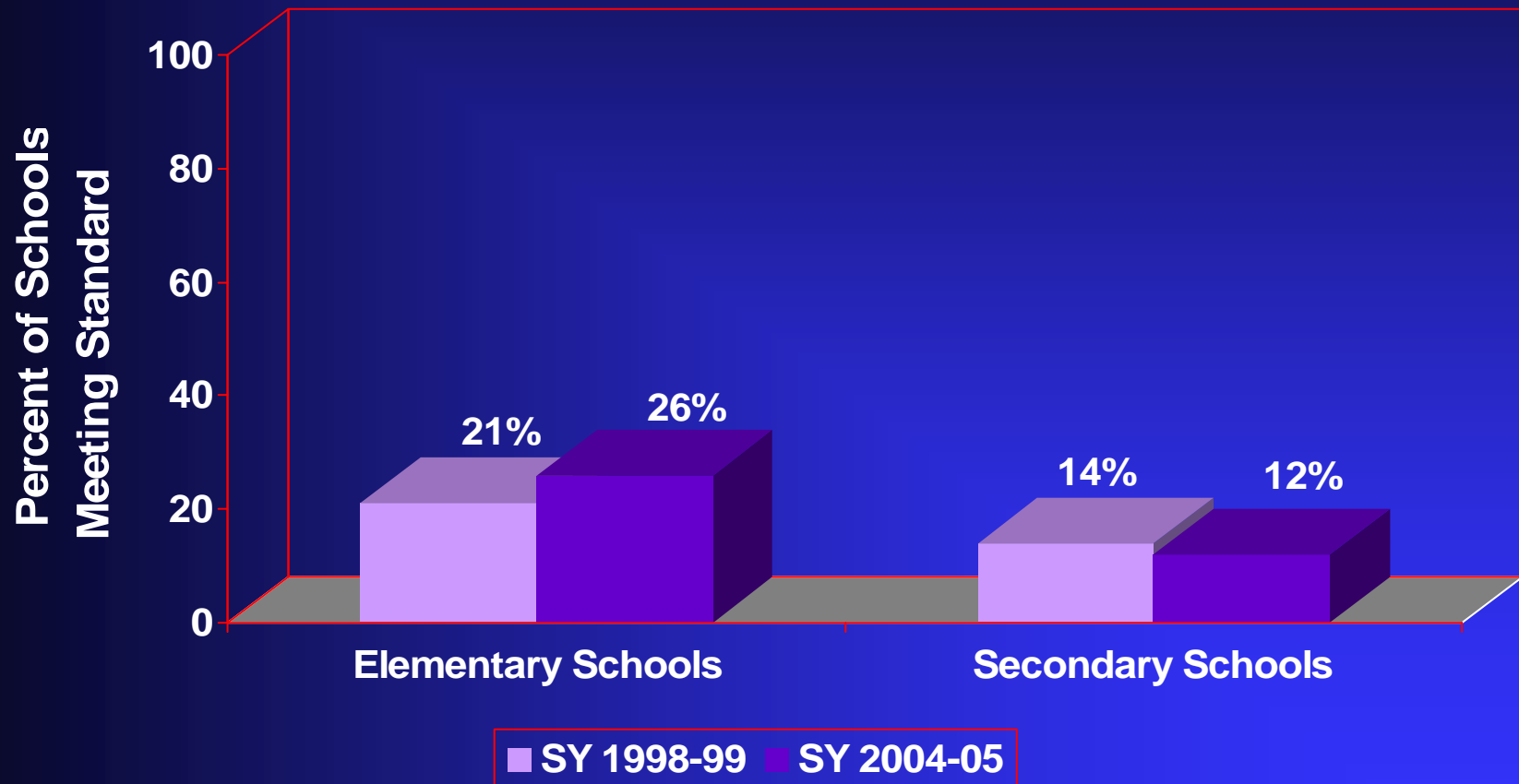


# Between SY 1998-99 and SY 2004-05, Average Calories from *Total Fat* in Lunches as *Served* Were Unchanged



SOURCES: SNDA-III, Menu Survey, SY 2004-05 and SNDA-II, Menu Survey, SY 1998-99.

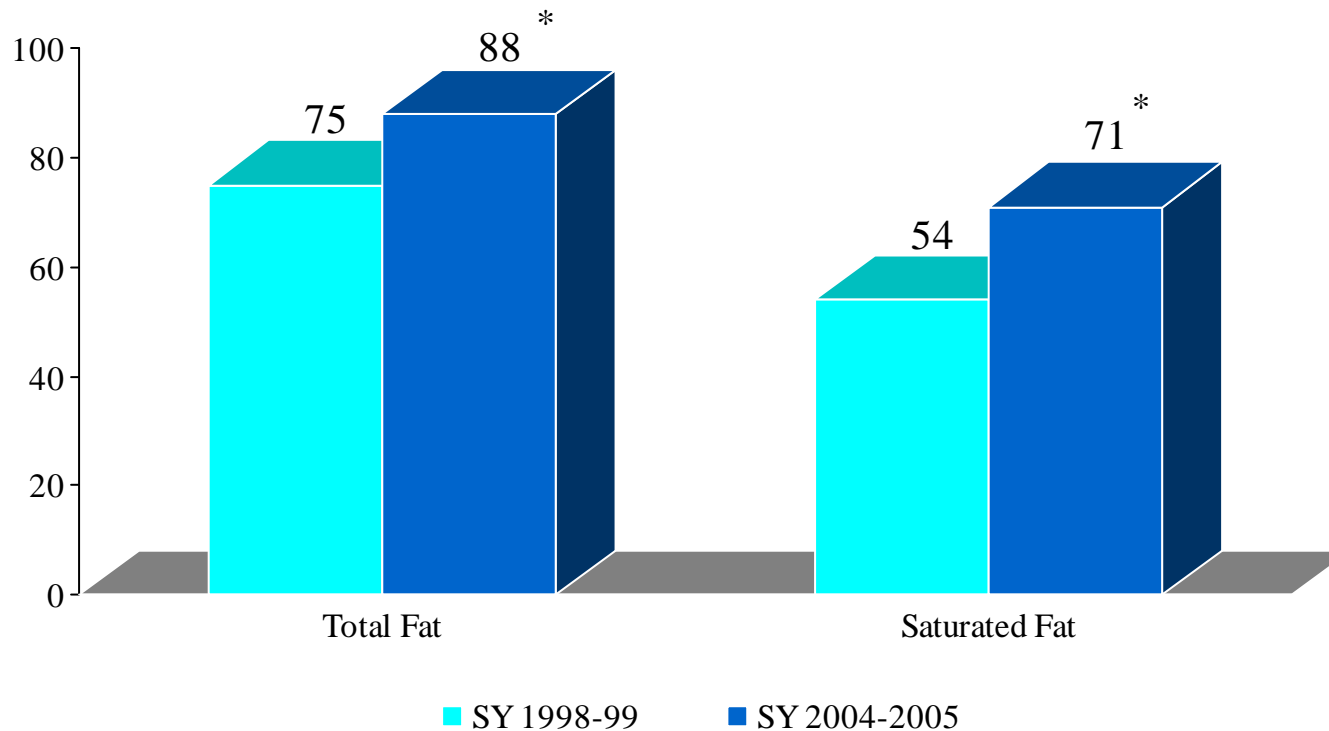
# There Was No Significant Difference in the Proportion of Schools Meeting the *Total Fat* Standard in Lunches Served Between SY1998-99 and SY2004-05



SOURCES: SNDA-III, Menu Survey, SY 2004-05 and SNDA-II, Menu Survey, SY 1998-99.

# For Breakfast, Significantly More Schools Met Standards for Total Fat and Saturated Fat

Percentage of Schools Meeting Standards



Source: School Nutrition Dietary Assessment-III, Menu Survey (Volume I, Table VIII.1), and School Nutrition Dietary Assessment-II, Menu Survey (Fox et al. 2001).

\*SNDA-III result is significantly different from the SNDA-II result at the .05 level.

**3. What do we know about the diets of participants and nonparticipants?**

# Participants and Nonparticipants

- Overall, the diets of NSLP participants were the same or better than the diets of nonparticipants.
- NSLP participants consumed more nutrients at lunch than nonparticipants.
- Both groups failed to meet standards for total fat and saturated fat.

# Participants and Nonparticipants

- At all school levels, the *average* lunch consumed by NSLP participants provided significantly larger percentages of energy from protein and greater amounts of many key nutrients than lunches consumed by nonparticipants.
- This pattern is, in large part, attributable to the fact that participants were four times as likely as nonparticipants to drink milk at lunch.

# Daily Intakes

- NSLP participants at all school levels consumed significantly greater amounts of 6 key nutrients at lunch.
- These differences are *not sustained* over 24 hours.



# Competitive Foods

- About 19 percent of participants consumed competitive foods versus 37 percent of nonparticipants.
- Among both groups, competitive food categories most frequently consumed were desserts and snacks and beverages other than milk. The most popular choices included candy, cookies, carbonated soft drinks, and sweetened juice drinks.

## **Low-income and elementary students participate at higher rates.**

- **Nearly 9 out of 10 low-income students participate in elementary school and about 6 of 10 low income students participate in high school.**
- **Not quite two-thirds of students with family incomes above 185 percent of poverty participate in elementary school and one-third participate in high school.**

# Summary

In SY 2004-05 . . .

- Most schools offered and served lunches meeting SMI standards for vitamins, minerals and protein
- Significantly more schools served lunches meeting standard for saturated fat than in SY 1998-99
- Less than one-third of schools offered or served lunches consistent with SMI standards for fat or saturated fat
- Sodium levels in lunches served remained high

# Top Sources of Total Fat and Saturated Fat in NSLP Lunches

## Total fat

- Salad dressings
- Condiments/spreads
- Pizza products
- Peanut butter sandwiches
- French fries

## Saturated fat

- Pizza products
- Condiments/spreads
- 2% milk
- Salad plates/salad bars
- Hamburgers and cheeseburgers

# *SNDA-III has much more information*

## Volume I: School Foodservice Operations, School Environment and Meals Offered and Served

- menu planning system used,
- characteristics of school environment (school policies on lunch time, open campus)
- availability of competitive foods (vending, a la carte, other)

# ***SNDA-III has much more information***

## **Volume II: Student Participation and Dietary Intakes**

- **Reasons for participation, satisfaction with school meals, characteristics of participants-nonparticipants**
- **Dietary intake at lunch and breakfast and over 24 hours**
- **Types of foods consumed, food sources of calories/nutrients**
- **Frequency and sources of competitive foods**

# ***SNDA-III has much more information***

## **Volume II: Appendices. Thirteen appendices, including:**

- **Definition of School Meal Program Participation**
- **Technical Appendix on the Multivariate Analysis of Mean Dietary Intakes**
- **Unadjusted Mean Intakes of School Meal Program Participants and Nonparticipants**
- **Technical Appendix on the Propensity Score Matching Analysis of Nutrient Inadequacy and Excess**
- **Means and Distributions of Usual Daily Intakes: NSLP Participants and Nonparticipants**
- **Food Sources of Nutrients: NSLP Participants and Nonparticipants**

*SNDA-III has much more information*

**Volume III: Sampling and Data Collection**



**The SNDA-III Summary of Findings and Full Report (3 volumes) are available on the FNS web site:**

**<http://www.fns.usda.gov/oanel/>**



## **SNDA-III addresses four questions:**

- **What are the characteristics of meals offered by schools?**
- **What is the role of school meals in the diets of school children?**
- **Which, and how many, school children participate in the programs?**
- **What is the availability of other foods sold at school?**