

Using the FNDDS to Analyze the Nutrient Content of School Meals

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13th National Nutrient Databank Conference
April 27, 2007

Presentation Overview

- **Brief background on School Nutrition Dietary Assessment Study-III**
- **Some challenges in coding and nutrient analysis of school menus with FNDDS**
- **Discussion of the special challenge of commercially prepared school foods**

School Nutrition Dietary Assessment Study-III



SNDA-III Research Questions

- **What is the food and nutrient content of USDA school meals?**
- **Are school meals meeting federal nutrient standards?**
- **What is the food and nutrient content of students' diets and the role of school meals and competitive foods?**

SNDA-III Study Design

- **Nationally representative samples of public school food authorities, schools, and students**
- **Data collected in spring 2005 from 398 schools and 2,314 students in grades 1 to 12**
 - **Detailed menu survey of foods offered and portions served during one week**
 - **24-hour dietary recalls (in-person)**

Food Coding and Nutrient Analysis

- Used the USDA dietary intake data system
 - Designed for *What We Eat in America*
 - Database was FNDDS 1.0
- ARS Food Surveys Research Group provided training and technical assistance

Coding School Lunch and Breakfast Menu Data with FNDDS



Challenges Encountered With Three Types of School Foods

- **Commercially prepared school foods**
- **Some school recipes**
- **Foods with incomplete descriptions**

Many Prepared Foods are Specially Formulated for School Food Service

- Less fat (reduced-fat pizza, low-fat beef patties)
- More vitamins and minerals (“super” donut)
- More protein (textured vegetable protein)

Commercially Prepared Foods Common in SNDA-III School Menus

- 1,356 unique items reported
- Offered on 86% of lunch menus, 51% of breakfast menus
- Most often entrées or meat/meat alternates

Used Placeholder Codes in FNDDS for Commercial School Foods

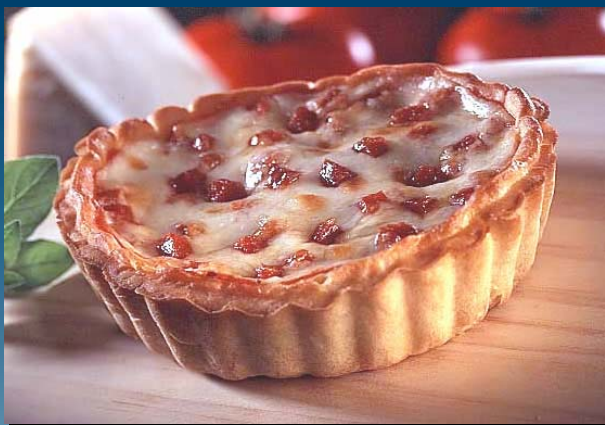
- Coders assembled list of products reported in menu surveys
- Identified 35 types of commercial foods (e.g., pizza with meat, breakfast burrito)
- Used “placeholders” to code these foods in FNDDS (e.g., 24198500 chicken feet)

Difficult to Obtain Nutrient and Ingredient Information

- Information often not available on the Internet
- Top 30 manufacturers of most frequently logged products contacted by phone:
 - Missing product codes problematic
 - Long response times
 - Uncooperative companies (“proprietary”)
- Available information limited to a few nutrients

Nutrient Information for Commercial School Food Product

Tony's® Galaxy Pizza Pepperoni



Nutrition Facts	
Serving Size: 5 oz. (141.75g)	
Amount per Serving	
Calories: 380	Calories from Fat: 180
	% Daily Value
Total Fat: 20 g	31%
Saturated Fat: 9 g	45%
Trans Fat: g	
Cholesterol: 35 mg	12%
Sodium: 900 mg	38%
Total Carbohydrate: 32 g	11%
Dietary Fiber: 1 g	4%
Sugars: 4 g	
Protein: 19 g	
Vitamin A: 10 %	Vitamin C: 0 %
Calcium: 30 %	Iron: 15 %
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	

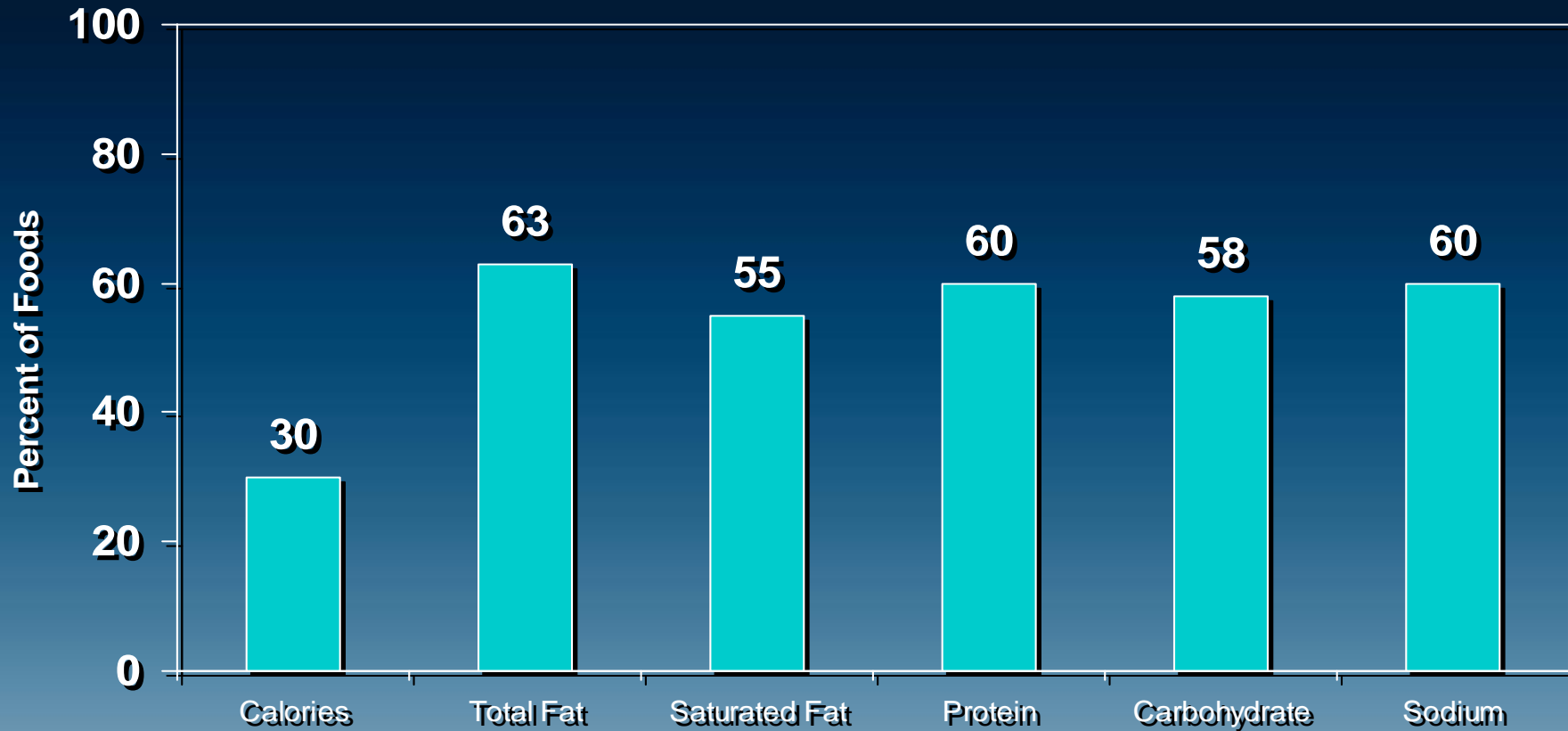
How Did Manufacturers' Nutrients Compare to FNDDS Values?

- Grouped similar foods into 38 food type groups (e.g., cheese pizza, pepperoni pizza)
- Selected 40 foods to represent these groups
- Compared manufacturers' nutrient values to closest values in FNDDS

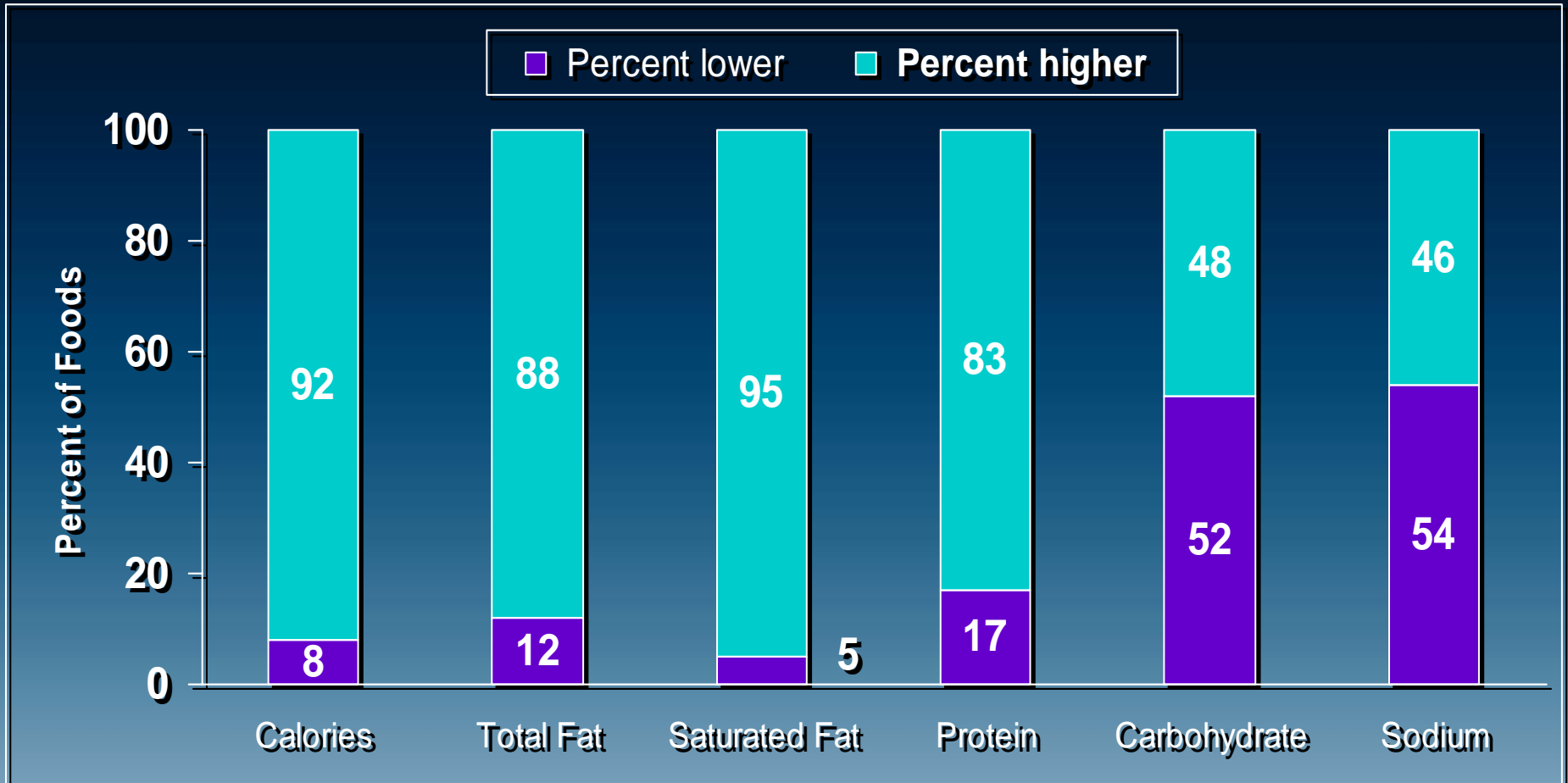
Nutrient Comparison for Beef Crumbles

	FOOD NAME	Calories (kcal)	Total fat (g)	Saturated fat (g)	Sodium (mg)
Manufacturer	USDA beef crumbles	172.1	10.4	4.1	551.2
FNDDS	Ground beef, extra lean, cooked (85%)	247.9	15.4	5.8	394.3
Difference		75.8	5.0	1.7	-156.9
% Difference		44.1	47.5	41.8	-28.5

Except for Calories, Nutrient Differences Were at Least 20% for More than Half of Foods (n=40)



When Difference > 20%, Values from FNDDS More Likely to be Higher than Manufacturers'



Enlisted Help from ARS Food Surveys Research Group

- **Sent 100 commercial products to ARS to obtain expanded set of nutrients**
 - **Foods commonly offered in menus**
 - **All food type group represented**
 - **Ingredient lists and label nutrients required**
- **ARS imputed values for all 61 nutrients and assigned food codes**

Nutrient Values from ARS Used to Replace Placeholders in Menu Data

- Used exact nutrients for the 100 products researched
- Used ARS values to impute nutrients for similar foods—within food type group
- Remaining commercial school foods coded in FNDDS

Conclusions

- **Commercially prepared foods were commonly reported in school menus**
- **Prepared school foods likely to differ in nutrient content from similar items in FNDDS**
- **FNDDS food codes tended to overestimate fat and calories for prepared school foods**
- **Meeting this challenge for SNDA-III required special expertise of ARS/FSRG staff and substantial MPR programmer time**

Conclusions (cont'd)

- **USDA/FNS, school districts, and researchers will continue to analyze school meals to assess effects of changes in school food policies**
- **Complete, accurate, and easily accessible nutrient information for commercially prepared school foods is needed**

Acknowledgements

**We thank the following ARS Food Surveys
Research Group staff for their assistance
and important contributions to the success
of the SNDA-III project:**

**Alanna Moshfegh
Betty Perloff
Lois Steinfeldt
Linda Ingwersen
Kaushalya Heendeniya**