



United States Department of Agriculture

# Linking IRI Data to USDA Nutrition Databases to Measure Diet Quality

Presentation to NEXT Team

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ERS

A joint effort by USDA's ERS, CNPP and ARS/FSRG, and Westat



# Economics of Healthy Diets

- Household Food Consumption Survey/Nationwide Food Consumption Survey
- Dietary Recall: CSFII/NHANES
- Consumer Panel/Nutrition Facts Panel
- FoodAPS
- Retail Scanner data



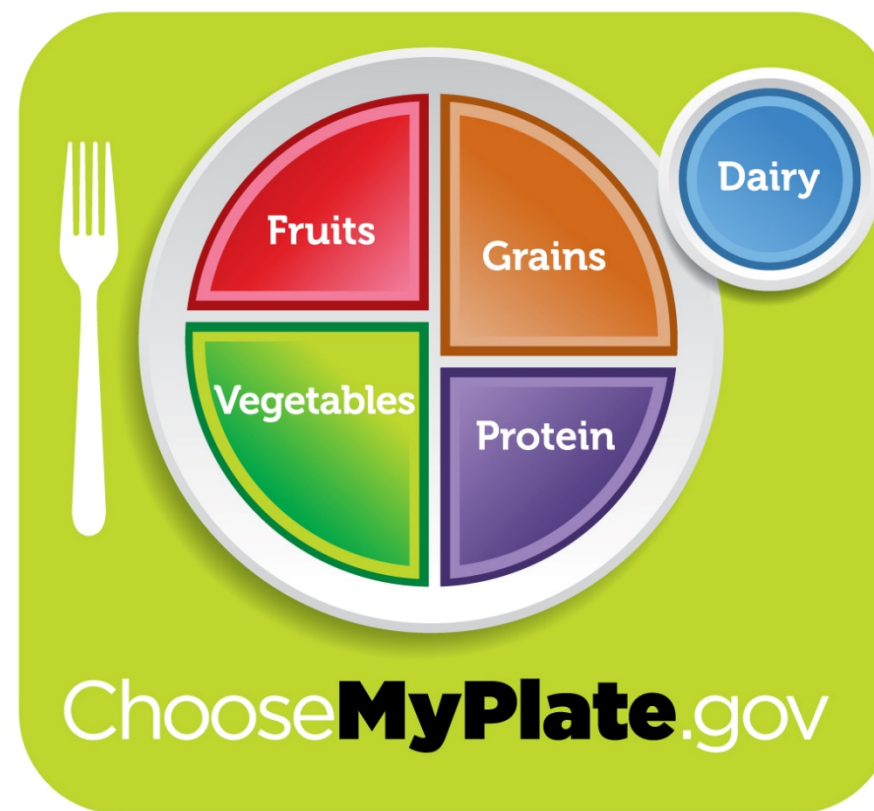
# Nutrition of Healthy Diets

- 4 Food Groups
- Food group quantity integrated into dietary recall
- Development of food patterns to follow *Dietary Guidelines for Americans*:
  - Food Pyramid
  - My Pyramid
  - My Plate



# Measuring a healthy diet

Nutrition Facts	
Serving Size 172 g	
Amount Per Serving	
Calories 200	Calories from Fat 8
% Daily Value*	
Total Fat 1g	1%
Saturated Fat 0g	1%
Trans Fat	
Cholesterol 0mg	0%
Sodium 7mg	0%
Total Carbohydrate 36g	12%
Dietary Fiber 11g	45%
Sugars 6g	
Protein 13g	
Vitamin A 1%	Vitamin C 1%
Calcium 4%	Iron 24%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
NutritionData.com	



Healthy Eating Index

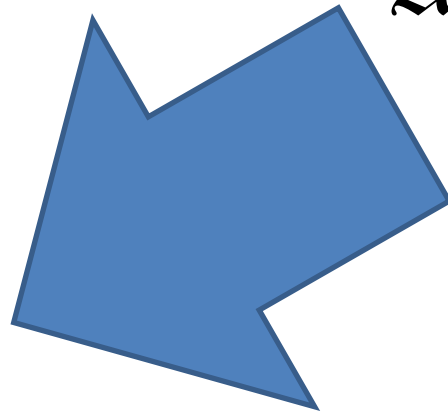
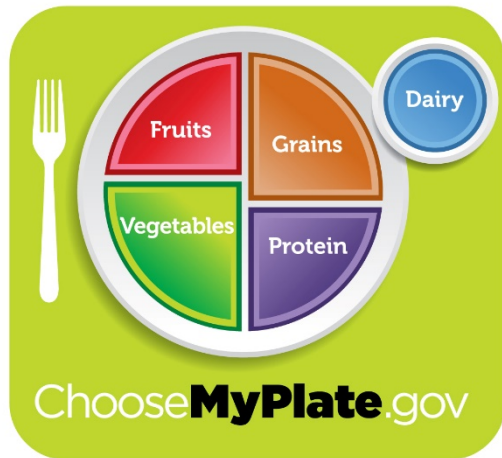
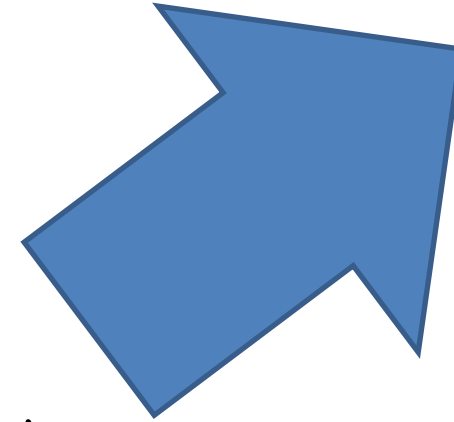




# Scanner Data

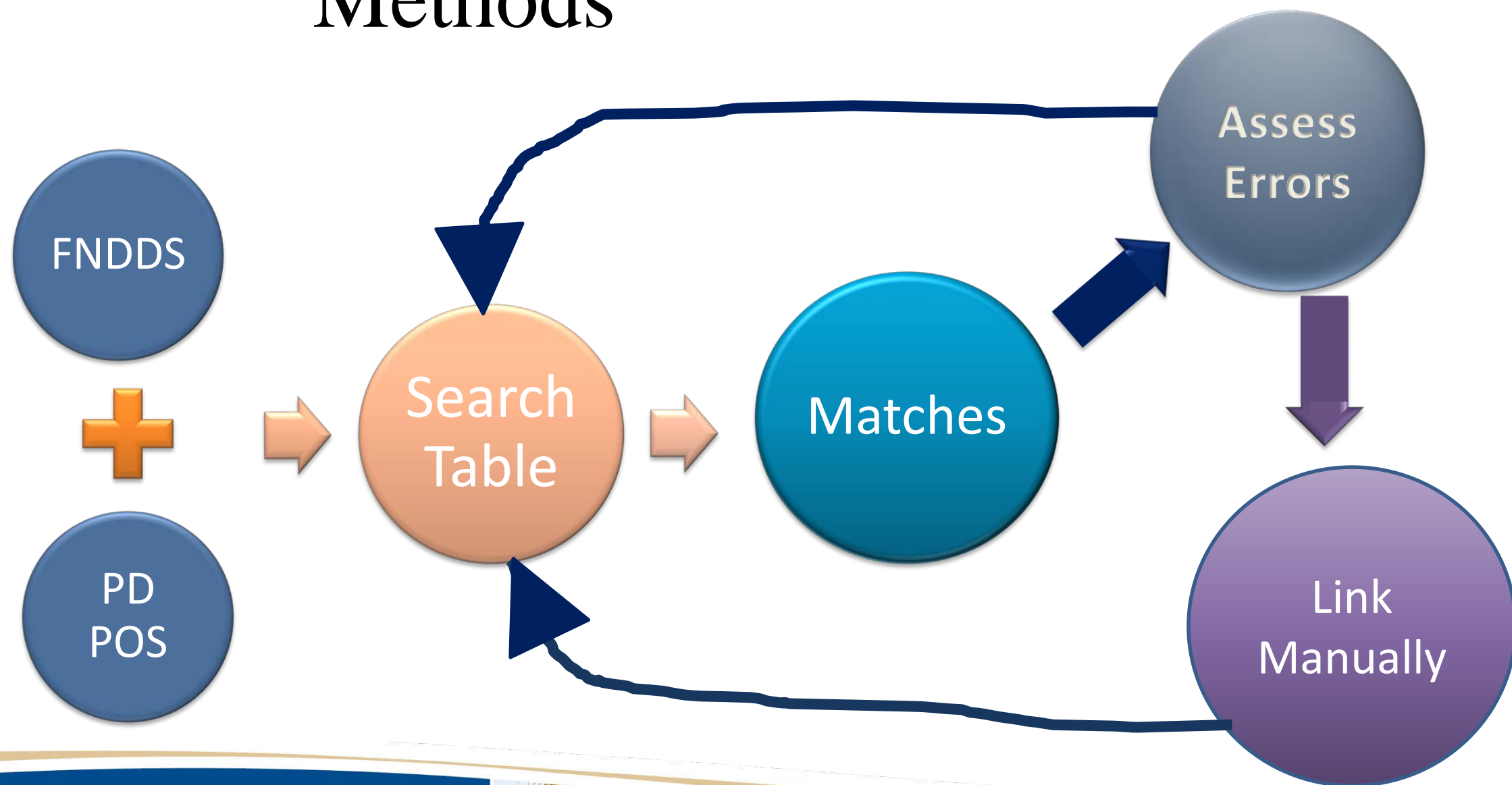
And then.....

*A Miracle Appears*





# Methods

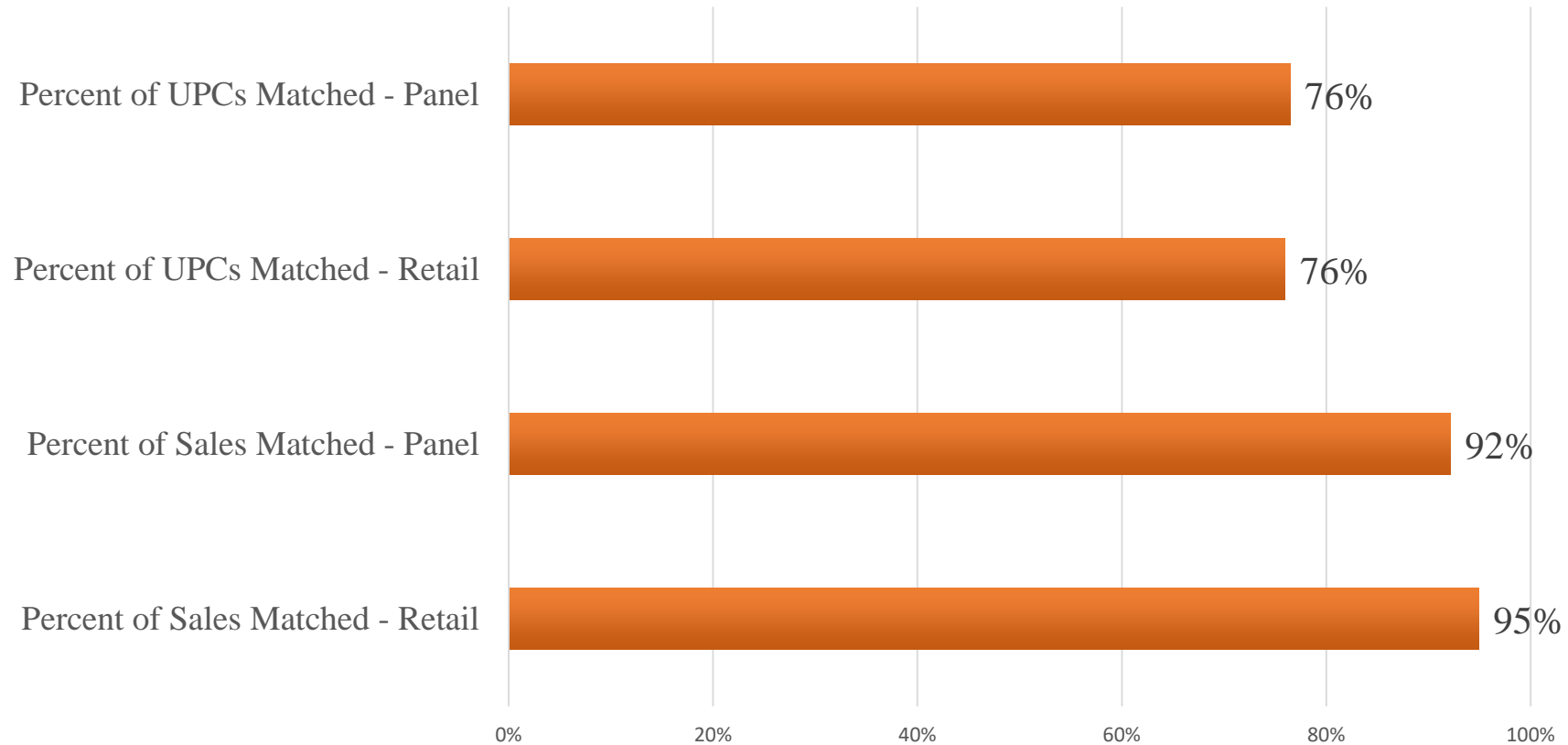


# Linking Table

UPC	EC	EC_Description
00112131722901	82105750	CANOLA AND SOYBEAN OIL
00225060332501	81203000	SHORTENING, NS AS TO VEGETABLE OR ANIMAL
IRI UPC not found	-90	EC Description missing
00339030622005	63135140	PEACH, COOKED OR CANNED, IN LIGHT OR MEDIUM SYRUP
00343117658901	63135140	PEACH, COOKED OR CANNED, IN LIGHT OR MEDIUM SYRUP
00414090023801	-99	No match available



# Results of Matching





# Aisles of Note

## High percent of sales matched:

- Soft drinks
- Shelf stable and frozen vegetables
- Produce
- Dairy
- Meat –99%
- Seafood – 99%

## Highest sales unmatched:

- Baking items
- Frozen and refrigerated meals
- Deli prepared items



# FNDDS Classification

1 – Milk and Milk Products

2 – Meat, Poultry, Seafood

3 – Eggs

4 - Plant Proteins

5 - Grains

6 – Fruits

7 – Vegetables

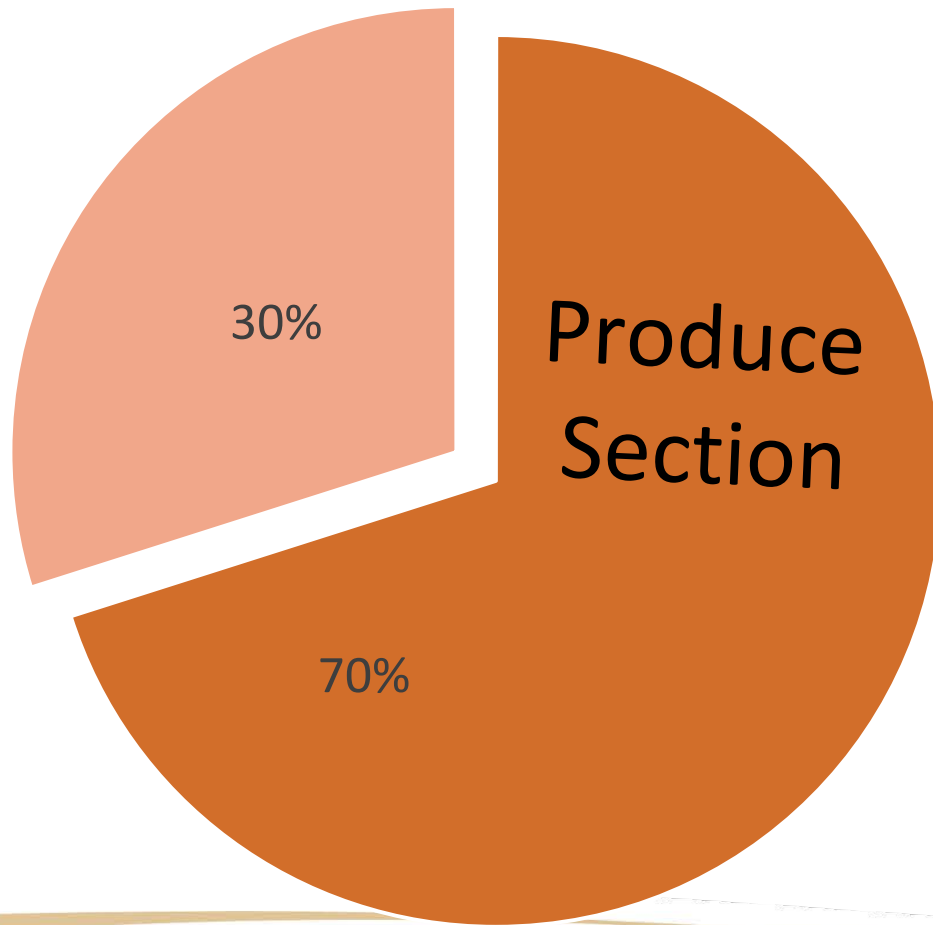
8 – Fats, Oils and Salad Dressings

9 – Sugars, Sweets, and Beverages

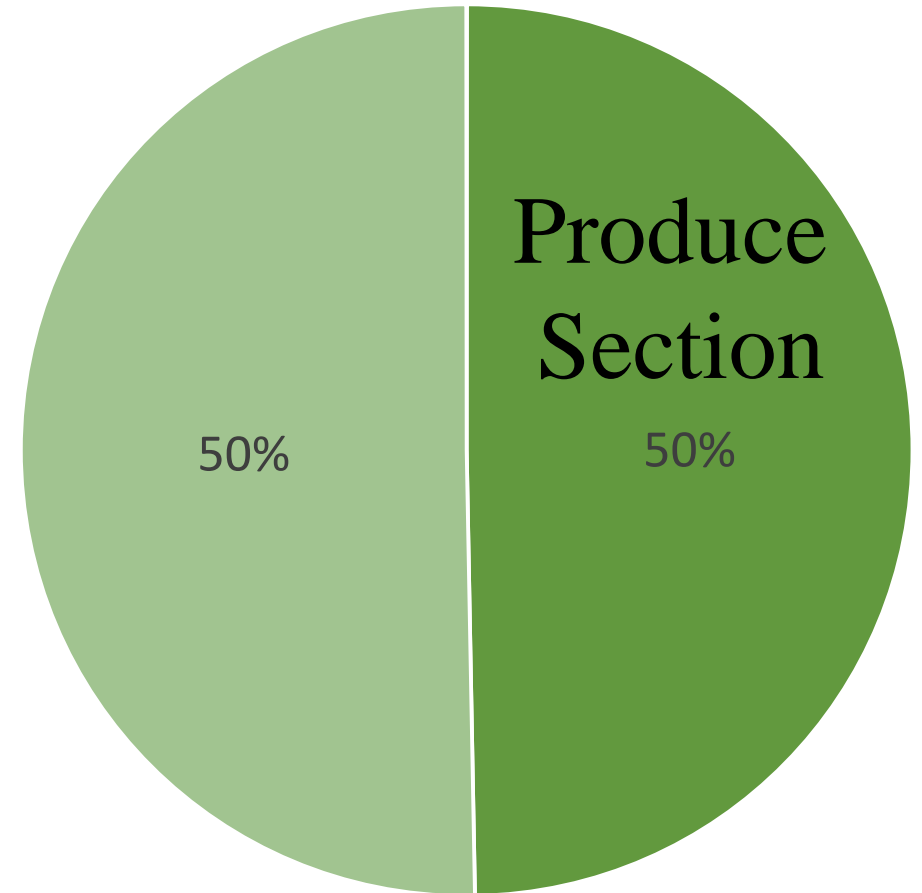


# Share of Sales

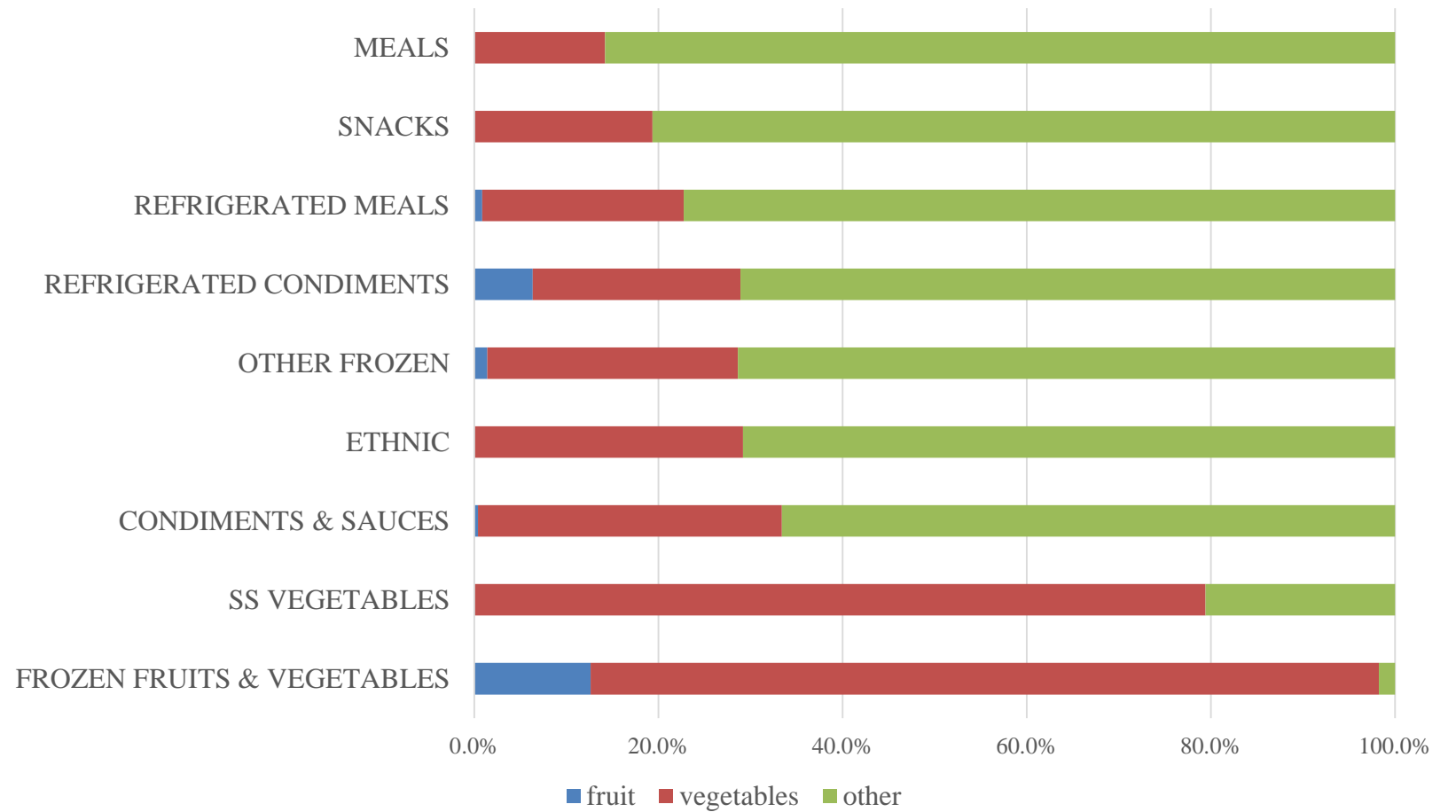
## Fruit



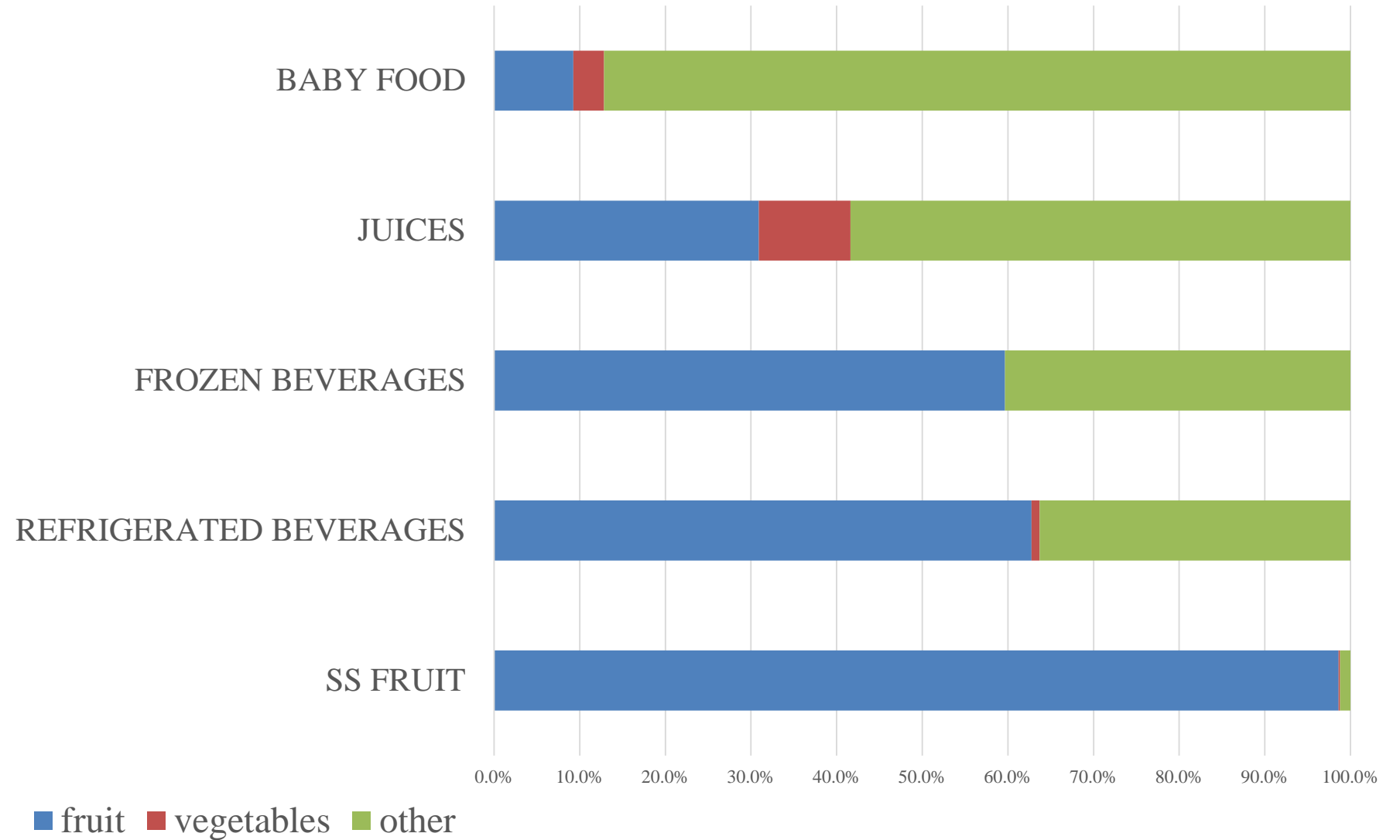
## Vegetables



# Vegetables in the store



# Fruit in the store

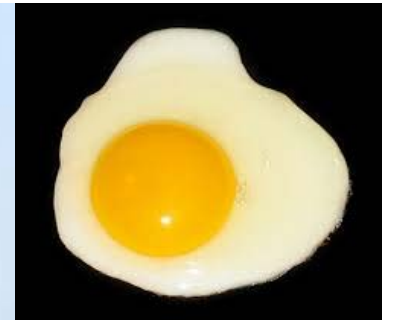




# IRI Product Dictionary

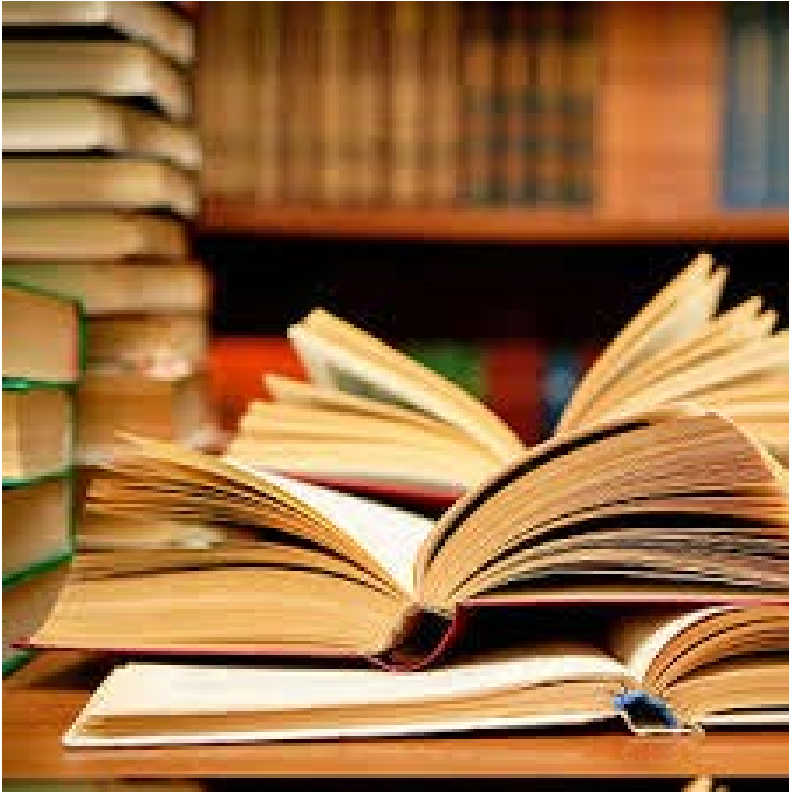


# USDA Nutrition Databases





# This is another miracle



- 359,572 yield factors from:
  - Agriculture Handbook 102
  - FICRCD
  - FNDDS
  - SR
  - Market Checks



# Nutrient Data Examples

Tomato Sauce  
(FNDDS - 744)  
21 FNDDS codes  
16,944 UPCs

BBQ Sauce  
(FNDDS 74406010)

1 FNDDS code  
1156 UPC with nutrient data

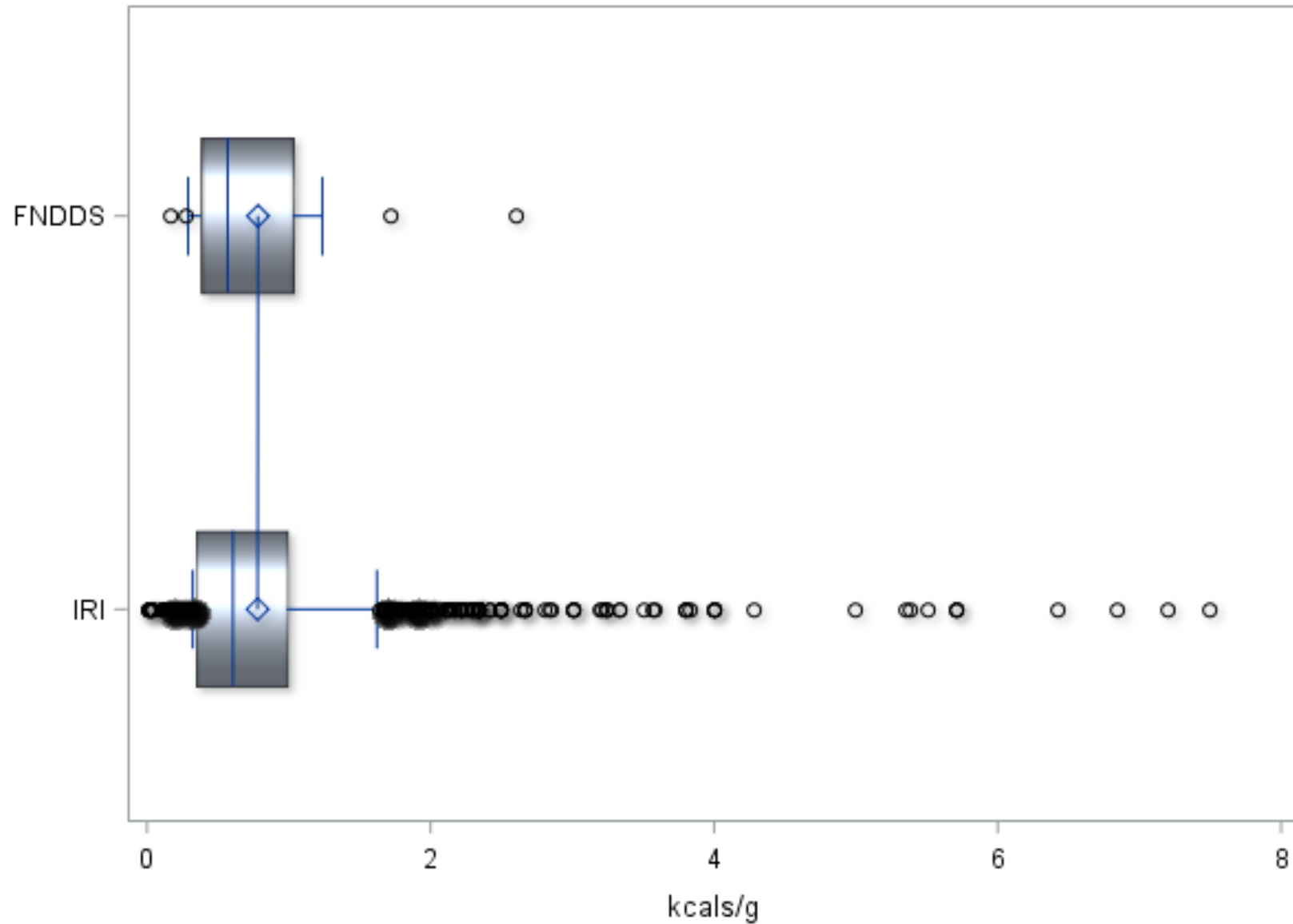


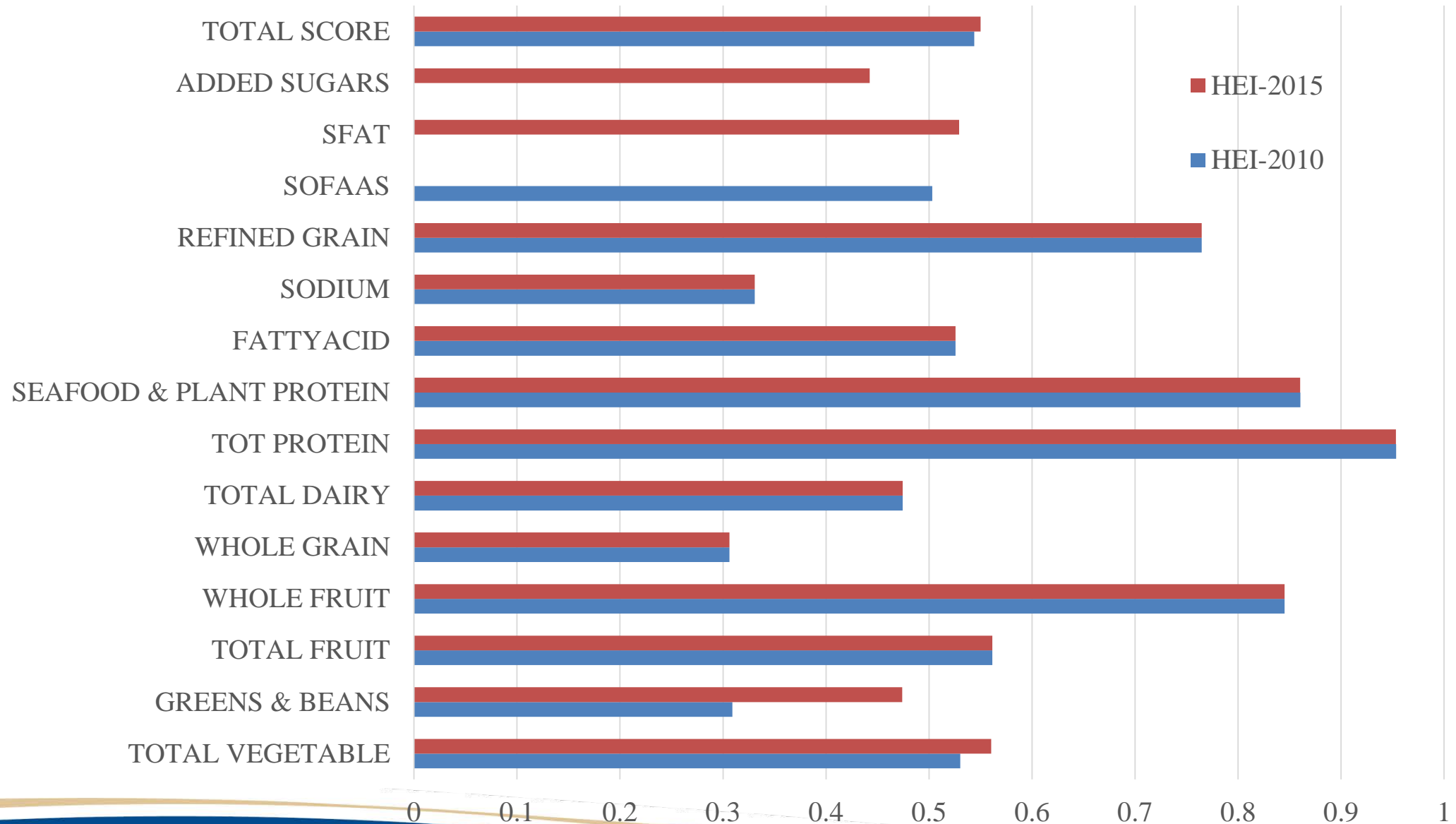
FNDDS – 1.72 kcals/g

IRI: 0-7.5 kcals/g  
Mean = 1.402



## Tomato Sauce Energy





# Validation Summary

- Coverage:
  - 95 percent of InfoScan sales
  - 92 percent of the Consumer Network sales
- HEI scores using 2013 Infoscan:
  - HEI-2010 = 54 (similar to NHANES, FoodAPS, and ERS Food Availability data)
  - HEI-2015 = 55





# Next Steps in Project

- Create Purchase and Acquisition Food (PAF) Groups
- Estimate prices for NHANES foods
- Update matches, conversion factors and price estimates for 2015 data





# Thank you

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