Using the Purchase to Plate Suite to meet USDA's mission

Andrea Carlson, PhD

Christopher Lowe, MS

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Purchase to Plate Team

ERS:

Andrea Carlson*

Christopher Lowe

Elina Page

Mark Denbaly

Center for Nutrition Policy and Promotion (CNPP):

Kristin Koegel

Kevin Kuczynski

Kevin Mathieu Meyers

TusaRebecca Pannucci

Westat:

Thea Palmer Zimmerman*

Amber Brown

Catlin Carter

Carina E. Tornow

*Co-Principal Investigators

Purchase to Plate Suite

- Purchase to Plate Crosswalk (PPC):
  - Allows scanner data users to measure the healthfulness of store purchases
- Purchase to Plate Price Tool (PPPT):
  - Allows users to estimate custom prices for NHANES foods
- Purchase to Plate Ingredient Tool (PPIT):
  - Breaks NHANES foods back into ingredients, based on U.S. retail food purchases

Purchase to Plate Crosswalk

Allows scanner data users to import the nutrition data from the USDA Nutrition Data
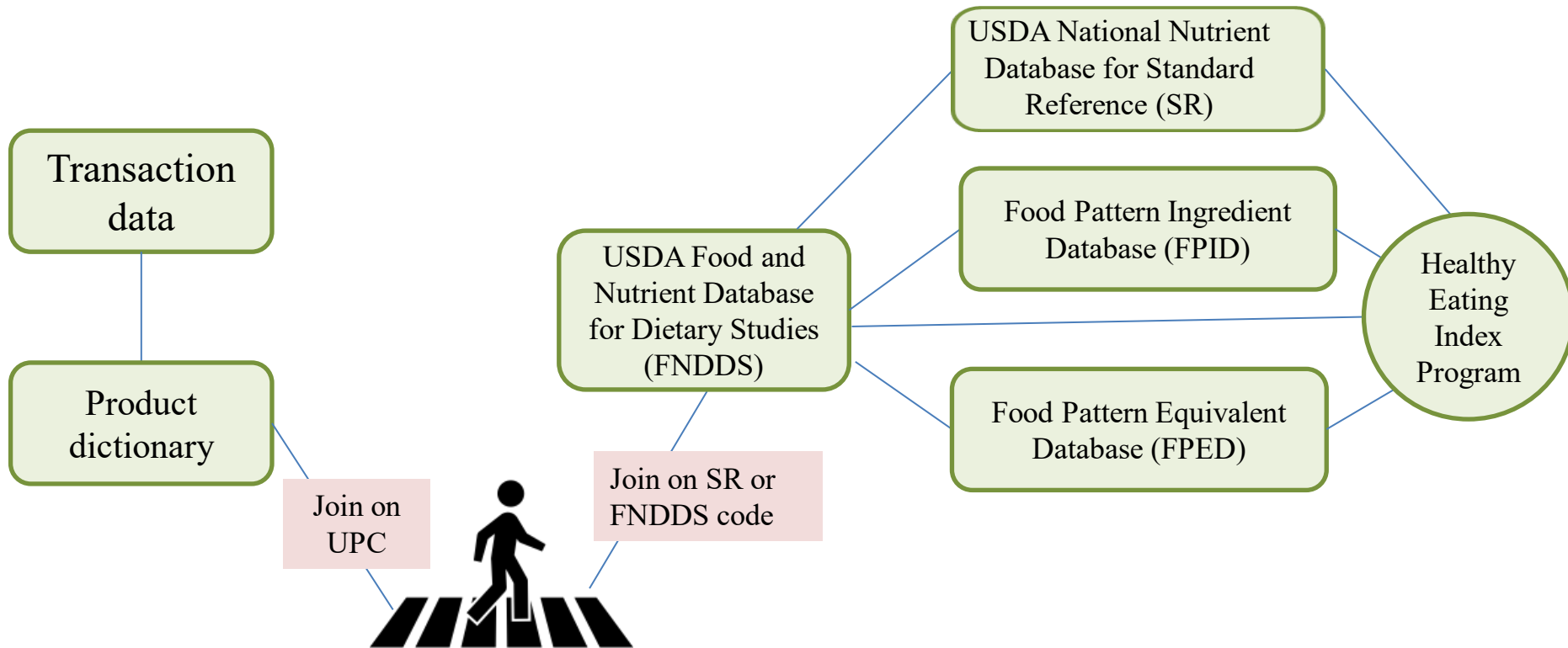
Healthy Eating Index

- Measure of compliance with the *U.S. Dietary Guidelines for Americans*
- Used by economists, nutritionists, and epidemiologists
- Updated when the DG'S updated
- HEI – 2015 is the most current
- 100 total points
  - 13 components
  - Higher score = better compliance

https://epi.grants.cancer.gov/hei/

Scanner Data

USDA Nutrition Data

Transaction data

Product dictionary

Join on UPC

USDA Food and Nutrient Database for Dietary Studies (FNDDS)

Join on SR or FNDDS code

USDA National Nutrient Database for Standard Reference (SR)

Food Pattern Ingredient Database (FPID)

Food Pattern Equivalent Database (FPED)

Healthy Eating Index Program

Choose**MyPlate**.gov

User Guide for the Purchase to Plate Crosswalk Data Files: FNDDS 2015/2016 to IRI 2015/2016

Christopher Lowe[1], Andrea Carlson[2], Elina T. Page
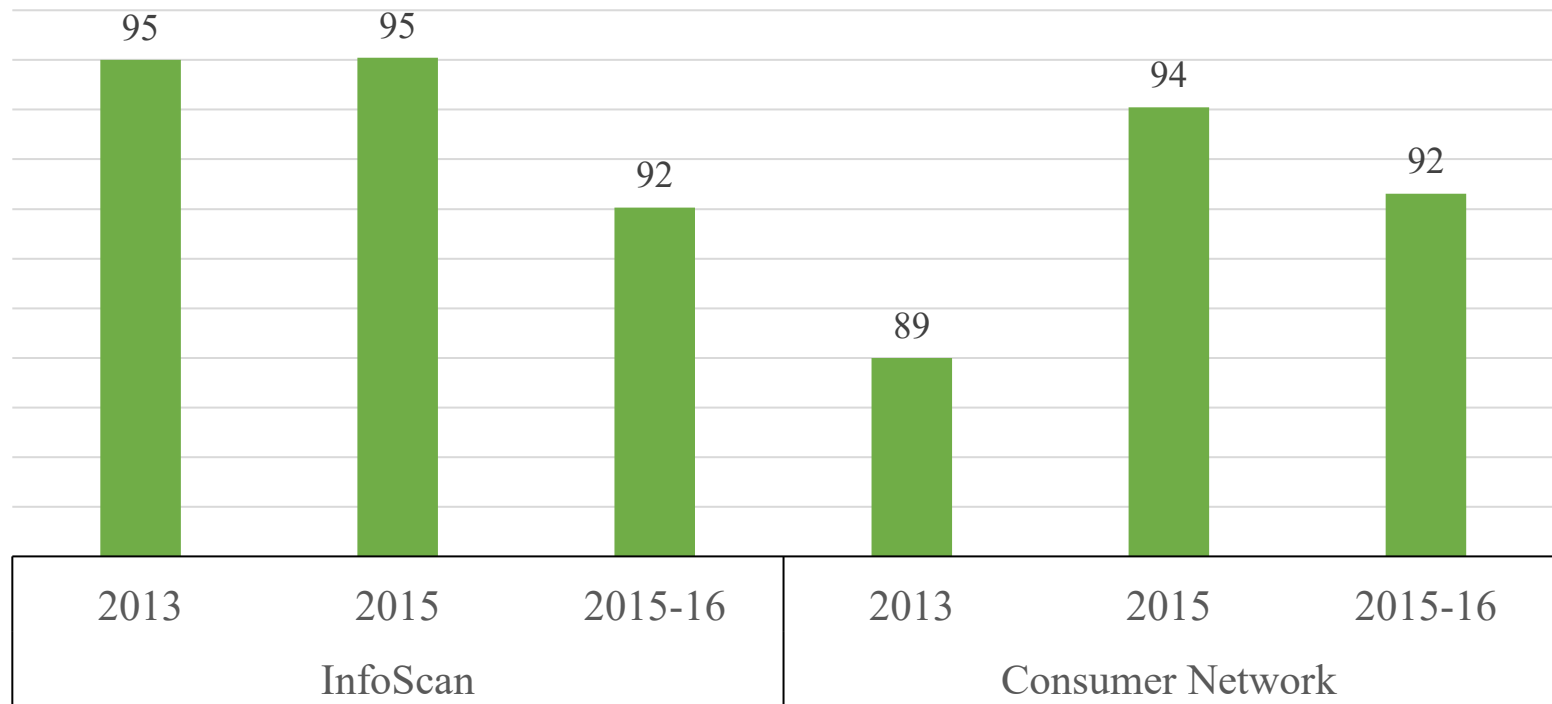
U.S. Department of Agriculture, Economic Research Service
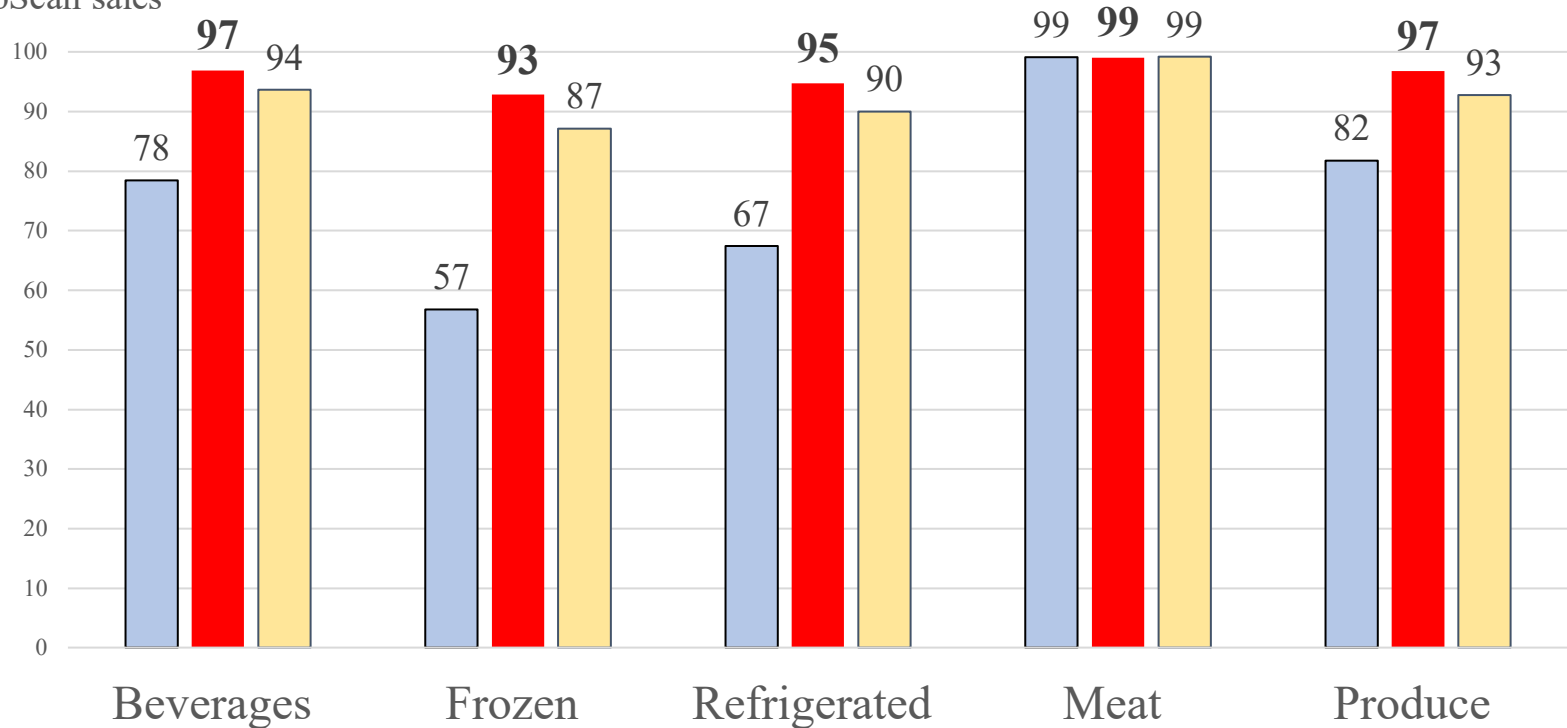
February 2022

Coverage of the PPC

Percent of sales

Source: ERS using IRI Infoscan and The Consumer Network 2013, 2015, 2016

Coverage of 2015 PPC in Selected Years
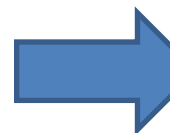
% InfoScan sales

Bar chart showing % InfoScan sales coverage by category for 2008, 2015, and 2016.

- Beverages: 2008 = 78, 2015 = **97**, 2016 = 94
- Frozen: 2008 = 57, 2015 = **93**, 2016 = 87
- Refrigerated: 2008 = 67, 2015 = **95**, 2016 = 90
- Meat: 2008 = 99, 2015 = **99**, 2016 = 99
- Produce: 2008 = 82, 2015 = **97**, 2016 = 93

Legend: ☐ 2008 ■ 2015 ☐ 2016

USDA Economic Research Service
www.ers.usda.gov

Purchase to Plate Price Tool

NHANES and WWEIA

- NHANES – National Health and Nutrition Examination Survey
  - 5,000 individuals each year
  - Released in 2-year cycles
  - detailed medical exam
- What We Eat in America (WWEIA)
  - two 24-hour dietary recalls
  - Nutrition data for foods as ingested

Sample recipe from FNDDS

WWEIA Food		Ingredient	Amount (g)
Vegetables, NS as to type, cooked, fat not added in cooking	1	Vegetables, mixed, frozen, cooked, boiled, drained, without salt	100
	2	Salt, table	0.6
Carrots, cooked, NS as to form, fat not added in cooking	1	Carrots, cooked, boiled, drained, without salt	155.2
	2	Salt, table	0.96
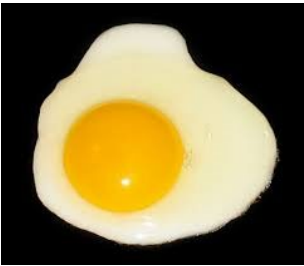
Recipes to price "as eaten" food

- Ingredients used are purchased from stores

- Convenience foods used

- Almost all foods prepared in 30 minutes or less

Can use a subset of InfoScan

Examples

- Store type
- Geographic region
  - Using new store weights
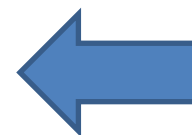- Organic food
- Private label vs. brand

Considerations

- Tool will not create a price if price of an ingredient is missing
- Researcher responsible for ensuring adequate number of observations for each ingredient price.

Purchase to Plate Ingredient Tool

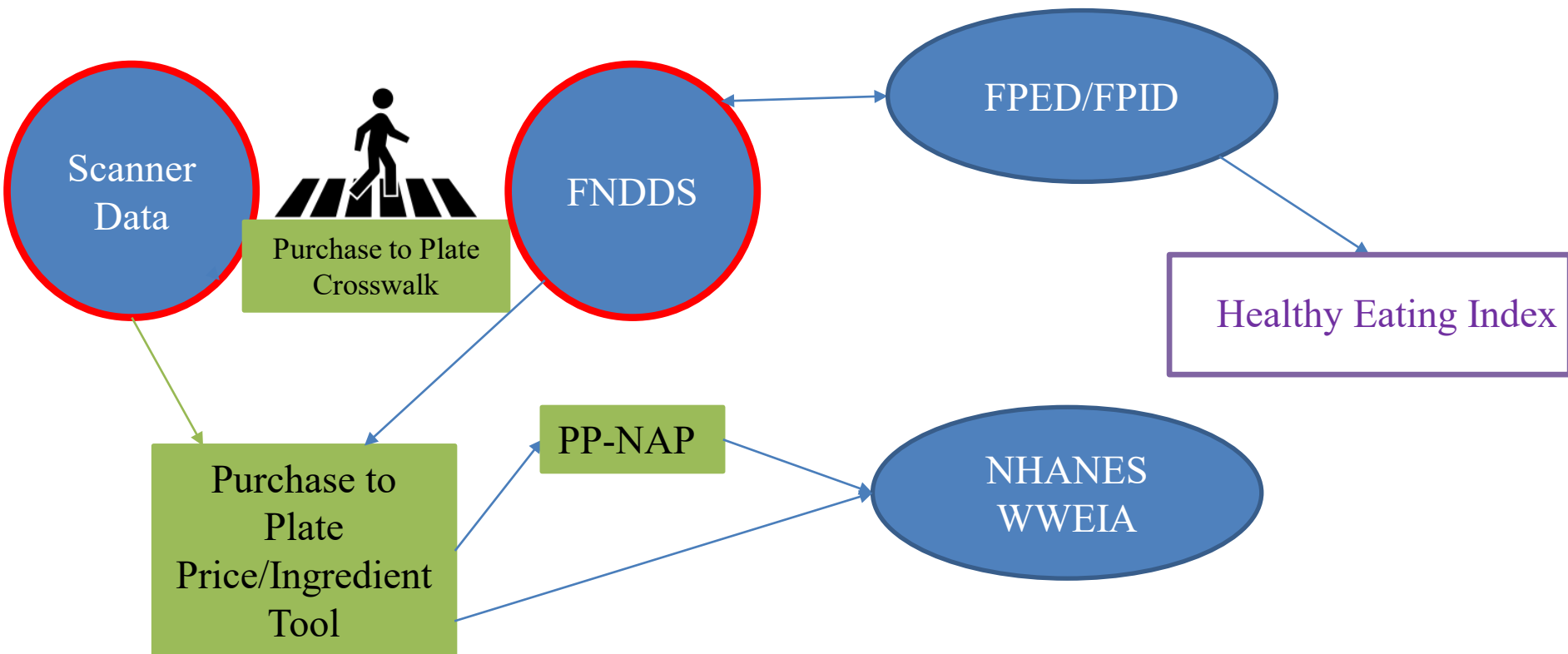| Product --- USDA Food = cooked rice	Subcode_IRIForm	Amount to Purchase (g)
Rice, brown, long-grain, raw	RFG-NRTS	0.00
Rice, brown, long-grain, raw	SS-NRTS	**2.35**
Rice, white, long-grain, regular, raw, enriched	RFG-NRTS	0.01
Rice, white, long-grain, regular, raw, enriched	SS-NRTS	**28.29**
Rice, white, long-grain, regular, enriched, cooked	SS-RTS	1.76
Rice, white, glutinous, unenriched, cooked	RFG-RTS	0.05
Rice, cooked, NFS	RFG-RTS	0.00
Rice, white, cooked, NS as to fat added in cooking	FZ-NRTS	0.27
Rice, white, cooked, fat added in cooking, made with oil	FZ-NRTS	0.38
Rice, brown, cooked, fat added in cooking, made with oil	FZ-NRTS	0.56
Rice, brown, cooked, fat not added in cooking	SS-NRTS	0.02
Rice, brown, cooked, fat not added in cooking	SS-RTS	1.42
Yellow rice, cooked, fat not added in cooking	SS-RTS	0.03
Rice, white, cooked, glutinous	SS-NRTS	0.38

Options for ingredient grouping

IRI Form

- Shelf stable
- Refrigerated
- Frozen
- Ready to serve/drink
- Ready to heat
- With refuse
- No refuse
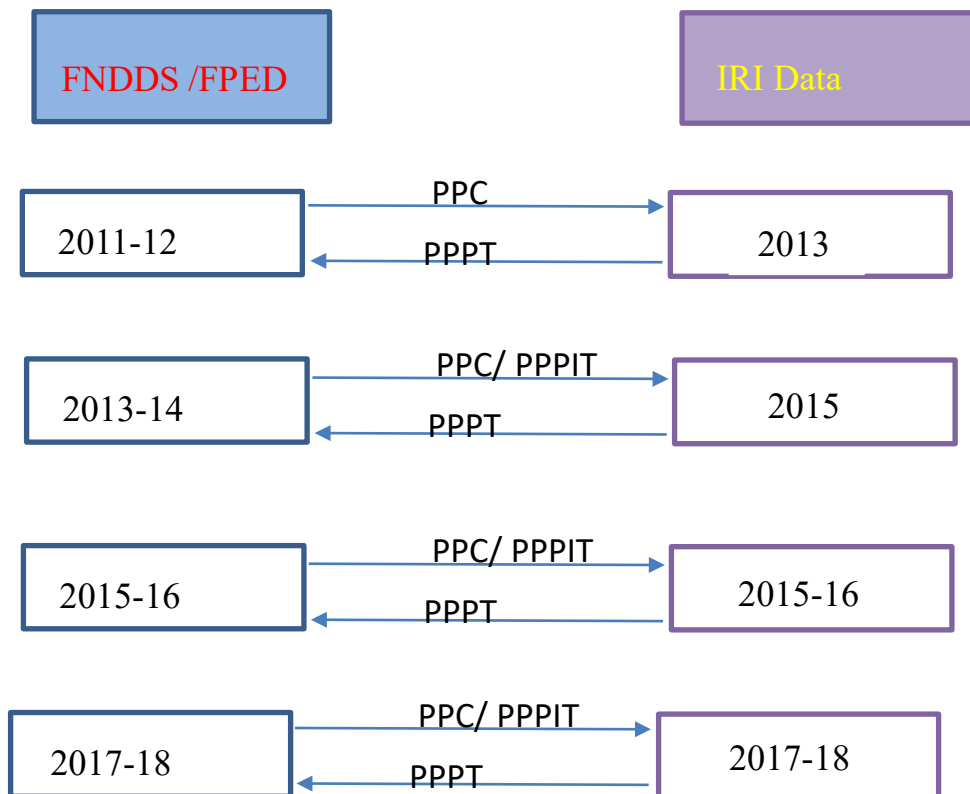
ERS Food Purchase Groups

- New ERS value added product for IRI data
- Categorizes foods by
  - Ingredients
  - Nutritional content
  - Convenience
  - Store aisle
- FoodAPS groups

Purchase to Plate Suite

Purchase to Plate Suite

FNDDS /FPED		IRI Data

2011-12 → PPC → **2013**
2011-12 ← PPPT ← **2013**

2013-14 → PPC/ PPPIT → **2015**
2013-14 ← PPPT ← **2015**

2015-16 → PPC/ PPPIT → **2015-16**
2015-16 ← PPPT ← **2015-16**

2017-18 → PPC/ PPPIT → **2017-18**
2017-18 ← PPPT ← **2017-18**

PPC – Purchase to Plate Crosswalk imports FNDDS/FPED data into scanner data

PPPT – Purchase to Plate Price Tool estimates prices for NHANES/WWEIA foods

PPPIT – Purchase to Plate Ingredient Tool estimates the purchase weight for ingredients in NHANES/WWEIA foods

Limitations of the Purchase to Plate Suite

- PPC
  - Match rate varies by supermarket category.

  - Not tested with years other than creation year—check coverage rate of PPC

- PPPT/PPIT
  - Price differences might be based on price calculation method.

  - Not fully tested with subdivisions of IRI data

  - Generates average prices which are not appropriate for most demand models

- Retail data:
  - 15% of stores; half of all retail food sales recorded in the Economic Census.

  - Purchases represent most large chains so breakdowns may not represent what is available at smaller and independent stores

  - Not all stores provide data to IRI or allow USDA access to it

- Household data:
  - Under reporting by participants

  - Does not use random weight data

Thank you

- Andrea Carlson—

Andrea.Carlson@USDA.gov

- Christopher Lowe—

Christopher.M.Lowe@usda.gov

IRI topic page:

https://www.ers.usda.gov/topics/food-markets-prices/food-prices-expenditures-and-establishments/using-scanner-data/

Economic Research Service
www.ers.usda.gov