Are healthy foods really more expensive?
New ways to estimate nutrient cost

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Being incorrect with MyPlate

Examples of Incorrect Usage

Examples on this page demonstrate some incorrect uses of the MyPlate icon. In each case, an alteration to the artwork has been made. **DO NOT alter the MyPlate icon.**

- Altering the size of the food groups
- Changing established colors of food groups
- Changing established colors of placement frame or removing icon elements
- Changing fonts and/or URL
- Removing the URL or changing the arrangement of icon elements
- Removing the placement frame
MyPlate: What is distribution by volume?

- Fruits: 2 cups
- Grains: 6 oz.
- Vegetables: 2.5 cups
- Protein: 5.5 oz.
- Dairy: 3 cups
MyPlate: What is distribution by weight?

- Grains: 180g.
- Protein: 200g
- Vegetables: 250g
- Fruit: 165g.
MyPlate: What is distribution by calories?

- Grains: 608 kcal
- Protein: 370 kcal
- Vegetables: 207 kcal
- Fruit: 134 kcal

Total: 608 kcal
MyPlate: What is distribution by cost?

Based on meat, poultry, fish – not eggs, beans

ChooseMyPlate.gov
Why the big differences?
Fruit and vegetables have low energy density.

Data for 1387 foods by USDA 9 major food groups
Fruit and vegetables have high energy cost.

Data for 1387 foods by USDA food group

Fruit and vegetables have high energy cost.
Some key thoughts about fruit and vegetables (F+V) on MyPlate

• Some F+V have high cost per calorie
• F+V have high water content and low energy density.
• F+V provide many more nutrients than calories.
• Many F+V provide some key nutrients at a very affordable cost
New analyses of NHANES data 2001-2008

- Data from the first 24-h recall from 4 cycles of NHANES: 2001-2; 2003-4; 2005-6, and 2007-8.
- Final analysis sample was 33,283 persons ages >3y.
- There were 19,132 adults (ages >20y) and 14,090 children aged 3-19y.
- Nutrient composition data from Food and Nutrition Database for Dietary Studies (FNDDS 2.0).
- Data for >6,000 foods by 9 major food groups.
- National food prices from the USDA Center for Food Policy and Promotion (CNPP) food prices database.
Fruit and vegetables contribute little dietary energy to US diets.

Children (3-19y)

Adults (>20y)

Fruit and vegetables contribute only 12% of energy
Fruit and vegetables provide more vitamin C than calories to US diets

Fruit and vegetables contribute >70% of vitamin C
Fruit and vegetables provide more fiber than calories to US diets

Fruit and vegetables contribute >60% of vitamin C
Fruit and vegetables provide more potassium than calories to US diets

Fruit and vegetables contribute >60% of vitamin C
Fruit and vegetables provide more beta-carotene than calories to US diets

Fruit and vegetables contribute >60% of vitamin C
Fruit and vegetables provide much more lutein + zeaxanthin than calories to US diets

Children (3-19y)
Adults (>20y)

Fruit and vegetables contribute >60% of vitamin C
Which fruits and vegetables (fresh, frozen or canned?) provide key nutrients at lowest cost?

- National food prices data from USDA 2008 Fruit and Vegetable Price Database
- Nutrient data from USDA FNDDS 2.0
- NEW COST METRIC: Estimated cost in dollars per 10% DV for some key nutrients
Cost of 10% DV Vitamin C: Fruit and Fruit Juices

Notice – fresh, frozen, canned are all good value!

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0
Cost of 10% DV Vitamin C: Vegetables

Notice – fresh, frozen, canned are all good value!

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0
Cost of 10% DV Fiber: Fruit and Fruit Juices

Bananas, oranges, dried plums!

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0
Cost of 10% DV Fiber: Vegetables

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0
Cost of 10% DV Potassium: Fruit and Fruit Juices

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0
Cost of 10% DV Potassium: Vegetables

Potatoes, potatoes!

Vegetables provide potassium at lowest cost!

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0
NEW Combined affordability metric (CAM score)

• For each nutrient, ranked fruits/vegetables from lowest cost per 10% DV (rank = 1) to highest cost per 10% DV.

• Average of rank for 7 nutrients used to identify most nutrient-dense fruits/vegetables that were also the most AFFORDABLE.

• Key nutrients: Vitamin C, fiber, potassium, folate, vitamin A, calcium, magnesium.
Combined affordability metric:
Fresh vegetables CAM score

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0

Foods may have higher score due to low nutrient density or high price per cup.
Combined affordability metric: Fresh fruit CAM score

Data source: 2008 USDA Fruit and Vegetable Price Database and FNDDS 2.0

Foods may have higher score due to low nutrient density or high price per cup.
Question:

Why is USDA trying to remove inexpensive vegetables (e.g. potatoes) from the school lunch?