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Do Healthy Foods Cost More? It Depends on How You Measure the Cost

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Introduction

The common perception that healthy foods cost more leads some consumers to believe that they cannot afford to consume a healthy diet. This perception may be based on a variety of factors, but how the cost is measured may play a large role.

Data

1. National Health and Nutrition Examination Survey (NHANES) 2003-04: The 24-hour recall data include the amount for each food item consumed and the nutrient content.
2. Pyramid Equivalent Database (PED) version 2: This database gives the number of pyramid equivalents (cups of fruits and vegetables and ounce equivalents of grains).
3. USDA's Center for Nutrition Policy and Promotion Food Prices Database 2003-04: These data provide the cost in dollars per 100 edible grams.

Objective

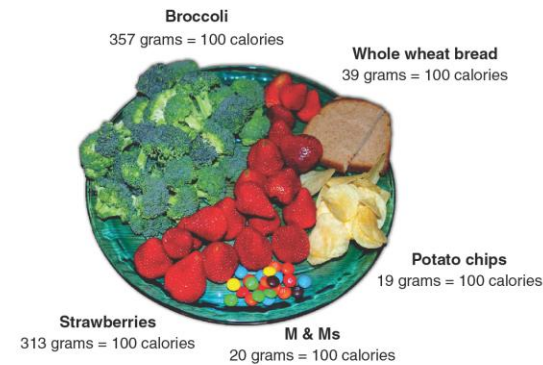
To compare the cost of food using different cost metrics.

Metrics used

We consider the following metrics in our analysis of how much food costs.

- **Cost of energy (\$/kilocalorie):** Recent nutrition literature on food costs has focused on this metric.
- **Cost of a standard portion:** The cost of consuming recommended amounts or the amounts that are normally consumed.
- **Cost of edible weight (\$/edible pound):** The edible weight of food is a better indicator of satiety than the number of kilocalories.

The amount of food differs in each cost measure. For example, the amount of each food shown in the picture contains about 100 kilocalories.



Method

To compare the different food cost metrics, we established a standard portion size for each food and then calculated the cost metric for each consumed food reported in NHANES. In this poster, we group and discuss only healthy foods from underconsumed food groups—fruits, vegetables, and whole grains—and compare these with foods that should be consumed in moderation (moderation foods).

Standard portion:

For most foods, we use the amounts recommended in the 2005 Dietary Guidelines for Americans—e.g., ½ cup of fruits and vegetables and 1 ounce of grain. When standard amounts are not provided (e.g., for foods high in fat, sodium, or added sugar and low in nutrients), we estimated the standard portion as the average amount consumed among adults who reported in NHANES that they consumed the foods.

Food group definition:

Defined by the amount of pyramid equivalent in a standard portion.

Whole grains, vegetables, and fruits:

- Foods that have at least ½-ounce equivalent or ¼ cup of the particular food group,
- Foods that have less than ½ cup or ¼ ounce of other food groups, or

- Foods that are not high in sodium, added sugar, or saturated fat (see moderation foods).

Moderation foods:

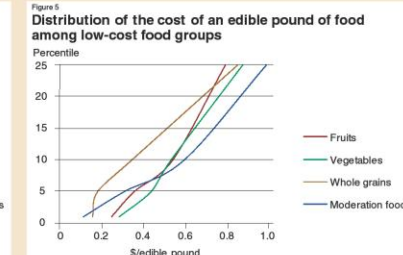
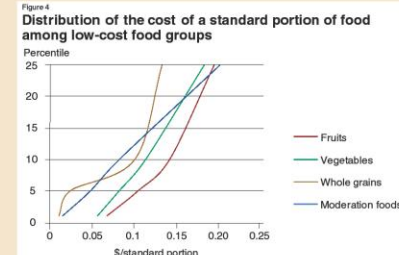
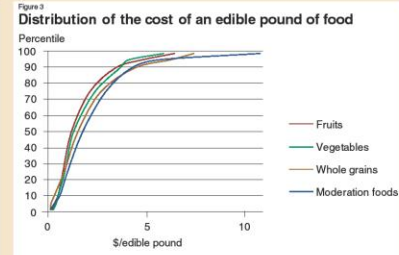
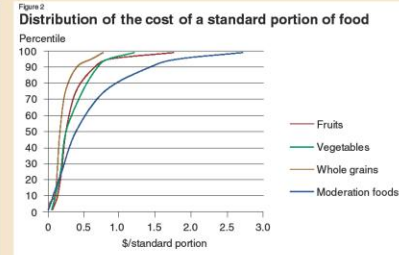
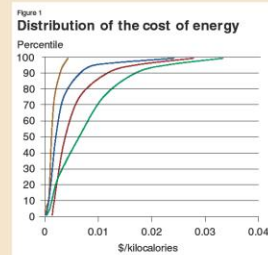
Foods that do not contain adequate pyramid servings or contain at least:

- 480 milligrams of sodium,
- 1 teaspoon of added sugar, or
- 3 grams of saturated fat.

Results

Figures 1-3 show that the ranking of most expensive to least expensive food groups changes with each metric. In particular, most fruits and vegetables, which have less energy in a standard portion, have higher energy costs than do whole grains or moderation foods (fig. 1). However, most fruits, vegetables, and whole grains have lower standard portion costs than do moderation foods (fig. 2) and are not more expensive per edible pound than moderation foods are (fig. 3).

Budget-conscious consumers will likely focus on the cheapest foods, such as those below the 25th percentile (figs. 4-5). For both standard portion costs and weight costs, the cost of moderation foods starts out low at the 1st percentile but is the highest by the 25th percentile.



Conclusions

When using dollars per edible pound or per standard portion, the healthier foods—fruits, vegetables, and whole grains—tend to cost less than the moderation foods. Although fruits and vegetables have higher costs per calorie than moderation foods, this cost metric does not make sense in a country like the United States where most individuals consume too many calories while failing to consume a healthy diet. The costs per standard portion and costs per edible pound are better measures of satiety than kilocalories are. The results show that whole grains, fruits, and vegetables are not more expensive and are often less expensive than moderation foods.

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