

FOOD PORTIONS AND SERVINGS

How Do They Differ?

INSIGHT 11

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Consumers appear to be confused about serving sizes—what they mean and how to use them. Complicating the problem are large portions of food that are becoming the norm in many eating establishments, which differ from the servings in the Food Guide Pyramid (FGP) and on the Nutrition Facts Label on food packaging. For example, a large deli bagel might weigh 6 ounces (about 6 FGP servings of bread) while the ½ medium bagel listed on the Food Guide Pyramid weighs 1 ounce (about 1 serving of bread). With so much variation in portions of foods, it's easy for consumers to become confused about what serving sizes mean and how to use them.

What's a Food Guide Pyramid Serving?

The Food Guide Pyramid serving is a unit of measure used to describe the total amount of foods recommended daily from each of the food groups. Criteria for selecting the serving sizes are identified in the box. Larger portions count as more than one serving; smaller portions count as partial servings. The Pyramid shows a range of servings for each of the five major food groups. The number of servings an individual requires depends on how many calories he or she needs. For example, the Pyramid suggests 6 to 11 servings of grain products each day. An individual consuming 1600 calories would need 6 servings of grains while an individual consuming 2800 calories would need 11 servings of grains. Additional information on what counts as one food guide serving unit and the suggested number of servings for various calorie levels is reported in *The Food Guide Pyramid (1)*.

What's a Food Label Serving?

A food label serving is a specific amount of food that contains the quantity of nutrients listed on the Nutrition Facts Label. The 1990 Nutrition Labeling and Education Act (NLEA) specified reference serving amounts for almost 200 product categories to be used on labels. To make food label servings consumer-friendly, the serving sizes are expressed in household measures, such as cups, ounces, or pieces, as well as grams, and generally reflect the amount an individual might reasonably consume each eating occasion.

Food Label vs. Food Guide Pyramid Serving Sizes—How Do They Differ?

For many food items, the serving size in the Food Guide Pyramid and on the food label are the same (e.g., ½ cup canned fruit or vegetables). However, some serving sizes differ because the Pyramid and the food label serve different purposes. The Pyramid describes serving units for each food group (e.g., ½ cup chopped or cooked vegetables and 1 cup raw leafy vegetables) so that they will be easy to remember and help consumers select a healthful diet. The food label serving unit is specific for each product category and designed to help consumers compare nutrient information on a number of food products within a category. The food label serving units cover mixed dishes (e.g., frozen entrees) as well as simple items (e.g., canned fruits). Pyramid serving units are primarily for simple food items, such as fruits, vegetables, and plain grain products.

Serving Sizes in the Food Guide Pyramid are based on four criteria (2,3):

1. Amount of foods from a food group typically reported in surveys as consumed on one eating occasion;
2. Amount of foods that provide a comparable amount of key nutrients from that food group, for example, the amount of cheese that provides the same amount of calcium as 1 cup fluid milk;
3. Amount of foods recognized by most consumers (e.g., household measures) or that can be easily multiplied or divided to describe a quantity of food actually consumed (portion);
4. Amount traditionally used in previous food guides to describe servings.

Additionally, the Pyramid serving size specifies the amount of a food that provides a designated amount of key nutrients from that food group: for example, ¾ cup fruit juice and 1 cup milk. Some food label product categories such as “beverages” specify the same serving size (1 cup), regardless of the food group in which the beverage (fruit juice, milk, or soda) belongs.

In both cases—the Food Guide Pyramid and the food label—the “serving size” is a unit of measure and may not be the portion of food an individual actually eats at one occasion.

What's a Portion?

A “portion” can be thought of as the amount of a specific food an individual eats for dinner, snack, or other eating occasion. Portions, of course, can be bigger or smaller than the servings listed in the Food Guide Pyramid or on a food label. Many factors affect food portions, such as the individual's age, gender, activity level, and appetite and where and when the food is obtained and eaten.

How Do Food Guide Pyramid Serving Sizes Compare With Portions Typically Reported?

Recently, the Center for Nutrition Policy and Promotion (CNPP) reviewed data on quantities of some foods commonly eaten in the United States that individuals reported consuming at each eating occasion in the USDA 1989-91 Continuing Survey of Food Intakes by Individuals (CSFII) (4). The table presents typical amounts of selected foods, expressed in food guide serving units, that were consumed by three age groups of adult men and women. Results are similar to data on typical portion sizes obtained from a study using the USDA 1977-78 Nationwide Food Consumption Survey (5). Consistent with their greater calorie need, men's portion sizes (number of food guide servings at each eating occasion) are larger than those for women; for both genders, portion sizes decrease with age, especially for foods such as meats and grain products.

Amounts of selected foods reported at each eating occasion,¹ 50th percentile, by age and gender

Food	FGP ² serving sizes	20-39 years		40-59 years		60+ years	
		Men	Women	Men	Women	Men	Women
-----Number of FGP serving sizes-----							
Apples, raw	1 medium	1.0	1.0	1.0	1.0	0.9	0.9
Orange juice	3/4 cup	1.3	1.3	1.3	1.1	1.1	1.0
String beans, cooked	1/2 cup	1.5	1.0	1.0	1.0	1.4	1.0
Broccoli, cooked	1/2 cup	1.3	1.0	1.6	1.3	0.8	1.1
Fluid milk	1 cup	1.0	0.9	1.0	0.7	0.8	0.7
Cheese ³	1-1/2 oz	0.7	0.6	0.7	0.7	0.7	0.7
White bread	1 slice	2.0	1.8	1.9	1.7	1.8	1.5
Rice, cooked	1/2 cup	1.7	1.5	1.6	1.3	1.4	1.2
RTE cereals	1 oz	2.1	1.5	1.8	1.3	1.7	1.2
Pasta, cooked	1/2 cup	2.2	1.5	2.0	1.5	1.7	1.5
Muffins	1 oz (approx.)	2.3	1.9	2.1	1.8	2.0	2.0
-----Number of 1-ounce meat equivalents ⁴ -----							
Beef steak, cooked	1 oz	5.7	4.9	5.3	4.3	4.9	3.8
Ham, cured cooked	1 oz	1.9	1.5	2.0	1.6	2.0	1.9
Eggs, fried	1 large	1.8	1.4	1.8	1.0	1.6	0.9
Dry beans, cooked	1/2 cup	1.9	1.0	1.5	1.0	1.3	1.0

¹Data calculated from CSFII 1989-91, NFS Report No. 91-3.

²FGP (Food Guide Pyramid).

³Includes all cheeses, other than cream or cottage, regardless of fat content.

⁴Serving sizes of meats and meat alternates are listed in 1-ounce equivalents because serving amounts vary by type of food (steak, roast, ground meat, beans, eggs, or peanut butter). The Food Guide Pyramid suggests 2 to 3 servings of meat or meat alternates for a total of 5 to 7 ounces each day.

What Is the Challenge for the Grain Products?

As in the earlier study (5), individuals' typical portion sizes for grain products in the 1989-91 CSFII equaled 1½ to 2 food guide serving units, for example, 2 slices of bread or a cup of cooked pasta. However, the Food Guide Pyramid retains the grain serving size units of 1 slice of bread or ½ cup of cooked pasta, etc., used in previous food guides, in part because the serving units are familiar and easy to use. This may have caused some confusion among consumers who are unaware of the specified serving unit—they may either perceive 6 to 11 servings of grain products suggested by the Pyramid to be far more than can be eaten or may alternatively interpret this as permission to consume more than they should of these foods, often with added fats and sugars. However, changing the *serving unit* to the more typically reported 2 slices of bread or 1 cup of cooked pasta would *reduce* the number of servings suggested by the Pyramid to 3 to 5 and might give an appearance of a conflict with the Dietary Guideline to include plenty of grain products in the diet.

How Can Educators Help?

Educators can help consumers better understand the concepts of servings and portions by:

- **Explaining that Food Guide Pyramid servings are units of measure that are easy to use and understand. They are not prescribed portions to eat at a meal or snack.**
- **Explaining that the number of servings suggested in the Food Guide Pyramid are related to the caloric needs of the individual—the higher the caloric needs, the higher the suggested number of servings.**

- **Providing tips on how to visually estimate serving sizes.**
- **Explaining why Food Guide Pyramid servings and food label servings differ.**
- **Explaining how serving sizes differ from portion sizes.**
- **Showing individuals how to evaluate their diets to determine if changes are needed to achieve a healthful diet. One way to evaluate an individual's diet is to total the number of Food Guide Pyramid servings eaten daily and compare them—based on caloric need—with the numbers of servings suggested by the Food Guide Pyramid.**

References

1. U.S. Department of Agriculture. 1996. *The Food Guide Pyramid*. Home and Garden Bulletin No. 252.
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String beans, ck	1/2 cup	1.5	1.0	1.0	1.0	1.4	1.0
Broccoli, ck	1/2 cup	1.3	1.0	1.6	1.3	0.8	1.1
Fluid milk	1/2 cup	1.0	0.9	1.0	0.7	0.8	0.7
Cheese	1-1/2 cup	0.7	0.6	0.7	0.7	0.7	0.7
White bread	1 slice	2.0	1.8	1.9	1.7	1.8	1.5
Rice, ck	1/2 cup	1.7	1.5	1.6	1.3	1.4	1.2
RTE cereals	1 oz	2.1	1.5	1.8	1.3	1.7	1.2
Pasta	1/2 cup	2.2	1.5	2.0	1.5	1.7	1.5
Muffins	~1 oz	2.3	1.9	2.1	1.8	2.0	2.0
Crackers	6-8 crax	1.0	0.8	0.9	0.7	0.7	0.6
----- <i>Number of 1 ounce meat equivalents³</i> -----							
Beef, ground	1 oz	2.5	2.0	2.5	2.1	2.8	2.3
Beef steak	1 oz	5.7	4.9	5.3	4.3	4.9	3.8
Pork, chops, rst	1 oz	3.8	3.0	3.6	2.8	2.8	2.4
Ham	1 oz	1.9	1.5	2.0	1.6	2.0	1.9
Eggs, fried	1 large	1.8	1.4	1.8	1.0	1.6	0.9
Dry beans, ck	1/2 cup	1.9	1.0	1.5	1.0	1.3	1.0
Peanut butter	2 Tbsp	0.9	0.6	0.9	0.5	0.8	0.5

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