



# Consumption of Food Group Servings: People's Perceptions vs. Reality

INSIGHT 20

A Publication of the USDA Center for Nutrition Policy and Promotion

October 2000

How accurate are people at remembering what they eat on an average day? Very accurate? Fairly accurate? Or just plain wrong? This *Nutrition Insight* helps answer those questions. We compared the average number of servings people estimate *usually* consuming on an average day from the five major food groups (grains; fruits; vegetables; milk products; and meat, poultry, fish, dry beans, eggs, and nuts) and fats, oils, and sweets with the average number of servings estimated from records of what they eat over a 14-day period.

We also compared "usual" and actual consumption with serving recommendations based on the USDA Food Guide Pyramid. The Pyramid translates nutritional recommendations from the *Dietary Guidelines for Americans* and the Recommended Dietary Allowances (RDAs) into the number of servings of the five major food groups a person should consume for a healthful diet. The Pyramid suggests servings for people with varying levels of caloric (energy) intake. With the exception of the milk

products group, we set serving recommendations for six gender/age groups based on the energy RDA for each group.

We used data from Market Research Corporation of America (MRCA) Information Services. MRCA conducts a continuous sampling program by using a multistage stratified random design to identify participants for its National Consumer Panel. Households are selected based on demographic criteria matched to the U.S. Census.

For this *Insight*, we used information from 5,752 adults in these households for the 1992-94 period. This information includes their gender and age. It also includes their estimates or perceptions of usual daily servings consumed of grains; fruits; vegetables; milk products; meat, poultry, fish, dry beans, eggs, and nuts; and fats, oils, and sweets as well as their consumption from these food groups, based on detailed diaries of what foods were eaten over a 14-day period. However, portion sizes (quantity

**Food group servings: Perceived, average daily consumed, and recommended\* by gender/age group**

	Grains	Fruits	Vegetables	Milk	Meat, etc.	Other (fats, oils, and sweets)
<b>Females 19-24</b>						
Perceived	3.2	2.6	2.6	3.2	3.5	2.2
Consumed	4.2	0.8	1.7	1.2	1.6	3.0
Recommended	9	3	4	2	2.4	Use sparingly
<b>Females 25-50</b>						
Perceived	2.9	2.2	2.5	2.3	3.0	2.1
Consumed	4.6	0.8	2.0	1.0	1.7	3.2
Recommended	9	3	4	2	2.4	Use sparingly
<b>Females 51 +</b>						
Perceived	2.5	2.4	2.6	2.1	2.7	1.6
Consumed	4.7	1.5	2.2	1.0	1.7	3.1
Recommended	7.4	2.5	3.5	3	2.2	Use sparingly
<b>Males 19-24</b>						
Perceived	2.9	2.1	2.2	3.1	3.7	2.1
Consumed	5.5	0.6	2.3	1.6	2.3	4.1
Recommended	11	4	5	2	2.8	Use sparingly
<b>Males 25-50</b>						
Perceived	2.9	2.2	2.4	2.2	3.4	2.1
Consumed	5.9	0.9	2.5	1.2	2.5	4.0
Recommended	11	4	5	2	2.8	Use sparingly
<b>Males 51 +</b>						
Perceived	2.7	2.2	2.5	2.1	3.1	1.7
Consumed	6.2	1.3	2.7	1.1	2.4	4.5
Recommended	9.1	3.2	4.2	3	2.5	Use sparingly

\* Recommended servings based on energy RDA for gender/age groups.

ties) eaten were estimated from data in National surveys of average serving sizes consumed by various gender/age groups.

For most food groups, the food servings in the MRCA data were estimated according to USDA Food Guide Pyramid recommendations. The exception was for milk products where MRCA serving measures were lower than Pyramid measures. Also, the amount of vegetables in vegetable chips, such as potato chips, was not added to vegetable consumption.

The Food Pyramid does not provide serving sizes or recommendations for fats, oils, and sweets. MRCA measured a serving of these foods as 1 teaspoon of butter or margarine, 12 ounces of carbonated soft drink, 1 teaspoon of sugar, 1 ounce of potato chips, 1 tablespoon of salad dressing, or 1 teaspoon of jam or jelly.

### **Grains**

All gender/age groups perceived they consumed fewer grain servings (2.5 to 3.2) daily than what they actually ate (4.2 to 6.2) (table). Although all gender/age groups' actual consumption of grains per day was above what they believed, it was still below the Pyramid recommendations. For example, females ages 19 to 50 consumed 4.2 to 4.6 servings of grains per day; for them, the recommendation is 9 servings, based on their energy RDA.

### **Fruits**

On average, each gender/age group perceived it consumed more fruit servings daily than what was actually the case. Males ages 19 to 50 believed they consumed 2.1 to 2.2 servings of fruit on a given day. Based on their food diaries, they actually consumed less than one serving per day. Since the recommendation for males ages 19 to 50 is 4 servings of fruit each day, based on their energy RDA, their actual daily consumption of fruit was below their perceptions as well as the recommendations. This held across all other gender/age groups—adults consume less fruit servings than they think and much less than is recommended.

### **Vegetables**

Adult females perceived they consumed more vegetable servings per day than they actually consumed: 2.5 to 2.6 (perceived) versus 1.7 to 2.2 (actual). Adult males, on the other hand, believed they consumed slightly less vegetable servings per day than they actually consumed: 2.2 to 2.5 (perceived) versus 2.3 to 2.7 (actual). Both women's and men's daily vegetable consumption was below the recommendation for their respective gender/age group—3.5 to 5 servings a day.

### **Milk products**

All gender/age groups perceived their usual daily milk servings to be far more than what they actually consumed. They thought they

consumed, on average, 2.1 to 3.2 servings of milk products per day. Their food diaries indicated they consumed 1 to 1.6 servings per day. For most groups, what they actually consumed of milk products was about half the amount they thought they consumed.

Milk consumption per day was also below Pyramid recommendations for all gender/age groups. Given that the MRCA serving measures for milk are below the Pyramid measures, actual milk consumption per day is even further below Pyramid recommendations.

### **Meat**

All gender/age groups perceived their usual servings of daily meat, poultry, fish, dry beans, eggs, and nuts to be more than what they actually consumed. They thought they consumed 2.7 to 3.7 servings, but their food diaries indicated they consumed 1.6 to 2.5 servings per day. Meat consumption per day was below Pyramid recommendations. For example, females ages 19 to 50 consumed 1.6 to 1.7 servings of meat per day; the recommendation for this group is 2.4.

### **Other foods (fats, oils, and sweets)**

Each gender/age group perceived its average daily servings of fats, oils, and sweets to be far less than what was actually consumed: 1.6 to 2.2 (perceived) versus 3.0 to 4.5 (actual). The Food Guide Pyramid does not specify the number or size of servings of these other foods a person should consume. It only recommends that people consume these foods sparingly. Based on this analysis, it does not appear that people are consuming these foods sparingly.

### **Conclusion**

People's perceptions of their food group consumption are very different from their actual consumption, based on diaries. Adults underestimated their consumption of servings of grains, as well as servings of fats, oils, and sweets. They overestimated their consumption of fruit, milk products, and meat, poultry, fish, dry beans, eggs, and nuts servings. The only exception was for vegetable servings by males. The difference between what people thought they ate and the number of servings they consumed may be the result of their not understanding what constitutes a serving. Nutrition education needs to focus on explaining to people what constitutes a serving for the various food groups and how to estimate the number of servings they eat.

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