

Estimating the Change in Food Consumption

The gap between the average U.S. diet in 1995 and the Pyramid serving recommendations was measured to determine how much agriculture would have to adjust to provide the more healthful diets specified in the Food Guide Pyramid.

The Pyramid recommends the types and amounts of foods to eat from five major food groups: grains (bread, cereals, rice, and pasta); vegetables; fruits; dairy (milk, yogurt, and cheese); and meat (red meat, poultry, fish, dry beans, eggs, nuts). The number of servings that are right for any one person varies according to age, gender, and physiological status (table 1). Almost everyone should have at least the lower number of servings in the ranges, except for preschool children who can eat smaller servings based on their lower caloric requirements.

The Pyramid supporting documents suggest that consumers adhere to recommendations for specific subgroups of foods (USDA, CNPP, 1996; Cronin and others, 1987). For example, vegetable servings should be divided evenly between three subgroups: *dark-green leafy* and *deep-yellow vegetables*; *dry beans, peas, and lentils*,⁴ and other *starchy vegetables*; and other vegetables. The dark-green leafy vegetables and dry beans, peas, and lentils subgroups should each account for about 15 percent of total vegetable servings. Fruit servings should be split evenly between two subgroups: *citrus, melons, and berries*, and *other fruits*. For daily grain servings, consumers should select several from foods made with whole grains, such as whole wheat bread and whole grain cereals. Similarly, the Dietary Guidelines suggest that consumers choose lowfat milk products, lean meats, fish, poultry, beans, and peas often to get the essential nutrients provided by the dairy and meat groups without substantially increasing intakes of calories and saturated fat (USDA, DHHS, 1995).

⁴Dry beans, peas, and lentils can be counted in either the meat or vegetable group. For consistency with other dietary assessment studies, these commodities were included in the vegetable group in this study.

The Food Guide Pyramid also suggests that consumers use fats, oils, and sweets sparingly (USDA, CNPP, 1996). To reduce health risks and to help consumers maintain a healthy weight, the Dietary Guidelines recommend that consumers limit total fat intake to 30 percent of their total calories (USDA, DHHS, 1995). To avoid getting too many calories from sugars, the Dietary Guidelines suggest that sugars be used in moderation, and sparingly for persons whose calorie needs are low. To help consumers meet this objective, the Pyramid suggests daily maximum levels of added sugars for sample diets at different calorie levels (USDA, CNPP, 1996).

To estimate the changes needed in average diets, we examined present consumption patterns based on servings estimates generated from food supply and utilization data compiled and published annually by ERS (Putnam and Allshouse, 1997). The average number of daily food supply servings were compared with the Pyramid recommendations, using the midpoint of the recommended Pyramid serving range for each food group, based on a sample diet of 2,200 calories (table 2). A 2,200-calorie diet approximates

Table 1—Food Guide Pyramid Serving Recommendations

Food group	Sample diets		
	1,600 calories	2,200 calories	2,800 calories
	<i>Number of servings per day</i>		
Grain group	6	9	11
Vegetable group	3	4	5
Fruit group	2	3	4
Dairy group ¹	2-3	2-3	2-3
Meat group (ounces)	5	6	7
Total fat (grams) ²	53	73	93
Added sugars (teaspoons) ²	6	12	18

¹Women who are pregnant or breastfeeding, teenagers, and young adults to age 24 need three servings.

²Recommendations for total fat and added sugars are suggested upper limits.

Source: USDA, CNPP, 1996.

the daily Recommended Energy Allowance (REA) of 2,247 calories derived from an average of REA's for different age and gender groups of the U.S. population (National Research Council, 1989). It is important to note that the ERS food supply servings estimates for some commodity groups, particularly grains, added fats, and added sugars, differ considerably from servings estimates generated from USDA's *Continuing Survey of Food Intakes by Individuals* (CSFII) (Krebs-

Smith and others, 1995, 1996, 1997; Cleveland and others, March 1997, April 1997; Munoz, 1997; USDA, CNPP, 1995; Kantor, 1998; Kantor 1999). For some sectors, like grains and sweeteners, these differences are sizable and could affect the magnitude of the adjustments detailed here (Kantor, 1998). For more detail on the methodology behind the food supply servings estimates and a comparison of the food supply data with the CSFII, see Kantor, 1998.

Table 2—1995 Food Supply Servings Compared with Food Guide Pyramid Recommendations

Food group	Pyramid recommendations for a 2,200-calorie diet	1995 food supply servings ¹	Change needed to meet Pyramid recommendations
	<i>Servings</i>	<i>Servings</i>	<i>Percent</i>
Grains ²	9.0	9.4	--
Vegetables	4.0	3.7	8
Dark-green leafy and deep-yellow vegetables ³	1.3	.3	333
Dry beans, peas, and lentils ⁴	.6	.2	200
White potatoes and other starchy vegetables	.8	1.3	-38
Other vegetables	1.3	1.9	-32
Fruit	3.0	1.3	131
Citrus, melons, and berries	1.5	.6	150
Other fruit	1.5	.7	114
Milk, yogurt, and cheese ⁵	2.2	1.8	22
	<i>Ounces</i>	<i>Ounces</i>	<i>Percent</i>
Meat, poultry, fish, dry beans, eggs, and nuts ⁶	6.0	5.7	5
	<i>Grams</i>	<i>Grams</i>	<i>Percent</i>
Total fat			
Added fats and oils ⁷	38	59	-36
	<i>Teaspoons</i>	<i>Teaspoons</i>	<i>Percent</i>
Added sugars ⁸	12	32	-63

-- = Minimal adjustment needed.

¹(Kantor, 1998).

²The recommendation for grains is a minimum consumption level, thus minimal adjustment is needed to meet Pyramid recommendations.

³Due to data limitations, the adjustments for dark-green leafy and deep-yellow vegetables were not estimated separately.

⁴Dry beans, peas, and lentils can be counted in either the vegetable or meat groups. Counting these foods toward "vegetable group" servings is consistent with other dietary assessment studies.

⁵Recommendation based on a weighted average of recommended servings for different age groups of the U.S. population (Kantor, 1999).

⁶Meat group servings reflect both the lean and fat portions of meat and poultry.

⁷The Food Guide Pyramid does not make a recommendation for added fats and oils. The upper limit reported here is implied by the share of total fats accounted for by added fats and oils in the food supply during 1994 and an upper limit for total fat of 30 percent of calories, or 73 grams.

⁸The recommendation for added sugars is a suggested upper limit based on a range of caloric intake.

Source: USDA, Economic Research Service.