

# **PYRAMID SERVINGS DATA**

Results from USDA's 1994-96 Continuing Survey of Food Intakes by Individuals

Table Set 9

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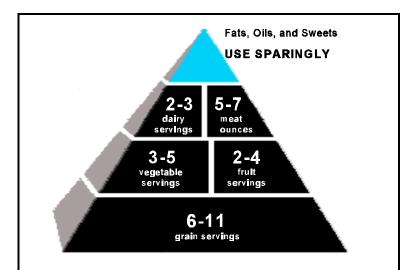
#### 1994-96 PYRAMID SERVINGS DATA

#### Introduction

This table set presents data comparing food intakes of Americans to recommendations in the U.S. Department of Agriculture's Food Guide Pyramid a general guide designed to help Americans choose what and how much to eat to get the nutrients they need without excess calories or fat (see box). The Pyramid specifies numbers of servings to eat from five major food groups (grain, vegetable, fruit, dairy, and meat) and gives advice about intakes of fats and added sugars as well.

The data are derived from USDA's 1994-96 Continuing Survey of Food Intakes by Individuals (CSFII), popularly known as the "What We Eat in America" survey. Two nonconsecutive days of food intake data for individuals of all ages were collected 3 to 10 days apart during in-person interviews between January 1994 and January 1997, using the 24-hour recall method.

The data in this table set provide national probability estimates for the U.S. population based on food intakes reported by individuals 2 years of age and older on 2 nonconsecutive days (14,256 individuals). The results are weighted to adjust for differential rates of sample selection and nonresponse and to calibrate the sample to match population characteristics that are correlated with eating behavior. The design, methodology, and operation of the survey are detailed in a separate report (Tippett and Cypel, eds. 1998).



The Pyramid provides guidance for individuals 2 years of age and over (USDA 1992). According to the Pyramid, everyone should eat at least the lowest number of servings within recommended ranges. Except for the dairy group, the number of servings that is right for a person depends on his or her calorie needs; people who need more calories should eat more servings. For the dairy group, the recommended number of servings depends on age and for women, on whether or not they are pregnant or lactating.

Generally speaking, the bottom of the recommended range of servings is about right for many sedentary women and older adults, the middle is about right for most children, teenage girls, active women, and many sedentary men, and the top of the range is about right for teenage boys, many active men, and some very active women. Preschool children with low calorie needs (less than 1,600 calories) should eat at least the lowest number of servings in the ranges, but they can eat smaller servings from all except the dairy group

Sample sizes on which estimates are based are provided in appendix A. In general, the sample sizes for each sex-age group provide a sufficient level of precision to ensure statistical reliability of the estimates. A statistic that is potentially unreliable because of small sample size or large coefficient of variation is flagged; see appendix B for the criteria used in flagging estimates. For 1994–96, the overall 2-day response rate was 76.1 percent. Background on the method used to develop Pyramid servings is provided in appendix C.

**Note:** The Pyramid servings data tables and related materials in this table set are also included in the following report which may be used as a citation:

U.S. Department of Agriculture, Agricultural Research Service. 1998. Food and Nutrient Intakes by Individuals in the United States, by Sex and Age, 1994–96, Nationwide Food Surveys Report No. 96–2, 197 pp. (Copies of the complete report are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. Phone 1-800-553-6847. Accession No. PB99-117251.)

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Table 1A.--Grain group: Mean numbers of Pyramid servings consumed per day, by sex and age, 2-day average, 1994-96

USDA's Food Guide Pyramid recommends eating between 6 and 11 servings of grain products each day, depending on calorie needs

Sex and age (years)	Percentage of population	Total grain products	Whole-grain products	Nonwhole-grain products
	Percent		Servings ‡	
lales:				
2-5	3.3	6.5	1.0	5.4
6-11	4.7	6.9	1.0	5.9
12-19	5.9	9.2	1.1	8.0
20-29	7.5	8.7	1.1	7.6
30-39	8.5	8.7	1.1	7.6
40-49	7.1	7.9	1.1	6.7
50-59	4.8	7.1	1.1	5.9
60-69	3.5	7.0	1.1	5.9
70 and over	3.4	6.2	1.2	4.9
20 and over	34.8	7.9	1.1	6.8
emales:				
2-5	3.1	6.1	1.0	5.1
6-11	4.5	6.1	.8	5.2
12-19	5.7	6.3	.9	5.5
20-29	7.2	5.9	.8	5.1
30-39	9.0	5.8	.9	4.9
40-49	7.1	5.7	.8	4.8
50-59	5.3	5.4	.9	4.5
60-69	4.3	4.9	.9	4.1
70 and over	4.9	4.9	1.0	3.9
20 and over	37.8	5.5	.9	4.6
II Individuals 2 and over	1.00.0	6.7	1.0	5.8

<sup>‡</sup> One serving is 1 slice of bread; 1 small roll; 1/2 bagel, English muffin, or croissant; 1 ounce of ready-to-eat cereal; 1/2 cup cooked cereal, rice, or pasta; 1 small muffin; or amounts of other grain products such as pretzels and cakes that contain an amount of grain equivalent to that in a standard slice of bread. For children 2 to 5 years old who consume less than 1,600 calories per day, 1 serving is two-thirds of the standard serving size to allow for their lower energy needs. Whole- and nonwhole-grain servings were calculated based on the proportion of whole- and nonwhole-grain ingredients in foods as consumed.

Table 1B.--Grain group: Percentages of individuals consuming specified numbers of Pyramid servings per day, by sex and age, 2-day average, 1994-96

Sex and age	Percentage	Percentage of individuals					
(years)	of population	Consuming less than 1 serving a day	Consuming at least minimum number of servings recommended (6 a day)	Consuming number of servings recommended based on caloric intake ‡			
	Percent		Percent				
lales:							
2-5	3.3	<b>†</b> *	54	51			
6-11		† *	60	45			
12-19	5.9	† *	77	48			
20-29	7.5	† 1	71	46			
30-39	8.5	† *	70	41			
40-49	7.1	† 1	68	39			
50-59	4.8	† 1	59	36			
60-69	3.5	† *	58	41			
70 and over	3.4	† 1	49	38			
20 and over	34.8	*	65	41			
emales:							
2-5	3.1	† *	48	46			
6-11	4.5	† *	46	37			
12-19		† *	49	35			
20-29	7.2	† 1	41	32			
30-39	9.0	† 1	41	33			
40-49	7.1	† 1	39	33			
50-59	5.3	† 1	37	31			
60-69	4.3	† 2	28	25			
70 and over		† 1	28	26			
20 and over	37.8	1	37	31			

<sup>‡</sup> Recommended servings were derived from sample patterns in "The Food Guide Pyramid" (USDA 1992). Individuals consuming less than 2,200 calories met the recommendation if they ate at least 6 servings of grain per day; individuals consuming 2,200 to 2,800 calories met the recommendation if they ate at least 9 servings of grain per day; and individuals consuming 2,800 calories or more met the recommendation if they ate at least 11 servings of grain per day.

<sup>†</sup> See "Statistical notes," appendix B.

<sup>\*</sup> Value less than 0.05 but greater than zero.

Table 2A.--Vegetable group: Mean numbers of Pyramid servings consumed per day, by sex and age, 2-day average, 1994-96
USDA's Food Guide Pyramid recommends eating between 3 and 5 servings of vegetables each day, depending on calorie needs

	Percentage		Dark	Deep yellow vegetables	Cooked dry beans and peas	Starchy v	egetables	Tomatoes	Other vegetables
Sex and age (years)	of population	Total vegetables	green leafy vegetables			White potatoes	Other starchy ‡		
	Percent				Sei	rvings §			
Males:									
2-5	3.3	2.1	0.1	0.1	0.1	0.9	0.2	0.3	0.4
6-11	4.7.	2.3	.1	.1	.1	1.0	.2	.4	.5
12-19	5.9	3.7	.1	.1	.2	1.7	.2	.6	.8
20-29		4.3	.1	.1	.2	1.7	.2	.7	1.2
30-39		4.5	.2	.2	.3	1.6	.2	.6	1.4
40-49		4.1	.2	.2	.3	1.2	.3	.6	1.3
50-59		4.1	.2	.2	.3	1.2	.3	.5	1.3
60-69		3.9	.2	.2	.2	1.1	.3	.5	1.3
70 and over		3.4	.2	.2	.2	.9	.3	.4	1.2
20 and over	34.8	4.1	.2	.2	.3	1.4	.3	.6	1.3
Females:									
2-5	3.1	2.2	.1	.1	.1	.9	.2	.3	.5
6-11		2.2	.1	.1	.1	.9	.2	.3	.5
12-19		2.7	.1	.1	.1	1.2	.1	.4	.7
20-29		3.0	.1	.2	.2	1.0	.2	.4	.9
30-39	90	3.1	.2	.2	.2	.9	.2	.4	1.0
40-49		3.2	.2	.2	.2	.9	.2	.4	1.2
50-59		3.2	.2	.2	.2	.8	.2	.5	1.2
60-69		3.0	.2	.2	.1	.7	.2	.4	1.2
70 and over		2.8	.2	.2	.1	.7	.2	.4	1.0
20 and over		3.1	.2	.2	.2	.8	.2	.4	1.1
All Individuals 2 and over	100.0	3.3	.2	.2	.2	1.1	.2	.5	1.0

<sup>‡</sup> Examples are corn, green peas, and lima beans (immature).

<sup>§</sup> One serving is 1 cup of raw leafy vegetables; 1/2 cup of cooked or chopped raw vegetables; 1 ounce of vegetable chips; or 3/4 cup of vegetable juice. For children 2 to 5 years old who consume less than 1,600 calories per day, 1 serving is two-thirds of the standard serving size to allow for their lower energy needs.

Table 2B.--Vegetable group: Percentages of individuals consuming specified numbers of Pyramid servings per day, by sex and age, 2-day average, 1994-96

		Percentage of individuals					
Sex and age (years)	Percentage of population	Consuming less than 1 serving a day	Consuming at least minimum number of servings recommended (3 a day)	Consuming number of servings recommended based on caloric intake ‡			
	Percent		Percent				
Males:							
2-5	3.3	22	24	23			
6-11		20	27	20			
12-19		10	55	37			
20-29	75	7	67	49			
30-39	8.5	4	69	54			
40-49	7.1	8	62	48			
50-59	4.8	7	67	56			
60-69	3.5	6	61	52			
70 and over	3.4	11	53	47			
20 and over	34.8	7	65	51			
emales:							
2-5	3.1	20	24	23			
6-11	4.5	23	24	20			
12-19	5.7	13	38	29			
20-29	7.2	11	43	38			
30-39	9.0	8	44	39			
40-49	7.1	8	49	46			
50-59	5.3	9	50	47			
60-69	4.3	9	46	44			
70 and over	4.9	10	40	39			
20 and over	37.8	9	45	42			

<sup>‡</sup> Recommended servings were derived from sample patterns in "The Food Guide Pyramid" (USDA 1992). Individuals consuming less than 2,200 calories met the recommendation if they ate at least 3 servings of vegetables per day; individuals consuming 2,200 to 2,800 calories met the recommendation if they ate at least 4 servings of vegetables per day; and individuals consuming 2,800 calories or more met the recommendation if they ate at least 5 servings of vegetables per day.

Table 3A.--Fruit group: Mean numbers of Pyramid servings consumed per day, by sex and age, 2-day average, 1994-96

USDA's Food Guide Pyramid recommends eating between 2 and 4 servings of fruits each day, depending on calorie needs

Sex and age (years)	Percentage of population	Total fruits	Citrus fruits, melons, berries	Other fruits
	Percent		Servings ‡	
Males:				
2-5	3.3	2.3	0.8	1.5
6-11	4.7	1.5	.7	.9
12-19	5.9	1.4	.8	.6
20-29	7.5	1.3	.8	.5
30-39	8.5	1.3	.6	.7
40-49	7.1	1.5	.7	.7
50-59	4.8	1.7	.8	.9
60-69	3.5	1.9	.9	1.0
70 and over	3.4	2.1	.9	1.1
20 and over	34.8	1.5	.8	.8
emales:				
2-5	3.1	2.2	.8	1.4
6-11	4.5	1.5	.7	.9
12-19	5.7	1.3	.7	.6
20-29	7.2	1.2	.6	.6
30-39	9.0	1.3	.7	.6
40-49	7.1	1.4	.8	.7
50-59	5.3	1.6	.8	.8
60-69	4.3	1.7	.9	.8
70 and over	4.9	1.8	.8	1.0
20 and over	37.8	1.5	.7	.7
Il Individuals 2 and over	1.00.0	1.5	.8	.8

<sup>‡</sup> One serving is a whole fruit such as a medium apple, banana, or orange; a grapefruit half; 1/2 cup of berries, melon, or chopped raw fruit; 1/2 cup of cooked or canned fruit; 1/4 cup of dried fruit; or 3/4 cup of fruit juice. For children 2 to 5 years old who consume less than 1,600 calories, 1 serving is two-thirds of the standard serving size to allow for their lower energy needs.

Table 3B.--Fruit group: Percentages of individuals consuming specified numbers of Pyramid servings per day, by sex and age, 2-day average, 1994-96

		Percentage of individuals					
Sex and age (years)	Percentage of population	Consuming less than 1 serving a day	Consuming at least minimum number of servings recommended (2 a day)	Consuming number of servings recommended based on caloric intake ‡			
	Percent		Percent				
Males:							
2-5	3.3	29	48	46			
6-11		45	27	22			
12-19		54	22	14			
20-29		60	23	15			
30-39		59	23	16			
40-49	7.1	53	27	18			
50-59		48	30	21			
60-69	3.5	40	36	29			
70 and over	3.4	35	42	36			
20 and over	34.8	52	28	20			
Females:							
2-5	3.1	28	46	45			
6-11	4.5	45	26	23			
12-19	5.7	53	23	18			
20-29	7.2	57	20	18			
30-39	9.0	55	23	20			
40-49	7.1	53	23	21			
50-59	5.3	45	31	29			
60-69	4.3	38	34	33			
70 and over	4.9	33	36	36			
20 and over	37.8	49	26	24			
all Individuals 2 and over	1.00.0	49	28	23			

<sup>‡</sup> Recommended servings were derived from sample patterns in "The Food Guide Pyramid" (USDA 1992). Individuals consuming less than 2,200 calories met the recommendation if they ate at least 2 servings of fruit per day; individuals consuming 2,200 to 2,800 calories met the recommendation if they ate at least 3 servings of fruit per day; and individuals consuming 2,800 calories or more met the recommendation if they ate at least 4 servings of fruit per day.

Table 4A.--Dairy group: Mean numbers of Pyramid servings consumed per day, by sex and age, 2-day average, 1994-96

USDA's Food Guide Pyramid recommends eating 2 or 3 servings of dairy products each day, depending on age and physiological status

Sex and age (years)	Percentage of population	Total dairy‡	Milk	Yogurt	Cheese
	Percent		Ser	vings §	
fales:					
2-5	3.3	1.9	1.5	*	0.3
6-11		2.2	1.7	*	.5
12-19		2.4	1.6	*	.8
20-29		1.7	.9	*	.8
30-39		1.7	1.0	*	.7
40-49		1.6	1.0	*	.5
50-59		1.3	.8	*	.4
60-69	3.5	1.3	.9	*	.4
70 and over		1.3	1.1	*	.3
20 and over	34.8	1.5	.9	*	.6
emales:					
2-5	3.1	1.9	1.5	*	.3
6-11		1.9	1.5	*	.4
12-19	5.7	1.5	1.0	*	.5
20-29	7.2	1.3	.7	*	.5
30-39	9.0	1.2	.7	*	.4
40-49	7.1	1.1	.6	*	.4
50-59		1.1	.7	.1	.3
60-69	4.3	1.0	.7	*	.3
70 and over	4.9	1.1	.8	*	.2
20 and over	37.8	1.1	.7	*	.4
II Individuals 2 and over	1.00.0	1.5	1.0	*	.5

<sup>‡</sup> Includes small amounts of miscellaneous dairy products, such as whey and nonfat sour cream, that are not included in the subgroups milk, yogurt, cheese.

<sup>§</sup> One serving is 1 cup of milk, 1 cup of yogurt; 1-1/2 ounces of natural cheese, 2 ounces of processed cheese, 1/2 cup of ricotta cheese, or 2 cups of cottage cheese. Dairy desserts, such as ice cream, ice milk, frozen yogurt, custard, and pudding, were separated into ingredients, and servings from dairy ingredients (usually milk) are tabulated. Serving sizes are the same for all individuals regardless of age.

<sup>\*</sup> Value less than 0.05 but greater than 0.

Table 4B.--Dairy group: Percentages of individuals consuming specified numbers of Pyramid servings per day, by sex and age, 2-day average, 1994-96

		Percentage of individuals					
Sex and age (years)	Percentage of population	Consuming less than 1 serving a day	Consuming at least 2 servings a day	Consuming number of servings recommended based on age and physiological status ‡			
	Percent		Percent				
Males:							
2-5	3.3	20	39	39			
6-11	4.7	13	52	47			
12-19	5.9	21	51	28			
20-29	75	37	30	22			
30-39	8.5	39	30	30			
40-49	71	42	29	29			
50-59	4.8	51	20	20			
60-69	3.5	45	23	23			
70 and over	3.4	43	24	24			
20 and over	34.8	42	27	25			
Females:							
2-5	3.1	21	40	40			
6-11	4.5	20	40	36			
12-19	5.7	40	26	11			
20-29	7.2	44	17	10			
30-39	9.0	53	19	17			
40-49	7.1	56	16	15			
50-59	5.3	56	14	14			
60-69	4.3	59	12	12			
70 and over	4.9	56	15	15			
20 and over	37.8	54	16	14			
All Individuals 2 and over	1.00.0	41	27	23			

<sup>‡</sup> The recommendation for an individual is based on age and physiological status. Women who were pregnant or lactating and individuals 11 to 24 years of age were counted as meeting the recommendation if they consumed at least 3 servings of dairy products per day; all other individuals were counted as meeting the recommendation if they consumed at least 2 servings of dairy products per day.

Table 5A.--Meat group: Mean numbers of Pyramid servings (ounce equivalents) consumed per day, by sex and age, 2-day average, 1994-96

USDA's Food Guide Pyramid recommends eating between 5 and 7 ounces of cooked lean meat or the equivalent in meat alternates each day, depending on calorie needs, to provide a total of 2-3 servings

Sex and age (years)	Percentage of population	Total meat and alternates ‡	Meat	Poultry	Fish	Organ meat	Frankfurter and lunch meat	Eggs	Soybean products §	Nuts and seeds
	Percent			Oun	ces cooked	lean meat equ	ivalents ¶			
Males:										
2-5	3.3	2.8	0.9	0.7	0.1	† *	0.6	0.3	† *	0.2
6-11	4.7	3.7	1.4	.8	.2	† *	.8	.3	+ *	.2
12-19		5.9	2.6	1.4	.3	† *	1.0	.4	+ *	.2
20-29		6.6	3.0	1.6	.4	† *	1.0	.5	† *	.2
30-39	8.5	7.2	3.1	1.6	.6	† *	1.3	.4	† *	.2
40-49		6.5	2.7	1.6	.5	† *	1.0	.5	† *	.2
50-59		6.4	2.5	1.5	.6	† *	.9	.5	† *	.2
60-69		5.6	2.2	1.2	.6	*	.8	.5	*	.1
70 and over	3.4	4.5	1.7	.9	.5	*	.6	.5	† *	.2
20 and over	34.8	6.4	2.7	1.5	.5	*	1.0	.5	*	.2
Females:										
2-5	3.1	2.6	.8	.7	.2	<b>+</b> *	.6	.2	+ *	.1
6-11	-	3.0	1.1	.7	.2	† *	.7	.2	† *	.1
12-19		3.7	1.5	.9	.2	† *	.6	.3	† *	.1
20-29		3.8	1.4	1.1	.3	† *	.5	.3	*	.1
30-39	9.0	4.1	1.6	1.0	.4	*	.6	.3	*	.1
40-49		4.0	1.5	1.1	.4	† *	.5	.3	*	.1
50-59	5.3	3.9	1.4	1.1	.5	*	.5	.3	*	.1
60-69	4.3	3.9	1.4	1.0	.6	*	.5	.4	† *	.1
70 and over	4.9	3.5	1.2	1.0	.4	*	.4	.3	† *	.1
20 and over		3.9	1.4	1.1	.4	*	.5	.3	*	.1
All Individuals 2 and over	100.0	4.7	1.9	1.2	.4	*	.7	.4	*	.1

<sup>‡</sup> Excludes cooked dry beans and peas, which are tabulated with vegetables in table 17A; according to USDA's Food Guide Pyramid they can be counted as a vegetable or a meat alternate.

<sup>§</sup> Includes tofu and simulated meat products made from soy.

<sup>¶</sup> Only the lean portion of meat, poultry, fish, and simulated meat products is tabulated here. One egg, 1/2 cup of tofu, 2 tablespoons of peanut butter, 1/3 cup of nuts, and 1/4 cup of seeds are each equivalent to 1 ounce of cooked lean meat. Fat in excess of amounts in the leanest meats is tabulated as discretionary fat in table 21.

<sup>\*</sup> Value less than 0.05 but greater than 0.

<sup>†</sup> See "Statistical notes," appendix B.

Table 5B.--Meat group: Percentages of individuals consuming specified numbers of Pyramid servings (ounce equivalents) per day, by sex and age, 2-day average, 1994-96

Sex and age (years)	Percentage	Percentage of individuals						
	of population	Consuming less than 1 ounce equivalent a day	Consuming at least 5 ounce equivalents a day	Consuming number of ounce equivalents recommended based on caloric intake ‡				
	Percent		Percent	·				
Males:								
2-5	3.3	12	10	16				
6-11	4.7	6	23	18				
12-19	5.9	2	54	41				
20-29	7.5	2	63	51				
30-39	8.5	† 1	66	56				
40-49	7.1	2	65	55				
50-59	4.8	† 1	61	54				
60-69	3.5	† 1	55	47				
70 and over	3.4	3	37	32				
20 and over	34.8	2	61	51				
emales:								
2-5	3.1	12	7	15				
6-11	4.5	7	11	9				
12-19	5.7	8	24	20				
20-29	7.2	8	25	22				
30-39	9.0	4	27	25				
40-49	7.1	6	27	25				
50-59	5.3	6	25	24				
60-69	4.3	4	27	26				
70 and over		7	17	17				
20 and over	37.8	6	25	23				
II Individuals 2 and over	1.00.0	5	37	32				

<sup>‡</sup> Recommended amounts were derived from sample patterns in "The Food Guide Pyramid" (USDA 1992). Individuals consuming less than 2,200 calories met the recommendation if they ate at least 5 ounces of cooked lean meat equivalents a day; individuals consuming 2,200 to 2,800 calories met the recommendation if they ate at least 6 ounces of cooked lean meat equivalents a day; and individuals consuming 2,800 calories or more met the recommendation if they ate at least 7 ounces of cooked lean meat equivalents a day. The recommendation was adjusted for children 2 to 5 years old who consumed less than 1,600 calories. To allow for their lower energy needs, the minimum recommendation was lowered by one-third to 3.3 ounce equivalents.

<sup>†</sup> See "Statistical notes," appendix B.

Table 6.--Pyramid tip: Mean daily intakes of discretionary fat and added sugars per day, by sex and age, 2-day average, 1994-96
USDA's Food Guide Pyramid recommends that fats and sugars be used sparingly; they provide energy but little else of nutritional value

Sex and age (years)	Percentage of population	Total intake		Intake from the Pyramid tip			
		Food energy	Fat	Discretionary fat ‡	Added sugars §	Discretionary fat	Added sugars
	Percent	Kilocalories		Percent of total kilocalor	ries	Grams	Teaspoons ¶
Males:							
2-5	3.3	1.546	32.4	25.3	15.8	43.9	15.3
6-11		1.968	32.4	25.1	18.6	55.3	23.1
12-19		2,716	33.2	25.5	20.0	77.7	34.2
20-29		2,666	33.0	24.7	16.8	74.1	27.8
30-39	8.5	2,669	34.2	25.7	15.3	78.2	26.0
40-49		2,403	34.1	25.3	13.9	69.0	21.4
50-59		2,217	34.3	25.5	13.3	64.3	18.7
60-69		2,059	33.1	24.3	11.9	57.3	15.9
70 and over		1,816	32.9	24.6	12.0	50.9	13.9
20 and over		2,406	33.7	25.1	14.4	68.7	22.3
Females:							
2-5	3.1	1.456	32.3	25.4	16.1	41.6	14.8
6-11		1,738	32.3	25.4	18.7	49.4	20.7
12-19		1,841	32.3	25.0	20.2	51.9	23.5
20-29	7.2	1,758	31.8	24.3	18.2	48.7	20.4
30-39	9.0	1.687	32.4	24.5	15.9	47.2	17.2
40-49		1,638	33.8	25.7	14.5	47.8	15.1
50-59		1.576	32.7	24.7	13.5	44.5	13.6
60-69		1,443	32.3	23.8	12.4	39.2	11.4
70 and over		1,386	31.9	23.7	12.6	37.1	11.1
20 and over	-	1,609	32.5	24.5	14.9	45.0	15.4
All Individuals 2 and over	100.0	1,982	32.9	24.9	15.7	56.1	20.0

<sup>‡</sup> Discretionary fat includes fats added to foods in preparation and at the table (that is, cream, butter, margarine, cream cheese, oil, lard, meat drippings, cocoa, and chocolate) and fat from grain products, vegetables, fruits, dairy products, and meats and meat alternates beyond amounts people would consume if they selected only the lowest-fat foods in each food group.

<sup>§</sup> Includes white sugar, brown sugar, raw sugar, corn syrup, honey, molasses, and artificial sweeteners containing carbohydrate that were eaten separately or used as ingredients in processed or prepared foods such as breads, cakes, soft drinks, jams, and ice cream. Does not include sugars such as fructose and lactose that occur naturally in foods such as fruit and milk.

<sup>¶</sup> Quantities are standardized on a carbohydrate equivalent basis. One teaspoon of added sugars is defined as the quantity of a sweetener that contains the same amount of carbohydrate as 1 teaspoon (4 grams) of table sugar (sucrose).

# Appendix A. Counts of 2-Day Respondents and Population Percentages, by Sex and Age, 1994–96

The table below shows unweighted counts of survey respondents in each sex-age group in the Pyramid servings tables and the weighted percentages of the population that they represent. Excluded from these counts and population percentages are 6 breast-fed children. Weights are used to account for differential rates of selection and nonresponse, to calibrate the sample to match population characteristics believed to be correlated with eating behavior, and to equalize intakes over the 4 quarters of the year and the 7 days of the week.

The statistics presented in the tables are based on the data from all appropriate respondents. Fasters (that is, individuals reporting no foods or beverages consumed for the day) were included in the calculations.

Appendix A table.-- Counts of 2-day respondents and population percentages, by sex and age, 1994-96

Sex and age (years)	2-day count (unweighted)	2-day percentage of population (weighted)
		Percent
Males:		
2-5	1,059	3.3
6-11	726	4.7
12-19	696	5.9
20-29	723	7.5
30-39	820	8.5
40-49	815	7.1
50-59	848	4.8
60-69	809	3.5
70 and over	736	3.4
20 and over	4,751	34.8
Females:		
2-5	1,044	3.1
6-11	706	4.5
12-19	702	5.7
20-29	675	7.2
30-39		9.0
40-49	870	7.1
50-59	824	5.3
60-69		4.3
70 and over	674	4.9
20 and over	4,572	37.8
All individuals	14,256	100.0

Note: Excludes 6 breast-fed children.

### **Appendix B. Statistical Notes**

Estimates based on small cell sizes may tend to be less statistically reliable than estimates based on larger cell sizes. Cell size refers to the unweighted number of individuals in a given sex-age group or demographic group (see appendix A). The guidelines (listed below) for determining when a cell size is small take into account the average design effect for the survey. The design effect results from the complex sample design and from the procedures used to weight the data. When the design effect is 1.00, its effect on accuracy is negligible; a larger design effect implies a greater effect on variance. The guidelines derive from a policy statement (Federation of American Societies for Experimental Biology 1995) that specifies the use of a broadly calculated design effect. In that role we are using a variance inflation factor. Variance inflation factors for the survey data sets used to generate these tables are as follows:

1994–96 CSFII 2 days — 1.60

Daggers in the tables flag estimates that may be less statistically reliable than those which are not flagged. The rules used for flagging estimates are listed below, and tables to which each rule applies are identified.

1. An estimated mean is flagged when it is based on a cell size of less than 30 times the average design effect or when its coefficient of variation (CV) is equal to or greater than 30 percent. The CV is the ratio of the estimated standard error of the mean to the estimated mean, expressed as a percentage.

Rule 1 was applied to data in tables, 1A, 2A, 3A, 4A, 5A, and 6 to flag estimates that should be used with caution. It applies to mean nutrient intakes, mean food intakes, and means expressed as percentages, such as mean intakes of nutrients expressed as percentages of Recommended Dietary Allowances and percentages of nutrients from foods eaten as snacks

- 2. An estimated proportion (percent) that falls above 25 percent and below 75 percent is flagged when it is based on a cell size of less than 30 times the average design effect or when the CV is equal to or greater than 30 percent.
- 3. An estimated proportion of 25 percent or lower or 75 percent or higher is flagged when the smaller of np and n(1-p) is less than 8 times the average design effect, where n is the cell size on which the estimate is based and p is the proportion expressed as a fraction.

Rules 2 and 3 were applied to data in tables 1B, 2B, 3B, 4B, and 5B to flag estimates that should be used with caution.

# Appendix C: Method Used To Develop Pyramid Servings Estimates in Tables 16A-21

#### Overview

The Food Guide Pyramid was designed as an educational tool to help explain and interpret the Dietary Guidelines for Americans—seven basic principles for healthful eating that form the basis of Federal nutrition policy (U.S. Department of Agriculture and U.S. Department of Health and Human Services 1995, Federal Register 1990). The Pyramid depicts the total diet, specifying amounts to eat from five major food groups (grain, vegetable, fruit, dairy, and meat) and selected subgroups and provides advice about intakes of fats, added sugars, and alcohol (items found at the Pyramid tip). In general, Pyramid recommendations are defined in terms of servings expressed in household measures, such as slices, pieces, and cups.

The Pyramid recommends that individuals 2 years of age and over eat at least the lowest number of servings within recommended ranges. Except for the dairy group, the number of servings that is right for a person depends on his or her calorie needs; people who need more calories should eat more servings. For the dairy group, the recommended number of servings depends on age and, for women, on whether or not they are pregnant or lactating.

Below are sample diets for a day at three calorie levels (from the Food Guide Pyramid, U.S. Department of Agriculture 1992):

	Lower	Moderate	Higher
	1,600-calorie	2,200-calorie	2,800-calorie
Food group	diet	diet	diet
Bread (servings)	6	9	11
Vegetable (servings)	3	4	5
Fruit (servings)	2	3	4
Dairy (servings)	2–3*	2–3*	2–3*
Meat (ounces)	5	6	8

<sup>\*</sup>Women who are pregnant or lactating, teenagers, and young adults to age 24 need three servings. Source: U.S. Department of Agriculture (1992).

These diets are guides to the number of servings from each food group that people should eat depending on their calorie needs. Generally speaking, the bottom of the recommended range of servings is about right for many sedentary women and older adults; the middle is about right for most children, teenage girls, active women, and many sedentary men; and the top of the range is about right for teenage boys, many active men, and some very active women. Preschool children, who require fewer calories (less than 1,600 calories), should eat at least the lowest number of servings in the ranges, but they can eat smaller servings from all except the dairy group.

### **Converting Food Consumption Data Into Pyramid Servings**

In 1993, researchers at the Agricultural Research Service (ARS) of the U.S. Department of Agriculture, in collaboration with researchers from the National Cancer Institute, began developing a method for assessing food intakes in terms of food-guidance-based servings (Cleveland et al. 1997). Because many foods could not be categorized into Pyramid food groups in the forms in which they are eaten and reported in food consumption surveys, foods needed to be separated into their ingredients, when necessary, before categorizing them by Pyramid food groups. Many needed to be disaggregated to a commodity level or an intermediate level of disaggregation. The level of disaggregation required depended on several factors, including the types of foods in each Pyramid food group, the specificity with which Pyramid serving sizes and their underlying criteria are described in Pyramid documentation, and the methods ARS used to identify serving weights that were consistent with Pyramid definitions for servings.

Serving weights were assigned to foods or to their ingredients in forms as close to "as eaten" as possible. If appropriate, serving weights were assigned to the food as reported in the survey. As needed, foods were separated into ingredients using the recipes in the CSFII 1994–96 recipe database (U.S. Department of Agriculture 1998) before assigning serving weights. Every attempt was made to adhere strictly to the concepts and definitions described in the Food Guide Pyramid (U.S. Department of Agriculture 1992) when categorizing foods and defining servings.

### **Source of Serving Weights for Foods or Ingredients**

The CSFII 1994–96 food coding database (U.S. Department of Agriculture 1998) was the primary source used to derive food- or ingredient-specific weights consistent with Pyramid definitions for serving sizes. For many food codes, weights for several portion sizes were available. From these weights, a weight consistent with the Pyramid definition for a serving of that food (or ingredient) was selected or imputed.

## What Foods Count As Servings in Each of the Five Major Food Groups?

**Grain group.** In the Food Guide Pyramid, the grain group includes yeast breads and rolls; quick breads such as muffins, biscuits, pancakes, and tortillas; rice; pasta; breakfast cereals; grain-based snacks such as crackers, pretzels, popcorn, and corn chips; and baked goods made from flour, such as cakes, cookies, croissants, doughnuts, pastries, and pie crust (U.S. Department of Agriculture 1992, 1993). The Pyramid emphasizes whole-grain choices; it recommends choosing several servings a day of foods made from whole grains (U.S. Department of Agriculture 1992). For that reason, the Pyramid servings intake files and database present data separately on servings of whole grains and nonwhole grains. Some foods in the grain group contain relatively high amounts of fat and sugar; those ingredients count toward the Pyramid tip.

Definitions of grain servings were derived from the Food Guide Pyramid (U.S. Department of Agriculture 1992, 1993). Educational materials about the Pyramid list the following as a serving size for grain products: 1 slice of bread; ½ of a hamburger bun, English muffin, bagel, or croissant; 1 small roll, biscuit, or muffin; 1 tortilla; 1 ounce of ready-to-eat cereal; ½ cup of cooked cereal, rice, or pasta; 3 to 4 small or 2 large crackers; ½ of a medium doughnut or Danish; or 2 medium cookies. The Pyramid does not specify serving sizes for all foods in the grain group, and those specified are relatively imprecise. For example, slices of bread come in many sizes, and terms like small, medium, and large are relative. Therefore, ARS developed operational definitions and procedures for the grain servings sizes based on two primary criteria:

- -- Consistency with the underlying rationale for the grain group as the primary source of complex carbohydrate in diets and a major contributor to fiber intake.
- -- Maintenance of the Pyramid concept of defining servings in common household measures (cups, ounces) and easily recognizable units (1 slice of bread, 1 roll).

Pyramid serving sizes were used as a basis for selecting or imputing appropriate serving weights from the CSFII 1994–96 food coding database, but guidelines were developed to standardize the selection process. Where needed, methods were also developed to define servings based on either the grain content or the complex carbohydrate content of the food. Details are presented below.

- -- For yeast breads (rolls, English muffins, bagels, croissants), some quick breads (muffins, tea breads), rice, pasta, and breakfast cereals, the basic Pyramid definitions for servings were used, and guidelines were established for selecting serving weights from the food coding database.
- -- For snack-type grain products (crackers, pretzels, corn chips), grain-based desserts (cookies, cakes, sweet rolls, pastries, pie crust), certain quick breads (hush puppies, dumplings), and miscellaneous grains (thickeners, batter, breading), a method was developed for defining servings based on the grain content of the food.

- -- For some grain products, notably quick breads (pita bread, biscuits, pancakes, waffles, tortillas, taco shells), a combination of the two approaches presented above was used. The grams needed per serving were calculated based on the grain content of the food, but then the serving size was defined as a household measure for which a gram weight was available in the CSFII 1994–96 food coding database (for example, a pancake of a given diameter). A serving was defined as the household measure with a gram weight closest to the weight calculated based on grain content.
- -- For popcorn, the serving size was defined in terms of common household units based on the complex carbohydrate content.
- -- To determine whole-grain servings, ARS food specialists classified all grain ingredients used in the CSFII 1994–96 recipe database as whole grain or nonwhole grain. The total number of grain servings per 100 grams of each food reported in the survey was determined. Then, this total number of servings was divided into whole-grain servings and nonwhole-grain servings based on the proportion of the grain ingredients in the food that were whole grain and nonwhole grain.

**Vegetables.** The Food Guide Pyramid separates vegetables into five subgroups: dark green leafy vegetables; deep yellow vegetables; starchy vegetables; dry beans and peas (legumes); and other vegetables (U.S. Department of Agriculture 1992, 1993). A list of vegetables classified according to these subgroups is shown below. It includes all those reported in the CSFII 1994–96. The classification for those marked with an asterisk is from a publication describing the Pyramid and its use (U.S. Department of Agriculture 1993); the remainder were assigned by ARS nutritionists and food specialists.

- -- Dark green leafy vegetables: arugula, beet greens\*, broccoli\*, chard\*, chicory\*, cilantro, collard greens\*, dandelion greens\*, endive\*, escarole\*, grape leaves, kale\*, lambsquarters, mustard greens\*, parsley, poke greens, pumpkin leaves, romaine lettuce\*, spinach\*, sweetpotato leaves, taro leaves, turnip greens\*, watercress\*.
- -- Deep-yellow vegetables: calabaza, carrots\*, carrot juice, pumpkin\*, sweet potato\*, winter squash\*, yams.
- -- Starchy vegetables: black-eyed peas (not dried), breadfruit\*, cassava, corn\*, cowpeas (not dried), dasheen, green peas\*, hominy\*, jicama, lima beans (immature)\*, parsnips, pigeonpeas, white potato\*, rutabaga\*, tannier, taro\*, yambean.
- -- Dry beans and peas: bayo beans, black beans\*, black-eyed peas\*, broadbeans, calico beans, chickpeas (garbanzos)\*, cowpeas, fava beans, kidney beans\*, lentils\*, lima beans (mature)\*, mung beans\*, navy beans\*, pinto beans\*, pink beans, red Mexican beans, split peas\*, soybeans (mature), white beans.

-- Other vegetables: algae, aloe vera juice, artichoke\*, asparagus\*, balsam-pear pods, bamboo shoots, bean and alfalfa sprouts\*, broccoflower, beets\*, Brussels sprouts\*, cabbage\* (green and red, and sauerkraut), cactus, capers, cauliflower\*, celery\*, celery juice, chayote, Chinese cabbage\*, chives, christophine, chrysanthemum, coriander, cucumber\*, eggplant\*, garlic, ginger root, green beans\*, horseradish, leek, lettuce\*, lotus root, mushrooms\*, nopales, okra\*, olives, onions (mature and green)\*, oriental radishes, palm hearts, peppers (green\*, red, hot, banana), pimiento, radicchio, radishes\*, seaweed, snow peas\*, summer squash\*, swamp cabbage, tomatillos, tomato\*, tomato juice\*, turnips\*, water chestnuts, wax beans, waxgourd, winter melon, zucchini\*.

The Pyramid servings data further subdivide these groups. White potatoes are listed separately from other starchy vegetables because they account for a large proportion of starchy vegetable consumption. Similarly, tomatoes are listed as a separate group; the Food Guide Pyramid includes them with "other vegetables."

Serving sizes were based on those in the Food Guide Pyramid, which defines a serving as 1 cup of raw leafy vegetables; ½ cup of other vegetables, cooked or chopped raw; or 3/4 cup of vegetable juice. These serving sizes were used as the basis for selecting or imputing appropriate serving weights from the CSFII 1994–96 food coding database.

Often, the food coding database provided several different weights for the various forms in which a vegetable might be available for consumption. When mashed vegetables were reported, the weight for the mashed form was used. For other forms, the following general order of priority was used to select a serving weight: chopped, sliced, cubes, diced, pieces, whole. For broccoli, the order of priority was: chopped, cut, pieces, florets, spears. In general, this had the effect of counting as a serving the most dense form of the vegetable for which a weight was available.

Although serving weights were assigned to vegetables in their "as consumed" form, the nonvegetable ingredients were counted toward appropriate food groups as well. For example, the fat added in cooking and the added sugars were counted toward servings in the Pyramid tip, and the milk in mashed potatoes was counted toward the dairy group. Vinegar does not count toward a food group because it has no calories.

For vegetable combinations containing vegetables from more than one subgroup (for example, peas and carrots), first the serving weight was selected from the food coding database. Then the number of servings from each subgroup per 100 grams was determined based on the proportion by weight that each vegetable in the recipe contributed to the total.

**Fruits.** The Food Guide Pyramid separates fruits into two subgroups: "citrus, melons, berries" and "other fruits" (U.S. Department of Agriculture 1993). A list of fruits classified according to these subgroups is shown below. The classification for those marked with an asterisk is from a publication describing the Pyramid and its use (U.S. Department of Agriculture 1993). The remainder were assigned by ARS nutritionists and food specialists.

- -- Citrus fruits, melons, berries: Acerola, blackberries, blueberries\*, boysenberries, calamondin, cantaloupe\*, casaba melon, cranberries\*, elderberries, gooseberries, grapefruit\*, honeydew melon\*, juneberries, kiwifruit\*, kumquat, lemon\*, lime, loganberries, mulberries, orange\*, raspberries\*, strawberries\*, tangelo, tangerine\*, ugli fruit\*, watermelon\*, and juices made from these fruits.
- -- Other fruits: Apple\*, apricot\*, Asian pear\*, avocado\*, banana\*, cherries\*, currants, dates\*, figs\*, genip, guava\*, quince, grapes\*, jackfruit, Japanese pear, jobo, lychee, mamey (mamea apple), mango\*, nectarine\*, papaya\*, passion fruit\*, peach\*, pear\*, persimmon, plantain\*, pineapple\*, plum\*, pomegranate, prickly pear\*, prunes\*, raisins\*, red banana, rhubarb\*, sapodilla, soursop (guanabana), star fruit\* (carambola), sweetsop, tamarind, watermelon rind, wi-apple, and juices made from these fruits.

Definitions of serving size were based on those in the Food Guide Pyramid. It defines a serving as a whole fruit, such as a medium apple, banana, or orange; a grapefruit half; a melon wedge; 3/4 cup fruit juice; ½ cup berries; ½ cup chopped, cooked, or canned fruit; or 1/4 cup dried fruit (U.S. Department of Agriculture 1992). These serving sizes were used as the basis for selecting or imputing appropriate serving weights from the CSFII 1994–96 food coding database.

Servings from all fruits, whether eaten plain or consumed as an ingredient of any food, were counted toward fruit group servings. As with foods in the grain and vegetable groups, foods were separated into ingredients before serving weights were assigned only if a serving weight consistent with Pyramid guidance could not be determined for the food consumed. Therefore, serving weights were assigned to fruits prepared with added sugar if the sugar did not increase the volume appreciably. For example, weights from the food coding database appropriate for a ½-cup serving were selected for fruits that were unsweetened and sweetened and for those canned in juice, light syrup, and heavy syrup. A few fruit sources such as fruit nectars and cranberry sauces were defined as mixtures and separated into ingredients before serving weights were assigned because they contained large proportions of added sugar, which could change the volume measurement.

For fruit combinations containing fruits from more than one subgroup (for example, fruit cocktail with citrus fruits), first the serving weight was selected from the food coding database. Then the number of servings from each subgroup per 100 grams was determined based on the proportion by weight that each fruit in the recipe contributed to the total.

**Dairy.** According to the Pyramid, most dairy foods are classified in this group (also called the milk, yogurt, and cheese group). Dairy foods that are excluded are those which are primarily fat, namely butter, cream, sour cream, and cream cheese.

For milk and yogurt, the serving size used was taken directly from the Pyramid, which defines a serving as 1 cup of milk or yogurt (U.S. Department of Agriculture 1992). For cheeses, serving sizes were based on the Pyramid's underlying criterion for a dairy serving, which is that it should provide about the same amount of calcium as 1 cup of skim milk (that is, 302 milligrams) (U.S. Department of Agriculture 1992, 1993).

Most foods containing dairy products were separated into ingredients, and the number of servings from the dairy group was determined based on the amount of milk or cheese they contained using the serving sizes specified above. This was true for foods having dairy products as primary ingredients, such as ice cream, ice milk, frozen yogurt, puddings, and custards (including those used as fillings). It also applied to mixed dishes (such as casseroles, omelets, soups, and vegetables with cream or cheese sauces) and to mixtures (such as salad dressings, milk gravies, meal replacements, and candies) that contained milk or cheese as an ingredient. However, for a few foods, such as grain products, processed meats, and meat analogs, milk was considered such an integral part of the food that to count the milk toward servings from the dairy group would have constituted double counting.

Meat. Meats and meat alternates are classified in the meat group. Meats include beef, pork, lamb, veal, game, poultry, fish, shellfish, frankfurters, sausages, bacon, luncheon meats, and organ meats. Meat alternates include eggs, soy-based products such as tofu and meat analogs, nuts, and seeds. Dry beans and peas can also count as a meat alternate, or they can count as a vegetable.

The Food Guide Pyramid recommends eating two to three servings each day of foods from the meat group (also called the meat, poultry, fish, dry beans, eggs, and nuts group). The Pyramid states that the total amount of these servings should be the equivalent of 5 to 7 ounces of cooked lean meat, poultry, or fish per day (U.S. Department of Agriculture 1992). For meat alternates, the Pyramid specifies amounts equivalent to 1 ounce of cooked lean meat as follows: ½ cup cooked dry beans or peas, 1 egg, 2 tablespoons peanut butter, 1/3 cup nuts, 1/4 cup seeds, and ½ cup tofu (U.S. Department of Agriculture 1992, 1993). Thus, the same serving unit, ounces of cooked lean meat equivalents, is used for all foods that count toward the meat group. This measure standardizes the definition of a serving unit for the different types of foods that count toward the meat group and presents the data in the unit of measure in which the meat group recommendation is specified.

When the Food Guide Pyramid was developed, nutrient profiles were established for the food groups and subgroups as a preliminary step toward determining the number of servings to recommend (Welsh et al. 1993). For the five major nutrient-bearing groups and their subgroups, each profile represents the quantities of nutrients one would expect to obtain on average from a serving if foods were in their

lowest fat forms (Welsh et al. 1993). The profile for the meat group provides 2.651 grams of fat per ounce of cooked lean meat, poultry, or fish. This translates to 9.35 grams of fat per 100 grams of cooked lean meat.

Therefore, the definition of cooked lean meat is meat, poultry, or fish that contains 9.35 grams or less of fat per 100 grams and at least 90.65 grams of nonfat meat per 100 grams. Thus, by definition, every 100 grams of meat, poultry, or fish with 9.35 grams or less of fat is 3.53 ounces of cooked lean meat (that is, 100/28.35 = 3.53) and has no discretionary fat to count toward the Pyramid tip.

For meat, poultry, or fish having more than 9.35 grams of fat per 100 grams when cooked, an algorithm was developed to provide a standardized method for determining the amount of cooked lean meat and the amount of discretionary (or excess) fat per 100 grams. This means that meats generally considered high in fat, such as frankfurters and bacon, for which there are low-fat alternatives, can be systematically categorized into Pyramid food groups in a manner consistent with the concepts behind the Pyramid. As the variety of low-fat meat products on the market increases, this will become increasingly important.

Some recipes in the CSFII 1994–96 recipe database contain raw meat. Thus, ARS developed a standard for raw meat comparable to the standard for cooked meat by estimating the grams of fat in 100 grams of raw meat that would be equivalent to 9.35 grams or less of fat in the cooked standard. This standard was 6.16 grams of fat or less per 100 grams of raw meat, poultry, or fish. To convert from the raw to the cooked weight, ARS assumed an average cooking yield of 75 percent. Thus, 1-1/3 ounces of raw lean is equivalent to the 1-ounce cooked, lean standard.

**The Pyramid tip.** The Pyramid tip includes fats, sugars, and alcohol. These items supply calories but little or no vitamins and minerals. Fats and sugars eaten separately or added to foods obviously count toward the tip. So do most of the fats and the added sugars from foods in the five major food groups (U.S. Department of Agriculture 1992). The tables in this report include information on discretionary fat and added sugars but not alcohol.

# Discretionary fat includes

- -- all "excess" fat from the five major food groups beyond amounts that would be consumed if only the lowest fat forms of food in each food group were eaten
- -- fats added to foods in preparation or at the table, including cream, butter, margarine, regular or low-fat cream cheese, oil, lard, meat drippings, cocoa, and chocolate.

# Added sugars, include

- -- all sugars used as ingredients in processed and prepared foods, such as breads, cakes, soft drinks, jam, and ice cream
- -- sugars eaten separately or added to foods at the table.

#### **More Information**

Additional documentation on the development of the Pyramid servings data is available on the CD–ROM containing microdata from the 1994–96 CSFII (U.S. Department of Agriculture 1998).

#### References

Cleveland, L.E., D.A. Cook, S.M. Krebs-Smith, and J. Friday. 1997. A method for assessing food intakes in terms of servings based on food guidance. American Journal of Clinical Nutrition 65 (suppl): 1254S–1263S.

Federal Register. October 22, 1990. Public Law 101–445. National Nutrition Monitoring and Related Research Act of 1990.

Federation of American Societies for Experimental Biology. 1995. Third report on nutrition monitoring in the United States, vol. 1. Interagency Board for Nutrition Monitoring and Related Research. U.S. Government Printing Office, Washington, DC, pp. III–1 to III–10.

Tippett, K.S., and Y.S. Cypel, eds. 1998. Design and operation: the Continuing Survey of Food Intakes by Individuals and the Diet and Health Knowledge Survey, 1994–96. U.S. Department of Agriculture, Nationwide Food Surveys Report No. 96–1.

- U.S. Department of Agriculture. 1992. The Food Guide Pyramid. USDA Home and Garden Bulletin 252.
- U.S. Department of Agriculture. 1993. Eat a variety of foods. USDA Home and Garden Bulletin 253–2.
- U.S. Department of Agriculture. 1998. 1994–96 Continuing Survey of Food Intakes by Individuals and 1994–96 Diet and Health Knowledge Survey. CD–ROM.
- U.S. Department of Agriculture and U.S. Department of Health and Human Services. 1995. Nutrition and your health: Dietary Guidelines for Americans, 4th ed. USDA Home and Garden Bulletin No. 232.

Welsh, S.O., C. Davis, A. Shaw. 1993. USDA's food guide: background and development. USDA Miscellaneous Publication No. 1514.