

# U.S. Per Capita Food Supply Trends: More Calories, Refined Carbohydrates, and Fats

Judy Putnam, Jane Allshouse, and Linda Scott Kantor

The average American dietary style at the beginning of the 21st century resembles an hour glass rather than the Federal Government's Food Guide Pyramid. We gobble huge amounts of added fats and sugars from the top tier of the Pyramid (marked "Use sparingly") and heaping plates of pasta and other refined grains from the bottom tier, but we are sorely lacking in the vegetables, fruits, low-fat milk products, and other nutritious foods in the middle of the Pyramid.

A big jump in average calorie intake between 1985 and 2000 without a corresponding increase in the level of physical activity (calorie expenditure) is the prime factor behind America's soaring rates of obesity and Type 2 diabetes. ERS's loss-adjusted annual per capita food supply series (adjusted for spoilage, cooking losses, plate waste, and other food losses accumulated throughout the marketing system and the home) suggests that average daily calorie consumption in 2000 was 12 percent, or roughly 300 calories, above the 1985 level (fig. 1). Of that 300-calorie increase, grains (mainly refined grains) accounted for 46 percent; added fats, 24 percent; added sugars, 23 percent; fruits and vegetables, 8 percent; and the meat



According to a recent survey, the number of American adults who say they are eating "pretty much whatever they want" is at an all-time high.

Credit: PhotoDisc.

Judy Putnam (202) 694-5462 [jjputnam@ers.usda.gov](mailto:jjputnam@ers.usda.gov)  
Jane Allshouse (202) 694-5449 [allshous@ers.usda.gov](mailto:allshous@ers.usda.gov)  
Linda Scott Kantor [lkantor@ers.usda.gov](mailto:lkantor@ers.usda.gov)

The authors are agricultural economists with the Food and Rural Economics Division, Economic Research Service, USDA.

and dairy groups together, declined by 1 percent.

In 2000, the American diet did an about-face with respect to total dietary fat. Preliminary data on the nutrient content of the U.S. food supply (calculated by USDA's Center for Nutrition Policy and Promotion and not adjusted for spoilage, cooking losses, and plate waste) indicate that per capita availability of total dietary fat jumped 6 percent between 1999 and 2000, reaching an all-time high level and pushing per capita calorie availability to a new high of 3,900 calories per person per day. Per capita availability of total carbohydrate declined 2 percent in 2000; protein was unchanged.

In contrast, between 1985 and 1999, per capita consumption of total dietary fat remained steady, even declining slightly in some intervening years. Moreover, fat's share of total calories declined between 1985 and 1999, as total calorie consumption increased. Mean-

while, per capita consumption of total carbohydrate and protein jumped 21 percent and 12 percent between 1985 and 1999.

Several trends helped to moderate fat consumption during this period, such as the closer trimming of outside fat on retail cuts of meat (beginning in 1986), the marketing of a host of lower fat ground and processed meat products, and consumer substitution of poultry for red meat. An overall decrease in per capita consumption of milks and growing consumer preference for lower fat milks also stemmed fat consumption. Mandatory nutrition labeling on packaged foods, beginning in early 1994, prompted food manufacturers to market lower fat versions of regular high-fat foods, which likely spawned the modest decline in consumption of added fats between 1993 and 1997. Meanwhile, counteracting increases in fat consumption came from hikes in consumption of total meats (red meat, poultry, and fish),

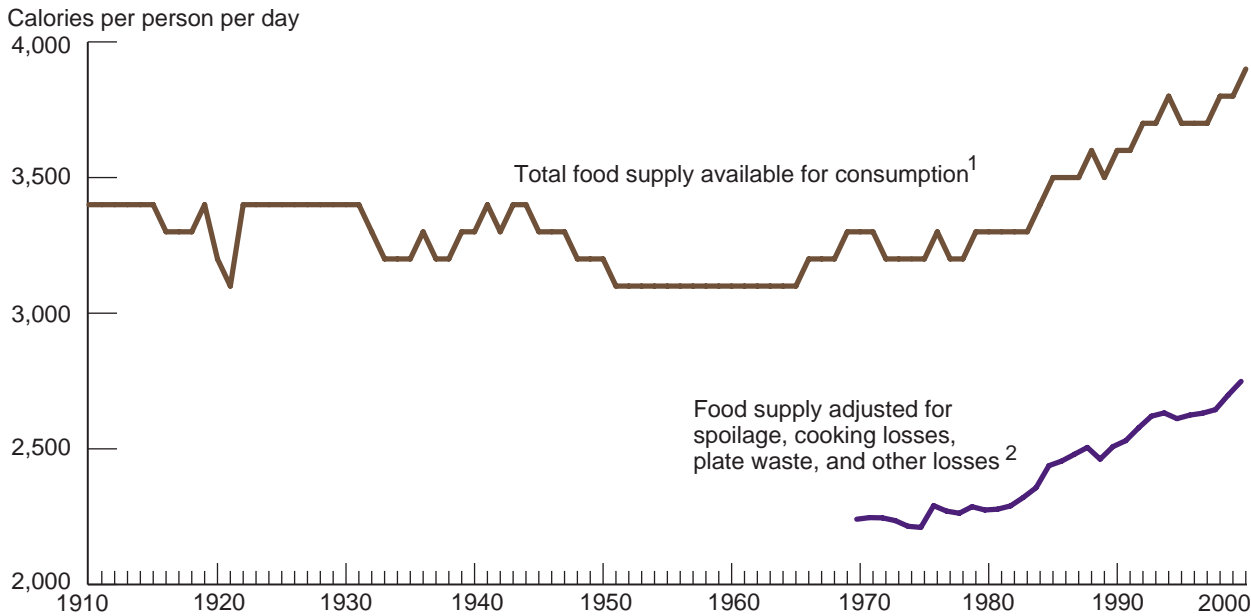
salad dressings, cheeses, salty snack foods, baked goods, commercially prepared foods, and foods eaten away from home.

Interestingly, as total fat consumption surged in 2000, availability of caloric sweeteners declined, from 151.3 pounds per person in 1999 (not adjusted for losses) to 148.9 pounds in 2000—the first decline in consumption of added sugars since 1986. And, in 2001, consumption of added sugars declined again. Average daily consumption of added sugars (adjusted for plate waste and other losses) was 31.1 teaspoons in 2001, 31.9 teaspoons in 1999, and 27.1 teaspoons in 1985.

### Americans Eat Too Much Refined Grain, Fall Far Short on Whole Grains

Americans consumed, on average, 200 pounds of flour and cereal products in 2000 (unadjusted for spoilage, plate waste, and other losses), compared with 147 pounds

**Figure 1—Calories From the U.S. Per Capita Food Supply, Adjusted for Losses, Increased 20 Percent Between 1982 and 2000**



<sup>1</sup> Rounded to the nearest hundred.

<sup>2</sup> Not calculated for years before 1970.

Source: USDA's Center for Nutrition Policy and Promotion; USDA's Economic Research Service.

annually in the early 1980s and 135 pounds annually in the early 1970s (table 1). The food supply series excludes popcorn and other whole grain foods for which only scant availability data exist, such as wheat bran, wheat germ, wheat berries, amaranth, buckwheat, millet, kamut, quinoa, spelt, and triticale.

ERS estimates that 60 pounds of the 200 pounds per capita of flour and cereal products available for domestic human food consumption in 2000 were lost to spoilage, plate waste, and other losses. The remaining 140 pounds convert to 10 Food Guide Pyramid servings per capita per day. (A serving is equivalent to 1 slice of bread, 1 ounce of ready-to-eat cereal, or ½ cup of cooked cereal, rice, or pasta.) The actual number of per capita

daily servings from the grains group likely would total about 10.6 servings in 2000 if missing whole grain foods were included, suggesting that many consumers exceeded the 9-serving Pyramid recommendation for a 2,200-calorie diet (fig. 2).

Based on the data available, total daily Pyramid grain servings increased 33 percent between the early 1980s and 2000, from 7.5 servings per person per day to 10 servings. Increased consumption of white and whole wheat flour accounted for nearly half of the increase. Twofold increases in per capita consumption of durum flour (used for pasta), corn products (used for some snack foods and Mexican-style foods, such as tortillas), and rice accounted for additional increases in grain group servings.

The data suggest that the average American not only eats more grain servings than recommended—most of it refined grain—in relation to calorie expenditure level but also may need to change the types of foods consumed from the grain group to meet dietary recommendations for whole grains, fiber, fat, cholesterol, and added sugars. A high-carbohydrate diet can raise the risk of heart disease for the estimated 25 percent of Americans who have Metabolic Syndrome, also called Syndrome X, or insulin resistance. For these people, too much carbohydrate will raise levels of triglycerides and lower levels of HDL (good) cholesterol. A high-carbohydrate diet can also pose a health threat for overweight, underexercised people and for people from ethnic groups—Latino, Asian,

**Table 1—Per Capita Grain Consumption Has Jumped Nearly 50 Percent Since the Early 1970s<sup>1</sup>**

Item	Per capita annual averages						2000	Change, 1970-74 to 2000	2000 food supply, Pyramid-based servings per capita per day <sup>2</sup>
	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99			
	Pounds <sup>3</sup>						Percent	Number	
Total flour and cereal products <sup>3</sup>	135.1	141.2	147.0	167.8	185.7	195.3	200.0	48	9.97
Total wheat flour	111.0	116.1	117.3	128.3	139.1	144.4	146.3	32	7.69
White and whole wheat flour	103.9	109.0	110.8	119.1	126.4	132.0	133.4	28	7.30
Durum wheat flour <sup>4</sup>	7.1	7.1	6.5	9.2	12.7	12.4	12.9	82	.39
Rye flour	1.2	.8	.7	.6	.6	.6	.5	-58	.03
Rice (milled)	7.2	7.4	10.1	12.6	16.6	18.4	19.7	174	.54
Total corn products	10.2	11.8	14.1	20.4	22.5	26.5	28.4	178	1.56
Corn flour and meal	6.3	6.5	8.2	13.0	15.2	16.8	17.5	178	.96
Hominy and grits	2.0	3.0	2.9	3.3	3.0	4.9	6.2	210	.27
Corn starch	2.0	2.4	3.1	4.1	4.2	4.8	4.7	135	.33
Oat products	4.7	4.1	3.8	5.0	6.2	4.8	4.3	-9	.14
Barley products	.9	1.0	1.0	.9	.7	.7	.7	-22	.02
	Servings per capita per day <sup>2</sup>								
Total flour and cereal products <sup>2</sup>	6.90	7.23	7.51	8.5	9.26	9.77	9.97	44	9.97

The Food Guide Pyramid recommends nine servings of grain products a day for a 2,200-calorie diet, including several servings of whole grains.

Note: Totals may not add due to rounding.  
<sup>1</sup>Excludes quantities used in alcoholic beverages and fuel. Excludes popcorn and some other whole grain foods, for which production data are scanty and whose consumption likely totaled at least three-fifths of a grain serving per capita per day in 2000.  
<sup>2</sup>Adjusted for spoilage, plate waste, and other losses. Servings are calculated based on a grain equivalent. The amount of flour in 1 slice of bread; 1 ounce of ready-to-eat cereal; or 1/2 cup of cooked cereal, rice, or pasta count as 1 serving.  
<sup>3</sup>Aggregate data, unadjusted for spoilage, plate waste, and other losses.  
<sup>4</sup>Includes flour equivalent of imported pasta products.  
 Source: USDA's Economic Research Service.

Indian—in which a higher proportion have a genetic predisposition to Type 2 diabetes.

Most Americans are missing out on whole grains, often consuming less than one serving a day. The health benefits of whole-grain foods include not only fiber, but important vitamins, minerals, and phytochemicals that may work synergistically to reduce risk for some chronic diseases. Because whole grains take longer to digest, especially when they are coarsely ground or intact, they have a slow, low, and steady effect on blood sugar and insulin levels, which protects the body against heart disease and diabetes. The high fiber content of many whole grains may help a person feel full longer while consuming fewer calories.

The 2000 edition of *Nutrition and Your Health: Dietary Guidelines for Americans*, for the first time, included a specific guideline for grain foods, separate from fruits

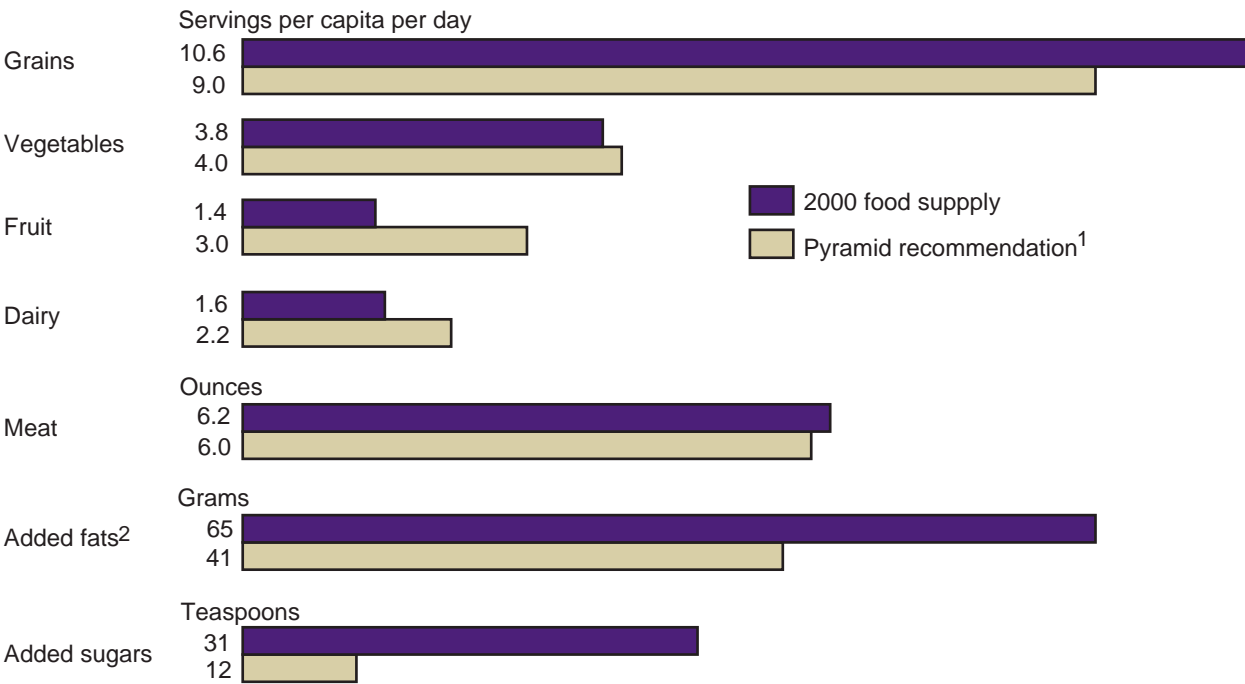
and vegetables, and recognized the unique health benefits of whole grains. But neither the guideline nor its accompanying text specify the number of whole grain servings that consumers should eat each day. However, a number of public and private organizations, including the U.S. Department of Health and Human Services and the American Dietetic Association, recommend that at least three daily grain servings should come from whole grains.

According to USDA's Continuing Survey of Food Intakes by Individuals (CSFII), in 1994-96, two-thirds of the population age 2 or older consumed less than one serving of whole grains a day, whereas just 10 percent of Americans consumed three or more servings. Low-income individuals and those with less than a high school education had whole grain intakes 40 percent below those in the highest income and education groups.

Whole grain consumption among Hispanics and non-Hispanic Blacks was about half that of non-Hispanic Whites.

Given the many health benefits of eating whole grains, why do two-thirds of Americans eat less than one serving a day? First, Americans are simply not used to eating whole grains. Thus, many U.S. consumers are not aware of the health benefits of whole grains, have difficulty identifying whole grains in the marketplace, perceive whole grains to be inferior in taste and palatability, and lack familiarity with preparation methods for whole grains. Second, whole grains have not been that easy to buy. Until recently, such products as whole grain pasta, whole grain couscous, or bulgur were available only in health food stores, co-ops, or through mail order. Getting whole grain foods in restaurants was even harder. Third, many whole grains take longer to cook than

**Figure 2—2000 Food Supply Servings Compared With Food Guide Pyramid Recommendations**



<sup>1</sup>Pyramid recommendation based on a sample diet of 2,200 calories.

<sup>2</sup>The Food Guide Pyramid does not make a recommendation for added fats and oils. This recommendation is implied by the 56-percent share of total fats accounted for by added fats and oils in the food supply in 2000 and an upper limit on total fat consumption of 73 grams for a 2,200-calorie diet.

Source: USDA's Economic Research Service.

their refined counterparts, thus failing to meet current consumer demands for convenience. Brown rice, for example, takes twice as long to cook as white rice. Finally, whole grain foods have been more expensive relative to their refined counterparts. On average, prices were one-third higher for whole-grain versions of the same product in 1999, according to supermarket scanner data. For most consumers, meeting the whole grain guideline may require substantial shifts in shopping and consumption habits.

The food industry, always on the lookout for new markets and using the health claim approved by the U.S. Food and Drug Administration (FDA) in 1999 for use on whole grain products to gain a competitive edge, has begun to offer more whole grain products. Many mainstream grocery stores now carry a selection of whole grain products, including quick-cooking brown rice. Several large companies have introduced pasta made from half whole wheat flour and half white flour. Pre-cooked

whole wheat pizza shells are showing up in grocery stores. But to garner the health benefits of whole grain foods, consumers must not only purchase these products for at-home consumption but ask for them in the away-from-home sector.

### Consumption of Added Fats Dipped in Mid-1990s, Surged From 1998 to 2000

After adjusting for losses and the nonfat portion of composite products, such as margarine, the

**Table 2—Americans Consumed an Average of 65 Grams, or 600 Calories' Worth, of Added Fats Per Person Per Day in 2000**

Item	Per capita annual averages						2000	Change, 1970-74 to 2000	2000 food supply, added fats per capita per day <sup>1</sup>
	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99			
	<i>Pounds, product weight<sup>2</sup></i>							<i>Percent</i>	<i>Grams</i>
Fats and oils	55.7	57.4	61.7	66.1	69.1	67.5	77.1	38	63.0
Salad and cooking oils	16.7	19.5	22.2	24.8	26.2	27.2	33.7	102	29.8
Shortening	17.2	17.6	19.0	21.9	23.1	21.2	23.1	34	19.2
Margarine	11.0	11.4	10.8	10.6	10.6	8.5	8.2	-25	4.8
Butter	5.0	4.4	4.6	4.6	4.5	4.4	4.6	-8	3.6
Lard (direct use) <sup>3</sup>	3.6	2.5	2.1	1.5	1.4	1.8	1.9	-47	1.2
Edible beef tallow (direct use) <sup>3</sup>	na	.4	1.4	1.2	1.8	2.9	4.0	na	2.5
Other edible fats and oils <sup>4</sup>	2.2	1.9	1.6	1.4	1.4	1.4	1.5	-32	1.8
Very high-fat dairy foods that are included in total added fat:									
Cream cheese	.6	.8	1.1	1.4	2.0	2.2	2.4	300	.7
	<i>Half pints, product weight<sup>2</sup></i>								
Heavy cream	1.0	1.1	1.5	2.2	2.5	3.4	3.7	270	.6
Light cream	.7	.6	.5	.8	.6	.9	1.1	57	.1
Sour cream	2.4	3.1	3.7	4.5	5.0	5.5	6.2	158	.5
Half and half	5.0	4.5	4.8	5.8	5.8	6.1	6.9	38	.3
Eggnog	.7	.8	.8	.9	.8	.7	.6	-14	--
	<i>Grams per capita per day, fat content basis<sup>1</sup></i>								
Total added fat (excludes naturally occurring fat in such foods as meats, beverage milks, nuts, and avocados) <sup>1</sup>	47.9	49.3	52.5	56.4	58.6	57.2	65.3	36	65.3
	<i>Tablespoons per capita per day, fat content basis<sup>1</sup></i>								
	3.5	3.6	3.9	4.1	4.3	4.2	4.8	37	na

The *Dietary Guidelines* recommend that people limit their total fat consumption to no more than 30 percent of daily energy intake—about 73 grams of added and naturally occurring fat for a 2,200-calorie diet. In 2000, added fats alone accounted for 97 percent of this suggested upper limit.

Notes: na = not applicable or not available. -- = less than 0.05 grams. Totals may not add due to rounding.

<sup>1</sup>Adjusted for cooking losses, plate waste, and other losses. Includes only the cream portions of half and half and eggnog; the milk portions are included in the dairy group. Fat content of butter and margarine calculated at 80 percent. One gram of fat equals 9 calories. One tablespoon of fat equals approximately 13.6 grams of fat.

<sup>2</sup>Aggregate data, unadjusted for cooking losses, plate waste, and other losses.

<sup>3</sup>Excludes use in margarine and shortening.

<sup>4</sup>Specialty fats used mainly in confections and nondairy creamers.

Source: USDA's Economic Research Service.

per capita food supply provided 65 grams a day of added fats and oils in 2000, a 24-percent increase from the 53 grams available for consumption in the early 1980s (table 2). Fats are added in cooking and at the table and in many processed food products, including baked goods, french fries, and snack foods. Added fat in processed foods may not be visible to consumers, who are typically not aware of the fat content, particularly for foods eaten away from home. These added fats are consumed in addition to those that occur naturally in meats, nuts, eggs, dairy products, avocados, and other foods.

Americans' mid-1990s push to cut dietary fat is apparent in recent food supply data, which show a modest (8 percent) decline between 1993 and 1997 in per capita daily consumption of added fats, from 61 grams to 56 grams. As a result of consumer concerns about fat and mandatory nutrition labeling (beginning in April 1994), food processors introduced over 5,400 lower fat versions of foods in U.S. supermarkets in 1995-97, according to the Global New Products Database, a product of Mintel International Group Ltd.

But the decline in consumption of added fats was short lived. Between 1997 and 2000, per capita daily consumption of added fats jumped 16 percent, from 56 grams to 65 grams. Consumer backlash against the spate of fat-free and low-fat (3 grams of fat or less per serving) versions of high-fat processed foods introduced in the mid-1990s and consumer relaxation of dietary fat restrictions to include more healthful oils in the diet likely fueled the rise.

Many consumers found the taste of the new low-fat and fat-free versions of foods unacceptable. Accordingly, many companies reformulated their low-fat and fat-free products in the late 1990s, adding some fat to improve taste. Some consumers, who rejected the low-fat and fat-free versions, have ac-

## Food Supply Data Adjusted for Spoilage and Waste

Two primary data sets are available to measure compliance with the *Dietary Guidelines*—USDA's Continuing Survey of Food Intakes by Individuals (CSFII) and the U.S. Food Supply Series. Both data sets provide Food Guide Pyramid servings data for analyzing how American diets stack up to Pyramid recommendations.

The CSFII records what people say they have eaten over a specific time period and collects demographic information about respondents, such as household size, income, race, age, and sex. The demographic information is particularly valuable because it can be used to identify the type of persons most likely to meet dietary recommendations on the basis of social and demographic characteristics and can help researchers to assess dietary status among population subgroups. The CSFII 1994-96 Pyramid Servings Data provide national probability estimates for the U.S. population based on food intakes reported by individuals age 2 and older on 2 nonconsecutive days (14,256 individuals).

Numerous studies suggest that food intake surveys, like the CSFII, which collect food consumption data through recollections of foods eaten or food diaries over short periods, are subject to under-reporting of consumption when measured in terms of energy intake. Under-reporting of consumption is a particular concern of researchers studying the underlying causes of the steep rise in the prevalence of obesity in recent years in the United States.

Food supply data are collected directly from producers and distributors using techniques that vary by commodity. Food supply data are not collected from individual consumers, which allows examination of food consumption changes independent of consumer survey data. If waste and other losses in the system are relatively constant from year to year, food supply data provide an independent measure of changes in food consumption patterns over time.

ERS annually calculates the amount of food available for human consumption in the United States. For most commodity categories, this available food supply is measured as the sum of annual production, beginning inventories, and imports minus exports, industrial nonfood uses, farm uses (seed and feed), and end-of-year inventories. Per capita consumption is calculated by dividing the available food supply by the total U.S. population as of July 1 each year. Since food supplies are measured on an aggregate level as they move through marketing channels for domestic consumption, the data typically overstate the amount of food that people actually ingest by capturing substantial quantities of nonedible food parts (like peach pits) and food lost through spoilage and waste in the home and marketing systems.

ERS has developed new methods to adjust the food supply data for losses and express the data in terms of Food Guide Pyramid-based servings. Researchers can gain a more complete understanding of U.S. dietary patterns by comparing food supply servings at the national level with estimates generated at the individual level by food intake surveys. Loss-adjusted servings calculated from the food supply data can be compared with the servings recommended by the Food Guide Pyramid to gauge America's progress in following the *Dietary Guidelines*.

ERS uses the recommended Pyramid servings for a sample diet of 2,200 calories in this article. This calorie level approximates the daily Recommended Energy Allowance (REA) of 2,247 calories for the United States, derived from a 1998 population-weighted average of REA's for different cohorts of the U.S. population.

cepted reduced-fat products (one-third less fat than full-fat versions). Many other consumers have resumed eating full-fat versions (see “Are Americans Turning Away From Lower Fat Salty Snacks?” elsewhere in this issue). According to a 2000 Roper Reports’ survey of a nationally representative sample of 2,000 Americans age 18 or older, the share of American adults who say they are eating “pretty much whatever they want” was at an all-time high of 70 percent in 2000, up from 58 percent in 1997.

Although a healthful diet requires some dietary fat, excessive fat intake is associated with increased blood cholesterol, heart disease, and some cancers. The 2000 *Dietary Guidelines* recommend that people limit total fat consumption to no more than 30 percent of daily energy intake—about 73

grams of added and naturally occurring fat for a 2,200-calorie diet.

The food supply data suggest that most consumers do not meet this recommendation. In 2000, added fats alone accounted for 89 percent of the recommended upper daily limit for total fat intake—or about 21 percent of total calories for a 2,200-calorie diet. Per capita consumption of salad and cooking oils, which has doubled since the early 1970s, accounted for 46 percent of total added fats in 2000. These oils, which are largely unsaturated, are used mainly in mayonnaise and salad dressings. Animal fats—including lard, edible beef tallow, butter, and other dairy fats—which are major sources of saturated fats, accounted for 15 percent of added fats in 2000. Shortening and margarine, which are major sources of trans fatty

acids, accounted for more than a third of added fats in 2000.

According to food supply nutrient data for 2000, added fats accounted for 56 percent of the total fat provided by the food supply. Assuming that added fats continue to account for about 56 percent of the total fat provided by the food supply, Americans must, on average, consume roughly a third less added fat to bring total fat (added fat and naturally occurring fat) consumption close to the recommended upper limit of 30 percent of calories.

### Added Sugars Consumption Is Nearly Triple Dietary Targets

Although our body cannot distinguish between naturally occurring and added sugars, dietary guides focus on added sugars because foods high in added sugars

**Table 3—Average Consumption of Added Sugars Increased 22 Percent From 1980-84 to 2000**

Item	Per capita annual averages						2000 food supply, added sugars per capita per day <sup>1</sup>	Change, 1970-74 to 2000	2000 food supply, added sugars per capita per day <sup>1</sup>
	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99			
	<i>Pounds, dry-weight equivalent<sup>2</sup></i>							<i>Percent<sup>3</sup></i>	<i>Teaspoons</i>
Total caloric sweeteners	123.7	123.8	122.4	130.5	140.7	148.4	148.9	20	31.4
Refined cane and beet sugar	100.5	91.5	74.7	62.0	64.1	65.4	65.6	-35	13.8
Corn sweeteners	21.7	30.9	46.4	67.3	75.3	81.7	81.9	277	17.3
High fructose corn syrup	1.5	9.4	27.4	47.1	52.5	60.3	62.7	4,080	13.2
Glucose	15.7	17.5	15.6	16.5	19.0	17.6	15.8	1	3.3
Dextrose	4.6	3.9	3.4	3.6	3.9	3.8	3.4	-26	.7
Edible syrups	.5	.4	.4	.4	.4	.4	.4	-20	.1
Honey	.9	1.0	.9	.9	.9	1.0	1.1	22	.2
	<i>Teaspoons per capita per day<sup>3</sup></i>								
Total caloric sweeteners supply									
Not adjusted for loss and waste	38.4	38.5	38.0	40.6	43.7	46.1	46.3	20	46.3
Adjusted for loss and waste <sup>1</sup>	26.1	26.1	25.8	27.5	29.6	31.3	31.4	20	31.4

The Food Guide Pyramid bulletin recommends that people limit their consumption of added sugars to no more than 12 teaspoons daily for a 2,200-calorie diet. In 2000, average consumption of added sugars was nearly three times this suggested upper limit.

Note: Totals may not add due to rounding.

<sup>1</sup>Adjusted for spoilage, plate waste, and other losses. ERS makes a tentative assumption that approximately 29-30 percent of the total domestic human food supply of caloric sweeteners is wasted or otherwise lost and not ingested.

<sup>2</sup>Aggregate data, unadjusted for spoilage, plate waste, and other losses.

<sup>3</sup>One teaspoon of sugar equals 16 calories.

Source: USDA's Economic Research Service.

often supply calories but few nutrients, the so-called empty calories. High intake of sugary snack foods and desserts—colas, candy, cookies—and reduced intake of nutrient-rich foods—fruits, vegetables, whole grains—cuts needed nutrients.

To maintain nutritious diets and healthy weights, the Food Guide Pyramid advises consumers to limit added sugars to 12 teaspoons a day for a 2,200-calorie diet. After adjusting for losses at the processor, retail, foodservice, and consumer levels totaling roughly 29 percent of the available supply, the food supply provided 31 teaspoons of added sugars (refined cane and beet sugar, corn sweeten-

ers, edible syrups, and honey) per person per day in 2000—about the amount in three and three-quarters regular 12-ounce colas (table 3). Average annual consumption of caloric sweeteners grew by 22 percent between 1980-84 and 2000.

The ability of consumers to moderate their consumption of added sugars is complicated by the fact that caloric sweeteners are likely to be “hidden” in prepared foods. Although the 1990 Nutrition Labeling and Education Act requires manufacturers to disclose the total sugar content of food on food labels, the Act does not require labels to distinguish total sugars from added sugars, making

it difficult for consumers to determine how much added sugar they actually consume. A coalition of leading health experts and organizations, concerned about the climbing rates of obesity and the rising level of added sugars in Americans’ diets, has asked FDA to require that food labels state the amount of added sugars. FDA has said it would await final release of the Institute of Medicine’s report on dietary reference values for macronutrients.

### Red Meat Dominates the Meat Group

In 2000, total U.S. meat consumption (red meat, poultry, fish,

**Table 4—Americans Are Eating Less Red Meat, Fewer Eggs, and More Poultry and Fish**

Item	Per capita annual averages				Change, 1970-74 to 2000	2000 food supply, Pyramid-based servings per capita per day <sup>1</sup>
	1970-79	1980-89	1990-99	2000		
	<i>Pounds, edible weight<sup>2</sup></i>				<i>Percent</i>	<i>Ounces of cooked meat equivalents</i>
Total meat, poultry, and fish	177.2	182.2	188.9	195.8	10	5.2
Red meat	129.5	121.8	112.4	113.7	-12	3.0
Beef	80.9	71.7	63.1	64.6	-20	1.8
Pork	45.0	47.7	47.6	47.8	6	1.2
Veal, lamb, and mutton	3.5	2.4	1.7	1.4	-60	--
Poultry	35.2	46.2	61.8	66.9	90	1.7
Chicken	28.4	36.3	47.9	53.2	87	1.3
Turkey	6.8	9.9	13.9	13.7	101	.4
Fish and shellfish	12.5	14.2	14.7	15.2	22	.5
Dry beans, peas, and lentils (legumes) <sup>3</sup>	7.0	6.5	8.1	8.6	23	.2
Nuts (including peanut butter)	8.0	8.8	8.6	8.9	11	.2
	<i>Number<sup>2</sup></i>					
Eggs	285	257	236	250	-12	.5
In-shell	252	218	177	177	-30	.4
Processed	34	38	59	73	116	.1
	<i>— Ounces of cooked meat equivalents daily<sup>1</sup> —</i>					
Total meat group supply <sup>1, 3</sup>	5.8	5.8	5.9	6.2	7	6.2

The Food Guide Pyramid bulletin recommends that average meat group consumption should total the equivalent of 6 ounces of cooked lean meat per person per day for a 2,200-calorie diet, and that legumes should be selected often as choices from the meat group.

Note: -- = less than 0.05. Totals may not add due to rounding.

<sup>1</sup>Adjusted for cooking losses, plate waste, and other losses. According to the *Food Guide Bulletin*, consumers should count meat, poultry, and fish in total ounces. Other foods in this group—1 egg, 1/2 cup dry beans, 2 tablespoons of peanut butter, and 1/3 cup of nuts—are counted as the equivalent of 1 ounce of cooked lean meat.

<sup>2</sup>Aggregate data, unadjusted for cooking losses, plate waste, and other losses.

<sup>3</sup>Includes all legumes consumed, including those that may have been selected as vegetable group servings.

Source: USDA’s Economic Research Service.



and shellfish) amounted to 196 pounds (boneless, trimmed-weight equivalent, unadjusted for cooking losses, plate waste, and other losses) per person, 19 pounds above the annual average in the 1970s (table 4). Each American consumed an average of 16 pounds less red meat (mostly beef), 32 pounds more poultry, and 3 pounds more fish and shellfish, compared with average annual consumption in the 1970s.

The *Dietary Guidelines* and the Food Guide Pyramid recommend two to three servings (totaling the equivalent of 5-7 ounces of cooked lean meat) of fish, shellfish, lean poultry, other lean meats, eggs, beans, or nuts daily. The *Dietary Guidelines* suggest choosing beans often, trimming fat from meat, skinning poultry, and limiting intake of organ meats, egg yolks, and high-fat processed meats, such as bacon, sausages, and cold cuts, to keep saturated fat intake and blood cholesterol in check. The *Dietary Guidelines* also advise eating moderate amounts of foods high in unsaturated fats—some fish, such as salmon, tuna, and mackerel, and many kinds of nuts—taking care to avoid excess calories.

For a 2,200-calorie diet, the recommended amount from the meat group is the equivalent of 6 ounces of cooked lean meat per person per day. Meat, poultry, and fish are counted in total ounces. Other foods in this group—1 egg, ½ cup of dry beans, ½ cup of tofu, a 2 ½-ounce soyburger, 2 tablespoons of peanut butter, or 1/3 cup of nuts—are counted as the equivalent of 1 ounce of cooked lean meat. Legumes (dry beans, peas, or lentils) count either as servings in the meat or the vegetable group.

After adjusting for waste and cooking losses, the food supply provided the equivalent of 6.2 ounces of cooked meat (lean and fat portion) per person per day in 2000—a modest 9-percent increase from the 1970s. Because food supply estimates for meat and poultry include both lean and fat, the estimates

likely overstate lean meat consumption and are not directly comparable with the Food Guide Pyramid recommendation.

Although poultry meat consumption nearly doubled since the 1970s, red meat accounted for 48 percent of total meat-group servings per capita per day in 2000, nearly double the 27-percent poultry share. Red meat contributed 20 percent of the total saturated fat in the American diet in 2000; poultry, 6 percent; eggs, 2 percent; legumes, nuts, and soy, 2 percent; and fish and shellfish, 0.2 percent. The data suggest that, on average, Americans consume large quantities of foods that, relative to others in the meat group, are naturally high in saturated fat and cholesterol. Many consumers need to adjust the mix of foods they eat in this group.

### Too Few Fruits and Vegetables, Too Little Variety

The loss-adjusted food supply provided 5.2 servings of fruits and vegetables, including legumes, per person per day in 2000, slightly higher than the minimum recommendation shown in the Food Guide Pyramid but well below the 7 daily servings suggested for a 2,200-calorie diet. According to the 1994-96 CSFII, intakes of fruits and vegetables rose with age, income, and education and seem to be higher among Asian/Pacific Islanders and Native Americans than among other racial/ethnic groups, although small subsample sizes preclude assessing this with confidence.

U.S. per capita fruit consumption was woefully low. The food supply provided 1.4 servings per person per day of fresh and processed fruit and fruit juices in 2000, less than half the 3 fruit servings a day recommended by the Pyramid for a 2,200-calorie diet (table 5). Half of all Americans age 2 or over consumed less than 1 serving of fruit a day in 1994-96, according to the CSFII, and less than a quarter consumed the num-

ber of fruit servings recommended based on calorie intake. This shortfall is particularly troublesome given scientific evidence linking frequent consumption of fruits and vegetables with substantially reduced risk of many chronic diseases, including certain cancers. When measured in Pyramid servings, average fruit consumption has inched up 0.3 servings a day since the early 1970s—the equivalent of a third of a medium banana or apple or 1.75 ounces of fruit juice.

Dietary recommendations call for total fruit servings to be fairly evenly divided between two fruit subgroups—citrus, melons, and berries, which are good sources of vitamin C, and other fruit. In 2000, on a per-person-per-day basis, the food supply provided 0.6 servings of citrus, melons, and berries and 0.8 servings of other fruit.

The data suggest that many consumers do not incorporate adequate variety into their daily diet. Six foods, out of more than 60 fruit products included in the food supply data, accounted for half (51 percent) of total fruit servings in 2000—orange juice (17 percent), bananas (9 percent), apple juice (8 percent), fresh apples (7 percent), fresh grapes (5 percent), and watermelon (4 percent).

Vegetable consumption tells the same story—consumers tend to eat a limited variety of vegetables. While food supply servings were close to recommendations, consumption was concentrated in a small number of foods. The food supply provided a daily average of 3.8 servings of fresh, frozen, canned, and dehydrated vegetables (including dry beans, peas, and lentils) in 2000, close to the minimum 4 daily servings recommended for a 2,200-calorie diet (table 6). Per capita servings grew 30 percent, or nearly one vegetable serving, between the early 1970s and 2000.

Five foods—iceberg lettuce, frozen potatoes, fresh potatoes, potato chips, and canned tomatoes—

accounted for 48 percent of total vegetable servings in 2000. Legumes made up 6 percent of total consumption. Another 19 percent of total vegetable servings came from dehydrated potatoes (mainly instant potatoes), garlic, fresh carrots, fresh tomatoes, and fresh onions. No other single food, out of more than 70 vegetable foods in the food supply data, accounted

for more than 3 percent of total vegetable consumption, or 0.1 serving. (Note: fresh, frozen, or canned vegetables are counted as three different foods.)

Dietary guidance suggests that consumers divide their total vegetable servings into three subgroups—dark-green leafy and deep-yellow vegetables; starchy vegetables, including potatoes, dry

beans, peas, and lentils; and other vegetables. Thus, for a 2,200-calorie diet with a minimum serving recommendation of 4 servings daily, consumption would be expected to be evenly divided at about 1.3 servings from each subgroup. Within these groups, dark-green leafy vegetables and dry beans, peas, and lentils should account for 0.6 servings, or about three-sevenths of

**Table 5—Three Fruits—Oranges, Apples, and Bananas—Contributed One-Half of Total Daily Fruit Servings in 2000**

Item	Per capita annual averages						Change, 1970-74 to 2000	2000 food supply Pyramid-based servings per capita per day <sup>1</sup>	
	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99			2000
	<i>Pounds, fresh-weight equivalent<sup>2</sup></i>						<i>Percent</i>	<i>Number</i>	
Total fruit <sup>3</sup>	239.9	257.5	266.0	272.0	275.2	284.8	280.0	17	1.36
Fresh fruit	97.6	101.3	107.6	118.6	120.0	127.3	126.9	30	.64
Processed fruit	142.3	156.3	158.4	153.4	155.2	157.5	153.2	8	.73
Citrus, melons, and berries <sup>3</sup>	141.4	151.4	148.0	140.2	139.3	150.7	146.2	3	.55
Fresh citrus <sup>4</sup>	27.9	26.6	24.7	23.7	23.0	24.3	23.4	-16	.10
Oranges	15.0	13.8	13.0	12.8	12.1	12.3	11.7	-22	.05
Grapefruits	8.4	8.2	7.0	6.3	5.7	5.9	5.1	-39	.01
Melons <sup>4</sup>	20.0	19.1	20.5	24.7	24.6	28.0	26.7	34	.10
Watermelon	12.6	12.0	12.1	13.3	14.0	15.4	13.7	9	.06
Cantaloup	6.5	5.8	6.8	9.1	8.7	10.4	10.6	63	.04
Berries <sup>4</sup>	3.4	3.4	3.9	5.0	6.0	6.5	7.1	109	.08
Fresh and frozen strawberries	2.9	3.0	3.5	4.3	4.8	5.4	5.9	103	.06
Kiwifruit	na	na	.1	.2	.5	.5	.6	na	.01
Juices <sup>4</sup>	90.1	101.9	98.9	86.8	85.8	91.8	89.0	-1	.27
Orange juice	72.2	83.7	81.5	72.5	72.0	76.4	73.7	2	.23
Other fruit <sup>4</sup>	98.5	106.1	118.0	131.8	135.9	134.1	133.8	36	.81
Fresh bananas	18.0	19.5	21.6	24.7	26.2	28.1	28.5	58	.12
Fresh apples	16.3	17.6	18.0	19.4	19.0	18.6	17.5	7	.10
Apple juice	5.9	8.2	14.7	18.5	20.0	20.1	21.7	268	.11
Fresh grapes	2.8	3.4	5.1	7.3	7.3	7.5	7.3	161	.07
Canned olives	.9	1.2	1.1	1.3	1.2	1.2	.9	0	.06
Canned applesauce	5.5	5.1	5.0	5.3	5.4	4.9	4.2	-24	.03
Canned peaches	6.4	5.8	4.4	4.0	4.0	3.6	3.8	-41	.04
Raisins	5.8	6.8	8.0	9.1	8.1	7.6	7.1	22	.04
Fresh peaches and nectarines	4.8	5.6	6.3	6.0	5.8	5.1	5.4	13	.02
Canned pears	3.7	4.2	4.0	3.6	3.6	3.2	2.8	-24	.02
	<i>Servings per capita per day<sup>1</sup></i>								
Total fruit <sup>1</sup>	1.11	1.17	1.24	1.34	1.36	1.40	1.36	23	1.36

The Food Guide Pyramid bulletin recommends three servings of fruit a day for a 2,200-calorie diet.

Note: na = not available.

<sup>1</sup>Inedible portions removed and adjustments made for spoilage, plate waste, and other losses. One medium apple, banana, or orange; 1/2 cup of chopped, cooked, or canned fruit; 1/4 cup of dried fruit; or 3/4 cup of fruit juice count as 1 serving.

<sup>2</sup>Includes inedible portions, spoilage, plate waste, and other losses.

<sup>3</sup>Totals may not add due to rounding.

<sup>4</sup>Includes food item(s) not shown separately.

Source: USDA's Economic Research Service.

**Table 6—Iceberg Lettuce, Frozen Potatoes (Mainly French Fries), and Potato Chips Constituted a Third of Total Daily Vegetable Servings in 2000**

Item	Per capita annual averages						2000	Change, 1970-74 to 2000	2000 food supply Pyramid-based servings per capita per day <sup>1</sup>
	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99			
	Pounds, fresh-weight equivalent <sup>2</sup>						Percent	Number	
Total vegetables	336.4	341.2	340.4	365.9	400.7	415.1	428.5	27	3.83
Fresh vegetables	149.0	146.8	150.0	164.4	176.6	187.0	201.8	35	2.03
Processed vegetables	187.3	194.4	190.4	201.5	224.1	228.1	226.7	21	1.80
Canned	102.1	100.0	98.8	99.1	112.0	106.6	104.7	3	.54
Frozen	47.3	56.9	56.5	65.5	72.5	81.0	79.7	68	.58
Dehydrated (includes dry beans)	21.3	21.4	17.8	19.4	22.6	24.6	26.3	23	.45
Potato chips	16.6	16.1	17.2	17.6	17.0	15.9	16.0	-4	.23
Dark-green leafy vegetables	4.9	5.6	6.8	11.8	16.2	19.8	23.4	378	.17
Escarole, romaine, and leaf lettuces	.6	.5	.4	3.3	4.9	6.8	8.4	1,300	.09
Broccoli	1.7	2.3	3.5	5.3	5.8	7.4	7.9	365	.05
Spinach	1.8	1.7	1.6	1.5	1.6	1.8	2.7	50	.03
Squash	.9	1.1	1.4	1.6	3.9	3.8	4.4	389	.02
Deep-yellow vegetables	15.2	14.5	14.5	14.8	17.6	20.8	19.5	28	.20
Carrots	10.2	9.4	9.7	10.4	13.4	16.5	15.2	49	.17
Sweet potatoes	5.0	5.1	4.8	4.5	4.3	4.3	4.3	-14	.03
Dry beans, peas, and lentils (legumes) <sup>3</sup>	7.2	6.7	6.2	6.9	7.8	8.3	8.6	19	.24
Other starchy vegetables	152.7	153.6	146.7	154.2	163.6	172.0	170.2	11	1.33
Total potatoes	118.9	121.3	117.4	124.7	132.3	139.6	138.7	17	1.23
Fresh potatoes	55.5	49.5	48.4	48.5	49.0	48.5	47.2	-15	.33
Frozen potatoes	31.7	40.4	39.7	45.9	51.3	58.5	57.8	82	.46
Other forms of potatoes	31.7	31.4	29.3	30.3	32.0	32.6	33.7	6	.44
Corn	27.8	26.9	24.6	25.2	27.1	28.4	27.3	-2	.08
Peas	5.1	4.7	4.3	3.9	3.9	3.5	3.7	-27	.02
Lima beans	.9	.7	.5	.4	.4	.6	.6	-33	--
Other vegetables	156.4	160.8	166.2	178.2	195.5	194.2	206.8	32	1.89
Iceberg lettuce	22.8	24.8	24.6	25.4	25.8	22.6	24.3	7	.57
Canned tomatoes	63.0	62.7	62.5	64.5	75.6	73.1	69.9	11	.25
Garlic	.5	.7	.8	1.0	1.6	2.4	2.8	460	.18
Fresh tomatoes	12.0	12.4	13.1	16.0	15.8	17.3	17.3	44	.13
Fresh onions	10.6	11.0	11.9	14.0	16.2	18.3	18.4	74	.10
Cucumbers	8.5	9.4	9.5	10.2	9.7	10.8	11.5	35	.10
Bell peppers	2.4	2.7	3.1	4.2	5.5	6.6	7.9	229	.08
Cabbage	11.1	10.7	10.3	10.4	10.2	9.7	10.6	-5	.08
Celery	7.3	7.1	7.2	6.9	7.1	6.7	6.2	-15	.07
	Servings per capita per day <sup>1, 3</sup>								
Total vegetables <sup>1, 3</sup>	2.94	3.02	3.03	3.27	3.57	3.71	3.83	30	3.83
Cruciferous vegetables <sup>4</sup>	.10	.11	.11	.13	.13	.13	.14	40	.14

The Food Guide Pyramid bulletin recommends four servings of vegetables a day for a 2,200-calorie diet.

Notes: -- = less than 0.005. Totals may not add due to rounding.

<sup>1</sup>Excludes inedible portions and adjusts for spoilage, plate waste, and other losses. One cup of raw leafy greens, 1/2 cup of other vegetables—cooked or chopped raw—or 3/4 cup of vegetable juice count as 1 serving.

<sup>2</sup>Includes inedible portions, spoilage, plate waste, and other losses.

<sup>3</sup>Includes all legumes consumed, including those that may have been selected as meat group servings.

<sup>4</sup>Cruciferous vegetables (members of the cabbage family) are not mentioned per se in the *Dietary Guidelines for Americans*. However, the Committee on Diet, Nutrition, and Cancer of the National Research Council advised the public in 1982 to eat more carotene-rich (dark-green and deep-yellow) vegetables and cruciferous vegetables (cabbage, broccoli, cauliflower, and brussels sprouts) to lower the risk of certain cancers.

Source: USDA's Economic Research Service.

total subgroup consumption, and deep-yellow and other starchy vegetables should account for 0.8 servings, or four-sevenths of their subgroups.

Average vegetable consumption in 2000, however, tilted to starchy vegetables, especially white potatoes (fig. 3). Frozen potatoes (mostly french fries) and potato chips together accounted for 39 percent of

starchy vegetables servings and 18 percent of total vegetable servings. Consumption of dark-green leafy vegetables and deep yellow vegetables combined totaled 0.4 servings per capita per day, well below the

**Table 7—Americans Are Drinking Less Milk and Eating More Cheese**

Item	Per capita annual averages				Change, 1970-74 to 2000	2000 food supply Pyramid-based servings per capita per day <sup>1</sup>
	1970-79	1980-89	1990-99	2000		
	<i>Gallons<sup>2</sup></i>				<i>Percent</i>	<i>Number</i>
Beverage milk	29.8	26.5	24.3	22.6	-24	.70
Plain						
Whole	28.1	24.9	22.8	21.0	-25	.65
2-percent fat	20.9	13.9	8.7	7.7	-63	.24
1-percent fat	4.7	7.7	8.3	7.1	51	.22
Skim	1.0	1.8	2.5	2.6	160	.08
Flavored	1.4	1.5	3.4	3.5	150	.11
Buttermilk	1.2	1.1	1.2	1.4	17	.04
	.6	.5	.3	.3	-50	.01
	<i>Half pints<sup>2</sup></i>					
Yogurt	3.2	6.5	8.5	9.9	209	.03
Half and half	4.7	5.3	6.0	6.9	47	--
Eggnog	.7	.9	.8	.6	-14	
	<i>Pounds<sup>2</sup></i>					
Total cheese (excluding cream cheese) <sup>3</sup>	18.6	24.3	27.4	30.0	61	.62
Cheese other than cottage types <sup>3, 4</sup>	13.7	20.2	24.6	27.3	99	.61
Cheddar	6.3	9.0	9.2	9.7	54	.22
Mozzarella	2.0	4.5	7.9	9.3	365	.21
Cottage cheese	4.9	4.1	2.9	2.6	-47	.01
Frozen dairy products <sup>5</sup>	27.8	27.4	28.8	27.8	0	.12
Ice cream	17.7	17.7	16.0	16.5	-7	.07
Low-fat ice cream	7.6	7.2	7.5	7.3	-4	.03
Sherbet	1.5	1.3	1.3	1.2	-20	.01
Frozen yogurt	na	na	2.8	1.8	na	.01
Condensed and evaporated milks	9.4	7.5	7.3	5.8	-38	.04
Dry milk	4.5	3.0	3.7	3.1	-31	.09
	<i>Number of daily servings<sup>1</sup></i>					
Total dairy group supply <sup>1</sup>	1.62	1.56	1.53	1.61	-1	1.61

The Food Guide Pyramid bulletin suggests three servings—the equivalent of three 8-ounce glasses of milk per day—for teenagers, young adults up to age 24, and pregnant and lactating women. Two daily servings of dairy foods are recommended for children and most other adults. In this study, average servings were compared with a daily recommended intake of 2.2 servings. This target was based on a weighted average of recommended servings for different age groups of the U.S. population (excluding the higher needs of pregnant and lactating women).

Notes: na = not available. -- = less than 0.005. Totals may not add due to rounding.

<sup>1</sup>Adjusted for spoilage, plate waste, and other losses. One cup of milk or yogurt, 1-1/2 ounces of natural cheese, 2 ounces of processed cheese, 2 cups of cottage cheese, 1 1/2-cups of ice cream, 1/2 cup of canned evaporated milk, or 1/4 cup of dry milk or buttermilk count as 1 serving. Only the milk portion of half and half and eggnog are included in daily dairy servings; the cream portion is included in added fats.

<sup>2</sup>Aggregate data, unadjusted for spoilage, plate waste, and other losses.

<sup>3</sup>Cream cheese is counted in added fats.

<sup>4</sup>Excludes full-skim American, cottage, pot, and baker's cheese.

<sup>5</sup>Includes items not shown separately, such as mellorine (from 1970-90).

Source: USDA's Economic Research Service.

1.3 daily servings suggested for a 2,200-calorie diet. Likewise, average consumption of dry beans, peas, and lentils was low.

Nationwide, the market for fruits and vegetables has expanded in recent years, with many consumers benefiting from an ever-widening array of fruit and vegetable choices in their local supermarkets. Supermarket produce departments typically carry more than 400 produce items today, up from 250 in the late 1980s and 150 a decade earlier. Fresh-cut fruits and vegetables, such as short-cut carrots, prepackaged salads, restaurant and supermarket salad bars, locally grown items, and exotic and specialty produce, as well as hundreds of new varieties and processed fruit and vegetable products have been introduced or expanded since the early 1980s. Sharp increases in off-season imports of fruits from Chile and other Southern Hemisphere countries mean that consumers now have, virtually year-round, a choice of

fruits that were once available only in summer months.

Even if aggregate supplies are adequate, the successful adoption of Federal dietary recommendations will require that individual consumers have sufficient access to quantities of fruits and vegetables at affordable prices and in forms that meet their standards for quality, taste, and convenience. Between 1985 and 2000, fruits and vegetables led all other food categories in retail price increases, with price increases for fresh fruits and vegetables much higher than those for processed products (fig. 4).

### Too Few Dairy Servings

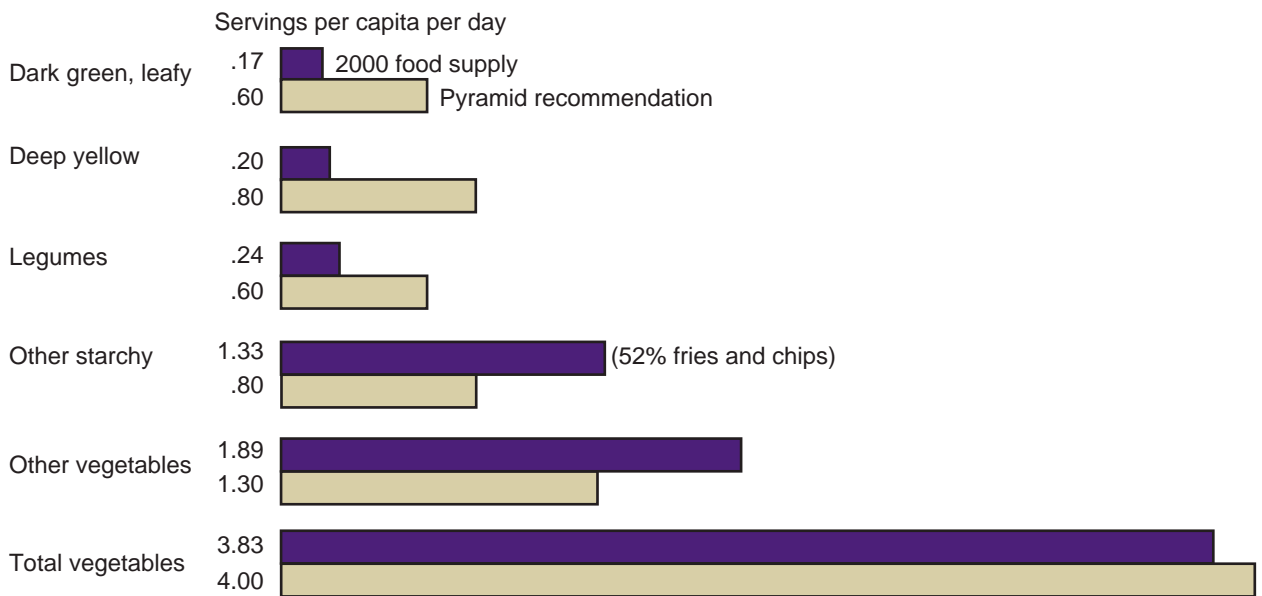
Dairy products accounted for 72 percent of the calcium available in the U.S. food supply in 2000. Calcium is essential to form strong bones and teeth, and requirements increase significantly during adolescence, early adulthood, pregnancy, and lactation. Therefore, the *Dietary Guidelines* base milk serving recommendations on age and phys-

iology rather than energy requirements. Three daily servings—the equivalent of three 8-ounce glasses of milk per day—are suggested for teenagers, young adults up to age 24, and pregnant and lactating women. All others should have two daily servings.

In this study, food supply servings were measured against a daily recommended intake of 2.2 servings. This target was based on a weighted average of recommended servings for different age groups of the U.S. population (excluding the higher needs of pregnant and lactating women). The food supply provided 1.61 daily servings of dairy products in 2000, about 73 percent of the 2.2 servings target, which is essentially unchanged since 1970 (table 7).

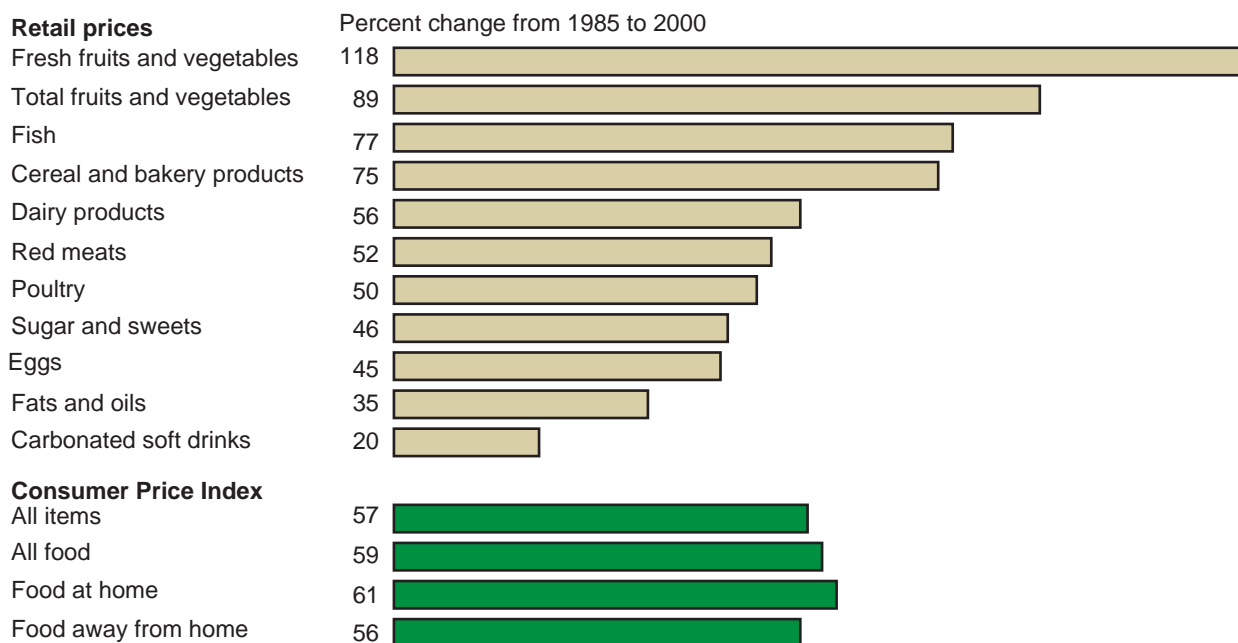
A modest increase in consumption, equal to about one-half cup of milk per person per day would bring per capita servings up to Pyramid recommendations. Because many dairy foods are naturally high in fat, consumers may

**Figure 3—Average Consumption of Dark-Green Leafy and Deep-Yellow Vegetables and Legumes Is Woefully Low**



Source: USDA's Economic Research Service.

**Figure 4—Fruits and Vegetables Have Led Retail Food-Price Increases**



Source: Calculated by USDA's Economic Research Service from the Consumer Price Index.

need to weigh their increased consumption of dairy products against overall fat intake. In 2000, for example, more than half the dairy servings provided by the food supply came from two dairy products naturally high in fat—cheese and whole milk. The dairy group contributed 22 percent of the saturated fat in the American diet in 2000; cheese accounted for nearly half of that contribution.

## References

Gerrior, Shirley, and Lisa Bente. *Nutrient Content of the U.S. Food Supply, 1909-2000*, preliminary data, U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.

Kantor, Linda S., Jayachandran N. Variyam, Jane E. Allshouse, Judith J. Putnam, and Biing-Hwan Lin.

“Choose a Variety of Grains Daily, Especially Whole Grains: A Challenge for Consumers,” *Journal of Nutrition*, Volume 131, No. 2S-1, February 2001, pp. 473S-486S.

Kantor, Linda Scott. *A Dietary Assessment of the U.S. Food Supply: Comparing Per Capita Food Consumption with Food Guide Pyramid Serving Recommendations*, Agricultural Economic Report No. 72, U.S. Department of Agriculture, Economic Research Service, December 1998.

Liu, Simin et al. “Whole-Grain Consumption and Risk of Coronary Heart Disease: Results From the Nurses’ Health Study,” *American Journal of Clinical Nutrition*, Volume 70, September 1999, pp. 412-419.

U.S. Department of Agriculture, Agricultural Research Service. *Pyramid Servings Data: Results From USDA’s 1994-96 Continuing Survey of Food Intakes by Individuals*, ARS Food Surveys Research Group, <<http://www.barc.usda.gov/bhnrc/foodsurvey/pdf/3yr-py.pdf>> February 1999.

U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. *Nutrition and Your Health: Dietary Guidelines for Americans*, (Fifth edition), Home and Garden Bulletin No. 232, May 2000.

U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. *The Food Guide Pyramid*, Home and Garden Bulletin No. 252, October 1996. **FR**