

Many Americans Are Not Meeting Food Guide Pyramid Dietary Recommendations

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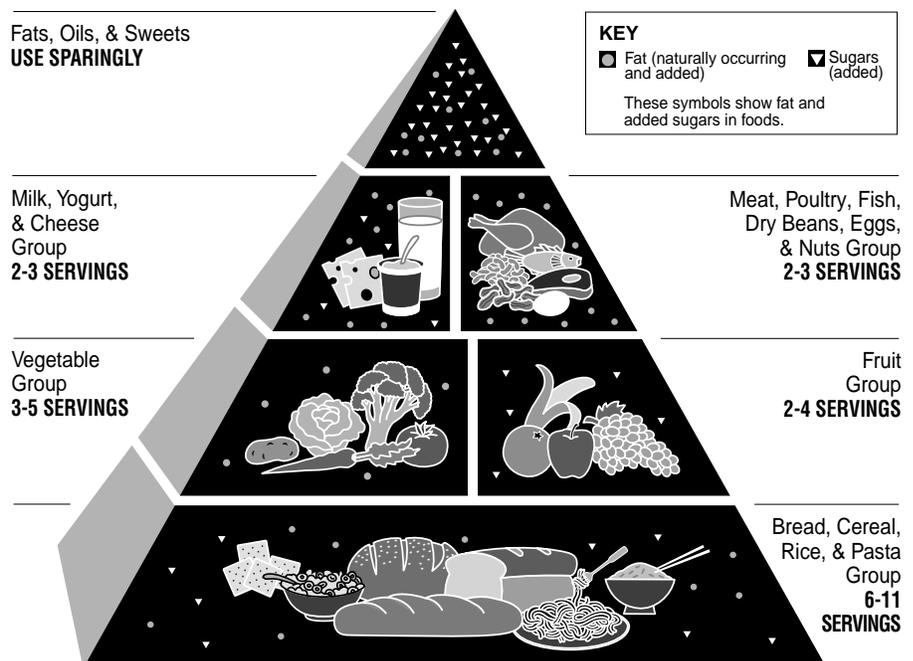
Growing scientific evidence about the relationship between diet and health has increased the need for information about the quality and composition of the American diet. Diet-related chronic diseases—including coronary heart disease, cancer, stroke, and diabetes—account for nearly two-thirds of all deaths in the United States each year and cost society an estimated \$250 billion annually in medical care and lost productivity (see “The American Diet: A Costly Health Problem,” elsewhere in this issue). Healthy diets, including those abundant in grains, vegetables, and fruits, and low in fat, saturated fat, and cholesterol, combined with moderate and regular physical activity, can reduce the risk for these diseases.

Federal nutrition guidelines, such as those depicted graphically in the USDA Food Guide Pyramid, are intended to promote health by helping consumers choose diets that meet their nutritional needs. The Pyramid provides recommendations for the quantity and type of foods to eat

from five major food groups—bread, cereals, rice, and pasta; vegetables; fruits; milk, yogurt, and cheese; and meat, poultry, fish, dry beans, eggs, and nuts. The Pyramid shows a range of recommended servings for each food group for sample levels of energy intakes. It also recommends

that consumers limit their intake of fats, oils, and sweets. For each food group, the recommended number of servings varies with an individual’s age, physiological status, and energy requirements (see box on recommended servings at selected calorie levels).

Food Guide Pyramid A Guide to Daily Food Choices



Source: U.S. Department of Agriculture/U.S. Department of Health and Human Services

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Yet, while Americans clearly have made positive changes in their eating habits over the past two decades, they have had difficulty making many of the dietary changes needed to meet federal nutrition guidelines. On average, most Americans are not meeting recommended servings for most of the Food Guide Pyramid's five major food groups, particularly fiber-rich fruits and vegetables, while consuming excess calories from fats, oils, and sweets.

These findings are gleaned from a recent study by USDA's Economic Research Service (ERS) comparing the amount of food available for human consumption in the United States with the Food Guide Pyramid's serving recommendations, using 1994 per capita food supply data. The food supply series is compiled and published annually by ERS and measures aggregate consumption of several hundred foods, based on records of commodity flows from production to end uses. The series is typically used as a proxy to measure changes in national food consumption trends over time. The food supply data differ from USDA food intake surveys

which measure foods reportedly eaten by individuals or households. The data were adjusted to account for waste and other factors so that they would more closely approximate actual human consumption. Both the food supply and food intake data have strengths and limitations which affect their ability to accurately measure food consumption. Continued research is needed to determine actual intake levels for most foods (see box for more details).

Gap Between Food Supply Data and Food Guide Pyramid Serving Recommendations

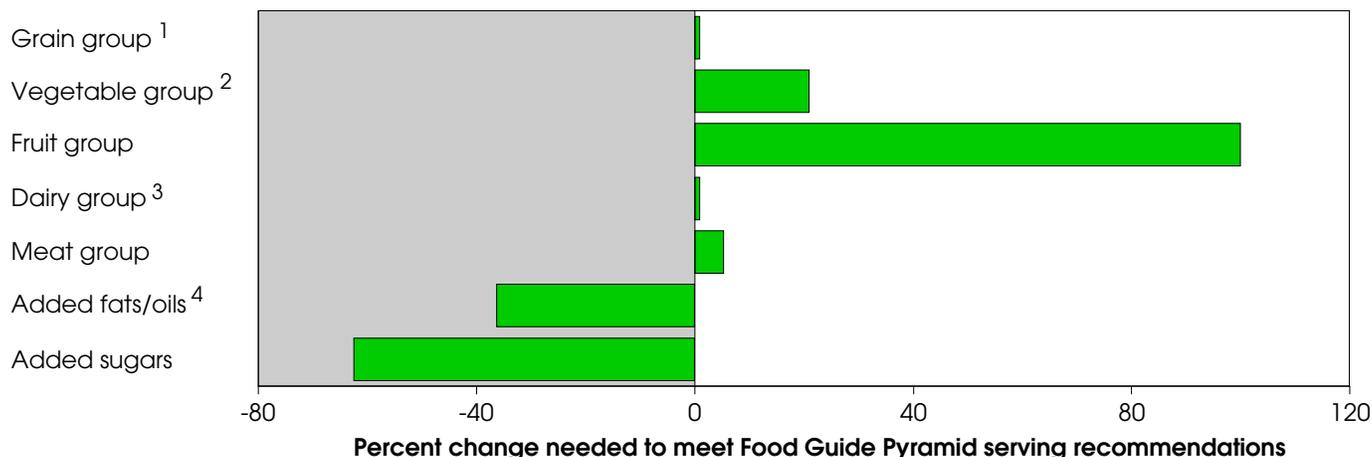
For most food groups, the food supply data show a substantial gap between the quantity and type of foods provided by the food supply and Food Guide Pyramid serving recommendations (fig. 1). When measured in servings, average supplies of fruits and vegetables were well below those needed to provide most Americans with the five to nine daily servings recommended by the Food Guide Pyramid. And,

while the supply of foods in the bread, cereals, rice, and pasta; milk, yogurt, and cheese; and meat, poultry, fish, dry beans, eggs, and nuts groups came close to or exceeded Food Guide Pyramid recommendations for total servings, the type of foods consumed from these groups may need to change for most consumers to meet nutrition recommendations for fiber and selected nutrients, such as fat, saturated fat, and cholesterol. The data also suggest that a sharp reduction in the use of fats, oils, and sweets is needed to bring average consumption of total fats and added sugars within the daily limits suggested in the Food Guide Pyramid educational materials.

Conflicting Data About Grain Consumption

The food supply provided 9.4 servings of grains and grain products per day in 1994, slightly higher than the quantity needed to supply the 9 daily servings of foods from the bread, cereals, rice, and pasta group recommended by the Food Guide Pyramid for the average

Figure 1
Large Gap Between 1994 Food Supply Servings and Food Guide Pyramid Serving Recommendations



Notes:¹Total grain group servings meet Food Guide Pyramid target. ²Excludes potato chips. ³Consumption is close to the 2 serving target but is 37 percent below the 3 daily servings needed by some consumers. ⁴Assumes added fats/oils = 1/2 of total fat intake.

What Is a Recommended Serving?

To guide consumers in their daily food choices, the Food Guide Pyramid suggests a range of servings for different levels of caloric intake. Most consumers should have at least the minimum number of servings each day. Sample serving sizes for each food group are listed below.

Bread, cereal, rice and pasta

- 1 slice of bread
- 1/2 cup cooked cereal, rice, or pasta
- 1 oz. ready-to-eat cereal
- 1/2 English muffin or bagel
- 1 tortilla
- 3-4 small crackers
- 1- 4" pancake

Fruit

- 1 whole fruit (medium apple, orange, banana)
- 1/2 cup chopped, cooked, or canned fruit
- 3/4 cup fruit juice
- 1/2 grapefruit
- 1/4 cup dried fruit
- 1/2 cup berries

Meat, poultry, fish, dry beans, eggs, and nuts

- 2-3 oz. cooked lean meat, poultry, or fish are 1 serving;
- 1 egg; 2 tablespoons of peanut butter; 1/2 cup cooked dry beans, peas or lentils; 1/3 cup of nuts count as 1 oz. of meat (about 1/3 serving)

Vegetables

- 1 cup raw leafy vegetables
- 1/2 cup cooked or canned vegetables
- 7-8 carrot sticks
- 1 medium potato
- 3/4 cup vegetable juice

Milk, yogurt, and cheese

- 1 cup milk
- 8 oz. plain or flavored yogurt
- 1-1/2 oz. natural cheese
- 2 oz. process cheese

Sources: Adapted from USDA/HNIS, *The Food Guide Pyramid*, Home and Garden Bulletin No. 252, Aug. 1992; *Choose a Diet with Plenty of Vegetables, Fruits and Grain Products*, Home and Garden Bulletin No. 253-5, July 1993; and *Eat a Variety of Foods*, Home and Garden Bulletin No. 253-2, July 1993.

Food Guide Pyramid Recommendations Vary With Calorie Intake

Daily calorie intake	Bread, cereal, rice, and pasta	Vegetables	Fruit	Milk, cheese, and yogurt ¹	Total fats ²	Added sugars and sweeteners ²
	-----Number of daily servings-----				Grams	Teaspoons
1,600 calories: Many sedentary women and some sedentary men	6	3	2	2-3	53	6
2,200 calories: Most children, teenage girls, active women, and many sedentary men	9	4	3	2-3	73	12
2,800 calories: Teenage boys, many active men, and some very active women	11	5	4	2-3	93	18

Notes: ¹Three servings from the milk, yogurt, and cheese group are appropriate for teenagers and young adults to age 24 and pregnant and breastfeeding women. Two servings are recommended for other adults. ²Levels defined in Food Guide Pyramid educational materials. Source: USDA/HNIS, *The Food Guide Pyramid*, Home and Garden Bulletin No. 252, Aug. 1992.

2,200-calorie diet. However, the food supply data provide limited information on the final products consumed from this group—measuring supplies of flour, cornmeal, oats, and barley rather than the consumption of the bread, breakfast cereals, muffins, and other foods identified in the Pyramid. As a result, actual consumption of these foods may differ somewhat from the servings estimates reported here.

For example, while the food supply data suggest that total grain consumption exceeds Food Guide Pyra-

mid serving recommendations, food intake surveys suggest that Americans are falling far short of recommended intake for this food group. According to USDA's 1989-91 Continuing Survey of Food Intake by Individuals (CSFII) fewer than 20 percent of Americans consume the recommended number of total grain servings each day and average consumption of whole grain foods—such as brown rice, rolled oats, and whole wheat breads, rolls, and pasta—is one or fewer servings per day. To boost fiber intake and the

consumption of other nutrients available in whole grain products, the Food Guide Pyramid educational materials recommend that consumers include several servings of whole grain foods in their diets each day. According to the CSFII, average fiber intake for adults in the United States is only half the 20 to 30 grams of dietary fiber recommended by the National Cancer Institute (see "Dietary Fiber: Is Information the Key?" elsewhere in this issue).

Food Supply Data Used To Measure Food Consumption

The USDA's Economic Research Service (ERS) food supply series measures the flow of several hundred commodities into the U.S. marketing system. Food intake is normally not directly measured or statistically estimated. The availability of total food for human use is, therefore, a residual component after subtracting other uses (such as exports, seed, feed, and industrial use) from the available food supply (the sum of production, beginning inventories, and imports) and then dividing by population estimates.

The food supply series is the only continuous source of food and nutrient availability in the United States, providing researchers with a unique data set with which to measure changes in food consumption trends over time. However, the data are only one of several different sources of dietary information in the United States. Food intake surveys, such as USDA's Continuing Survey of Food Intakes by Individuals (CSFII), provide data on food consumption reported by individuals and households. These surveys differ from the food supply series in that they record intake over a specific period of time ranging from 1 day to 1 week and they combine demographic information with food intake data.

Both the food supply and food intake data have strengths and limitations which affect their usefulness as a dietary assessment tool. For example, food intake surveys are subject to underreporting, although little is known about the extent to which underreporting may differ among food groups. The average caloric intakes reported by survey respondents are often well below those needed to maintain body weight, and research indicates that when people are given a diet containing the calories reported in the intake surveys, they lose weight. In the 1989-91 CSFII, for example, the diets reported by women aged 20-39 yielded an average caloric intake of 1,657 calories, compared with a Recommended Energy Allowance (REA) of 2,200 calories for their age group. Similarly, the average daily energy intake of 2,347 calories calculated from the foods reported by male respondents aged 20-50 was about 20 percent below their REA of 2,900 calories. Because of these limitations, food intake surveys are considered an underrepresentation of actual food intakes.

On the other hand, the food supply data typically overstate actual human consumption because they capture food lost to waste, spoilage, and cooking, and include most food

ingredients used in processed products that are exported. As a result, average caloric intake based on these data are often well above recommended levels. For example, the food supply provided an average of 3,700 calories per capita in 1990, the last year for which nutrient data are available for the food supply.

Despite these limitations, the aggregate approach used in the food supply series complements the individual intake data by capturing small quantities of foods used as ingredients in other products. For example, the food supply series measure per capita consumption of canning tomatoes rather than the actual intake of foods in which they are used, such as Italian and Mexican-style entrees, soups, stews, pizza, and sandwiches. This eliminates the problem—commonly associated with food intake survey data—of decomposing compound foods back to commodity ingredients. Also, because the food supply data are developed using similar methodologies across years, they provide researchers with a tool with which to measure long-term trends in food consumption relative to dietary guidance.

To convert the national per capita consumption estimates in the food supply series into Food Guide Pyra-

More Variety May Increase Vegetable Intake

The food supply provided a daily average of just over three servings of fresh, frozen, and canned vegetables in 1994 (excluding legumes, which are counted in the meat group). Average vegetable servings were about 80 percent of the four total servings recommended by the Food Guide Pyramid for a 2,200-calorie diet. Five foods—canned tomatoes (excluding catsup), fresh

and frozen potatoes (excluding potato chips), head lettuce (excluding romaine and other leafy lettuce), and onions—accounted for about half of total vegetable consumption (fig. 2).

The relatively high consumption of a small number of vegetables and the relatively low intake of deep yellow and dark green and dark-green leafy vegetables (see below) suggest that some people need to increase the quantity and change the composition of the vegetables that they consume. A reduction in the con-

sumption of relatively high-fat processed vegetable products, such as frozen french fries, may also be needed to meet fat guidelines. However, removing french fries from the vegetable group reduces daily vegetable consumption to just under three servings, or less than three-quarters of the number of servings recommended by the Food Guide Pyramid for a 2,200-calorie diet.

mid servings, each commodity in the data set was assigned to one of the Pyramid's five major food groups (as well as a separate group for fats and oils and added sugars where appropriate). The data were then adjusted downward to account for estimated waste and loss in the food marketing system, changes in weight due to cooking, and the discard of nonedible portions of foods, including peels, seeds, cores, pits, skins, and trimmable fat.

Waste estimates were based on a combination of observed discard rates reported in published studies, discussions with trade associations and commodity groups, and the farm-to-retail conversion factors ERS developed for the per capita food supply series. Waste was estimated at several different stages in the marketing system, including retail, household, and institutional (schools, hospitals, restaurants) levels, with total losses between 15 and 30 percent for most food groups.

However, the limited ability to precisely measure food waste suggests that actual waste rates, and hence estimated food consumption, may differ from the amounts reported here. This may be particularly true in the case of added fats and oils where the amount of used frying fats (such as shortening, lard,

and edible beef tallow), discarded by fast food restaurants and unavailable for human consumption, may be higher than the adjustment factor used in this study. Additional details on the waste estimates and methodology used in this analysis can be found in a forthcoming ERS publication, *A Dietary Assessment of the U.S. Food Supply: Comparing Per Capita Food Consumption with Food Guide Pyramid Serving Recommendations*.

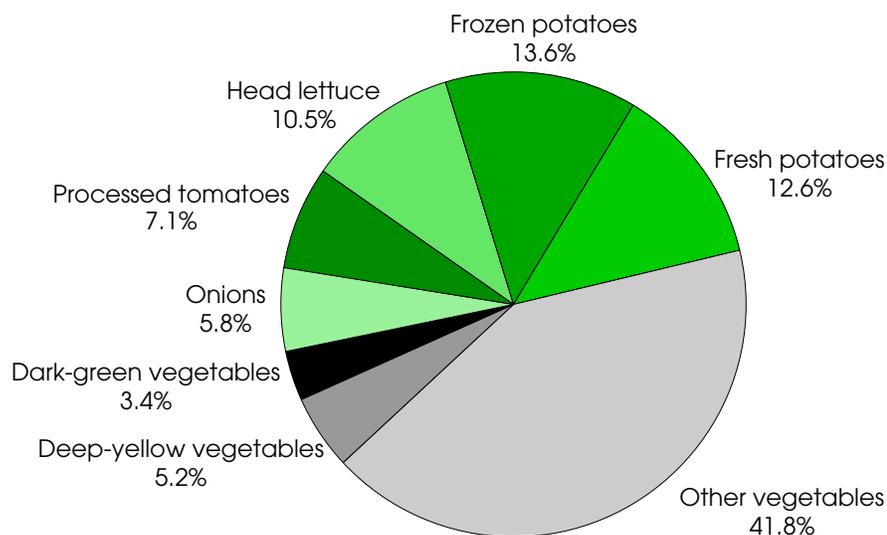
Because the Food Guide Pyramid's dietary guidance is primarily expressed in servings rather than weight, a single serving weight was established for each commodity using standard household measures defined by USDA. For example, since a medium orange counts as one serving of fruit, the food supply series for oranges was assigned a serving weight of 4.6 ounces—the average weight of one medium-sized fruit (excluding peels and seeds).

Serving weights for bread, cereals, rice, and pasta were estimated differently. The Food Guide Pyramid defines grain servings as final products—bread, pasta, cookies, or breakfast cereals. However, the food supply data for this group are available only in their primary form—flour, oats, barley, and corn meal.

Therefore, serving weights were estimated as the weight of the primary ingredient used in the end product. For example, the food supply series for flour was assigned a serving weight of 17 grams—the average quantity of flour in a serving of bread or other grain product having flour as a primary ingredient. Similarly, the serving weight for cereals was the dry amount of rice or oatmeal that would yield one half cup of the cooked product.

Once serving weights were established for each commodity measured in the food supply, the servings of all foods were added to determine total consumption for each Pyramid group. The gap between the total number of daily servings provided by the food supply and Food Guide Pyramid servings was measured by dividing total consumption by recommended intake. Recommended servings were based on a daily per capita energy intake of 2,200 calories. This was derived from a weighted average of recommended energy allowances (REA's) for different age and sex groups of the U.S. population. According to the Food Guide Pyramid educational materials, a daily energy intake of 2,200 calories is appropriate for most children, teenage girls, active women, and sedentary men.

Figure 2
Five Foods Accounted for Half of Total Vegetable Servings in 1994



Percent of total vegetable servings
Total vegetable intake = 3.2 servings per day, 80% of 4 serving target

Consumption of Dark-Green Leafy Vegetables Falls Short

Consumption of dark green and dark-green leafy vegetables, including broccoli, spinach, and romaine and other leaf lettuce, fell far short of the several weekly servings recommended for good health by the Food Guide Pyramid educational materials. Despite a threefold increase in per capita broccoli consumption since 1970, the food supply provided less than one serving per person per week of all dark-green and dark-green leafy vegetables in 1994. Broccoli and romaine and other leaf lettuce account for the bulk of dark-green and dark-green leafy vegetables available in the U.S. food supply. However, several other vegetables of this type, including collards, kale, chard, frozen spinach and mustard, turnip, and beet greens, are either not included or not measured individually in the food supply data. Although efforts are currently underway at ERS to

improve these data, actual use of these foods may be higher than estimated here.

Despite these limitations, data on individual intake seem to confirm that total consumption of dark-green vegetables is in fact low. According to a servings-based analysis of the CSFII recently completed by researchers at USDA's Agricultural Research Service and the National Cancer Institute, average consumption of dark-green and yellow vegetables was about one-third of a daily serving, or the equivalent of about two servings per week. Although the CSFII study combined dark-green and yellow vegetables, the intake data support the food supply servings estimates in that total consumption of both foods is still well below suggested weekly intake for dark-green vegetables alone.

Americans Eat One and a Half Servings of Fruit a Day

The food supply provided one and a half servings per person per day of fresh and processed fruits and fruit juices, about half the Pyramid's recommended daily total fruit intake for a 2,200-calorie diet. As with vegetables, fruit disappearance was concentrated in a few commodities, suggesting that more variety may help consumers increase their total fruit intake and maximize their consumption of the fiber, vitamins, minerals, and other nutrients found in abundance in this group. In 1994, six foods—orange juice, bananas, grapes, fresh apples, apple juice, and watermelon—accounted for half of all fruit servings. Orange juice alone accounted for nearly 20 percent of the total.

The Food Guide Pyramid educational materials suggest that people include vitamin-C-rich fruits, such as citrus fruits or juices, melons, berries, and kiwifruit regularly in their diets. In 1994, the food supply provided just over four and a half servings per week (or two-thirds of a daily serving) of vitamin-C-rich fruits—just over three servings per week of citrus fruit and juices, primarily oranges and orange juice (less than half a serving daily), and about one and a half servings per week (less than one-quarter of a serving daily) of melons and berries, including cantaloupe, watermelon, and strawberries (fig. 3).

Large Share of Meat Group Servings Are From Red Meat

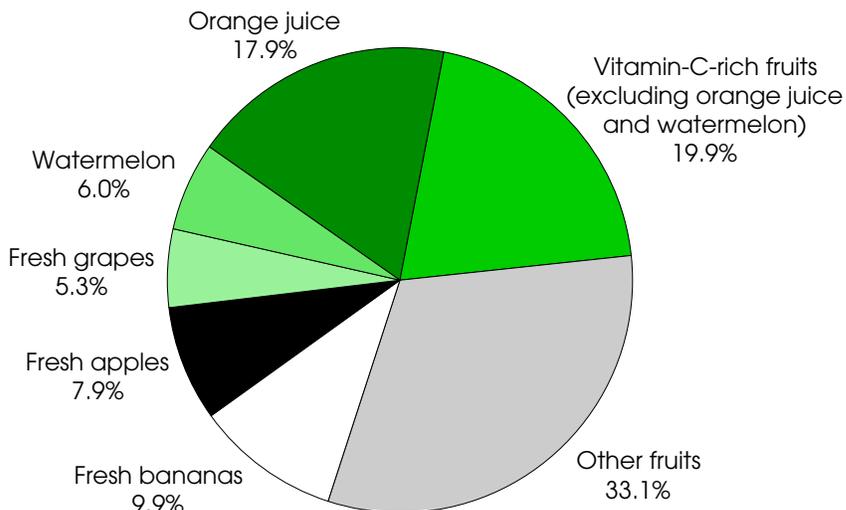
The meat, poultry, fish, dry beans, eggs, and nuts group contains a diverse set of commodities, which are similar in the nutrients they provide—including protein, iron, zinc, and other vitamins and minerals. Total servings for this group were estimated on a meat-equivalent

basis, with a serving defined as 3 ounces of cooked lean meat, poultry, or fish (boneless, trimmed equivalent). Specified quantities of other foods in the group—1/2 cup dry beans, 1 egg, 1/3 cup nuts, or 2 tablespoons of peanut butter—derived from portions commonly reported in food intake surveys, were counted as 1 ounce of cooked meat.

After adjusting for waste and other losses due to cooking, the food supply provided the equivalent of 5.6 ounces per day of cooked lean meat in 1994, slightly below the 6 ounces suggested in the Food Guide Pyramid for a 2,200-calorie diet. Although the food supply series does not provide consumption information on individual meat products, the data indicate that the food supply provides larger quantities of commodities that, relative to others in the group, are naturally high in fat, saturated fat, and cholesterol (fig. 4). For example red meat (including beef, veal, pork, and lamb) accounted for nearly 50 percent of total meat equivalents in 1994, double the 25-percent share accounted for by chicken and turkey, which are generally lower in fat than most red meats. Fish and shellfish accounted for 8 percent of total meat equivalents, and about 10 percent came from eggs. According to the 1995 Dietary Guidelines, excess consumption of foods high in cholesterol and saturated fat increases the risk of coronary heart disease through their effect on blood cholesterol.

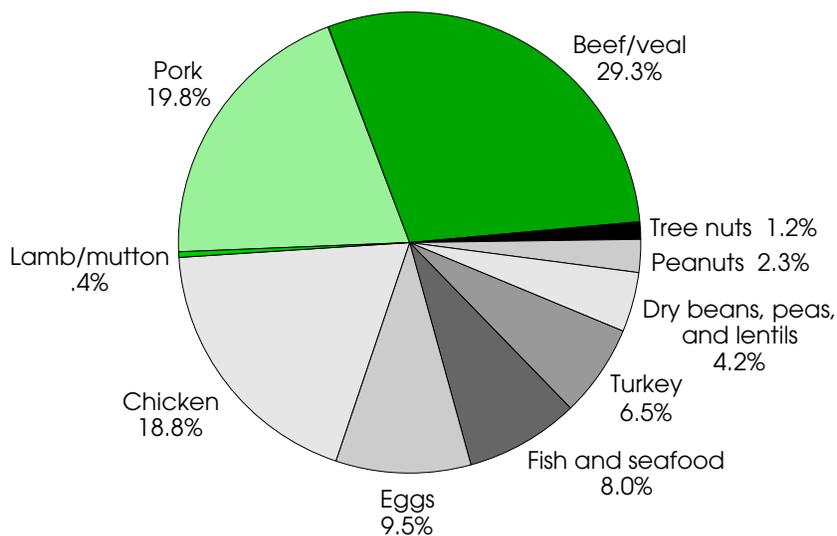
In recent years, meat producers and meatpackers, responding to consumer demand for lower fat meats, have made strides in reducing the fat content of their products. Production practices that incorporate advanced feeding, management, and breeding techniques are resulting in leaner cattle and hogs. Meatpackers and food retailers are trimming more external fat, often leaving only 1/4 inch or less on the retail product, compared with an average of 1/2 inch to 1 inch 10 years

Figure 3
Vitamin-C-Rich Fruits and Juices Account for Half of Total Fruit Servings



Percent of total fruit servings
Total fruit intake = 1.5 servings per day, 1/2 of 3 serving target

Figure 4
Red Meat Accounted for Half of Total Meat Equivalents in 1994



Percent of total meat-equivalent servings
Total meat-equivalent servings = 5.6 ounces per day, 93% of 6 ounce target

ago. As a result, beef and pork are now significantly leaner than they were in 1980. However, red meat's fat content is widely variable, with only the leanest cuts nearly as low in fat as broiled fish or skinless chicken breast.

Nuts, dry beans, and other protein-rich plant foods constituted about 7 percent of total meat equivalents (about half from peanuts used in peanut butter). Consumption of dry beans, peas, and lentils was less than two half-cup servings per week, well below the several weekly servings suggested by the Food Guide Pyramid educational materials. Dry beans, peas, and lentils offer consumers a relatively low-cost, low-fat, and high-fiber alternative to meat, poultry, and fish, and together with nuts and seeds are naturally high in several vitamins and minerals, including magnesium and folate, which are present in relatively small quantities in animal products and seafood.

Half of Dairy Servings Come From Cheese, Whole Milk, and Ice Cream

Dairy products, including milk, yogurt, and cheese, are the primary source of calcium in most Americans' diets, accounting for about 75 percent of the calcium available in the food supply in 1990. Calcium is essential for the formation of bones and teeth, and requirements increase significantly during adolescence, early adulthood, pregnancy, and lactation. As a result, the milk, yogurt, and cheese group is the only food group for which recommended servings are independent of daily energy requirements. Three servings—the equivalent of three 8-ounce glasses of milk per day—are suggested for teenagers, young adults up to 24 years of age, and pregnant and lactating women. Two daily servings of

dairy products are recommended for most other adults.

The food supply provided just under two servings of milk, yogurt, cheese, and other dairy products in 1994 (excluding cream cheese and fluid cream, which are counted as fats in the tip of the Pyramid), close to the two servings recommended for most Americans but shy of the three servings suggested for those with greater calcium needs.

However, some health experts believe that the current Recommended Dietary Allowance (RDA) for calcium (on which the Food Guide Pyramid serving recommendations are based) is too low. In 1994, a National Institutes of Health (NIH) Consensus Development Conference on Optimal Calcium Intake recommended that the RDA for calcium—currently 800 milligrams daily for most adults 25 years of age and older—be upgraded to between 1,000 and 1,500 milligrams, depending on age and other health factors, to help reduce the risk of osteoporosis. Inadequate calcium intake appears to be an important risk factor for this disease that weakens the body's bone structure and is responsible for 1.5 million fractures of the hip, wrist, and spine each year (see "Osteoporosis-Related Hip Fractures Cost \$13 Billion to \$18 Billion Yearly," elsewhere in this issue).

However, because many dairy foods are naturally high in fat and saturated fat, consumers need to balance any increased dairy consumption with overall fat intake. In fact, in 1994 more than half of total dairy servings provided by the food supply were from high-fat foods, such as cheese, whole milk, and ice cream, while lower fat products such as 1-percent and skim milk accounted for 10 percent of total dairy consumption.

Added Fats and Oils Account for More Than Three-Quarters of Recommended Fat Intake

After adjusting for waste, the food supply provided 55 grams, or about 14 teaspoons, per person per day of added fats and oils, such as butter, margarine, shortening, salad dressings, mayonnaise, cream cheese, and sour cream in 1994. "Added" fats and oils are added in cooking and at the table, and food manufacturers use them in many processed food products, including baked goods, french fries, snack foods, and peanut butter. These fats are consumed in addition to those that occur naturally in the foods we eat, such as meats, fish, dairy products, and nuts.

Although some dietary fat is essential for good health, excessive fat intake is associated with increased blood cholesterol, heart disease, and some cancers. The 1995 Dietary Guidelines recommend that people limit total fat intake to no more than 30 percent of daily energy intake—about 73 grams for a 2,200-calorie diet. Mono- and polyunsaturated fats, such as those found in high quantities in vegetable oils, should account for at least two-thirds of this intake. Saturated fats—which are found in larger amounts in animal fats such as butter and lard—should account for no more than one-third of total fat consumption. However, the food supply data suggest that added fats and oils alone accounted for nearly 30 percent of total calories, the upper limit recommended for total fat in the diet.

During 1985-90, the last time period for which nutrient data for the food supply series were available, naturally occurring fats accounted for half the total fat provided by the food supply. Although some of this fat was unavailable for human consumption due to waste and spoilage, the data suggest that consumption

of both added and naturally occurring fats exceeds dietary recommendations (see box for more details about waste estimates for added fats and oils). Assuming that added fats continue to account for at least half of an individual's daily fat consumption, the quantity of added fats and oils for human consumption would have to decline by one-third to bring average total fat intake per person close to the limit of 30 percent of calories per day.

Sugar Consumption Exceeds Dietary Recommendations

The food supply data for added sugars measure the delivery of caloric sweeteners (refined cane and beet sugar, corn sweeteners, and edible syrups) to U.S. food and beverage manufacturers for use in processed food products (such as baked goods, breakfast cereals, candy, and soft drinks) and to food wholesalers and retailers for individual and household use. The data do not measure the consumption of individual products identified as "sweets" in the Food Guide Pyramid educational materials, and in this respect, differ from food intake data for this group.

Given these limitations, the food supply provided 32 teaspoons per person per day of added sugars in 1994, nearly 3 times the 12-teaspoon daily intake of added sugars suggested by the Food Guide Pyramid educational materials as an upper limit for a 2,200 calorie diet. Foods high in added sugars often provide calories but few nutrients. To the extent that consumers substitute the "empty" calories found in sugary snacks, sweetened soft drinks, and baked goods, for nutrient-rich foods, like fruits, vegetables, and whole grains, dietary intake of the vitamins, minerals, fiber, and other nutrients found in these foods may be reduced. To maintain nutritious

diets and healthy weights, the 1995 Dietary Guidelines suggest that sugars be used in moderation by most healthy people and sparingly by people with low caloric needs.

The ability of consumers to moderate their consumption of added sugars is complicated by the fact that many added sugars are likely to be "hidden" in prepared foods. Although the new food label requires disclosure of the total sugar content of food, the label does not distinguish total from added sugars and thus many people may be unaware of how much added sugar they are actually consuming. For example, someone eating a cup of lowfat fruit yogurt (7 teaspoons of added sugar) at lunchtime and washing it down with a regular 12-ounce cola (9 teaspoons of added sugar) would already exceed the 12 daily teaspoons of added sugars suggested as an upper limit for a 2,200-calorie diet by the Food Guide Pyramid educational materials. By comparison, a cup of skim milk and a medium apple would provide about the same amount of calcium and no added sugar for about half the calories. Fiber intake would also rise from 0 to 3 grams.

These results suggest that, on average, consumers have a long way to go in adjusting their diets to meet health guidelines. Continuing nutrition education efforts by the public and private sector should help consumers to choose diets that meet Food Guide Pyramid recommendations. Consumers can also use the new food labels and other information on the nutrient content of foods to improve their diets.

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