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# U.S. Per Capita Food Consumption: Record-High Meat and Sugars in 1994

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**I**t may be chic in the current milieu of diet-health mania to say one has cut back on meat and refined sugars, and people report as much in numerous consumer surveys. However, U.S. per capita food supply data indicate that Americans consumed record-high levels of caloric sweeteners and total meat (red meat, poultry, and fish) in 1994. And, forecasters predict still higher consumption in 1995 and 1996.

The American diet has changed considerably over the past decade. Beef consumption, for example, fell 14 percent between 1980-84 and 1990-94, while chicken consumption rose 37 percent and turkey 67 percent (table 1). Egg use also declined, while cheese consumption increased steadily. Consumption of fresh produce reached a record-high level in 1994 (with kiwifruit one of the biggest gainers, increasing 267 percent between 1980-84 and 1990-94).

Diet and health concerns, as well as changing relative prices and increases in real (adjusted for inflation) disposable income, compelled these changes in U.S. food consumption. New products—particularly more convenient ones—also have

contributed to shifts in consumption, along with an aging population, expanded advertising campaigns, smaller households, more two-earner households, more single-person households, and an increasing proportion of ethnic minorities in the U.S. population.

USDA's Economic Research Service (ERS) estimates per capita food consumption, based on food disappearance data (see box). These data represent the amount of food available for human use. They are used as a proxy to estimate human consumption, even though the data may overstate what is actually eaten because they represent food supplies available in the market and do not account for waste.

## Large Supplies and Lower Real Prices Boost Per Capita Meat Consumption

We are a nation of meat eaters—now more so than ever. In 1994, total meat consumption (red meat, poultry, and fish) reached a record 194 pounds (boneless, trimmed equivalent) per person, 14 pounds above the 1980-84 annual average (table 2). Half-pound hamburgers and “value-priced” buckets of fried chicken draw slews of customers to foodservice outlets. Rotisserie chicken and Buffalo wings have become so popular that they have made inroads across the country, even in pizzerias.

Americans love to barbecue meat on outdoor grills—boosting per capita consumption in warm months—and, increasingly, on indoor grills year-round. A host of new lean-meat products cater to saturated-fat-wary consumers. Seasoned, ready-to-cook meats available in the fresh and frozen food cases and cooked meats in the self-serve and service delicatessens appeal to time-crunched consumers. ERS projections indicate that annual per capita meat consumption may jump another 6 pounds by 1996.

In 1994, Americans consumed an average of 64 pounds of beef (boneless, trimmed equivalent), 49.5 pounds of pork, 49.5 pounds of chicken, 15 pounds of fish and shellfish, 14 pounds of turkey, and just under 1 pound each of lamb and veal.

Red meat—beef, pork, lamb, and veal—accounted for 59 percent of the total meat supply in 1994, compared with 69 percent in 1980-84 and 74 percent in 1970-74. Chicken and turkey accounted for 33 percent of the total meat consumed in 1994, up from 24 percent in 1980-84 and 19 percent in 1970-74. In 1994, per capita consumption averaged 16 pounds less red meat, 30 pounds more poultry, and 3 pounds more fish and shellfish than in 1970-74.

Meat consumption and prices are determined by the complex interaction of supply and demand. In the short run, supplies are relatively

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fixed, and prices adjust so products clear the market. That is, what is produced is sold. When supplies go up, prices go down and consumers buy more. In 1996, per capita consumption of beef, pork, chicken, and turkey will likely increase to match record-large production of livestock meat and poultry. Yearly changes in consumption reflect mostly changes in supply rather than changes in consumer tastes. Longrun changes in meat consumption, on the other hand, reflect changing demographics, preferences, technology, and marketing practices in addition to relative prices and incomes. For example, an increase in the number and variety of low-fat and reduced-fat meat choices available likely boosted overall per capita meat consumption during the last decade.

Advanced feeding and management practices and a greater understanding of genetics have created leaner cattle and hogs. Retail beef and pork cuts now have roughly 30 percent less trimmable fat than in the early 1980's. The fat content of some of today's leanest beef and pork cuts compares favorably to a skinless chicken breast. For example, a 3-ounce serving of beef eye round or boneless pork tenderloin (each trimmed of visible fat, after cooking) has 4 grams of fat. That compares favorably to the same serving size of roasted, skinless chicken breast, which comes in at 2 grams of fat. By comparison, a 3-ounce serving of roasted, skinless chicken thigh totals 9 grams of fat. Moreover, researchers at the Sarah Stedman Center for Nutritional Studies at Duke University Medical Center, Durham, NC, have found that lean pork is just as effective as skinless chicken in keeping serum cholesterol levels in check.

Most retailers offer several kinds of ground beef with progressively lower fat content. For example, Giant Food, Inc., a large regional supermarket chain based in Landover, MD, sells five kinds: regular ground

## How Food Consumption Is Measured

USDA's Economic Research Service annually calculates the amount of food available for consumption in the United States. The U.S. food supply series measures national consumption of several hundred basic commodities. It is the only continuous source of data on food and nutrient availability in the country.

The food supply series is based on records of commodity flows from production to end uses. Therefore, the total available supply is the sum of production, beginning inventories, and imports. These three components are either directly measurable or are estimated by Government agencies using sampling and statistical methods.

The food available for human use reflects what is left from available supply after deducting exports, industrial uses, farm inputs, and end-of-year inventories. Human food use is not directly measured or statistically estimated. Instead, it is a residual component after subtracting out other uses from the available total supply.

The availability of food for human use represents disappearance of food into the marketing system, and it is often referred to as food disappearance. Food disappearance measures food supplies for consumption through all outlets—at home and away from home. Per capita food use, or consumption, is calculated by dividing the total annual food disappearance by the total U.S. population.

Food disappearance is often used as a proxy to estimate human consumption. Used this way, the data usually provide an upper bound on the amount of food available for consumption. In general, food disappearance data indicate trends in consumption over time rather than absolute levels of food eaten. Food disappearance estimates can overstate actual consumption because they include amounts that may not be used due to spoilage and waste accumulated through the marketing system and in the home.

beef (on a raw basis, 72 percent lean, 28 percent fat; 20 grams of fat per 3-ounce cooked portion, broiled), ground chuck (78 percent lean, 22 percent fat; 18 grams of fat), ground round (86 percent lean, 14 percent fat; 12 grams of fat), ground sirloin (91 percent lean, 9 percent fat; 8 grams of fat), and Giant Lean (93 percent lean, 7 percent fat; 6 grams of fat). Ground sirloin and Giant Lean are lower in fat than regular ground chicken; the ground round is comparable to ground chicken; and the Giant Lean to regular ground turkey. Ground skinless turkey breast (98 percent lean, 2 percent fat; 1.5 grams of fat) is now available in grocery stores.

Many new packaged deli meats meet the definition of "lowfat" under the new nutrition labeling

rules. A product labeled "lowfat" cannot contain more than 3 grams of fat in a serving.

Per capita consumption of beef reached an all-time high of 89 pounds (boneless, trimmed equivalent) in 1976, when beef supplies were at record levels because of a liquidation of the Nation's beef herd due to declining cattle prices and farm income from cattle.

Consumption dropped significantly in the late 1970's, remained flat in the early 1980's, and then, from a 1980's high of 75 pounds per capita in 1985, declined steadily to 61.5 pounds in 1993. In 1994, increasing supplies (fig. 1) and declining prices (fig. 2) spurred a 2-pound increase in per capita consumption of beef, the first increase in 9 years. In 1995 and 1996, average consump-



tion will likely increase a half pound and a pound, respectively, to 65 pounds per person by 1996.

In contrast, per capita consumption of chicken, which remained flat in the early 1970's, steadily increased from 29 pounds (boneless equivalent) in 1976 to 49.5 pounds in 1994. Similarly, per capita consumption of turkey doubled from 7 pounds in 1976 to 14 pounds in 1994.

## No Change in the Prevalence of Vegetarianism

A deluge of newly published vegetarian cookbooks and the introduction of brand-name meatless vegetable burgers and sausage-style products across the marketplace suggests that vegetarianism may be

a growing consumer movement. But surveys indicate that the proportion of true vegetarians—people who eat no red meat, poultry, fish, or shellfish—among Americans may be the same today as it was 16 years ago.

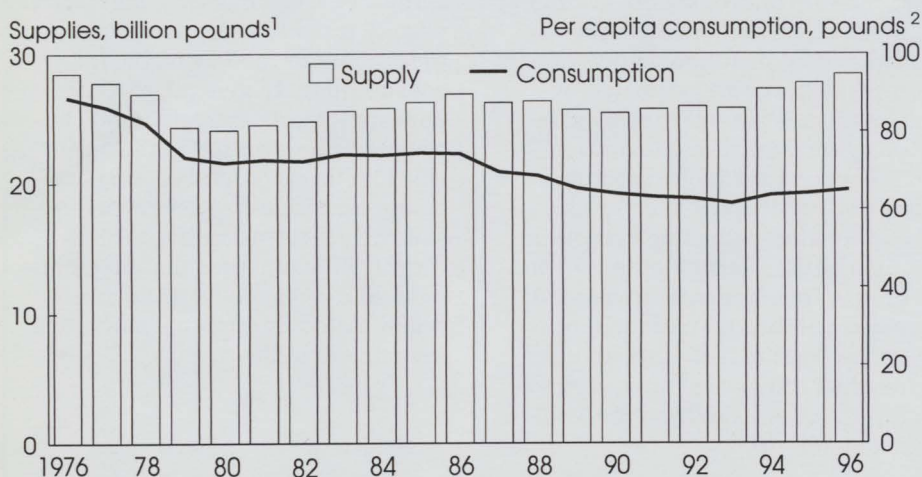
A 1992 survey conducted by the market research firm Yankelovich, Clancy, and Shulman and commissioned by *Vegetarian Times* magazine found 12.5 million in this country described themselves as vegetarians—nearly 5 percent of the population. There was only one catch, however; most of them actually ate poultry and fish, and even enjoyed red meat once in a while. The majority cited health concerns as the reason for adopting a semivegetarian diet.

In a 1992-93 national survey commissioned by the National Live Stock and Meat Board (NLSMB) and conducted by the market research firm MRCA Information Services, Inc., which tracks food consumption via its Menu Census diaries, 95 percent of the survey sample (2,000 households) classified themselves as "red meat eaters," 5 percent as "red meat avoiders" who never eat red meat, and about 2 percent as "vegetarians." When the diets of all study participants were analyzed, however, less than 1 percent consumed no red meat during the 14-day reporting period and an even smaller percentage consumed no meat, poultry, or fish. Red meat avoiders actually consumed an average of 2.3 ounces of red meat (beef, pork, lamb, veal, processed, and variety/other meats) a day. Red meat eaters consumed only 1.2 ounces more red meat than the red meat avoiders.

Results from a 1980 ERS survey match those of the NLSMB survey. Together, the 1980 and 1992-93 surveys indicate that the proportion of vegetarians among Americans has remained stable from 1980. About 2 percent of the people in ERS's nationally representative sample of 1,350 households described themselves as vegetarians and less than 1

Figure 1

### U.S. Beef Supplies Forecast To Reach a Record High in 1996

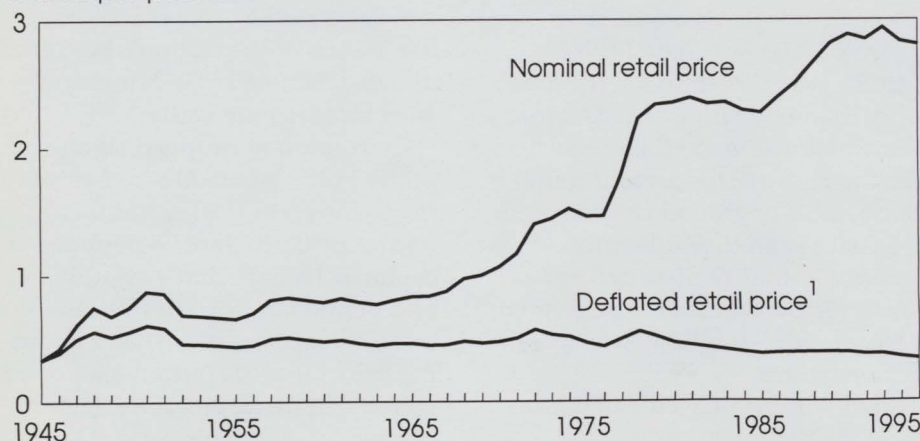


Notes: 1995 and 1996 forecast. <sup>1</sup> Carcass weight. <sup>2</sup> Boneless, trimmed-weight equivalent.

Figure 2

### The Inflation-Adjusted Retail Price for Choice Beef in 1995 Hit a 50-Year Low

Dollars per pound



Note: <sup>1</sup> Constant (1945) dollars.



Table 1  
Consumption Statistics Show 10 Years of Change

Item	Per capita annual averages		Change, 1980-84 to 1990-94
	1980-84	1990-94	
	Pounds, unless otherwise specified		Percent <sup>1</sup>
<b>Some Gainers...</b>			
Frozen yogurt	0.3	3.3	1,000
Kiwifruit	.1	.5	267
Bottled water (gallons)	3.1	8.8	186
Mangoes	.3	.8	146
Oat products	3.8	9.0	137
Skim milk (gallons)	1.3	2.9	129
Noncitrus fruit juices (gallons)	1.7	3.6	112
Limes	.4	.9	106
Diet carbonated soft drinks (gallons)	5.7	11.5	101
Garlic	.8	1.6	97
Italian cheeses (mozzarella, etc.)	5.0	9.7	95
Durum flour (used to make pasta)	6.5	12.5	94
High-fructose corn syrup (HFCS)	27.4	52.8	93
Corn flour and meal	8.2	15.2	86
Sweet bell peppers	3.1	5.6	80
Cream and neufchatel cheeses	1.1	2.0	78
Chiles (hot peppers)	3.5	6.2	76
Rice	10.1	17.4	72
Dried prunes	.4	.7	70
Turkey <sup>2</sup>	8.4	14.1	67
Barley	1.0	1.6	65
Fresh broccoli	1.9	3.1	63
Fresh strawberries	2.4	3.6	53
Frozen broccoli	1.5	2.3	49
Yogurt (1/2-pint servings)	5.4	8.0	48
Fresh spinach	.5	.8	48
Cocoa beans (used to make chocolate)	3.8	5.5	45
Fresh grapes	5.1	7.3	45
Breakfast cereals	12.1	16.9	39
1-percent milk (gallons)	1.7	2.4	37
Chicken <sup>2</sup>	33.9	46.3	37
Sour cream (½ pints)	3.7	5.0	35
Corn hominy and grits	2.9	3.9	34
Frozen potatoes	19.8	26.5	34
Fresh onions	11.9	15.9	33
Cream (½ pints)	6.8	9.0	33
Spices <sup>3</sup>	1.9	2.5	31
Cantaloup	6.8	8.8	30
Fresh carrots	6.2	7.9	26
Regular carbonated soft drinks (gallons)	29.7	37.5	26
Dry edible beans	5.8	7.3	26
Candy	17.1	21.2	24
Shortening	19.0	23.3	22
Bananas	21.6	26.3	22
Tomatoes for canning	62.5	75.6	21
Fresh tomatoes	13.1	15.6	19
Fish and shellfish	13.0	14.9	15
White and whole wheat flours <sup>4</sup>	110.8	127.3	15
Salad and cooking oils	21.7	24.9	15
<b>Some Losers...</b>			
Veal <sup>2</sup>	1.4	.8	-40
Plain whole milk (gallons)	15.3	9.5	-38
Distilled spirits (gallons)	1.9	1.4	-27
Cottage cheese	4.3	3.1	-27
Canned green peas	2.5	1.8	-26
Fresh grapefruits	7.0	5.7	-18
Beef <sup>2</sup>	73.1	63.0	-14
Cane and beet sugar (refined)	74.7	64.4	-14
Eggs (number)	264.0	235.2	-11
Canned peaches	5.3	4.8	-10
Pickles	5.2	4.7	-10
Ice cream	17.7	16.1	-9

Notes: <sup>1</sup>Computed from unrounded data. <sup>2</sup>Boneless weight. <sup>3</sup>Excludes dehydrated onions and garlic. <sup>4</sup>Excludes durum wheat flour.

Table 2

## Americans Are Consuming Record-High Amounts of Meat and Sugars

Item	Unit	1970-74	Annual average consumption			
			1980-84	1990-94	1993	1994
Total meat <sup>1</sup>	lb.	176.5	179.1	188.3	189.6	193.6
Beef	lb.	79.1	73.1	63.0	61.5	63.6
Pork	lb.	47.6	48.3	48.3	48.9	49.5
Chicken	lb.	27.4	33.9	46.3	48.5	49.5
Turkey	lb.	6.7	8.4	14.1	14.1	14.2
Fish	lb.	12.1	13.0	14.9	14.9	15.1
Eggs	no.	299	264	235	236	238
Shell	no.	265	229	181	179	177
Processed	no.	34	35	54	57	61
Beverage milk <sup>2</sup>	gal.	30.7	26.7	25.3	24.9	24.7
Plain	gal.	29.0	25.2	23.8	23.4	23.2
Whole	gal.	23.9	15.7	9.8	9.4	9.1
2-percent	gal.	4.0	6.8	9.0	8.9	8.7
1-percent	gal.	.5	1.7	2.4	2.4	2.4
Skim	gal.	1.5	1.3	2.9	3.1	3.3
Yogurt	½ pt.	2.3	5.4	8.0	8.2	8.7
Fluid cream <sup>3</sup>	½ pt.	9.7	11.3	14.8	15.1	15.2
Cheese	lb.	12.9	19.5	25.7	26.3	26.8
Frozen dairy products	lb.	28.1	26.7	29.2	29.3	30.0
Salad and cooking oils	lb.	16.7	21.7	24.9	25.1	24.3
Shortening	lb.	17.2	19.0	23.3	25.1	24.1
Margarine	lb.	11.0	10.8	10.7	11.1	9.9
Fruits <sup>4, 5</sup>	lb.	229.0	260.0	269.1	278.4	279.5
Fresh	lb.	97.7	107.7	121.0	124.9	126.7
Citrus	lb.	27.9	24.7	23.1	24.4	26.0
Noncitrus	lb.	69.8	83.0	97.8	99.0	101.7
Processing	lb.	131.3	152.3	148.2	153.4	152.8
Vegetables <sup>4</sup>	lb.	335.6	339.0	394.2	402.0	398.3
Fresh	lb.	148.2	148.6	168.7	172.0	170.8
Potatoes	lb.	55.5	48.4	48.2	49.9	50.2
Processing	lb.	187.4	190.4	225.5	230.0	227.5
Tomatoes for canning	lb.	63.0	62.5	75.6	76.4	75.3
Potatoes for freezing	lb.	31.7	39.7	53.0	54.5	57.8
Flour and cereals <sup>6</sup>	lb.	135.1	147.0	191.6	195.8	198.7
Wheat flour	lb.	111.0	117.3	139.8	143.3	144.5
Corn products	lb.	10.2	14.1	23.1	23.5	23.7
Rice	lb.	7.2	10.1	17.4	17.6	19.0
Caloric sweeteners <sup>7</sup>	lb.	123.7	122.4	141.6	144.4	147.6
Refined sugar	lb.	100.5	74.7	64.4	64.3	65.0
Corn sweeteners	lb.	21.7	46.4	75.8	78.7	81.3
High-fructose corn syrup (HFCS)	lb.	1.5	27.4	52.8	54.8	56.9
Candy	lb.	19.0	17.1	21.2	21.7	22.1
Carbonated soft drinks	gal.	26.2	35.4	49.0	50.2	52.2
Regular (nondiet)	gal.	23.8	29.7	37.5	38.5	40.3
Diet	gal.	2.4	5.7	11.5	11.7	11.9
Coffee	gal.	33.1	26.4	24.8	23.5	21.1
Bottled water	gal.	NA	3.1	8.8	9.4	10.5
Beer	gal.	19.5	24.3	23.1	22.6	22.5
Fruit juice	gal.	6.0	7.4	8.0	8.4	8.6
Fruit drinks and ades	gal.	NA	NA	6.0	6.0	5.7
Canned iced tea	gal.	NA	NA	.3	.4	.6

Notes: NA = Not available. <sup>1</sup>Boneless weight. Includes lamb, mutton, and veal. <sup>2</sup>Includes flavored milk and buttermilk. <sup>3</sup>Heavy cream, light cream, half and half, sour cream, and eggnog. <sup>4</sup>Farm weight. <sup>5</sup>Totals may not add due to rounding. <sup>6</sup>Includes oat, barley, and rye products. <sup>7</sup>Dry weight. Includes honey, molasses, refiner's syrups, and caloric sweeteners added to commercially prepared foods and beverages.



percent actually ate no meat of any kind.

When Kraft Foods asked 1,000 people which one food they would never give up, meat ranked first among responses, followed by fruits and vegetables, bread, pasta, ice cream, potatoes, pizza, milk, chocolate, and cheese.

Still, many consumers question whether their diets would be healthier without meat, particularly red meat: one-third of the adults in the NLSMB survey said their diets would be healthier if they did not eat red meat and another third were not sure.

Studies do show that vegetarians are less at risk for heart disease, diabetes, and various cancers (notably of the colon) than is the average American. They tend to have lower blood pressure and cholesterol levels, are closer to healthy body weights, and do more vigorous exercise. Reducing the intake of animal protein decreases the intake of saturated fat that is contained in animal products. Likewise, the increase in grains, legumes, and vegetables that accompanies vegetarian diets increases the content of fiber and some vitamins and minerals in the diet.

For the first time, the 1995 *Federal Dietary Guidelines for Americans*—the fourth edition issued since 1980—acknowledges the health benefits of a vegetarian regimen. The new guidelines bulletin includes the following statement concerning vegetarianism:

"Most vegetarians eat milk products and eggs, and as a group, these lacto-ovo-vegetarians enjoy excellent health. Vegetarian diets are consistent with the *Dietary Guidelines for Americans* and can meet Recommended Dietary Allowances for nutrients. You can get enough protein from a vegetarian diet as long as the variety and amounts of foods consumed are adequate. Meat,

fish, and poultry are major contributors of iron, zinc, and B vitamins in most American diets, and vegetarians should pay special attention to these nutrients. Vegans eat only food of plant origin. Because animal products are the only food sources of vitamin B12, vegans must supplement their diets with a source of this vitamin. In addition, vegan diets, particularly those of children, require care to ensure adequacy of vitamin D and calcium, which most Americans obtain from milk products."

## Long-Term Decline in Egg Consumption Levels Off in the 1990's

U.S. per capita consumption fell to a record low of 234 eggs in 1990 and 1991, down from an all-time high of 403 eggs in 1945. Between 1950 and 1990, per capita consumption declined about 4 eggs per year. But since 1991, consumption inched up each year, reaching 238 eggs per person in 1994 (table 2). During the 1990's, the continuing decline in shell-egg consumption has been more than offset by gains in processed-egg consumption.

Per capita consumption of processed egg products—used mainly in manufactured foods or sold to foodservice operations in liquid form—is projected to double in 1995 from 1981's total of 32 eggs. This 1995 forecast corresponds to 27 percent of total egg use, compared with only 13 percent in 1980-84. If this trend continues, a third of all eggs will be consumed in processed form by 2000.

Several factors are behind the steady growth of processed eggs products. The traditional market for processed eggs—as ingredients in foods such as pasta, cake mixes, and other baked goods—has continued

to grow. And the increased safety and convenience of liquid egg products is encouraging use of pasteurized egg products in institutional food service and restaurants.

Declining wholesale and retail egg prices may have spurred egg use in recent years. The average retail price for a dozen large, Grade A eggs declined from \$1.01 in 1990 to \$.86 in 1994. Changing consumer attitudes toward eggs may also be responsible. New test results show eggs to contain less cholesterol than previously documented, leading the American Heart Association to increase its maximum recommended consumption from three eggs per week to four. Medical research shows a weaker link between cholesterol consumption and heart disease than had been hypothesized. Also, various research studies indicate that some consumers are indulging themselves in more traditional and flavorful foods, such as eggs, cream, butter, cheese, regular (nondiet) carbonated soft drinks, and chocolate candy.

## Americans Drink Less Milk, Eat More Cheese

In 1994, Americans, on average, drank 20 percent less milk and ate more than twice as much cheese (excluding cottage types) as in the early 1970's (table 2).

Annual per capita consumption of beverage milks declined from 31 gallons in 1970-74 to 25 gallons in 1994. Consumption of soft drinks may be displacing beverage milk in the diet. Price partially explains the switch to soft drinks. The 1980-94 increase in the Consumer Price Index for fresh milk and cream (42 percent) outpaced that for carbonated soft drinks (34 percent). Big increases in eating away from home, especially at fast food places, and in consumption of salty snack foods favored soft drink consumption. A threefold increase in per capita consumption of yogurt since the early



1970's—to nearly 9 half-pint servings per person in 1994—partially offset the decline in beverage milks.

The trend in beverage milk is toward lower fat drinks. While whole milk (plain and flavored) represented 78 percent of all beverage milk consumption in 1970-74, its share dropped to 37 percent in 1994. In 1994, reduced-fat milk accounted for 50 percent of all beverage milk, and skim milk constituted 13 percent, compared with 18 percent and 5 percent, respectively, in 1970-74. In 1994, skim milk (average fat content of 0.2 percent) was the only beverage milk for which per capita consumption increased; 1-percent milk held steady, while consumption of 2-percent, buttermilk (average fat content of 1.0 percent), and whole milk (average fat content of 3.3 percent) declined.

Relative prices and advertising have influenced the shift to lower fat milks. Since 1980, the price of a half-gallon of lowfat milk has averaged a few pennies below that of whole milk. A major print advertising program that features celebrities, models, and sports stars wearing "milk mustaches" has improved the overall image of milk, especially reduced-fat and skim milks.

Preliminary research indicated that major contributing factors to a decline in milk consumption were concern about fat and a belief that lower fat milks contain fewer nutrients than whole milk. Follow-up research showed that more people now know that skim and reduced-fat milk are as high in calcium, vitamins, and nutrients (except fat) as whole milk.

While Americans are switching to lower fat milk, they are also using more fluid cream products (half-and-half, light cream, heavy cream, eggnog, sour cream, and dips). Per capita consumption of fluid cream jumped from an annual average of 10 half pints in 1970-74 to 15 half pints in 1994.

*Even as coffee espresso bars and coffee houses have proliferated, per capita consumption plummeted from 27 gallons in 1991 to 21 gallons in 1994—the lowest level since 1910.*

On balance, however, per capita consumption of milkfat from all fluid milk and cream products declined 36 percent between 1970 and 1994, from 9.1 pounds per person to 5.8 pounds. Of that 5.8 pounds, whole milk contributed 2.6 pounds; reduced-fat milks, 1.8 pounds; and fluid cream products, 1.3 pounds. Skim milk and yogurt each added 0.05 pound of fat to the average diet in 1994.

Average consumption of cheese—excluding full-skim American and cottage, pot, and baker's cheeses—more than doubled from 12.9 pounds per person per year in 1970-74 to 26.8 pounds in 1994. The growth is concentrated in the ingredient and away-from-home markets. Rapidly expanding pizza sales and lifestyles that emphasize convenience foods are probably major forces behind the higher consumption. Advertising and new products—such as boxed cheesy scalloped potato mixes, frozen broccoli-and-cheese combos—also had an effect.

### **Fruits and Vegetables—The Array of Choices Widens**

As Americans increasingly embrace national health authorities' recommendation of consuming five fruits and vegetables a day, their array of choices continues to widen. Fresh-cut fruits and vegetables,

prepackaged salads, locally grown items, and exotic produce—as well as hundreds of new varieties and processed products—have been introduced or expanded in the last decade.

Per capita use of fruits and vegetables rose in the early 1980's in response to higher consumer incomes, increased ethnic diversity, and burgeoning interest in healthful diets. By 1994, per capita consumption was 14 percent higher than in 1980. This trend is likely to continue expanding into the next decade as consumers heed nutritionists' message on healthful eating.

Supermarket produce departments carry over 400 produce items today, up from 250 in the late 1980's and 150 in the mid-1970's. Also, the number of ethnic, gourmet, and natural foodstores—which highlight fresh produce—continues to rise.

Consumers increasingly have more access to fresh, local produce as well. The number of farmers' markets has grown substantially throughout the United States over the last several decades, up from 1,755 in 1993 to around 2,116 by the end of 1995, according to USDA surveys.

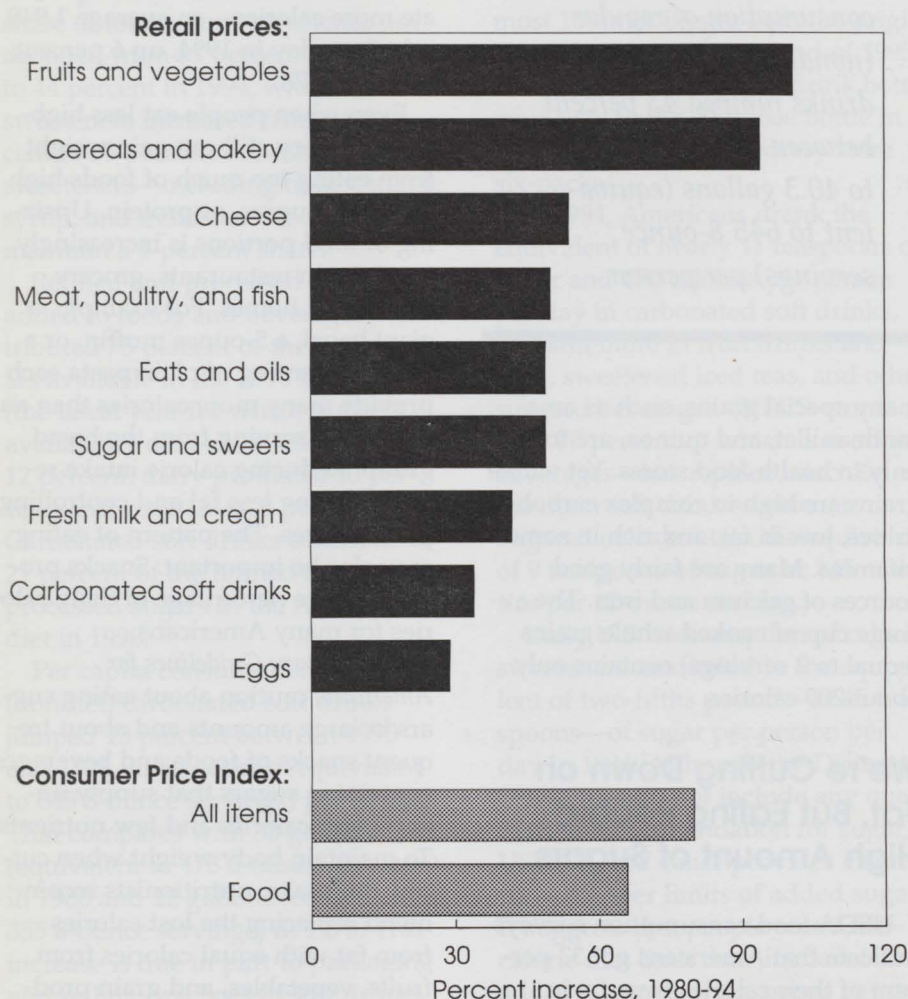
While the overall market for fruits and vegetables has expanded in the last 15 years, the mix has changed. Shifts have taken place among traditional produce items and between fresh and processed forms. Traditional varieties have lost market share to specialty varieties, and exotic produce has gained favor.

Americans are eating more apples, grapes, bananas, and other noncitrus fruits, and fewer grapefruits and oranges. Americans consumed 127 pounds of fresh fruits in 1994, up more than 12 percent from 1980-84 and up 24 percent from 1970-74 (table 2).

Freeze-injured supplies of grapefruit in 1990 and oranges in 1991 raised prices so much that, even after adjusting for inflation, consumer prices were higher than in the



Figure 3  
Fruits and Vegetables Have Led Retail Food-Price Increases



early 1980's. On the other hand, improved technology and expanded storage facilities make high-quality U.S.-produced fresh apples and pears available year-round. Imports popularized new varieties—such as Granny Smith apples—and augmented winter supplies, which had been dominated by citrus fruits.

While prices of citrus fruits climbed during the 1980's, prices of many noncitrus fruits dropped. Inflation-adjusted retail prices of Red Delicious apples were 24 percent lower in 1990-94 than in 1980-84. Banana prices dropped 10 percent. Prices for d'Anjou pears and Thompson seedless grapes also fell.

Gains in U.S. production were largely responsible for lower apple and pear prices. Increased production in other countries encouraged U.S. imports and lowered banana and grape prices. Bananas—nearly 28 pounds per person are consumed annually in the United States—continue to be the most popular fresh fruit, and nearly all of the U.S. banana supply is imported.

Exotic or specialty produce—kiwis, mangoes, carambola, jicama, broccoflower, and other new or unusual items—mostly remain in a small but rapidly expanding niche market. Some minor fruits that jumped to record-high consumption

in 1994 were kiwifruit, up 439 percent since 1980-84 to more than half a pound per person, and mangoes, up 205 percent to 1 pound.

Americans consumed, on average, about 20 percent more fruit or fruit juice in 1994 than in 1977-78, according to USDA nationwide food consumption surveys. However, nearly half in 1994 ate no fruit on a given day; dietary guidelines recommend 2 to 4 servings of fruits a day. Consumption of vegetables increased slightly between 1977-78 and 1994. However, Americans still eat lower than recommended levels of nutrient-packed dark-green and deep-yellow vegetables.

Salads are becoming more popular. Consumption of fresh salad vegetables rose between 1980 and 1994: bell peppers up 130 percent; garlic, 126 percent; broccoli, 101 percent; mushrooms, 64 percent; spinach, 46 percent; cucumbers, 37 percent; carrots, 29 percent; cauliflower, 23 percent; and tomatoes, 22 percent. Specialty lettuce varieties—red and green leaf, romaine, and others—are eroding the market share of iceberg lettuce.

Consumption of frozen french fries has soared, and now surpasses fresh potatoes. A staple commodity in the United States, potatoes account for about one-third of total per capita vegetable use. The popularity of fast-food restaurants lies behind most of the shift toward frozen potato use. In 1994, foodservice outlets sold about 89 percent of the supply of frozen french fries.

### Average Grain Consumption Up From 1970's, But Far Below Early 1900's Highs

Per capita use of flour and cereal products reached 199 pounds in 1994 from an annual average of 147 pounds in 1980-84 and 135 pounds in 1970-74. The increase, however, is far below the 291 pounds consumed



per person per year in 1909-13 (the earliest years for which data are available. The expansion in supplies reflects ample grain stocks, strong consumer demand for variety breads and other instore bakery items, and increasing sales of fast-food products made with buns, doughs, and tortillas.

Wheat is the major grain product eaten in the United States, with wheat flour and other wheat products representing 73 percent of U.S. grain consumption in 1994. However, wheat's share of total grain consumption declined 8 percentage points since 1980, as rice, corn products, and oat products gained momentum.

USDA nationwide food consumption surveys also indicate that Americans are eating more grain products. Consumption of grain mixtures—such as lasagna and pizza—increased 115 percent between 1977-78 and 1994. Consumption of snack foods—such as crackers, popcorn, pretzels, and corn chips—have soared 200 percent, and ready-to-eat cereals were up 60 percent. One of the biggest changes within the grain mixture group was the explosion in consumption of ethnic foods, especially Mexican foods. Mexican foods were consumed four times more often in 1994 than in the late 1970's.

Still, Americans, on average, are eating a serving or less a day of whole grain foods, far below the minimum three per day recommended by the American Dietetic Association (half of the recommended 6 to 11 servings a day should be whole grain). Many Americans do not know how to identify and prepare whole grains, aside from the familiar whole-grain breads, brown rice as a side dish, or rolled oats as a breakfast cereal. Other whole grains, such as cracked wheat and barley, are too often overlooked as potential main or side dishes. Others, such as kasha or bulgur, may sound mysterious. And

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*Annual per capita consumption of regular (nondiet) carbonated soft drinks jumped 43 percent between 1986 and 1994, to 40.3 gallons (equivalent to 645 8-ounce servings) per person.*

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many special grains, such as amaranth, millet, and quinoa, are found only in health food stores. Yet whole grains are high in complex carbohydrates, low in fat, and rich in some B vitamins. Many are fairly good sources of calcium and iron. The average cup of cooked whole grains (equal to 2 servings) contains only about 200 calories.

## **We're Cutting Down on Fat, But Eating Record-High Amount of Sugars**

USDA food consumption surveys indicate that Americans got 33 percent of their calories from fat in 1994, down from 40 percent in 1977-78, but still above the recommended limit of 30 percent. Still, about one in three adults in 1994 were overweight based on self-reported height and weight, compared with one in five in the late 1970's. Survey data from the National Center for Health Statistics show a similar pattern.

Why then, if the percentage of fat in the diet is decreasing, is obesity increasing? Experts believe that a number of factors contribute to the increase in body weight, including a sedentary lifestyle, an accessible abundance of food, and an excess calorie intake. Thirty percent of the men and 45 percent of the women in USDA's 1994 survey reported that they rarely or never exercised (the new Dietary Guidelines advise

doing 30 minutes of moderate physical activity on most—preferably all—days of the week). And, people ate more calories—an average 1,949 calories a day in 1994, up 6 percent from 1977-78.

Even when people eat less high-fat food, they still can gain weight from eating too much of foods high in starch, sugars, or protein. Upsizing of food portions is increasingly common in restaurants, grocery stores, and homes. For example, a giant bagel, a 5-ounce muffin, or a two-cup serving of plain pasta each provide many more calories than an "average" serving from the bread group. Reducing calorie intake requires eating less fat and controlling portion sizes. The pattern of eating may also be important. Snacks provide a large percentage of daily calories for many Americans.

The *Dietary Guidelines for Americans* caution about eating sugars in large amounts and about frequent snacks of foods and beverages containing sugars that supply unnecessary calories and few nutrients. To maintain body weight when cutting fat intake, nutritionists recommend replacing the lost calories from fat with equal calories from fruits, vegetables, and grain products, especially whole grains. For very active people with high caloric needs, sugars can be an additional source of energy. However, because maintaining a nutritious diet and a healthy weight is very important, the guidelines caution that sugars should be used in moderation by most healthy people and sparingly by people with low calorie needs.

In 1994, each American consumed, on average, a record 148 pounds worth of caloric sweeteners. Per capita consumption of caloric sweeteners (dry-weight basis)—mainly sucrose (table sugar made from cane and beets) and corn sweeteners (notably high-fructose corn syrup, or HFCS)—increased 25 pounds, or 21 percent between 1980-84 and 1994 (table 2).



A striking change in the availability of specific types of sugar occurred in the past two decades. Sucrose's share of total caloric sweetener use dropped from 81 percent in 1970-74 to 44 percent in 1994, while corn sweeteners increased from 18 percent to 55 percent. All other caloric sweeteners—including honey, maple syrup, and molasses—combined to maintain a 1-percent share.

Refined and processed sugars added to foods and beverages contributed 75 percent of the total sugars available in the 1990 food supply (the latest year for which nutrient availability data are available); fruit, 12 percent; dairy products, 10 percent; and vegetables, 3 percent. Carbonated soft drinks contributed 21 percent of the refined and processed sugars in the American diet in 1990.

Per capita consumption of regular (nondiet) carbonated soft drinks jumped 13 percent between 1990 and 1994, to 40 gallons (equivalent to 645 8-ounce servings) per person. That compares with 30 gallons (equivalent to 478 8-ounce servings) in 1980 and 22 gallons (equivalent to 355 8-ounce servings) in 1970. This increase is due in part to packaging and selling practices of soft drinks. For example, the familiar 6-1/2-ounce contoured bottle of Coca-Cola (introduced in 1916) used to be the pause that refreshed. In 1980, 7-

Eleven introduced the 32-ounce Big Gulp. In 1992, that chain gave us the 64-ounce Double Gulp. That's almost 10 times bigger than the original Coke. In the latest trend of 1995, the typical 16-ounce soft drink bottle gave way to the 20-ounce bottle in eating places and in grocery store six-packs.

In 1994, Americans drank the equivalent of nearly 11 teaspoons of sugar and 170 calories per person per day in carbonated soft drinks, and still more in fruit drinks and ades, sweetened iced teas, and other sugared beverages. (HFCS—more than 70 percent of which is used in beverages—has replaced sucrose as the main soft drink sweetener. Sugared colas contain the equivalent of 9 teaspoons of sugar, or 145 calories per 12-ounce serving.)

Daily U.S. consumption of caloric sweeteners amounted to the equivalent of two-fifths pound—or 45 teaspoons—of sugar per person per day in 1994. Although the Dietary Guidelines do not include any quantitative recommendation for sugar, USDA's *Food Guide* provides examples of upper limits of added sugars. It suggests that people on a 1,600-calorie diet limit their intake of added sugars to 6 teaspoons per day. The daily suggested limit increases to 12 teaspoons for those consuming 2,200 calories, and 18 teaspoons for those consuming 2,800 calories.

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