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Food Consumption

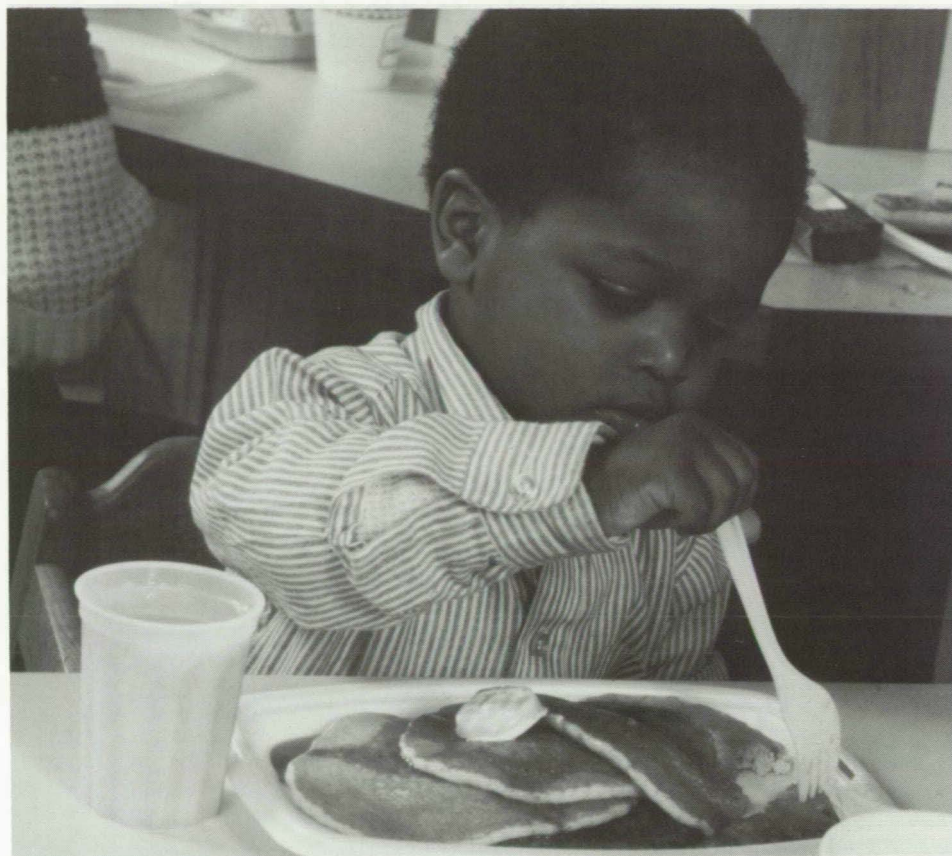
The American diet has changed quite a bit over the last two decades. Beef consumption, for example, fell almost 7 percent between 1966-68 and 1986-88, while chicken rose almost 72 percent, turkey 80 percent, and fish and shellfish more than 38 percent (*table 1*). Egg use has also declined, while cheese has increased steadily. Fresh fruits and vegetables reached record levels in 1988, with fresh broccoli one of the biggest gainers, increasing over 940 percent between 1966-68 and 1986-88.

A variety of factors are responsible for the changes in U.S. consumption patterns, including diet and health concerns and increases in real (adjusted for inflation) disposable income. New products, particularly more convenient ones, have also contributed to shifts in consumption along with an aging population, advertising campaigns, smaller households, more two-earner households, more single-person households, and an increasing proportion of ethnic minorities in the U.S. population.

The Economic Research Service (ERS) publishes per capita consumption statistics annually in *Food Consumption, Prices, and Expenditures*. ERS estimates are based on food disappearance data (*see box*). These data represent the amount of food available for human use. They can be used as a proxy to estimate human consumption even though the data may overstate what's actually eaten because they do not account for waste.

Here are some of the highlights from the ERS bulletin:

- **Meat, poultry, and fish:** In 1989, total meat, poultry, and fish consumption reached a record 187 pounds per person (boneless, trimmed equivalent), 6 pounds more than in 1971. However, we consumed an average of 24 pounds less red meat, 26 pounds more poultry, and 4 pounds more fish and shellfish than in 1971.



Pork consumption averaged 44 pounds per person (on a boneless basis) in 1989, about the same as 1980-89 and 1970-79 but 5 pounds below 1960-69 and 9 pounds less than 1955-59 (*see box*). At 65 pounds per capita in 1989, beef use was 14 pounds below 1971's total and 24 pounds less than the high of 89 pounds in 1976 when beef supplies reached record levels as ranchers reduced the size of the Nation's beef herd. The current forecast for 1990 indicates beef consumption will be at the lowest level since 1962.

Americans consumed 19 pounds per capita more chicken in 1989, up 70 percent from 1971. Chicken is forecast to top 75 percent of beef consumption in 1990, up from 35 percent in 1971. Turkey rose 4.7 pounds to 14.2 pounds per capita, gaining an average of 9.9 percent annually between 1985 and 1990, com-

pared to 2.8 percent a year between 1976 and 1984.

Per capita fish and shellfish consumption rose 5 percent in 1989 to 15.7 pounds. That's a 4.2-pound increase from 1971. Canned tuna rose 10 percent to 3.9 pounds per person—a 1.5-pound gain from 1971. Fresh and frozen fish and shellfish totaled 10.4 pounds per person in 1989, up 3.7 pounds from 1971. Consumption of cured fish, canned salmon, shellfish, and sardines declined on a per capita basis between 1971 and 1989.

- **Eggs.** Total egg consumption dropped from 310 per capita in 1971 to 235 in 1989. Shell egg use declined from 274 to 190. At the same time, consumption of eggs in the form of egg products rose from 36 per capita in 1971 to 45 in 1989. The increase reflects greater numbers of both foodservice (fast food and other)

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Table 1. Consumption Statistics Show Twenty Years of Change

Item	1966-68	1971-73	1976-78	1981-83	1986-88	1966-68 to 1986-88	1976-78 to 1986-88
	Pounds per capita ¹					Percent change ²	
Some Gainers...							
Fresh broccoli	0.3	0.7	1.0	1.9	3.5	940.4	231.8
Low-calorie sweeteners ³	6.9	5.1	6.5	10.2	19.2	179.1	193.2
Fresh cauliflower	0.9	0.7	0.9	1.5	2.5	179.7	174.1
Fresh grapes	3.5	2.2	2.9	4.6	6.8	91.2	134.8
Rice	na	7.2	6.7	10.8	13.1	na	95.1
Yogurt	0.5	1.3	2.4	2.8	4.5	846.1	89.4
Fresh carrots	6.6	6.3	5.6	7.1	9.9	50.0	77.0
Frozen broccoli	na	1.0	1.2	1.5	2.1	na	67.6
Turkey ⁴	6.5	6.8	7.2	8.6	11.7	80.1	62.7
Cheese (excl. cottage)	10.1	12.8	16.1	19.5	23.5	133.5	46.0
Lowfat milk ^{5,6}	3.1	5.4	8.1	9.7	11.6	276.2	43.0
Chicken ⁴	24.9	28.0	30.5	36.2	42.8	71.7	40.2
Cream ⁷	5.8	4.8	5.0	5.5	7.1	22.7	42.4
Fresh tomatoes	10.4	10.2	10.8	11.4	14.7	41.9	36.2
Fresh onions	11.2	12.0	12.6	13.8	16.3	46.4	29.3
Salad and cooking oils	13.0	16.7	19.6	22.4	25.0	92.8	27.8
Fresh bananas	18.4	18.0	19.6	21.7	24.9	35.7	27.5
Skim milk ⁵	1.3	1.5	1.4	1.3	1.7	34.9	24.7
Soft drinks ⁵	18.6	22.4	25.4	27.1	31.4	68.3	23.2
Shortening	16.1	17.1	17.6	18.5	21.6	34.2	22.8
Frozen corn	na	5.6	6.5	6.2	7.9	na	21.8
Wine ^{5,8}	1.7	2.6	2.9	3.3	3.4	96.7	19.0
Fish and shellfish ⁴	10.9	12.2	13.0	12.6	15.0	8.2	15.7
Pasta ⁹	6.3	8.5	10.3	10.4	11.9	88.3	15.7
Fresh apples	15.4	15.4	16.5	17.1	19.0	23.8	15.3
Breakfast cereals	9.9	10.7	12.2	12.0	13.5	37.2	11.2
Orange juice ⁵	2.7	3.7	4.4	4.5	4.9	83.1	10.1
Wheat flour ¹⁰	106.3	103.8	109.5	110.4	119.3	12.2	8.9
Frozen potatoes	na	14.6	20.8	19.3	22.6	na	8.8
Butter	5.7	5.0	4.3	4.5	4.6	-20.3	5.6
Iceberg lettuce	19.9	21.1	23.5	23.9	24.7	24.5	5.5
Caloric sweeteners ¹¹	116.2	124.9	125.5	124.0	131.5	13.2	4.8
Fresh potatoes	na	53.2	46.6	45.5	48.8	na	4.7
Some Losers...							
Veal ⁴	2.9	1.6	2.4	1.4	1.3	-53.8	-46.1
Whole milk ⁵	27.5	24.0	19.5	15.6	12.9	-53.1	-33.8
Canned green peas	na	3.2	2.9	2.5	2.0	na	-32.8
Canned peaches	na	5.0	4.6	3.4	3.3	na	-27.8
Distilled spirits ^{5,8}	2.8	3.1	3.1	2.8	2.3	-17.6	-25.2
Nonfat dry milk	5.7	5.0	3.3	2.2	2.5	-55.8	-23.9
Canned corn	na	14.8	13.5	11.7	10.8	na	-19.6
Beef ⁴	75.4	78.5	85.8	73.0	70.5	-6.6	-17.8
Coffee ⁵	36.2	33.0	28.1	26.1	26.0	-28.2	-7.5
Lamb ⁴	2.5	2.0	1.1	1.1	1.0	-59.9	-8.8
Eggs ¹²	317.3	300.3	270.0	262.7	249.7	-21.3	-7.5
Evaporated & condensed milk	14.2	10.9	8.0	7.1	7.9	-44.6	-2.5
Beer ^{5,8}	28.3	31.7	34.7	36.2	34.4	21.4	-0.8

na = not available.

¹Annual average data. ²Percent computed from unrounded data. ³Sugar-sweetness equivalent. ⁴Boneless, trimmed equivalent. ⁵Gallons. ⁶Includes buttermilk. ⁷Includes half and half and sour cream. ⁸Adult population, 21 years and over. ⁹Excludes fresh pasta products ¹⁰White and whole wheat flour excluding durum and semolina used in pasta. ¹¹Dry basis. ¹²Number of eggs.

Source: *Food Consumption, Prices, and Expenditures*. SB-804. USDA, ERS. May 1990.

Contact: Judith Jones Putnam (202) 786-1870.

establishments using eggs and food products containing eggs, such as pasta and sweet baked goods.

● **Dairy products.** Per capita use of total fluid milk declined steadily from 271 pounds in 1971 to 229 pounds in 1988. Whole milk's share fell from 80 percent in 1971 to 46 percent in 1988. Lowfat and skim milk (including buttermilk and lowfat and nonfat yogurts) increased from 20 percent to 54 percent.

Cheese consumption nearly doubled from 12 pounds per person in 1971 to 23.6 pounds in 1988. Cheddar cheese, Americans' favorite, increased 59 percent to 9.5 pounds per capita. Italian cheese consumption more than tripled. Mozzarella quadrupled from 1971, reaching 6 pounds per capita in 1988.

Fluid cream consumption was 7.2 pounds per capita in 1988, up from 4.8 pounds in 1971. However, it was still just over half of the 13.6 pounds in 1946. As cream sales fell between 1946 and 1972, the probability of getting cartons of spoiled cream increased dramatically. Consequently, consumer dissatisfaction and industry costs rose due to a high rate of return of spoiled product. Sales began to reverse when ultrapasteurization was widely adopted in the early 1970's, increasing the shelflife of cream products. This brought single-serving packages of cream back into restaurants.

Policy changes at about the same time resulted in a decrease in the relative prices for milkfat and, consequently, cream. High Federal dairy support prices made cream more expensive than imitation cream products, encouraging their production and use.

● **Fats and oils.** Use of visible fats and oils (butter, margarine, shortening, salad and cooking oils, lard, and edible tallow) increased 21 percent from 1971, reaching 62.7 pounds per person (on a fat-content basis). A 39-percent increase in vegetable fats and oils (mainly shortening and salad and cooking oils) more than offset a 26-percent decrease in the use of animal fats (lard and butter). As consumers

How Food Consumption Is Measured

Estimates of the total available U.S. food supply are based on the sum of production, beginning inventories, and imports. These three components are either directly measurable or estimated by Government agencies using sampling and statistical methods.

The food available for human use is what's left after deducting exports, industrial uses, farm seed and feed, and end-of-year inventories. Human food use is not directly measured or statistically estimated. Instead, use is often referred to as "food disappearance." It measures food supplies for consumption through all outlets, at home and away from home. Per capita food consumption usually is calculated by dividing total food disappearance by the U.S. total population on July 1.

In general, food disappearance data indicate trends in consumption over time rather than measure absolute levels of food eaten. Food disappearance estimates can overstate actual consumption because they include spoilage and waste accumulated through the marketing system and in the home.

While the data reflect the amount of fats and oils sold for

human food, they probably do not accurately reflect trends in what is actually eaten because the proportion wasted has grown over the last two decades. A recent study by SRI International indicates that the quantity of used frying fat disposed of by restaurants and processed by renderers for use in animal feeds, pet foods, industrial operations, and for export now annually amounts to about 6 pounds per person, or about 10 percent of the 1988 disappearance of food fats and oils.

The Nationwide Food Consumption Survey (NFCS), conducted by USDA's Human Nutrition Information Service, provides information on food use by U.S. households or food intake by individuals. The survey is conducted every 10 years, with data collection for the most recent NFCS completed in 1988.

The Continuing Survey of Food Intake by Individuals (CSFII), initiated in 1985, reports individual food intake data for each year between the decennial NFCS. CSFII results provide annually updated moving averages of dietary intakes. For more information, call Dr. Howard Riddick, Human Nutrition Information Service, (301) 436-8485.

grew more concerned about saturated fat, animal fat declined from 28 percent of total visible fat consumption in 1971 to 17 percent in 1988.

● *Fresh fruits and vegetables.* Total per capita consumption of nine major commercial fresh vegetables reached a record high in 1988—20 percent more than in 1980 and 37 percent above 1971. Onions, iceberg lettuce, and tomatoes rose about 5 pounds each and carrots and broccoli more than 3 pounds each over

the two decades. Americans also ate more asparagus, cauliflower, and celery, while fresh corn declined almost 1 pound per person. Gains in frozen corn were more than offset by declines in canned corn consumption. We're also using fewer canned and more frozen vegetables.

Fresh fruit consumption gained 19 pounds per capita from the 1971-73 annual average to a total of 94 pounds (retail-weight equivalent) in 1988. The rise was due entirely to sharp increases in

fresh noncitrus fruits like bananas, grapes, apples, avocados, pineapples, and strawberries.

● *Flour and cereal products.* Per capita use rose from the annual average of 142 pounds in 1971-73 to 172 pounds in 1988. However, this is still considerably below the 204 pounds consumed in 1945-49 and 287 pounds in 1910-13. Rice, pasta, and breakfast cereals together increased 55 percent between 1971 and 1988 to 41 pounds per person (*figure 1*).

● *Sweeteners.* Total use, including caloric sweeteners on a dry weight basis and low-calorie sweeteners on a sugar-sweetness equivalency basis, increased steadily from 121 pounds per capita in 1966 to 153 pounds in 1988.

Americans increased per capita caloric sweetener consumption (dry basis) 16 percent during 1966-88 to 133 pounds. Increased use of high-fructose corn syrup (HFCS) cut food use of refined sugar from the record 102.3 pounds per capita in 1972 to 61.7 pounds in 1988. HFCS, glucose, and dextrose (all corn sweeteners) became economical because of abundant corn supplies and low corn prices. At the same time, Federal policy ensured high support prices for domestic sugar growers through import quotas on refined sugar. In 1985, total corn sweeteners surpassed cane and beet sugar use for the first time.

U.S. per capita consumption of low-calorie sweeteners (mainly aspartame and saccharin) increased faster than caloric sweeteners in the 1980's. By 1988, low-calorie use was about 20 pounds (sugar sweetness equivalent) per person, accounting for nearly 13 percent of total sweetener consumption, compared with 6 percent in 1980. This segment of the sweetener industry is changing rapidly because of new uses for low-calorie sweeteners approved by the U.S. Food and Drug Administration (FDA), introduction of new sweeteners, and growth in the "light" food segment of the food industry.

USDA Meat Consumption Series To Be Revised In Early 1991

USDA is currently revising its red meat and poultry consumption series to reflect changes in marketing practices and to facilitate comparisons of red meats and poultry on an equivalent basis. USDA has several meat and poultry consumption series, depending on the amount of bone and internal organs removed. Consumption of red meat is reported on carcass, retail, and boneless trimmed weight bases. Chicken and turkey consumption is reported as ready-to-cook and boneless. The National Marine Fisheries Service similarly reports an edible-weight or boneless-weight series for fish and shellfish.

The boneless, trimmed series are a close measure of the amount Americans have available for consumption, but should not be equated with the amount actually eaten. Significant losses occur in home preparation and consumption, including trimming, cooking, and disposal of uneaten portions (including that fed to pets).

The boneless, trimmed series show that Americans continued to eat more beef than poultry in 1989. Since 1987, however, many in the press and elsewhere have reported that Americans, on average, are eating more poultry than beef. Such reports are based on an increasingly inappropriate comparison of retail weight for beef which contains little bone and ready-to-cook

(RTC) weight for poultry which includes bones, skin, fat, liver, heart, gizzard, and neck. The difference between RTC weight and boneless weight for chicken was 24.5 pounds per capita in 1989.

USDA uses conversion factors to derive retail and boneless weights from the carcass. In 1989, for example, USDA estimated that 70.5 percent of the beef carcass was processed into products suitable for sale in grocery stores (retail-weight). The conversion factor had remained at 74 percent from 1962 through 1985. Changes in beef production and processing, however, have prompted adjustments in the factor annually since 1986.

The revised figures account for leaner cattle, closer trimming of fat, and removal of more bone. The lower conversion factor means that 3.6 pounds less beef per capita were purchased in 1988 than if the 1962-85 factor were used. Exterior fat trimmed from beef cuts before retail sale accounted for 2.2 pounds of the difference, less bone amounted to 1 pound, and less fat in hamburger and processed meat to 0.4 pound.

It is not clear how these changes affect the amount of beef fat actually ingested. In earlier years, consumers may have trimmed much or all of the beef fat now being removed by meat packers and food distributors.

Revised estimates of the pork carcass-to-retail weight conversion factors will put per capita pork con-

sumption at the retail-weight level somewhat lower than currently reported for all years. The revisions, to be published in early 1991, will go back to 1955 to reflect the trend toward leaner hog carcasses over the last 35 years, closer trimming of fat, and removal of more skin and bone. The difference between the current and new series will likely gradually increase over the 1955-89 period, reflecting a pronounced trend at retail to a largely boneless and nearly skinless product. The current factors do not adjust for skin and bone removal.

Revisions of the boneless-trimmed-weight pork consumption series have the potential to significantly alter the historical pattern of per capita pork supplies available for domestic consumption. The current series has a constant factor of 67 percent for all years, while the new series' conversion factors will increase annually to better reflect the trend toward leaner hog carcasses and changes in pork marketing practices.

Current plans call for a new and revised poultry consumption series also to be introduced in early 1991. The RTC series will likely be adjusted to make it more comparable to the red meat carcass-weight series. A new retail-weight poultry series will be introduced that reflects trends in merchandising practices, including the increasing availability of boneless and skinless poultry.

On a Boneless, Trimmed Weight Basis, Beef Consumption Was Still Greater Than Poultry in 1989¹

Year	Red meat					Poultry ²			Fish and shellfish	Total red meat, poultry, and fish ³
	Beef	Veal	Pork	Lamb	Total ³	Chicken	Turkey	Total ³		
<i>Pounds per capita</i>										
1966	73.7	3.2	44.3	2.6	123.8	24.6	6.3	30.9	10.7	165.4
1971	79.0	1.9	52.6	2.1	135.5	27.7	6.6	34.3	11.5	181.3
1976	88.9	2.7	39.2	1.2	132.1	29.3	7.2	36.5	12.9	181.4
1981	72.7	1.3	46.8	1.0	121.9	35.4	8.5	43.9	12.7	178.5
1986	74.1	1.6	41.6	1.0	118.3	40.5	10.5	51.1	14.5	183.8
1987	69.2	1.3	41.8	1.0	113.3	43.2	12.0	55.3	15.5	184.1
1988	68.2	1.1	44.7	1.0	115.1	44.5	12.6	57.1	15.0	187.2
1989	65.0	1.0	44.3	1.1	111.3	47.0	13.5	60.5	15.7	187.4
1990 ⁴	63.9	.9	42.6	1.1	108.5	49.7	14.2	63.9	na	na

na = not available.

¹Boneless equivalent for poultry and red meat subtracts all bone and the fat that is normally trimmed before retail sale. Conversion factors for red meats adjust from carcass to boneless, trimmed weight: beef = 0.698 for 1962-85, 0.69 for 1986, 0.67 for 1987, 0.667 for 1988-1990; pork = 0.67; veal = 0.685; lamb = 0.658; chicken = 0.69; and turkey = 0.79. Boneless equivalent, or edible weight, for fish is calculated by the U.S. Department of Commerce. ²Includes skin, neck meat, and giblets. ³Total may not add due to rounding. ⁴Forecast.

Source: *Food Consumption, Prices, and Expenditures*. SB-804. USDA, ERS. May 1990.

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Because only a fraction of low-calorie sweeteners is needed to provide the same degree of sweetness as sugar, low-calorie use is reported on a sugar-sweetness equivalent (SSE) basis. Aspartame, for example, is 180-200 times as sweet as sucrose, compared with saccharin's 300 SSE. Aspartame's taste, however, is considered superior to saccharin. In fact, the rapid rise of low-calorie sweetener use reflects accelerated adoption of aspartame, first introduced for commercial use in 1981.

Another high-intensity, low-calorie sweetener, acesulfame-k (ace-k) entered U.S. commercial use in 1988. Ace-k is equal to aspartame in sweetness but, unlike aspartame, does not lose its sweetness when heated. Its taste quality, however, is said to be below that of sucrose or aspartame.

Other low-calorie sweeteners are awaiting approval by the FDA for use in the U.S. market. Among them are alitame, which is 2,000 times sweeter than sugar, and sucralose, 600 times sweeter than sugar. Cyclamate use was

banned by the FDA in 1970 but is being reconsidered for certain restricted uses.

The potential exists over the next decade for a reduction in the use of sugar and corn sweeteners as high-intensity sweetener alternatives find increasing areas for substitution at competitive prices. Food processors could also adopt a multisweetener policy; sweeteners, both caloric and low-calorie, are likely to be increasingly combined to obtain the optimal mix in terms of price and such functional factors as sweetness, taste, texture, and stability. Moreover, interest in "light" foods appears to be growing rapidly and low-calorie alternatives are well positioned to capture the growth. For example, a West Coast food processor is now marketing a new low-calorie line of "light" fruit spreads that use aspartame rather than sugar. The jams contain about half of the calories of sugar- or corn-sweetener based jams, and are currently being marketed at about 15 cents a jar more than traditional sugar-based jams.

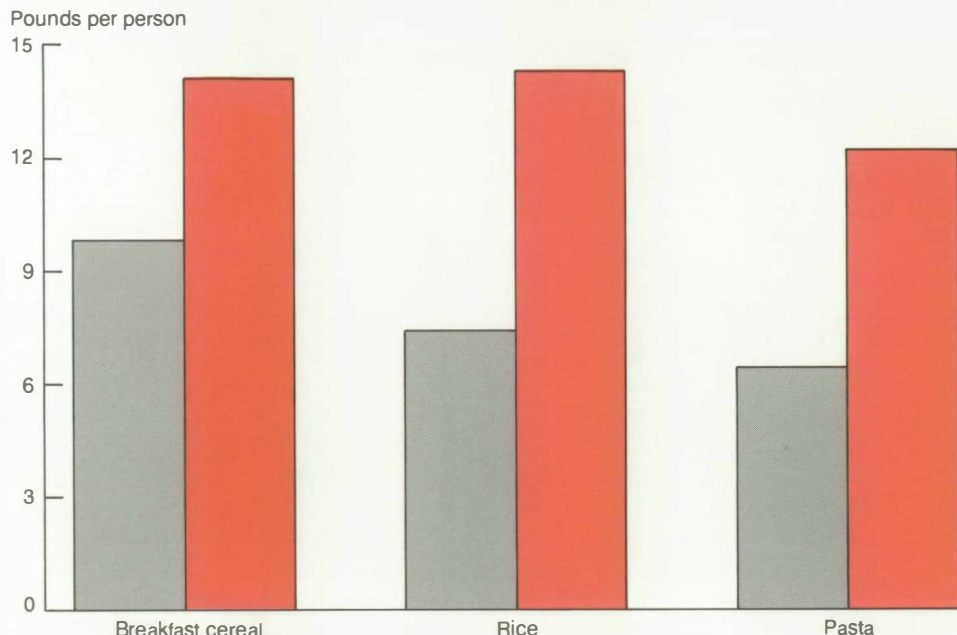
What's Behind the Food Consumption Trends?

A number of factors explain the changes in food consumption over the last two decades. Diet and health information, for example, have directly influenced the amount of fat trimmed from retail beef and pork cuts. Some retailers have been selling leaner cuts of beef (mostly Good/Select grades) and less fatty ground beef to satisfy consumer demand. Meat processors have been marketing a host of reduced-fat and reduced-sodium processed meat products which carry nutrition labeling.

The popularity of fish, seafood, and chicken has increased even though prices rose faster than for beef and pork from 1980 to 1989. The cost of 3 ounces of cooked lean meat from bone-in chicken breasts, for example, jumped from 50.8 cents in 1980 to 83.8 cents in 1989 (table 2). In contrast, the same amount of cooked lean meat from a U.S. Choice chuck roast increased from 81.9 cents to 84.7 cents.

Health concerns about tropical oils (palm oil, palm kernel oil, and coconut

Figure 1. Consumption of Rice and Pasta Doubled Between 1967 and 1988



Source: Judith Jones Putnam, *Food Consumption, Prices, and Expenditures 1967-88*. USDA, ERS, Stat. Bull. No. 804. May 1990.
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oil) in processed foods are receiving widespread attention. According to a recent ERS study, the United States used about 14.5 billion pounds of fats and oils in edible products in 1987/88, of which 550 million pounds, or 4 percent, were tropical oils.

Several major food processing companies have eliminated these oils in all or most of their products. Other firms plan to follow. Substitution is fairly easy in baking and frying fats, salad and cooking oils, and margarine. However, replacing tropical oils in confectionery products and cracker spray coatings is more difficult because other oils do not have the same properties. ERS estimates that as much as half of the tropical oils in U.S. food products could be eliminated, more if acceptable substitutes are found.

Annual per capita consumption of fresh fruits and vegetables rose very slowly in the 5 years after the Government began advising Americans in late 1977 that risk for various chronic diseases could be reduced by moderating dietary fat and eating foods containing

Table 2. With Its Growing Popularity, the Cost of Chicken Has Risen Faster than Beef

Year	Retail price per pound						Cost of 3 ounces of cooked lean ¹					
	Chicken			Beef		Canned tuna, chunk, light	Chicken			Beef		Canned tuna chunk, light
	Whole, ready-to-cook	Legs, bone-in	Breasts, bone-in	Ground chuck	U.S.Choice chuck roast, bone-in		Whole ready-to-cook	Legs, bone-in	Breasts, bone-in	Ground chuck	U.S.Choice chuck roast, bone-in	
	Cents											
1980	70.9	106.7	127.1	183.3	181.9	235.5	39.0	49.1	50.8	47.7	81.9	49.5
1981	73.2	111.9	148.5	180.4	181.7	255.3	40.3	51.5	59.4	46.9	81.8	53.6
1982	71.4	106.9	148.5	177.5	178.9	246.9	39.3	49.2	59.4	46.2	80.5	51.8
1983	72.5	104.2	151.7	173.1	173.3	230.9	39.9	47.9	60.7	45.0	78.0	48.5
1984	81.0	115.4	170.2	171.7	168.1	211.8	44.6	53.1	68.1	44.6	75.6	44.5
1985	76.3	107.7	166.1	167.8	157.1	200.6	42.0	49.5	66.4	43.6	70.7	42.1
1986	83.5	116.7	184.8	163.3	158.5	199.8	45.9	53.7	73.9	42.5	71.3	42.0
1987	78.5	108.8	180.4	170.7	167.8	197.2	43.2	50.0	72.2	44.4	75.5	41.4
1988	85.4	114.1	193.2	176.1	173.1	215.6	47.0	52.5	77.3	45.8	77.9	45.3
1989	92.7	120.6	209.4	182.7	188.2	207.5	51.0	55.5	83.8	47.5	84.7	43.6

¹Part of retail-weight pound for 3 ounces of cooked lean: Whole ready-to-cook broiler, 0.55; bone-in chicken legs, 0.46; bone-in chicken breasts, 0.40; ground chuck, 0.26; U.S. Choice bone-in chuck roast, 0.45; and canned light chunk tuna, 0.21. These factors are based on data from Agriculture Handbook No. 8-5 (revised August 1979) for chicken, No. 8-13 (revised August 1986) for beef, and No. 8-15 (revised September 1987) for fish.

Source: ERS, USDA and the Bureau of Labor Statistics, U.S. Dept. of Labor.

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more complex carbohydrates (fruits, vegetables, grains, legumes, and cereal products). Consumption began increasing more rapidly following public health reports beginning in the early 1980's. The National Academy of Science's (NAS) Committee on Diet, Nutrition, and Cancer (1982) and the American Cancer Society (1984) proposed interim dietary guidelines aimed at lowering cancer risk. The Consensus Conference of the National Institutes of Health resulted in recommendations to lower blood cholesterol (1985). Consumers were advised to eat carotene-rich dark green/yellow and cruciferous vegetables, such as broccoli, to reduce the risk of cancer. Demand for such vegetables increased dramatically, led by broccoli and cauliflower. Consumption is likely to continue growing, particularly in light of a recommendation by the NAS Committee on Diet and Health that Americans double their consumption of fruits and vegetables. The Committee also concluded that any increased exposure to pesticide residues posed by eating more produce was "greatly outweighed by the potential benefits (i.e., reduced risk of cancers of the lung, stomach, colorectum, and other sites and reduced risk of other chronic diseases)." USDA recommends two to four servings of fruit and three to five servings of vegetables per day as part of its pattern of daily food choices.

Per capita consumption of cereal and grain products showed a similar trend, rising slowly from the late 1970's and then very rapidly beginning in 1985. In late 1984, the Kellogg Company began an advertising and labeling campaign for All-Bran citing the National Cancer Institute's statements on the link between fiber and cancer. (The labeling portion of this campaign was in direct violation of longstanding FDA policy that essentially created a ban on health claims on food products. Spurred by the cereal campaign and other activities in the marketplace, FDA began developing criteria that would underlie a new policy initia-

tive in the area of health messages on food labels. In the interim, FDA has permitted companies to use health messages on labels if they follow certain criteria established by FDA.)

Other cereal producers followed with their own health claims and developed new high-fiber cereals. The ripple effect of the promotion of high-fiber cereals likely contributed to rapid increases in the use of rice and wheat flour products.

Awareness of the importance of calcium in the diet has been partly responsible for the recent upturn in consumption of dairy products. Over the longer run, however, concerns about reducing fat intake have been cited as one of the major factors influencing the trends away from whole milk to lowfat and skim milk and away from fluid milk to soft drinks.

The aging of the population also has encouraged greater consumption of soft drinks and beer. Between 1971 and 1988, annual average soft drink consumption increased 45 percent to 32 gallons per person. During the same period, the number of Americans under 16, the heavy milk-drinking group, fell from 30 percent to 23 percent of the population. The number of 16 to 44 year olds increased by nearly 30 million, from 40 percent of the total population in 1971 to 46 percent in 1988. They drank less coffee and more soft drinks and beer than their same age counterparts in 1971.

Americans, particularly middle-aged people fighting weight gain, significantly increased their consumption of low-calorie soft drinks and light beer in the 1980's. In the *1986 Continuing Survey of Food Intake by Individuals*, diet soft drinks accounted for about one-third of the soft drinks consumed by younger women and about one-half of those drunk by older women. Light beer's share of the market was 27 percent in 1989, compared to 13 percent in 1980. Similarly, diet soft drinks captured 27 percent of the market in 1989, compared to 16 percent in 1980.

The aging of the population also has encouraged greater consumption of flour and cereal products. ERS research indicates that in 1988 homes where the household head was 45 years or older spent an average of 36 percent more per person for cereals and bakery products than did younger households. Demand for flour and cereal products might be expected to rise in the 1990's as the first of the baby boom generation, the largest U.S. population segment, reaches 45 in 1991.

Changes in the racial and ethnic mix of the population also have influenced American food use patterns over the past 20 years. In 1989, whites accounted for 84.1 percent of the U.S. population, blacks for 12.4 percent, and others (mostly Orientals) for 3.5 percent. In 1971, whites accounted for 87.5 percent, blacks for 11.2 percent, and others for 1.3 percent. (Hispanics can be any race.) ERS research based on the *1981-86 Continuing Consumer Expenditure Diary Surveys* conducted by the Bureau of Labor Statistics indicates that whites, blacks, and others allocate their food dollar in substantially different ways.

In 1986, black urban households spent about 5 percent more per capita on meat, poultry, fish, and eggs than white urban households. Conversely, whites spent about 90 percent more than blacks on total dairy products, 195 percent more on cheese, 50 percent more on carbonated soft drinks, and 49 percent more on sugar and sweets. Whites also spent about 112 percent more on food away from home. Others (excluding blacks) spent 440 percent more than whites on rice, 106 percent more on fish, and 17 percent more on fresh fruits and vegetables.

The influx of minority groups, particularly from Third World countries, has diversified our food choices. Hispanics comprised 8.3 percent of the population in 1989, and Asians, 2.8 percent. Their various cuisines, which are increasingly popular among the general population, include more rice which partially

explains the big increase in per capita use. Shipments of specialty vegetables (oriental and tropical vegetables, snow peas, chili peppers, and others) have increased every year for more than a decade, as consumers have added variety to their diets. For instance, we imported 76 million pounds of chili peppers in 1988 (nearly a third of a pound per capita), up from 26 million pounds in 1985.

Over the last two decades, many new products have affected consumption. The rapid expansion in poultry, for example, has occurred mainly in the processed and cut-up sectors rather than in whole birds. Today's consumers can choose

from an array of poultry products, including leg packs, skinless breast fillets, whole baked hens, ground turkey, turkey "hams," turkey hotdogs, and turkey salami. One of the biggest boosts to chicken use has been its proliferation in fast food menus, giving consumers an alternative to hamburgers.

Convenience seems to be a key attribute of many new food products. Developments in packaging and processing cheese, for example, have encouraged greater consumption of some dairy products. Consumers can now purchase individually wrapped cheese slices, packaged shredded cheese, and frozen, prepared dairy products, such as quiche.

The greater quality and variety of oven-ready and microwaveable prepared foods with ingredient labeling and cook-

ing instructions boosted fish and seafood consumption over the last two decades. Seafood and dairy products also gained from intensive advertising campaigns. The National Seafood Council advised people to eat fish at least twice a week and the industry made a concerted effort to educate consumers about how to prepare seafood.

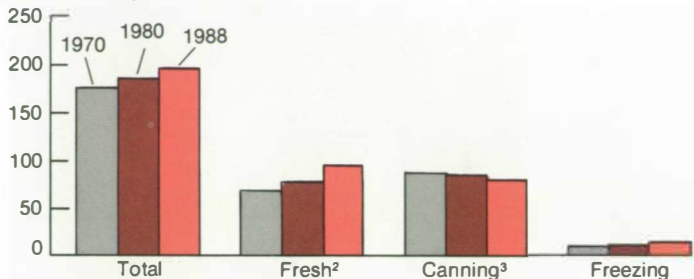
A 40-percent increase in real (adjusted for inflation) per capita disposable income between 1971 and 1989 also influenced food trends. Rising incomes enabled consumers to buy more costly processed products and to eat out more often. Americans spent 46 cents of every food dollar in restaurants and other foodservice establishments in 1989, compared to 34 cents in 1971.

Food Consumption. . . At a Glance

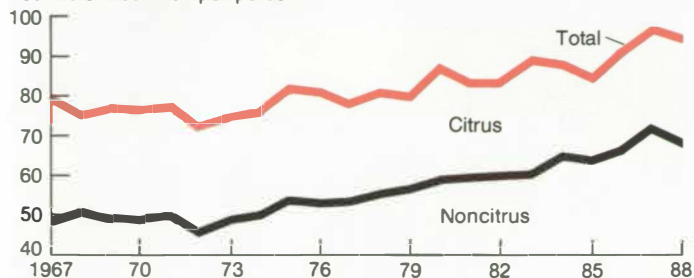
Americans are increasingly favoring foods that are fresh, lowfat, and sweet.

The American Diet Includes More Fresh Fruits and Vegetables

Pounds of vegetables per person¹



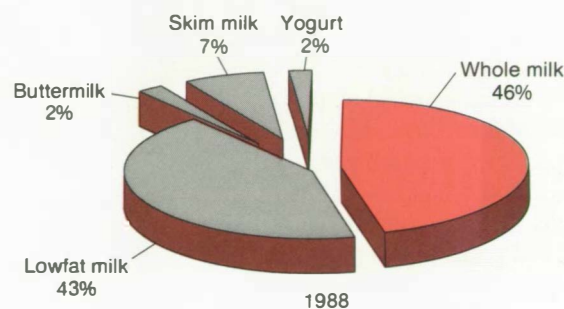
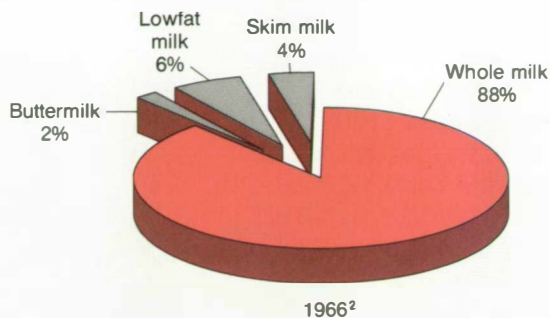
Pounds of fresh fruit per person⁴



¹Farm weight. ²Asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, onions, and tomatoes. ³Tomato products are about 60 percent of the total. ⁴Retail weight.

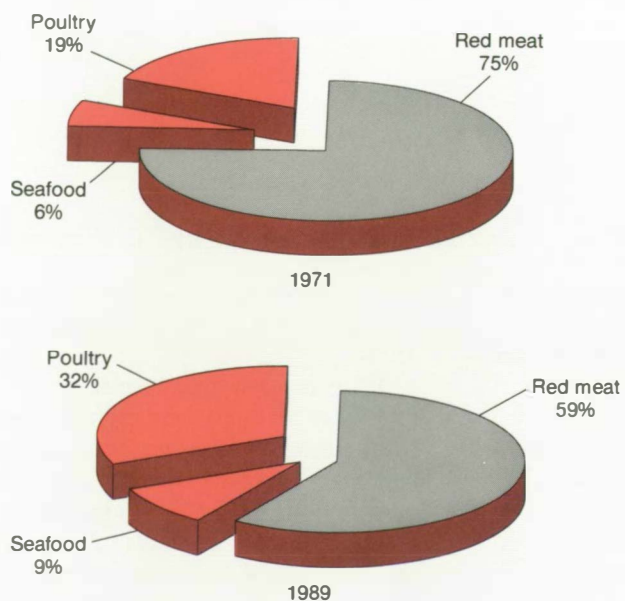
Source: *Food Consumption, Prices, and Expenditures 1967-88*. Contact Judith Jones Putnam (202) 786-1870.

The Use of Whole Milk Has Declined Dramatically¹



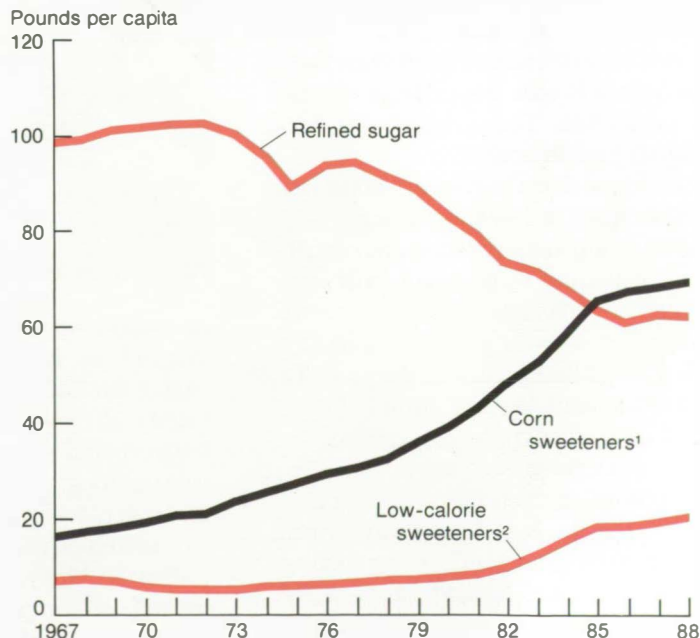
¹Product weight. ²Yogurt = less than 0.2 percent. Source: *Food Consumption, Prices, and Expenditures 1967-88*. Electronic database. Contact Judith Jones Putnam (202) 786-1870.

Poultry and Seafood's Share of Per Capita Meat Consumption Has Grown



¹Boneless, trimmed basis. Source: *Food Consumption, Prices, and Expenditures 1967-88*. Contact Judith Jones Putnam (202) 786-1870.

Total Sweetener Consumption Is Up, While Low-Calorie Sweeteners Are Becoming More Popular



¹Dry basis. ²Sugar-sweetness equivalent. Source: *Food Consumption, Prices, and Expenditures 1967-88*. Contact Judith Jones Putnam (202) 786-1870.