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# Household Characteristics Affect Food Choices

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**N**ational trends in food consumption often mask the fact that the eating habits of some American households run counter to those trends.

Food supply data suggest that, overall, Americans are eating fewer animal products and more crop products. Consumption of most crops has increased steadily in the past 20 years, especially grains, fruit, and vegetables. In comparison, Americans are consuming less whole milk, eggs, and red meat. For example, per capita beef consumption in 1991 was about 25 pounds lower than the all-time high of 89 pounds in 1976. These decreases in some animal products have been tempered by increases in the consumption of lowfat milk, cheese, poultry, and fish.

Household characteristics, such as income, type, and size, influence the type and quantities of foods used. For instance, the lowest income households have decreased their consumption of fresh vegetables by 22 percent between 1977-78 and 1987-88, compared with a reduction of 12 percent for the highest income households. Upper income households increased their consumption of poultry, fish, and shellfish by 20 percent during this

period, while poorer households increased consumption by 11 percent.

Between 1977-78 and 1987-88, households with children parented by a single female ("female-headed households") decreased their consumption of most commodity groups, except fruit and vegetable juices and other beverages.

Larger households, containing more children, consume less food per person than do smaller households. Exceptions include fresh

fluid milk, flours and cereals, and sugars—foods prevalent in children's diets.

These changes in food consumption may have implications for the nutrition and health of particular groups. The 1988 *Surgeon General's Report on Nutrition and Health* concluded that diet and health are linked. For example, it is generally agreed that reducing fat intake, particularly saturated fats, can help reduce the risk of health problems, such as coronary heart disease.



*Food supply data indicate that Americans have been shifting their eating patterns away from animal products and toward crop products. However, food consumption data suggest that certain households have not followed all the national trends.*

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Given knowledge about the health risks from consuming too much fat and the benefits of a diet rich in vitamins, minerals, and dietary fiber, certain socioeconomic groups of Americans may be at a greater risk of chronic diet-related diseases than is the population as a whole. Food program administrators, food and nutrition educators, and health professionals can use information on the eating patterns of different households to target nutrition education and food assistance programs toward high-risk groups.

This article presents results from analysis by USDA's Economic Research Service of the 1977-78 and 1987-88 Nationwide Food Consumption Surveys (NFCS) on household food consumption. In the survey, respondents reported the households' consumption of foods and beverages at home and on picnics and in packed lunches prepared from home supplies. We adjusted the data to account for differences in the number of household members and for meals eaten away from home (see box).

The data in this article reflect the fact that only a single factor influencing the household's food consumption was considered at a time. But many factors—such as income, season of the year, household age, and household composition—combine to influence food consumption. Because these factors vary among households within a group, food consumption within the group is also likely to vary. For example, a single-person household could be a 24-year-old male or an elderly widow. These individuals will likely choose different foods.

### Dairy Products

Consumption of most dairy products was down in 1987-88 from 1977-78 levels, except cheese. Cheese consumption increased substantially with income. In 1987-88, households with the lowest income ate about 26 percent less cheese

Table 1  
Overall, Americans Are Eating Less Red Meat and Eggs, More Poultry and Entree Mixtures

Food group	Per person change in consumption, 1977-78 to 1987-88	
	Percent	
Dairy (fresh equivalent)	-3.6	
Fats and oils	-12.4	
Flour and cereals	-12.0	
Bakery products	-4.3	
Red meat	-20.8	
Poultry, fish, shellfish	19.2	
Eggs (fresh equivalent)	-24.6	
Sugars, sweets	-18.3	
Potatoes, sweet-potatoes	-10.3	
Fresh vegetables	-15.2	
Fresh fruit	-2.4	
Canned vegetables and fruit	-20.4	
Frozen vegetables and fruit	18.0	
Vegetable and fruit juices	17.1	
Dried vegetables and fruit	-17.1	
Beverages	34.6	
Soups, sauces, gravies	-18.0	
Nuts, condiments	-6.7	
Dinner mixtures	68.5	

than did the Nation as a whole. Households with the highest income ate about 26 percent more cheese. Higher income households generally consumed more dairy

products in both 1977-78 and 1987-88.

Single-person households continued to consume more dairy

Table 2  
Female-Headed Households Decreased Consumption of Most Food Groups

Food group	Per person change in consumption, 1977-78 to 1987-88		
	Female-headed households	Two-parent households	Other
	Percent		
Dairy (fresh equivalent)	-9.5	-2.5	-1.5
Fats and oils	-18.7	-11.8	-13.2
Flour and cereals	-19.3	-9.8	-13.9
Bakery products	-10.6	-4.9	-1.4
Red meat	-21.8	-19.1	-24.9
Poultry, fish, shellfish	-3.2	22.6	16.4
Eggs (fresh equivalent)	-26.7	-22.4	-29.5
Sugars, sweets	-7.2	-16.3	-24.9
Potatoes, sweet-potatoes	-10.7	-10.4	-10.1
Fresh vegetables	-28.5	-14.0	-18.1
Fresh fruit	-19.6	-2.3	-3.2
Canned vegetables and fruit	-21.6	-18.6	-24.9
Frozen vegetables and fruit	-4.5	25.0	11.5
Vegetable and fruit juices	10.8	21.3	9.6
Dried vegetables and fruit	-34.7	-11.9	-21.5
Beverages	46.0	28.7	38.1
Soups, sauces, gravies	-36.8	-23.7	-8.0
Nuts, condiments	-8	-11.2	8
Dinner mixtures	42.1	57.7	95.9

products per person during the 1980's than did larger households. However, single-person households decreased consumption of cheese about 9 percent, and households with more than one person increased consumption by about 8 percent.

Female-headed households consumed about 10 percent fewer dairy products in 1987-88 than in 1977-78 (table 2). This may be because these households are also consuming less breakfast cereal, which is usually served with milk.

### Red Meat, Poultry, and Fish

Consumption of red meat, on average, declined dramatically during the 1980's. Single-person households led the decline by consuming about 31 percent less red meat in the late 1980's than they did in the late 1970's (table 3). In 1977-78, consumption of red meat rose with income, but the opposite

was found in 1987-88. In fact, the poorest households went from consuming about 6 percent less red meat than the national average to about 5 percent more.

Middle income households led the Nation in increases in consumption of poultry, fish, and shellfish (table 4). While poorer households increased consumption of poultry, fish, and shellfish about 11 percent, this is a drop from consuming 6 percent more than the national average to consuming 3 percent less. Female-headed households decreased consumption of poultry, fish, and shellfish about 3 percent. But, two-parent households remained the smallest consumers of poultry, about 8 percent less than did the Nation as a whole.

### Eggs

All households substantially decreased consumption of fresh eggs during the 1980's, partly due to press reports on salmonella in im-

properly stored eggs and to their relatively high cholesterol level. Although the poorest households consumed about 8 percent more eggs than did the Nation as a whole in 1987-88, their consumption decreased about 22 percent in the 1980's. The wealthiest households decreased consumption about 29 percent, making them the group with the lowest consumption of eggs. Single-person households maintained the highest per person level of consumption.

### Fats and Oils

The survey data show a decrease in the use of fats and oils in the 1980's, while ERS food supply data suggest consumption increased. This disparity probably stems from our assumption in the analysis of the survey data that foods eaten away from home were consumed in the same relative amounts as at home. However, many people eat more fried foods at restaurants and fast-food estab-

Table 3  
Larger Households Consume Less Food Per Person—Except Food Prevalent in Children's Diets

Food group	Per person change in consumption, 1977-78 to 1987-88				
	One-person households	Two-person households	Three-person households	Four-person households	Five or more person households
	Percent				
Dairy products (fresh equivalent)	-4.7	-1.3	-4.5	-2.0	-4.7
Fats and oils	-20.2	-9.9	-19.2	-11.3	-12.9
Flour and cereals	-14.5	-10.4	-12.3	-12.0	-9.3
Bakery products	-5.2	.7	-9.2	-4.8	-5.9
Red meat	-30.5	-24.9	-21.4	-18.5	-18.3
Poultry, fish, shellfish	12.2	18.1	13.7	21.5	11.9
Eggs (fresh equivalent)	-36.3	-28.8	-23.6	-22.6	-23.5
Sugars, sweets	-28.1	-20.9	-29.6	-12.9	-6.6
Potatoes, sweet-potatoes	-11.2	-8.6	-17.0	-7.6	-8.9
Fresh vegetables	-24.5	-17.2	-18.0	-20.5	-17.8
Fresh fruit	-4.9	-6.2	-6.1	-8.0	-5.7
Canned vegetables and fruit	-23.6	-25.6	-21.3	-20.2	-19.3
Frozen vegetables and fruit	6.9	3.6	21.7	11.0	21.2
Vegetable and fruit juices	3.0	8.9	13.6	19.1	16.9
Dried vegetables and fruit	-21.9	-16.5	-25.5	-20.7	-8.1
Beverages	23.2	46.0	32.2	26.4	16.1
Soups, sauces, gravies	-6.8	-15.5	-19.2	-30.3	-26.7
Nuts, condiments	2.4	3.6	-7.7	-7.3	-17.9
Dinner mixtures	90.1	89.2	46.6	70.0	42.4

ishments than they do at home. In addition, the fats and oils used as ingredients in commercially prepared bakery products and other foods eaten at home would be reported as bakery products rather than as fats and oils in the survey data.

Single-person and three-person households decreased their consumption of fats and oils relative to the rest of the Nation, while consumption by other sized households remained relatively flat. The largest increase was seen in two-person households.

A look at specific foods suggests people may be changing their food preparation practices as well as their food choices. For example, single-person households decreased their use of shortening (used to fry foods and make desserts) by over 67 percent, but used more salad dressings.

## Flours and Cereals

Consumption of flour, cereal, and bakery products declined in the 1980's, according to the survey data. However, as with fats and oils, ERS food supply data suggest consumption increased during the decade. Again, this disparity is probably due to our adjustment procedure used to account for foods eaten away from home. For example, if someone picks up doughnuts on the way to work, the flour in the breakfast choice would be missed in the survey.

The highest income households increased their total use of flours and cereals about 2 percent, despite 39- and 35-percent decreases in their use of flour and flour mixes, respectively. These households increased their consumption of breakfast cereals by over 24 percent.

In female-headed households, consumption of breakfast cereals declined about 9 percent—making them the lowest per person consumers of breakfast cereals. This

may be partially due to the relatively high price of breakfast cereals coupled with the typically low income of these households. Female-headed households also decreased consumption of bakery products about 11 percent, making them the group eating the fewest bakery products.

## More Details Available

*Changes in Food Consumption and Expenditures in American Households During the 1980's* contains more details on the data source, tabulation procedures, and results—as well as more comprehensive information about the consumption and expenditure data from the survey. A joint publication by USDA's Economic Research Service and Human Nutrition Information Service, the full report examines consumption and expenditures for the 19 broad food groups presented in this article, plus 64 more specific food groups.

The full report examines food consumption and expenditures by household size, type, income, race, geographical region, and urbanization area. In addition, tables present the percentage of households consuming each of the 64 food groups in a typical week.

To obtain a copy, call toll-free from the United States and Canada, 1-800-999-6779. Other areas, please dial (703) 834-0125. Ask for *Changes in Food Consumption and Expenditures in American Households During the 1980's*, SB-849.

## Fruit and Vegetables

The survey shows an overall decline of fresh vegetable and fruit consumption of about 10 percent during the 1980's. However, overall consumption of dark-green vegetables (including spinach, collards, and kale) increased about 30 percent during the decade, but this varied widely across income groups.

Households generally consumed more fresh vegetables as income rose. For example, the wealthiest households increased their consumption of dark-green vegetables about 75 percent, while consumption by the poorest households fell about 22 percent. An exception was fresh potatoes—consumption generally decreased as income rose.

Frozen vegetable consumption increased about 20 percent in the 1980's, with middle-income households showing the largest increases.

Fresh fruit consumption declined over the decade in all but the wealthiest households, where it increased about 8 percent. The wealthiest households consumed about 40 percent more fresh fruit in 1987-88 than did the Nation as a whole; the poorest households consumed about 27 percent less fresh fruit.

Consumption of fresh fruit and vegetables declined sharply in female-headed households between 1977-78 and 1987-88. Most of the decline was accounted for by light green vegetables and citrus fruit. Female-headed households decreased their consumption of citrus fruit about 49 percent over the decade. This is significant because the data show the consumption of fresh fruit and vegetables, well-known sources of vitamins and nutrients, in these households was already substantially below the national average in 1977-78.

The consumption numbers for fresh fruit and vegetables do not account for total consumption since

## USDA's Nationwide Food Consumption Survey

The results presented in this article are based on data from the household portion of the 1977-78 and 1987-88 Nationwide Food Consumption Surveys (NFCS) conducted by USDA's Human Nutrition Information Service (HNIS). The survey contains two parts—household food consumption and individual intakes.

In the household portion, information was collected on various socioeconomic and demographic characteristics of the households, as well as detailed records on the value, type, and quantity of food used from household food supplies. The data provide food expenditures as well as food use for a whole week.

The second component involved specific information about the individuals in the household and detailed records on the types of food—both at home and away from home—for each member of the household over a 3-day period. The value of the foods was not recorded.

This article is based on the household portion to measure consumption of foods brought into the household (sometimes called food use). These data do not reflect actual ingestion. Consumption of food in a dietary sense is measured by the individual intake component of the survey. A forthcoming article will analyze the food expenditure data from the survey.

The survey data contain a wealth of information on the socioeconomic and demographic characteristics of American households and is the only major public survey that couples this information with detailed information on the quantities and

value of foods used in the households. The surveys sampled households in the contiguous 48 States and focused on food consumption at home.

The household survey does have some limitations. Americans have been eating more of their food in restaurants, fast-food establishments, and sandwich shops. The NFCS data include food purchased at food-service establishments, but only if it is carried home for consumption. We assumed household members would consume foods away from home in the same relative proportions as they did at home. This may be a valid assumption for many foods, but not so for others. For example, there has been a dramatic increase in the number of salad bars in restaurants and fast food places over the last decade and people may be eating relatively more fresh vegetables away from home than at home. Therefore, it is difficult to measure actual food consumption using only data on foods eaten at home.

There has been a considerable shift from consuming individual food items to foods in mixtures (such as pizza, frozen entrees, and salads from grocery stores). Overall, households increased their consumption of mixtures by 68 percent. Households participating in the survey can report these foods as mixtures rather than each individual food. This would tend to underestimate the consumption of certain food groups. For example, the pork sausage used on pizza is reported as pizza, not pork—underestimating red meat consumption.

Another drawback is the relatively low response rate. A number of households selected for the surveys chose not to partici-

pate. This may cause statistical bias problems if many households chose not to participate and if there was a systematic difference in their consumption behavior from those who did respond.

For example, if a large portion of single-person households chose not to participate and those households also ate more frozen dinners and less fresh vegetables than did the single-person households that did participate, frozen dinner consumption would be underestimated and fresh vegetable consumption would be overestimated. The lower the participation rate, the greater is the potential of nonparticipation bias. Sampling weights that adjust for nonparticipation were used in the calculations. The response rate was about 57 percent in the 1977-78 survey, dropping to about 37 percent in the 1987-88 survey.

To determine the impact of nonresponse on the NFCS's representation of the U.S. population, HNIS compared descriptive statistics of the 1987-88 survey to several other surveys. Also, a panel of experts evaluated the impact of the response rate on the accuracy of the data. The U.S. General Accounting Office examined the reliability of the data.

All three groups concluded that it is not possible to determine if those not responding to the survey differed systematically from those who did. But, they were concerned about estimates based on small subgroups of people. The subgroups we examined all had over 400 households. For this reason, we believe nonresponse bias has minimal effect on the estimates in this article.

Table 4

**Upper Income Households Increased Their Consumption of Poultry, Fish, and Shellfish by 20 Percent, While Poorer Households Increased Consumption by 11 Percent**

Food group	Per person change in consumption, 1977-78 to 1987-88		
	Lowest income households	Middle income households	Highest income households
	Percent		
Dairy products (fresh equivalent)	0.3	-4.7	-7.7
Fats and oils	-10.9	-5.5	-13.6
Flour and cereals	-15.7	-13.0	1.7
Bakery products	-1.2	-4.2	-3.4
Red meat	-11.4	-20.6	-31.0
Poultry, fish, shellfish	11.1	24.7	20.0
Eggs (fresh equivalent)	-21.5	-20.5	-28.6
Sugars, sweets	-6.6	-22.4	-18.3
Potatoes, sweet-potatoes	-5.1	-6.6	-9.5
Fresh vegetables	-22.2	-12.9	-12.4
Fresh fruit	-5.9	-10.1	7.8
Canned vegetables and fruit	-14.9	-15.0	-29.8
Frozen vegetables and fruit	-1.4	18.4	11.3
Vegetable and fruit juices	24.3	27.6	11.4
Dried vegetables and fruit	-28.3	-26.9	-5.1
Beverages	37.1	33.7	25.4
Soups, sauces, gravies	-31.2	-8.2	-7.0
Nuts, condiments	3.0	-7.3	-2.6
Dinner mixtures	37.4	63.1	113.8

canned and frozen items are a separate category. However, the consumption trends for canned or frozen fruit and vegetables were similar to the fresh produce.

More and more fruit and vegetables are being consumed in mixtures, such as frozen prepared dinners and pizza. Further research into the amount of fruit and vegetables in mixtures is needed before we can determine if overall fruit and vegetable consumption has decreased as indicated by the survey data for fresh fruit and vegetables.

### Sugars and Sweets

Consumption of sugars and sweets declined about 18 percent in the 1980's. But this figure does not include, for example, sugar used in soft drinks or presweet-

ened breakfast cereals. Decreases were larger in middle- and higher income households than in the lowest income groupings (table 4). Consumption fell about 25 percent in households without children. While consumption of sugars and sweets declined about 7 percent in female-headed households, they still consumed about 10 percent more than the national average.

### Beverages

Increased beverage consumption in the 1980's was led by a 68-percent increase in soft drink consumption by female-headed households. However, households without children maintained the highest consumption levels for beverages as a whole and overtook other households as the largest consumers of soft drinks.

Fruit and vegetable juice marketers enjoyed a strong increase in the

consumption of their products, particularly in two-parent households. Households without children, however, still led the way in juice consumption, by consuming about 15 percent more than the national average.

### Implications

Food supply data indicate that Americans have been shifting their eating patterns away from animal products and toward crop products. However, food consumption data suggest that certain households, such as low-income Americans, have not followed all the national trends.

Food choices are determined by many socioeconomic characteristics of the household, as well as prices of food and cultural eating habits. Recognizing these influences and identifying the factors affecting food choices will help policymakers develop more effective farm and nutrition education programs.

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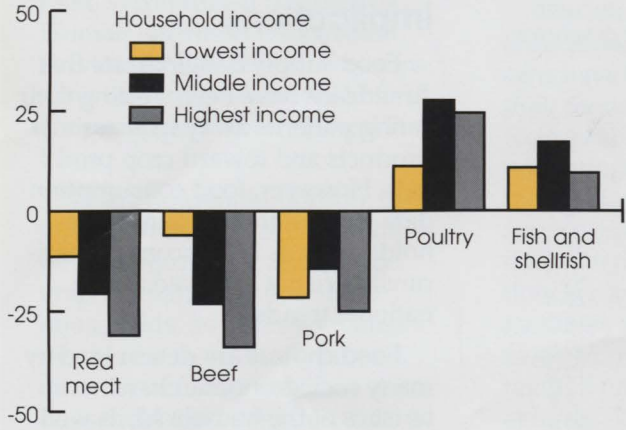
Putnam, J.J., and J.E. Allshouse. *Food Consumption, Prices, and Expenditures, 1970-90*, SB-840. USDA, Economic Research Service, Aug. 1992. ■

## Changes in Food Consumption...At a Glance

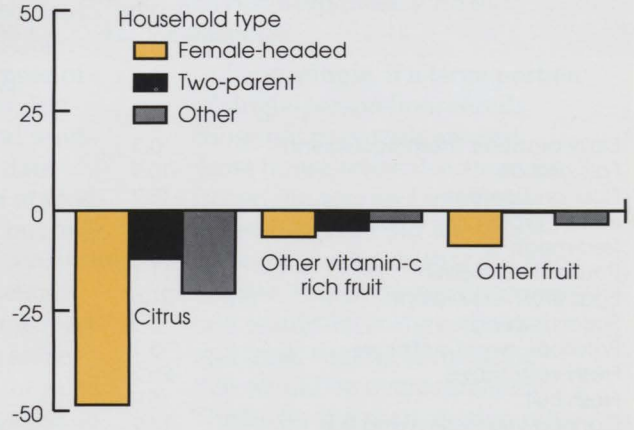
A Look at Specific Foods Within Major Food Groups Suggests Not Only Changes in Food Consumption, But Also the Influence of Demographic Characteristics

Meat, Poultry, and Fish

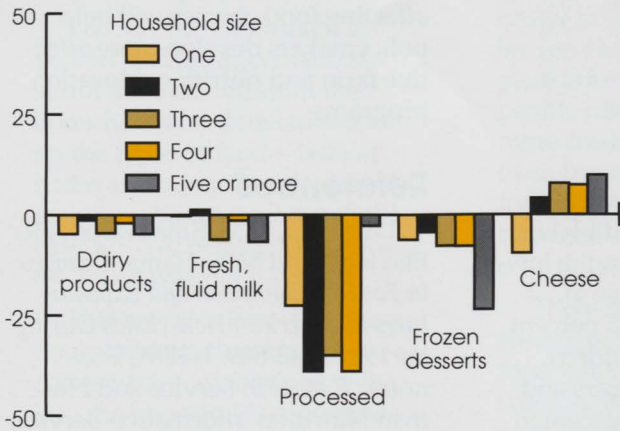
Per person percent change, 1977-78 to 1987-88



Fresh Fruit



Dairy Products



Fresh Vegetables

