Away-From-Home Foods Increasingly Important to Quality of American Diet. By Biing-Hwan Lin and Elizabeth Frazão, Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture; and Joanne Guthrie, Food and Drug Administration, U.S. Department of Health and Human Services. Agriculture Information Bulletin No. 749.

Abstract

The increasing popularity of dining out over the past two decades has raised the proportion of nutrients obtained from away-from-home food sources. Between 1977 and 1995, home foods significantly improved their nutritional quality, more so than away-from-home foods, which typically contained more of the nutrients overconsumed (fat and saturated fat) and less of the nutrients underconsumed (calcium, fiber, and iron) by Americans. Since the trend of eating out frequently is expected to continue, strategies to improve the American diet must address consumers' food choices when eating out.

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Summary

Americans are dining out more often than ever, boosting the amount spent at eating places from 26 percent of food expenditures in 1970 to 39 percent in 1996. While the nutritional quality of foods consumed by Americans has improved overall, foods prepared at home are generally much more healthful than away-from-home foods. Despite nutritional gains at home, Americans will find it difficult to improve their diets because they purchase so many meals outside the home.

The frequency of dining out rose by more than two-thirds over the past two decades, from 16 percent of all meals and snacks in 1977-78 to 27 percent in 1995. Consequently, a greater proportion of nutrients now come from away-from-home food sources. For example, away-from-home foods provided 34 percent of total caloric intake in 1995 (nearly double the 18 percent in 1977-78), 38 percent of total fat intake (vs. 18 percent in 1977-78), 29 percent of total calcium intake (vs. 17 percent in 1977-78), and 27 percent of total iron intake (vs. 16 percent in 1977-78).

Improved diets could prevent a significant proportion of heart disease, stroke, cancer, diabetes, osteoporosis-related hip fractures, and neural tube birth defects in the United States. The costs associated with these health conditions are substantial. Just for osteoporosis-related hip fractures, the U.S. Department of Agriculture's (USDA) Economic Research Service (ERS) has estimated that improved diets might save $5.1 to $10.6 billion each year in medical care costs, missed work, and premature deaths. These enormous costs are one reason that USDA and other private and public entities place a high priority on improving Americans' diets.

The nutritional content of foods prepared at home (home foods) has improved more than that of away-from-home foods in recent years. In 1995, away-from-home foods typically contained more of the nutrients overconsumed (fat and saturated fat) and less of those underconsumed (calcium, fiber, and iron) than home foods.

In 1977-78, fat from both home and away-from-home foods provided 41 percent of the calories consumed. The fat content of home foods declined to 31.5 percent of calories from fat by 1995, whereas the fat content of away-from-home foods declined much less, to 37.6 percent of calories.

As with fat, the saturated fat content of American diets declined steadily since its first measurement in 1987-88. Home foods typically had lower saturated fat than away-from-home foods, and saturated fat in both types of foods experienced similar declines through 1994. Between 1994 and 1995, saturated fat in home foods continued to decline, but that in away-from-home foods rose slightly.

Cholesterol in both home and away-from-home foods has declined considerably since cholesterol intake was first measured in 1987-88. However, the decline has been sharper among home foods: between 1987-88 and 1990, cholesterol density in home foods was higher than in away-from-home foods, but the relationship has reversed since 1991.

Sodium levels in both home and away-from-home foods are higher than the recommended level and have shown little decline over the years. With rising caloric intake, Americans are facing an uphill battle in lowering their sodium intake to meet the recommended level.

Calcium in home foods showed a general upward trend over the past two decades, while the calcium in away-from-home foods declined slightly. In 1995, calcium in home foods was fairly close to the 1989 recommended levels, but away-from-home foods were more than 20 percent below the recommended level. School foods were considerably rich in calcium compared with any other foods.

Fiber in both home and away-from-home foods has increased slightly. Home foods were more rich in fiber than away-from-home foods, but both remained low. The trend in eating out more implies that reaching the recommended fiber intake will remain a challenge for Americans.

Home foods have shown a larger increase in iron than away-from-home foods, likely because of increased home consumption of iron-fortified breakfast cereals. While most Americans consume recommended amounts of dietary iron, low iron intake is common among teenage girls and women, who face the highest requirements and typically have low food consumption.

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Biing-Hwan Lin
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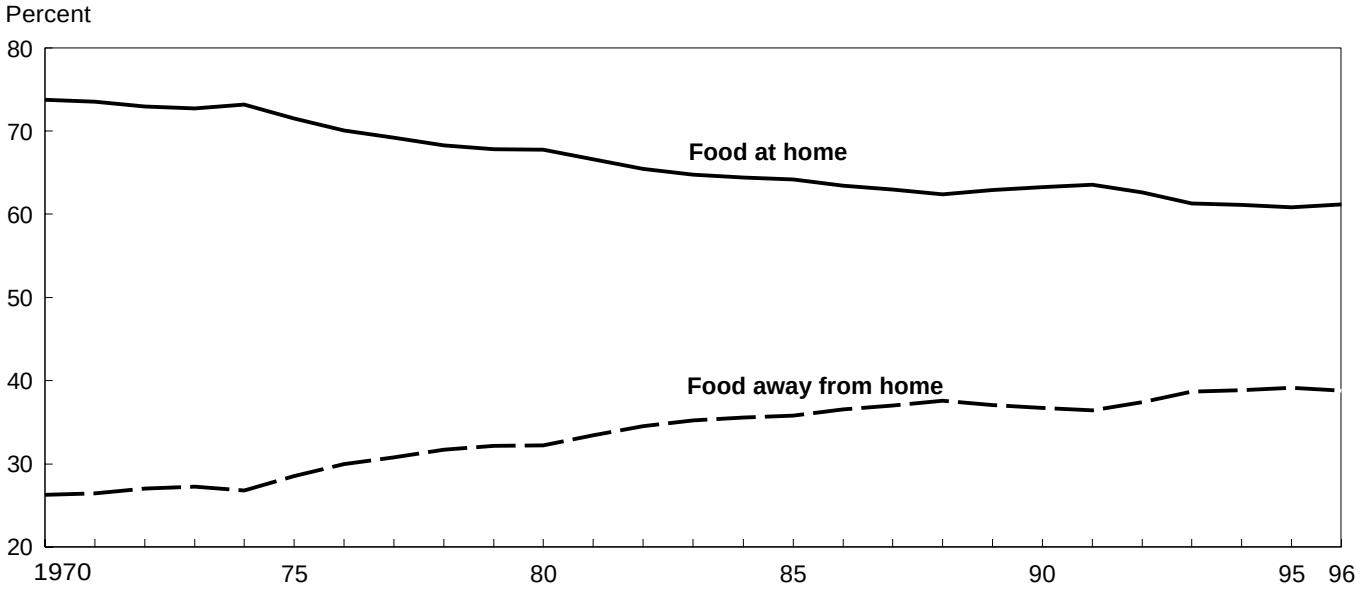
Introduction

Over the past decades, eating out has been increasingly popular for Americans. In 1970, 26 percent of total food expenditure was spent away from home; by 1996, that number had risen to 39 percent (fig. 1). A number of factors contribute to the trend of increased dining out, including: a growing number of women employed outside the home, more two-earner households, higher incomes, more affordable and convenient fast-food outlets, increased advertising and promotion by large foodservice chains, and the smaller size of American households (Nayga and Capps).

Earlier studies suggested that away-from-home foods have lower nutritional quality than home foods. For example, Lin and Frazão showed that away-from-home foods were higher in fat and saturated fat and lower in fiber and calcium than home foods. Similarly, a nonprofit consumer advocacy group, the Center for Science in the Public Interest, highlighted the high fat, saturated fat, and sodium contents of many popular restaurant foods. Therefore, the increased trend toward food away from home could present a challenge for Americans to improve the nutritional quality of their diets.

Research points to poor diets as a significant cause of heart disease, stroke, cancer, diabetes, osteoporosis-related hip fractures, and neural tube birth defects in the United States. The costs associated with these health conditions are substantial. For example, the

Figure 1
Share of food budget at home and away from home
As Americans increasingly eat out, the nutritional value of away-from-home foods becomes more important in overall diet quality



Source: Putnam and Allshouse.

U.S. Department of Agriculture's (USDA) Economic Research Service (ERS) has estimated that improved diets might save $5.1 to $10.6 billion each year in medical care costs, missed work, and premature deaths from osteoporosis-related hip fractures alone. These enormous costs are one reason that USDA and other private and public entities place a high priority on improving Americans' diets.

The social, demographic, and economic factors that promote dining out should continue to boost away-from-home food spending. Consequently, it is important to understand the trends in the nutritional profiles of food at home and away from home and how the trend toward dining out might affect diet quality.

We analyzed food intake survey data collected by USDA over the past two decades to compare the nutritional quality of home and away-from-home foods and examine how the quality has changed over time. This historical comparison shows how dining out influences specific dietary components. We focus on the nutrients that are current public health concerns: excessive intakes of total fat, saturated fat, cholesterol, and sodium, and low intakes of fiber, calcium, and iron (Interagency Board for Nutrition Monitoring and Related Research). The potential consequences associated with inadequate and/or excessive intake for each of these seven nutrients are summarized in table 1.

Table 1—Consequence of inadequate and excessive intake of selected nutrients

Nutrient	Function in body	Consequence of inadequate intake	Consequence of excessive intake
Food energy	Metabolic processes; supports physical activity and growth, repairs bones and tissues, and maintains body temperature.	Underweight, semi-starvation, growth retardation in children.	Overweight and obesity (risk factors for heart disease, stroke, diabetes, hypertension, cancers).
Fiber	Promotes normal laxation.	Constipation; may increase risk of heart disease and some cancers.	Possible decrease in mineral absorption.
Calcium	Formation and maintenance of bone and teeth; muscle contraction; blood clotting; integrity of cell membranes.	May increase risk of osteoporosis.	Renal calculi; possible soft tissue calcification.
Iron	Carrier of oxygen in body; red blood cell formation.	Iron deficiency and iron deficiency anemia; functional impairments in intellectual development and learning, behavior, work performance, and resistance to infection.	Iron overload; may increase risk of stroke and some cancers in men.
Total fat, saturated fat, cholesterol	Concentrated sources of energy; carrier for fat-soluble vitamins; structural and functional components of cell membranes; precursors of compounds involved in many aspects of metabolism.	No public health problem; clinical deficiencies of essential fatty acids and fat-soluble nutrients have occurred.	Associated with elevated levels of blood cholesterol and of low-density lipoprotein (LDL) cholesterol, major risk factors for coronary heart disease.
Sodium	Regulation of body fluid volume and acid-base balance of blood; transmission of nerve impulses.	--	Edema; associated with high incidence of hypertension (risk factor for stroke and heart disease).

Sources: Adapted by Economic Research Service, USDA, from: Interagency Board for Nutrition Monitoring and Related Research (IBNMRR), *Third Report on Nutrition Monitoring in the United States: Volume 1*, Washington, DC: Government Printing Office, 1995; USDA and DHHS, *Nutrition Monitoring in the United States: An Update Report on Nutrition Monitoring*, DHHS Publication No. 89-1255, Public Health Service, Washington, DC: Government Printing Office, 1989; and Institute of Medicine, *Dietary Reference Intakes: Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*, Washington, DC: National Academy Press, 1997.

The Data: 1977-95

USDA has conducted household food consumption surveys in the United States since the 1930's. In 1965, USDA supplemented the household food consumption survey with a survey on the dietary intake of individual household members. USDA conducted two decennial Nationwide Food Consumption Surveys in 1977-78 and 1987-88 (NFCS 1977-78 and NFCS 1987-88) in which individual food intakes were collected. In 1985, USDA initiated the Continuing Survey of Food Intakes by Individuals (CSFII) for relatively small national samples in years between the decennial surveys. During 1989-91, three separate 1-year surveys collected information on individual food intakes. The 1989-91 CSFII surveys drew year-round, national representative samples to describe food consumption behavior and to assess the nutritional content of American diets. Most recently, USDA conducted another three separate 1-year CSFII surveys for 1994-96. Data from 1994 and 1995 were available and the 1996 survey was in progress when this study was underway.

We analyzed data from seven year-round, nationwide surveys of individual food intakes: NFCS 1977-78, NFCS 1987-88, CSFII 1989, CSFII 1990, CSFII 1991, CSFII 1994, and CSFII 1995. The 1965 data were excluded because they were conducted for the spring quarter only, and only surveyed housekeeping households with at least 1 person having 10 or more meals at home during a 7-day period. The CSFII 1985-86 data were excluded because they did not represent all Americans.

The first five surveys, prior to CSFII 1994, collected dietary intakes for 3 consecutive days—a 1-day recall and a 2-day record. The 1994-96 CSFII recorded two nonconsecutive days of food consumption. To more accurately compare the seven surveys' data, only the first day from each survey is included in the analysis.

The surveys collected information on what and how much individuals ate and where the food was obtained. Children under age 2 are excluded from this analysis because Federal dietary recommendations are not aimed at individuals under age 2 (USDA/DHHS, 1995). Pregnant and lactating women are also excluded because their dietary needs differ considerably from the rest of the population. Although only the first day's intake was used in the analysis, individuals with incomplete dietary intake data (i.e., less than 3 days of dietary intake data in the first five surveys and less than 2 days of data in the CSFII 1994-95) are also excluded to avoid any possible biases between those who completed and those who only partially completed the survey.

We define home and away-from-home foods based on where the foods are obtained, not where they are eaten. Home food is purchased at a retail store, such as a grocery store, a convenience store, or a supermarket. Food away from home is purchased mainly from foodservice establishments. Both food at home and food away from home can be eaten at home or away from home.

This definition differs from the definition used by USDA's Agricultural Research Service (ARS), which defines any food consumed at home (for example, a pizza delivered to the home) as food at home (Borrud et al.). Our distinction between home and away-from-home foods relates to the knowledge and control a consumer might have over the nutritional content of the food. Although retail stores increasingly offer ready-to-eat foods (such as roast chicken and frozen entrees), foods purchased at retail stores are still frequently used as ingredients in meal preparation, and the consumer has some control over the nutritional quality of meals and snacks prepared at home. Away-from-home foods are typically ready-to-eat and consumed "as is," and the consumer has less control over or knowledge of their nutritional content.

The continual evolution of the U.S. foodservice industry over the past two decades prohibited a consistent definition of away-from-home food sources for the seven surveys. In this study, away-from-home food sources are grouped into five categories:

- Fast-food places, including self-service restaurants and carryout places;
- Schools (for children ages 2-17), including day-care centers and summer camps;
- Restaurants with wait staffs;
- Other public eating places, including cafeterias, residential dining facilities, bars, taverns, lounges, soup kitchens, shelters, meals on wheels, and other community food programs; and
- Others, a catch-all category, including vending machine and gift/someone's home.

Meals and snacks consisting of a combination of away-from-home and home foods are classified according to the highest caloric component.

Meal and Snack Eating Patterns

Over the past two decades, the number of meals Americans consume has remained fairly stable at 2.6-2.7 per day (table 2). Snacking increased from less than once a day in 1987-88 to 1.6 times a day in 1995. The increased popularity of dining out is quite evident as the proportion of meals away from home increased from 16 percent in 1977-78 to 29 percent in 1995, and the proportion of snacks away from home rose from 17 percent in 1977-78 to 22 percent in 1995. Overall, meals and snacks eaten away from home increased by more than two-thirds over the past two decades, from 16 percent of all meals and snacks in 1977-78 to 27 percent in 1995.

The increasing frequency of dining out means that Americans are getting more of their nutrients from away-from-home sources (table 3). For example, away-from-home foods provided 34 percent of total calories in 1995, up from 18 percent in 1977-78. Away-from-home foods also provided 38 percent of total fat intake in 1995, more than double the 18 percent it provided in 1977-78. Similarly, away-from-home foods contributed 29 percent of total calcium intake and 27 percent of total iron intake in 1995, compared with 17 and 16 percent, respectively, in 1977-78. Thus, the nutritional quality of food away from home becomes increasingly important in determining the overall nutritional quality of diets in the United States.

Table 2—Meal and snack eating patterns of Americans,[1] 1977-95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Number			
Meals per day	2.7	2.6	2.6	2.6	2.6	2.7	2.6
Snacks per day	1.1	0.9	1.2	1.2	1.4	1.5	1.6
				Percent			
Source of meals:							
At home	84	76	76	77	73	72	71
Away from home[2]	16	24	24	23	27	28	29
Source of snacks:							
At home	83	80	80	82	82	79	78
Away from home[2]	17	20	20	18	18	21	22
Source of all meals and snacks:							
At home	84	77	77	78	76	74	73
Away from home[2]	16	23	23	22	24	26	27
Restaurant	2	4	4	4	4	6	5
Fast food	3	7	7	7	7	8	9
School[3]	3	2	2	2	3	2	2
Other public	3	2	2	2	2	2	2
Others	6	8	8	7	8	8	9

[1] Ages 2 and older, excluding pregnant and lactating women and those who did not provide complete dietary intake data.

[2] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.

[3] Schools are classified as a separate category for children only; for adults, they are included in "others."

Compiled by Economic Research Service, USDA, from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Table 3—Consumption of selected nutrients and food components in home and away-from-home foods as part of total diet, 1977-95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Percent			
Calories							
At home	82	73	73	74	71	69	66
Away from home[1]	18	27	27	26	29	31	34
Total fat							
At home	81	72	71	72	68	65	62
Away from home[1]	18	28	29	28	32	35	38
Saturated fat							
At home	na	72	71	72	69	67	63
Away from home[1]	na	28	29	28	31	33	37
Cholesterol							
At home	na	74	75	75	70	68	66
Away from home[1]	na	26	25	25	30	32	34
Sodium							
At home	na	73	74	74	70	68	66
Away from home[1]	na	27	26	26	30	32	34
Fiber							
At home	na	78	77	78	75	74	73
Away from home[1]	na	22	23	22	25	26	27
Calcium							
At home	83	77	77	78	75	74	71
Away from home[1]	17	23	23	22	25	26	29
Iron							
At home	84	78	78	79	75	74	73
Away from home[1]	16	22	22	21	25	26	27

na = not available.

[1] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.
Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Nutritional Quality of Home and Away-from-Home Foods

We compared the nutritional quality of foods from various locations using the nutrient-to-calorie density (nutrient density), which measures the amount of a nutrient or food component for each 1,000 calories of that food. Because dietary recommendations for fat and saturated fat are expressed in terms of total calories consumed, we use the proportion of total calories that come from fat and from saturated fat as measures of the fat and saturated fat densities.

For each nutrient or food component we calculate a "benchmark" density. Obtained by dividing the recommendation for a given nutrient or food component by an individual's reported caloric intake in 1,000 calories, the benchmark density represents the nutrient density an individual's diet would have to reach to meet the dietary recommendation for that caloric intake level. The benchmark density for a particular nutrient will be lower (higher) than the nutrient density when that nutrient is consumed in amounts higher (lower) than the recommended levels. We used dietary recommendations from the Dietary Guidelines for Americans (USDA/DHHS, 1995) and other health authorities to derive the benchmark densities (table 4).

We calculate benchmark densities for specific groups by dividing the sum of the recommended intakes for all people in the group by the sum of those individuals' reported caloric intakes. Because caloric intakes vary

Table 4—Recommended daily intakes of selected dietary components

Gender	Dietary Recommendations							
and age	Calories[1]	Fat[2]	Saturated fat[2]	Cholesterol[3]	Sodium[4]	Fiber[5]	Calcium[1]	Iron[1]
	Calories	*Percent*	*Percent*	*Mg*	*Mg*	*Grams*	*Mg*	*Mg*
Children								
2-3	1,300	≤ 30	< 10	300	2,400	Age+5/day	800	10
4-6	1,800	≤ 30	< 10	300	2,400	Age+5/day	800	10
7-10	2,000	≤ 30	< 10	300	2,400	Age+5/day	800	10
Males								
11-14	2,500	≤ 30	< 10	300	2,400	Age+5/day	1,200	12
15-18	3,000	≤ 30	< 10	300	2,400	Age+5/day	1,200	12
19-20	2,900	≤ 30	< 10	300	2,400	Age+5/day	1,200	10
21-24	2,900	≤ 30	< 10	300	2,400	11.5/1,000 calories	1,200	10
25-50	2,900	≤ 30	< 10	300	2,400	11.5/1,000 calories	800	10
51+	2,300	≤ 30	< 10	300	2,400	11.5/1,000 calories	800	10
Females								
11-14	2,200	≤ 30	< 10	300	2,400	Age+5/day	1,200	15
15-18	2,000	≤ 30	< 10	300	2,400	Age+5/day	1,200	15
19-20	2,000	≤ 30	< 10	300	2,400	Age+5/day	1,200	15
21-24	2,000	≤ 30	< 10	300	2,400	11.5/1,000 calories	1,200	15
25-50	2,000	≤ 30	< 10	300	2,400	11.5/1,000 calories	800	15
51+	1,900	≤ 30	< 10	300	2,400	11.5/1,000 calories	800	10

Sources: Adapted by Economic Research Service, USDA, from:

[1] National Research Council's *Recommended Dietary Allowances*.

[2] U.S. Department of Health and Human Services and U.S. Department of Agriculture's *1995 Nutrition and Your Health: Dietary Guidelines for Americans*.

[3] U.S. Food and Drug Administration's (FDA) Daily Values (Kurtzweil).

[4] National Research Council's *Diet and Health* (National Academy Press, 1989).

[5] American Health Foundation for "age plus 5" per day (Williams) and FDA's Daily Value for 11.5 grams per 1,000 calories (Kurtzweil).

over time, benchmark densities also vary from year to year. For any nutrient, a higher caloric intake means that less of that nutrient is needed per 1,000 calories to meet the same recommended intake level. Therefore, an increase in caloric intake means a lower benchmark density.

Caloric Intake

Caloric and nutrient intake estimates from dietary recall surveys usually represent a lower limit of actual intakes because of potential under-reporting. Also, the methodology of conducting dietary recall interviews changed over the years (most notably in the 1994-96 CSFII) to improve the accuracy of reporting. Therefore, some of the reported increases in caloric and nutrient intakes over time may be due to changes in survey methodology, which must be considered when interpreting results.

Average caloric intake declined from 1,876 calories per person per day in 1977-78 to 1,807 calories in 1987-88, then rose steadily to 2,043 calories in 1995 (table 5). The proportion of Americans 2 and older who consumed the recommended energy allowance (REA) or more rose from 22 percent in 1987-88 to 31 percent in 1995.

Although caloric intakes for most individuals fall below the average REA, overweight has become more prevalent. More than one in three adults (35 percent) in the United States were considered overweight in 1988-94, compared with one in every four adults in 1976-80 (Centers for Disease Control and Prevention). Because overweight is associated with many chronic diseases and adverse health outcomes, an increase is a cause for public health concern. Decreased physical activity and hence decreased energy expenditure may also contribute to overweight (McPherson et al.).

Some of the observed increase in caloric intake may be due to increased eating out. Away-from-home food was eaten at 16 percent of all meals and snacks in 1977-78 (table 2), and accounted for 18 percent of total caloric intake (table 3). In 1995, the away-from-home sector accounted for 27 percent of all meals and snacks and 34 percent of total caloric intake. These numbers suggest that, when eating out, people eat either larger quantities or higher calorie foods or both than when eating at home. Further, this tendency appears to be increasing, since each percent of meals and snacks away from home composed an average of 1.26 percent of total calories in 1995, up from 1.13 percent in 1977-78. By comparison, each percent of meals and snacks at home contributed only 0.9 percent to the total calories consumed in 1995.

As the number of meals and snacks eaten at fast-food places and restaurants has increased over the past two decades, so has the proportion of total calories con-

Table 5—Caloric intake and sources for Americans,[1] 1977- 95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Calories			
Average caloric intake	1,876	1,807	1,837	1,853	1,883	2,006	2,043
				Percent			
People consuming more than REA[2]	26	22	24	26	26	28	31
Portion of total calories:							
At home	82	73	73	74	71	69	66
Away from home[3]	18	27	27	26	29	31	34
Restaurants	3	5	7	6	6	8	8
Fast foods	3	8	9	9	9	11	12
Schools[4]	3	3	2	2	3	2	2
Other public places	3	2	3	2	3	3	2
Others	6	9	7	8	9	7	9

[1] Ages 2 and older, excluding pregnant and lactating women and those who did not provide complete dietary intake data.

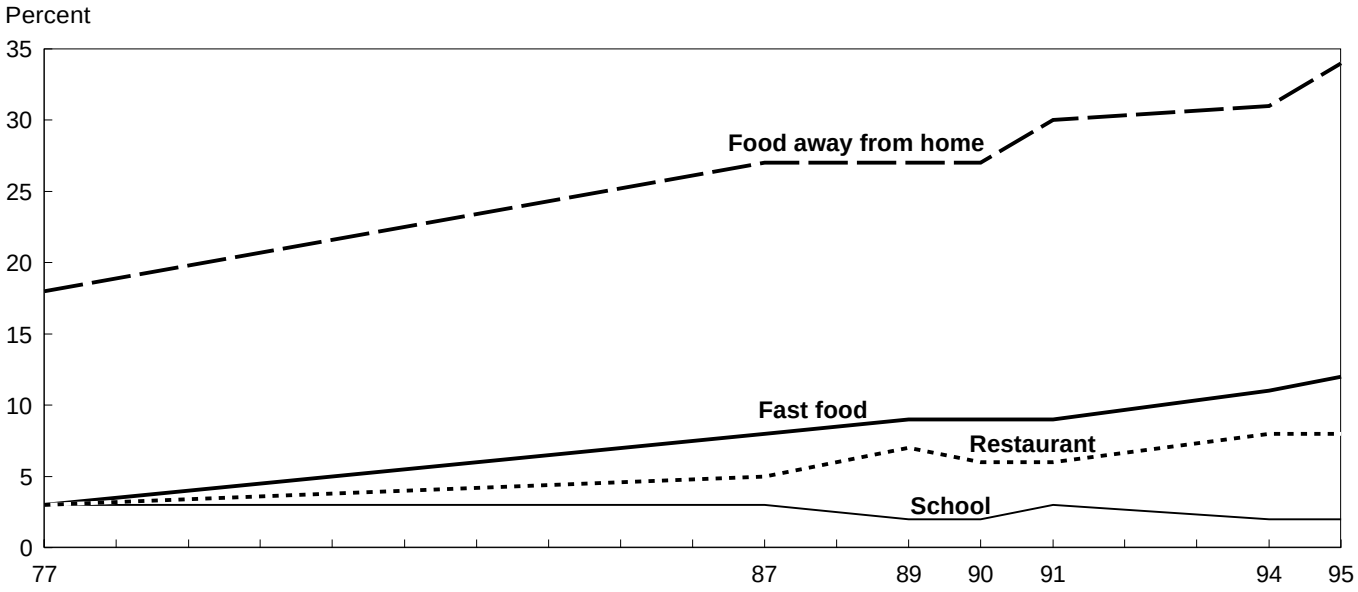
[2] See recommendations in table 4. REA = Recommended energy allowance (per day).

[3] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.

[4] Schools are classified as a separate category for children only; adults are included in "others."

Compiled by Economic Research Service, USDA, from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 2
Contributions of away-from-home sources to total calories
Of away-from-home food, fast foods supply the most calories



Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day data.

sumed from these locations (fig. 2). Whereas fast-food places and restaurants each accounted for 3 percent of total caloric intake in 1977-78, their shares of total calories increased to 12 and 8 percent, respectively, in 1995. Schools' share of total caloric intake remained stable at 2-3 percent.

Fat and Saturated Fat

According to the *Dietary Guidelines for Americans*, fat intake should not exceed 30 percent of total calories, and saturated fat should be less than 10 percent of total calories—the benchmark densities for fat and saturated fat.

Over the past two decades, Americans have eaten less fatty foods.[1] Fat provided an average of 33.6 percent of total calories in 1995, still higher than the recommended 30-percent limit, but considerably less than the 41.1 percent of 1977-78 (table 6, fig. 3). Although fat density declined for both home and away-from-home foods, the home-food numbers were more promising. In 1977-78, slightly more than 41 percent of the calories from both home and away-from-home foods were from fat. By 1987-88, the fat density of home foods had declined to 36.3 percent, compared with 38.7 percent for away-from-home foods. Since then, the fat density of home foods declined steadily to 31.5 percent, but away-from-home foods declined only slightly to 37.6 percent.

Restaurant foods had a considerably higher fat density than either fast foods or school foods in 1977-78, with fat providing over 46 percent of calories (table 6, fig. 4). Although the fat density of restaurant foods declined to 40.1 percent in 1995, the density remained higher than for fast foods or school foods. The fat density of fast foods also declined between 1977-78 and 1987-88, but the density has fluctuated slightly below 40 percent since 1987-88. School foods' fat density has declined steadily from 40.1 percent to 35.7 percent between 1977-78 and 1995.

As with fat, the saturated fat density of American diets declined steadily since 1987-88, when it was first measured (table 6, fig. 5).[2] Home foods typically had a lower saturated fat density than away-from-home

[1] It should be noted, however, that total grams of fat consumed per person per day has steadily increased since 1989 (table 6).

[2] However, total grams of saturated fat consumed per person per day has been fairly stable since 1990.

Table 6—Fat and saturated fat intake levels and nutrient densities of foods at home and away from home, 1977-95

Nutrient	1977-78	1987-88	1989	1990	1991	1994	1995
Fat				*Grams*			
Average daily intake	86.3	74.7	72.0	72.9	73.4	74.9	76.2
				Percent of calories			
Average intake	41.1	37.0	35.3	35.4	35.1	33.6	33.6
				Percent			
People meeting recommendation[1]	13	21	30	29	30	36	37
				Percent of calories			
Benchmark density[1]	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Average fat density	41.2	37.0	35.3	35.4	35.1	33.6	33.6
Home foods	41.1	36.3	34.4	34.5	33.8	31.9	31.5
Away-from-home foods[2]	41.2	38.7	37.8	38.1	38.2	37.4	37.6
Restaurants	46.2	41.3	40.7	40.7	41.2	40.0	40.1
Fast-food places	41.6	39.7	39.7	39.6	38.8	39.9	39.3
Schools[3]	40.1	38.0	37.7	36.1	36.8	36.1	35.7
Other public places	41.4	41.2	34.8	40.9	42.3	30.3	32.6
Others	38.6	36.4	33.9	33.1	34.2	34.1	34.9
Saturated fat				*Grams*			
Average daily intake	na	27.7	25.7	26.0	26.0	25.6	26.2
				Percent of calories			
Average intake	na	13.8	12.6	12.6	12.4	11.5	11.5
				Percent			
People meeting recommendation[1]	na	17	29	29	31	40	39
Nutrient density				*Percent of calories*			
Benchmark density[1]	na	10.0	10.0	10.0	10.0	10.0	10.0
Average sat. fat density	na	13.8	12.6	12.6	12.4	11.5	11.5
Home foods	na	13.5	12.3	12.2	12.1	11.1	10.9
Away-from-home foods[2]	na	14.7	13.5	13.8	13.3	12.4	12.8
Restaurants	na	15.5	14.3	13.5	14.0	12.3	12.5
Fast-food places	na	15.4	14.2	14.5	13.1	13.6	13.8
Schools[3]	na	13.9	15.4	16.1	15.4	14.4	14.2
Other public places	na	15.2	12.0	14.6	13.8	9.8	9.8
Others	na	13.7	12.0	11.8	12.0	11.1	12.1

na = not available.

[1] Recommendations are 30 percent or less of calories from fat and less than 10 percent of calories from saturated fat. These recommendations are the benchmark densities.

[2] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.

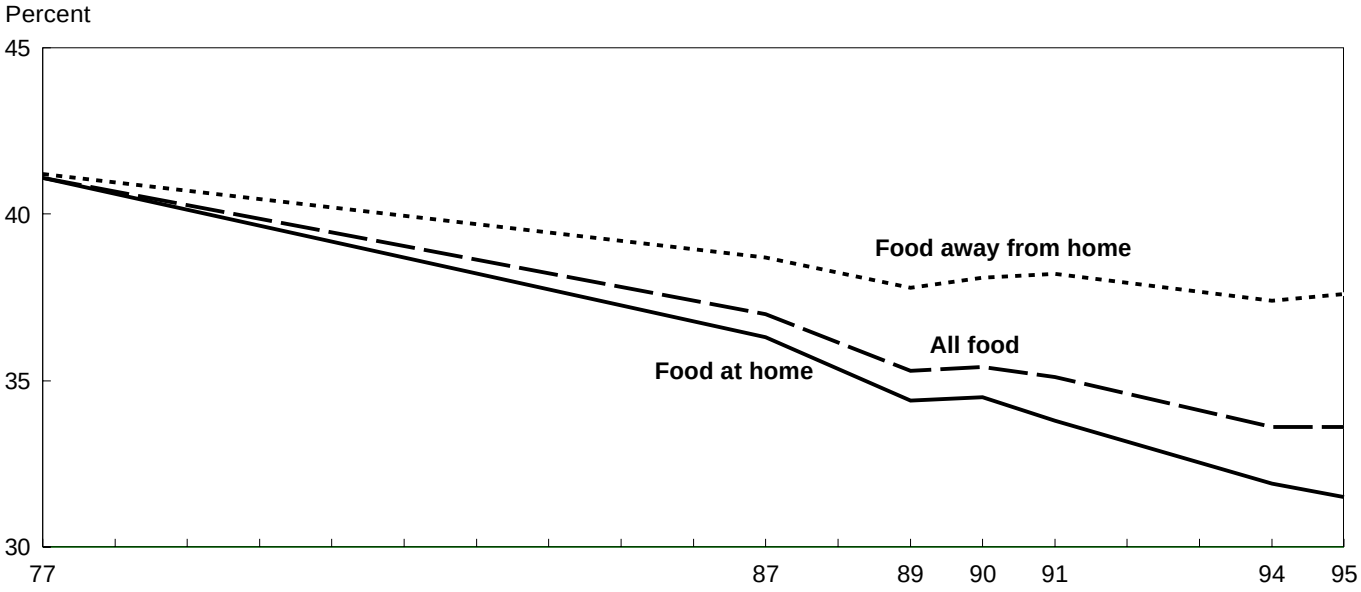
[3] Schools are classified as a separate category for children only; adults are included in "others."

Compiled by Economic Research Service, USDA, from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 3

Calories from fat in different food sources

While fat content has dropped in all foods, only home foods have fallen nearly to the 30-percent benchmark

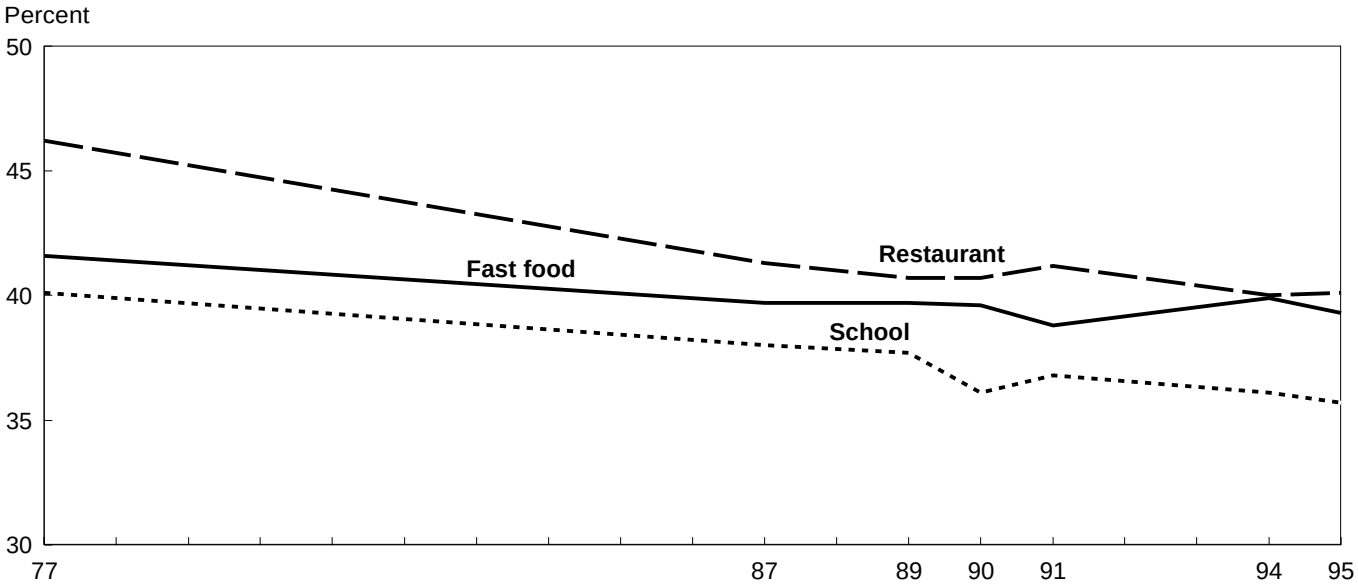


Note: Benchmark fat density is 30 percent of calories from fat; it is recommended not to exceed 30 percent.
Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 4

Calories from fat in away-from-home foods

Calories from fat have dropped for all sources of food away from home, but remain high above the 30-percent benchmark

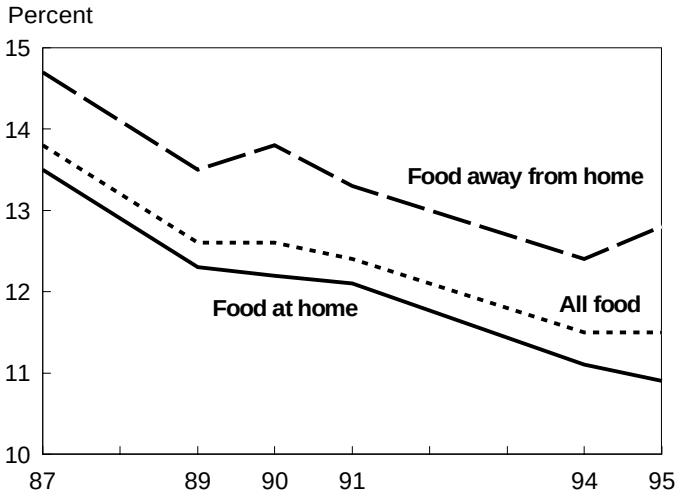


Note: Benchmarkk fat density is 30 percent of calories from fat; it is recommended not to exceed 30 percent.
Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 5

Calories from saturated fat in different food sources

Americans are eating foods with less saturated fat at and away from home

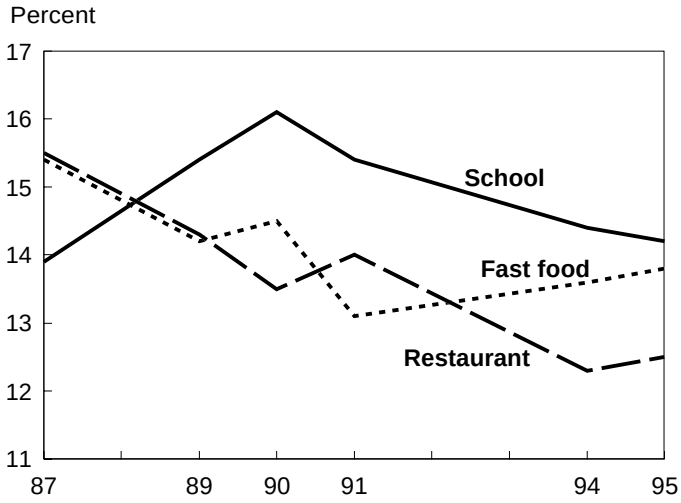


Note: Benchmark fat density is 10 percent of calories from saturated fat; it is recommended to have less than 10 percent of calories from saturated fat. Saturated fat was first measured in 1987.
Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 6

Calories from saturated fat in away-from-home foods

Calories from saturated fat in restaurant foods had declined more than other away-from-home foods



Note: Benchmark saturated fat density is 10 percent of calories from saturated fat; it is recommended to have less than 10 percent of calories from saturated fat. Saturated fat was first measured in 1987.
Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

foods, and the saturated fat density of both types of foods experienced similar declines through 1994. Between 1994 and 1995, the saturated fat density of home foods continued to decline, but that of away-from-home foods rose slightly.

In 1987-88, restaurant and fast foods had similar saturated fat densities, higher than school foods (table 6, fig. 6). Between 1987-88 and 1989, the saturated fat density of both restaurant foods and fast foods declined sharply. The saturated fat density of restaurant foods declined 3 percent by 1995, while the saturated fat density in fast foods fell, then rose. The saturated fat density in school foods rose from 13.9 percent of total calories in 1987-88 to 16.1 percent in 1990, then declined steadily to 14.2 percent in 1995—higher than the saturated fat density of foods at restaurants and fast-food places.

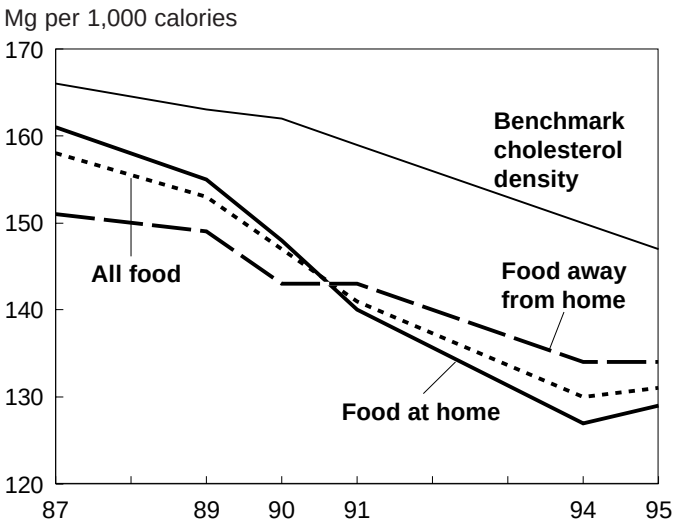
Overall, the fat and saturated fat densities of both home and away-from-home foods have declined, although the away-from-home sector has shown less improvement. As the away-from-home sector becomes increasingly important in overall diet, the fat and saturated fat densities of away-from-home foods will be a key to consumers' progress in reducing their levels of fat and saturated fat intake.

Cholesterol

Many health authorities recommend that daily cholesterol intake should not exceed 300 milligrams (mg), and that number is used by the U.S. Food and Drug Administration (FDA) to set the Daily Value for nutrition labeling (Kurtzweil). Because this recommended cholesterol intake is fixed regardless of caloric intake, and because average caloric intake has increased since 1987-88, the benchmark cholesterol density has declined (table 7, fig. 7).

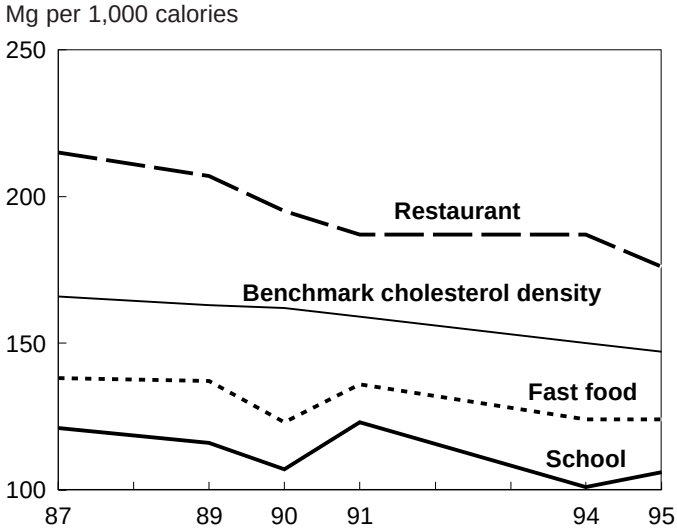
In 1987-88, when the cholesterol content of Americans' diets was first measured, average cholesterol intake was 286 mg per person per day. In 1995, it was 268 mg. Between 1987-88 and 1990, the cholesterol density of home foods was actually higher than away-from-home foods. However, the relationship reversed after 1990, indicating that consumers had more successfully reduced their cholesterol intake from home foods than from away-from-home foods. Nevertheless, cholesterol densities in both home and away-from-home foods have been markedly reduced during the past decade. Restaurant food, fast food, and school food all saw lower cholesterol (table 7, fig. 8).

Figure 7
Cholesterol density of Americans' diets
Americans' cholesterol levels consistently remain safely below benchmark level



Note: Cholesterol intake was first measured in 1987. Healthful diets require the density to remain below the benchmark.
Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 8
Cholesterol density of away-from-home foods
Restaurant foods have much higher cholesterol than recommended levels



Note: Cholesterol intake was first measured in 1987. Healthful diets require the density to remain below the benchmark.
Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Table 7—Cholesterol intake and density of foods at home and away from home, 1987-95

	1987-88	1989	1990	1991	1994	1995
			Milligrams			
Average daily intake	286	282	272	265	260	268
			Percent			
People meeting recommendation[1]	66	66	70	70	71	69
			Milligrams per 1,000 calories			
Benchmark density[2]	166	163	162	159	150	147
Average cholesterol density	158	153	147	141	130	131
Home foods	161	155	148	140	127	129
Away-from-home foods[3]	151	149	143	143	134	134
Restaurants	215	207	195	187	187	176
Fast-food places	138	137	123	136	124	124
Schools[4]	121	116	107	123	101	106
Other public places	160	161	189	152	103	114
Others	131	116	117	116	113	122

[1] Recommendation is 300 milligrams of cholesterol per day (see table 4).
[2] Benchmark densities are obtained by dividing the recommended intake for each nutrient by the individual's reported food energy intake. The benchmark density for specific groups of individuals is the ratio of the sum of recommended intakes for all individuals to the sum of their food energy intakes.
[3] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.
[4] Schools are classified as a separate category for children only; adults are included in "others."
Compiled by Economic Research Service, USDA, from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Average cholesterol density has been below the benchmark density since 1987-88, indicating that average cholesterol intake was below the recommended limit of 300 mg per day. Sixty-six percent of Americans 2 and older met the cholesterol guideline in 1987-88; by 1990, 70 percent did so, with little change since. Those who exceed 300 mg of cholesterol per day are mostly teenage boys and men, who tend to eat more than others yet face identical cholesterol recommendations. In 1995, males ages 12-39 consumed an average of 2,763 calories per day, for which the benchmark cholesterol density is 109 mg per 1,000 calories. The cholesterol densities for home and away-from-home foods for that group were 122 and 127 mg, respectively. To meet the cholesterol guideline, male adolescents and adults have to reduce the cholesterol content of foods at home and away-from-home. Restaurant foods have especially high cholesterol density, 158 mg per 1,000 calories in 1995.

Sodium

The National Academy of Sciences' *Diet and Health* recommends fewer than 2,400 mg of sodium per day, regardless of age and gender (National Research Council). As with cholesterol, those who consume more calories have lower benchmarks than do those consuming fewer calories. Sodium intakes in the NFCS and CSFII include sodium occurring naturally in foods, as well as that added via food processing, and used in food preparation. They do not include sodium added at the table. The USDA surveys first measured sodium content in 1987-88.

Consumers overdo it on sodium consumption (table 8, fig. 9). Because of rising caloric intake, sodium benchmark density has declined over time, while average daily sodium intake increased from 3,023 mg in 1987-88 to 3,348 mg in 1995. The sodium densities of home and away-from-home foods are fairly similar, both substantially higher than the benchmark density. More important, the gap between the sodium density and the benchmark density has widened during the past two decades. As a result, Americans meeting the sodium recommendation declined from 41 percent of the population in 1987-88 to 34 percent in 1995.

The sodium density of restaurant foods rose sharply between 1989 and 1990, but declined since 1991 (table 8, fig. 10). The sodium density of fast foods increased during the past decade. The sodium density of school foods declined during the late 1980's, but returned to the 1987-88 level in 1994.

Overconsumption of sodium is a problem for most consumers except young children and elderly women, groups who tend to consume less calories than others. The problem is more severe for males than females because of their larger diets. Males ages 12-39, for example, had a sodium density of 1,646 mg per 1,000 calories in 1995, 89 percent above their benchmark sodium density of 869 mg. Obviously, consumers have to exert greater efforts to reduce the sodium density of home and away-from-home foods.

Calcium

The 1989 Recommended Daily Allowances (RDA) for calcium, used in this analysis, were 1,200 mg for those ages 11-24 and 800 mg for all others. In August 1997, the Institute of Medicine of the National Academy of Sciences issued new dietary recommendations for several nutrients, including calcium. The report raises the recommended calcium intakes for many Americans, especially children 9 and older and adults 25 and older. Calcium density rose between 1977-78 and 1990, then declined (table 9, fig. 11). Meanwhile, rising caloric intake since 1987-88 has been accompanied by a declining benchmark calcium density, resulting in a narrower gap between the two. A higher proportion of Americans met the 1989 calcium RDA in 1995 than in 1977-78.

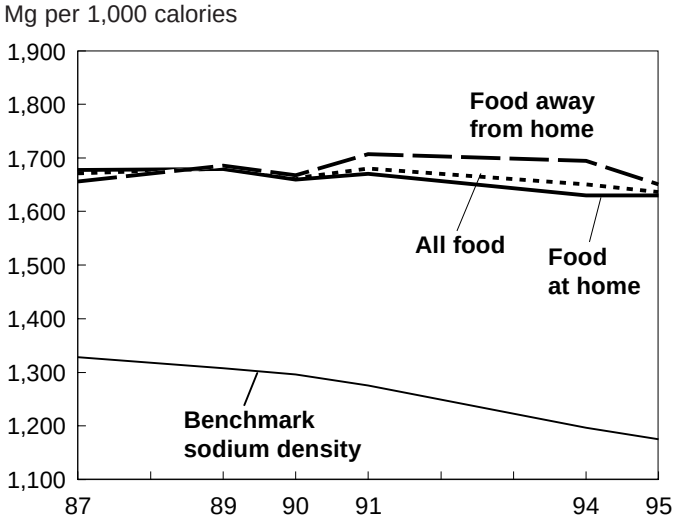
Home foods' calcium density showed a general increase while the calcium density of away-from-home foods declined slightly. In 1995, the calcium density of home foods was 425 mg per 1,000 calories, fairly close to the benchmark density. Away-from-home foods—which contributed 34 percent of total caloric intake in 1995—had a calcium density of 343 mg, 21 percent below the benchmark.

The calcium density of school foods has always been considerably higher than restaurant or fast foods and

Figure 9

Sodium density of Americans' diets

Americans' sodium intake remains high above the recommended levels

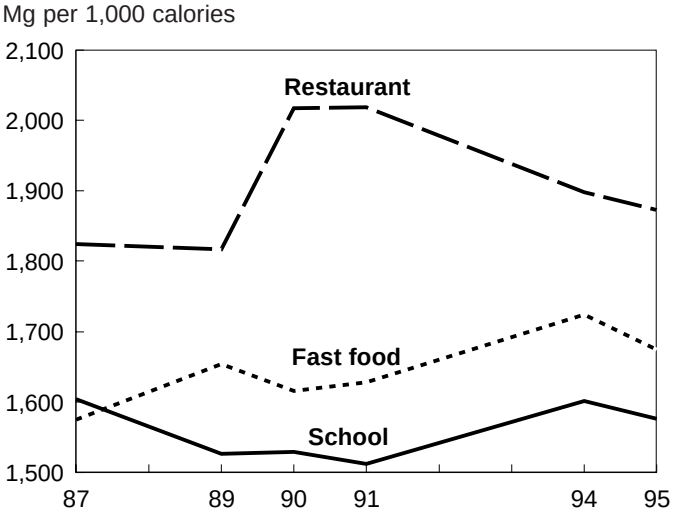


Note: Sodium intake was first measured in 1987. Healthful diets require the density to remain below the benchmark.
Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 10

Sodium density of away-from-home foods

Restaurant foods contain much more sodium than other away-from-home foods



Note: Sodium was first measured in 1987. Healthful diets require the density to remain below the benchmark; the benchmark was 1,175 mg per 1,000 calories in 1995.
Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Table 8—Sodium intake and density of foods at home and away from home, 1977-95

Item	1987-88	1989	1990	1991	1994	1995
			Milligrams			
Average daily intake	3,023	3,090	3,081	3,168	3,313	3,348
			Percent			
People meeting recommendation[1]	41	40	40	39	36	34
			Milligrams per 1,000 calories			
Benchmark density [2]	1,328	1,307	1,296	1,275	1,196	1,175
Average sodium density	1,672	1,681	1,662	1,681	1,651	1,637
Home foods	1,678	1,679	1,660	1,670	1,630	1,630
Away-from-home foods [3]	1,656	1,686	1,668	1,708	1,695	1,651
Restaurants	1,824	1,817	2,017	2,019	1,898	1,873
Fast-food places	1,575	1,654	1,616	1,628	1,724	1,674
Schools [4]	1,604	1,526	1,529	1,512	1,601	1,576
Other public places	1,911	1,807	1,657	1,738	1,469	1,548
Others	1,590	1,607	1,402	1,579	1,551	1,476

[1] Recommendation is 2,400 milligrams of sodium per day (see table 4).

[2] Benchmark densities are obtained by dividing the recommended intake for each nutrient by the individual's reported food energy intake. The benchmark density for specific groups of individuals is the ratio of the sum of recommended intakes for all individuals to the sum of their food energy intakes.

[3] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.

[4] Schools are classified as a separate category for children only; adults are included in "others."

Compiled by Economic Research Service, USDA, from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Table 9—Calcium intake and density of foods at home and away from home, 1977-95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Milligrams			
Average daily intake	743	756	773	791	785	794	813
People meeting recommendation[1]	31	32	33	36	33	35	36
				Milligrams per 1,000 calories			
Benchmark density [2]	481	491	479	475	466	439	432
Average calcium density	396	418	420	426	416	395	397
Home foods	402	439	444	448	446	421	425
Away-from-home foods [3]	368	360	356	365	350	337	343
Restaurants	280	302	315	295	312	301	291
Fast-food places	304	342	338	345	305	350	353
Schools [4]	645	648	596	707	676	657	689
Other public places	341	346	430	368	316	302	317
Others	308	330	326	316	321	286	296

[1] Daily recommendation is 800 mg for individuals ages 2-10 or older than 24; 1,200 mg for individuals ages 11-24 (see table 4).

[2] Benchmark densities are obtained by dividing the recommended intake for each nutrient by the individual's reported food energy intake. The benchmark density for specific groups of individuals is the ratio of the sum of recommended intakes for all individuals to the sum of their food energy intakes.

[3] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.

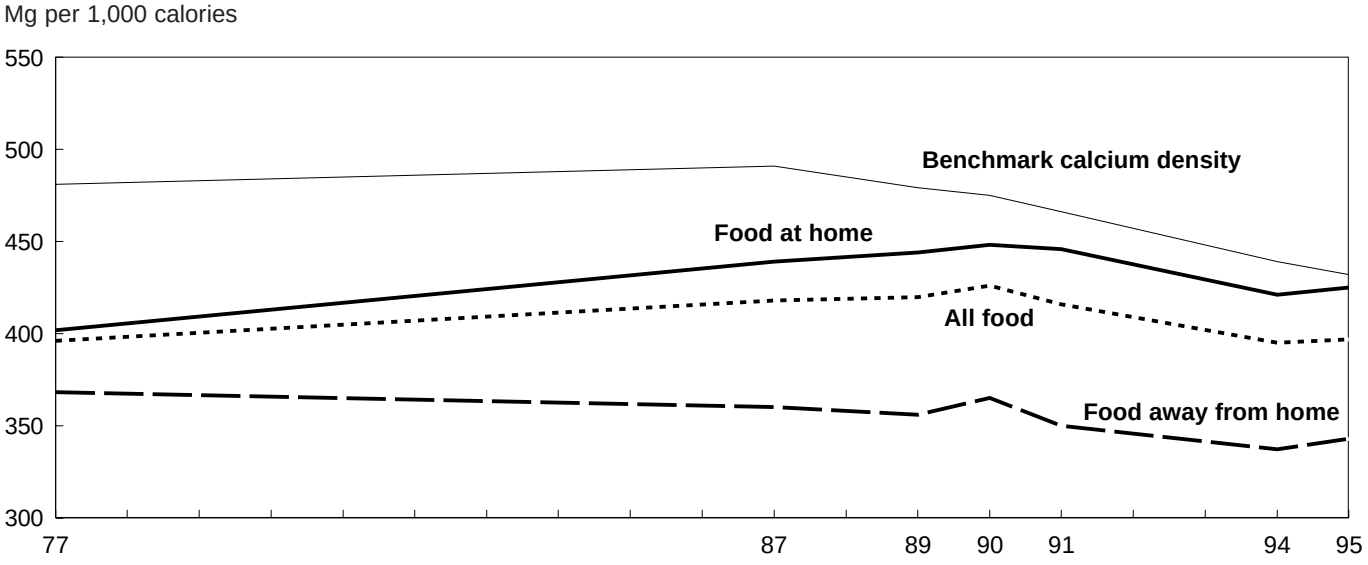
[4] Schools are classified as a separate category for children only; adults are included in "others."

Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 11

Calcium density in different sources of food

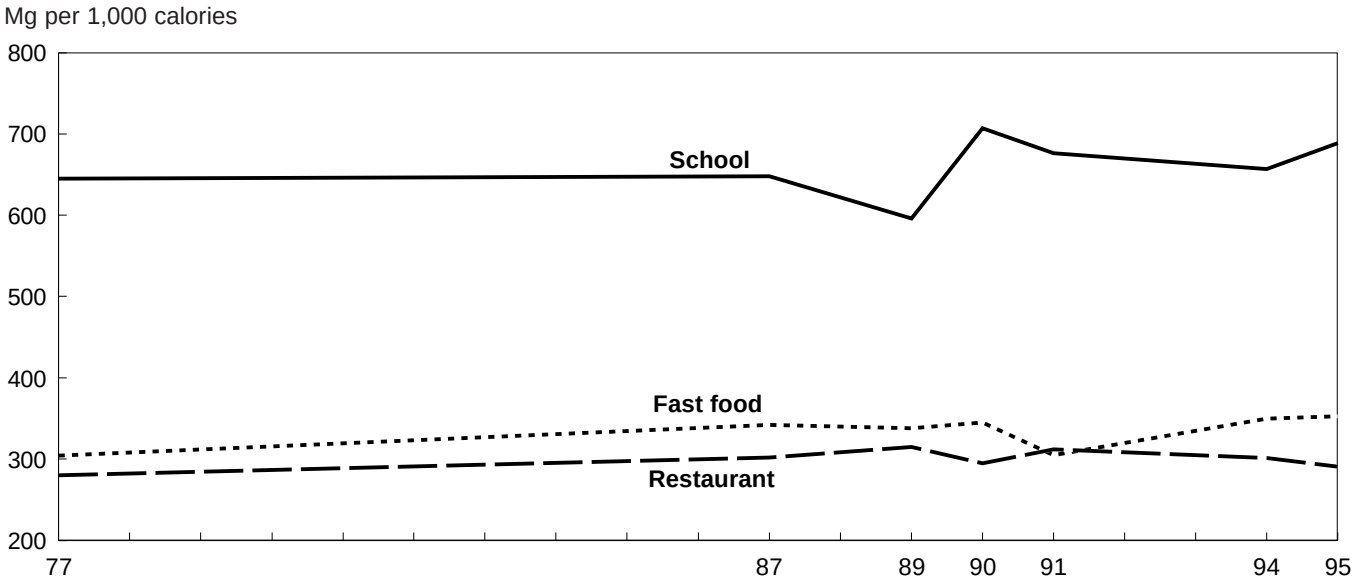
Home foods are much more calcium rich than away-from home foods, yet remain lower than benchmark levels



Note: Healthful diets require the density to be above the benchmark.

Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 12
Calcium density of away-from-home foods
School foods are rich in calcium relative to all other foods



Note: Healthful diets require the density to be above the benchmark; the benchmark was 432 mg per 1,000 calories in 1995.
Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

even home foods (table 9, fig. 12). School foods had a calcium density of 689 mg in 1995, considerably higher than the 425 mg for home foods, the 353 mg for fast foods, or the 291 mg for restaurant foods. Clearly, the trend toward increased consumption of fast foods or restaurant foods will slow any progress in reaching the guideline for calcium.

Insufficient calcium intake is a more severe problem for teenage girls and women because of their higher calcium requirements and their lower food consumption. In 1995, only 18 percent of teenage girls ages 12-17 met their calcium RDAs. Foods eaten by teenage girls had an average calcium density of 413 mg, 64 percent of their benchmark density of 642 mg. School foods eaten by teenage girls had a calcium density of 544 mg, while school foods eaten by teenage boys and children ages 6-11 had calcium densities of 647 and 759 mg, respectively.

Dietary Fiber

The American Health Foundation recommends a dietary fiber intake of "age plus five" for those ages 2-20 (Williams), and the FDA recommends a Daily Value (DV) of 11.5 grams per 1,000 calories (Kurtzweil). We use the "age plus five" for 2- to 20-year-olds, and FDA's DV for those 21 and older (table 4).

Over the past decade, fiber densities of home and away-from-home foods have increased slightly, but still remain far below the benchmark (table 10, fig. 13). Home foods had a fiber density of 8.1 grams per 1,000 calories in 1995, about three-fourths of the benchmark fiber density, and away-from-home foods had a fiber density of 6.1 grams. In 1995, fiber intake averaged 15.2 grams per day, and only 24 percent of Americans met the fiber intake recommendations.

School foods have had the highest fiber density of the three main sources of away-from-home foods (table 10, fig. 14). However, after peaking at 8.0 grams per 1,000 calories in 1990, the fiber density of school foods fell to 7.1 grams in 1995. Fast foods have shown a general upward trend, but its 5.6 grams in 1995 was the lowest of all foods. The fiber density of restaurant foods increased from 5.8 grams in 1987-88 to 7.0 grams in 1994, then fell to 6.2 grams in 1995. Increased popularity in dining at fast-food places and restaurants may reverse the little progress Americans have made in increasing their fiber intake.

Table 10—Fiber intake and density of foods at home and away from home, 1987-95

	1987-88	1989	1990	1991	1994	1995
			Grams			
Average intake	12.7	13.7	13.1	14.0	15.2	15.2
			Percent			
People meeting recommendation[1]	18	20	20	20	24	24
			Grams per 1,000 calories			
Benchmark density[2]	10.7	10.7	10.5	10.6	10.5	10.4
Average fiber density	7.0	7.4	7.1	7.4	7.6	7.4
Home foods	7.5	7.9	7.4	7.9	8.1	8.1
Away-from-home foods[3]	5.8	6.2	6.0	6.4	6.5	6.1
Restaurants	5.8	6.0	6.2	6.7	7.0	6.2
Fast-food places	5.0	5.5	5.3	5.3	5.7	5.6
Schools[4]	7.6	7.5	8.0	7.6	7.1	7.1
Other public places	6.9	7.2	6.1	6.3	6.5	6.8
Others	5.9	6.6	5.8	6.9	6.8	6.2

[1] Daily recommendation is "age+5" for individuals age 2-20, and 11.5 grams per 1,000 calories for individuals older than 20 (see table 4).

[2] Benchmark densities are obtained by dividing the recommended intake for each nutrient by the individual's actual food energy intake. The benchmark density for specific groups of individuals is the ratio of the sum of recommended intakes for all individuals to the sum of their food energy intakes.

[3] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.

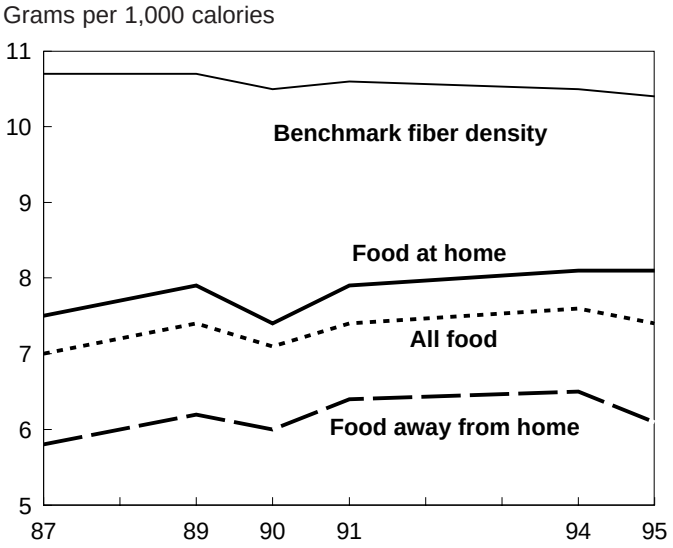
[4] Schools are classified as a separate category for children only; adults are included in "others."

Compiled by Economic Research Service, USDA, from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 13

Fiber density of foods from different sources

Americans have a long way to go to reach the recommended dietary fiber intake

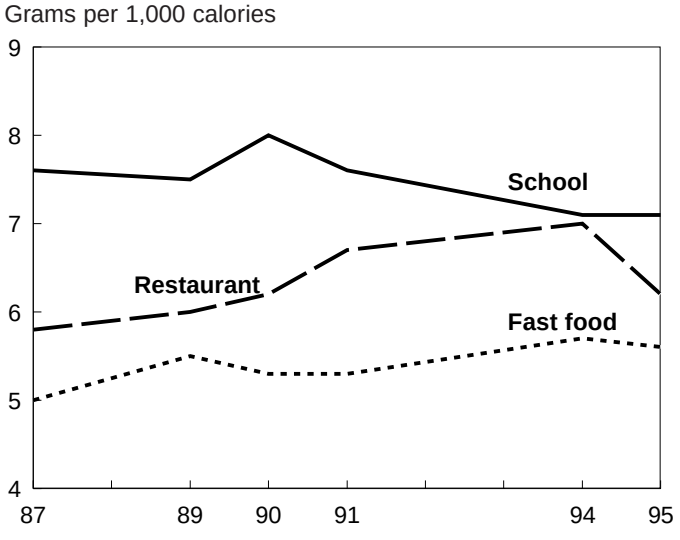


Note: Dietary fiber was first measured in 1987. Healthful diets require the density to be above the benchmark. Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 14

Fiber density of away-from-home foods

All away-from-home foods contain less dietary fiber than recommended



Note: Dietary fiber was first measured in 1987. Healthful diets require the density to be above the benchmark; the benchmark was 10.4 grams per 1,000 calories in 1995.

Compiled by USDA/ERS from NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Dietary Iron

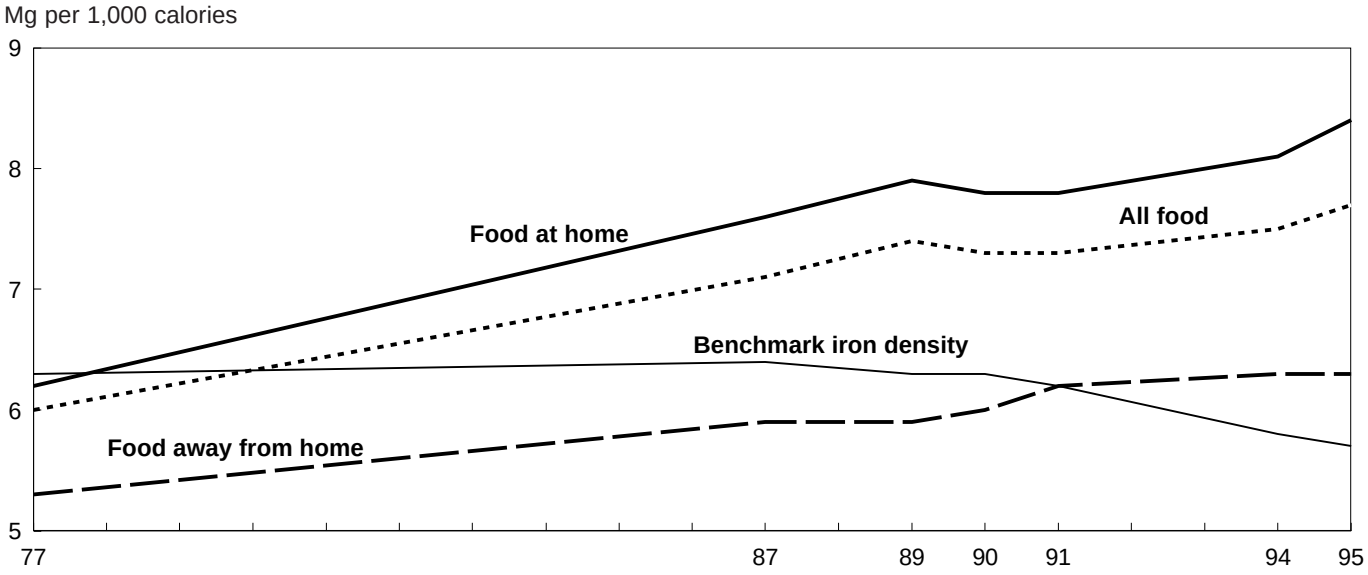
The RDA's for iron are 12 mg for males ages 11-18, 15 mg for females 11-50, and 10 mg for children ages 2-10 (National Research Council). Over the past two decades, iron density has risen more rapidly for home foods than for away-from-home foods (table 11, fig. 15), in part because of increased home consumption of iron-fortified breakfast cereals.

As with other nutrients, rising caloric intake has decreased the iron benchmark density over time. Meanwhile, iron densities of both home and away-from-home foods have risen. The result is that average daily dietary iron consumption of children and adults has exceeded the RDAs since 1987-88. In 1995, 61 percent of children and adults met their dietary iron RDAs, compared with only 42 percent in 1977-78.

Iron densities of fast foods, schools foods, and restaurant foods have shown a general upward trend over the past two decades (table 11, fig. 16). Although restaurant foods have a higher iron density than fast foods or school foods, the differences between these three major sources of away-from-home foods have narrowed over time.

While most individuals consume recommended amounts of dietary iron, low iron intake is common among teenage girls and women, who have the highest requirements and typically low food consumption. For example, only one in every three women ages 18-39 met their iron RDAs in 1995. Home foods consumed by those women had an iron density of 8.2 mg per 1,000 calories and away-from-home foods had 6.0 mg of dietary iron, both lower than the benchmark 8.4 mg for females 11-50. The increased popularity of dining out may exacerbate the problem for some women.

Figure 15
Iron density of foods from different sources
Dietary iron intake in Americans' diets has reached and surpassed benchmark levels



Note: Healthful diets require the density to be above the benchmark.
Compiled by USDA/ERS from NFCS 1977-87, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Table 11—Iron intake and density of foods at home and away from home, 1977-95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Milligrams			
Average daily intake	11.3	12.9	13.5	13.6	13.7	15.1	15.7
				Percent			
People meeting recommendation[1]	42	47	50	51	50	57	61
				Milligrams per 1,000 calories			
Benchmark density[2]	6.3	6.4	6.3	6.3	6.2	5.8	5.7
Average iron density	6.0	7.1	7.4	7.3	7.3	7.5	7.7
Home foods	6.2	7.6	7.9	7.8	7.8	8.1	8.4
Away-from-home foods[3]	5.3	5.9	5.9	6.0	6.2	6.3	6.3
Restaurants	5.8	6.3	5.9	6.6	6.3	6.7	6.5
Fast-food places	5.3	5.7	6.1	6.4	6.2	6.3	6.3
Schools[4]	5.0	5.4	5.5	5.6	6.1	6.3	6.1
Other public places	5.4	6.1	5.9	5.7	5.6	5.3	5.5
Others	5.2	5.9	5.8	4.8	6.1	6.1	6.4

[1] Daily recommendation is 10 mg for individuals ages 2-10, males older than 18, and females older than 50; 12 mg for males 11-18; and 15 mg for females ages 11-50 (see table 4).

[2] Benchmark densities are obtained by dividing the recommended intake for each nutrient by the individual's actual food energy intake. The benchmark density for specific groups of individuals is the ratio of the sum of recommended intakes for all individuals to the sum of their food energy intakes.

[3] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.

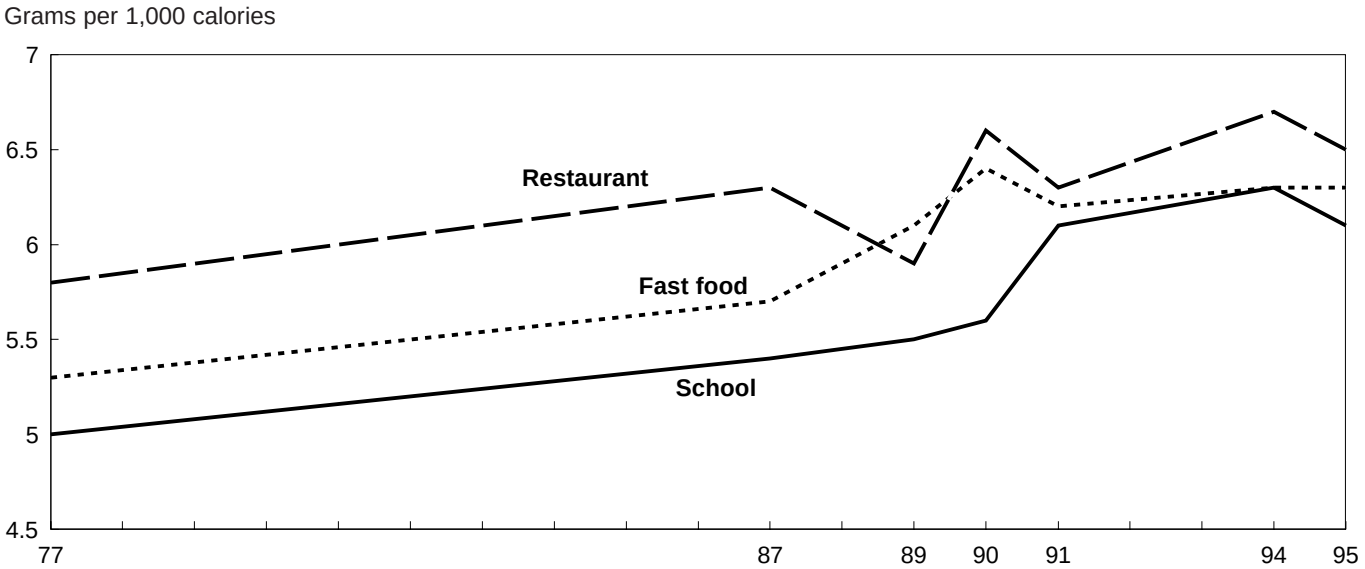
[4] Schools are classified as a separate category for children only; adults are included in "others."

Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Figure 16

Iron density of away-from-home foods

Americans are consuming more iron-rich foods when eating out



Note: Healthful diets require the density to be above the benchmark; the benchmark was 5.7 grams per 1,000 calories in 1995.

Compiled by USDA/ERS from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Conclusions

To improve the nutritional quality of their diets, Americans must increase intakes of some nutrients and food components, such as fiber, calcium, and iron, and reduce intakes of other nutrients, such as fat, saturated fat, cholesterol, and sodium. Over the past two decades, Americans have reduced the densities of fat, saturated fat, and cholesterol in their foods and increased the iron density, but have made little progress in increasing the fiber and calcium density of their foods and in reducing the sodium density.

Overall, away-from-home foods have shown smaller nutritional improvements than home foods. Away-from-home foods generally contain more of the nutrients overconsumed and less of the nutrients underconsumed by Americans. As a result, the increased popularity of dining out may make it more difficult for Americans to improve the overall nutritional quality of their diets, particularly in terms of reducing intakes of fat and saturated fat. For example, we calculate that if food away from home had the same average nutritional densities as food at home in 1995, Americans would have reduced their fat intake to 31.5 percent of calories from fat (instead of 33.6 percent) and their saturated fat intake to 10.9 percent of calories from saturated fat (instead of 11.5 percent). In addition, Americans would have increased their consumption of calcium by 7 percent and their consumption of fiber and iron by 9 percent each. Cholesterol and sodium intakes would not have changed much.

Since the trend of increasing eating out is expected to continue, Americans could adopt nutrition policy, educational programs, and promotion strategies to improve both the nutritional quality of food away from home and consumers' food choices when eating out. Some policy changes address nutritional improvements for school meals. The Healthy Meals for Healthy Americans Act of 1994 (Public Law 103-448) now requires the National School Lunch and School Breakfast Programs to meet the *Dietary Guidelines for Americans* over a week. In addition, USDA's Team Nutrition provides nutrition education through schools, communities, and the media to educate and motivate children about making healthier food choices at and outside of school.

For meals eaten at restaurants, fast-food places, and other foodservice establishments, however, other strategies would be more effective. Food away from home does not have to differ nutritionally from food prepared at home. Indeed, professional chefs and foodservice organizations may be particularly adept at preparing tasty meals that meet dietary recommendations. However, consumer demand for such meals must be strong enough to create an economic incentive for increased marketing of nutritious items by restaurants, fast food, and other foodservice establishments. Currently, it appears that consumers are more likely to value the nutritional properties of foods when eating at home than when eating away from home. Several fast-food chains introduced reduced-fat hamburgers, for example, but later withdrew them because they did not sell. And, a number of restaurant operators claim that consumers say they want healthful foods, but typically do not order them (Parseghian).

Consumers may have different attitudes about food away from home than food at home. Consumers may believe that it is less important to consider the nutritional quality of food away from home or be less willing to sacrifice taste when eating out—they might consider eating out an occasional treat that does not have the same effect on overall diet as food at home. Or perhaps consumers believe they can offset the excess nutrients consumed away from home by eating less at home. Such attitudes may have been reasonable 20 years ago, when eating out was less frequent, but, as eating out becomes more common, those beliefs become increasingly inappropriate. Consumers may not realize the extent to which eating out has become a part of their usual diets or the effect of away-from-home food on overall diet quality. To the degree that consumer attitudes are a barrier to change, nutrition education and promotion strategies may be able to inform consumers of the effect of away-from-home food on overall diet.

Differences in information may also impede healthful eating, in that the nutritional quality of away-from-home foods may be less apparent to consumers than for food at home, especially for foods consumers may not prepare themselves. In addition, traditional nutrition education focused on knowledge and skills that relate to home food purchase and preparation, such as

reduced-fat cookies. With people eating out more often, nutrition intervention activities can focus on the attitudes, knowledge, and skills consumers need to make more healthful food choices when eating away from home.

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