SYMPOSIUM: STATUS OF FAT IN FOOD AND NUTRITION

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Fat in Today's Food Supply—Level of Use and Sources[1]

ROBERT L. RIZEK, BERTA FRIEND, and **LOUISE PAGE,** Consumer and Food Economics Institute,[2] Hyattsville, Maryland 20782

ABSTRACT

Nutrient fat—food fats and oils, as well as fat from meat, milk, and other fat containing foods—in the U.S. food supply has increased ca. one-fourth over the past 60 years or so on a per person/day basis. Ca. two-fifths of the fat currently comes from fats and oils, including butter; over a third comes from meat (including fat pork cuts), poultry, and fish; and ca. one-eighth comes from dairy products. This large increase in nutrient fat is due mainly to the use of more vegetable fats—margarine, shortening, and salad and cooking oils. The per capita amount provided by animal fats actually has decreased, because the large decreases in consumption of butter and lard are only partly offset by increases in fat associated with greater consumption of meats. Despite the decrease in consumption of animal fats, they continue to provide ca. one-fourth of the total calories. Although the proportion of calories from vegetable fats has increased, animal products still account for the largest share of the calories provided by fat. Shifts in sources of fat and the increased amount of fat have changed the fatty acid content of the food supply.

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[2]ARS, USDA.

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INTRODUCTION

Man's diet has contained fatty substances since earliest times, whether he gathered seeds and other vegetable foods, hunted animals, or fished. As man's way of living changed, his diet changed as well, so that the kinds and amounts of fats he now consumes are quite different from those of earlier years. Use of national food supply statistics allows us to examine the U.S. diet since the beginning of this century to show how changes in food consumption have resulted in changes in the level and sources of fat in our diet (1). To estimate the fat content of the U.S. diet, appropriate food composition values are applied to quantities of foods available/person based upon amounts of food that disappear into civilian channels. These amounts represent food used up in an economic sense. Although not a measure of the amount of fat actually ingested, such estimates are useful for showing trends in overall patterns of consumption.

LEVEL OF FAT

Nutrient fat—food fats and oils, as well as fat from meat, milk, and other fat containing foods—in the U.S. diet has increased ca. one-fourth over ca. 60 years (Fig. 1). Early in

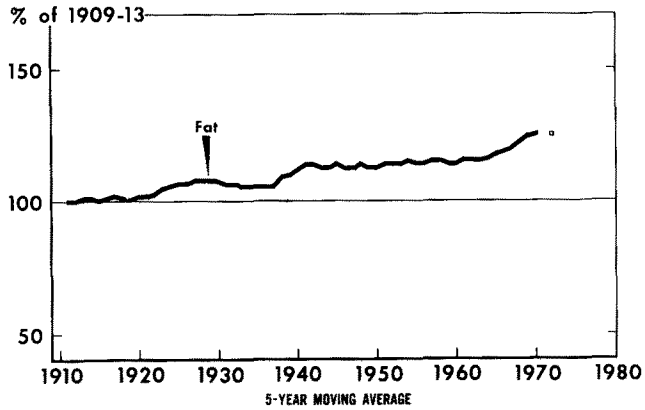

FIG. 1. Nutrient fat/capita civilian consumption. □=preliminary.

FIG. 2. Quantity of nutrient fat. Per capita/day, selected years. △=preliminary.

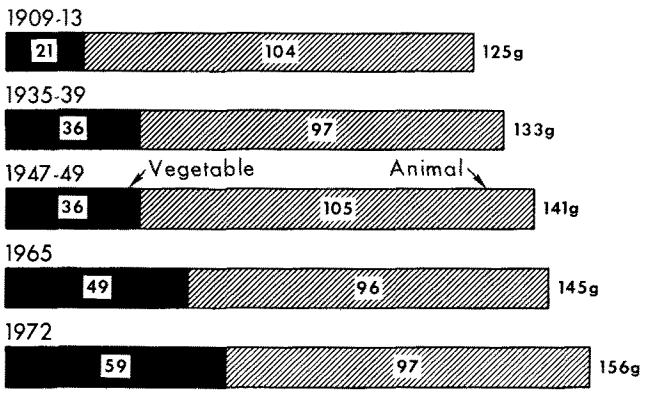

FIG. 3. Sources of nutrient fat. Per capita/day. △=preliminary.

the century, 125 g fat was available/person/day; now the level is 156 g, an increase of ca. 30 g. This increased amount of fat is roughly equivalent to the fat provided by 2-1/2 tablespoons of butter or regular margarine or by a little more than 2 tablespoons of vegetable oil. On a yearly basis, this increase in nutrient fat is equal to ca. 24 lb/person.

Figure 1 shows that nutrient fat climbed upward in the 1920s, dropped in the depression years of the mid-1930s, but soon climbed to a higher level by the 1940s, a level which was maintained into the early 1960s. Since the early 1960s there has been a steady upward trend to still higher levels. A closer look at the years that it has taken for the 30 g increase in nutrient fat to occur shows that the first 10 g increase spanned roughly 15 years (Fig. 2) and that the second 10 g increase took more than 2 times as long, or 35-40 years. The last 10 g increase, however, took place within 7 years, revealing the recent acceleration in the level of fat in the U.S. diet.

The same foods did not always account for the increase in fat throughout the 60 year period, but, for most years, salad and cooking oils were the chief contributors. Following salad and cooking oils, dairy products and shortening shared ca. equally in the contribution to the gain in nutrient fat during the first 15 years and margarine, shortening, and meat, in that order, during the next 40 years. However, in the last 7 years, meat provided the largest increase in fat, followed by salad and cooking oils, and then by shortening.

SOURCES OF FAT

Other changes have occurred in the food sources of fat (Table I). At the turn of the century, meat, poultry, and fish as a group were the leading sources, providing almost two-fifths of the total amount. Butter and lard, including small amounts of edible beef fat, accounted for more than one-fourth, and dairy products provided one-seventh of the total. Other fats and oils, including salad and cooking oils, accounted for one-tenth. The remaining one-tenth came from other foods. However, over the 60 years, there has been a complete reversal in the share provided by some sources. Such is the case with butter and lard and with other fats and oils which today contribute one-tenth and over one-fourth of the total, respectively, the reverse of their earlier contributions.

Vegetable and Animal Fats

As a result of these changes in food sources of fat, an increasingly large proportion of the nutrient fat is coming from vegetable sources, as shown in Figure 3. Vegetable sources now account for proportionately more than twice as much fat as they did in 1909-13, when they provided ca. one-sixth of the total amount, or ca. 20 g/person/day. Today they account for nearly 60 g. Consumption of vegetable fats has risen with the shift from lard to shortening and from butter to margarine. Also contributing to this rise, as already indicated, has been the sharp increase in use of salad and cooking oils.

Use of animal fats has not paralleled the rise in use of vegetable fat. From the early 1900s until the late 1940s, the level of use remained ca. the same, except for a drop in the 1930s during the depression years when meat consumption was down. From the late 1940s until the mid-1960s, use of animal fats declined, reflecting decreased use of butter and lard. Since 1965, the decline in fat from these products has been more than offset by an increase in fat associated with greater consumption of meat and some dairy items. The current level is similar to the level reported for 1965, ca. 95 g/person/day.

Although the large increase of nutrient fat in the U.S. diet is due chiefly to use of more vegetable fats, animal fats continue to provide the largest share.

Sources of Fat by Food Groups

Three groups of foods—fats and oils; meat, poultry, and fish; and dairy products—account for 90% nutrient fat in the U.S. diet. Of the three, the fats and oils group is the largest contributor, supplying two-fifths of the total amount.

Fats and oils group: Foods comprising the fats and oils group and the share they provide of the nutrient fat supplied by the group are shown for different time periods in Figure 4. In the early 1900s, these foods supplied 46 g nutrient fat/person/day; now they provide 65 g, ca. a 40% increase.

Lard and butter were the major sources of fat in this food group 60 years ago, each furnishing ca. a third or more of the total amount. Shortening, providing ca. one-fourth

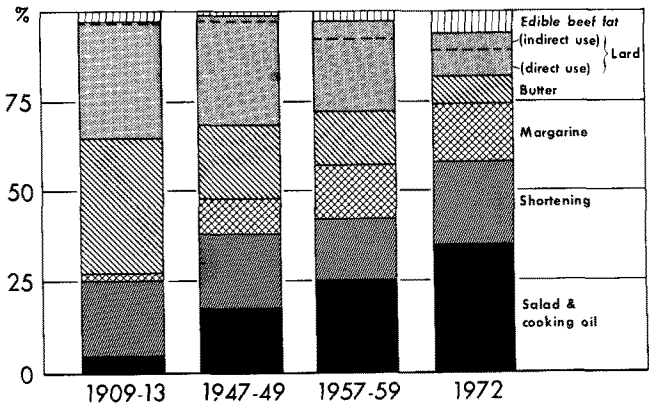

FIG. 4. Nutrient fat from fats and oils. Per capita civilian food supply. △=preliminary.

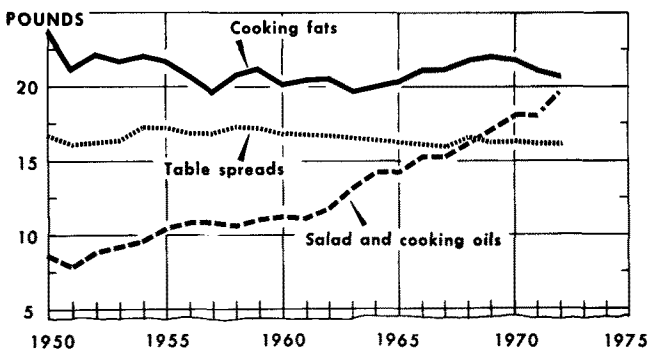

FIG. 5. U.S. consumption of food fats and oils/person. Cooking fats = lard and shortening. Table spreads = butter and margarine (product wt).

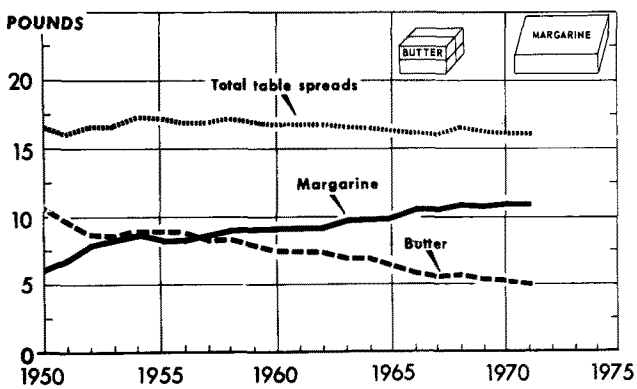

FIG. 6. U.S. consumption of table spreads/person (product wt).

of the total, was the other major contributor. As mentioned earlier, three major trends in the use of food fats have occurred. These trends can be seen clearly in Figure 4: (A) a substantial and continuing increase in the use of salad and cooking oils, (B) a shift from butter to margarine, and (C) a shift from lard to shortening.

Consumption of salad and cooking oils shows the biggest change, a 12-fold increase since 1909-13. At that time, their use approximated 1.5 lb/capita/year. In the early 1920s, a steady rise in use of these oils began, and, by 1947-49, consumption reached over 7 lb/capita. Since then, use has more than doubled, and consumption is now more than 18 lb. This increase resulted from both greater consumer and industrial use. Salad and cooking oils now account for over one-third of the nutrient fat provided by food fats and oils.

In contrast, even though margarine is replacing butter, the replacement rate has not been large enough to maintain the level of nutrient fat provided by butter 60 years ago. The decrease in nutrient fat from the two table spreads together is around 15%.

Although use of lard as lard, or direct use, continues to decline, its indirect use, use in the manufacture of some margarines and shortenings, has increased from 0.2 g nutrient fat/capita/day in 1909-13 to 4.0 g in 1972. Most of the increase has taken place since the late 1940s. If only the direct use of lard is considered, nutrient fat provided is now ca. 30% 1909-13 level; but, if fat from all lard used is taken into account, the level is ca. 60%.

Small quantities of edible beef fats also are used in the manufacture of some shortenings and margarines. Largest amounts are used in shortening, where the per capita/day quantity of nutrient fat coming from edible beef fats has risen from 0.8 g early in the century to the present level of 2.9 g.

Figures 5 and 6 show trends in consumption of food fats and oils by type of use for the years 1950-1972. Figure 5 illustrates the dramatic increase in use of salad and cooking oils with level of use more than doubling during these years. The increase can be explained, in part, by the phenomenal growth of the fast food industry which features items, such as french fries, fried chicken, fried fish sandwiches, and fish and chips. On the other hand, a slightly downward trend is indicated for cooking fats, shortening and lard, and for table fats, margarine and butter.

Figure 6 indicates that, although level of use of table fats changed little during the past 20 years or so, a marked change occurred in use of each product. Use of margarine surpassed use of butter in 1957 after a 5 year period, when the difference in their consumption was slightly less than 1 lb/person. Since 1957, there has been an almost steady increase in use of margarine at the expense of butter. Between 1950 and 1972, margarine consumption rose from 6 lb/capita/year to 11 lb. At the same time, butter consumption dropped from 11 to 5 lb. The small net decline in use of table fats probably has resulted, in part, from decreased use of some foods with which these fats commonly are served, such as bread and potatoes.

Trends in use of various food fats and oils are expected to continue (2). Projections for 1985 are shown in Figure 7 along with information for 1960 and 1972 as points of reference. A moderate rise of ca. 7 lb is expected for food fat products. This will result in a level of 60 lb/person by 1985. Use of total table fats is expected to remain unchanged, but margarine will continue to displace butter. Cooking fats (direct use of lard plus shortening) are expected to increase ca. 2 lb/person, with gains in shortening more than offsetting the decline in use of lard. Cooking and salad oils are expected to increase some 5 lb/person to a total of ca. 25 lb/person by 1985.

Reasons for the emerging dominance of vegetable oils and food fat products made from them include: (A) the competitive price of soybean oil, the major vegetable now used in the U.S.; (B) a trend toward use of more liquid oils and less solid fats by persons changing their diets to help avert the risk of heart attacks; (C) processing methodology which permits the manufacture of shortening entirely from vegetable oils; and (D) the consumer shift from butter to lower priced vegetable oil margarines (2).

Meat, poultry, fish group: As a group, meat, poultry, and fish currently provide over one-third of the nutrient fat in the U.S. diet, ca. 55 g/person/day. Figure 8 shows the proportion of fat furnished by various foods within the group for selected years.

Pork is the leading contributor of fat in this group. In 1909-13, all pork products, including both lean and fat cuts (bacon and salt pork), provided 60% total fat supplied by

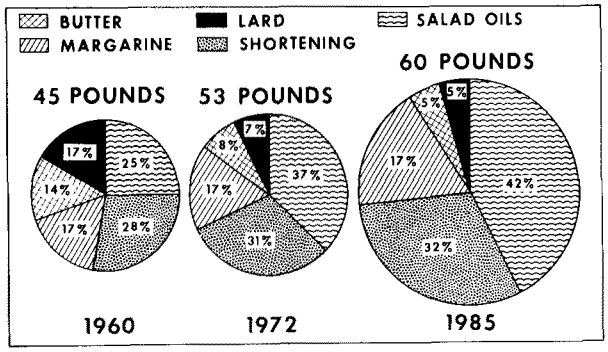

FIG. 7. Per capita consumption of food fat products with projections to 1985. Butter and margarine = fat content basis. Lard = direct use which excludes quantities consumed in shortening and margarine production. Salad oils = cooking oils and other edible uses.

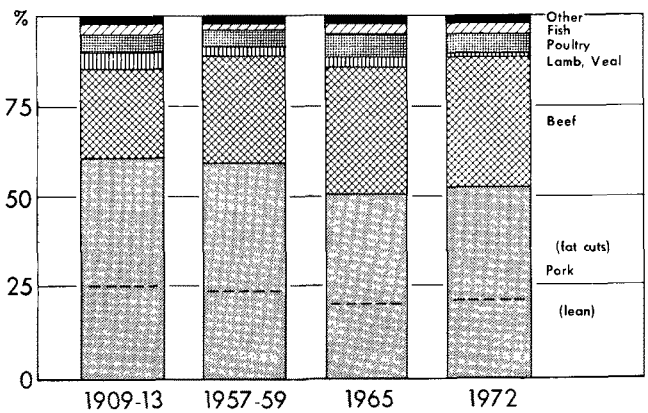

FIG. 8. Nutrient fat from meat, poultry, fish. Per capita civilian food supply. △=preliminary.

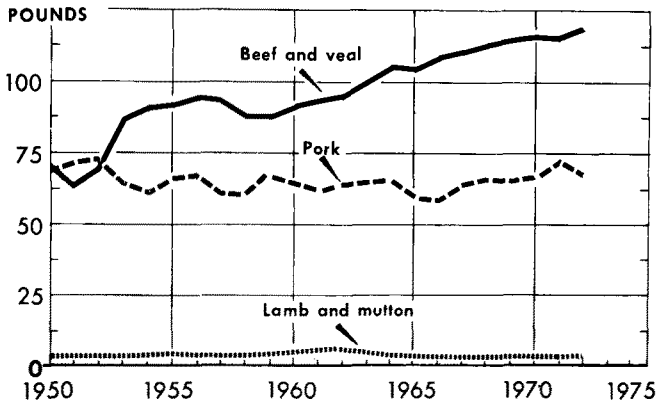

FIG. 9. Meat consumption/person. Pounds = carcass wt basis.

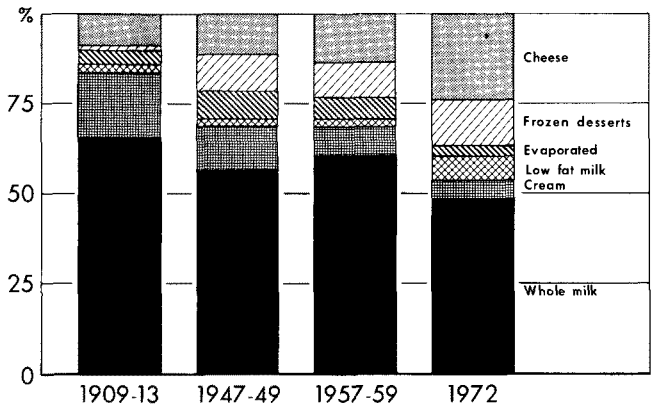

FIG. 10. Nutrient fat from dairy products (excluding butter). Per capita civilian food supply. Evaporated includes condensed. △=preliminary.

the group. By 1972, the proportion had dropped some, but pork still furnished over half of the fat. For the time periods shown, the fat cuts consistently have contributed over one-third again as much fat as the lean pork, despite the fact that, in general, the lean pork comprises 70% pork consumed.

Early in the century lean pork and beef contributed equally to the fat provided by the meat, poultry, fish group—each supplying ca. one-fourth. With the increase in beef consumption, however, beef now furnishes over a third of the amount; lean pork provides ca. a fifth.

By 1972, the consumption of beef had risen to around 86 lb (retail cut equivalent)/person/year from a low of 37 lb in 1932. During the 1930s, both income and food consumption were low. The proportion of nutrient fat in the U.S. diet provided by beef alone was 6% in 1932, 10% in 1957-59, and 13% in 1972. This is an impressive contribution from one food alone. The gain is even more impressive when one considers the amount of fat in the U.S. diet—133 g in 1932 compared with 156 g today.

As shown in Figure 8, pork and beef combined currently provide ca. 90% fat from meat, poultry, and fish. Poultry, which is low in fat, furnishes ca. 5% fat today, as it did in 1909-13, despite the fact that poultry consumption is ca. three times as great today. Fish, also low in fat, supplies ca. 3% fat from the group.

Trends in meat consumption (carcass wt) since 1950 are shown in Figure 9. The major change since 1950 is the increase of more than 50 percentage points in the use of beef and veal. This increase is due entirely to the increased consumption of beef; in fact, consumption of veal has declined. Although pork use fluctuated during this period, consumption is currently at a level of ca. that for 1950. Use of lamb and mutton shows a slight downward trend.

Dairy products: Dairy products, other than butter, have been contributing a proportionately smaller share of the total nutrient fat in the U.S. diet since 1947-49. At that time, these foods provided 17% total fat. Currently, they account for ca. 13%, 2% less than the 1909-13 level.

When butter is included with other dairy products, the share of nutrient fat coming from dairy products is down considerably, from almost 30% in 1909-13 to ca. 15% today. This reduction in dairy fat amounts to more than 10 g/person/day.

Figure 10 shows the contribution of individual dairy products other than butter to the nutrient fat provided by the group. A definite trend away from the use of whole milk and cream is evident. Early in the century fluid whole milk and cream accounted for ca. 85% fat from the group, compared with ca. 50% today. This decrease represents a drop of ca. 5 g fat/person/day, equal to the fat in a generous half cup of whole milk. Evaporated milk has supplied a decreasing amount of fat since its peak consumption in 1947-49.

In contrast, fat provided by some other dairy products has increased. By 1972, for example, 24% fat came from cheese and 13% from frozen desserts compared with 9 and 2%, respectively, in 1909-13. Low fat milks, despite their low fat content, also are contributing more fat as their consumption rises. Currently, they provide 7% nutrient fat coming from this group of foods, up from the 2-3% of earlier years. The low fat milks now provide a higher proportion of the fat than either fluid cream or evaporated and condensed milks. The trend in use of fluid skim milk has made a complete cycle from 61 lb/capita/year in

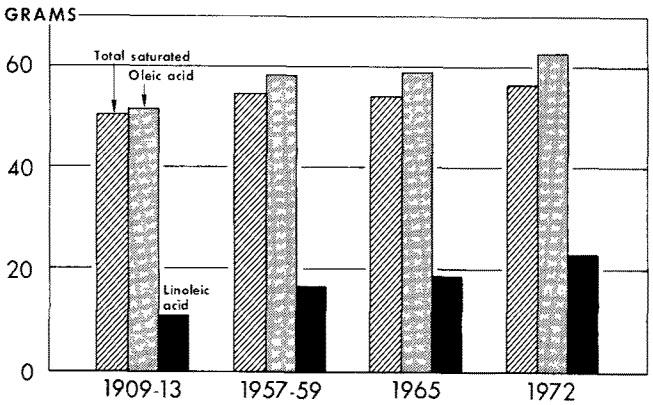

FIG. 11. Fatty acids. Per capita civilian consumption. △=preliminary.

1909-13 to a low of 26 lb in 1957 and climbing to 69 lb in 1972. The recent increase in use is probably due to the mounting concern about dietary fat on the part of the consumer.

FATTY ACIDS IN FOOD SUPPLY

Changes in the kinds and amounts of fat in the U.S. diet have altered its fatty acid content (Fig. 11). Estimates are given for total saturated fatty acids, oleic acid, and linoleic acid for selected years. Gains have been largest for linoleic acid. The current level, 23.1 g/person/day, is more than double that for 1909-13. The smallest increase has been for total saturated fatty acids, ca. 6 g during the past 60 years. Most of this increase occurred by the late 1940s. Shifts in food consumption patterns have resulted in more saturated fatty acids coming from beef, some dairy products, and salad and cooking oils and less coming from lard and butter. The higher levels of linoleic acid are largely due to greater use of salad and cooking oils.

Although our diet currently contains more fat than our diet of 60 years ago, total saturated fatty acids now account for a smaller share of the total fat, 36% today compared with 40% in 1909-13. These fatty acids currently account for 15% total calories in the diet, up from 13% in the early 1900s. The share from oleic acid has risen from 13 to 17%, and, from linoleic acid, from 3 to 6%.

FOOD ENERGY FROM FAT

The fat content of the diet sometimes is expressed in terms of the proportion of food energy—or kilocalories—provided by fat. When the fat level in the U.S. diet is presented on this basis, an increase in the share of calories from fat can be shown to accompany the increase in the level of fat. However, the increases do not necessarily occur at the same rate. From 1909-13 to 1972, the proportion of calories rose from 32 to 42%, but most of the increase had taken place by the middle 1950s. At that time, the share was 41%. Both the increase in fat and the sharp decrease in carbohydrate in the diet, brought about mainly by the decreased use of grains, have been responsible for the rise in the share of calories from fat. Most of the decline in carbohydrate had occurred by the mid 1950s. On the other hand, one-third of the increase in fat has taken place since 1965. The share from protein is the same today as 60 years ago, 12%.

The proportion of calories from vegetable fats has increased from 5 to 16% since 1909-13; however, animal products still account for the largest share of calories provided by fat. Animal fats continue to supply ca. one-fourth of the total calories in the U.S. diet, despite the decline in their use.

FAT IN DIETS OF INDIVIDUALS

Although food supply statistics are useful in pointing up trends in fat consumption, they do not tell us about actual levels of ingestion. For this information, we turn to the U.S. Department of Agriculture's nationwide survey on diets of individuals (3). In this study, persons reported on the kinds and amounts of food they ate in one day—both at home and away from home—in the spring of 1965.

Levels of Fat

In comparing the average intake of fat by men, women, and children of various ages, peak consumption was observed for the 18-19 year old males who had an average intake of 149 g/person/day. The males just younger and older, the 15-17 year olds and the 20-34 year olds, consumed almost as much, around 145 g. Among the females, the 12-14 year olds had the largest intake of fat, an average of 100 g. As one might expect, the level of fat in the diets paralleled the amount of food eaten, measured in calories. That is, the sex-age categories with high calorie levels also had high fat levels. For both males and females, consumption rose steadily during childhood to reach a peak in the teen years when food needs are greatest, then tapered off.

If the survey were carried out today, levels of fat might be a little higher, because the amount of fat available, on per capita/day basis, from the U.S. diet is ca. 10 g more than it was in 1965, the year of the survey.

No consistent differences in fat intake were noted for persons living in urban and rural areas, but differences were found by income and by region of the country. Data from the 1965 survey were stratified by 4 income levels after taxes: (A) under $3,000, (B) $3,000-$4,999, (C) $5,000-$7,999, and (D) $8,000 and over.

With few exceptions, the level of fat increased with increased income. The most notable exception was among females, where about half the age groups showed a decrease in fat going from the third to the fourth income level. Failure to show an increase with income was observed for only two groups of males. A higher level of fat associated with higher incomes may be the result of selecting a more expensive assortment of foods containing more fat, such as including more meat and whole fluid milk and less grain products, or it may simply reflect the ability to purchase more food.

Data for the South were tabulated separately and compared with data for the rest of the country. For most population groups, the fat level of the diet was lower in the South where intakes of meat were generally lower and of grain products generally higher. This may reflect the effect of income, as more families surveyed in the South had lower incomes than in other areas.

The older teenagers, male and female, had the highest proportion of nutrient fat in their diets coming from food eaten away from home, ca. one-fifth of the total amount.

Contributions of fat to the total calories in the diets ranged from 39% for infants to 45% for men 20-64 years of age. Thus, the proportion of calories from fat in the food eaten by individuals is ca. the same as that calculated for the national food supply—42%—well above the 35%, or less, level thought to be desirable by some researchers and physicians.

Sources of Fat

Major sources of fat in the diets of individuals were milk and milk products; meat, poultry, and fish; grain products; and fats and oils. As expected, milk and milk products supplied most of the fat in the diets of infants, accounting for three-fourths of the total amount for children under 1 year of age. The share coming from this group of foods decreased with the age of the individuals, dropping to

TABLE I

Selected Statistics on Nutrient Fat in U.S. Food Supply, Per Capita/Day[a]

Item	1909-13		1925-29		1935-39		1947-49		1957-59		1965		1972[b]	
Total fat:	125	100.0	135	100.0	133	100.0	141	100.0	143	100.0	145	100.0	156	100.0
Animal	104	83.1	106	78.2	97	73.3	105	74.6	101	70.6	96	66.2	97	62.4
Vegetable	21	17.0	29	21.8	36	26.8	36	25.6	42	29.3	49	33.8	59	37.6
Selected sources:														
Fats and oils including butter:	46.1	36.7	54.2	40.2	56.5	42.5	52.7	37.3	56.4	39.4	59.1	40.9	64.3	41.2
Salad and cooking oils	1.9	1.5	6.0	4.5	8.1	6.1	9.1	6.4	13.5	9.4	17.4	12.0	22.9	14.6
Shortening (vegetable)[c]	9.6	7.7	11.2	8.4	13.6	10.2	10.6	7.5	9.7	6.8	12.2	8.4	14.6	9.4
Margarine (vegetable)[c]	.8	.6	1.7	1.2	2.8	2.1	5.5	3.9	8.7	6.1	9.3	6.4	10.3	6.6
Butter	17.7	14.1	18.1	13.4	17.1	12.9	10.6	7.5	8.2	5.7	6.4	4.4	4.9	3.2
Lard:	14.9	11.9	16.1	11.9	13.7	10.3	16.4	11.6	14.5	10.1	11.4	7.9	8.6	5.5
Direct use	14.7	11.7	15.7	11.7	13.7	10.3	15.4	10.9	11.5	8.0	8.0	5.5	4.6	2.9
Indirect use	.2	.2	.3	.3	d	e	1.0	.7	3.0	2.1	3.5	2.4	4.0	2.5
Edible beef fats	1.2	.9	1.1	.8	.2	.9	.5	.3	1.8	1.2	2.4	1.7	3.0	1.9
Meat, poultry, fish:	46.8	37.4	44.3	32.9	39.8	29.9	47.3	33.5	47.3	33.0	48.6	33.6	55.9	35.8
Beef	11.6	9.2	9.2	6.9	9.4	7.1	11.1	7.9	13.9	9.7	16.8	11.6	19.6	12.6
Pork:														
Fat cuts	16.7	13.3	17.1	12.7	14.2	10.7	17.2	12.2	15.9	11.1	14.7	10.2	17.2	11.0
Lean pork	11.8	9.4	12.1	9.0	10.0	7.5	12.1	8.6	11.2	7.8	10.4	7.2	12.1	7.8
Poultry	2.3	1.8	2.1	1.5	2.0	1.5	2.6	1.9	2.5	1.8	3.0	2.0	3.6	2.3
Dairy products:														
Including butter	36.3	29.0	38.6	28.7	38.1	28.7	35.1	24.9	31.9	22.3	27.6	19.1	24.8	15.9
Excluding butter:	18.6	14.9	20.5	15.3	21.0	15.8	24.5	17.3	23.7	16.5	21.2	14.6	19.9	12.7
Whole fluid milk	12.4	9.9	12.6	9.4	12.4	9.3	13.9	9.8	14.2	9.9	11.7	8.1	9.5	6.1
Fluid cream	3.3	2.6	3.3	2.5	3.2	2.4	2.9	2.0	2.0	1.4	1.5	1.0	1.0	.6
Cheese	1.6	1.3	1.9	1.4	2.2	1.7	2.8	2.1	3.1	2.1	3.6	2.5	4.8	3.0
Frozen desserts	.3	.2	1.2	.9	1.2	.9	2.3	1.7	2.4	1.7	2.5	1.7	2.5	1.6
Fatty acids:														
Total saturated	50.3		53.3		52.9		54.4		54.7		54.0		56.1	
Oleic acid	51.5		55.2		54.5		58.0		58.2		58.9		62.5	
Linoleic acid	10.7		12.5		12.7		14.8		16.6		18.9		23.1	

[a]Components may not add to total due to rounding. First column under year is in g; second column is in percentage.

[b]Preliminary.

[c]Excludes nutrient fat from lard and edible beef fats used in manufacture of some shortening and margarine.

[d]Less than 0.05 g.

[e]Less than 0.05%.

one-fourth for older children and to ca. one-tenth for middle-aged adults. A slight upturn was noted for persons 65 and older. Milk and milk drinks make up the bulk of foods in the milk and milk products group. Also included are such foods as cream, ice cream, cheese, and mixtures made mainly of milk products, such as cheese sauces and cheese dips.

Meat, poultry, and fish as a group were the leading sources of fat in most diets. They provided on an average three-tenths to nearly one-half of the fat for all age groups, other than infants and young children. Contributions from these foods reached their peak in diets of middle-aged adults, after which the level dropped. In addition to items like beef, veal, pork, mutton, lamb, poultry, and fish, this group includes such foods as variety meats, bacon, salt pork, lunch meats, sausages, and mixtures like stews and pot pies.

Fats and oils averaged 12-16% fat in the diets of most age groups, other than infants and young children. The fats and oils group includes such foods as butter, margarine, salad dressing, cooking and salad oils, and cream substitutes. Food fats used as ingredients in other foods are not counted in this food group.

Grain products contributed about the same proportion of fat to the diets of the different age groups as did the fats and oils group.

Grain products, which include baked goods, become a much more important source of fat in these diets of individuals than in the national food supply, where grain products are measured prior to baking. In the survey of diets of individuals, foods were reported as eaten. Therefore, when food fats or other fat containing foods were used as ingredients, their fat is included in the contribution of the final product. Conversely, food fats and oils, because they are used as ingredients in many foods, appear to be a considerably less important source of fat in the diet of individuals than in the U.S. diet.

REFERENCES

1. U.S. Department of Agriculture, Economic Research Service, "Food Consumption, Prices, and Expenditures," Agricultural Economic Report 138, U.S. Department of Agriculture, Washington, D.C., 1968, and supplement for 1971.
2. Kromer, G.W., in "Fats and Oils Situation," FOS-267, Economic Research Service, U.S. Department of Agriculture, Washington, D.C., April 1973, pp. 16-23.
3. U.S. Department of Agriculture, Agricultural Research Service, "Food and Nutrient Intake of Individuals in the United States," Spring 1965, Household Food Consumption Survey 1965-66, Report No. 11, Washington, D.C., 1972, 291 pp.

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