CURRENT FOOD CONSUMPTION PRACTICES

AND

NUTRIENT SOURCES IN THE AMERICAN DIET

Consumer Nutrition Center--Human Nutrition
US Science and Education Administration
U.S. Department of Agriculture
Hyattsville, Maryland 20782

June 1980

CURRENT FOOD CONSUMPTION PRACTICES AND NUTRIENT SOURCES IN THE AMERICAN DIET

By Robert L. Rizek* and Elizabeth M. Jackson

I. INTRODUCTION

A. Survey Methodology

Food consumption information has been collected by the U.S. Department of Agriculture (USDA) about every 10 years since 1936. The purpose of the six nationwide surveys has been to measure the current status of the U.S. diet and changes since the previous survey. This paper will focus on changes in food habits and diet status between the 1965-66 survey and the 1977-78 survey.

Many of the basic concepts and procedures necessary for successful accomplishment of these food consumption surveys were developed before the turn of the century by Dr. Wilbur Atwater. Since then sampling methods and statistical procedures have become an integral part of the modern large-scale surveys.

The 1977-78 Nationwide Food Consumption Survey (NFCS) has been the largest of the surveys. In the basic survey of the 48 States, 15,000 households participated. An additional 15,000 households took part in the supplemental surveys. These surveys included samples in Hawaii, Alaska, and Puerto Rico and two special samples among elderly and low-income households in the 48 States.

The NFCS collected two kinds of information. One was household food consumption from which we get quantities and cost of foods used by households in a week. Second was the individual food intake from which we learn what individual members of the household actually ate over a 3-day period. Quantities of food used by households in a week and individuals in several days are not comparable for the following reason: The household consumption data were reported in terms of the food as it was brought into the kitchen from the store or garden. Thus the weight of household food used included, for example, the fat, gristle, and bone in the meat, as it was purchased. Quantity measurements for the individual were weights of food as it was ingested--cooked meat without the bone, including only the fat the individual ate.

Information on food intakes of individual members of the households was obtained as a part of one of the nationwide surveys for the first time in the spring of '65. At this time the household respondent--usually the homemaker--was asked to recall the previous day's intake for selected members of the household. In the most recent survey the household members answered for themselves whenever possible. A trained interviewer recorded individuals'

---

*Portions of text were presented by Robert L. Rizek at the International Symposium on "Animal Products in Human Nutrition," Iowa State University Ames, Iowa, June 2, 1980.

recall of foods eaten the previous day and then showed them how to keep a diary of foods eaten the next 2 days. Diet records of about 70,000 individuals are now being computerprocessed and then analyzed by the USDA staff.

The food consumption data now being reported are from the first part of the survey, that is, data gathered in spring '77. Although individual intake data were obtained for 3 days in the '77-78 survey, this paper reports on only the first day's intake, a 24-hour recall. Data yet to be published will provide greater detail to this overview of the changes in our food habits from 1965 to 1977.

B. Household Data

1.--Food From Home

We can measure the importance of food away from home in terms of meals household members ate out and the expense for food eaten out. A term used in talking about household food cost at home and away from home is "money value." The "money value" of food used by households includes money spent on meals and snacks bought and eaten away from home during the survey week, money spent directly on the purchase of food that was used at home during the week, and the value of foods used at home during the week that was received without direct expense by households (such as home-produced items and those received as gift or pay). This last category--money value of foods used by a household without direct expense--is imputed from the average price per pound for that food reported by survey households in the same region.

Household information on meals away from home is reported only for housekeeping households (households in which at least 1 person had 10 or more meals from the household food supply during the survey week). Thus USDA figures may be lower than others you may hear quoted, which apply to the total population. The USDA survey results indicated that 85% of meals consumed by household members were from home food supplies (eaten at home or carried from home), 11% were purchased and eaten away from home and 4% were eaten away from home without direct expense - as guest meals, free school meals, or meals received as pay.

A meal away from home on the average, cost more than one at home--about 2-1/2 times as much according to estimates from the '77 data. Therefore, the importance in terms of dollars is greater for food away from home than for food at home. In 1977, 24 cents of every dollar was spent for food away from home--that is, 19 cents for meals, 5 cents for snacks. The remaining 76 cents of the food dollar was for food used from the household food supplies, including food that was purchased, home produced, and received as gift or pay. Less of the household food dollar was used in 1965 than in 1977 for meals and snacks away from home.

The decrease from 1965 to 1977 in the percentage of the food dollar spent on food at home reflects changes in the social and economic status of households, the changes in the age groups in the population, and changes in life-styles. Factors such as more working females, smaller households, higher household income, and easier access to fast-food restaurants apparently

contributed to the increased percentage of the food dollar spent on food away from home.

Household income has more effect on money spent on food away from home than on money value of food at home, on the average. Those households with incomes of $20,000 or more spent 5 times as much for food away from home as households with incomes below $5,000.

Geographic location also affected the amount a household member spent on food away from home. The average money value for "eating out" was higher in the Northeast and West than in the North Central and South. These tendencies were also true in 1965. The typical household member spent more outside the home if he lived in a suburban area rather than in the central or nonmetropolitan area, but such information is not available for 1965.

2.--Food at Home

As mentioned before, a household's income has less effect on food at home than food away from home. In spring 1977 the average money value of food per household member was only 20% more for the highest than for the lowest income group. Thus all income groups spent between $14 and $16 per person a week for money value of food at home (Table 1).

People with high incomes are more satisfied with food they eat than are those with low incomes. About 72% of all the respondents said they had enough food and also the kinds of food they wanted to eat. At each successive income level, more households thought that they had enough food and the kinds of food they wanted. Although most households at all levels of income were satisfied with their food, 9% of the lowest income group responded that sometimes or often they did not have enough to eat. Translated in terms of the U.S. population, this 9%, or 3% of the total population, represents several million people who felt that they did not have enough to eat at times. Similar information is not available from the 1965 data.

Table II indicates that households in spring '77 allocated slightly more than 1/3 of their home food dollar to meat, poultry, and fish. Increases in the value of beef, poultry, and fish used contributed to the 5% change since 1965. More money was also allocated to fruit (now almost 8 cents of the food dollar) but the greatest increase in allocation was for soft drinks, punches, and prepared desserts--a 23% increase to 4 cents of the food dollar. The changes in food marketing and food distribution over the last 15 years, such as the availability of fresh fruit year round or the convenience of soft drinks, may be reflected in these data.

A smaller proportion of the home food dollar was spent on eggs, dry legumes, and nuts--eggs, in particular, decreased from 2.9 to 2.0% of the food dollar. Households also used less of their home food money for the fats and oils group, and for sugar, sirup, jelly, and candy. Declines may reflect concerns about health consequences of eating too much of these foods or a decrease in home baking.

The division of the home food dollar was not the same for each income group. For example, the share of the food dollar for alcoholic beverages and milk, cream and cheese increased with income; lower income households spent a much higher proportion of their food money for eggs and dry legumes.

TABLE I. MONEY VALUE PER HOUSEHOLD MEMBER OF FOOD USED IN A WEEK BY HOUSEKEEPING HOUSEHOLDS,[1] SPRING 1977

Income (1976) before taxes	People living in household[2]	Money value per household member[3]		
		Total	At home[4]	Bought away from home
	Number	Dollars		
All households.....	3.06	19.91	15.17	4.74
Under $5,000.....	2.02	17.51	14.99	2.52
$5,000-$9,999	2.72	17.26	14.20	3.06
$10,000-$14,999....	3.21	18.50	14.15	4.35
$15,000-$19,999....	3.53	19.99	14.99	4.99
$20,000 or more....	3.67	23.19	16.36	6.83

[1]Household with at least 1 person having 10 or more meals from the household food supply during 7 days preceding interview.

[2]Excludes roomers, boarders, and employees. Average value per household member calculated using population ratio procedure--aggregate value for all households divided by aggregate number of members in all households.

[3]Parts may not total to the whole because of rounding.

[4]Includes value of food that was bought, home produced, or received as gift or pay and used by household members and guests. Value of food received without direct expense by a household is based on average price per pound paid for that food by survey households in the same region.

Source: USDA Nationwide Food Consumption Survey 1977-78, 48 conterminous States, spring 1977 (preliminary).

TABLE II. DIVISION OF FOOD DOLLAR USED BY HOUSEHOLDS, SPRING 1965 AND 1977

Food group[1]	1965	1977	Change from 1965
	Cents	Cents	%
Milk, cream cheese	12.6	12.3	-2
Meat, poultry, fish	32.7	34.3	+5
Eggs, dry legumes, nuts[2]	5.2	4.3	-17
Vegetables	12.2	11.9	-2
Fruit	7.4	7.7	+4
Grain products	12.3	11.9	-3
Fats, oils	3.5	2.9	-17
Sugar, sirup, jelly, candy	3.1	2.6	-16
Soft drinks, punches, prepared desserts	3.1	3.8	+23
Alcoholic beverages	3.7	3.7	0
Other foods	4.1	4.6	+12
Total	100.0	100.0	

[1]Mixtures and soups included with group of main ingredients, except those mainly meat, which are included with eggs, dry legumes and nuts.

[2]Includes plate dinners with main ingredient mostly meat, poultry, fish.

Source: USDA Nationwide Food Consumption Survey 1977-78, 48 conterminous States, spring 1977 (preliminary).

Some food groups such as grain products and fats and oils did not vary in their share of the food dollar across the various incomes of households.

C. Individual Data

Individuals of all ages increased the share of nutrients eaten away from home between 1965 and 1977 (table III). Younger men (19 to 34 years old) and females (15 to 34 years old) consumed the largest share of caloric intake away from home in both surveys. In 1977, more than one-fourth of their calories were obtained away from home compared with one-fifth in 1965.

In 1977, adult men (35 to 50 years old) consumed 21% of their calories outside the home; women in the same group consumed somewhat fewer calories away from home--about 18%. Among persons 65 to 74 years old, women obtained more of their calories away from home than did men--13 versus 11%. Adults 75 years and over obtained 8% of their calories away from home regardless of whether they were male or female.

Nutrient intakes from food outside the home increased markedly for 3-to 5-year-old children and women, 23 to 34 years old. Intake of some away-from-home nutrients doubled for both of these sex-age groups, probably reflecting the great expansion of women into the work force and their use of nursery schools or care outside the home for preschoolers. Thus young women (23 to 34 years old) consumed one-fourth of their energy, protein, fat, and carbohydrate in food obtained outside the home and preschoolers, one-seventh.

TABLE III. PERCENTAGE OF ENERGY FROM FOOD OBTAINED AND EATEN AWAY FROM HOME PER INDIVIDUAL IN A DAY, SPRING 1977

Sex and age (years)	1965	1977
	------%------	
Males and females:		
Under 1	1	2
1-2	5	10
3-5	6	14
6-8	12	20
Males:		
9-11	11	20
12-14	14	20
15-18[1]	16	21
19-22[1]	20	24
23-34[1]	18	27
35-50[1]	14	22
51-64[1]	13	15
65-74	7	11
75 and over	7	8
Females:		
9-11	15	20
12-14	15	20
15-18[1]	18	25
19-22[1]	19	25
23-34[1]	14	24
35-50[1]	12	18
51-64[1]	11	13
65-74	10	12
75 and over	6	7

[1]Age groups in 1965 survey differed as follows: 15-17 years, 18-19, 20-34, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consumption Survey, 1965-66, Report No. 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

II. QUANTITIES OF FOOD USED BY FOOD GROUP

The types of food households used and individuals consumed changed between 1965 and 1977. These changes will be reflected in changes in the energy and nutrient levels of food consumed by individuals that will be discussed later in this paper.

A. Household Consumption

Households increased their consumption of four groups of foods--meat, poultry, fish; fruit; soft drinks; and alcoholic beverages. Table IV shows that meat, poultry, and fish increased somewhat. More specifically, beef consumption increased 14%, poultry and fish consumption each increased 8%, but bacon consumption decreased 30%.

As shown in table V, the consumption of fruit rose 6% and use of nuts went up 8% but households dramatically increased their consumption of soft drinks, punches, and prepared desserts, such as gelatin and pudding mixes--a 36% increase since 1965.

The quantity of alcoholic beverages increased the most of any food group from '65 to '77. This trend may reflect greater use of beer and wine and indicate people's increased candidness in revealing their alcoholic consumption.

B. Individual Intake

We can see how food habits of individuals have changed between '65 and '77 by examining changes for men, women, and children of different ages in 1) average food intakes 2) percentage of individuals consuming food from a food group during the day, and 3) average intakes of only those individuals who used food from the group. More detailed comparisons will be forthcoming as data processing progresses. Each food group contains several forms of a food and may contain mixtures in which the particular food is the major ingredient.

Men and boys consumed more of most foods than women and girls of the same age. The food groups that females consumed in similar or greater amounts than males were tomatoes and citrus fruit, dark green and deep yellow vegetables, and other fruits and vegetables (except potatoes). The amount of food eaten varied more among males of different ages than among females. Consumption of foods with high caloric value varied more by sex-age group than consumption of fruits and vegetables. Quantities given in the following discussion refer to intakes of an entire food group.

1.--Milk and Milk Drinks

Consumption of milk and milk products was down in 1977 from 1965 levels (table VI). First, let us consider milk and milk drinks. (This group includes, in addition to milk, chocolate milk, shakes, milk-based diet beverages, and instant breakfasts and yogurt.)

Although 9 out of 10 children consumed some milk and milk drinks on the survey day in '77, they drank less milk than children did in '65. Average

TABLE IV. USE OF MEAT, POULTRY, AND FISH, 1965 AND 1977

Food	Quantity per person[1] per week		Change from 1965[2]
	1965	1977	
	lbs	lbs	%
All meat, poultry, fish...	4.58	4.78	+4.3
Beef.....	1.65	1.88	+13.9
Bacon.....	0.27	0.19	-29.6
Other pork.....	0.83	0.82	-2.1
Luncheon meat.....	0.43	0.42	-2.8
Poultry.....	0.86	0.93	+8.3
Fish and shellfish.....	0.37	0.40	+8.7
Veal, lamb, game, variety meat, liver...	0.17	0.14	-17.6

[1] 21 meals from home supplies equal one person.
[2] Percent change calculated prior to rounding.

Sources: Dietary Levels of Households in the U.S., Household Food Consumption Survey, 1965-66, Report No. 6 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished data.

TABLE V. QUANTITY OF FOOD PER PERSON[1] PER WEEK, SPRING 1965 AND 1977

Food group	Quantity per person per week		Change from 1965[4]
	1965	1977	
	lbs	lbs	%
Milk, cream, cheese[2] (milk equivalent)	8.76	8.34	- 5
Meat, poultry, fish	4.58	4.78	+ 4
Eggs, dry legumes, nuts[3]	1.11	0.92	-17
Eggs in fresh equivalent	0.82	0.66	-19
Legumes in dry weight	0.17	0.12	-25
Nuts in shelled weight	0.12	0.13	+ 8
Vegetables[2]	5.35	5.09	- 5
Fruit[2]	3.73	3.94	+ 6
Grain products[2] (flour equivalent)	2.65	2.16	-19
Fats, oils	0.83	0.70	-15
Sugar, sirup, jelly, candy	1.12	0.83	-27
Soft drinks, punches, prepared desserts (sugar equivalent)	0.25	0.34	+36
Alcoholic beverages	0.68	0.94	+38

[1]21 meals from home supplies equal one person.
[2]Includes mixtures and soups with main ingredient from group.
[3]Excludes mixtures, soups, and plate dinners.
[4]Percent change calculated prior to rounding.

Sources: Dietary Levels of Households in the U.S., Household Food Consumption Survey, 1965-66, Report No. 6 and USDA Nationwide Food Consumption Survey 1977-78, 48 conterminous States, spring 1977 (preliminary).

TABLE VI. INTAKE OF MILK AND MILK DRINKS PER INDIVIDUAL AND PERCENTAGE USING IN A DAY, 1965 AND 1977

Sex and age (years)	Individuals		Milk and milk drinks				
			Intake per individual		Individuals using		Intake per user
	1965	1977	1965	1977	1965	1977	1977
	Number		Gm	Gm	%	%	Gm
Males and females:							
Under 1	408	78	696	618	97	92	667
1-2	810	264	592	404	98	91	443
3-5	1,405	437	509	353	94	88	401
6-8	1,412	469	538	433	93	91	479
Males:							
9-11	665	216	572	432	92	91	477
12-14	627	313	595	504	92	86	584
15-18[1]	562	400	601	519	86	77	672
19-22[1]	251	287	558	388	81	74	523
23-34[1]	1,406	770	318	243	75	58	417
35-50[1]	2,050	784	236	203	68	58	354
51-64[1]	742	634	203	180	70	62	291
65-74	460	295	231	217	75	71	305
75 and over	219	127	209	193	77	68	283
Females:							
9-11	599	241	500	402	90	89	453
12-14	626	309	475	387	88	81	478
15-18[1]	538	402	383	316	80	75	423
19-22[1]	232	337	300	224	72	65	343
23-34[1]	1,846	949	204	182	66	59	309
35-50[1]	2,492	942	152	130	64	55	236
51-64[1]	916	792	151	139	66	58	239
65-74	624	377	153	166	66	68	242
75 and over	340	197	165	214	73	73	292

[1]Age groups in 1965 survey differed as follows: 15-17 years, 18-19, 20-34, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consumption Survey, 1965-66, Report No. 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

intakes of milk and milk drinks for toddlers dropped 3/4 of a cup by '77, so that 1-to 2-year-old users consumed only 1.8 cups in a day; 3-to 5-year-olds, consumed less than toddlers, 1.6 cups; while 6-to 8-year-olds, consumed slightly more, 2 cups.

Older children and teenagers reduced their intakes of milk and milk drinks from '65 to '77 but by smaller amounts (1/3 to 1/2 cup). Nine out of 10 preteens consumed milk in 1977 but only 3 out of 4 teenagers (15 to 18 years old) consumed some milk or milk drinks. Although boys drank more milk than girls, the proportion of boys drinking milk as teenagers declined more than girls from 1965 to 1977.

Fewer adults drank milk or milk drinks in '77, but those who did drank about the same quantity as in 1965. Two groups, however, changed their average intakes: Elderly women (75 years and over) consumed more milk and milk drinks than all other groups of women except the 19-to 22-year-olds; young men (19 to 22 years old) decreased their intake but were still the largest consumers among adults in '77, as in '65.

Consumption of yogurt increased from '65 to '77 when the largest users in '77 were men and women, 23 to 34 years old. About 3% of this group reported eating yogurt on the survey day.

2.--Cheese

Cheese consumption increased 60% or more for most age groups from '65 to '77 (table VII). Among users of cheese, adults and teenage boys ate the equivalent of 2-1/4 slices (1 oz. size) a day in '77. Whereas, in '65 more than one-fifth of each adult group consumed cheese, in '77 at least one-fourth of each adult group reported eating cheese. The proportion of children eating cheese doubled between the surveys--from one-tenth to one-fifth of the age groups, 8 years and under. Toddlers using cheese ate about 1-1/3 slices of cheese a day; 6-to 8-year-old cheese users ate the equivalent of 1-3/4 slices. Consumption patterns varied little between sexes except that teenage boys (15 to 18 years old) used about 1/2 slice more than teenage girls and elderly women (75 years and over) used about 1/2 slice more than elderly men.

3.--Eggs

Egg consumption dropped from '65 to '77, mainly because the proportion of people using eggs declined. However, among people who did use eggs, the average intake was generally larger than in '65 except for groups over 50 years of age (table VII). Men ate more eggs than women. In 1965, well over half of the men consumed eggs; in '77 only one-third of 23-to 34 year-old men ate eggs (users averaged more than 2 eggs a day). However, the proportion of egg users increased with each older male group so that one-half the men 75 years and over consumed the equivalent of 1-2/3 eggs on the the survey day in 1977. Like men, smaller proportions of women consumed eggs in 1977 than in 1965. Among young women (23 to 34 years) egg consumers decreased 6%; for other groups of women consumers, the decrease ranged from 10 to 15%. By '77 only 1 out of 3 women ate eggs (between 1-1/6 and 1-2/3 eggs) regardless of age group.

TABLE VII. INTAKE OF CHEESE AND EGGS, PER INDIVIDUAL AND PERCENTAGE USING IN A DAY, 1965 AND 1977

Sex and age (years)	Individuals		Cheese					Eggs				
			Intake per individual		Individuals using		Intake per user	Intake per individual		Individuals using		Intake per user
	1965	1977	1965	1977	1965	1977	1977	1965	1977	1965	1977	1977
	Number		Gm	Gm	%	%	Gm	Gm	Gm	%	%	Gm
Males and females:												
Under 1	408	78	1	1	3	4	22	17	5	25	10	44
1-2	810	264	4	8	10	22	37	28	20	46	33	61
3-5	1,405	437	3	9	11	21	41	23	22	37	34	67
6-8	1,412	469	4	10	12	20	49	23	18	35	24	73
Males:												
9-11	665	216	5	8	12	16	52	27	26	38	26	98
12-14	627	313	7	9	15	15	59	31	28	39	29	98
15-18[1]	562	400	9	13	16	21	62	42	31	44	30	103
19-22[1]	251	287	10	15	13	26	56	41	32	41	30	107
23-34[1]	1,406	770	11	21	20	28	76	55	38	52	34	112
35-50[1]	2,050	784	13	18	21	27	68	51	41	56	40	104
51-64[1]	742	634	14	17	24	26	65	51	36	57	40	89
65-74	460	295	13	14	20	25	56	55	36	58	48	76
75 and over	219	127	9	18	16	25	70	41	41	53	52	80
Females:												
9-11	599	241	4	7	11	17	42	25	14	35	20	72
12-14	626	309	6	11	15	23	50	23	19	32	23	81
15-18[1]	538	402	7	11	16	25	45	25	21	33	26	84
19-22[1]	232	337	5	18	13	27	67	25	26	36	27	96
23-34[1]	1,846	949	10	19	17	29	65	27	26	37	31	83
35-50[1]	2,492	942	13	18	22	28	63	31	23	43	28	82
51-64[1]	916	792	14	19	20	27	69	33	24	45	33	73
65-74	624	377	13	14	20	26	54	30	22	43	33	66
75 and over	340	197	13	20	18	25	83	28	19	42	32	59

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-54, 55-64.

Sources: Food and Nutrient Intake of Indiviuals in the U.S., Household Food Consumption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

4.--Meat, Poultry, Fish

Although average household consumption of meat at home increased a few percentage points between '65 and '77, there was no evidence of increased intake at home and away for individual household members. The percentages of children and of most adult groups up to 65 years who used beef and pork on the day of the interview were the same or lower in '77 than in '65. One exception was males 15 to 22 years; more of them had beef in '77 than in '65 (table VIII). As many older adults had beef and pork in '77 as in '65. (Intakes of mixtures containing beef and pork, which were more often reported in '77, were not included in these percentages.)

Notice that a greater proportion of individuals, regardless of age group, selected pork than beef items. This is probably partly because most breakfast and luncheon meats are classified as pork. The pork group includes ham, bacon, pork variety meats, fresh and cured pork, all luncheon meats, frankfurters (except beef and chicken ones) and other sausages. More older adults had pork items than younger ones in both '65 and '77.

Although beef and pork were more frequently consumed than poultry, poultry consumption increased from '65 to '77, so that over 20% of some age-groups consumed poultry on the survey day.

The proportion of people consuming fish or shellfish increased for about half of the sex-age groups; about 1 out of 10 persons ate fish on the survey day in 1977. In addition, average quantities of fish consumed, increased slightly from '65 to '77 for all but the oldest adults.

The largest consumers of all types of meat, poultry, and fish in '77 were 19-to 22-year-old men. On the average, they ate 11 ounces of meat, poultry, fish on the survey day; men over 22 years consumed almost 10 ounces, except men 65 years and over whose intakes were less. Women averaged about 6-1/2 ounces until reaching 65 years and over, when consumption dropped to less than 5 ounces.

5.--Legumes and Nuts

Consumption of legumes such as dry beans, peas, baked beans, split pea soup and of nuts and nut butters, such as peanut butter generally decreased in the '77 survey for age groups less than 35 years old, but increased for almost all the older groups. The actual quantity consumed of this food group centers around 1 ounce a day. The proportion of children and males under 35 years old using legumes, nuts, seeds decreased about 6% since 1965; among younger females decreases ranged from 2% for preteens to 8% for 19-to 22-year-olds.

6.--Grains

People reported eating less grain products in '77 than in '65. For adults, average intakes generally decreased with age except for older women (65 years and over) whose intakes of grain products were the highest among women (table IX). These women ate the equivalent of 2 slices of bread or 2 ounces of cereal a day in 1977. Within the grain group, people reported

TABLE VIII. INTAKE OF MEAT, POULTRY, AND FISH PRODUCTS, PER INDIVIDUAL AND PERCENTAGE USING IN A DAY, 1965 AND 1977

Sex and age (years)	Individuals		Intake per individual								Individuals using							
			Beef		Pork		Poultry		Fish		Beef		Pork		Poultry		Fish	
	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977
	Number		Gm	Gm	Gm	Gm	Gm	Gm	Gm	Gm	%	%	%	%	%	%	%	%
Males and females:																		
Under 1.....	408	78	7	10	4	5	3	4	0	0	11	12	7	10	5	5	1	0
1-2.....	810	264	24	20	28	19	11	16	3	4	31	30	46	42	14	20	6	6
3-5.....	1,405	437	34	25	40	22	16	20	5	6	34	33	52	45	16	18	7	8
6-8.....	1,412	469	38	35	44	30	25	21	7	7	33	34	54	46	20	20	8	8
Males:																		
9-11.....	665	216	49	46	53	37	26	24	8	7	36	37	59	45	18	17	8	11
12-14.....	627	313	59	53	59	43	31	27	10	8	41	36	57	44	18	18	9	9
15-18[1].....	562	400	75	84	82	49	27	39	10	7	39	43	60	51	17	21	7	7
19-22[1].....	251	287	82	95	99	48	28	47	13	6	40	45	65	52	16	22	8	3
23-34[1].....	1,406	770	110	89	98	55	32	31	14	14	45	43	65	49	16	16	8	9
35-50[1].....	2,050	784	102	79	82	52	33	32	13	17	47	43	63	53	18	19	9	11
51-64[1].....	742	634	81	74	91	57	28	33	18	22	40	40	64	55	16	18	11	11
65-74.....	460	295	60	58	63	47	28	30	11	21	35	40	55	56	17	21	6	11
75 and over.....	219	127	44	48	55	54	29	29	14	5	29	32	51	61	19	23	8	4
Females:																		
9-11.....	599	241	37	41	42	33	25	27	8	5	33	37	51	45	20	23	8	9
12-14.....	626	309	52	49	53	35	19	24	8	7	36	34	55	47	16	18	9	8
15-18[1].....	538	402	58	49	56	28	18	28	9	11	41	35	55	41	13	22	8	7
19-22[1].....	232	337	57	53	50	34	24	26	9	8	41	36	53	42	16	18	9	8
23-34[1].....	1,846	949	64	50	54	32	21	25	9	10	38	35	52	42	16	18	8	9
35-50[1].....	2,492	942	57	51	50	32	25	25	13	14	37	39	53	43	17	20	10	12
51-64[1].....	916	792	54	54	49	30	25	27	9	12	37	37	52	41	18	19	7	10
65-74.....	624	377	46	36	41	33	23	30	8	9	33	32	46	48	17	23	6	8
75 and over.....	340	197	37	34	40	25	26	19	9	4	29	36	49	40	20	20	7	5

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consumption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

TABLE IX. INTAKE OF GRAIN PRODUCTS PER INDIVIDUAL AND PERCENTAGE USING IN A DAY, 1965 AND 1977

Sex and age (years)	Individuals		Breads, rolls, biscuits					Cereals and pastas				
			Intake per individual		Individuals using		Intake per user	Intake per individual		Individuals using		Intake per user
	1965	1977	1965	1977	1965	1977	1977	1965	1977	1965	1977	1977
	Number		Gm	Gm	%	%	Gm	Gm	Gm	%	%	Gm
Males and females:												
Under 1	408	78	5	4	14	14	32	42	30	74	76	40
1-2	810	264	39	27	77	68	40	45	44	71	70	63
3-5	1,405	437	63	46	90	78	59	52	54	71	66	81
6-8	1,412	469	77	53	91	81	66	51	60	69	69	87
Males:												
9-11	665	216	96	67	92	85	79	60	51	64	65	78
12-14	627	313	113	76	94	83	92	62	57	60	53	108
15-18[1]	562	400	135	91	94	81	112	50	53	45	50	108
19-22[1]	251	287	133	84	93	81	104	46	64	38	35	185
23-34[1]	1,406	770	120	82	92	80	102	41	40	32	28	142
35-50[1]	2,050	784	116	82	93	84	97	43	44	35	32	139
51-64[1]	742	634	107	78	93	86	91	49	48	41	38	124
65-74	460	295	99	71	99	87	81	60	69	51	56	124
75 and over	219	127	89	70	89	85	82	68	58	54	56	103
Females:												
9-11	599	241	79	58	79	82	70	50	44	59	60	74
12-14	626	309	86	57	86	77	74	45	45	54	46	97
15-18[1]	538	402	79	57	79	76	75	33	41	39	36	112
19-22[1]	232	337	78	44	78	69	64	37	33	39	28	119
23-34[1]	1,846	949	71	49	71	73	67	34	32	32	29	110
35-50[1]	2,492	942	72	49	72	74	66	27	32	32	31	105
51-64[1]	916	792	67	52	67	81	64	34	36	39	36	98
65-74	624	377	68	57	68	85	67	44	47	44	51	93
75 and over	340	197	73	54	73	87	62	52	58	49	55	105

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consumption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

eating more cereals and pastas than in '65 but less breads and bakery products. Ready-to-eat cereals are popular among the young and the old--one-half the children under 12 and over one-third of the adults 65 years and over ate ready-to-eat cereals.

7.--Potatoes

Teenage girls and adults (35 years and over) ate more white potatoes in '77 than in '65; children, teenage boys, and young adults (23 to 34 years) ate less. Among potato users, over half the groups of teenage girls and adults consumed at least 25% more potatoes in '77 than in '65, particularly girls 15 to 18 years old and elderly men (75 years and over).

Although a smaller proportion of persons reported eating potatoe in '77 than in '65, in both surveys a higher proportion of boys and men ate potatoes than did girls and women. A higher proportion of younger adults consumed potatoes than older adults. Over half of the older children, teenagers, and men reporting eating potatoes--about 3 ounces a day for adult males.

8.--Vegetables

Dark green and deep yellow vegetables such as brocolli, spinach, carrots, sweetpotatoes are grouped together because they are all high in vitamin A. Though far less popular in terms of amounts consumed than tomatoes and citrus fruits, consumption of dark green vegetables increased from '65 to '77, especially among adults over 50 years of age.

Although the amount of deep yellow vegetables consumed generally declined from '65 with respect to quantity and number of people consuming, a larger proportion of individuals in '77 ate the deep yellow vegetables rather than deep green ones. Average intakes of users were generally smaller among children and teenagers but larger among adults in '77 than in '65.

9.--Tomatoes

Tomatoes, tomato juice, tomato sauces and soups, tomato catsup, citrus juices and citrus fruits are traditionally grouped together for their contribution to vitamin C.

Consumption of tomatoes declined markedly from '65 to '77, particularly among women whose average intakes in 1977 were down about a third from their '65 intakes. Despite this decrease, the proportion of women eating tomatoes in 1977 was about the same or slightly greater than in 1965. Intakes declined less among men than among women and even increased in the oldest group of men. In 1977 about one-fourth of the adults and smaller proportions of children and teenagers used tomatoes on the survey day.

10.--Other Vegetables

Data available for vegetables other than white potatoes, tomatoes, dark green and deep yellow vegetables indicate that average intake was up some for most groups of individuals except preschoolers and preteens. Men and women over 50 years increased their average intake considerably--between 44 and 51% for men and 29 to 53% for women.

The proportion of individuals consuming other vegetables dropped some except for those over 50 years. Generally two-thirds of the individuals under 50 years consumed some other vegetables on the survey day in '77 compared with three-fourths of those over 50 years. The amount of other vegetables consumed by those who did eat them ranged between about 100 gm for children and 100 and 200 gm for adults.

11.--Fruit

Citrus fruit and juices plus other fruits and mixtures were eaten by about half the surveyed individuals in 1977 with individuals over 50 years old eating these items a little more frequently. Among fruit users, a total of about 250 gm of fruit was consumed by most groups of females and from 250 to 300 gm for most groups of men (23-to 34-year-old men consumed the most--305 gm). A medium-size apple is 138 gm and a 1/2 cup of fruit juice is 125 gm.

12.--Fats and Oils

This food group includes table fats such as butter, margarine, and lard; and other fats such as salad dressings, oils, shortening, sauces. Fats in meats are not included in this food group. The intakes of fats and oils were less than half as great in '77 as in '65, except among women and older teenage girls (table X). Among the younger men the number of users of fats and oils decreased markedly (from 75 to 59%) but these groups still had the highest average intake in '77 (1 ounce or 2 tablespoons a day). Intakes became somewhat smaller (down to 20 gm) with increasing age among both male and female users.

13.--Sugars and Sweets

America's sweet tooth is getting less conspicuous (table X). Average intakes of sugars such as sweet sauces, popsickles; sirup, honey, molasses; jelly, jam, gelatin desserts, and candy were only one-third to one-half the '65 intakes. Men had larger intakes of sugars and sweets than women and more men were users than women. However, in '65 over two-thirds of the men reported using sugar or sweets, whereas in '77 slightly over one-half did so. Among individuals who used sugar and sweets in '77, adults consumed 3 tablespoons (35-40 gm) a day and teenagers about 4 tablespoons (40-55 gm) a day. Use of sugar by children dropped also so that one-half rather than three-quarters of them used sugar or sweets on the survey day. Children consumed 2 tablespoons (20-27 gm) a day in '77 compared with 3-1/2 tablespoons (30-47 gm) in '65.

14.--Soft Drinks

Soft drinks became increasingly popular among all age groups except the very oldest. Four out of 10 toddlers had soft drinks in '77; in '65 the ratio was 3 out of 10 (table XI). About 10% more children (1 to 8 years) consumed soft drinks in '77 than in '65. Teenage boys (15 to 18 years) increased their average intake to 12-1/2 ounces or 1 can per day--3 ounces more than in '65. Three out of 5 teenage boys reported consuming soft drinks on the survey day. Although fewer young adults (19 to 22 years old) consumed soft drinks than 15-to 18-year-olds, those who did drank more--almost 2 cans a day for young men.

TABLE X. INTAKE OF FATS AND OILS, SUGARS AND SWEETS, PER INDIVIDUAL AND PERCENTAGE USING IN A DAY, 1965 AND 1977

Sex and age (years)	Individuals		Fats and oils					Sugars and sweets				
			Intake per individual		Individuals using		Intake per user	Intake per individual		Individuals using		Intake per user
	1965	1977	1965	1977	1965	1977	1977	1965	1977	1965	1977	1977
	Number		Gm	Gm	%	%	Gm	Gm	Gm	%	%	Gm
Males and females:												
Under 1.....	408	78	2	1	13	9	6	10	10	28	17	58
1-2.....	810	264	14	5	60	45	10	30	19	64	46	41
3-5.....	1,405	437	18	8	69	53	15	43	25	72	56	45
6-8.....	1,412	469	22	9	69	53	17	47	27	75	56	49
Males:												
9-11.....	665	216	28	11	73	55	19	55	37	75	62	60
12-14.....	627	313	34	12	74	61	20	60	42	72	56	75
15-18[1].....	562	400	39	16	69	54	30	59	30	68	54	55
19-22[1].....	251	287	46	17	75	59	29	49	22	63	42	51
23-34[1].....	1,406	770	42	18	75	61	29	44	19	73	49	38
35-50[1].....	2,050	784	39	19	77	66	29	46	24	71	57	42
51-64[1].....	742	634	35	18	70	67	27	47	27	73	58	47
65-74.....	460	295	30	17	68	70	24	46	25	71	67	38
75 and over.....	219	127	27	14	67	65	21	36	25	74	67	38
Females:												
9-11.....	599	241	21	10	66	53	18	48	34	72	57	60
12-14.....	626	309	25	11	73	48	24	51	22	68	49	45
15-18[1].....	538	402	22	12	65	57	21	41	19	62	43	44
19-22[1].....	232	337	23	13	65	53	25	39	14	66	41	35
23-34[1].....	1,846	949	23	15	70	61	24	35	18	65	51	35
35-50[1].....	2,492	942	23	14	71	64	22	32	19	62	55	34
51-64[1].....	916	792	24	15	70	67	22	33	20	63	52	38
65-74.....	624	377	20	13	68	69	19	31	21	62	57	36
75 and over.....	340	197	20	14	71	67	20	31	25	67	58	42

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-54, 55-64.

Sources: Food and Nutrient Intake of Indiviuals in the U.S., Household Food Consumption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977 unpublished preliminary data.

Among adults, average intake of soft drinks rose substantially but age was a factor in the number of users. In 1977 users accounted for more than one-half of those 23 to 34 years, about one-third of those 35 to 50 years, about one-fourth of those 51 to 64 years, and less than one-fifth of those 65 to 74 years.

15.--Alcoholic Beverages

The '77 data show some teenage consumption of alcoholic beverages whereas the '65 data showed little (table XI). Although only 2% of the 15-to 18-year-old boys reported consuming alcoholic beverages, those who did averaged 21 ounces, mostly beer. More 15-to 18-year-old girls reported consuming alcoholic beverages than boys of the same ages, but the girls drank less (14-1/2 ounces) and only half of their consumption was beer.

Adult intakes of alcoholic beverages were up markedly between '65 and '77 with a much higher proportion reporting consumption, particularly among women. In '65 only 2 to 9% of the women mentioned alcoholic beverages as part of their diet compared with 4 to 14% in '77. Intakes decreased considerably with increasing age for both sexes. Among women in '77, the proportion consuming alcoholic drinks was 14% until age 51 and over, then decreased to 6% of the oldest group; comparable proportions for men were 24% down to 8%. Beer was a significant portion of the alcoholic beverages for the youngest and oldest adults.

TABLE XI. INTAKE OF SOFT DRINKS AND ALCOHOLIC BEVERAGES PER INDIVIDUAL AND PERCENTAGE USING IN A DAY, 1965 AND 1977

Sex and age (years)	Individuals		Soft drinks					Alcoholic beverages				
			Intake per individual		Individuals using		Intake per user	Intake per individual		Individuals using		Intake per user
	1965	1977	1965	1977	1965	1977	1977	1965	1977	1965	1977	1977
	Number		Gm	Gm	%	%	Gm	Gm	Gm	%	%	Gm
Males and females:												
Under 1	408	78	4	15	3	11	127	0	0	0	0	0
1-2	810	264	68	106	29	40	269	0	0	0	1	76
3-5	1,405	437	111	163	36	48	340	0	0	0	0	98
6-8	1,412	469	144	182	39	50	365	0	0	0	0	0
Males:												
9-11	665	216	165	197	40	48	413	0	0	0	1	37
12-14	627	313	229	198	48	44	448	0	0	0	0	0
15-18[1]	562	400	285	379	52	60	630	0	12	0	2	611
19-22[1]	251	287	314	355	57	52	688	18	214	3	19	1,138
23-34[1]	1,406	770	229	284	45	54	525	136	203	19	24	840
35-50[1]	2,050	784	115	180	26	34	523	102	181	18	24	743
51-64[1]	742	634	75	96	18	25	382	91	100	16	19	522
65-74	460	295	46	72	12	17	432	35	52	8	12	440
75 and over	219	127	38	25	12	7	357	21	28	7	8	355
Females:												
9-11	599	241	167	231	42	52	446	0	0	0	0	0
12-14	626	309	187	239	45	53	455	0	1	0	1	111
15-18[1]	538	402	240	263	52	56	474	0	13	0	3	394
19-22[1]	232	337	246	283	53	53	530	4	25	1	6	396
23-34[1]	1,846	949	191	234	43	52	448	29	78	7	14	555
35-50[1]	2,492	942	99	150	26	35	426	32	43	9	13	336
51-64[1]	916	792	65	88	19	25	347	15	25	5	10	264
65-74	624	377	41	53	14	15	359	8	10	2	4	235
75 and over	340	197	27	42	8	14	292	3	10	1	6	187

[1]Age groups in 1965 survey differed as follows: 15-17 years, 18-19, 20-34, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consumption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977 unpublished preliminary data.

III. OVERVIEW OF INDIVIDUAL DIETS

The '77-78 individual food intake records have been translated into nutrient intakes and are now being analyzed. We can begin to make some comparison of nutrient intakes for groups of individuals in spring 1965 and spring 1977.

Individuals consumed fewer calories in '77 than they did in '65. This general reduction in caloric intake occurred for both males and females, but the decreases were more dramatic for the younger age groups. The mean intakes for infants declined the most, 7%. Children and teenage boys consumed 10 to 17% fewer calories in '77 while girls 9 to 18 years consumed 7 to 11% fewer. Caloric intakes dropped more for young adults than for older adults. Caloric intakes of men and women 65 years and over dropped the least between '65 and '77.

The average number of calories consumed in '77 was about 1,520 cal for women 35 to 64 years old and about 2,200 cal for men in the same age bracket.

A. Food Energy Intake of Dieters

Preliminary data are available now on groups of individuals who are on any kind of special diet. Further data processing will indicate whether the special diet was based on doctor's guidelines, a group diet program such as Weight Watcher's, a diet an individual devised for himself, or some other diet.

Among groups of females, the proportion dieting increased with age but declined slightly among the oldest women (table XII). Males also dieted, but in lower proportions than females did. For example, for individuals 19 to 34 years, 12 to 16% of the women dieted and 6% of the men; for individuals 65 to 74 years, 33% of the women dieted and 23% of the men.

Although the available data do not indicate what kind of diet these individuals were on, fewer calories were consumed on the average by dieting individuals. Young adult males who were dieting consumed about 370 cal less than nondieters in the same age group; older males 230 to 280 cal less. Caloric intake of women was more varied. Dieting teenagers and women 19 to 34 years old consumed between 180 and 560 cal less, women over 35 years consumed between 180 and 270 fewer cal. When one separates out dieters, mean caloric intake increases between 50 to 80 cal for most adult sex-age groups.

A small proportion of children, particularly infants, were on special, but not necessarily low-calorie diets. One out of 8 (12%) infants were on diets, consuming about 75 fewer cal than the nondieting infants. The 3% of the toddlers on special diets ate 300 more cal than nondieters, the 2% of dieting preschoolers consumed 100 fewer cal, and the 3% of dieting 6-to 8-year-olds consumed over 100 cal more.

B. Nutrient Intakes of All Individuals

Generally speaking, the intakes of the three main energy-producing nutrients--protein, fat, and carbohydrate--decreased from '65 to '77.

TABLE XII. FOOD ENERGY BY DIETING STATUS[1]

Sex and age (years)	Intake of food energy all individuals		Individuals on diets	Intake of dieter	Intake of nondieters
	1965	1977	1977	1977	1977
	Kcal	Kcal	%	Kcal	Kcal
Males and females:					
Under 1.....	962	794	11.8	732	806
1-2.....	1,405	1,164	2.3	1,452	1,162
3-5.....	1,703	1,435	1.6	1,338	1,438
6-8.....	2,017	1,111	3.0	1,844	1,706
Males:					
9-11.....	2,354	2,000	2.4	2,170	1,979
12-14.....	2,658	2,366	2.6	2,192	2,372
15-18[2].....	2,989	2,698	2.3	2,521	2,709
19-22[2].....	3,049	2,569	5.9	2,427	2,591
23-34[2].....	2,917	2,449	5.5	2,101	2,474
35-50[2].....	2,632	2,314	12.1	2,111	2,341
51-64[2].....	2,422	2,148	20.8	1,943	2,201
65-74.....	2,058	1,970	22.6	1,753	2,030
75 and over.....	1,878	1,808	18.8	1,985	1,767
Females:					
9-11.....	2,009	1,865	2.1	1,834	1,869
12-14.....	2,146	1,903	4.9	1,475	1,928
15-18[2].....	1,999	1,791	7.6	1,628	1,809
19-22[2].....	1,918	1,621	11.5	1,142	1,697
23-34[2].....	1,803	1,616	15.8	1,229	1,690
35-50[2].....	1,652	1,514	20.2	1,301	1,571
51-64[2].....	1,619	1,522	24.9	1,389	1,569
65-74.....	1,473	1,444	33.0	1,313	1,507
75 and over.....	1,459	1,367	30.1	1,361	1,370

[1]Dieting status unknown for 91 persons.
[2]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-64, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals on the U.S., Household Food Consumption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

Less protein was consumed by all sex-age groups (see table XIV). The drop in protein intake of infants (39 gm to 29 gm) may reflect a change in composition of baby formulas from those made with evaporated cow's milk, as was common in the 1960's, to the formulas developed to resemble human milk in the 1970's. Recall that human milk has about one-third as much protein as cow's milk. Breast-fed infants were not included in the calculation of dietary intakes. Mean protein intakes of older groups of children decreased also by about 10 gm. Intakes decreased more for men than for women. The reduced intakes, however were more than adequate to meet the 1974 Recommended Dietary Allowances (RDA) for all age groups.

Fat intakes decreased considerably from '65 to '77 for all sex-age groups, particularly infants (27%) and children (23%). The decline was smallest for elderly adults. Teenage boys (15 to 18 years old) and teenage girls (12 to 14 years old) consumed the greatest quantity of fat (see table XV). Despite the overall drop in fat intake, all sex-age groups except infants still consumed well above the level recommended by the American Heart Association--35% or less of calories from fat.

Carbohydrate consumption for most groups fell between '65 and '77 but increased for men, 65 to 74 years, and women, 65 years and over. Even though the absolute amounts of protein and carbohydrate decreased from 1965 for most age groups, the proportion of calories from them increased, because fat was contributing less to the caloric intake of individuals, especially infants and children.

Nutrient intakes decreased for some vitamins and minerals. Calcium intakes were lower for infants (24%), children (11 to 22%) and teenagers (3 to 15%) in '77 than in '65. For most adult groups, average calcium intakes were close to or above '65 levels. The calcium intakes were below the recommended '80 RDA levels for individuals of ages 3 to 5, 9 to 18, men over 34 years and all women.

Average intakes of iron increased in 1977 over 1965 for many sex-age groups but were still below RDA for females between the ages of 12 and 50. Mean iron intakes were also below the RDA for boys 12 to 18 and children 3 to 5 years (see table XVI). Although mean intake of iron appears to be more than 30% below the RDA levels for children 1 to 2 years, the iron intake for infants was over twice as high in '77 as in '65 and exceeded the '74 RDA. Iron fortification of cereals and formulas probably accounts for the increases.

Magnesium intakes were less in 1977 than estimates for 1965 for most groups of children and teenagers but higher for most groups of adults. All groups were below the RDA for magnesium, and females, 12 years and older, were more than 20% below the RDA levels for calcium and magnesium.

Vitamin A intake for nearly all sex-age groups was down in 1977 from 1965 levels except for the men 65 years and over and women over 50 years. Vitamin A intakes of the older adults were probably enhanced by the increased intakes of dark green vegetables, which are good sources of vitamin A.

Intakes of vitamin C were considerably higher (20 to 80%) in 1977 than average intakes in 1965. Fortification of beverages and other foods

and increased consumption of citrus fruit and juices contributed to the increase.

Average intakes of thiamin increased in 1977 over 1965 for all groups but younger men (19 to 34 years) in which the average was almost unchanged.

Riboflavin intakes of children and younger adult groups decreased between 1965 and 1977 but increased for adults 65 years and over.

Vitamin B_6 intakes were higher in 1977 than estimates for 1965 except for children 1 to 2 years; adults, 19 to 34 years old; and men, 35 to 50 years. It should be pointed out that the scarcity of food composition data for both vitamin B_6 and magnesium could explain, in part, the substandard mean intakes.

In the 1965 survey, average intakes of sex-age groups were compared with the 1968 RDA. Several sex-age groups then were below RDA for vitamin A, thiamin, riboflavin, and vitamin C. In 1977 the average intakes for these vitamins were above the 1980 RDA for all sex-age groups. Changes in RDA are responsible for some of the apparent improvement but increased fortification in foods and changes in foods consumed also contributed to the improvement.

The nutritional trends shown by comparison of data from the '65 and '77 surveys seem to indicate that the American public is beginning to respond to suggestions that Americans should reduce their caloric intake; therefore, reduce their consumption of fat, cholesterol, sugar, and salt and increase their consumption of fruits, vegetables, and grain products. However, the average figures discussed above are bound to obscure what is really happening. Some sex-age groups changing their dietary habits more markedly than other groups.

Data from the surveys must be interpreted with caution. Although a diverse population is represented, the data presented here are based on only 1 day of food intake by individuals. Food intake can vary greatly from 1 day to another; what one ate the day the interviewer asked them may have little relationship to their average food intake over a week, a month, or a year which is really what we need to know. Averages of 1-day intakes for any group can be legitimately analyzed but subsequent interpretation of these averages will not give us all that we would like to know about the adequacy of the American diet. Furthermore, the averages for the 3-day intakes, now being analyzed at USDA, may show different trends than those for 1-day intakes just presented.

IV. NUTRIENTS CONTRIBUTED BY FOOD GROUPS

Animal products provide major proportions of energy and nutrients for all sex-age groups. The meat, poultry, fish, and their mixtures group was an important source of energy and of 10 out of the 14 nutrients calculated for diets in the 1977 survey. Eggs are mainly a source of protein, fat, iron, vitamin A, riboflavin, and B_{12}. Milk is an excellent source of calcium and riboflavin and a good source of protein, phosphorus, vitamin A, niacin, and thiamin.

Food energy.--The meat, poultry, fish, and their mixtures group was the most important source of food energy for adults and slightly more so in '77 than in '65 (table XIII). Adults 35 to 64 years received 31 to 33% of their food energy from this group in '77; younger adults about 30%. Milk and milk products provided 20% of the food energy for children 3 to 11 years (somewhat less than in '65) and about 11% of the food energy for adults in 1977 (almost the same as in '65).

Grain products contributed proportionately more food energy for children 3 to 14 years (27 to 30% in '77) than meat, poultry, fish, and their mixtures did. For adults the contribution of grain products to food energy decreased slightly from 1965 intake data, for example, from 26 to 23% for women 23 to 34 years old.

The fats and oils group (butter, margarine, sauces, spreads, oils, salad dressing) contributed less to food energy in 1977 than in 1965. Preschoolers received 3% of their food energy from this group in 1977 compared with 5 percent in 1965; men (23 to 34 years) received 4% in 1977 compared with 7% in 1965. Fats and oils were also included in other food groups in 1977, for example, vegetables (when buttered) and salads (when with dressing).

Protein.--Protein from animal sources is roughly estimated here as protein from the milk, meat, and egg groups, and the remainder is assumed to be from plant sources. It is recognized that groups other than milk, meat, and eggs, such as grain mixtures may contain animal sources of protein. Also meat mixtures often contain plant protein. In 1977, 66 to 71% of the protein intake of sex-age groups over 1 year of age came from animal sources and 29 to 34% from plant sources. The percentage of protein from animal sources in the 1965 survey was a little higher--70 to 77%. Most of the plant protein came from grain products in both periods.

Meat, poultry, fish, and their mixtures contributed 50% or more of the protein in the diets of men 19 to 64 years and women 23 to 64 years of age in 1977. This food group also contributed over 50% of the protein for older adults in 1965 but only 42 to 48% in 1977. In 1977, children 1 to 2 years obtained only 32% of their protein from the meat group. This was the smallest proportion for any age group except infants under 1 year (table XIV). These toddlers received a slightly larger share (33%) from milk and milk products. Adult men and women obtained 12 to 20% of their protein from the milk group in 1977. Men, 65 years and over, received 6% of their protein from eggs, the largest proportion for any sex-age group.

For individuals over 1 year of age, grain products contributed between 17 to 22% of the protein, which was a slight increase from the '65 survey.

TABLE XIII. INTAKE OF FOOD ENERGY, KILOCALORIES PER PERSON AND PERCENT OF FOOD ENERGY CONTRIBUTED BY SELECTED FOOD GROUPS, 1 DAY, 1965 AND 1977

Sex and age (years)	Individuals		Intake of food energy all individuals		Milk, milk products		Eggs		Meat, poultry, fish, mixtures		Beef	Pork	Poultry	Lamb, veal, game
	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1977	1977	1977	1977
	Number		Kcal	Kcal	%	%	%	%	%	%	%	%	%	%
Males and females:														
Under 1.....	408	78	962	794	61.6	54.3	2.7	1.1	7.0	7.8	2.0	1.0	0.7	0.4
1-2.....	810	264	1,405	1,164	31.7	24.5	3.7	3.2	16.9	19.0	5.1	5.6	3.4	0.1
3-5.....	1,405	437	1,703	1,435	24.1	19.7	2.5	2.9	19.2	21.1	5.9	5.3	3.4	0.02
6-8.....	1,412	469	2,017	1,711	22.1	19.9	2.2	1.8	20.0	22.1	6.8	5.9	3.1	0.2
Males:														
9-11.....	665	216	2,354	2,000	20.2	18.1	2.3	2.3	20.7	24.4	7.7	6.0	3.3	0.4
12-14.....	627	313	2,658	2,366	19.3	16.8	2.3	2.3	21.9	25.2	7.7	6.4	2.9	0.02
15-18[1].....	562	400	2,989	2,698	17.8	15.8	2.8	2.1	23.5	28.1	10.4	6.0	3.5	0.1
19-22[1].....	251	287	3,049	2,569	16.9	13.2	2.7	2.1	25.7	30.8	12.1	6.3	4.5	0.1
23-34[1].....	1,406	770	2,917	2,449	10.7	10.8	3.7	2.6	31.2	30.8	11.3	7.4	3.2	0.2
35-50[1].....	2,050	784	2,632	2,314	10.3	10.0	3.8	3.2	31.0	32.8	11.2	7.4	3.6	0.2
51-64[1].....	742	634	2,422	2,148	9.7	9.9	4.2	3.0	31.7	32.5	11.0	8.8	3.8	0.4
65-74.....	460	295	2,058	1,970	11.9	11.4	5.0	3.4	27.7	29.0	9.8	7.9	3.8	0.3
75 and over.....	219	127	1,878	1,808	12.0	12.2	4.1	3.8	28.0	28.8	8.5	11.2	4.3	0.9
Females:														
9-11.....	599	241	2,009	1,865	21.4	17.3	2.5	1.5	19.4	22.9	7.3	5.7	3.6	0.1
12-14.....	626	309	2,146	1,903	19.4	17.3	2.2	1.8	22.4	24.8	8.2	6.1	3.5	0.1
15-18[1].....	538	402	1,999	1,791	17.3	15.5	2.6	1.9	25.5	26.2	8.5	5.6	4.2	0.5
19-22[1].....	232	337	1,918	1,621	15.0	14.1	2.6	3.0	26.7	29.7	10.0	7.9	4.1	0.2
23-34[1].....	1,846	949	1,803	1,616	11.9	12.2	2.9	2.8	28.9	29.4	9.9	6.7	4.2	0.3
35-50[1].....	2,492	942	1,652	1,514	11.6	10.2	3.7	2.7	30.0	31.9	11.0	7.1	4.3	0.4
51-64[1].....	916	792	1,619	1,522	11.4	10.5	3.9	2.8	30.2	30.6	11.1	6.8	4.3	0.5
65-74.....	624	377	1,473	1,444	12.7	12.6	3.8	2.5	28.0	26.9	7.7	7.6	4.7	0.6
75 and over.....	340	197	1,459	1,367	13.4	15.5	3.5	2.5	25.3	23.3	7.5	6.4	3.5	0.5

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-64, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consuption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

TABLE XIV. INTAKE OF PROTEIN, GRAMS PER PERSON AND PERCENT OF PROTEIN CONTRIBUTED BY SELECTED FOOD GROUPS, 1 DAY, 1965 AND 1977

Sex and age (years)	Individuals		Intake of protein, all individuals		Milk, milk products		Eggs		Meat, poultry, fish, mixtures		Beef	Pork	Poultry	Lamb, veal, game
	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1977	1977	1977	1977
	Number		Gm	Gm	%	%	%	%	%	%	%	%	%	%
Males and females:														
Under 1	408	78	38.9	29.2	70.2	61.5	3.7	1.4	12.6	15.3	3.7	1.7	1.5	0.9
1-2	810	264	56.3	46.1	40.7	32.8	6.0	5.0	29.9	31.6	9.2	7.1	7.3	0.1
3-5	1,405	437	64.9	55.1	31.1	26.5	4.4	4.8	36.4	37.0	10.7	7.6	7.7	0.1
6-8	1,412	469	75.8	65.9	28.6	26.7	3.8	2.8	38.7	39.2	11.8	8.8	7.5	0.4
Males:														
9-11	665	216	88.1	78.0	26.4	22.7	3.8	3.6	40.1	42.0	13.6	8.7	7.4	0.9
12-14	627	313	99.9	89.7	24.8	21.8	3.9	3.5	41.2	41.9	13.0	7.8	6.9	0.03
15-18[1]	562	400	113.8	106.6	22.2	20.1	4.7	3.3	44.2	46.9	16.7	8.8	8.6	0.2
19-22[1]	251	287	118.4	105.3	20.5	16.7	4.3	3.5	48.1	50.9	19.1	9.0	10.6	0.3
23-34[1]	1,406	770	118.6	98.1	12.5	14.0	6.0	4.3	56.5	50.5	18.3	10.6	7.1	0.3
35-50[1]	2,050	784	106.2	95.6	11.9	11.9	6.2	4.9	56.1	53.8	17.8	10.6	8.4	0.4
51-64[1]	742	634	98.0	90.1	11.7	11.8	6.8	4.7	56.4	53.1	17.1	12.6	8.3	0.8
65-74	460	295	82.5	81.0	14.9	14.2	8.4	5.6	50.3	48.3	16.2	10.9	8.6	0.5
75 and over	219	127	73.0	74.6	14.9	14.3	7.3	6.1	51.6	47.5	13.6	15.2	10.5	1.6
Females:														
9-11	599	241	75.1	70.4	27.5	22.6	4.1	2.4	38.7	41.3	13.4	8.5	9.3	0.2
12-14	626	309	80.6	73.2	24.9	22.4	3.6	3.3	42.6	41.5	13.0	9.2	8.2	0.2
15-18[1]	538	402	78.0	70.7	21.5	19.8	4.1	3.2	47.5	46.1	14.4	8.1	9.9	0.8
19-22[1]	232	337	75.5	66.7	17.8	17.9	4.3	4.3	50.9	48.3	16.1	11.0	8.9	0.6
23-34[1]	1,846	949	72.3	65.9	14.5	15.9	4.7	4.3	53.9	49.6	15.9	7.8	9.1	0.5
35-50[1]	2,492	942	68.3	63.9	13.6	12.7	5.8	4.2	55.5	52.5	17.6	9.9	9.4	0.8
51-64[1]	916	792	67.4	65.2	14.0	13.5	6.1	4.4	54.5	50.9	17.4	10.0	9.2	1.1
65-74	624	377	60.3	60.4	15.4	15.4	6.4	4.3	52.0	46.1	12.8	11.1	10.4	1.3
75 and over	340	197	58.8	54.1	16.5	20.3	5.9	4.2	50.0	41.9	13.4	10.3	8.1	1.0

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-64, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consuption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

Fat.--There were some interesting changes from 1965 to 1977 in the percentage of fat from some of the food groups (table XV). Except for children under 2 years of age, the largest percentage of fat in individual intakes comes from the meat group. The proportion of fat coming from the meat group increased from 1965 to 1977, and increases were greatest among children, preteen boys and girls, teenage boys, and men 19 to 22 years of age. The proportion for women over 65 years old decreased slightly. Another interesting shift from 1965 to 1977 was the increase in fat intake associated with potatoes. The increase was about 0.5 to 1.5 percentage points for most age groups; slightly more for female teenagers. Perhaps this is from increased use of potato chips and french fries, but this hypothesis has not been tested yet. Fat from table fats and the salad dressing group diminished from 1965 to 1977--about 5 percentage points for most age groups. Fat from grain products was down (1 to 2 percentage points) for most groups of adults, but increased slightly for children and teenagers. The sliht increase in proportion of fat contributed by the milk group is due to the increase in cheese consumption.

Carbohydrate.--The largest percentage of carbohydrate in individual intakes came from grain products, except for infants who obtained more carbohydrate from the milk group and noncitrus fruits and juices. Toddlers and young women (19 to 34 years) received about 36% of their carbohydrates from grain while older children and older adults received between 38 and 44%. The corresponding proportions for adults were somewhat higher in 1965.

White potatoes were a more important carbohydrate source for all ages in 1977 than in 1965. While the milk group provided a smaller share of carbohydrate to diets in 1977, beverages other than milk and fruit juice became a more important source of carbohydrate--ranging from 9 to 15% for individuals except children under 3 years and men 35 to 64 years. Carbohydrate from the sugars and sweets group, which includes sirups, jams, candy, popsicles, and gelatin desserts diminished from 1965 to 1977 for all groups. Most groups obtained 5 to 8% of their carbohydrate intake from the sugars and sweets group in 1977 compared with 10 to 15% in 1965. This decline of sugars and sweets does not necessarily mean that the overall amount of sweeteners in diets has dropped because intake of other foods with added sugar such as soft drinks, presweetened cereals, and baked goods has generally increased since 1965.

Calcium.--Along with an overall decrease in consumption of milk and milk drinks, the percent of calcium contributed by the milk group declined since 1965 for all sex-age groups. Meat, poultry, fish and their mixtures were a greater source of calcium for all sex-age groups in 1977 than in 1965. Grain products were an increasingly important source of calcium, particularly for infants and toddlers.

Iron.--The meat group had a smaller percentage contribution to iron intakes in 1977 than in 1965, while grain products contributed proportionately more (table XVI). However, both food groups are important sources of iron. In 1977 meat and grain each contributed 28 to 42% of the iron intake for males and females above age 6. Meat as a source of iron peaked for 35-to 50-year-old adults--about 38% of their iron came from meat, poultry, and fish, and their mixtures, whereas only 30% of iron came from the meat group for preteens. Iron from eggs decreased since 1965 because egg consumption has declined. The milk group was not a major source of

1965 & 1977

TABLE XV.--INTAKE OF FAT, GRAMS PER PERSON AND PERCENT OF FAT CONTRIBUTED BY SELECTED FOOD GROUPS, 1 DAY, ~~1 DAY~~,

Sex and age (years)	Individuals		Intake of fat, all individuals		Milk, milk products		Eggs		Meat, poultry, fish, mixtures		Beef	Pork	Poultry	Lamb, veal, game
	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1977	1977	1977	1977
	Number		Gm	Gm	%	%	%	%	%	%	%	%	%	%
Males and females:														
Under 1.....	408	78	41.6	30.4	73.2	67.9	4.8	2.4	9.9	12.9	3.0	1.6	1.5	0.7
1-2.....	810	264	64.6	48.9	36.0	30.3	6.0	5.5	26.0	29.9	8.5	10.5	4.7	0.1
3-5.....	1,405	437	78.6	61.0	27.2	24.5	4.2	5.1	29.7	32.9	9.7	10.3	4.7	0.04
6-8.....	1,412	469	93.5	72.4	25.1	24.3	3.6	3.2	30.3	34.7	11.3	11.2	4.4	0.2
Males:														
9-11.....	665	216	109.6	87.6	22.6	21.9	3.8	4.0	31.6	36.4	12.3	10.6	4.3	0.7
12-14.....	627	313	125.8	105.5	21.4	19.9	3.7	4.1	32.9	37.6	12.5	11.1	3.6	0.02
15-18[1].....	562	400	144.0	123.3	19.5	18.2	4.4	3.7	34.8	41.7	16.4	11.1	4.2	0.1
19-22[1].....	251	287	~~149.0~~ 144.0	118.4	18.1	16.0	4.4	3.7	37.1	44.4	17.8	11.2	5.8	0.2
23-34[1].....	1,406	770	146.1	114.8	11.6	13.1	5.8	4.1	44.2	44.7	16.8	12.6	4.1	0.2
35-50[1].....	2,050	784	132.4	109.3	11.5	12.2	5.8	5.2	44.0	46.8	16.8	12.8	4.5	0.2
51-64[1].....	742	634	121.3	101.6	10.9	12.0	6.4	4.8	45.8	46.3	16.0	14.6	4.7	0.5
65-74.....	460	295	100.6	92.8	13.2	13.9	7.8	5.5	41.0	42.2	15.0	13.6	4.8	0.4
75 and over.....	219	127	90.3	86.2	13.1	15.2	6.5	6.2	41.5	42.7	13.0	18.3	5.7	1.1
Females:														
9-11.....	599	241	92.2	79.1	24.6	21.8	4.2	2.6	29.2	35.4	11.8	10.8	5.1	0.1
12-14.....	626	309	100.4	85.3	21.8	21.3	3.6	3.3	34.2	36.6	12.6	10.7	4.4	0.2
15-18[1].....	538	402	93.9	80.5	19.1	18.5	4.3	3.1	38.2	38.1	13.0	9.7	5.4	0.8
19-22[1].....	232	337	89.8	75.9	16.5	17.1	4.2	4.8	39.6	42.2	14.3	13.0	5.2	0.3
23-34[1].....	1,846	949	86.5	73.7	13.2	15.1	4.6	4.8	42.3	42.3	14.3	11.7	5.3	0.3
35-50[1].....	2,492	942	80.2	70.8	12.8	12.2	5.8	4.3	42.8	45.4	16.5	11.9	5.4	0.6
51-64[1].....	916	792	79.9	71.2	12.2	12.3	6.0	4.7	43.6	43.9	16.3	11.4	5.6	0.7
65-74.....	624	377	70.4	65.8	14.0	15.6	5.9	4.2	40.9	39.8	11.9	13.1	6.2	0.9
75 and over.....	340	197	68.3	59.0	15.5	19.8	5.6	4.4	37.2	36.6	12.5	11.4	4.7	0.8

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-64, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consuption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

TABLE XVI. INTAKE OF IRON, MILLIGRAMS PER PERSON AND PERCENT OF IRON CONTRIBUTED BY SELECTED FOOD GROUPS, 1 DAY, 1965 AND 1977

Sex and age (years)	Individuals		Intake of iron, all individuals		Milk, milk products		Eggs		Meat, poultry, fish, mixtures		Beef	Pork	Poultry	Lamb, veal, game
	1965	1977	1965	1977	1965	1977	1965	1977	1965	1977	1977	1977	1977	1977
	Number		Mg	Mg	%	%	%	%	%	%	%	%	%	%
Males and females:														
Under 1.....	408	78	5.9	17.4	5.0	28.3	5.6	1.2	11.7	7.5	1.7	0.8	0.5	0.3
1-2.....	810	264	6.9	7.9	1.9	6.2	8.5	5.6	30.2	22.6	6.8	6.2	3.2	0.04
3-5.....	1,405	437	8.5	9.5	1.8	5.2	5.7	5.1	34.0	25.9	8.2	5.9	3.3	0.04
6-8.....	1,412	469	10.1	11.1	1.7	5.0	4.8	3.2	34.7	27.7	9.2	6.8	2.9	0.3
Males:														
9-11.....	665	216	12.0	13.3	1.5	4.4	4.8	3.7	35.5	30.4	10.3	7.3	3.0	0.5
12-14.....	627	313	13.8	15.3	1.5	4.4	4.8	3.6	36.5	30.5	10.2	6.7	2.7	0.04
15-18[1].....	562	400	15.9	17.1	1.6	4.1	5.6	3.4	38.7	35.4	13.5	7.0	3.5	0.1
19-22[1].....	251	287	16.6	16.0	1.7	3.6	5.3	3.6	42.8	39.1	16.0	7.6	4.7	0.1
23-34[1].....	1,406	770	17.9	15.9	1.0	2.9	6.7	4.3	46.3	38.3	14.8	8.4	3.1	0.3
35-50[1].....	2,050	784	16.7	15.8	1.0	2.2	6.8	5.1	44.2	39.2	14.0	8.3	3.4	0.3
51-64[1].....	742	634	15.9	15.5	1.1	2.1	7.3	4.7	43.9	37.4	13.0	9.6	3.4	1.7
65-74.....	460	295	13.5	14.5	1.1	2.4	8.9	5.2	37.4	32.2	11.4	8.4	3.5	0.2
75 and over.....	219	127	11.5	13.4	1.2	2.4	8.0	5.8	36.2	30.9	9.5	11.2	3.8	0.9
Females:														
9-11.....	599	241	10.2	11.9	2.0	4.2	5.1	2.6	35.1	28.9	10.1	6.8	3.5	0.1
12-14.....	626	309	11.1	11.6	1.7	4.5	4.5	3.2	37.9	31.4	10.6	7.4	3.4	0.1
15-18[1].....	538	402	11.0	11.1	1.6	4.0	4.9	3.5	41.8	33.7	11.7	6.7	4.1	0.5
19-22[1].....	232	337	10.9	10.5	1.4	3.8	5.1	4.6	40.5	37.2	13.2	9.2	4.2	0.4
23-34[1].....	1,846	949	11.3	10.7	1.7	3.3	5.2	4.5	43.1	35.4	12.5	7.4	3.9	0.4
35-50[1].....	2,492	942	10.9	10.7	1.7	2.7	6.2	4.2	42.2	36.5	13.5	7.7	3.9	0.6
51-64[1].....	916	792	10.8	11.4	1.6	2.4	6.6	4.3	40.0	35.0	13.3	7.4	3.8	1.8
65-74.....	624	377	9.9	10.6	1.6	2.4	6.8	4.1	38.3	29.7	9.8	8.0	4.1	0.8
75 and over.....	340	197	9.2	10.1	1.4	3.1	6.4	4.0	36.4	27.2	9.6	6.9	3.4	0.5

[1]Age groups in 1965 survey differed as follows:
15-17 years, 18-19, 20-34, 35-64, 35-54, 55-64.

Sources: Food and Nutrient Intake of Individuals in the U.S., Household Food Consuption Survey, 1965-66, Report 11 and USDA Nationwide Food Consumption Survey, 1977-78, 48 conterminous States, spring 1977, unpublished preliminary data.

iron except for infants. In 1977 more than 25% of the infant iron intake came from this source compared with 5% in the 1965 survey, probably because of the increased use of iron-fortified formulas.

Magnesium.--Milk and milk products were an important source of magnesium, supplying 22 to 35% of its intake by children and teenagers and 10 to 14% of adult intakes. Meat, poultry, fish, and their mixtures contributed nearly 20% the magnesium in adult individual diets; somewhat less for children and adults over 65 years. Grain products were equally as important as the meat, poultry, fish, and their mixtures group for younger adults (19 to 34 years) and more important for the children and adults over 65 years.

Phosphorus.--Lean muscle meats, poultry, and fish are excellent sources of phosphorus, and in '77 this group contributed one-third of the phosphorus in adult diets and somewhat less for younger and older individuals. Milk and milk products were more important sources of phosphorus than the meat group for individuals 18 years or younger. Eggs contributed about 4% of the phosphorus in diets. Grain products contributed about 20% of the phosphorus for most individuals and vegetables contributed less than 10% in 1977.

Vitamin A.--Grain products contributed proportionately more to vitamin A intakes in 1977 than in 1965 partly because of more fortification of breakfast cereals. As age increased, the contribution of grains decreased in importance--from 27% for children 9 to 11 years to 15% for 75-year-olds and over. The milk group, also because of fortification, added proportionately more vitamin A to individuals' diets in 1977 despite the lower consumption of milk and milk products. Dark green and deep yellow vegetables contributed a much smaller proportion of the vitamin A intake in 1977 compared with 1965. Vegetables (other than white potatoes, tomatoes, and dark green and deep yellow vegetables) were also important sources of vitamin A; their contribution ranged from 8 to 21% throughout the various sex-age groups. The meat group contributed a much smaller proportion of the vitamin A intake in '77 than in '65 due to the greater share of vitamin A contributed by fortified cereals and milk in '77 and a drop in the consumption of organ meats and their mixtures from '65 to '77.

Thiamin.--Moderate amounts of thiamin came from milk products for children and teenagers with a lesser proportion for adults. Meat, poultry, fish, and their mixtures contributed about one-fourth the thiamin in individual diets. This was less than in '65 partly because of the decreased consumption of pork. (Pork is richer in thiamin than is beef.) Thiamin intake is aided by the enrichment of white rice and white flour. The grain products group contributed about 40% of the thiamin to individuals' diets in 1977 compared with about 30% in 1965.

Riboflavin.--Although milk is an excellent source of riboflavin, less riboflavin came from the milk group in 1977 than in 1965 because of decreased milk product consumption. Preschoolers' intake of riboflavin from this food group decreased from 57 to 39%; adults' intake decreased from around 30 to 23%. The apparent decline in riboflavin from meat, poultry, fish, and their mixtures from '77 to '65 is due to recent changes in the nutrient composition values for chicken. Grain products contributed from 25 to 30% of the riboflavin in '77 compared with 15 to 20% in '65.

Preformed Niacin.--Meat, poultry, fish, and their mixtures contributed about 45% of the preformed niacin in adult diets. Grain products contributed about 25% and white potatoes 5 to 7%. Whole-grain products are good sources of niacin, but they contributed proportionately less to niacin intake than refined, enriched breads and other baked products since they are less popular.

Vitamin B_6 and B_{12}.--Poultry is a particularly good source of B-vitamins, and the meat, poultry, fish, and their mixtures group contributed about 40 to 45% of the vitamin B_6 and about 50 to 60% of the vitamin B_{12} in adult diets. In 1977, grain products contributed about 15% to 20% of the B_6 and and 7% of the B_{12} for adult diets; whereas the milk group contributed about 8% of the B_6 and 25% of the B_{12}. For adults, eggs supplied about 2% of the vitamin B_6 intake and 9% of the B_{12} intake.

Vitamin C.--The tomatoes and citrus fruits was the main source of vitamin C, more so for females than males. Younger females received about 25% of their vitamin C intake from tomatoes and citrus fruits in '77 compared with about 42% in '65. Older adults decreased their intake of vitamin C from the citrus fruit and tomato group the least of the surveyed individuals--30 to 35% in '77 compared with 39 to 46% in '65. Dark green and deep yellow vegetables decreased in importance as sources of vitamin C, while white potatoes increased. Increased consumption of nonalcoholic beverages, some of which are now fortified with vitamin C, became an important source of vitamin C for younger males and females.

V. CONCLUSION

Preliminary data from the household food phase of the survey indicate that the percentage of total money for food that was spent on food away from home increased significantly between 1965 and 1977. Preliminary data on food intake for individuals reconfirm this trend in terms of increases in nutrient intakes from food outside the home, especially for preschoolers and younger women. Household income had less effect on food at home than food away from home. Household members changed their consumption of certain food groups as explained in this paper, and these changes have affected the use of the food dollar and the nutrient intakes of individuals.

The reduction in caloric intake of all sex-age groups from 1965 to 1977 may indicate that individuals are trying to improve their health through dietary means. Younger men and women apparently gave more heed to warnings about excessive intakes of fat and cholesterol than did older men. Diets of teenage girls and women still did not meet recommendations for iron and calcium. Diets of senior citizens apparently improved between 1965 and 1977.

Animal products provide major proportions of energy and nutrients for all sex-age groups, but shifts in consumption patterns have occurred among and within the milk, egg, and meat groups since 1965. Within the grain group, ready-to-eat cereals became an important source of vitamins and minerals (due to fortification), especially for younger individuals. Fruits and vegetables generally increased in adult diets, providing fiber and major portions of vitamins A and C.

As data from the 1977-78 (NFCS) are processed, more detailed information on household composition, use of income for food purchases, and effect of geographical area will become available. Data on individual intake will be analyzed for nutrient density, shifts among subgroups of food groups, and information on the manner in which foods are combined in meals for the various sex-age groups will also be reported.

REFERENCES

Consumer and Food Economics Institute (1979). "Money Value of Food Used by Households in the United States, Spring 1977." Nationwide Food Consumption Survey 1977-78, Preliminary Report No. 1. Science and Education Administration.

Cronin, F. J. (1979). "Changes in Nutrient Levels and Food Used by Households in the United States, Spring 1965 and 1977." Talk at 1980 Agricultural Outlook Conference, November 6, 1979.

Hama, M. Y. (1979). "Changes in Food Consumption in the United States, Spring 1965 and 1977." Talk at 1980 Agricultural Outlook Conference, November 6, 1979.

Pao, E. M. (1979). "Nutrient Consumption Patterns of Individuals in 1977 and 1965." Talk at 1980 Agricultural Outlook Conference, November 6, 1979.

Pao, E. M. (1980). "How Eating Patterns Have Changed 1965 to 1977." Talk at Home Economics Association, Washington, D.C. Chapter, March 27, 1980.

Pao, E. M. (1980). "Food Consumption Trends: What Americans Are Eating, How This is Changing, and A Nutritionist's Assessment of the Significance." Talk at Institute of Food Technologists, June 11, 1980.

Rizek, R. L., and Jackson, E. M. "Current Food Consumption Practices." Talk at International Conference "Implementing the Dietary Guidelines," sponsored by the American Health Foundation in New York City on May 14, 1980.