

FOOD HABITS OF FAMILIES IN THE EASTERN HEALTH DISTRICT OF BALTIMORE IN THE WINTER AND SPRING OF 1943¹

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THE quality of diets is a matter of interest at this time because of the importance of proper food in maintaining health during the emergency. According to a recent report from the National Research Council's Food and Nutrition Board, every nutritional survey in the past decade has indicated that a large proportion of families have diets below the recommended standard (1). During the period 1940-1943 there has been a great increase in the purchasing power of many people. The increased market demand is evidence that a considerable share of this increased purchasing power has gone into food. A survey of food habits in a population group in a war industry center, which has provided information describing the quality of diets obtained during the period of increased purchasing power and since food rationing has been in effect, is certainly of current interest.

This report presents data from two records of food used during one week for a sample of 943 white families living in the Eastern Health District of Baltimore. The data were obtained at two different periods in 1943, January and February, and again in April and May; that is, before and after the beginning of rationing of processed foods, meats, and fats.²

THE SAMPLE

The families surveyed were from a population which was being visited for the purpose of collection of data on illness. When the special study of illness was initiated in May, 1938, the Eastern

¹ From the Milbank Memorial Fund and the United States Public Health Service.

² Rationing of canned vegetables, canned fruits, and fruit juices, dried beans, and certain frozen foods was started March 1, 1943. Rationing of meats, cheese, canned fish, canned milk, butter, and other fats started March 29, 1943.

Health District of Baltimore consisted of two city wards containing 10,979 white families or households, including approximately 43,000 persons, and 2,800 colored households, including 12,363 persons.⁸ As far as the white population is concerned, the district is considered as fairly representative of the localities in the city in which the wage-earning population live; that is, it contains some families in relatively poor economic circumstances, wage-earning families in moderate circumstances, relatively few families in the professional class, and no families that can be classed as wealthy. Consequently, the district cannot be considered as strictly representative of Baltimore as a whole, but is probably representative of the population which forms the greatest majority in the City.

The method of sampling for the initial population in the illness study has been described in detail in a previous report (2). It is sufficient here to say that the white families living in thirty-five city blocks scattered throughout the two wards formed the sample population. The sample was found to be representative of the population of the district from which it was drawn with respect to age constitution, size of household, and home ownership.

The study of illness extended over a period of five years. At the end of three years it was decided to change the sample being studied by increasing the number of families in which there was a case of chronic illness. Accordingly one-half of the total families with no chronic disease in them were dropped from observation and another thirty-five blocks in the district were surveyed in order to discover additional families with chronic illness. This meant that at the beginning of the fourth year of study the number of families with chronic illness was doubled with the result that the sample was then about evenly divided between families with no case of chronic illness and those having one or more cases of chronic disease.

⁸ A few months after the special study of illness was started, the Eastern Health District was enlarged so that it now includes a population of approximately 100,000. Any reference to the Eastern Health District in this paper, however, is to the former district composed of Wards 6 and 7.

The records of food habits were obtained in 1943, near the end of the fifth year of the sickness study. The 943 families constitute about 80 per cent of the total families being visited at that time. It is recognized that chronic diseases, with a few exceptions, tend to occur most frequently among persons in the middle and old-age periods. Therefore, the families studied for food habits are weighted with more of the older families than would be the case if the sample consisted of a cross-section or entirely random selection of families in the district from which they were drawn. However, the data on food habits of the family are shown according to the age of the housewife. In this way it is possible to bring out clearly the influence of older families upon the presentation of data on food habits for the community.

DESCRIPTION OF THE FAMILIES

Certain characteristics of the families surveyed for food habits are presented which are of interest in relation to the family dietary pattern. The distribution of the families according to age of house-

Table 1. Distribution of families according to age of housewife.

| Age of Housewife | Per Cent | Number of Families |
|-------------------|----------|--------------------|
| TOTAL | 100.0 | 943 |
| Under 20 Years | 0.4 | 4 |
| 20-24 Years | 4.8 | 45 |
| 25-29 " | 8.0 | 76 |
| 30-34 " | 10.1 | 95 |
| 35-39 " | 10.4 | 98 |
| 40-44 " | 11.3 | 107 |
| 45-49 " | 11.6 | 109 |
| 50-59 " | 22.9 | 216 |
| 60 Years and Over | 20.5 | 193 |

wife is shown in Table 1. In 23 per cent of the families the housewife was under 35 years of age; in 33 per cent she was from 35 to 49 years of age; and 43 per cent of the housewives were 50 years of age or older. Age of housewife was found to be a factor related to the dietary pattern of the family; consequently, the data on food habits are presented according to three age groups: (1) for families where the housewife was under 40 years of age; (2) families where the

housewife was under 40 years of age; (2) families where the

housewife was 40-59 years of age; and (3) those where the housewife was 60 years of age or over.

Table 2 shows the families classified according to whether there were one or more members of the family employed and indicates also whether some members were employed in industries engaged in defense work. Eighteen per cent of the families where the housewife was 60 years of age or over had no employed person in them. It is to be expected that in this group there would be a relatively high proportion of families living on savings or other income but with no income from employment. It is apparent that in the majority of the families in two of the groups there was one or more members of the family employed in defense work; the proportions were

Table 2. Distribution of families according to employment of members.

| TYPE OF EMPLOYMENT | TOTAL FAMILIES | AGE OF HOUSEWIFE | | | |
|--|--|------------------|-------|----------------|------|
| | | Under 40 | 40-59 | 60 and Over | |
| TOTAL | PER CENT | | | | |
| | 100.0 | 100.0 | 100.0 | 100.0 | |
| | No Employed Persons in Family | 6.3 | 1.6 | 4.6 | 17.6 |
| | Some Persons Employed, None in Defense Work | 34.8 | 31.2 | 35.6 | 38.8 |
| | Some Persons Employed, Some in Defense Work | 57.6 | 65.2 | 58.6 | 41.5 |
| | Some Persons Employed, Unknown as to Defense Work | 1.3 | 1.0 | 1.2 | 2.1 |
| | NUMBER OF FAMILIES | | | | |
| | TOTAL | 943 | 318 | 432 | 193 |
| | No Employed Persons in Family | 59 | 5 | 20 | 34 |
| | Some Persons Employed, None in Defense Work | 328 | 99 | 154 | 75 |
| Some Persons Employed, Some in Defense Work | 543 | 210 | 253 | 80 | |
| Some Persons Employed, Unknown as to Defense Work | 12 | 3 | 5 | 4 | |
| Unknown | 1 | 1 | — | — | |

| NUMBER OF PERSONS | PER CENT | | | | NUMBER OF FAMILIES | | | |
|-------------------|----------------|------------------|-------|-------------|--------------------|------------------|-------|-------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 884 | 313 | 412 | 159 |
| None | 30.3 | 31.6 | 24.3 | 43.4 | 268 | 99 | 100 | 69 |
| 1 Person | 42.7 | 46.3 | 41.7 | 37.7 | 377 | 145 | 172 | 60 |
| 2 Persons | 17.8 | 16.6 | 20.4 | 13.2 | 157 | 52 | 84 | 21 |
| 3 " | 6.4 | 2.9 | 10.2 | 3.8 | 57 | 9 | 42 | 6 |
| 4 " | 1.5 | 1.0 | 1.9 | 1.3 | 13 | 3 | 8 | 2 |
| 5 " | 1.1 | 1.3 | 1.5 | 0 | 10 | 4 | 6 | — |
| 6 " | 0.1 | 0.3 | — | 0 | 1 | 1 | — | — |
| 7 " | 0.1 | — | — | 0.6 | 1 | — | — | 1 |

Table 3. Distribution of families according to number of workers taking lunch from home.

42 per cent in the oldest families, 59 per cent in the age group 40-59, and 65 per cent in the youngest age group.

Table 3 shows that in a considerable number of the families with employed members, lunch was being taken from home by the workers. The proportion of families with workers taking lunch from home was least in the oldest families (57 per cent) and great-

Table 4. Number of persons in family.

| NUMBER OF PERSONS | PER CENT | | | | NUMBER OF FAMILIES | | | |
|-------------------|----------------|------------------|-------|-------------|--------------------|------------------|-------|-------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 1 Person | 4.3 | 0.3 | 3.5 | 13.0 | 41 | 1 | 15 | 25 |
| 2 Persons | 23.9 | 16.1 | 22.7 | 39.4 | 225 | 51 | 98 | 76 |
| 3 " | 25.1 | 25.2 | 26.1 | 22.8 | 237 | 80 | 113 | 44 |
| 4 " | 18.7 | 25.5 | 16.9 | 11.4 | 176 | 81 | 73 | 22 |
| 5 " | 12.9 | 15.4 | 12.7 | 9.3 | 122 | 49 | 55 | 18 |
| 6 " | 8.2 | 10.1 | 9.3 | 2.6 | 77 | 32 | 40 | 5 |
| 7 " | 3.8 | 5.0 | 4.4 | 0.5 | 36 | 16 | 19 | 1 |
| 8 or More | 3.1 | 2.4 | 4.4 | 1.0 | 29 | 8 | 19 | 2 |

est (76 per cent) for families where the housewife was 40-59 years of age.

It may be concluded that the families surveyed represent chiefly those with workers in them, many of whom were engaged in defense work. This fact adds special interest to a study of the food habits of the families from which they come.

In Table 4 the families are classified according to the number of persons present when visited in 1943. The families where the housewife was under 40 had the highest proportion with four or more persons in them. The majority of the families where the housewife was 60 years of age or older were one or two-person households; 52 per cent were in this class.

Table 5. Distribution of families according to weekly food expenditure.

| WEEKLY FOOD EXPENDITURE PER ADULT COST UNIT | TOTAL FAMILIES | AGE OF HOUSEWIFE | | |
|---|--------------------|------------------|-------|-------------|
| | | Under 40 | 40-59 | 60 and Over |
| TOTAL Under \$2.50 \$2.50-\$3.49 3.50- 4.49 4.50- 5.49 5.50- 6.49 6.50- 7.49 7.50 and Over | PER CENT | | | |
| | 100.0 | 100.0 | 100.0 | 100.0 |
| | 2.5 | 1.1 | 2.2 | 5.5 |
| | 9.4 | 8.0 | 9.0 | 12.7 |
| | 20.6 | 18.5 | 18.5 | 29.1 |
| | 25.6 | 26.1 | 25.9 | 24.2 |
| | 20.6 | 18.8 | 24.8 | 14.5 |
| | 10.5 | 13.9 | 10.1 | 5.5 |
| | 10.8 | 13.6 | 9.5 | 8.5 |
| | NUMBER OF FAMILIES | | | |
| | 943 | 318 | 432 | 193 |
| | 20 | 3 | 8 | 9 |
| | 77 | 23 | 33 | 21 |
| | 169 | 53 | 68 | 48 |
| | 210 | 75 | 95 | 40 |
| 169 | 54 | 91 | 24 | |
| 86 | 40 | 37 | 9 | |
| 88 | 39 | 35 | 14 | |
| Unknown | 124 | 31 | 65 | 28 |

The housewife was asked to give information as to the amount of money spent for food during the seven-day period preceding the visit. Table 5 shows the weekly food expenditure per adult cost unit for the 943 families classified by age of the housewife.⁴ In 1943 a weekly food expenditure of less than \$3.60 per adult cost unit may be considered as an inadequate amount for obtaining a proper diet.⁵ It is apparent that relatively few families in any age group spent less than an adequate amount of money per week. The highest proportion in this class, 18 per cent, was noted in the families where the housewife was 60 years of age or over. On the whole, families in this age group tended to fall into lower weekly food-expenditure classes than did the younger families.

DESCRIPTION OF DATA OF FOOD HABITS

Information concerning the use of different foods for a seven-day period before and after rationing of processed foods, meats, and fats was obtained for each of the 943 families. The first record for these families was obtained during January and February, 1943; the second was obtained during April and May of the same year.

The seven-day report was designed to describe qualitative food habits of the family. The housewife was asked to give information as to the amount or frequency of use of specific foods during the seven-day period preceding the visit. The information for each type of food was as follows:

1. The amount of milk
2. The amount and kind of cheese
3. Number of eggs
4. The amount of butter or enriched oleomargarine

⁴ Weekly food expenditure is expressed per adult cost unit because this method allows for the relative cost of maintenance of children and adults.

⁵ According to the U. S. Bureau of Labor Statistics the average cost of food in Baltimore during the period January to May, 1943 was about 43 per cent above the average for the years 1935-1939 (3). In March, 1935 the minimum weekly amount of money necessary for a good diet was \$2.52 per adult cost unit (4). Increasing this amount by 43 per cent, the minimum weekly expenditure necessary for a good diet in 1943 was \$3.60 per adult cost unit.

5. Citrus fruits, times used
6. Tomatoes, times used
7. Other fruits, times used
8. Potatoes (white), times used
9. Vegetables, times used for each kind
10. Kinds and times meat used
11. Dried beans or peas, times used
12. Bread and cereals, times used for each kind

Before the data on use of different foods are discussed, it will be helpful to consider the significance of the recommended foods with reference to their contribution to a balanced diet with adequate amounts of various essential nutrients. Although some of the essential nutrients are distributed in nature in many different foods, several are present in appreciable amounts in only a few foods. An important example of the latter is ascorbic acid. Citrus fruits and tomatoes are very good sources of this vitamin, and although a few other foods also are moderately good sources, most diets will contain insufficient amounts of ascorbic acid unless a citrus fruit or tomato is included regularly in the diet. The vitamin A allowance can be obtained from various combinations of foods; nevertheless, a green or yellow vegetable of high vitamin A content usually is essential because it can be replaced satisfactorily only by an exceptionally large consumption of dairy products. The amount of milk daily which is recommended not only is needed to assure a good source of calcium and to supplement the vitamin A from vegetables, but also is almost indispensable for obtaining the amount of riboflavin which is considered necessary. Meat is the next best source of riboflavin, but some methods of cooking destroy a large percentage of the riboflavin, and only those who eat exceptionally large quantities of lean meat daily are likely to have an adequate amount of riboflavin unless milk is included in the diet. Meat is the best source of niacin (nicotinic acid). Thiamin is rather widely distributed in foods, but not in concentrated amounts. Milk, meat, and

some vegetables are fairly good sources of thiamin, but there may be considerable loss from cooking. Eggs are not the most important source of any of the nutrients, but they are a good source of several vitamins as well as of iron and protein. The regular consumption of eggs, therefore, is desirable as a supplement to other foods. Thus, it is apparent that a regular and adequate supply of the principal vitamins and minerals under most circumstances can be obtained best by the consumption each day of a green or yellow vegetable, a citrus fruit or tomato, two glasses of milk or equivalent, an egg, and a serving of lean meat. Whole grain cereal food or bread is also important in the diet, but the enrichment of cereal products has somewhat modified the need for whole grain products. Other food combinations can be used to obtain complete nutritional protection, but as a rule only very specially planned diets furnish all the necessary nutrients when these varieties of foods are not included. The total diet should include other foods, especially butter or fortified oleomargarine, and potatoes, and an amount of food sufficient to furnish the required energy value.

The records of foods used by the families studied contain both quantitative and nonquantitative data. They show food choice of the family as a whole and indicate fairly well the possibility of certain dietary deficiencies. Distribution of the foods among different family members is not necessarily equal and that fact must be kept in mind in the interpretation of the data presented in this study.

FREQUENCY IN USE OF SPECIFIC FOODS

The reported frequency in the use of specific foods is shown in Figures 1 and 2 and in Appendix Tables 1 to 9.

Fruits. From 36 to 52 per cent of the families reported that fruit was used two or more times a day. The youngest families (housewife under 40 years of age) used fruit most frequently and the oldest families least frequently.

A higher proportion of the families reported a satisfactory use

of citrus fruits and tomatoes than was true for all fruits. From 58 to 78 per cent used these fruits six or more times a week.

Milk. Most of the families used less milk than the recommended amount. Only 30 to 42 per cent of the families used 3.5 quarts or more per person per week.

Vegetables. Few families reported using an average of two vegetables a day in addition to using potatoes as recommended.⁶ From 18 to 21 per cent of the families reported that vegetables of any type, including white potatoes, were eaten as many as nineteen or more times in a week; from 1 to 9 per cent had eaten vegetables less than six times a week.

The use of green or yellow vegetables was relatively infrequent; from 70 to 74 per cent of the families reported eating vegetables in this class less than seven times a week, from 13 to 33 per cent had green or yellow vegetables less than three times a week. The lack of green or yellow vegetables in the diet was specially noted in the families where the housewife was 60 years of age or older.

Meat. Lean meat, fish, or poultry was eaten at least once a day by most of the families; from 15 to 25 per cent had meat less than six times a week. The families in all three age groups had fairly similar habits with regard to the frequency of use of meat.

Eggs. From 8 to 20 per cent of the families used less than 2.5 eggs per person per week; from 23 to 31 per cent averaged one a day per person per week.

Butter. From 28 to 41 per cent of the families used less than one-quarter of a pound of butter or enriched oleomargarine per person per week. Although the older families used somewhat more butter per person than did the other two groups of families, on the whole the three groups of families were fairly similar as to the amounts used in a week.

⁶ On counting the number of times all vegetables were used during a week, white potatoes were included a maximum of seven times. Although many families used potatoes more than seven times a week, it was felt that this should not substitute for the use of other vegetables.

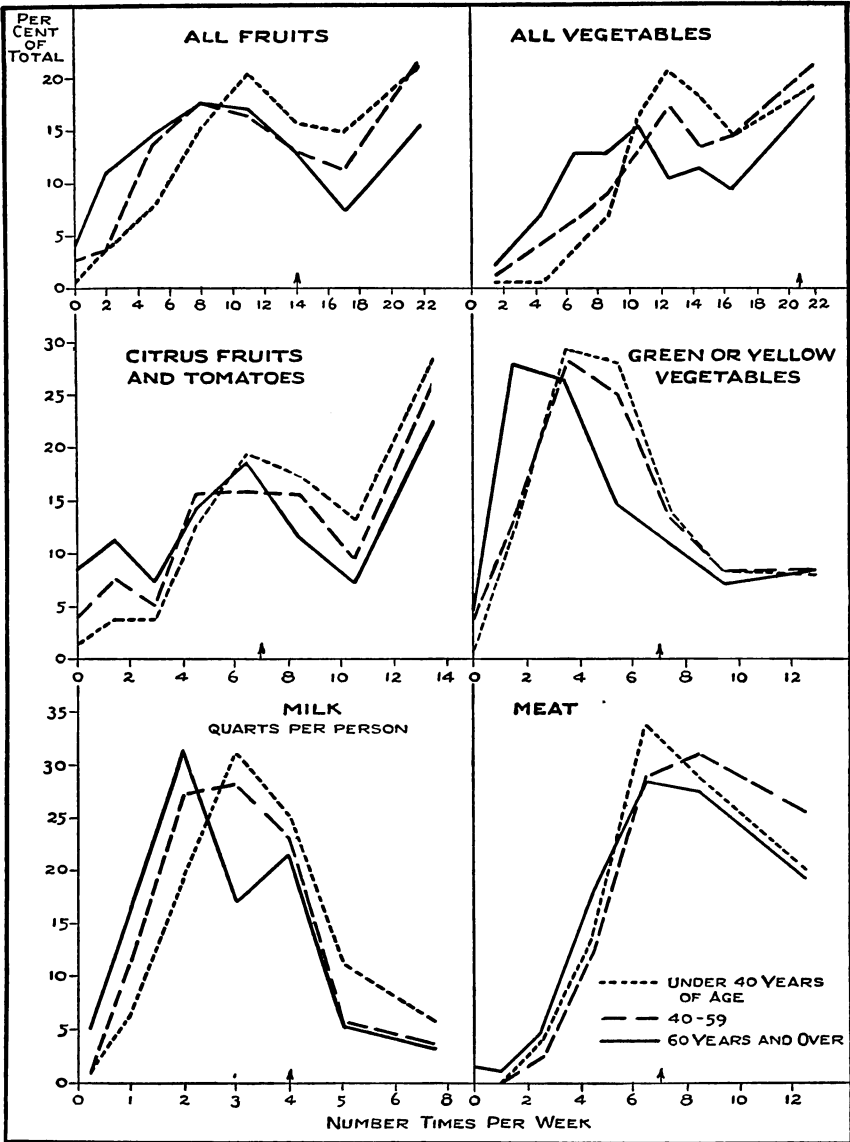


Fig. 1. Percentage distribution of diet records for 943 families in the Eastern Health District of Baltimore according to the reported use of specific foods or food groups during one week, January and February, 1943. (The arrow indicates the frequency of use which approximately corresponds to that in the recommended dietary pattern.)

Whole Grain Cereal Foods (Appendix Table 9). Use of dark bread and whole grain cereals has been generally advocated and the

consumption of these foods, therefore, is of interest. The younger families used dark bread only slightly more frequently than did the older families; from 41 to 49 per cent reported eating dark bread at least once a day.⁷

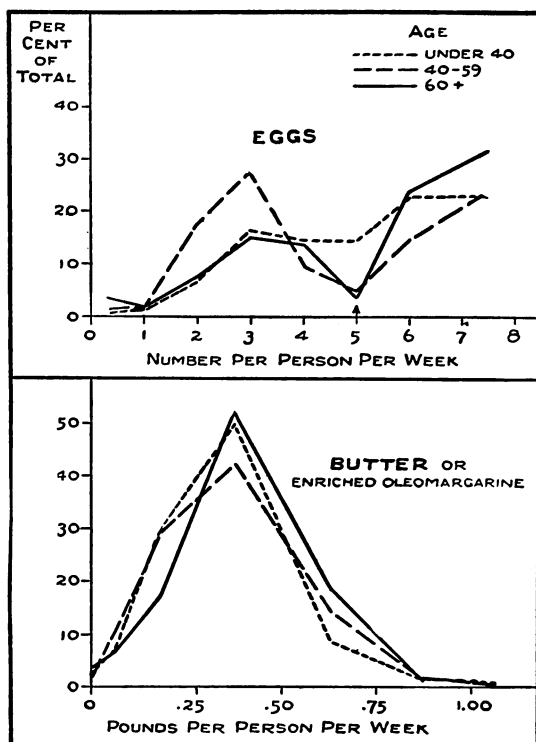


Fig. 2. Percentage distribution of diet records for 943 families in the Eastern Health District of Baltimore according to the reported use of eggs and butter during one week, January and February, 1943. (The arrow indicates the frequency of use which approximately corresponds to that in the recommended dietary pattern.)

From 50 to 67 per cent of the families used no whole grain breakfast cereal, either prepared or cooked, in a week, and only 5 to 10 per cent ate it every day.

On the charts in Figures 1 and 2 an arrow indicates the frequency of use of each food or food group which approximately corresponds to that in the recommended dietary pattern. If the diets had conformed fairly well with this pattern, each curve would reach a peak at a point above the arrow. Only the curves for meat

consumption and for citrus fruits and tomatoes are of this type; for other foods, the areas under the curves and to the left of the arrow show that large percentages of the diets were low in their content of yellow or green vegetables, of all fruits, milk, and eggs. Also, the charts bring out clearly the relationship of age of the housewife and

⁷ In connection with the use of dark bread it should be pointed out that 12 per cent of the families studied were Jewish.

the quality of the dietary pattern; the best diets were recorded for the youngest families and the poorest for the oldest families.

COMPARISON OF FOOD HABITS IN WINTER AND EARLY SPRING

A comparison of the use of various types of foods by the same families at two different periods of time affords important evidence on the extent to which food habits of a family tend to be fixed. Or, in other words, does a family vary its food choices from week to week with the result that the dietary pattern for one week is not typical of a family's eating habits? In a recent study of the amounts of specific nutrients in the diets of twenty-five children at three different periods of 10-14 days, Huenemann and Turner (5) concluded that "no single diet record could be considered 'typical' of a subject's food intake over a period of time, in the majority of the cases studied."

For these families, the degree of association in the frequency of use of specific foods in April and May with the use of the same foods in January and February has been measured by the coeffi-

Table 6. Correlation of amount or frequency of use of different foods in one week in January or February with use in one week in April or May, 1943, for families in the Eastern Health District of Baltimore.

| SPECIFIC FOODS AND MEASURE OF USE | COEFFICIENTS OF CORRELATION ¹ FOR FAMILIES GROUPED BY AGE OF HOUSEWIFE | | |
|--|--|----------------|----------------------|
| | Under 40 Years | 40-59 Years | 60 Years and Over |
| Milk, Quarts Per Person | +.53 | +.54 | +.72 |
| Butter, Pounds Per Person | +.37 | +.28 | +.49 |
| Eggs, Number Per Person | +.40 | +.43 | +.53 |
| Citrus Fruits and Tomatoes, Times Per Week | +.40 | +.50 | +.53 |
| All Fruits, Times Per Week | +.40 | +.48 | +.50 |
| Green and Yellow Vegetables, Times Per Week | +.34 | +.37 | +.40 |
| All Vegetables, Times Per Week | +.25 | +.48 | +.44 |
| Meat, Times Per Week | +.34 | +.23 | +.47 |

¹ For age group under 40, $N = 318$, $\sigma_r = .056$; age group 40-59, $N = 432$, $\sigma_r = .048$; age group 60+, $N = 193$, $\sigma_r = .072$.

cients of correlation. These coefficients are shown in Table 6 for families in the three age groups. For every food group in each age class, the coefficient of correlation is statistically very significant. There was, therefore, a definite tendency for families to be high, or low, in the use of specific foods at both periods. On the other hand, most of the coefficients are of a relatively low order, and the majority are between $+.23$ and $+.50$. In other words, there was considerable variation in the families' use of certain foods or food groups in one period of time as compared with the other period. Milk is the only food for which there was a relatively high association in the amount used in each of the two periods for the families in each age group.

Table 6 shows also that there was a higher degree of association in the two periods in the use of practically all of the different food groups for families where the housewife was 60 years and over, compared with the younger families; that is, the food habits of the older families were less variable and tended to be more fixed.

One purpose of this particular study is to describe the change in the use of the specific food groups after rationing of some foods was started. Table 7 shows the mean frequency of use or consumption of the specific foods in the two periods and the mean differences in consumption. For each comparison, a distribution of "paired differences" (6) was obtained by taking the difference between the values for use of a specific food in the two periods for each family. The standard deviations of the distributions of these differences are shown in Table 7 and indicate the extent of the variation in frequency of use of the various foods by individual families. The significance of the differences between average values for the two periods is indicated by the standard errors of the means for the distributions of paired differences.

For families in the three age groups there were increases in the mean use of practically all of the foods or food groups in April and May compared with the earlier period. Some of the increases were

Table 7. Mean values for use of different groups of food in one week in the winter and in the spring of 1943, difference between means for the two periods and standard deviations for distributions of difference in use in the two periods by specific families.

| SPECIFIC FOODS AND MEASURE OF USE | MEAN FOR ONE WEEK | | MEAN DIFFERENCE II—I | FOR PAIRED DIFFERENCES | |
|---|--|---------------------|----------------------------|--|-----------------------|
| | January- February I | April- May II | | Standard Error of Mean Difference | Standard Deviation |
| Milk, Quarts Per Person Butter, or Enriched Oleo, Pounds Per Person Eggs, ¹ Number Per Person Citrus Fruits and Tomatoes, Times Per Week All Fruits, Times Per Week Green or Yellow Vegetables, Times Per Week All Vegetables, Times Per Week Meat, Times Per Week Milks, Quarts Per Person Butter, or Enriched Oleo, Pounds Per Person Eggs, ¹ Number Per Person Citrus Fruits and Tomatoes, Times Per Week All Fruits, Times Per Week Green or Yellow Vegetables, Times Per Week All Vegetables, Times Per Week Meat, Times Per Week Milk, Quarts Per Person Butter, or Enriched Oleo, Pounds Per Person Eggs, ¹ Number Per Person Citrus Fruits and Tomatoes, Times Per Week All Fruits, Times Per Week Green or Yellow Vegetables, Times Per Week All Vegetables, Times Per Week Meat, Times Per Week | HOUSEWIFE UNDER 40 YEARS OF AGE—318 FAMILIES | | | | |
| | 3.35 | 3.41 | .060 | ±.078 | 1.392 |
| | .37 | 0.39 | .016 | ±.011 | 0.194 |
| | 5.67 | 6.72 | 1.055 | ±.200 | 2.963 |
| | 9.14 | 9.27 | .132 | ±.276 | 4.919 |
| | 13.22 | 13.80 | .579 | ±.363 | 6.479 |
| | 5.54 | 6.10 | .560 | ±.199 | 3.542 |
| | 14.49 | 12.35 | -2.146 | ±.354 | 6.313 |
| | 7.72 | 8.06 | .338 | ±.180 | 3.204 |
| | HOUSEWIFE 40-59 YEARS OF AGE—432 FAMILIES | | | | |
| | 2.98 | 3.06 | .083 | ±.065 | 1.358 |
| | .37 | .39 | .020 | ±.011 | 0.233 |
| | 5.76 | 7.27 | 1.507 | ±.176 | 2.940 |
| | 8.50 | 9.23 | .732 | ±.246 | 5.114 |
| | 12.37 | 13.22 | .850 | ±.316 | 6.575 |
| | 5.48 | 5.77 | .291 | ±.193 | 4.006 |
| | 14.16 | 12.27 | -1.873 | ±.293 | 6.086 |
| | 8.17 | 8.11 | -.065 | ±.172 | 3.569 |
| | HOUSEWIFE 60+ YEARS OF AGE—193 FAMILIES | | | | |
| | 2.65 | 2.92 | .269 | ±.080 | 1.106 |
| | .41 | .43 | .028 | ±.012 | 0.169 |
| | 6.00 | 6.98 | .976 | ±.260 | 2.895 |
| | 7.15 | 7.85 | .710 | ±.366 | 5.083 |
| | 10.68 | 11.36 | .679 | ±.498 | 6.913 |
| | 4.82 | 5.17 | .345 | ±.295 | 4.096 |
| | 12.56 | 11.03 | -1.529 | ±.460 | 6.384 |
| | 7.38 | 7.63 | .257 | ±.223 | 3.102 |

¹Due to the increased use of eggs at Easter time, all records obtained within one week before and one week after Easter were excluded in considering the use of eggs in the period April and May.

very slight and not significant. For example, the mean increase in the use of green and yellow vegetables was significant only for families where the housewife was under 40 years of age. These families, on the other hand, had little change in the average use of citrus fruits and tomatoes, and families in which the housewife was 40 years or older increased their use of citrus fruits and tomatoes. There was a significant increase in the use of eggs in all of the three groups of families.

The mean differences in the use of all vegetables indicate that there was a definite decrease for all of the families with respect to consumption in April and May as compared with January and February. The mean times per week for the use of all vegetables was about two times per week less in the spring than in January and February. April and May were months when white potatoes were scarce in Baltimore food markets. A comparison of the food records of the families indicated that the frequency in use of white potatoes declined 50 to 60 per cent in April and May as compared with their use in January and February. This, it is believed, accounts for most of the decrease in the use of all vegetables.

There was no significant change in the frequency with which meat and dried beans were served, the mean times per week being seven or eight for all groups of families in both periods. The average use of butter or enriched oleo was close to 0.4 pound per person per week in both periods.

Apparently, food rationing did not materially alter the food habits.

The variation in the use of many of the foods and food groups was great enough to warrant the conclusion that a food record of the family for any particular period cannot be considered as typical of the food habits of the family. The standard deviations for differences in use by the same family in the two weeks show clearly that use of specific foods varied greatly. For example, the standard deviations for citrus fruits and tomatoes are about 5, and for approxi-

mately one-third of the families the difference in times used per week for the two periods was more than 5. For green and yellow vegetables, the standard deviations are from 3.5 to 4.1 times per week. Thus, although the coefficients of correlation indicate that there is some relationship between the levels of use in the two periods, for some families the frequency of use of a particular group of foods was very different in the two periods. These food records, therefore, describe general tendencies in the dietary pattern of these groups of families.

QUALITATIVE CLASSIFICATION OF FOOD HABITS

To summarize the food choices of the families, it is convenient to classify the use of selected foods in a few categories based on the amount of deviation from a dietary pattern prepared by the Committee on Food and Nutrition. For five food groups, namely, citrus fruits or tomatoes, green or yellow vegetables, eggs, milk, and meat, the habits of use were classified in one of three categories. The categories and the dietary pattern recommended are given in detail in Appendix 2. The category "satisfactory" indicates a use equal to or only slightly below the recommended standard. "Marginal" describes a use moderately below standard, and "unsatisfactory" a use considerably below standard.

By combining the ratings for each of the five types of foods, it is possible to get a composite rating which indicates the quality of the dietary pattern of each family. A composite rating of "satisfactory" was given if all food groups were rated as "satisfactory." A diet was classified as "marginal" if any food group was rated "marginal," but all other food groups were "marginal" or "satisfactory." A diet was considered as "unsatisfactory" if any of the five food groups was given an "unsatisfactory" rating.

Figure 3 and Appendix Table 10 show the composite ratings on food habits in families by age of housewife for each of the two periods studied. In the first period, January and February, food

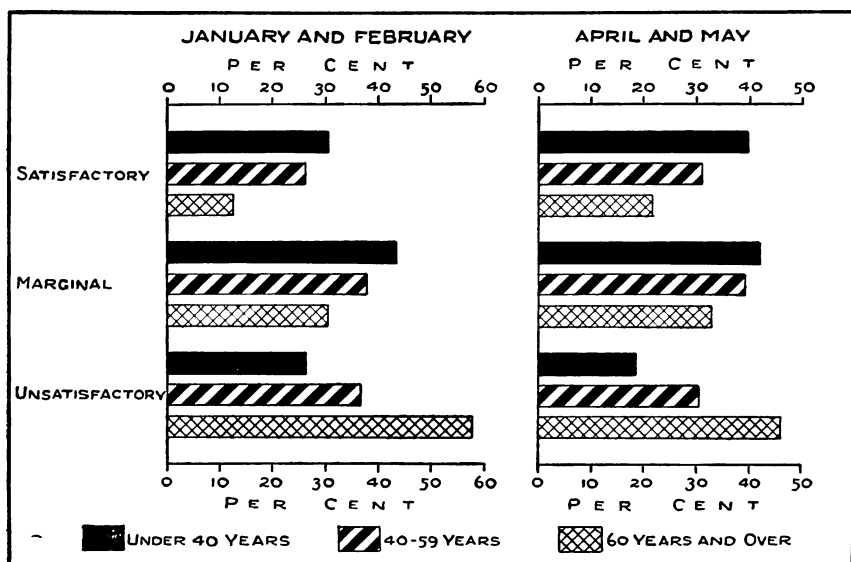


Fig. 3. Percentage distribution of composite ratings for food habits in relation to age of housewife, at two periods in 1943.

habits were rated as "satisfactory" for 30 per cent of the young families, 26 per cent of the middle-age families, and 13 per cent of the old-age families. For families with diets rated as "marginal" the same relationship of rating with age of housewife was noted but the differences between the groups were not so great. Forty-three per cent of the youngest families and 30 per cent of the oldest families had food habits classed as "marginal." In families with food habits considered as "unsatisfactory" the age relationship of the three groups was reversed. Only 26 per cent of the young families were in this class compared with 36 per cent of the middle-age families and 57 per cent of those where the housewife was 60 years of age or older. Since a "marginal" or "unsatisfactory" rating indicates an inadequate family dietary pattern, it is evident that the majority of the families were below standard in their consumption in one or more of the important food groups.

In the second period studied, April and May, the same relationship between age of family and rating of food habits was noted as has been pointed out for the earlier period. Some improvement in

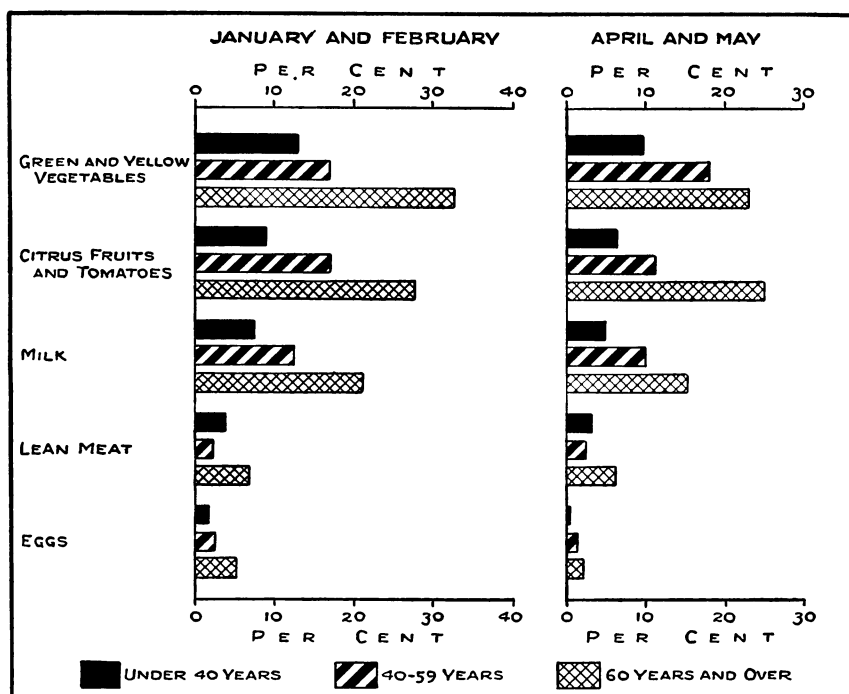


Fig. 4. Percentage distribution of food habits classified as unsatisfactory for amounts of specific food groups, according to age of housewife, at two periods in 1943.

food habits was evident. This is shown by increases in the proportions of families with food habits rated as "satisfactory" and decreases in the proportions rated as "unsatisfactory." These changes were noted for the families in each age group. For example, 19 per cent of the youngest families and 46 per cent of the old-age families in April and May reported diets rated as "unsatisfactory" compared with 26 and 57 per cent, respectively, in January and February. Very little difference in the two periods was noted for the proportions in each age group with food habits rated as "marginal." Certainly it cannot be said that rationing had an adverse effect upon the food habits of these families.

It is of interest to indicate the extent to which the use of specific foods was rated as "unsatisfactory" in the two periods (Figure 4 and Appendix Table 10). For both periods, marked deficiencies in the

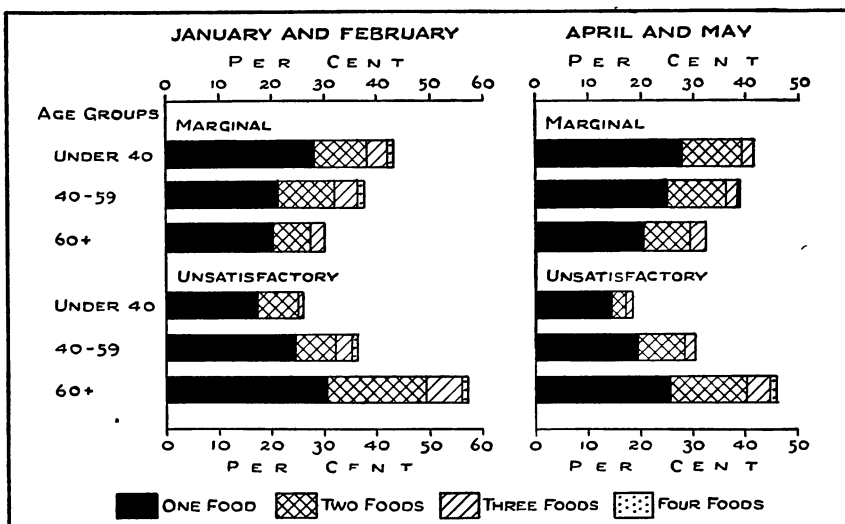


Fig. 5. Percentage distribution of composite ratings for food habits and of the number of food groups with the specified lowest rating, according to age of housewife, January and February, 1943.

quality of the diet were noted most frequently in the use of green and yellow vegetables, citrus fruits and tomatoes, and milk. These deficiencies were greatest in families in the old-age group. For example, 33 per cent and 23 per cent of these families in the first and second periods, respectively, used green and yellow vegetables less than three times a week. In the same age group, at both periods, about one-fourth of the families had citrus fruits and tomatoes less than four times a week. On the other hand, a very small proportion of the families in the three age groups used an "unsatisfactory" number of eggs. The proportion which had a rating of "unsatisfactory" in the use of lean meat was relatively small and did not change in the two periods studied. For all foods except meat, the proportion of families with "unsatisfactory" ratings was less in April and May than in January and February. This was true for families at each age period.

The distribution of the "marginal" and "unsatisfactory" ratings according to the number of food groups with these particular ratings are shown in Figure 5, and Appendix Tables 11 and 12. When

the diets rated as "marginal" are considered, in both periods from 20 to 28 per cent of the total families in each age group had this rating because of one food group only. In families where the housewife was under 60 years of age, fewer had three or more food groups rated "marginal" in April and May than in January and February. On the other hand, there was an increase in April and May in the proportion of old-age families rated marginal in two or more food groups.

The distribution of the "unsatisfactory" ratings showed a striking difference in families by age of housewife in both periods. A much higher proportion of the old-age families (housewife 60+) had an "unsatisfactory" rating in the use of two or more food groups than did families where the housewife was under 40 and 40-59 years of age. In January and February, the percentages were 27 compared with 9 and 11, respectively. This difference with age in the rating of two or more food groups was true of both periods studied.

The findings in this study in the Eastern Health District of Baltimore are in general agreement with a recent study of diets of a group of aircraft workers in southern California when consideration is given to the fact that the California study was based upon diets of individuals and in Baltimore the data on food habits represent an average for the family group (7). Both studies reveal that relatively few individuals or families had a dietary pattern which could be considered entirely adequate with respect to all food groups considered. Young men in the California study and, in Baltimore, young families had somewhat better diets than did older men and older families.

SUMMARY

Records on the amount and frequency of use of selected foods during one week were collected for 943 families at two different periods in 1943, January and February and April and May. The reported use of each of five foods or food groups was compared

with amounts recommended in the dietary pattern prepared by the National Research Council, Committee on Food and Nutrition. The data are presented for the two periods according to age of the housewife.

1. Percentages of food records which included specific foods with the frequency in amounts per week equal to or slightly below that recommended were:

| | <i>January-February</i> | | |
|---|--------------------------|--------------|------------|
| | <i>Age of Housewife</i> | | |
| | <i>Under 40</i> | <i>40-59</i> | <i>60+</i> |
| | <i>Per Cent of Group</i> | | |
| Green or yellow vegetables, 7 x or more | 30 | 30 | 26 |
| Citrus fruits or tomatoes, 6 x or more | 78 | 67 | 58 |
| Milk, 4 quarts per person | 17 | 9 | 8 |
| Eggs, 4 or more per person | 60 | 43 | 59 |
| Lean meat, fish, etc., 6 x or more | 82 | 85 | 75 |

2. Percentages of food records where use of specific foods was definitely below that recommended were:

| | <i>January-February</i> | | |
|---|--------------------------|--------------|------------|
| | <i>Age of Housewife</i> | | |
| | <i>Under 40</i> | <i>40-59</i> | <i>60+</i> |
| | <i>Per Cent of Group</i> | | |
| Green or yellow vegetables, 4 x or less | 42 | 46 | 59 |
| Citrus fruits or tomatoes, 3 x or less | 9 | 17 | 28 |
| Milk, 2 quarts or less per person | 58 | 68 | 70 |
| Eggs, 1 or less per person | 8 | 20 | 13 |
| Lean meat, etc., 3 x or less | 4 | 2 | 7 |

Though some improvement was noted in the second period studied, it was found that a majority of the families in both periods had used one or more of the five foods with a frequency moderately or considerably below standard.

| | Age of Housewife | | |
|---------------------------------|-------------------|-------|-----|
| | Under 40 | 40-59 | 60+ |
| | Per Cent of Group | | |
| Per cent rated "unsatisfactory" | | | |
| January-February | 26 | 36 | 57 |
| April-May | 19 | 30 | 46 |
| Per cent rated "marginal" | | | |
| January-February | 43 | 38 | 30 |
| April-May | 42 | 39 | 33 |

Comparison of the use of various types of foods by the same families at two different periods indicated that use of specific foods varied greatly although there was some relationship between the levels of use in the two periods. It was concluded that a food record of a family for any particular period cannot be considered as typical of the food habits of the family.

Apparently, food rationing did not materially alter the food habits.

The morbidity study in the Eastern Health District of Baltimore was conducted by the United States Public Health Service and the Milbank Memorial Fund.

Acknowledgments are made: (1) To the Johns Hopkins School of Hygiene, especially to the Departments of Biostatistics and Epidemiology, for generous assistance and cooperation which have greatly facilitated the carrying on of the study of illness in the Eastern Health District of Baltimore; and (2) to the Baltimore City Health Department for generous assistance and cooperation.

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Appendix Table 1. Distribution of families according to frequency of use of all fruits, Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF TIMES PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 0 | 2.4 | 0.9 | 2.8 | 4.1 | 23 | 3 | 12 | 8 |
| 1 to 3 | 5.2 | 3.8 | 3.7 | 10.9 | 49 | 12 | 16 | 21 |
| 4 to 6 | 12.0 | 7.9 | 13.9 | 14.5 | 113 | 25 | 60 | 28 |
| 7 to 9 | 16.8 | 15.4 | 17.6 | 17.6 | 159 | 49 | 76 | 34 |
| 10 to 12 | 17.9 | 20.4 | 16.4 | 17.1 | 169 | 65 | 71 | 33 |
| 13 to 15 | 13.9 | 15.7 | 13.0 | 13.0 | 131 | 50 | 56 | 25 |
| 16 to 18 | 11.7 | 14.8 | 11.3 | 7.3 | 110 | 47 | 49 | 14 |
| 19 to 21 | 8.4 | 9.8 | 8.6 | 5.7 | 79 | 31 | 37 | 11 |
| 22 or More | 11.7 | 11.3 | 12.7 | 9.8 | 110 | 36 | 55 | 19 |

Appendix Table 2. Distribution of families according to frequency of use of citrus fruits and tomatoes, Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF TIMES PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 0 | 4.2 | 1.5 | 4.2 | 8.8 | 40 | 5 | 18 | 17 |
| 1 or 2 | 7.1 | 3.8 | 7.6 | 11.4 | 67 | 12 | 33 | 22 |
| 3 | 5.1 | 3.8 | 5.1 | 7.3 | 48 | 12 | 22 | 14 |
| 4 or 5 | 14.4 | 12.6 | 15.7 | 14.5 | 136 | 40 | 68 | 28 |
| 6 or 7 | 17.7 | 19.5 | 16.0 | 18.6 | 167 | 62 | 69 | 36 |
| 8 or 9 | 15.4 | 17.3 | 15.7 | 11.4 | 145 | 55 | 68 | 22 |
| 10 or 11 | 10.3 | 13.2 | 9.5 | 7.3 | 97 | 42 | 41 | 14 |
| 12 or 13 | 8.7 | 10.4 | 7.6 | 8.3 | 82 | 33 | 33 | 16 |
| 14 or 15 | 6.1 | 8.2 | 5.4 | 4.1 | 57 | 26 | 23 | 8 |
| 16 or 17 | 4.1 | 3.4 | 5.1 | 3.1 | 39 | 11 | 22 | 6 |
| 18 or More | 6.9 | 6.3 | 8.1 | 5.2 | 65 | 20 | 35 | 10 |

Appendix Table 3. Distribution of families according to frequency of use of milk (quarts per person per week), Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF QUARTS PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|---------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 0-0.4 | 1.5 | 1.0 | 0.5 | 4.7 | 14 | 3 | 2 | 9 |
| 0.5-1.4 | 11.0 | 6.6 | 11.8 | 16.6 | 104 | 21 | 51 | 32 |
| 1.5-2.4 | 25.6 | 19.5 | 27.3 | 31.6 | 241 | 62 | 118 | 61 |
| 2.5-3.4 | 26.9 | 31.1 | 28.2 | 17.1 | 254 | 99 | 122 | 33 |
| 3.5-4.4 | 23.6 | 25.2 | 23.1 | 21.7 | 222 | 80 | 100 | 42 |
| 4.5-5.4 | 7.3 | 11.0 | 5.6 | 5.2 | 69 | 35 | 24 | 10 |
| 5.5-6.4 | 1.6 | 2.5 | 1.2 | 1.0 | 15 | 8 | 5 | 2 |
| 6.5-7.4 | 1.6 | 1.6 | 1.4 | 2.1 | 15 | 5 | 6 | 4 |
| 7.5-8.4 | 0.3 | 0.6 | 0.2 | 0 | 3 | 2 | 1 | 0 |
| 8.5-9.4 | 0.3 | 0.6 | 0.2 | 0 | 3 | 2 | 1 | 0 |
| 9.5 or More | 0.3 | 0.3 | 0.5 | 0 | 3 | 1 | 2 | 0 |

Appendix Table 4. Distribution of families according to frequency of use of all vegetables, Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF TIMES PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 0-3 | 1.2 | 0.6 | 1.2 | 2.1 | 11 | 2 | 5 | 4 |
| 4-5 | 3.7 | 0.6 | 4.4 | 7.3 | 35 | 2 | 19 | 14 |
| 6-7 | 6.9 | 3.8 | 6.5 | 12.9 | 65 | 12 | 28 | 25 |
| 8-9 | 9.0 | 6.6 | 9.0 | 12.9 | 85 | 21 | 39 | 25 |
| 10-11 | 14.4 | 16.0 | 12.7 | 15.5 | 136 | 51 | 55 | 30 |
| 12-13 | 17.0 | 20.5 | 17.4 | 10.4 | 160 | 65 | 75 | 20 |
| 14-15 | 14.6 | 18.2 | 13.4 | 11.4 | 138 | 58 | 58 | 22 |
| 16-18 | 13.4 | 14.5 | 14.3 | 9.3 | 126 | 46 | 62 | 18 |
| 19-21 | 8.7 | 9.1 | 8.6 | 8.3 | 82 | 29 | 37 | 16 |
| 22-24 | 5.1 | 5.4 | 4.9 | 5.2 | 48 | 17 | 21 | 10 |
| 25 or More | 6.0 | 4.7 | 7.6 | 4.7 | 57 | 15 | 33 | 9 |

Appendix Table 5. Distribution of families according to frequency of use of green or yellow vegetables, Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF TIMES PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 0 | 3.1 | 0.9 | 3.9 | 4.7 | 29 | 3 | 17 | 9 |
| 1 or 2 | 15.7 | 12.0 | 13.0 | 28.0 | 148 | 38 | 56 | 54 |
| 3 or 4 | 28.2 | 29.3 | 28.3 | 26.4 | 266 | 93 | 122 | 51 |
| 5 or 6 | 23.9 | 28.0 | 25.0 | 14.5 | 225 | 89 | 108 | 28 |
| 7 or 8 | 12.9 | 13.8 | 13.2 | 10.9 | 122 | 44 | 57 | 21 |
| 9 or 10 | 8.1 | 8.2 | 8.3 | 7.2 | 76 | 26 | 36 | 14 |
| 11 or 12 | 4.5 | 5.0 | 4.4 | 3.6 | 42 | 16 | 19 | 7 |
| 13 or 14 | 1.9 | 1.9 | 1.6 | 2.6 | 18 | 6 | 7 | 5 |
| 15 or 16 | 0.6 | 0.9 | 0.7 | 0 | 6 | 3 | 3 | 0 |
| 17 or 18 | 0.5 | 0 | 0.9 | 0.5 | 5 | 0 | 4 | 1 |
| 19 or More | 0.6 | 0 | 0.7 | 1.6 | 6 | 0 | 3 | 3 |

Appendix Table 6. Distribution of families according to frequency of use of lean meat, Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF TIMES PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 0 | 0.3 | 0 | 0 | 1.5 | 3 | 0 | 0 | 3 |
| 1 | 0.1 | 0 | 0 | 0.5 | 1 | 0 | 0 | 1 |
| 2 or 3 | 3.3 | 3.8 | 2.3 | 4.7 | 31 | 12 | 10 | 9 |
| 4 or 5 | 14.1 | 13.8 | 12.5 | 18.1 | 133 | 44 | 54 | 35 |
| 6 or 7 | 30.3 | 33.7 | 28.7 | 28.5 | 286 | 107 | 124 | 55 |
| 8 or 9 | 29.5 | 28.6 | 31.0 | 27.5 | 278 | 91 | 134 | 53 |
| 10 or 11 | 12.7 | 11.0 | 14.6 | 11.4 | 120 | 35 | 63 | 22 |
| 12 or 13 | 5.6 | 6.0 | 5.8 | 4.7 | 53 | 19 | 25 | 9 |
| 14 or 15 | 2.8 | 2.5 | 3.2 | 2.1 | 26 | 8 | 14 | 4 |
| 16 or 17 | 0.9 | 0.3 | 1.2 | 1.0 | 8 | 1 | 5 | 2 |
| 18 or More | 0.4 | 0.3 | 0.7 | 0 | 4 | 1 | 3 | 0 |

Appendix Table 7. Distribution of families according to frequency of use of eggs (per person per week), Eastern Health District of Baltimore, January and February, 1943.

| NUMBER PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|-----------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| 0-0.4 | 1.4 | 0.3 | 1.2 | 3.6 | 13 | 1 | 5 | 7 |
| 0.5-1.4 | 1.4 | 1.2 | 1.4 | 1.6 | 13 | 4 | 6 | 3 |
| 1.5-2.4 | 11.9 | 6.9 | 17.4 | 7.8 | 112 | 22 | 75 | 15 |
| 2.5-3.4 | 21.3 | 16.7 | 27.5 | 15.0 | 201 | 53 | 119 | 29 |
| 3.5-4.4 | 12.1 | 14.5 | 9.7 | 13.5 | 114 | 46 | 42 | 26 |
| 4.5-5.4 | 7.8 | 14.8 | 4.6 | 3.6 | 74 | 47 | 20 | 7 |
| 5.5-6.4 | 19.1 | 22.6 | 14.4 | 23.8 | 180 | 72 | 62 | 46 |
| 6.5-7.4 | 3.7 | 3.8 | 3.0 | 5.2 | 35 | 12 | 13 | 10 |
| 7.5-8.4 | 7.0 | 7.2 | 7.6 | 5.2 | 66 | 23 | 33 | 10 |
| 8.5-9.4 | 3.3 | 3.5 | 3.2 | 3.1 | 31 | 11 | 14 | 6 |
| 9.5 or More | 11.0 | 8.5 | 10.0 | 17.6 | 104 | 27 | 43 | 34 |

Appendix Table 8. Distribution of families according to amount of butter used (per person per week), Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF POUNDS PER WEEK | PER CENT | | | | NUMBER OF FAMILIES | | | |
|---------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| No Butter Less Than | 2.1 | 2.2 | 1.4 | 3.6 | 20 | 7 | 6 | 7 |
| .125 Lbs. | 8.6 | 7.2 | 10.4 | 6.8 | 81 | 23 | 45 | 13 |
| .125-.24 Lbs. | 27.5 | 30.5 | 29.6 | 17.6 | 259 | 97 | 128 | 34 |
| .25-.49 " | 46.7 | 49.7 | 42.1 | 52.3 | 441 | 158 | 182 | 101 |
| .50-.74 " | 13.6 | 8.8 | 14.9 | 18.7 | 128 | 28 | 64 | 36 |
| .75-.99 " | 1.3 | 1.3 | 1.4 | 1.0 | 12 | 4 | 6 | 2 |
| 1.00 or More | 0.2 | 0.3 | 0.2 | — | 2 | 1 | 1 | — |

Appendix Table 9. Distribution of families according to frequency of use of dark bread and cereals, Eastern Health District of Baltimore, January and February, 1943.

| NUMBER OF TIMES PER DAY | PER CENT | | | | NUMBER OF FAMILIES | | | |
|-------------------------------|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| <i>Dark Bread</i> | | | | | | | | |
| None | 45.5 | 48.6 | 41.9 | 48.7 | 427 | 153 | 180 | 94 |
| Less Than Once a Day | 8.9 | 10.5 | 9.3 | 5.2 | 83 | 33 | 40 | 10 |
| Once a Day | 25.6 | 30.5 | 25.8 | 17.1 | 240 | 96 | 111 | 33 |
| Twice a Day | 6.6 | 3.8 | 8.1 | 7.8 | 62 | 12 | 35 | 15 |
| 3 or More Times | 13.4 | 6.6 | 14.9 | 21.2 | 126 | 21 | 64 | 41 |
| Unknown | — | — | — | — | 5 | 3 | 2 | 0 |
| <i>Dark Cooked Cereal</i> | | | | | | | | |
| None | 58.3 | 50.0 | 60.6 | 66.8 | 550 | 159 | 262 | 129 |
| Less Than Once a Day | 34.7 | 42.1 | 34.5 | 22.8 | 327 | 134 | 149 | 44 |
| Once a Day | 7.0 | 7.9 | 4.9 | 10.4 | 66 | 25 | 21 | 20 |

Appendix Table 10. Distribution of families according to the composite rating on food habits and the frequency of unsatisfactory ratings for use of specific foods, Eastern Health District of Baltimore, 1943.

| CLASSIFICATION OF FOOD HABITS | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--|----------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL Satisfactory Marginal Unsatisfactory Unknown | JANUARY AND FEBRUARY | | | | | | | |
| | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| | 24.9 | 30.8 | 26.0 | 12.5 | 233 | 98 | 111 | 24 |
| | 38.0 | 43.1 | 37.7 | 30.2 | 356 | 137 | 161 | 58 |
| | 37.1 | 26.1 | 36.3 | 57.3 | 348 | 83 | 155 | 110 |
| | | | | | 6 | — | 5 | 1 |
| | APRIL AND MAY | | | | | | | |
| | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| | 31.7 | 39.7 | 30.6 | 21.3 | 297 | 125 | 131 | 41 |
| | 38.6 | 41.6 | 39.0 | 32.6 | 361 | 131 | 167 | 63 |
| | 29.7 | 18.7 | 30.4 | 46.1 | 278 | 59 | 130 | 89 |
| | | | | | 7 | 3 | 4 | — |
| TOTAL FAMILIES <i>Spec. Foods Unsat.</i> Green and Yellow Vegetables Citrus Fruits and Tomatoes Milk Meat Eggs | JANUARY AND FEBRUARY | | | | | | | |
| | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| | | | | | | | | |
| | 18.8 | 12.9 | 16.9 | 32.6 | 177 | 41 | 73 | 63 |
| | 16.4 | 9.1 | 16.9 | 27.5 | 155 | 29 | 73 | 53 |
| | 12.5 | 7.5 | 12.3 | 21.2 | 118 | 24 | 53 | 41 |
| | 3.7 | 3.8 | 2.3 | 6.7 | 35 | 12 | 10 | 13 |
| | 2.8 | 1.6 | 2.5 | 5.2 | 26 | 5 | 11 | 10 |
| | APRIL AND MAY | | | | | | | |
| | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| | | | | | | | | |
| | 16.0 | 9.4 | 17.8 | 22.8 | 151 | 30 | 77 | 44 |
| 12.3 | 6.3 | 11.1 | 24.9 | 116 | 20 | 48 | 48 | |
| 9.2 | 4.7 | 10.0 | 15.0 | 87 | 15 | 43 | 29 | |
| 3.5 | 3.1 | 2.5 | 6.2 | 33 | 10 | 11 | 12 | |
| 1.3 | 0.6 | 1.4 | 2.1 | 12 | 2 | 6 | 4 | |

Appendix Table 11. Distribution of families according to the composite rating on food habits and the number of food groups with the specified lowest rating, Eastern Health District of Baltimore, January and February, 1943.

| COMPOSITE RATING AND NUMBER OF FOOD GROUPS WITH SAME RATING | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| <i>Satisfactory</i> | | | | | | | | |
| Total | 24.9 | 30.8 | 26.0 | 12.5 | 233 | 98 | 111 | 24 |
| <i>Marginal</i> | | | | | | | | |
| Total | 38.0 | 43.1 | 37.7 | 30.2 | 356 | 137 | 161 | 58 |
| 1 Food Group | 23.4 | 28.0 | 21.3 | 20.3 | 219 | 89 | 91 | 39 |
| 2 Food Groups | 9.8 | 10.1 | 10.8 | 7.3 | 92 | 32 | 46 | 14 |
| 3 Food Groups | 3.8 | 4.1 | 4.2 | 2.6 | 36 | 13 | 18 | 5 |
| 4-5 Food Groups | 1.0 | 0.9 | 1.4 | — | 9 | 3 | 6 | 0 |
| <i>Unsatisfactory</i> | | | | | | | | |
| Total | 37.1 | 26.1 | 36.3 | 57.3 | 348 | 83 | 155 | 110 |
| 1 Food Group | 23.6 | 17.6 | 24.8 | 30.7 | 221 | 56 | 106 | 59 |
| 2 Food Groups | 9.8 | 7.5 | 7.5 | 18.8 | 92 | 24 | 32 | 36 |
| 3 Food Groups | 3.1 | 1.0 | 3.1 | 6.8 | 29 | 3 | 13 | 13 |
| 4-5 Food Groups | 0.6 | — | 0.9 | 1.0 | 6 | — | 4 | 2 |
| Unknown | | | | | 6 | — | 5 | 1 |

Appendix Table 12. Distribution of families according to the composite rating on food habits and the number of food groups with the specified lowest rating, Eastern Health District of Baltimore, April and May, 1943.

| COMPOSITE RATING AND NUMBER OF FOOD GROUPS WITH SAME RATING | PER CENT | | | | NUMBER OF FAMILIES | | | |
|--|-------------------|------------------|-------|----------------|--------------------|------------------|-------|----------------|
| | Total Families | Age of Housewife | | | Total Families | Age of Housewife | | |
| | | Under 40 | 40-59 | 60 and Over | | Under 40 | 40-59 | 60 and Over |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 943 | 318 | 432 | 193 |
| <i>Satisfactory</i> | | | | | | | | |
| Total | 31.7 | 39.7 | 30.6 | 21.3 | 297 | 125 | 131 | 41 |
| <i>Marginal</i> | | | | | | | | |
| Total | 38.6 | 41.6 | 39.0 | 32.6 | 361 | 131 | 167 | 63 |
| 1 Food Group | 25.2 | 28.0 | 25.2 | 20.7 | 236 | 88 | 108 | 40 |
| 2 Food Groups | 10.8 | 11.4 | 11.2 | 8.8 | 101 | 36 | 48 | 17 |
| 3 Food Groups | 2.5 | 2.2 | 2.4 | 3.1 | 23 | 7 | 10 | 6 |
| 4-5 Food Groups | 0.1 | — | 0.2 | — | 1 | — | 1 | — |
| <i>Unsatisfactory</i> | | | | | | | | |
| Total | 29.7 | 18.7 | 30.4 | 46.1 | 278 | 59 | 130 | 89 |
| 1 Food Group | 19.2 | 14.6 | 19.6 | 25.9 | 180 | 46 | 84 | 50 |
| 2 Food Groups | 8.0 | 2.5 | 9.1 | 14.5 | 75 | 8 | 39 | 28 |
| 3 Food Groups | 2.3 | 1.6 | 1.7 | 4.7 | 21 | 5 | 7 | 9 |
| 4-5 Food Groups | 0.2 | — | — | 1.0 | 2 | — | — | 2 |
| Unknown | | | | | 7 | 3 | 4 | — |

APPENDIX 2

Description of qualitative classes used in rating weekly food records.

1. Rating for Milk Used Per Person Per Week
 - Satisfactory — 3 quarts or more
 - Marginal — 2 quarts
 - Unsatisfactory — 1 quart or less
2. Rating for Eggs Used Per Person Per Week
 - Satisfactory — 3 eggs or more
 - Marginal — 2 eggs
 - Unsatisfactory — 1 or no eggs
3. Rating for Times Citrus Fruits and Tomatoes Used Per Week
 - Satisfactory — 6 times or more
 - Marginal — 4 or 5 times
 - Unsatisfactory — 3, 2, 1, or no times
4. Rating for Times Green and Yellow Vegetables (Including Cabbage) Used Per Week
 - Satisfactory — 5 times or more
 - Marginal — 3 or 4 times
 - Unsatisfactory — 2, 1, or no times
5. Rating for Times Lean Meat, Fish, or Fowl Used Per Week
 - Satisfactory — 6 times or more
 - Marginal — 4 or 5 times
 - Unsatisfactory — 3, 2, 1, or no times
6. Composite Rating for Five Food Groups
 - Satisfactory — 5 ratings satisfactory
 - Marginal — 1 or more ratings marginal, no rating unsatisfactory
 - Unsatisfactory — 1 or more ratings unsatisfactory

When cheese was needed to meet the recommended allowances for milk, it was considered as a milk substitute. When the milk requirement was met with some of the cheese used, the rest of the cheese was considered as a meat substitute. All of the cheese used was considered as a meat substitute when the milk requirement was met without the use of cheese.

Procedure for using cheese as a milk substitute (based on values for calcium).

1. 1 lb. of cottage cheese = 1 pt. of milk
2. 5 ounces of cheese (other than cottage cheese) = 1 qt. of milk

Procedure for using cheese as a meat substitute (based on protein values).

1. 2 ounces of cheese (other than cottage cheese) = 1 serving of meat
2. 3 or 4 ounces of cottage cheese = 1 serving of meat

Procedure for using dried peas or beans as a meat substitute was as follows:

- 1 serving of dried peas or beans = 1 serving of meat

The DIETARY PATTERN to meet recommended allowances outlined by the Committee on Food and Nutrition, National Research Council, is as follows:

Milk, adults — 1 pt. daily; children — 1 qt. daily

Vegetables — 2 servings daily — 1 green or yellow

Fruit — 2 servings daily — 1 citrus or tomato and 1 other

Eggs — 3 or 4 times per week

Meat — 1 serving daily

Whole grain or “enriched” cereal and bread — at least half the intake

Butter or fortified oleomargarine (100-500 calories)

Potato — 1 or more servings daily