

Diet Therapy



THE COST OF AN ADEQUATE DIET

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FOOD is the item which takes the greatest proportion of the family budget at a low or moderate income level. The amount of money a family can spend on food, and the type of food this sum buys are both important factors in determining dietary adequacy.

LOW AND MODERATE COST PLANS

The Recommended Dietary Allowances of the Food and Nutrition Board, National Research Council¹ provide a practical guide for planning normal and therapeutic diets,² and can also serve as a basis for determining the cost of an adequate diet. These recommended allowances have been translated by the Human Nutrition Research Branch of the United States Department of Agriculture into the kinds and quantities of foods that will furnish a nutritionally adequate diet at a low and moderate cost level.³ These food lists have been detailed for each of the age and activity groups listed in Table I.

A U. S. Department of Agriculture publication⁴ describes the two cost levels as follows:

"The plans differ in relative quantities of foods from the different groups and in choice of foods within a group. The low-cost plan relies heavily on the cheaper food groups: potatoes, dry beans and peas, flour and cereals. Also this plan is based on selection of the cheaper foods within the groups, for instance, the less expensive cuts of meat and the lower priced vegetables and fruits.

"The moderate-cost plan allows for larger quantities from the more expensive food groups

such as meat and eggs. It allows also for some of the higher priced cuts of meat and a few out-of-season foods.

"Menus made from the quantities suggested in the low-cost plan will be simple. They will include foods requiring a considerable amount of home preparation and will call for skill in cooking to make varied and appetizing meals. They will have more cereal products, potatoes, and dry beans and peas. On the other hand, the moderate-cost plan will allow for menus with greater variety, some frills, and less home preparation. Although neither plan allows for much waste in food preparation, the moderate-cost plan has slightly more leeway than the low-cost."

BUDGET ALLOWANCES FOR FOOD

The following table shows the estimated cost of one week's food at these two levels when food is prepared and served at home. The weekly cost of food for a specific family can be estimated from this table since costs are given for individuals of different ages and degrees of activity. Such cost estimates are usually made in June and December of each year, with interim adjustments during periods of rapid price change.

Variation in food costs amounts to well over 100 per cent between the highest and lowest categories, indicating the effect of sex, age and activity characteristics on cost.

Obviously, the number in the family group also affects food costs. The small family usually cannot buy and prepare its food as economically as can a large family. For this reason, the following additions to the esti-

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TABLE 1
Estimated Cost of One Week's Food (October 1956)⁵
(Average Prices in 46 Cities)

Age and activity groups	Low-cost adequate diet	Moderate-cost adequate diet
Children:		
1-3 years	\$3.00	\$3.75
4-6 years	3.75	4.50
7-9 years	4.50	5.25
Girls:		
10-12 years	5.00	6.00
13-15 years	5.50	6.50
16-20 years	5.25	6.50
Boys:		
10-12 years	5.50	6.25
13-15 years	6.25	7.75
16-20 years	7.00	8.50
Women:		
Sedentary	5.00	6.00
Moderately active	5.50	6.75
Very active	6.00	7.75
Pregnant	6.50	7.75
Nursing	8.00	9.00
60 years or over	5.00	6.00
Men:		
Sedentary	5.50	6.75
Physically active	6.00	7.75
Doing heavy work	7.50	9.75
60 years or over	5.50	6.50
Per capita	5.50	6.75

Estimated weekly cost are suggested: for an individual living alone, add 35 per cent; for two in the family, add 20 per cent; for three in the family, add 10 per cent. For families of six or more a reduction in food costs is often possible because of the economies possible when buying and cooking in larger quantities.

The allowance for food granted to Public Assistance recipients varies among the states. Practically all of the food budgets planned for this type of case use the "low-cost food plan" of the U. S. Department of Agriculture. Usually the amount allowed is based on local pricing of the foods on this list. However, limited funds, and often administrative simplification, resulting in a rigid system of allowances without differentiation for age, sex and activity characteristics, mean that the actual allowance is different from the amount obtained by pricing. This may result in hardship for families whose composition varies from the

"standard" family of four persons or whose health and activity require special food consideration.

Using the median allowance of seven industrial states,* an old age assistance recipient might receive \$28.15 per month for food; a family consisting of sedentary father, moderately active mother, boy 13 years of age and girl 7 years of age might receive \$83.45 per month for food. These median amounts approach the estimated cost of providing a low-cost adequate diet, but would fall below this where the family group includes several teenagers, active adults, and/or a pregnant or lactating woman.

It is possible to provide the recommended dietary allowances with food quantities which can be purchased for 15 to 20 per cent less than those in the low-cost plan. However, adequate diets at lower costs tend to deviate from normal diet patterns, requiring the cooperation of the entire family in accepting less variety at mealtime, larger amounts of grain products, dry beans and peas, and potatoes, and much smaller quantities of meat, fish, poultry and eggs. For a family to maintain an adequate diet at this level for any extended period of time would be difficult without expert guidance in food management.

In general, extra money spent for food is apt to provide a more varied diet, and therefore a more nutritious diet. A study of rural, low-income families in the North Central States⁶ indicates that the households of homemakers over 60 years of age had poorer diets. Older homemakers tended to limit their food selection, and those who used relatively few foods during a week were likely to have poorer diets than those making a wider choice.

The quantities of food per person in the diet of these low-income families compared with those from the "low-cost food plan" suggest where improvement might be made. Older families used much less milk, and were more likely to omit altogether an important food group such as citrus fruits and tomatoes, leafy, green and yellow vegetables, or relatively

* Illinois, Indiana, Massachusetts, Michigan, New Jersey, New York and Wisconsin.

economical sources of protein such as legumes.

Many families are not especially restricted in the amount of money they can spend for food, but this is not in itself a guarantee of an adequate diet. Care must still be taken to insure ample amounts of all the nutrients by including sufficient quantities of such foods as milk and milk products, fruits and vegetables.

CHARACTERISTICS OF DIETS AT FOUR LEVELS OF COST

The manner in which the quantities of various food groups may be increased or decreased is illustrated in Table II. These food needs would vary for different age and activity categories.

liver at 13 cents on the low-cost diet, or calf liver at 37 cents per serving on the liberal-cost diet. The lower grades and the cheaper cuts of meat can be used on the lower cost levels, and the better grades of rib roasts and steaks on the liberal level. Adjustments of this type are shown in Table III.

COST CONSIDERATIONS FOR THERAPEUTIC DIETS

When a therapeutic diet is prescribed for a patient by a physician, the cost of such a diet may or may not be higher than that for a person in good health.⁷ When dietary modification can be made without seriously altering the normal diet, increased food costs should not be necessary in most cases. Qualitative

TABLE II
Weekly Food Needs (As Purchased) for a Family of Four*

Food group	Restricted ⁴ diet	Low-cost ⁵ diet	Moderate ⁶ cost diet
Leafy, green, and yellow vegetables	7 ³ / ₄ lb	9 lb	11 ³ / ₄ lb
Citrus fruit, tomatoes	6 ¹ / ₄ lb	8 ¹ / ₂ lb	10 ¹ / ₄ lb
Potatoes, sweet potatoes	14 lb	12 lb	10 ¹ / ₂ lb
Other vegetables and fruits	5 ¹ / ₄ lb	7 ¹ / ₄ lb	12 ¹ / ₄ lb
Milk (or equivalent in cheese, dry milk)	18 ¹ / ₂ qt	18 ¹ / ₂ qt	20 ¹ / ₂ qt
Meat, poultry, fish	3 ³ / ₄ lb	7 ¹ / ₂ lb	10 ¹ / ₄ lb
Eggs	15	20	28
Dry beans, peas, nuts	1 ⁷ / ₈ lb	1 ¹ / ₄ lb	⁵ / ₈ lb
Flour, cereals†	14 ¹ / ₄ lb	13 lb	11 lb
Fats and oils	2 ³ / ₄ lb	3 lb	3 ¹ / ₈ lb
Preserves, sugar, syrups	2 ³ / ₄ lb	3 lb	3 ³ / ₈ lb

* Father, sedentary; mother, moderately active; boy, 13 years; girl 7 years old.

† 1¹/₂ lb bread equal 1 lb flour, cereal.

In general, the quantity of milk and milk products should not be changed greatly, regardless of the amount to be spent for food. The greatest adjustments to a lower cost level can be made by reducing the quantities of meat, poultry and fish somewhat, and also the group described as "other vegetables and fruits," and increasing the potato and cereal intake. Within any food group there are both expensive and inexpensive sources of the important nutrients. The cost of the meat, poultry and fish group depends on the specific kind of meat, poultry or fish priced, and the division of the total poundage among them. For example, when liver is used, it might be lamb liver at 10 cents per serving on the restricted diet, beef

changes, such as variations in the consistency and digestibility of food should be obtainable at a cost similar to the cost of an adequate diet for a well person. Changes with respect to the quantity of one or more nutrients may mean that the patient must seek the less expensive sources of some nutrients, unless food costs are to be greatly increased. This becomes a problem in nutritional education. For a patient who has a low income and especially one with a fixed food allowance, some education as to the relative costs of different sources of a nutrient is essential—for an increased food allowance for one person may result in either an inadequate diet for other members of the family, or money taken away from other basic

TABLE III
 Characteristics of Adequate Diets at Four Levels

	Restricted	Low	Moderate	Liberal
Estimated cost per week: for family of four (school age children)	\$17.50	\$21.50	\$26.00	--
Meat, poultry, fish, eggs, dry beans and peas, nuts	Very small quantities of meat, poultry, fish and eggs Lower grades and cheaper cuts Inexpensive variety meats Much larger amounts of dry beans and peas, lentils	Small quantities of meat, poultry, fish, eggs Lower grades and cheaper cuts Inexpensive variety meats Large amounts of dry beans and peas, lentils	Larger quantities of meat and eggs Some higher priced meats	Larger quantities of meat and eggs Higher grades, more expensive cuts
Leafy, green, yellow vegetables, citrus fruits, tomatoes	Cheapest fruits and vegetables in season More potatoes Canned tomatoes or juice when citrus fruits are high Canned citrus juices when cheaper than fresh fruit Cheaper grades of canned products	Lower priced fresh fruits and vegetables in season More potatoes	Fresh fruits and vegetables in season A few out-of season foods	More variety in fresh fruits and vegetables Use of more expensive and out-of season ones
Milk, milk products	Evaporated and non-fat dry milk when cheaper than fluid milk	Evaporated and non-fat dry milk when cheaper than fluid milk		
Bread, flour, cereals	Much larger quantities Cereal products as extenders No expensive ready-baked items	Larger quantities Cereal products as extenders No expensive ready-baked items	Smaller quantities	More expensive ready-baked items
Other characteristics	Much home preparation of food Food served at home Fewer foods in one meal with larger servings of these	Home preparation of food Food served at home Fewer foods in one meal with larger servings of these	Some ready-to-serve and partially prepared foods A few meals eaten away from home More items in one meal	More ready-to-serve and partially prepared foods More meals away from home

needs such as shelter and clothing. A nutritionist, dietitian, or nurse with experience in budgetary planning, as well as in construction of therapeutic diets, can provide invaluable assistance. For those who must rely on published materials, the planning guides listed at the end of this article are reliable, readily available and inexpensive.

REFERENCES

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3. Human Nutrition Research Branch, U. S. Dept. of Agriculture; *Food Plans at Low and Moderate Cost*. FE 86, 1955. Washington, D. C.
4. Bureau of Human Nutrition and Home Economics,

U. S. Dept. of Agriculture; *Helping Families Plan Food Budgets*. Misc. Publ. 662 Revised 1952, Washington, D. C.

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6. Orshansky, M., Age of Homemaker and the Family Diet. *Rural Family Living*, August 1956, Washington, D. C.
7. Health and Welfare Federation of Allegheny County, *Guide to Limited Family Incomes in Pittsburgh and Allegheny County*, Fourth Revised Edition. Sept. 1950, pp. 17-22, Pittsburgh, Pa.

PLANNING GUIDES

Human Nutrition Research Branch, U. S. Department of Agriculture, Washington, D. C.
Helping Families Plan Food Budgets, Misc. Pub. No. 662, 1950
Food for Two



- Food for the Family with Young Children*, Bulletin G-5
Food for Families with School Children, Bulletin G-13
Food Guide for Older Folks, Bulletin G-17
Nutrition Up to Date Up to You, Reprinted from
Home and Garden Bulletin No. 1, Family Fare,
Separate 1
*Budget Standards for Family Agencies in New York
City*, New York Budget Council, 105 East 22nd
St., New York City
Chicago Standard Budget for Dependent Families,
Budget Committee of the Family and Child Wel-
fare Division, Chicago Council of Social Agencies,
344 S. Dearborn St., Chicago, Ill.
Family Low-Cost Budget Guide, Health and Welfare
Council, 311 South Juniper St., Philadelphia 7, Pa.
*Guide to Limited Family Incomes in Pittsburgh and
Allegheny County* (see reference 7)
The Minimum Family Budget, Visiting Nurse As-
sociation of Boston, 137 Newburg St., Boston 16,
Mass.

Practical Diet Therapy

THE AMERICAN JOURNAL OF CLINICAL NUTRITION is pleased to announce the availability of a booklet entitled PRACTICAL DIET THERAPY. This is a collection of permanently useful articles which have appeared in the Diet Therapy section of this JOURNAL.

Starting, as all diet therapy must, with the concept of the "normal" diet, this guide goes on to discuss the various adaptations of the basic pattern to specific therapeutic aims. Included are papers on bland and liquid diets, high protein regimens, limitation of dietary cholesterol, the low purine diet, and sodium restriction. Other articles deal with diet in diabetes and the principles of geriatric nutrition. A special series of papers gives practical advice on diet in pregnancy, infant feeding, and the nutrition of preschool and school-age children. The special dietary problems and procedures involved in metabolic studies are also covered, and the discussion of correct dietary nomenclature is a "must" for anyone required to write diet prescriptions.

This collection of helpful reprints is priced at \$2.00 per copy, and is obtainable from the publisher.

