

# Dietotherapy

☆ As a feature of immediate practical value to our readers, the JOURNAL will present a series of articles on dietetics by a noted authority, Corinne Robinson, Lecturer in Nutrition at Temple University, Philadelphia, and Chairman, Diet Therapy Section, American Dietetic Association—ED.

## FOOD THERAPY BEGINS WITH THE NORMAL DIET

THE MAINTENANCE or reestablishment of good nutritional status is the fundamental objective of any dietary regimen. The principles which govern the planning of diets in health will likewise apply, in large degree, to the planning of therapeutic diets, inasmuch as the food requirements for most ill people are like those of people in health.

Disease conditions may greatly modify an individual's nutritive requirements. In some pathological conditions it becomes necessary to modify the normal diet with respect to the quantity of one or more nutrients. In other situations, qualitative changes, such as variations in consistency, flavor, and digestibility of food, are required. All such dietary modifications are most easily made when they are related to the normal diet. Moreover, if planning has been carried out in terms of the normal diet, it is a relatively simple matter to make an assessment of the nutritive adequacy of the modified regimen.

There is a distinct psychological advantage in relating all diets to the normal pattern. Even though considerable dietary modification is sometimes necessary for a short period of time, most people can look forward to a return to normal patterns of diet. Some people, of course, require modified diets for the rest of their lives, but even here emphasis can be placed on the *similarities to the normal diet* rather than on the deviations from the desired pattern.

### *What Is the Normal Diet?*

No two individuals have absolutely identical food requirements. It is impossible to escape consideration of such factors as the individual's age, weight, activity, religious, social, and emotional patterns; nor can a dietary program become effective if there has been no regard to the cost and availability of food or to the facilities for properly cooking the food. The normal diet cannot be a "single rule of thumb" which can be applied to every individual.

The Recommended Dietary Allowances of the Food and Nutrition Board<sup>1</sup> provide a practical guide for planning normal and therapeutic diets. For example, the Recommended Allowances for a sedentary man or for a moderately active woman may be used to plan a foundation diet for persons in these categories. Such a *foundation* or Basic Diet is given in Table I. It will be noted that this diet provides ample amounts of all of the nutrients, but does not meet the caloric needs of most persons in these groups. Sufficient calories to maintain optimum body weight are obtained by eating larger amounts of any of the foods in the foundation diet or by adding cream, fats, sweets, desserts, etc., to this diet.

It should be emphasized that the basic diet is planned in terms of food classes rather than specific foods. Thus, the individual can fully express his preferences as to the kind of vege-



DIETOTHERAPY

Nutritive Value of Basic Diet\*

Food	Measure	Weight	Calories <sup>1</sup>	Protein <sup>1</sup>	Fat <sup>1</sup>	Carbo- hydrate <sup>1</sup>	Ca	Fe	A	Vitamins			
										Gm.	Gm.	Gm.	I. U.
Milk or equivalent	3 cups	720	480	26	27	36	0.84	0.7	1,230	6	0.30	1.29	0.9
Meat, fish, or fowl <sup>2</sup>	3 ounces (raw wt.)	75	160	17	10	1	0.01	2.8	1,495	1	0.23	0.24	3.8
Egg	1	50	80	7	6	..	0.03	1.4	495	..	0.07	0.18	..
Other protein <sup>3</sup>	1 serving	50	90	6	6	3	0.05	1.1	205	..	0.08	0.11	0.4
Whole-grain or en- riched bread	1 serving	30	80	2	1	15	0.01	0.6	..	..	0.06	0.04	0.6
Whole-grain or en- riched bread	3 slices	90	240	8	3	45	0.03	1.8	..	..	0.18	0.12	1.8
Potato	1-2 servings <sup>4</sup>	150	130	3	..	29	0.02	1.1	50	12	0.12	0.05	1.5
Green or yellow vegetable	1-2 servings <sup>4</sup>	150	50	3	..	10	0.14	2.1	6,225	44	0.13	0.22	0.9
Other vegetable	1 serving	100	30	1	..	7	0.03	0.5	265	14	0.03	0.03	0.3
Citrus fruit	1 serving	100	50	1	..	11	0.02	0.4	180	42	0.07	0.03	0.2
Other fruit	1 serving	100	55	1	..	13	0.01	0.4	740	11	0.03	0.04	0.3
Butter or fortified margarine	2 tablespoons	30	210	..	24	..	..	..	960	..	..	..	..
Recommended Dietary Allowances—													
Woman		1655	75	77	77	170	1.19	12.9	11,845	130	1.30	2.35	10.7 <sup>5</sup>
Man		2400	60	..	..	..	1.0	12	5,000	70	1.2	1.5	12
		2400	70	..	..	..	1.0	12	5,000	75	1.2	1.8	12

<sup>1</sup>Calories have been rounded off to the nearest 5, and protein, fat, and carbohydrate to the nearest whole gram. In computing the averages for fruits and vegetables, the values have been weighted to conform roughly to the available food supplies.

<sup>2</sup>This assumes per two-week period: beef, veal, lamb, fowl—525 Gm.; pork, ham—300 Gm.; fish—150 Gm.; liver—75 Gm.

<sup>3</sup>Average of foods used for luncheon and supper dishes. Includes cheese, legumes, additional meat, or egg—small serving.

<sup>4</sup>It is assumed that 1-2 servings of potato and of green leafy or yellow vegetables will average 150 Gm. per day.

<sup>5</sup>The liberal tryptophan content of this diet together with this level of niacin will amply fill the niacin requirement.

tables, fruits, meats, and bread or cereals at any given time. Even though such broad classes of food permit a great deal of individual latitude in day-to-day meal planning, it should not be assumed that this is the only sound plan, or even the best one, which could be devised in any given situation. One could plan other diets which contained greater or smaller amounts of meat, cereals and breads, vegetables, fruits, milk, etc., and still achieve nutritive adequacy.

One of numerous ways in which the food allowances of the foundation diet can be arranged into a meal pattern is given below:

MEAL PATTERN	TYPICAL MENU
<i>Breakfast</i>	<i>Breakfast</i>
Fruit, citrus—1 serving	(Frozen) orange juice
Cereal, whole grain or enriched— $\frac{1}{2}$ cup	Wheat cereal with milk, sugar
Milk and sugar* for cereal	Soft cooked egg
Egg—one	Whole wheat bread
Whole grain or enriched bread—1 slice	Margarine—1 teaspoon
Butter or margarine—2 teaspoons	Coffee with cream, sugar
Beverage*	
<i>Luncheon (or Supper)</i>	<i>Luncheon</i>
Cheese, legumes, egg, meat, fish, or fowl—1 serving	Grilled cheese sandwich: bread, cheese, margarine
Vegetable, green or yellow, raw—1 serving	Mixed green salad
Salad dressing*	French dressing
Bread, whole grain or enriched—1 slice	Applesauce
Butter—2 teaspoons	Milk
Fruit—1 serving	
Milk—1 cup	
<i>Dinner</i>	<i>Dinner</i>
Meat—3 ounces	Tomato juice
Potato—1 serving	Meat balls with gravy
Vegetable—1 serving	Mashed potato
Whole grain or enriched bread—1 slice	Buttered carrots
Butter or margarine—2 teaspoons	Baking powder biscuit
Dessert*	Butter
Milk—1 cup	Tapioca pudding
	Milk

\* These foods are in addition to the basic diet.

Milk may be used as beverage, for cereals, in soups, in milk desserts, etc. Butter or margarine may be used for flavoring foods as well as for a spread for bread; cream and salad dressing may replace part of the butter.

### *The Foundation Diet in a Program of Food Therapy*

How can this or any other foundation diet be useful to the physician in planning the therapeutic diet?

To illustrate, let us suppose that a low calorie diet is desired. Reference to the Basic Diet in Table I makes it evident that a nutritionally adequate diet can be planned by using one or more of the following simple modifications depending on the desired calorie level: (a) use skim milk and decrease the butter or margarine; (b) reduce the amounts of bread, cereal, and/or potato but use whole milk; (c) include 1-2 extra servings of vegetables and fruit in order to provide extra bulk, better meal acceptability, and replacement of vitamins and minerals which are decreased by the reduced amounts of breads and cereals.

Again, what problems of nutritive adequacy would be encountered if a dietary program required the entire omission of milk? With the use of the calculated foundation diet it quickly becomes evident that milk contributes outstandingly to the protein, calcium, and riboflavin content of the diet, and importantly to the thiamine level of intake. Perhaps meat or eggs can be used in greater amounts to compensate for the protein supplied by milk, but these foods are not suitable substitutions with respect to calcium and riboflavin levels of the diet. Hard cheese is a desirable substitute for these valuable nutrients of milk, but in some situations such as the 200 mg. sodium diet is cannot be used. The physician then recognizes the need for prescribing supplements if the diet is to be used for more than a few days.

If, for example, raw fruits and vegetables are contraindicated in a certain clinical state, the use of all cooked foods may significantly lower the mineral and vitamin contributions of these classes of foods. Reference to the Basic Diet makes it apparent that one way to maintain the desirable ascorbic acid intake would be to double the amount of citrus fruit juice.

The physician who consistently evaluates the dietary regimens he prescribes in terms of



the normal diet will find that his patients accept his recommendations more willingly and are likely to abide by a program which permits individual food choice as well as suitable meal arrangements. Dietary modifications are less frequently made, because it is found that the normal diet is, after all, the most effective program in a great variety of situations.

The old-fashioned, dangerously inadequate, rigidly fixed "special" diet lists of years ago have no place in modern food therapy. They

have given way to nutritionally adequate, individually acceptable therapeutic diets which use the normal diet as a foundation.—CORINNE ROBINSON

#### REFERENCES

1. Food and Nutrition Board, National Research Council: *Recommended Dietary Allowances*, Revised 1948, Washington, D. C.
2. PROUDFIT, F. T., and ROBINSON, C. H.: *Nutrition and Diet Therapy*, 10th edition. The Macmillan Company, New York, 1950.

## Nutritional Quotes

### Why Breast Milk?

"One accepts the fact that human milk taken by the infant from the mother's breast is the ideal food for the human infant: this needs restating, particularly at the present time, because it has recently been questioned, and figures have been published showing that small infants fed on a modified cow's-milk mixture with a high protein content, can achieve more rapid gains in weight than with breast milk. That this is so can be accepted, but it is salutary to remind ourselves that good nutrition cannot be determined merely by a gain in weight. Indeed, except for the very small premature infant in the first weeks of life, a too rapid gain may be disadvantageous: overweight infants succumb to infections more frequently than those who are of average weight for age."

—S. Graham. *The British Journal of Nutrition* 6: 207, 1952.

### Intravenous Iron

"Iron should not be given intravenously to patients with refractory anemia because they are refractory on oral administration, but only to those who have a hypochromic anemia with iron deficiency. It should not be given in a quantity materially greater than is needed to replace this deficiency, as calculated from the amount of hemoglobin and the probable blood volume. With this precaution, intravenous administration of iron should be valuable in a small selected group in whom iron orally administered is disturbing or poorly absorbed, and in the later stage of pregnancy, when rapid replenishment of the iron stores is important."

—P.W.C., editorial. *Annals of Internal Medicine* 36: 699, 1952.

### The Extrinsic Factor

"It appears, therefore, that the macrocytic anemia of tropical sprue or pernicious anemia is a multiple deficiency state, and that both folic acid and vitamin B<sub>12</sub> are necessary to correct this abnormality of hemopoiesis. The synergistic action of folic acid and vitamin B<sub>12</sub> (extrinsic factor), or vice versa, suggests the possibility that folic acid is needed for the proper absorption and utilization of vitamin B<sub>12</sub> by the human organism.

The extrinsic factor as described by Castle may very well be a combination of substances, among which folic acid and vitamin B<sub>12</sub> play a prominent role."

—F. Diez-Rivas, F. Hernandez-Morales, and L. M. Meyer. *Annals of Internal Medicine* 36: 1076, 1952.

### Antibiotics and Vitamins

"More work is needed before any sound conclusions can be drawn concerning the mode of action of the antibiotics in influencing the requirements for known dietary factors. It is of course only speculation that an antibiotic apparently can conserve a given vitamin for the host by suppressing the intestinal organisms that are in competition with the host for that vitamin in the intestinal contents."

—*Nutrition Reviews* 10: 108, 1952.

### It's the Milk, Not the Cereal

"It is unfortunate that some have seized upon the results displayed in recent literature to claim a nutritional superiority of one cereal over certain others. This practice is unwarranted, unethical, and not in the interests of the public good. Breakfast cereals are eaten with milk, only rarely with water alone. Any differences in the biologic value of their proteins is obliterated when consumed with the proper proportions of milk—a weight ratio of 1:1."

—*Nutrition Reviews* 10: 130, 1952