

Dietotherapy

LIQUID DIETS

By CORINNE H. ROBINSON*

LIQUID DIETS may be employed postoperatively, in febrile states, or in any situation where the patient is unable to tolerate solid foods. Because the diets are usually used for short periods of time, too little consideration is sometimes given to planning for nutritive adequacy.

The following are some formulae of liquid diets which have proved valuable in our experience and are offered as guides to the general use of such diets in practice. Naturally, in every case there will have to be modifications to tailor the nutritional intake to the patient's specific medical problem.

CLEAR LIQUID DIET

The clear liquid diet supplies fluid in the form of fat-free broth, ginger ale, tea and coffee with sugar but without milk or cream. The caloric intake will depend upon the quantity of ginger ale and the amount of sugar used in the tea or coffee, but in any case it will be insignificant in relation to total body needs. Occasionally, small amounts of strained fruit juices, egg white, and gelatin may be included on the clear liquid diet.

FULL LIQUID DIET

The full liquid diet includes all foods which are liquid at room temperature and at body temperature. It provides normal allowances of all the nutrients in a form which requires minimum activity for digestion and absorption. A guide for planning this diet follows:

Include these foods, or their equivalents, daily:

6 cups milk
2 eggs

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$\frac{1}{2}$ cup strained cooked cereal for gruel
 $\frac{1}{4}$ cup vegetable purée for cream soup
1 cup citrus fruit juice
 $\frac{1}{2}$ cup tomato or vegetable juice
1 tablespoon cocoa
3 tablespoons dried brewers' yeast
3 tablespoons sugar
1 tablespoon butter
2 servings plain gelatin dessert, Junket, custard, ices, or plain ice cream
Broth or bouillon

Nutritive values of foods specified above: Protein, 87 Gm.; calories, 1980; calcium, 2.1 Gm.; iron, 11 mg.; vitamin A, 6300 I.U.; thiamine, 3.3 mg.; riboflavin, 4.6 mg.; niacin, 12 mg.; ascorbic acid, 160 mg. *Note:* Failure to include brewers' yeast in the amounts specified will result in iron and niacin intakes below the recommended dietary allowances for adults in health.

To increase caloric level: (a) substitute light cream for part of the milk; (b) use glucose in fruit juices; (c) use ice cream for dessert or in beverages; and (d) use butter in soups and gruels.

To increase the protein level: (a) use non-fat milk solids in milk beverages,¹ custards, and cream soups; (b) use egg white with fruit juices; (c) add beaten whole egg to broth.

Meal Plan. Six or more feedings should be used daily. One way in which the above list of foods may be incorporated is given here:

<i>Suggested Meal Pattern</i>	<i>Sample Menu</i>
<i>Breakfast</i>	
Citrus juice	Orange juice
Cereal gruel with butter, sugar, milk	Strained oatmeal with hot milk, butter, sugar
Beverage with cream, sugar	Coffee with cream, sugar

Midmorning

Eggnog	Malted milk
or	
Fruit juice with egg	
or	
Milk beverage	

Noon Meal

Strained soup	Cream of asparagus soup
Tomato juice with	Tomato juice with yeast
brewers' yeast	Baked custard
Custard, ice cream, plain	Milk
gelatin, or junket	Tea with sugar, 1 lemon
Eggnog, milk, or cocoa	
Tea or coffee, if desired	

Midafternoon

Same as at midmorning	Ginger ale and grape juice with egg white
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Evening Meal

Strained soup	Beef broth with egg*
Citrus fruit juice	Grapefruit juice
Custard, ice cream, plain	Junket
gelatin, or junket	Hot chocolate made with
Eggnog, milk, or cocoa	milk

At Bedtime

Same as at midmorning	Eggnog with vanilla ice cream
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* To prepare broth with egg, add $\frac{3}{8}$ cup hot broth gradually to one slightly beaten egg, stirring continuously. Serve at once.

TUBE FEEDINGS

Any foods which will pass easily through a tube may be used for a tube feeding. The selection of kinds and amounts of food is dependent upon the needs of the individual patient. Since these feedings may be needed for a long period of time, it is essential that all of the nutritive essentials be included. This is more readily accomplished when a formula, such as the one described below, is used.

High Protein Tube Feeding

	Household Measure	Weight Gm.
Skim milk	6 cups	1440
Nonfat milk solids	1 $\frac{1}{2}$ cups	150
Eggs	4	200
Sugar	$\frac{1}{2}$ cup	120
Molasses	$\frac{1}{2}$ cup	120
Brewers' yeast	3 tablespoons	25
Salt	1 teaspoon	5
Cod-liver oil or A and D concentrate	1 teaspoon oil	4

To prepare: Put skim milk in large bowl. Sprinkle milk solids on top of milk, and beat with rotary beater until well blended. Beat eggs, add sugar and molasses, and add gradually to milk, stirring until well mixed. Add yeast, oil, and salt; beat until smooth. Store in covered bottles in refrigerator.

To feed: Heat enough formula for one feeding over hot water. The formula should not be heated warmer than 100° F. since curdling may otherwise take place. Usually 6 to 8 ounces of this formula may be given at intervals of two to three hours.

Nutritive value of recipe: Protein, 143 Gm.; calories, 2309; calcium, 4.2 Gm.; iron, 23 mg.; vitamin A, 6500 I.U.; thiamine, 3.9 mg.; riboflavin, 7.8 mg.; niacin, 15.6 mg.; ascorbic acid, 14 mg.

Ascorbic acid is provided by giving $\frac{3}{4}$ cup orange juice by tube daily.

Variations: To increase calories, use whole milk in place of skim milk. To increase protein, use Casec® in place of nonfat milk solids. If there is a tendency to diarrhea, add apple sauce or apple powder to the formula.

REFERENCE

1. ROBINSON, C. H.: Planning the high protein diet. J. CLIN. NUTRITION 1: 401, 1953.