

Dietotherapy

THE LOW PURINE DIET

By CORINNE H. ROBINSON*

THE LOW PURINE diet has been used by many physicians for the treatment of gout, on the premise that a reduction of purines in the diet would lead to a correspondingly diminished production of uric acid in the body. More recently it has been found that very simple nitrogen- and carbon-containing compounds are precursors of purines which can be synthesized in the body; thus, dietary protein, fat, and carbohydrate all contribute to the production of uric acid. In view of this fact, the exclusion of nucleoproteins from the diet cannot, in itself, be expected to greatly reduce the uric acid levels in the blood and tissues.

MODIFICATION OF THE DIET

If dietary regulation is to be of benefit, it must be observed over a long period of time; some restriction may be indicated throughout life. However, the extremely rigid diets excluding meat at all times which were prescribed some years ago probably were not justified, inasmuch as the patient was likely to become an invalid from his diet as well as from his gout. The following regulations may be of some benefit in the treatment of gout.

Energy

The caloric intake should be planned to sustain optimum weight, or to effect weight loss in the obese. Contrary to popular opinion, obesity is not inevitably present in the gouty patient, nor can it be stated that overweight may predispose to the disease. Nevertheless, an excessive caloric intake will contribute materials for the synthesis of purines in the body.

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Protein

Since the amino acids provide nitrogen as well as carbon for the endogenous production of purines in the body, it is desirable to restrict protein to maintenance levels; that is, to $\frac{2}{3}$ to 1 Gm. per kilogram of body weight. This, in itself, dictates an important change in the average American diet, which provides a liberal intake of milk, eggs, cheese, meat, poultry, and fish.

Purines

Some restriction of purines is advisable, so that the uric acid pool is not needlessly increased. All animal foods contain significant amounts of nucleoproteins, while the germ of seeds and some plants also contain nucleoproteins.

These foods are especially high in purines and should be omitted at all times: organ meats—liver, kidney, sweetbreads, brains; meat extracts, meat soups, and gravies; anchovies, and sardines.

Meat, poultry, and fish also contain significant amounts of purines, but indefinite elimination of them does not seem wise. Some patients have benefitted by use of the very low purine diet described below during the acute phases, while the maintenance diet has permitted a small serving of meat three to five times a week.

Other less concentrated sources of purines include whole-grain breads and cereals; dry beans, peas, and lentils; spinach, asparagus, and cauliflower. Their elimination from the diet is perhaps not necessary at all times.

Coffee, tea, and chocolate have been eliminated from the diet by some physicians, since these beverages contain methyl-xanthines. However, methyl-xanthines are metabolized

to methyl-uric acid, which is not believed to increase the deposition of urates in the tissues. Thus, the omission of these beverages from the diet of persons who desire them imposes a needless hardship.

Fat

Since a high-fat diet may interfere with the excretion of urates, the fat level should be restricted to that provided in the basic diet pattern.

Carbohydrates

Carbohydrates are used to complete the caloric requirement. A plan for the low purine diet is presented below:

LOW PURINE DIET

Suggested Basic Foods

- 3 cups milk
- 2 eggs
- 1 ounce cheese
- 1 serving enriched cereal
- 4-6 slices enriched bread
- 3-4 servings vegetables including:
 - 1 medium potato
 - 1-2 servings green leafy or yellow vegetable
 - 1 serving other vegetable
- 2-3 servings fruit including:
 - 1 serving citrus fruit
 - 1-2 servings other fruits
- 2 tablespoons butter or fortified margarine

Additional calories are provided as needed by increasing the amount of potato, potato substitutes such as macaroni, rice, noodles, fruits, vegetables, bread, sugars, and sweets.

Nutritive Value of Basic List of Foods: Calories, 1850; protein, 68 Gm.; fat, 80 Gm.; carbohydrate, 220 Gm.; calcium, 1400 mg.; iron, 11.3 mg.; vitamin A, 10,350 I.U.; thiamine, 1.32 mg.; riboflavin, 2.33 mg.; niacin, 10.0 mg.; ascorbic acid, 145 mg.

Moderately Low Purine Diet

Use a small serving of lean beef, veal, lamb, poultry, or fish three to five times a week. On the days when these are included, the cheese and one egg may be omitted.

One of many ways in which the basic list of foods might be used to plan meals is suggested here.

Suggested Meal Pattern

Breakfast

- Fruit
- Enriched cereal
- Milk and sugar for cereal
- Egg—1
- Enriched toast—2 slices
- Butter—2 teaspoons
- Coffee—1 cup

Luncheon or Supper

- Cream soup
- Egg or cheese
- Salad
- Bread—2 slices
- Butter—2 teaspoons
- Fruit
- Milk—1 cup

Dinner

- Egg or cheese
- Potato
- Cooked vegetable
- Bread—1-2 slices
- Butter—1 to 2 teaspoons
- Dessert
- Milk

Sample Menu

- Orange juice
- Cream of wheat with milk, sugar
- Shirred egg
- Toast—2 slices
- Butter
- Coffee with milk, sugar; no cream
- Cream of tomato soup; Melba toast
- Fruit salad plate with:
 - Apricot halves
 - Strawberries
 - Banana wedges
 - Cottage cheese center
 - Lettuce, watercress
- French dressing—1 tablespoon only
- Plain muffin with 1 teaspoon butter, current jelly
- Milk—1 glass
- Cheese soufflé
- Baked potato with 1 teaspoon butter
- Broiled tomato
- Hard roll with 1 teaspoon butter
- Raspberry sherbet
- Milk

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