# Heart Smart Nutrition

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# New Dietary Approaches to Treating Hypertension

By Maureen Elhatton, RD

One of the major breakthroughs in the treatment of hypertension has been the research into the dietary methods of controlling blood pressure (BP). Several studies have proven that reducing sodium intake and consuming a heart-healthy diet rich in fruit, vegetables and low fat dairy products can substantially lower BP.[1,2]

Historically, non-pharmacologic interventions have focused on the relationship between individual nutrients, *i.e.*, potassium, sodium *etc.*, and hypertension. While some successes have been reported, the reduction in BP was small and inconsistent.[3]

The first clinical trial examining the effects of dietary patterns on BP was published in 1997.[1] It advocated the control of BP through dietary change and compared the control diet (a typical North American one) to a fruit/vegetable diet and to a combination diet (heart-healthy, increased fruit, vegetable and low-fat dairy). All diets contained approximately 3,000 mg of sodium per day. Patients enrolled in the study had an average systolic BP of < 160 mmHg and diastolic BP of 80 mmHg to 95 mmHg.

While patients on the increased fruit and vegetable program reduced their BP, the hypertensive individuals on the heart-healthy diet, with increased fruit, vegetables and

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Table 1

## Sodium Content of Various Foods

**Remember, 2,000 mg of sodium is found in 1 tsp. of salt. The DASH Diet advises 1,500 mg to 3,000 mg of sodium per day.**

| Food Category | Approximate Sodium Content in mg |
|---|---|
| Fresh or frozen fruit/vegetables | < 20 |
| Canned vegetables/ vegetable juice | < 500 |
| l slice bread (most types) | < 200 |
| 1 cup pasta or rice cooked without salt | < 20 |
| 2 pancakes | < 800 |
| 1 cup milk (skim, 1%,2% or whole) | < 150 |
| 1 cup feta cheese | < 950 |
| 2 oz. part skim mozzarella cheese | < 300 |
| 1 cup unsalted mixed nuts | < 9 |
| 1 cup salted mixed nuts | < 484 |
| 3 oz. fish, poultry or meat prepared without salt | < 100 |
| 1 cup canned salmon | < 400 |
| 1 oz smoked salmon | < 500 |
| 1 weiner | < 500 |
| 1 cup canned soup | < 1,100 |
| 1 small beef pot pie | < 1,100 |
| Small sub with cold cuts | < 1,700 |

Adapted from: Health Canada: Nutrient Value of Some Common Foods. 1999. Canadian Government Publishing, Ottawa, Ont.

low-fat dairy products reduced their systolic and diastolic BP by 11.4 and 5.5 mmHg, compared to the control diet group. Improvements began within two weeks of starting the dietary changes and the reduction in BP was similar in men, women, and members of minority groups. This type of diet has since been called the DASH Diet (Dietary Approaches to Stop Hypertension).

The second study, published in 2001, combined the DASH Diet with varying amounts of sodium restriction: high (defined as 150 mmol-3,300 mg sodium/day); medium (defined as 100 mmol-2,400 mg sodium/day); and low (defined as 50 mmol-1,500 mg/day).[2] Results of this DASH Diet study, with its varying levels of sodium restriction, were compared to BP levels in patients consuming a control diet (typical North American) with similar sodium restrictions. The researchers discovered that the DASH Diet, in conjunction with varying degrees of sodium restriction, reduced both systolic and diastolic BP in a stepwise fashion. The lower the sodium intake, the better the improvement in BP control. On average, the group following the low-sodium DASH Diet reduced their BP more than either the group on the DASH

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Diet alone or on sodium reduction alone. While normotensive individuals significantly lowered their BP during this study, these effects were especially important in hypertensive individuals, where the effects of the diet were equivalent to or greater than the BP lowering of single-drug therapy. Even in the control diet group, improvements in BP control were noted with reduced sodium intake.

These studies have settled the controversy over whether sodium-restricted diets should be used in the control of high BP. The risk of high BP can be lowered in a typical North American diet just by restricting the sodium intake. However, the most effective dietary treatment for hypertension appears to combine the virtues of a DASH eating program with a sodium-restricted diet.

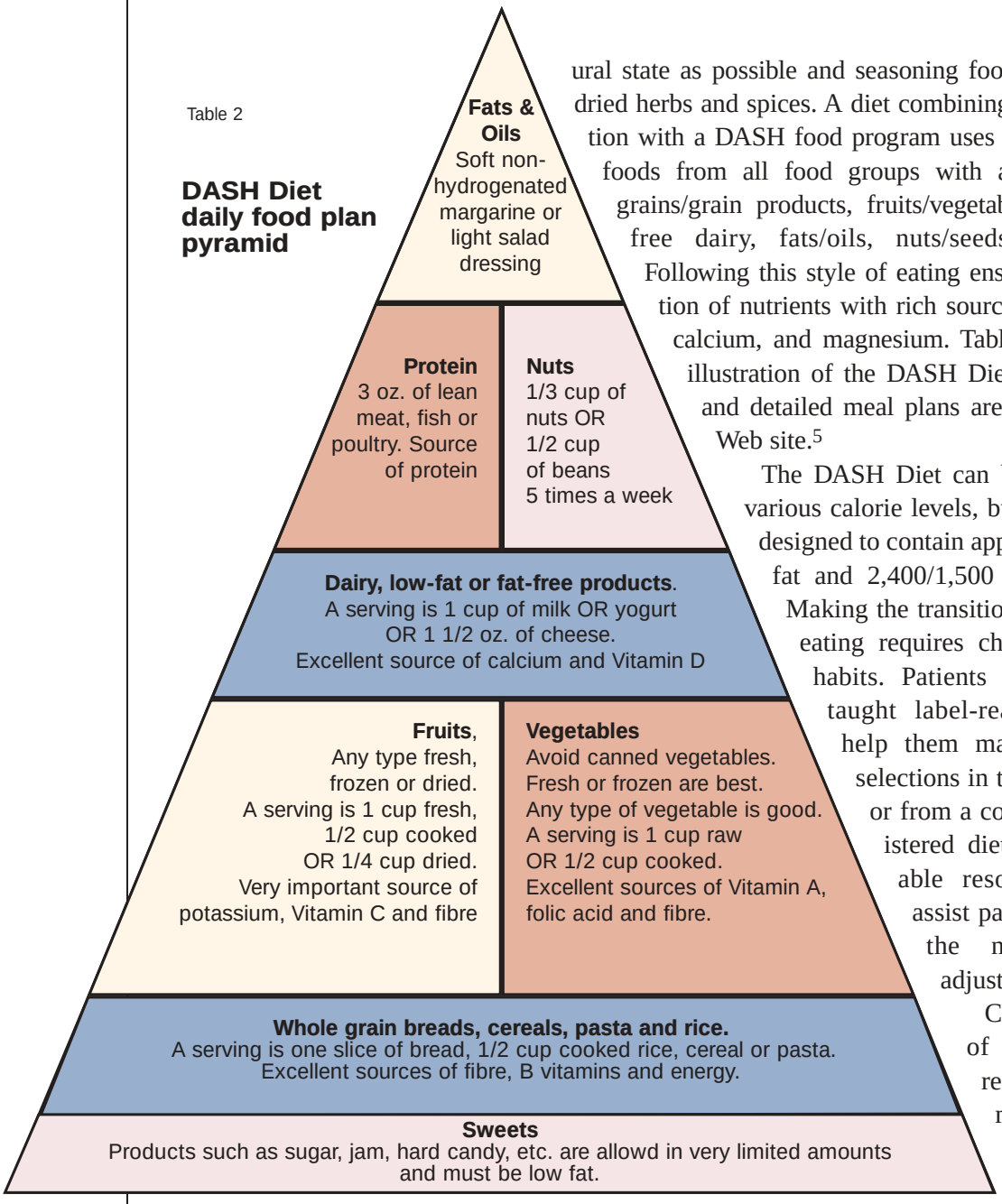
When recommending a sodium- restricted food program to patients, it is important to counsel them not only about the recommended amount, but also about useful comparative numbers. To provide a level of comparison, it is important to remember that a level teaspoon of table salt contains 2,373 mg of sodium.[4] For patient education purposes, ask them to remember that approximately 2,000 mg of sodium are found in one teaspoon of salt. Suggest that they remember the number 2,000 by thinking of the millennium year 2000. Although a 3,000-mg sodium restriction appears to mean consuming one teaspoon of salt per day, in reality, this much sodium and more is found in foods commonly eaten.

Table 1 provides a listing of some commonly consumed foods and their sodium contents.

Sodium is found in two major areas in the North American food program: as a food additive for seasoning purposes and for use as a preservation method, *i.e.*, canning, smoking, salting etc. The DASH Diet focuses on using foods as close to their nat-

Table 2

**DASH Diet daily food plan pyramid**




ural state as possible and seasoning foods with fresh or dried herbs and spices. A diet combining sodium restriction with a DASH food program uses readily available foods from all food groups with an emphasis on grains/grain products, fruits/vegetables, low-fat/fat-free dairy, fats/oils, nuts/seeds, and sweets. Following this style of eating ensures a combination of nutrients with rich sources of potassium, calcium, and magnesium. Table 2 provides an illustration of the DASH Diet food grouping and detailed meal plans are available on its Web site.[5]

The DASH Diet can be prescribed at various calorie levels, but it is generally designed to contain approximately 27% fat and 2,400/1,500 mg of sodium. Making the transition to this type of eating requires changes in eating habits. Patients should also be taught label-reading skills to help them make better food selections in the grocery store or from a cookbook.[6] A registered dietitian is a valuable resource who can assist patients in making the needed dietary adjustments.[7]

Current treatment of hypertension requires not only medication, but also diet coun-

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seling. The DASH Diet has a place in the eating habits of all Canadians affected by hypertension, and some researchers also advise it as a good first step in the prevention of this problem.[3] RCod


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