

## **TWO “HEALTHY” DIETS WITH SCIENTIFIC BACKING**

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From bookstores to social media to blogs, there’s no shortage of information on diet. So how to differentiate what “works” from an overhyped fad?

It’s important to remember that even if a particular diet may be successful for one person, it may not be effective for another due to individual differences in genes and lifestyle. And while research shows that calories matter, [focusing on food quality](#) is an equally important part of [preventing weight gain](#) and promoting weight loss. Diets are also more likely to be successful when they are easier to follow, so tailoring a strategy to suit your own lifestyle is key.

Still, when faced with the seemingly endless promotion of weight-loss strategies and diet plans, it helps to see what evidence is supporting them. In this series, we take a look at some popular diets and approaches to eating—and review the research behind them.

### **Mediterranean Diet**

The Mediterranean diet is a primarily plant-based eating plan that includes daily intake of whole grains, olive oil, fruits, vegetables, beans and other legumes, nuts, herbs, and spices. Other foods like animal proteins are eaten in smaller quantities, with the preferred animal protein being fish and seafood. It does not specify portion sizes or specific amounts, as it is up to the individual to decide exactly how much food to eat at each meal.

#### **What Is It?**

The traditional diets of countries bordering the Mediterranean Sea differ slightly so there are different versions of the Mediterranean diet. However, in 1993 the Harvard School

of Public Health, Oldways Preservation and Exchange Trust, and the European Office of the World Health Organization introduced the [Mediterranean Diet Pyramid](#) as a guide to help familiarize people with the most common foods of the region. More of an eating pattern than a strictly regimented diet plan, the pyramid emphasized certain foods based on the dietary traditions of Crete, Greece, and southern Italy during the mid-20<sup>th</sup> century. [1,2] At that time, these countries displayed low rates of chronic disease and higher than average adult life expectancy despite having limited access to healthcare. It was believed that the diet—mainly fruits and vegetables, beans, nuts, whole grains, fish, olive oil, small amounts of dairy, and red wine—contributed to their health benefits. The pyramid also highlighted daily exercise and the beneficial social aspects of eating meals together.

## How It Works

The Mediterranean diet is a primarily plant-based eating plan that includes daily intake of whole grains, olive oil, fruits, vegetables, beans and other legumes, nuts, herbs, and spices. Other foods like animal proteins are eaten in smaller quantities, with the preferred animal protein being fish and seafood. Although the pyramid shape suggests the proportion of foods to eat (e.g., eat more fruits and vegetables and less dairy foods), it does not specify portion sizes or specific amounts. It is up to the individual to decide exactly how much food to eat at each meal, as this will vary by physical activity and body size. There are additional points that make this eating plan unique:

- An emphasis on [healthy fats](#). Olive oil is recommended as the primary added fat, replacing other oils and fats (butter, margarine). Other foods naturally containing healthful fats are highlighted, such as avocados, nuts, and oily fish like salmon and sardines; among these, walnuts and fish are high in omega-3 fatty acids.
- Choosing fish as the preferred animal protein at least twice weekly and other animal proteins of poultry, eggs, and dairy (cheese or yogurt) in smaller portions either daily or a few times a week. Red meat is limited to a few times per month.
- Choosing water as the main daily beverage, but allowing a moderate intake of wine with meals, about one to two glasses a day for men and one glass a day for women. **(Editorial note by Dr. Kramer: Drinking any alcohol is problematic and is not encouraged).**
- Stressing daily physical activity through enjoyable activities.

## The Research So Far

Research has consistently shown that the Mediterranean diet is effective in reducing the risk of cardiovascular diseases and overall mortality. [3, 4] A study of nearly 26,000 women found that those who followed this type of diet had 25% less risk of developing cardiovascular disease over the course of 12 years. [5] The study examined a range of underlying mechanisms that might account for this reduction, and found that changes in inflammation, blood sugar, and body mass index were the biggest drivers.

One interesting finding of this eating plan is that it dispels the myth that people with or at risk for heart disease must eat a low fat diet. Although it does matter which [types of fats](#) are chosen, the percentage of calories from fat is less of an issue. The PREDIMED study, a primary prevention trial including thousands of people with diabetes or other risk factors for heart disease found that a Mediterranean diet supplemented with extra virgin olive oil or nuts and without any fat and calorie restrictions reduced the rates of death from stroke by roughly 30%. [6] Most dietary fats were healthy fats, such as those from fatty fish, olive oil, and nuts, but total fat intake was generous at 39-42% of total daily calories, much higher than the 20-35% fat guideline as stated by the Institute of Medicine. [7] Risk of type 2 diabetes was also reduced in the PREDIMED trial. [8]

There has also been increased interest in the diet's effects on aging and cognitive function. [9-11] Cell damage through stress and inflammation that can lead to age-related diseases has been linked to a specific part of DNA called telomeres. These structures naturally shorten with age, and their length size can predict life expectancy and the risk of developing age-related diseases. Telomeres with long lengths are considered protective against chronic diseases and earlier death, whereas short lengths increase risk. Antioxidants can help combat cell stress and preserve telomere length, such as by eating foods that contain antioxidants nutrients like fruits, vegetables, nuts, and whole grains. These foods are found in healthy eating patterns like the Mediterranean diet. [12] This was demonstrated in a large cohort of 4676 healthy middle-aged women from the Nurses' Health Study where participants who more closely followed the Mediterranean diet were found to have longer telomere length. [12]

Another Nurses' Health Study following 10,670 women ages 57-61 observed the effect of dietary patterns on aging. [13] Healthy aging was defined as living to 70 years or more, and having no chronic diseases (e.g., type 2 diabetes, kidney disease, lung disease, Parkinson's disease, cancer) or major declines in mental health, cognition, and physical function. The study found that the women who followed a Mediterranean-type eating pattern were 46% more likely to age healthfully. Increased intake of plant foods, whole grains, and fish; ~~moderate alcohol intake~~; and low intake of red and processed meats were believed to contribute to this finding.

## Potential Pitfalls

- There is a risk of excess calorie intake because specific amounts of foods and portion sizes are not emphasized, which could lead to weight gain. It might be helpful to use the Mediterranean Diet Pyramid, which provides guidance on specific types of foods to choose, along with a balanced plate guide such as the [Harvard Healthy Eating Plate](#), which gives a better indication of proportions of food to eat per meal. However, it is important to note that—probably in part due to the higher intake of olive oil and less processed foods—the Mediterranean dietary pattern provides satiety and enables long term adherence. In one of the most successful weight loss trials to date, those assigned to the Mediterranean diet maintained weight loss over a period of six years. [14]
- Research supports the health benefits of a Mediterranean-style eating pattern that includes several different foods. It is the combination of these foods that appear protective against disease, as the benefit is not as strong when looking at single foods or nutrients included in the Mediterranean diet. [12] Therefore it is important to not simply add olive oil or nuts to one's current diet but to adopt the plan in its entirety.

## Bottom Line

Research supports the use of the Mediterranean diet as a healthy eating pattern for the prevention of cardiovascular diseases, increasing lifespan, and healthy aging. When used in conjunction with caloric restriction, the diet may also support healthy weight loss.

## DASH Diet

The DASH (Dietary Approaches to Stop Hypertension) diet is sometimes prescribed by doctors to help treat high blood pressure, however numerous studies show wide-ranging health benefits of this eating pattern..

## What Is It?

The DASH (Dietary Approaches to Stop Hypertension) diet is sometimes prescribed by doctors to help treat high blood pressure. Blood pressure is the amount of pressure that blood places against the walls of arteries. It will normally vary throughout the day but if it

remains too high, this is called high blood pressure or hypertension. Untreated high blood pressure can lead to heart disease, stroke, congestive heart failure, kidney disease, and blindness. [1]

DASH was first introduced at a meeting of the American Heart Association in 1996 and later published in the *New England Journal of Medicine* in 1997. [2] The DASH trial randomly assigned 456 people to different diets to test the effects of dietary patterns on lowering blood pressure. The authors surmised that eating a diet with many different foods with blood pressure-lowering nutrients would show a greater effect on blood pressure than eating single nutrients, such as found in supplements or in a limited diet. Three diets were tested: 1) a control diet, or a standard American diet, 2) a fruits and vegetables diet, similar to the control diet but providing more fruits and vegetables and less snacks and sweets, and 3) a combination diet rich in fruits, vegetables, nuts, and low-fat dairy foods with reduced amounts of saturated fat, total fat, and cholesterol. The last two diets were richer in nutrients associated with lower blood pressure, such as potassium, magnesium, calcium, fiber, and protein. All three diets provided about 3000 mg sodium, which is more than the recommended amount from the *Dietary Guidelines for Americans* but less than the average sodium intake for Americans. [3]

Despite no weight changes, the combination diet reduced blood pressure more than the other two diets. Those with hypertension showed greater decreases in blood pressure than those without hypertension. The reduction of blood pressure in the DASH combination diet was comparable to that of people on medication for stage 1 hypertension.

The results of this landmark study contributed much of the scientific basis for the *Dietary Guidelines for Americans 2010* and later editions.

## How It Works

DASH is based on the following foods: [fruits](#), [vegetables](#), low fat milk, [whole grains](#), fish, poultry, [beans](#), and [nuts](#). It recommends reducing [sodium](#), foods and [beverages with added sugars](#), and red meat. The diet is heart-friendly as it limits [saturated and trans fat](#), while increasing the intake of [potassium](#), [magnesium](#), calcium, [protein](#), and [fiber](#), nutrients believed to help control blood pressure. [1]

The diet suggests a specific number of servings of the recommended foods listed above. The sample plans provided by the National Heart Lung and Blood Institute (NHLBI) are based on 1600, 2000, or 2600 calories daily. For 2000 calories a day, this translates to about 6-8 servings of grains or grain products (whole grains recommended), 4-5 servings vegetables, 4-5 fruits, 2-3 low fat dairy foods, 2 or fewer 3-

ounce servings of meat, poultry, or fish, 2-3 servings of fats and oils, and 4-5 servings of nuts, seeds, or dry beans per week. It advises limiting sweets and added sugars to 5 servings or less per week. The plan defines the serving sizes of each these food groups.

To follow the plan, one must decide their calorie level and then divide the suggested servings of each food group throughout the day. This requires meal planning ahead of time. The NHLBI guide provides many tips on how to incorporate DASH foods and to lower sodium intake; a [one-day sample menu](#) following a 2300 mg sodium restriction and a 1500 mg sodium restriction; and one week's worth of recipes. The NHLBI also publishes an [online database](#) of "heart healthy" recipes.

## The Research So Far

Numerous studies show wide-ranging health benefits of the DASH diet. A consistent body of research has found that DASH lowers blood pressure in people with high blood pressure but also normal blood pressure even without lowering sodium intake. [4] It can produce greater reductions in blood pressure if sodium is restricted to less than 2300 mg a day, and even more so with a 1500 mg sodium restriction. [5, 6] When compared with a standard American diet (e.g., high intake of red and processed meats, beverages sweetened with sugar, sweets, refined grains) DASH has also been found to lower serum uric acid levels in people with hyperuricemia, which places them at risk for a painful inflammatory condition called gout. [7] Because people with gout often also have high blood pressure and other cardiovascular diseases, DASH is optimal in improving all of these conditions.

Adherence to the DASH-style pattern may also help prevent the development of diabetes, as analyzed in a recent meta-analysis, and kidney disease as found in the Atherosclerosis Risk in Communities (ARIC) cohort that followed more than 3700 people who developed kidney disease. [8, 9] Dietary components of DASH that were protective in the ARIC cohort included a high intake of nuts, legumes, and low-fat dairy products. A high intake of red meat and processed meats increased kidney disease risk.

## Potential Pitfalls

- **DASH requires each person to plan their own daily menus based on the allowed servings. People who are not used to meal planning or cooking may need more specific guidance.**
- **The types of foods listed are not comprehensive. For example, avocados are not included so it is not clear if they would be categorized as a fruit**

or a fat serving. Certain foods are placed into questionable categories: pretzels are placed in the grain group even though they have fairly low nutrient content and no fiber; frozen yogurt is placed in the dairy group even though most brands contain little calcium and vitamin D and are high in added sugar. The general term “cereals” are placed in the grain group but different types of cereals can be highly variable in nutrient and sugar content.

- Those with lactose intolerance or food allergies (e.g., nuts) may need to modify the diet to include lactose-free alternatives to dairy and seeds instead of nuts.
- Some people may experience gas and bloating when starting the diet due to the high fiber content of plant foods like fruits, vegetables, and whole grains. This can be minimized by adding one or two new high fiber foods a week instead of all at once.

### **Bottom Line**

Research supports the use of the DASH diet as a healthy eating pattern that may help to lower blood pressure, and prevent or reduce the risk of cardiovascular diseases, diabetes, kidney disease, and gout.