



## The Mediterranean Diet

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The Mediterranean diet involves eating patterns typical of countries bordering the Mediterranean Sea. It emphasizes a mostly plant-based diet that includes fruits, vegetables, legumes, whole grains, nuts, seeds, and monounsaturated fats (eg, olive oil). The diet generally allows consumption of small amounts of meat and dairy products. In addition, added salt may be replaced with herbs and spices, and a limited amounts of sweets are allowed.



The Mediterranean diet lifestyle also recommends that people eat slowly, enjoy their food, and eat in the company of friends and family. Further, they should drink lots of water, exercise, try to eat seasonal plant-based foods, and consume fish and seafood at least twice weekly.

Health outcomes related to the Mediterranean diet has been widely studied. This lifestyle has been compared with other popular dietary modification techniques, including the low-carbohydrate diet, the low-dietary fat diet, the Dietary Approaches to Stop Hypertension (DASH) diet, the vegetarian/vegan diets, and the ketogenic diet. **Generally, experts recommend that the best diet is one that can be followed consistently.**

## **Possible Benefits**

Multiple studies (including large, prospective cohort trials) have shown people with chronic diseases to benefit from following the Mediterranean diet. However, results have been mixed, depending on whether or not the study was conducted in a Mediterranean country. The diet has been associated with reductions in overall mortality (10%), cardiovascular events and mortality (9%), reduction in overall cancer incidence and mortality (6%), reduction in colorectal, prostate and breast cancer (14%), Alzheimer's and Parkinson's diseases (13%), and diabetes (52%).

## **Better Evidence**

### *Cardiovascular disease*

The Prevención con Dieta Mediterránea, or Primary Prevention of Cardiovascular Disease with a Mediterranean Diet (PREDIMED), trial was a randomized, controlled study published in the *New England Journal of Medicine* in 2013. Estruch et al studied 7,887 persons (age: 55-80 years old; gender: 57% female) at high cardiovascular risk but who did not have cardiovascular disease to find out how diet affected the primary outcome of major cardiovascular events (MCE). These individuals randomly were assigned to one group that consumed a Mediterranean diet supplemented with extra-virgin olive oil, another group that followed a Mediterranean diet supplemented with nuts, or a control group advised to reduce dietary fat. Over a median follow-up of 4.8 years, those who consumed the Mediterranean diet supplemented with olive oil had fewer MCEs than did the control group (hazard ratio [HR] 0.70, 95% confidence interval [CI] 0.54-0.92), and those who followed the Mediterranean diet with nuts also had fewer MCEs than did the control

group (HR 0.72, 95% CI 0.55-0.96). This corresponded to an absolute reduction in three cardiovascular events per 1,000 patient-years, or a 30% relative risk reduction. However, in the subgroup analysis, only death resulting from cardiovascular accident was significantly lowered; reductions in myocardial infarction and cardiovascular death were not statistically significant between groups. A later publication found that the study had inconsistent randomization and inadequate concealment; secondary analyses have found that the primary result holds the same, but the initial findings still are being examined.

#### *Diabetes*

Favorable results have been reported in studies of the Mediterranean diet and associated risk reduction of type-2 diabetes mellitus. When compared with a low-fat diet, the low-carbohydrate, high-protein Mediterranean diet was associated with less need for, and a delayed time to, antihyperglycemic medication.

#### *Weight loss*

The Mediterranean diet has been associated with weight loss. Most studies having a follow-up of 5 years have shown a 2- to 3-kg (5- to 7-lb) weight decrease during the first 2 years that did not persist to the fourth year. Persistence of weight loss has not been consistent; the few large, prospective, randomized controlled trials with intention-to-treat analyses (including participants who did not report consistent use of diet) have reported a return to regular weight by the end of follow-up, whereas several large observational studies have reported persistent weight loss. The Mediterranean diet is not associated with greater weight loss than seen with other diets in head-to-head comparison trials.

#### *Other benefits*

Use of the Mediterranean diet has reduced the risk of stroke but not the incidence of cardiovascular disease or overall mortality in a meta-analysis. Smaller observational studies showed that following the Mediterranean diet was associated with a decreased incidence in neurologic disease (including Alzheimer's disease) and cancer (eg, of the prostate, breast, gastrointestinal system, and oropharynx).

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