The Mediterranean diet: a short review of the health benefits

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Abstract

There is an urgent need to preserve the traditional diet in the Mediterranean countries and to stress its important contribution to the public health. The traditional Mediterranean diet can be revitalised within a modern environment and lifestyle and be adopted not only by inhabitants of the Mediterranean region, but also by people in other countries as a health-promoting model. The Mediterranean diet can significantly decrease the risk of overall mortality.

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Introduction

The Mediterranean diet is well known internationally as a health-promoting dietary model, mainly from the results of the Seven Countries Study by Ankel Keys in the 1960s.[1] In this study, the populations of the Mediterranean countries were found to have a lower coronary heart disease mortality rate, with Greece having the lowest compared to the other countries. Since then, many other studies, such as the Health Professionals Follow-up Study and the Nurses' Health Study, have also shown that the Mediterranean diet can provide a substantial degree of protection against a wide range of chronic diseases, and is essential for the Mediterranean people's good health.

The Mediterranean basin has been a crossroad of civilisations for centuries. Many factors, cultural and psychological, as well as the mild climatic conditions and the human spirit, have contributed to the final Mediterranean dietary pattern. The Mediterranean diet is characterised not only by its food and nutrient composition but also by the associated eating patterns and habits, which correspond to the socio-economic environment of these countries. For example, the type of breakfast, the number of meals per day, the fasting periods, the drinking pattern and other factors,[2] such as the relaxed environment, the extended family structure and even the afternoon siesta, have contributed to the establishment of the Mediterranean diet.

The fruit and oil of the olive tree have contributed significantly to the diet of the Mediterranean people and is connected to the civilisation that flourished there. Olive oil is the basic source of fat. It plays an important role and has a central position in all diets of the Mediterranean countries. The Mediterranean diet is rich in foods such as legumes, cereals, fruits and vegetables. Mediterranean people also traditionally eat moderate amounts of fish, poultry, eggs, milk and milk products. Red wine is consumed in small quantities with meals.

The Mediterranean diet is characterised by a high consumption of carbohydrates and a low consumption of animal proteins. A major characteristic of the diet is its high content of monounsaturated fatty acids, which is attributed to olive oil, and its low content of saturated fats.

Fruit and vegetable intake

Another characteristic that is related to the beneficial effect of the Mediterranean diet is that it is rich in fruits and vegetables that contain antioxidant vitamins, calcium and fibre. Fibre and antioxidant vitamins have been related to the prevention of cancer. Eating high amounts of antioxidants has been shown by epidemiological studies to be negatively related to the development of various cancers. Cause-specific mortality statistics indicate that the Mediterranean populations have lower mortality rates from cancer of the large intestine, breast, endometrium, ovary and prostate.

Fruits and vegetables, along with other plant foods, are the mainstay of the traditional Mediterranean diet. Plant foods contain hundreds, if not thousands, of health-protecting

compounds, and the benefit to cardiac health likely results from the multiple effects of these diverse phytomolecules.[3]

The pigments that give fruits and vegetables their colouring provide many of the antioxidants that help the body ward off damage by free radicals. In general, the deeper the colour, the higher the antioxidant levels in these foods. Nevertheless, all fruits and vegetables, regardless of colour, contain a variety of phytomolecules, and each offers unique health benefits. Fruit is the typical dessert in the traditional Mediterranean diet.

Numerous studies indicate that high fruit and vegetable consumption can have a positive effect on factors associated with cardiovascular disease, including stroke, high blood pressure and diabetes. [4,5]

Olive oil is particularly characteristic of the Mediterranean diet. It contains a very high level of monounsaturated fats, most notably oleic acid, which epidemiological studies suggest may be linked to reduction in coronary heart disease risk.[1] There is also evidence that the antioxidants in olive oil improve cholesterol regulation and reduce low-density lipoprotein (LDL) cholesterol, and that they have other anti-inflammatory and antihypertensive effects.[6] According to recent scientific data, high olive oil consumption is believed not only to decrease LDL cholesterol levels in the blood but also to prevent LDL oxidation, owing to its antioxidant content, such as tocopherols, polyphenols, and so forth. Furthermore, olive oil does not lower high-density lipoprotein (HDL) cholesterol levels as other vegetable oils do.

Health benefits

A 10-year study[7] found that adherence to a Mediterranean diet and healthful lifestyle was associated with a more than 50% lowering of early death rates. However, other studies failed to confirm that diets rich in monounsaturated fats such as olive oil are atheroprotective when compared to diets rich in either polyunsaturated or even saturated fats.[8,9]

According to a study published in the *British Medical Journal* in 2008, the traditional Mediterranean diet provides substantial benefits against type 2 diabetes.[10] A meta-analysis published in the same journal, also in 2008, showed that strict adherence to the Mediterranean diet reduced the risk of dying from cancer and cardiovascular disease, as well as the risk of developing Parkinson's and Alzheimer's disease.[11] Recent evidence suggests that dietary patterns may have an effect on the mechanisms of atherosclerotic plaque vulnerability and the progression to thrombosis.[12] Epidemiological studies[13] and randomised clinical trials have shown that a substantial number of cases of coronary heart disease can be prevented by appropriate interventions. Although the beneficial effect of lowering LDL cholesterol and triglycerides with medications has been well documented, lifestyle modifications, dietary interventions and control of known risk factors are all considered key components of treatment and prevention.[14-16] Alcohol intake varies greatly among the different Mediterranean regions. When alcohol is used, it typically accompanies a meal. Many studies over the past several decades have examined alcohol consumption and its association with a reduced risk of heart disease.[17]

Dietary pattern analysis has recently received growing attention in relation to many diseases, including cirrhosis and various cancers, because individuals consume foods or nutrients not in isolation but rather as components of their daily diet.[18] Defining diet by dietary patterns has the ability to capture its multidimensionality while reducing its apparent complexity, because patterns can integrate the complex or subtle interactive effects of many dietary constituents and bypass problems generated by multiple testing and the high correlations that may exist among these constituents.[19]

Part of the explanation for some of the conflicting findings in the literature regarding dietary constituents and Alzheimer's disease risk could be the result of individual food or nutrient approaches. Nevertheless, there is a paucity of data regarding the effect of composite dietary patterns on the risk for Alzheimer's disease. One such dietary pattern is the Mediterranean diet, which has been associated with lower risk for several forms of cancer,[20] obesity,[21,22] dyslipidaemia,[23,24] diseases of glucose metabolism,[24] hypertension,[25] coronary heart disease[26,27] and overall mortality.[26-28]

Conclusion

The Mediterranean diet provides protection against a number of major chronic diseases. It can significantly decrease the risk of overall mortality, mortality from cardiovascular diseases, the incidence and mortality of various forms of cancer and the incidence of Parkinson's and Alzheimer's disease.

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