

Health Benefits of the Mediterranean Diet

The Mediterranean Diet is a mix of food ingredients that, if consumed over a number of years, has been shown to significantly reduce the risks of developing heart disease, cancer and chronic conditions such as hypertension, Type 2 diabetes, Parkinson's disease and Alzheimer's disease. Adoption of the diet has also been linked with a reduced risk of early death and has proved a successful strategy for healthy weight reduction. You don't need any particular culinary skills to produce inexpensive, yet delicious, meals fitting the Mediterranean Diet pattern.

What is the Mediterranean Diet?

The Mediterranean Diet is high in vegetables, fruit, legumes and grains, but also contains moderate amounts of white meat and fish.

It is sparse in red meat, with most fat being unsaturated and coming from olive oil and nuts. The addition of small to moderate amounts of (red) wine has been shown to enhance the healthy mix.

In combination with moderate exercise and not smoking, the Mediterranean Diet offers a scientifically researched, affordable, balanced, and health promoting, lifestyle choice.



Lifestyle and risk

The modern Western diet, increasing urbanisation, office working, daily stress and reliance on the car all appear to have contributed to a recipe for unhealthy living as recently highlighted in the Government's Change4Life campaign.

The decades following World War II saw a rapid rise in the UK (and Western) death rate from coronary heart disease (CHD) that peaked in the 1970s. Since then, the UK coronary death rate has been falling due to improvements in treatment, such as clot busting drugs, heart bypass and angioplasty, as well as public health measures addressing smoking, high blood pressure and raised cholesterol.

However, CHD is still the most common cause of death (and premature death) in the UK accounting for 101,000 deaths each year with 1 in 5 men and 1 in 6 women dying from the condition. Among the more developed countries in Europe, only Ireland and Finland have higher rates of CHD than the UK.

Unhealthy lifestyle, diet and obesity, have been linked to other medical scourges of modern society such as type 2 diabetes, raised cholesterol and high blood pressure, which can interact to make medical risks and problems more severe. Diet, lifestyle factors and obesity are also associated with an increased risk of certain cancers. And being substantially overweight can bring on or worsen osteoarthritis, sleep apnoea, high blood pressure and gallbladder disease.

Why was the Mediterranean Diet investigated?

In 1980, Professor Ancel Keys published the results of his investigation into cardiovascular death rates in different countries. He found death rates were low in Greece (particularly Crete), southern Italy (also Japan) and relatively high in the US and Finland.

This prompted investigations into the lifestyles of the long-lived Mediterranean peoples to see if lessons could be learnt and applied to the higher risk populations. After such factors as smoking, exercise, education and stress had been taken into account, it was found that diet had played an essential part in keeping these communities healthy. The dietary pattern was not new. In fact, it was a traditional mix of fresh seasonal and easily stored produce, that probably dated back to the early civilizations - although, its precise composition had evolved over the years to incorporate new foodstuffs, such as tomatoes, peppers and potatoes.

Efforts were made to establish which dietary components offered particular health benefits, spawning all the research into 'superfoods'. Perhaps surprisingly, it was found that both individual food components such as vegetables, fruits, mono-unsaturated fats and their combination into a long-term dietary pattern were important for health. This led to the identification and description of an 'ideal' Mediterranean Diet which could be tested on Western populations, and if successful made available for all.

Numerous long-term population studies, involving many hundreds of thousands of people, have since been carried out to quantify the likely health benefits of switching to a Mediterranean Diet.

The 'ideal' Mediterranean Diet

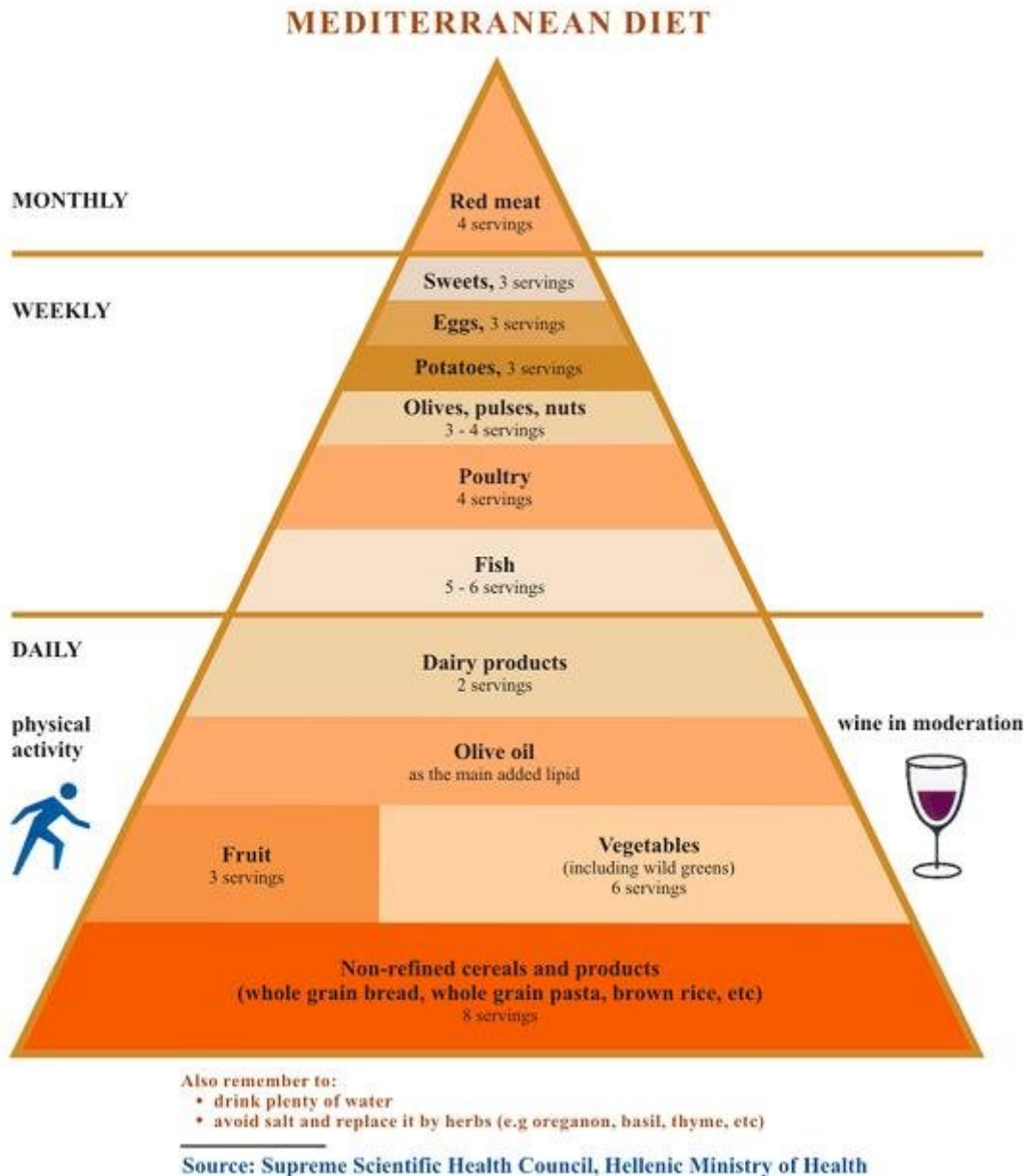
The 'ideal' (in terms of health giving effects) Mediterranean Diet has, in relation to a typical Western diet:

- High quantities of: a variety of vegetables, a variety of fruit, legumes (eg beans), cereals and cereal products.
- Moderate quantities of: fish, white meats, nuts, low fat dairy produce, wine (men: 1-3 units per day, women: 1-2 units per day) with meals.
- Low quantities of: red meat, eggs, sweets and sweet desserts.
- A high mono-unsaturated fat (eg olive oil) to saturated animal fat (eg fatty red meat) ratio - at least 2:1.
- Low amounts of added salt – in many cases, herbs can be used for flavouring in place of excess salt.

Importantly, the Mediterranean Diet is a pattern of food proportions, rather than a set list of particular products, 'superfoods' or recipes. As such, there is infinite scope for variation and invention using locally sourced and affordable produce, according to individual taste. You don't need to master Greek or Italian cookery - unless you want to. Just use the ingredient mix in any way you wish.

With fat being a major source of calories, restrictions can be placed on total amounts used in food preparation if setting targets for losing weight (see separate leaflet called *'How to Follow the Mediterranean Diet'*).

An example of an 'ideal' Mediterranean Diet food template (as currently issued in Greece, where authorities are trying to combat health problems resulting from the commercial introduction of Western style produce) is shown below:



It can be seen from the template, that the dietary pattern fits with both the World health Organisation's 5-A-Day message and the recommendations of the UK Government's new Change4life campaign, both of which are ultimately derived from the same pool of high quality research into the effects of diet and lifestyle on health.

What are the measured benefits of the Mediterranean Diet?

Once scientists had quantified the Mediterranean Diet, they were able to compare the risks of developing heart and other diseases in populations that did and didn't adopt the diet. In these studies, assessments of dietary compliance were usually made by scoring the relative quantities of food substances consumed by those taking part, against the amounts listed in the 'ideal' template.

We can carry out a similar comparison of our own diet with the 'ideal' Mediterranean Diet, if we wish to find out how to add more of a healthy Mediterranean style to what we eat (see separate leaflet called '*How to Follow the Mediterranean Diet*').

So, what health benefits did the scientists find when they studied those who'd closely followed the Mediterranean Diet?

- Increased longevity – that is, a reduced chance of death at any age – due mainly to reductions in the chance of developing, having a recurrence of, or dying from heart disease or cancer. The results have been confirmed in UK and US populations and represent around a 20% reduced risk of death at any age.
- Reduction in the chance of developing Type 2 diabetes, high blood pressure, or raised blood cholesterol, each of which are associated with cardiac and vascular disease as well as other serious complications. And each of which may require permanent medication once developed.
- Reduction in the chance of becoming obese and that the Mediterranean Diet formed the basis for a balanced reduction in weight.
- Reduction in the risk of developing Parkinson's disease and Alzheimer's disease.

Researchers, who conducted a detailed review and re-analysis of the scientific evidence to date (called a meta-analysis), recently published in the British Medical Journal, concluded, "These results seem to be clinically relevant for public health, in particular for encouraging a Mediterranean-like dietary pattern for primary prevention of major chronic diseases."

Enjoy the Mediterranean lifestyle at home

It has become clear, from the wealth of high quality and detailed investigation of the Mediterranean Diet, and from investigation of its individual components, that there are very good scientific reasons why Professor Keys found certain peoples of the Eastern Mediterranean lived longer, healthier lives than those in the West in mid 20th century.

We can all benefit from the lessons learnt from the scientific investigation of the Mediterranean Diet and use its pattern as an affordable basis for a healthy diet (and lifestyle) here in the UK, particularly in these times when governments are having to ration spending on preventative medicines and curative treatments. The Mediterranean Diet is a healthy template for endless culinary experimentation and invention that fits with the WHO and UK recommendation to eat 5 portions of fruit and vegetables per day.

But, the Mediterranean Diet is much more than this. Its mix maximises the intake of essential nutrients and health-promoting ingredients, whilst minimising quantities of ingredients associated with adverse health risks. So that overall, those who adopt the Mediterranean Diet are likely to have a much lower risk of developing life threatening and chronic disease than those who don't.

Gradually switching to a Mediterranean Diet, taking moderate exercise and stopping smoking, are all lifestyle choices that together offer the significant chance of being able to enjoy an active long life, free from medical intervention and medication. If you are interested in trying out the Mediterranean Diet at home, then please see our related leaflet on '*How to Follow the Mediterranean Diet*'.

References

- UK Government's [Change4Life](#) Campaign
- The Mediterranean Diet: Constituents and Health Promotion by Antonia-Leda Matalas, Antonis Zampelas, Vassilis Stavrinou, Ira Wolinsky. Published by CRC Press, 2003. ISBN 0849301106, 9780849301100
- Keys A. Seven countries: a multivariate analysis of death and coronary heart disease. London: Harvard University Press, 1980.
- [Trichopoulou A, Orfanos P, Norat T, et al](#); Modified Mediterranean diet and survival: EPIC-elderly prospective cohort study. BMJ. 2005 Apr 30;330(7498):991. Epub 2005 Apr 8. [abstract]
- [Kontogianni MD, Vidra N, Farmaki AE, et al](#); Adherence rates to the Mediterranean

- diet are low in a representative sample of Greek children and adolescents. *J Nutr*. 2008 Oct;138(10):1951-6. [abstract]
- [Trichopoulou A, Costacou T, Bamia C, et al](#); Adherence to a Mediterranean diet and survival in a Greek population. *N Engl J Med*. 2003 Jun 26;348(26):2599-608. [abstract]
 - [Benetou V, Trichopoulou A, Orfanos P, et al](#); Conformity to traditional Mediterranean diet and cancer incidence: the Greek EPIC cohort. *Br J Cancer*. 2008 Jul 8;99(1):191-5. [abstract]
 - [Sofi F, Cesari F, Abbate R, et al](#); Adherence to Mediterranean diet and health status: meta-analysis. *BMJ*. 2008 Sep 11;337:a1344. doi: 10.1136/bmj.a1344. [abstract]
 - [Dalziel K, Segal L, de Lorgeril M](#); A mediterranean diet is cost-effective in patients with previous myocardial infarction. *J Nutr*. 2006 Jul;136(7):1879-85. [abstract]
 - [Mitrou PN, Kipnis V, Thiebaut AC, et al](#); Mediterranean dietary pattern and prediction of all-cause mortality in a US population: results from the NIH-AARP Diet and Health Study. *Arch Intern Med*. 2007 Dec 10;167(22):2461-8. [abstract]
 - [Martinez-Gonzalez MA, de la Fuente-Arrillaga C, Nunez-Cordoba JM, et al](#); Adherence to Mediterranean diet and risk of developing diabetes: prospective cohort study. *BMJ*. 2008 Jun 14;336(7657):1348-51. Epub 2008 May 29. [abstract]
 - [Mendez MA, Popkin BM, Jakszyn P, et al](#); Adherence to a Mediterranean diet is associated with reduced 3-year incidence of obesity. *J Nutr*. 2006 Nov;136(11):2934-8. [abstract]
 - [Gao X, Chen H, Fung TT, et al](#); Prospective study of dietary pattern and risk of Parkinson disease. *Am J Clin Nutr*. 2007 Nov;86(5):1486-94. [abstract]
 - [Scarmeas N, Luchsinger JA, Mayeux R, et al](#); Mediterranean diet and Alzheimer disease mortality. *Neurology*. 2007 Sep 11;69(11):1084-93. [abstract]
 - [Jensen MK, Koh-Banerjee P, Franz M, et al](#); Whole grains, bran, and germ in relation to homocysteine and markers of glycemic control, lipids, and inflammation 1. *Am J Clin Nutr*. 2006 Feb;83(2):275-83. [abstract]
 - [Khan NQ, Lees DM, Douthwaite JA, et al](#); Comparison of red wine extract and polyphenol constituents on endothelin-1 synthesis by cultured endothelial cells. *Clin Sci (Lond)*. 2002 Aug;103 Suppl 48:72S-75S. [abstract]
 - [Salas-Salvado J, Fernandez-Ballart J, Ros E, et al](#); Effect of a Mediterranean diet supplemented with nuts on metabolic syndrome status: one-year results of the PREDIMED randomized trial. *Arch Intern Med*. 2008 Dec 8;168(22):2449-58. [abstract]
 - [de Lorgeril M, Salen P, Martin JL, et al](#); Interactions of wine drinking with omega-3 fatty acids in patients with coronary heart disease: a fish-like effect of moderate wine drinking. *Am Heart J*. 2008 Jan;155(1):175-81. Epub 2007 Sep 27. [abstract]
 - [Psaltopoulou T, Naska A, Orfanos P, et al](#); Olive oil, the Mediterranean diet, and arterial blood pressure: the Greek European Prospective Investigation into Cancer and Nutrition (EPIC) study. *Am J Clin Nutr*. 2004 Oct;80(4):1012-8. [abstract]
 - [Menotti A, Kromhout D, Blackburn H, et al](#); Food intake patterns and 25-year mortality from coronary heart disease: cross-cultural correlations in the Seven Countries Study. The Seven Countries Study Research Group. *Eur J Epidemiol*. 1999 Jul;15(6):507-15. [abstract]
 - [Willett WC, Sacks F, Trichopoulou A, et al](#); Mediterranean diet pyramid: a cultural model for healthy eating. *Am J Clin Nutr*. 1995 Jun;61(6 Suppl):1402S-1406S. [abstract]
 - [Trichopoulou A, Vasilopoulou E, Georga K](#); Macro- and micronutrients in a traditional Greek menu. *Forum Nutr*. 2005;(57):135-46. [abstract]

Comprehensive patient resources are available at www.patient.co.uk

Disclaimer: This article is for information only and should not be used for the diagnosis or treatment of medical conditions. EMIS has used all reasonable care in compiling the information but make no warranty as to its accuracy. Consult a doctor or other health care professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).

© EMIS 2009 Reviewed: 30 Jan 2009 DocID: 9221 Version: 2