

Benefits of Mediterranean diet affirmed, again

Trichopoulos A, Costacou T, Bamia C, Trichopoulos D. Adherence to a Mediterranean diet and survival in a Greek population. *N Engl J Med* 2003;348(26):2599-608.

Background: Although there is no single "Mediterranean diet," the term has come to represent a food pyramid consisting at the base of bread, pasta, rice and other whole grains, and potatoes, supplemented with fruits, beans, vegetables and nuts to which olive oil is added, along with cheese and yogurt. Fish, chicken, eggs and refined carbohydrates are eaten less frequently (weekly). Red meat is consumed infrequently. The whole pyramid is supplemented with moderate alcohol consumption.

It has long been observed that people living in Mediterranean countries have lower rates of coronary artery disease and cancer and live longer than people in other European countries.¹ Clinical trials of similar diets imposed on patients with coronary artery disease or who had had a recent myocardial infarction showed that they experienced fewer deaths and fewer coronary events than patients who had other diets.² However, prospective studies are rare.

Question: Do people who regularly consume a traditional Mediterranean diet experience a lower mortality rate?

Design: Between 1994 and 1999 as part of the European Prospective Investigation into Cancer and Nutrition, 22 043 people living in Greece completed a validated food-frequency questionnaire and were traced through official death registries (people with coronary artery disease, diabetes mellitus or cancer were excluded). The questionnaire included questions about alcohol intake, physical activity and smoking. The authors measured adherence to the diet by constructing a scale based on consumption of 9 components of the diet. The scale ranged from minimal adherence to the traditional Mediterranean diet (0) to maximal adherence (9).

Results: Patients were followed for a median time of 3.7 years. The mortality benefit seen in this study was in the group aged 55 years or more who, as expected, accounted for most of the deaths. After adjustment for age, sex, smoking, body mass index, waist-hip ratio, education, level of physical activity, consumption of potatoes and eggs, and total energy intake, the hazard ratio for death from all causes for all ages combined resulting from a 2-point increment in Mediterranean diet score was 0.75 (95% confidence interval [CI] 0.64-0.87), for coronary artery disease 0.67 (95% CI 0.47-0.94) and for cancer 0.76 (95% CI 0.59-0.98).

The authors also attempted to identify a single food item that was predictive of mortality. After adjustment, the only statistically significant predictors of lower mortality were higher intakes of fruits and nuts (hazard ratio 0.82, 95% CI 0.70-0.96) and a higher ratio of monounsaturated lipids to saturated lipids (hazard ratio 0.86, 95% CI 0.76-0.98).

Commentary: Dietary habits are difficult to determine. This study used a snapshot (in the form of a validated

questionnaire) to measure usual and presumably lifelong dietary habits. The short median time of follow-up to measure death rates had the result of providing more information about older people. Nonetheless, in multivariate analysis taking age into account, the health effects of a 2-point increase in Mediterranean diet score are evident.

The study may have lacked sufficient power to measure the health effects of individual components of the diet. An alternative hypothesis is that the health effects result from a synergistic or interactive effect of the various components of the diet.

Practice implications: The results provide further observational evidence that eating a daily diet of unrefined cereals and grains, beans, legumes, nuts, vegetables, fruits, olive oil and yogurt or cheese with moderate alcohol consumption is associated with longevity and reduced numbers of deaths from coronary artery disease and from cancer.

The limitations are those of an observational study and the fact that the data, although population based, are from a single country. Nonetheless, there appears to be no evidence of serious harm that could result from the Mediterranean food pyramid and potentially much benefit. In addition, clinical studies support the use of this diet as one of the therapeutic options that can be offered to patients with coronary artery disease.

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References

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2. Hu FB. The Mediterranean diet and mortality — olive oil and beyond. *N Engl J Med* 2003;348:2595-6.



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