Invited Commentary

Mediterranean diet: the whole is more than the sum of its parts

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The Mediterranean diet corresponds to the traditional dietary pattern found in Greece, Southern Italy, Spain and other olive-growing countries of the Mediterranean basin in the 1960s. It included the abundant use of olive oil as the major culinary fat, a high consumption of plant foods (nuts, fruits, vegetables, legumes and whole grains), moderate to high fish consumption and a moderate consumption of wine. In contrast, consumption of red meats, processed meats, meat products and butter was very low. This pattern fits well with the current paradigm of assessing overall food patterns instead of isolated foods or nutrients. The profile of nutrient intake of the Mediterranean diet includes a high monounsaturated: saturated fat ratio, a high intake of α-linolenic acid, moderate ethanol intake, high intakes of fibre, vitamins, folate and natural antioxidants, and a low intake of animal protein.

The pioneering Seven Countries study followed an ecological design and suggested that the traditional Mediterranean diet could be the most plausible explanation for increased longevity and lower CHD rates observed in Mediterranean countries. Trichopoulou et al. conducted two seminal studies and introduced on operational nine-point Mediterranean diet score, which has been subsequently used in many epidemiological investigations. One of these papers has made a profound contribution to knowledge of the place of dietary investigations. One of these papers has made a profound contribution to knowledge of the place of nutritional epidemiology (2). The profile of nutrient intake of the Mediterranean diet includes a high monounsaturated: saturated fat ratio, a high intake of α-linolenic acid, moderate ethanol intake, high intakes of fibre, vitamins, folate and natural antioxidants, and a low intake of animal protein.

The biological plausibility to support a causal role of the Mediterranean diet in CHD prevention needs to take into account that the effect of an overall dietary pattern is likely to be greater than the sum of its components. The Mediterranean diet has been separately investigated in the paper by Dilis et al. (7). Most of them individually showed no evidence whatsoever of an association with CHD. The exceptions were an inverse association with fruits and nuts and a direct association for red meats. The exceptions were an inverse association with fruits and nuts and a direct association for red meats. The biological plausibility to support a causal role of the Mediterranean diet in CHD prevention needs to take into account that the effect of an overall dietary pattern is likely to be greater than the sum of its components.
to be considerably greater than the effect of individual foods or nutrients. The belief that a single nutrient will lower disease risk implies a reductionist and overly optimistic view. The complexity of the pathophysiological processes involved in the genesis of coronary disease suggests that multiple, cumulative and synergistic mechanisms are involved. The Mediterranean dietary pattern supports the concept of an overall healthy eating pattern that also seems the best known model to fulfil nutrient requirements\(^\text{15}\); it is possible that a combination of nutrient-rich foods synergises to foster favourable changes in intermediate pathways of cardiometabolic risk, as supported by randomised trials\(^\text{16}\). The Mediterranean diet supplies abundant polyphenols from virgin olive oil, fresh fruits, vegetables, nuts and legumes, with important antioxidant and anti-inflammatory properties, and includes moderate intake of alcohol. A key feature of the typical frugality of the Mediterranean diet is the scarce consumption of processed meats, red meats and trans-fat. Each of these individual aspects of the diet is known to be associated with substantially lower cardiovascular risk. It is very likely that the joint effect of all of them together might be larger than the sum of their parts.

In light of the increasing global burden of CVD, cardiovascular prevention constitutes a major public health goal, and the Mediterranean diet is an achievable and sustainable objective that should be promoted.

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References