Sesión Temática/Thematic sessions

Mitos y realidades sobre la dieta mediterránea

Myths and realities about Mediterranean diet

Jueves 2 de Octubre / Thursday 2, October
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MYTHS AND REALITIES ABOUT MEDITERRANEAN DIET

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Mediterranean diet is accepted to be a healthy pattern of food intake as well as an expression of healthy lifestyle and of a cultural model. The food pyramid based on the Mediterranean diet (Md) has been adopted as Dietary Guidelines in several of non-Mediterranean industrialised cultures. Usually the Mediterranean diet is associated with longer longevity and lower incidence and mortality of coronary heart disease and cancer. However, scientific evidence on potential health benefits of several food components of Md is still scant. The "Spanish Paradox", i.e. high prevalence of risk factors (obesity, low physical activity, smoking, arterial hypertension, high cholesterol levels) together with low cardiovascular risk, is often assumed to be related to the Mediterranean diet, but the mechanisms and specific factors involved remain elusive. Incidence in several tumours like breast, prostate, and colorectal cancer is lower in Mediterranean countries than in northern European countries. It has been thought that these differences are due to Mediterranean diet, although no conclusive evidences exist as to which are the reasons for such a lower risk. Other factors related to lifestyle could be also important. The definition of the typical components of the Mediterranean diet is controversial itself, since the pattern is changing and important differences in food consumption exists between Mediterranean populations. The current food consumption show signs of changes in the traditional habits that may have negative health consequences in industrialised urban areas, particularly in young population in the future. Governments and Public Health authorities have developed many initiatives to promote and protect the Mediterranean dietary pattern. For all of these reasons, we deem it of great scientific and social interest, to address this question in the next meeting of the EEF/IEA-SEE in Toledo.

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WHAT IS MEDITERRANEAN DIET TODAY?

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The Mediterranean diet refers in general to dietary patterns found fifty years ago in olive-growing areas of the Mediterranean regions for Keys and colleagues in their studies on Naples and Crete. The heart of this pattern was characterised as mainly vegetarian with abundant plant foods: "all kind of vegetables in season, pasta in many forms, leaves sprinkled with olive oil, and often cheese, fresh fruit as daily dessert, and frequently washed down with wine". Meat and dairy products in low amount was other important feature. Olive trees, wheat and vineyards have been in the Mediterranean area from immemorial time. However others foods like orange, lemon, tomatoes, eggs plants, beans, potatoes, etc. have been imported from other regions and continents.
Although some health benefits and famous palatability of Mediterranean diet are known since ancient times, it was just in the fifties, thanks to the Seven Countries Study of Keys and collaborators, when the healthy effect of Mediterranean diet was recognised by the scientific community. Since that, the interest in the modern medical world, for its ability in the prevention of chronic diseases, has raised. During the 90s, there was some sort of rediscovery of the Mediterranean diet and the "Mediterranean diet pyramid" has been adopted as the prototype for the development of current dietary guidance policy in the USA.
Even though the "typical" Mediterranean diet is thought to follow a common pattern, regional differences in its composition among and also within Mediterranean countries exist. It is accepted, on the other hand that the "typical" Mediterranean diet has been changed in parallel with important changes in the lifestyle. Even in the fifties it was recognised for example in Italy, that there was a gradient in wealth from the north to the south, with more meat and dairy products in the north and in the diet of rich people. Important differences have been existed in the Mediterranean countries regarding the consumption of fish, legumes and preserved meat. Unfortunately the consumption of cereals, fruit and vegetables has decreased and the consumption of meat and dairy products has increased in most of the Mediterranean populations, mainly in young people and big urban areas. Pie and ice cream are often substitute for fruits as main dessert. At the same time, the prevalence of obesity is increasing in Mediterranean countries, particularly in the south of Spain, Italy and Greece. Despite some variation in the components of diet within the Mediterranean populations, important differences in the pattern of food intake between the north and south of Europe still exists. A strong effort is currently needed to preserve and promote the Mediterranean diet. But these dietary recommendations should be based on more convincing scientific evidences on the health benefit of each component of the Mediterranean pattern of diet.

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EFFECTS OF TYPICAL COMPONENTS OF THE MEDITERRANEAN DIET

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The growing epidemiological evidence supporting that the Mediterranean diet has a beneficial effect on diseases associated with oxidative damage, such as cardiovascular and neuro-degenerative diseases, cancer, and on ageing is accompanied by some clinical trials that proved this type of nutrition to be effective in secondary prevention of coronary heart disease (CHD). This type of diet seems also been well accepted by non-Mediterranean cultures. Recent reports confirm the role of long-chain omega-3 poly-unsaturated fatty acid consumption in risk reduction of CHD and sudden death. An antiarrhythmic effect has been firmly suggested by some studies. In addition, other substantial evidence indicates that diets using mono-hydrogenated unsatured fats as the predominant source of fat, whole grain as main form of carbohydrates, and abundance of fruits and vegetables can also offer protection against coronary heart diseases.
Such diets, together with regular physical activity and appropriate body weight maintenance may be part of the explanation of the low coronary heart disease incidence and mortality rates despite the high prevalence of cardiovascular risk factors observed in southern Europe Mediterranean countries.
Surprisingly, clinical trials, which tested Vitamins E and C, failed to show any benefit in terms of CHD prevention, even though these have been associated with reduced CHD risk in cohort studies. It was early noted in the cohort studies that individuals eating a diet rich in vitamin C might be obtaining benefit from other substances, intake of which correlates with vitamin C. Folate may be one of such substances, given the evidence of an association between homocysteine and CHD and the association of low dietary folate with increasing homocysteine levels.
Nitric oxid (NO) is responsible for coronary vasodilatation for inhibition of platelet function, for monocyte adhesion and for smooth muscle proliferation. Folate supplementation enhances endothelial function, possibly by reducing homocysteine (which suppresses endothelial cell NO synthesis) or by reducing endothelial superoxides. Folate alone or with vitamins C and E has been found to be associated with a significant improvement in endothelial function whereas the effect of these vitamins alone did not differ from placebo. However, other components of fruit and vegetables, such as flavonoids or pyridoxine, may also account for enhanced endothelial function. Phenolic compounds have been shown to inhibit metal-induced and peroxyl radical-dependent LDL oxidation in vitro, and to inhibit the cytostatic and cytotoxic activity of oxidised LDL on mucus intestinal cells. Other potentially beneficial antioxidants such as phenolic compounds may have an effect on oxidative-damage prevention in humans.
Therefore, single-agent clinical trials may miss the effects of other components of foods such as fruit and vegetables for which vitamin C and E are probably only markers. Investigating food or nutrient clusters associated with reduced cardiovascular risk might be an alternative approach to study the Mediterranean diet.

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MEDITERRANEAN DIET AND CANCER

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Incidence and mortality rates of most cancers (including cancer of the lung, breast, prostate, colon, head and neck, kidney, endometrium and ovary) is lower in Mediterranean countries than in Central and Northern European countries. In Italy and Spain, moreover, cancer incidence is lower in the less economically developed regions of the South than in the North of the country. Women who migrated from South to North Italy in the 1950' and 60' maintained a lower incidence of breast cancer if migrated in adulthood, but those who migrated in childhood acquired the same risk of women born in the North. Geographical differences, however, are decreasing, because age standardised incidence rates of several cancer sites are still increasing in the South while usually do not increase any more in the North, where actually tend to decrease in young generations. A recent short term prediction exercise suggested that colon cancer incidence is already higher in Southern Europe than in Northern countries. These pattern and trends are probably linked to the evolving diet and lifestyle of the populations. The typical Mediterranean diet - characterised by an high consumption of cereal products, legumes, olive oil, vegetables (except potatoes), fruit, and in several regions fish, and a low consumption of meat and dairies - is disappearing, while the consumption of fruit and vegetables is increasing in Northern countries. Besides the DNA protection conferred by various components of plant food, the potential preventive effect of traditional Mediterranean diet may depend on its high fibre and low saturated fat content, and on its low glycaemic and insulinemic index. Recent experimental studies showed that a comprehensive dietary modification aimed at increasing unrefined cereals, legumes, various vegetables, and monounsaturated and n-3 polyunsaturated fats, while decreasing animal food, can make sex hormones and growth factors of the insulin/IGF system less available to cancer promotion. Preliminary data suggest that such a diet may also help preventing cancer recurrence.