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Title

DIETARY PATTERNS AND CARDIOVASCULAR PREVENTION

Abstract

Substantial advances in understanding the role of specific nutritional factors as determinants of cardiovascular disease (CVD) have accrued during the last 2-3 decades. The priority of overall food patterns over single foods or individual nutrients represents the current state of the art, that has mostly replaced the traditional but reductionistic single-nutrient analysis, because that traditional approach has been challenged by several conceptual and methodological limitations. It would be overly optimistic to attribute a sizable cardio-preventive effect to a single nutrient or food. It is very unlikely that the intake of a single nutrient or food could exert a sufficiently strong effect as to substantially change the incidence rates of CVD. In this context, the traditional Mediterranean diet (MedDiet) represents a high-quality food pattern characterized by an abundant use of extra-virgin olive oil for all culinary purposes, high consumption of plant-derived foods (vegetables, legumes, fresh fruits, tree nuts), moderate-to-high consumption of fish, whole-grain cereals and red wine (with meals). But reduced (or even no consumption at all) of sugar-sweetened beverages, red and processed meats, whole milk, butter, and sweet desserts. It is especially important to highlight what is not the traditional MedDiet. Some supposedly healthy foods, such as soya, quinoa, flaxseed oil, or other liquid oils different from olive oil are not part of the MedDiet. Potatoes, cocoa, beer or eggs have never been included in the definition of the traditional MedDiet. Dairy products should be reduced to increase adherence to the MedDiet. A recent meta-analysis (Martínez-González et al, *Nutrients*, 2017) showed a large and strongly consistent body of evidence supporting the benefit of the MedDiet for cardiovascular prevention. No other food pattern is backed by such an important and consistent accrual of sound prospective epidemiological and trial-based evidence.

Key references

1: Martínez-González MÁ, Hershey MS, Zazpe I, Trichopoulou A. Transferability of the Mediterranean Diet to Non-Mediterranean Countries. What Is and What Is Not the Mediterranean Diet. *Nutrients*. 2017 Nov 8;9(11). pii: E1226. doi: 10.3390/nu9111226. PubMed PMID: 29117146; PubMed Central PMCID: PMC5707698.

2: Alvarez-Alvarez I, Zazpe I, Pérez de Rojas J, Bes-Rastrollo M, Ruiz-Canela M,

Fernandez-Montero A, Hidalgo-Santamaría M, Martínez-González MA. Mediterranean diet, physical activity and their combined effect on all-cause mortality: The Seguimiento Universidad de Navarra (SUN) cohort. *Prev Med.* 2018 Jan;106:45-52. doi: 10.1016/j.ypmed.2017.09.021. Epub 2017 Sep 28. PubMed PMID: 28964855.

3: Martinez-Gonzalez MA, Martin-Calvo N. Mediterranean diet and life expectancy; beyond olive oil, fruits, and vegetables. *Curr Opin Clin Nutr Metab Care.* 2016 Nov;19(6):401-407. Review. PubMed PMID: 27552476; PubMed Central PMCID: PMC5902736.

4: Martínez-González MA. Benefits of the Mediterranean diet beyond the Mediterranean Sea and beyond food patterns. *BMC Med.* 2016 Oct 14;14(1):157. PubMed PMID: 27737657; PubMed Central PMCID: PMC5064779.

Key messages

- The PREDIMED trial is important but it represents only slightly more than 1% of the total available prospective evidence supporting the cardiovascular benefits of the Mediterranean diet
- Other high-quality dietary patterns apart from the Mediterranean diet have not passed the tests of long-term sustainability, clinical trial evidence, nutritional adequacy and millenary tradition of use without evidence of harm. Therefore, the Mediterranean diet is the gold standard among food patterns for cardiovascular prevention.
- The absolute reduction in the risk for cardiovascular hard clinical events is 10-15% for every 2 additional points in a 0 to 9 scale of adherence to the Mediterranean diet (Trichopoulou's Mediterranean Diet Score).

Questions

- Which are the components of the intervention conducted in the currently on-going PREDIMED-PLUS trial
- What are the advantages of assessing overall food patterns in nutritional epidemiology?
- What is the role of dairy products in the Mediterranean diet?