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Abstract

Dietary Polyphenol Intake in Relation to Ultra-Processed Food Consumption in a Mediterranean Population-Based Cohort: Findings from the Moli-Sani Study †

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Abstract: Background and objectives: Ultra-processed foods (UPFs) have been consistently associated with the increased risk of premature mortality and diseases in numerous cohorts worldwide, possibly due to their poor nutritional composition. However, UPFs could also be deficient in several bioactive compounds, such as polyphenols, which are otherwise largely present in a variety of fresh foods, such as fruit, vegetables, and cereals. We therefore examined the dietary polyphenol content in relation to the degree of processing according to the Nova classification. Methods: The data were from the Moli-sani Study established in 2005–2010, including 22,939 men and women (mean age 55.4 y ± 11.7). Dietary data were collected using a 188-item food frequency questionnaire, and the polyphenol intake was calculated by matching the food consumption data with the Phenol-Explorer database regarding the polyphenol content of each reported food. NOVA classification was used to categorize the foods according to the levels of processing as unprocessed/minimally processed foods (e.g., fruits; meat) or UPFs (e.g., processed meat; packaged snacks). Results: The average (SD) weight contributions of the unprocessed/minimally processed foods and UPFs to the diet were 63.1% (±11.8) and 11.0% (±6.7), respectively. The mean intake of polyphenols was 665 (±265) mg/day. In multivariable-adjusted linear regression analysis controlled for the sociodemographic, behavioral and clinical factors, more UPF intake was associated with fewer dietary polyphenols (β = −59.2; 95% CI: from −62.1 to −56.3 mg/day of polyphenols for 1-SD increase in UPF). On the contrary, unprocessed/minimally processed food consumption was linked to more polyphenols in the diet (β = 25.5; 95% CI: 22.2 to 28.7). Discussion: In this large cohort of Italian adults, an increasing dietary share of UPFs would provide lower amounts of polyphenols in the diet, while consuming fresh and minimally processed foods is associated with a higher intake of polyphenols. Future studies are needed to test whether a low dietary polyphenol content has an effect on UPF–disease relationship.

Keywords: polyphenols; food processing; Nova classification

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