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Editorial

Towards Planetary Health Diets: Plant-Based, Minimally Processed, Sustainable and Accessible

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Diet is not an isolated concept but a core component of the broader food ecosystem. Unhealthy dietary patterns are among the leading modifiable risk factors for the global burden of disease [1,2]. At the same time, food systems account for approximately one-third of anthropogenic greenhouse gas emissions [3]. As diet is a foundational pillar of planetary health, there is a need to promote diets with a lower environmental impact, such as dietary patterns closely resembling a Plant-Based Diet (PBD) [4]. In 2019, the EAT-Lancet Commission identified the transformation of food systems as a necessary condition for feeding approximately 10 billion people by 2050 without transgressing planetary boundaries [5]. Its 2025 update has reinforced this framework by explicitly incorporating the dimension of social justice and equity: it is not enough for a diet to be healthy and sustainable; it must also be accessible [6]. Accordingly, the main objective of this Special Issue (SI) was to assess how dietary patterns may affect population health holistically, including the communities in which people live, their immediate surroundings, and the natural environment. In other words, to investigate the characteristics of planetary health diets. This SI brings together six articles (https://www.mdpi.com/journal/nutrients/special_issues/7428DD4407 [accessed on 27 October 2026]). Five are original and observational studies: two cohort studies from Spain and China, two Italian studies on workplace lunches and national food consumption, and a cross-sectional multicountry study of university students in Chile, Mexico, Spain and Italy. The sixth is a scoping review.

The relevance of evaluating diet quality in PBDs was highlighted by two studies of this SI. Among middle-aged adults of the *Seguimiento Universidad de Navarra* (SUN) cohort, Martínez-Tabar et al. (2025) [contribution 1] showed that higher adherence to an overall provegetarian pattern (PVG) was prospectively associated with a 32% lower risk of all-cause mortality. While findings were very similar in its healthful version (hPVG), adherence to the unhealthful pattern (uPVG) pointed in the opposite direction [contribution 1]. In the scoping review, Oncina-Cánovas et al. (2026) [contribution 2] investigated how adherence to various PBDs influenced gastrointestinal cancers. Most studies found that greater adherence to healthful PBDs rich in whole and minimally processed plant foods was associated with lower risks across all digestive cancer localizations examined,

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while unhealthful PBDs characterized by refined or ultra-processed plant products showed the opposite, highlighting the critical importance of assessing the quality dimension of PBDs [contribution 2]. This distinction, introduced methodologically by Satija et al. (2016) through the creation of the healthful plant-based diet index (hPDI) and unhealthful versions (uPDI) [7,8] and subsequently validated in analyses of dietary change and mortality [9], is now central to the public health message. A diet that includes a high proportion of sugar-sweetened beverages, pastries, and ultra-processed meat analogs can be described as plant-based and still be associated with higher risk. If PBDs are promoted without specifying food quality and degree of processing, the term may come to describe dietary patterns with very different health effects. The emphasis should therefore be on the quality of plant foods rather than just on their consumption frequency.

Dietary patterns should not be considered in isolation from the environments in which they occur, and public health needs to understand how these environments shape food choices. This is what two of the SI contributions examined, addressing the influence of the workplace [contribution 3] and international university settings [contribution 4], both highlighting the role of context. On the one hand, Ferraris et al. (2025) showed, in a convenience sample of 189 staff members of a single institute, that two-thirds of lunches eaten at work did not meet the Healthy Eating Plate, mostly because vegetables were missing [contribution 3]. On the other hand, Moral-Moreno et al. (2026) reported that country was the characteristic most strongly associated with food-consumption profiles, although the association was modest [contribution 4]. In addition, Le Donne et al. (2026) [contribution 5] examined food choices shaped by food culture and reported results from the Italian national IV SCAI survey conducted between 2017 and 2020. Their findings highlighted the erosion of traditional and plant-based patterns, along with increased consumption of animal protein, resulting in intake profiles with greater environmental impact and lower representation of planetary healthy food groups, such as legumes and whole grains. These studies pointed in the same direction, with a loss of the traditional and plant-oriented diets, in favor of higher animal protein and lower fiber intakes. This is the opposite of what the EAT-Lancet Commission and most recent dietary guidelines recommend [5,6]. To serve as an effective antidote to the loss of traditional PBDs, the planetary health diet concept should be flexible and recognize that diverse healthful PBDs are possible and desirable, such as the Mediterranean Diet [10], each tailored to its culinary traditions, surrounding environment, and food systems.

Recent studies exploring substituting animal with plant-based proteins have shown clear benefits across human health and sustainability, though researchers also highlight important trade-offs depending on the degree of food processing [11]. In the SI, Wang et al. (2026) highlighted that the benefit of substitution is not universal and depends largely on the habitual intake of the food being replaced, challenging simple substitution narratives [contribution 6]. In a Chinese cohort, the authors found that replacing red meat with white meat (poultry and fish) was associated with a 34% reduction in diabetes risk, but only among participants who already consumed at least 75 g/day of red meat. In participants with lower red meat intakes, this substitution was not protective. For the authors, this specific substitution recommendation may add little and could divert attention from higher-yield interventions, such as increasing the intake of vegetables, fruits, legumes and whole grains. It should also be noted that this study investigated an animal-for-animal substitution model, with poultry and fish combined as white meat, and that replacement with plant protein sources was not examined.

Regarding the objectives of this SI, it would be relevant to clearly state which areas of our call have remained unanswered. First, although the sustainability dimension appears in all six contributions as a conceptual framework or discussion point, none of the articles

measured diet-related environmental footprints. A further problem encountered by several studies concerns definitions and indices: across the six contributions and, in particular, in the 24 studies included in the scoping review, a wide variety of indices coexists, including the PDI (hPDI, uPDI), the PVG (hPVG, uPVG), the EAT-Lancet-based indices, the Healthy Feeding Index (IASE), and the Healthy Eating Plate [contributions 1,2,4,5]. Future work should compare these patterns and indices across diverse populations and promote a unified, more comparable approach.

Read together with the wider literature, the six contributions suggest a concrete research agenda, which we offer as an explicit invitation to future authors. First, we need cohorts and trials that simultaneously report clinical outcomes and environmental footprints (greenhouse gas emissions, land use, and water use), by linking food composition databases with life cycle assessments. This model already exists [10,12], but it is still the exception. Second, the consumption of ultra-processed foods within PBDs should be disaggregated: given the growing supply of ultra-processed meat analogs and plant-based products, plant-based indices should be systematically cross-classified by degree of processing [13,14]. Finally, research should not simply describe food environments, but also propose interventions to improve them. Clinical trials with nutritional, environmental, and cost outcomes are still scarce. Such trials would also allow equity to be incorporated as a variable, which is the main addition of the EAT-Lancet update [6]. Unfortunately, economic and physical access to healthy and sustainable diets is unequal, and a recommendation that fails to account for this fact would shift the cost of the transition onto the households with the least capacity to absorb it. For example, estimates suggest that the most affordable version of the EAT-Lancet reference diet exceeds the per capita household income of around 1 in 5 people worldwide [15]. Future studies should report diet cost, food insecurity, and socioeconomic gradients alongside health outcomes. These studies integrating health, sustainability, and accessibility will also be central to national and international food policies aiming to tax unhealthy and unsustainable foods and to redirect that profit to promote equality in access to healthy and sustainable foods [16].

In conclusion, the world urgently needs to transition towards planetary health diets. To undertake this great challenge, promotion of PBDs is still a sound strategy, but whether it works depends on three conditions that research has identified, but policy has not yet adequately addressed: the quality of plant foods, the baseline intake of the population to which the advice is directed, and the food and social environment in which that population eats. Furthermore, future studies must integrate environmental footprint and economic cost data to evaluate and validate the sustainability and accessibility of planetary health diets.

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