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Sustainable values of the 2017 French food-based dietary Guidelines: Findings from the BioNutriNet project

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Abstract

Background: Recently, Food-Based Dietary Guidelines (FBDG) have introduced the sustainability concept relying on health and environmental issues related diet. In 2017, the French FBDG were updated including, beyond healthy diet for human, environmental protection and the promotion of organic food.

Objectives: The aim of the present analysis was to describe sustainable indicators (nutrition, environment, economic, sanitary exposure and long-term) according to adherence to the 2017 FBDG.

Material and Methods: The sample included a total of 28,240 from the NutriNet-Santé cohort having completed an, in the framework of the BioNutriNet project, an organic food frequency questionnaire allowing to estimate organic and conventional food consumption for 264 items. After matching, several databases were compiled to evaluate environmental impacts (greenhouse gas emissions, cumulative energy demand and land occupation and the *p*ReCiPe score aggregating the three individual indicators), purchase costs of the diet and dietary exposure to pesticides, all data accounting for farming systems. A recently validated adherence score estimating compliance with the 2017 FBDG (programme national nutrition santé guidelines-score, PNNS-GS 2) was used and the quintiles were computed for comparison purpose of multiple sustainable. Numbers of averted or avoided deaths by adhering to the FBDG were also estimated using the PRIME.

Results: A higher PNNS-GS2 scores is positively correlated to a high plant-based diet, a lower energy intake and a higher cost (+ 0.91 €/d). It was associated with lower environmental impacts (Δ_{Q5vsQ1} *p*ReCiPe: -50% for PNNS-GS2). Higher PNNS-GS2 was associated with lower exposure to all pesticides except those used in organic farming and led to a reduction of about 20,000 averted or delayed deaths.

Conclusion: Our results suggest that 2017 FBDG are in line with the sustainable despite a slight higher cost. Such dietary guidelines, if largely adopted, may help in health promotion and reducing environmental protection in a context of an alarming climatic change.

Conflict of Interest

Denis Lairon has acted as a scientific expert in 2018, with no honoraria or personal funding, in two non-for-profit French foundations ('Fondation Bjorg, Bonneterre et citoyens' and 'Fond de dotation Institut de l'alimentation bio'). None of the other authors have any potential conflicts of interest.