

Abstract

Investigating the Potential of Nutri-Score to Discriminate between Environmental Impact of Foods [†]

Elly Steenbergen , Reina E. Vellinga  and Elisabeth H. M. Temme 

National Institute for Public Health and the Environment (RIVM), 3721 MA Bilthoven, The Netherlands; reina.vellinga@rivm.nl (R.E.V.); liesbeth.temme@rivm.nl (E.H.M.T.)

* Correspondence: elly.steenbergen@rivm.nl

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Abstract: Background: There is a need for uniform communication on healthy and sustainable food choices. Several front-of-pack labels exist with the purpose of informing consumers. Nutri-Score has been introduced in Europe, aiming to help the public make more nutritionally sound choices. However, its potential to also aid consumers in making environmentally sustainable food choices has not yet been studied. Objective: to determine the extent to which the Nutri-Score algorithm is capable of discriminating foods based on their environmental impact. Methods: Nutri-Scores were calculated for foods in the Dutch food composition database. The environmental impact was assessed using lifecycle assessments. Correlations between Nutri-Scores and environmental impact indicators (greenhouse gas (GHG) emission, land use, water consumption, fresh and marine-water eutrophication, and acidification) were assessed. Correlation estimates were obtained for the main food groups. Results: Final Nutri-Scores (FNSs) and environmental impacts were calculated for 1853 foods, with FNSs ranging from −15 to −1 (most favorable) and 19 to 40 (least favorable). The FNSs for “Meat and poultry”, “Cold cut meats”, and “Fish” showed inverse correlations with environmental impacts ($r = -0.07$ to -0.36), whereas FNSs for “Cheese” and “Dairy” showed positive correlations ($r = 0.24$ to 0.59). The FNSs for “Fats and oils”, “Bread”, and “Fruit” had the highest correlations. The FNS for “Fats and oils” showed moderate correlations with GHG emissions ($r = 0.66$), marine-water eutrophication ($r = 0.59$), and acidification ($r = 0.50$). The FNS for “Bread” showed moderate correlations with land use ($r = 0.62$), freshwater eutrophication ($r = 0.58$), marine-water eutrophication ($r = 0.58$), and acidification ($r = 0.52$). Similarly, the FNS for “Fruit” showed moderate correlations with acidification ($r = 0.72$), marine-water eutrophication ($r = 0.55$), and land use ($r = 0.52$). Conclusion: For Meat and poultry, Cold cut meats and Fish, a higher FNS, indicating a less healthy food choice, correlated with lower environmental impacts. On the contrary, especially for the food groups Cheese, Dairy, Fruits, Bread, and Fats and oils, a higher FNS, indicating a healthier food choice, was correlated with higher environmental impacts. Therefore, depending on the food group, healthier food choices according to the Nutri-Score can potentially guide consumers toward more environmentally sustainable food choices. Though trade-offs exist, the use of Nutri-Score may be beneficial for both human and planetary health.

Keywords: nutri-score; eco-score; planetary health; environmental impact



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Conflicts of Interest: E.S. is member of the international Technical Committee of Nutri-Score. E.H.M.T is member of the international Scientific Committee of Nutri-Score.

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