

## Abstract

# The Updated Algorithm of Front-of-Pack Label Nutri-Score Is Not in Line with Dutch Food-Based Dietary Guidelines: Results of Calculations with Dutch Food Composition Database <sup>†</sup>

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**Keywords:** Nutri-Score; front-of-pack label; algorithm; food-based dietary guidelines; wheel of five

**Background and objectives:** The front-of-pack label Nutri-Score has met a lot of scientific opposition. In the Netherlands, these were major concerns that Nutri-Score was not in line with the Dutch food-based dietary guidelines. In 2022, the algorithm behind the Nutri-Score was updated with the intention to bring it more in line with the general European food-based dietary guidelines. **Methods:** In this study, the renewed 2022 algorithm for solid foods is applied to the Dutch Food Composition Database (NEVO) to calculate the Nutri-Score values. Subsequently, the Nutri-Score values of all-solid foods were compared to the Dutch food-based dietary guidelines (the Wheel of Five). The foods that are included in the Wheel of Five are considered as “healthy”, i.e., would qualify for labels A or B, while the foods that receive labels C/D/E are considered “unhealthy”. **Results:** In total, 1980 solid foods were selected from NEVO. Despite the intended outcome, 19% of the unhealthy (non-Wheel of Five) products still received a Nutri-Score A or B. In addition, 25% of the healthy products in the Wheel of Five were scored as “unhealthy”, i.e., Nutri-Scores C/D/E. So grossly, circa one quarter of the foods will be wrongly labelled if the new algorithm is applied. **Discussion:** If the Nutri-Score is applied with the updated algorithm, this will mean that an average supermarket in the Netherlands will contain thousands of products with an inappropriate score. These results confirm the worries of the >200 Dutch food scientists and the associations of dietitians, life style coaches and weight councilors that the Nutri-Score will confuse Dutch consumers upon introduction. In their request to the Dutch Ministry of Health, they suggest to first bring the Nutri-Score essentially in line with our Wheel of Five before introducing the Nutri-Score system in the Netherlands. The full details of this work can be found at doi 10.13140/RG.2.2.23262.31043.



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**Conflicts of Interest:** J.G. and S.P. are employed at the Dutch Dairy Association. H.V. is an independent consultant at the Food Safety & Nutrition Consultancy (The Netherlands) and holds professorships at the Technical University of Denmark (Denmark) and the University of Ulster (Northern Ireland). No author has a past or current collaboration with the Nutri-Score. H.V. is a member of the international board of the Choices International Foundation since 2023. Until 2015, Both S.P. and H.V. were members of the independent scientific committee in the Netherlands supporting the former front-of-pack logo “het Vinkje”. The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The Dutch Dairy Association is involved in the national discussion in the Netherlands about front-of-pack logos by submitting inputs into product reformulations and front-of-pack consultations of the Dutch Ministry of Health, Welfare and Sport.

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