

Nutri-Score calculated with new algorithm

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Nutri-Score has been updated: what does that mean?

A scientific committee has adjusted the algorithm behind the front-of-pack nutrition label Nutri-Score to better adhere to the dietary guidelines. What changes has this new algorithm led to? And does this mean that Nutri-Score corresponds more closely to the Dutch Wheel of Five?

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he front-of-pack nutrition label Nutri-Score was supposed to be introduced in the Netherlands as early as 2019. But the label faced considerable criticism for not being in line with Dutch dietary guidelines. Nutritionists expressed their concerns in an urgent letter to the secretary of state; conflicting nutritional advice can lead to confusion among consumers. The Dutch Ministry of Health, Welfare and Sport therefore enlisted a scientific committee to align the Nutri-Score algorithm with the Dutch Wheel of Five (see box). The adjusted algorithm for solid foods was presented in June. The algorithm for beverages is expected soon. Based on the adjusted algorithms, the Dutch Health Council will issue scientific opinion to the ministry. The secretary of state will then decide whether or not Nutri-Score will be introduced.



Figure 1: Percentage of the Nutri-Scores of all product groups* (minus drinks) that are in the Wheel of Five and that are not in The Wheel of Five, according to the old and new algorithm. (N=1611) * Product groups that fall outside the scope of Nutri-Score - such as vegetables, fruit, herbs, spices and infant nutrition - are not included.

New algorithm's impact

What does the new algorithm for Nutri-Score mean for various foods? To understand its impact, the products in the Dutch Food Composition Database (NEVO) were calculated using the new Nutri-Score algorithm. 1980 food products were selected, excluding beverages. The calculations found that the Nutri-Score of 606 products had changed in the new algorithm. Of these 606 products, 70 products received a better Nutri-Score and 536 products scored worse. Products which saw improved Nutri-Scores were mainly in the eggs, oils and fats, fish, and meat (especially poultry and game) product groups.

Wheel of Five

For Nutri-Score to align with the Dutch dietary guidelines, it is important that the products in the Wheel of Five receive a good Nutri-Score (A, B), and that products that are not in the Wheel of Five receive lower scores (C, D, E). It is also crucial that actual products in a product group in the Wheel of Five have higher Nutri-Scores. For example, if olive oil is recommended to consumers, but olive oil has a low Nutri-Score (C or D), then the two guidelines contradict each other. This can confuse the consumer. The consumer must always be able to make a healthy choice from a product group in the Wheel of Five. This means that the products in

the Wheel of Five product groups must have high Nutri-Scores.

Changes for the Wheel of Five

Figure 1 shows the new Nutri-Scores for all relevant products in the NEVO. The products are divided between those in the Wheel of Five and those not. Interestingly, for those products in the Wheel of Five, there are few changes between Nutri-Scores calculated with the old or new algorithm. For those products not in the Wheel of Five, 20% still have a Nutri-Score of A or B with the new algorithm. The only improvement from the modified algorithm is that there is an increase in the number of products outside the Wheel of Five with a Nutri-Score of E.

The Wheel of Five

The Wheel of Five is a practical translation of the Dutch dietary guidelines and is used as an information model to indicate which foods should be consumed daily for a healthy eating pattern. The Wheel of Five consists of five segments containing the foodgroups 'fruit and vegetables', 'spreads and cooking fats', 'fish, legumes, meat, eggs, nuts and dairy', 'bread, grain products and potatoes' and 'beverages'. Products that are not in the Wheel of Five generally contain too much salt, sugar and/or saturated fat or too little fibre. This includes snacks such as biscuits and sweets, soft drinks, sweet spreads, cold meats and white bread, pasta and rice. The products outside the Wheel of Five should be consumed in moderation.

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Figure 2. Percentages of the Nutri-Scores of all non-liquid dairy products (excluding cheese) that are in the Wheel of Five and that are not in the Wheel of Five, according to the old and new algorithm.



Figure 3. Percentage of the Nutri-Scores of cheese in the Wheel of Five and cheese not in the Wheel of Five, according to the old and new algorithm.

Changes for dairy

For dairy products, the modified algorithm leads to a number of changes in the Nutri-Scores. Figure 2 shows the distribution of non-liquid dairy products (such as yogurt and quark, but excluding cheese) on the Nutri-Scores with the old and new algorithm for products included in or excluded from the Wheel of Five. For products in the Wheel of Five, hardly anything changes. For products not in the Wheel of Five, several drop from Nutri-Score B to C. But of the products not in the Wheel of Five, one-third still get a high Nutri-Score (A or B).

Changes for cheese

The new algorithm has no effect on the cheese product group. Neither the old nor new Nutri-Score algorithm leads to differences between cheese in the Wheel of Five (e.g. 10+, 20+ or 30+ cheese) and cheese not in the Wheel of Five. Figure 3 shows that most products (whether or not included in the Wheel of Five) are assigned

Nutri-Score D. If Nutri-Score is meant to give consumers choices within product groups, a precondition should be that products in a product group (in this case cheese) should be distributed over all five Nutri-Scores. This is not the case for the cheese product group, contradicting advice from the dietary guidelines and Wheel of Five. In addition, the Dutch Dairy Association has calculated the effect of salt reduction in particular cheeses on the outcome and distribution of the Nutri-Scores. Such a theoretical salt reformulation would have no effect on the Nutri-Score, meaning higher Nutri-Scores would not be possible.

Drawbacks of Nutri-Score

Besides not being in line with the guidelines, the Nutri-Score label has several other drawbacks. The purpose of a nutrition label such as Nutri-Score is to help consumers make healthier choices. Nutri-Score does that by scoring products within a product group. Consumers can use Nutri-Score to compare products within a product group, but also with products outside it. As a result, consumers lump products together and classify them as "healthy" or "unhealthy". An undesirable effect. In countries where Nutri-Score has already been introduced, communication campaigns have been launched to inform consumers about this. The effectiveness of such campaigns is not yet clear. In addition, there is insufficient scientific evidence for consumer use of Nutri-Score in the supermarket (see box).

Conclusion

The adjustments to the Nutri-Score algorithm show a shift in Nutri-Scores for about one-third of NEVO products. One-fifth of non-Wheel of Five products still receive a Nutri-Score A or B. In addition, 25% of the products in the Wheel of Five score unhealthy Nutri-Scores. This will continue to cause confusion among consumers. For cheese, Nutri-Score as a decision-making label does not work, as there is no distribution of Nutri-Scores across the different types of cheeses. The 10+, 20+ or 30+ cheeses are not scored better, nor is cheese with less salt. Within the cheese product group, Nutri-Score would not help consumers make healthier choices. More calculations need to be done to determine the effects of the modified algorithm on the distribution of Nutri-Scores in other specific product groups.

References

 Peters, S.; Verhagen, H., An Evaluation of the Nutri-Score System along the Reasoning for Scientific Substantiation of Health Claims in the EU – A Narrative Review. Foods 2022, 11 (16), 2426.



Study on the effectiveness of Nutri-Score

Considerable research has been done on Nutri-Score. For example, research shows that consumers understand the Nutri-Score label and that there is an association between a better score on the algorithm (prior to the modifications) and health gains. The theoretical underpinnings seem to hold true. But what does this look like in practice? Does Nutri-Score also have the desired effect in the supermarket? Peters and Verhagen investigated the scientific evidence behind the effectiveness of Nutri-Score in the supermarket. To do so, they applied the methodology used by EFSA, the European Food Safety Authority, for authorizing health claims. Although Nutri-Score is not literally interpreted in legislation as a health claim, it is interesting to assess the effect of Nutri-Score using the EFSA methodology. Peters and Verhagen's research was recently published in the peer-reviewed scientific journal Foods.

Conditions for an EFSA health claim

A health claim must meet 3 EFSA conditions to be authorized. An authorized health claim must meet all conditions.

- The food or ingredient is adequately defined.
- 🏹 The Nutri-Score algorithm is clear and can be replicated.
- The claimed effect is beneficial to human health.
- The theoretical relationship between a better score on the Nutri-Score algorithm and a healthier choice according to the Food Standards Agency's Nutrient Profiling System (FSA-NPS) is credible.
- A cause-effect relationship must have been established.
 - There is insufficient evidence that Nutri-Score has a significant effect on healthier choices (as understood by FSA-NPS) in a real supermarket (not online).

Conclusion: Nutri-Score does not meet all the conditions for an EFSA health claim. There is insufficient scientific evidence that Nutri-Score helps consumers make healthier choices in a supermarket.