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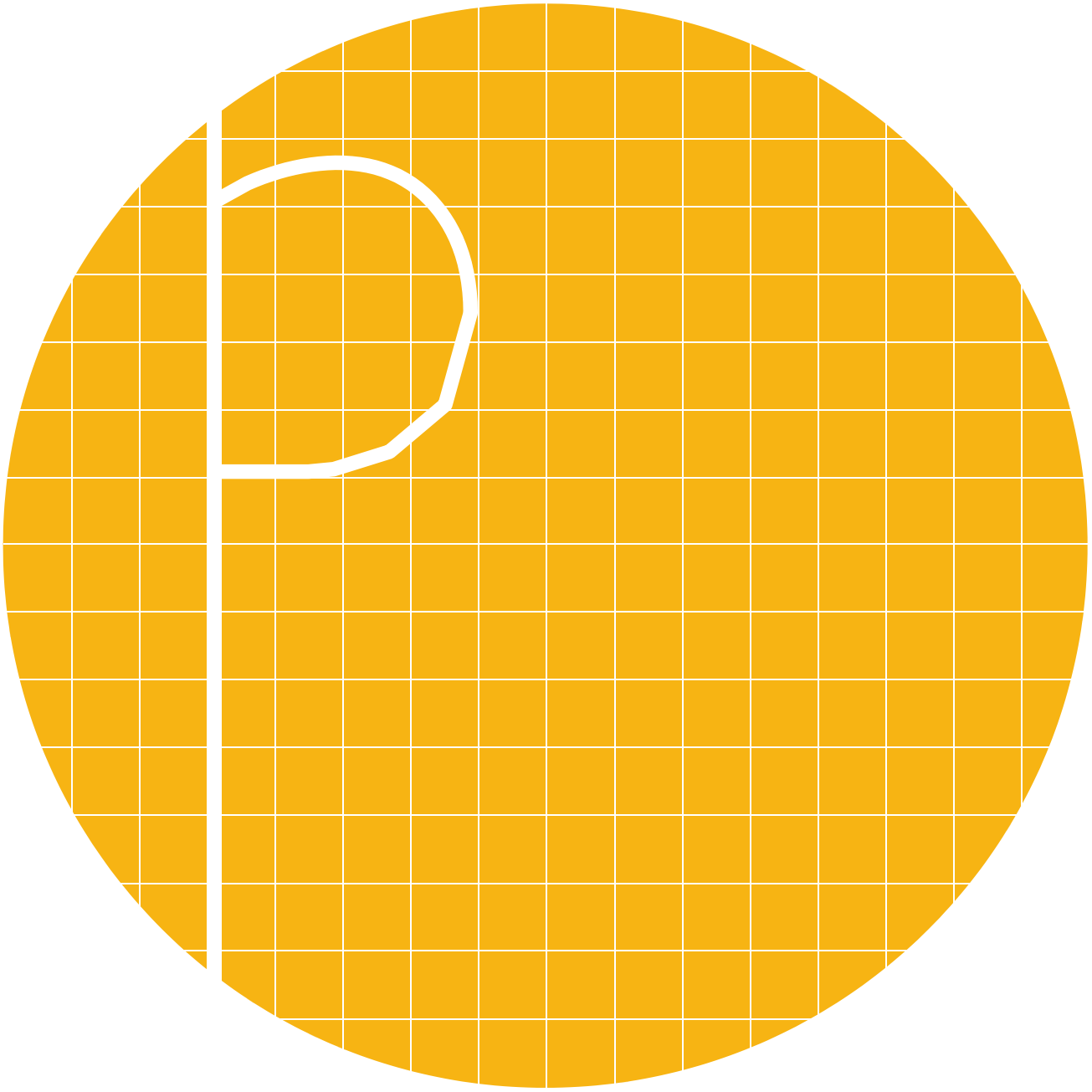
Paper: The sales diet

Why Nutri-score is not a good idea



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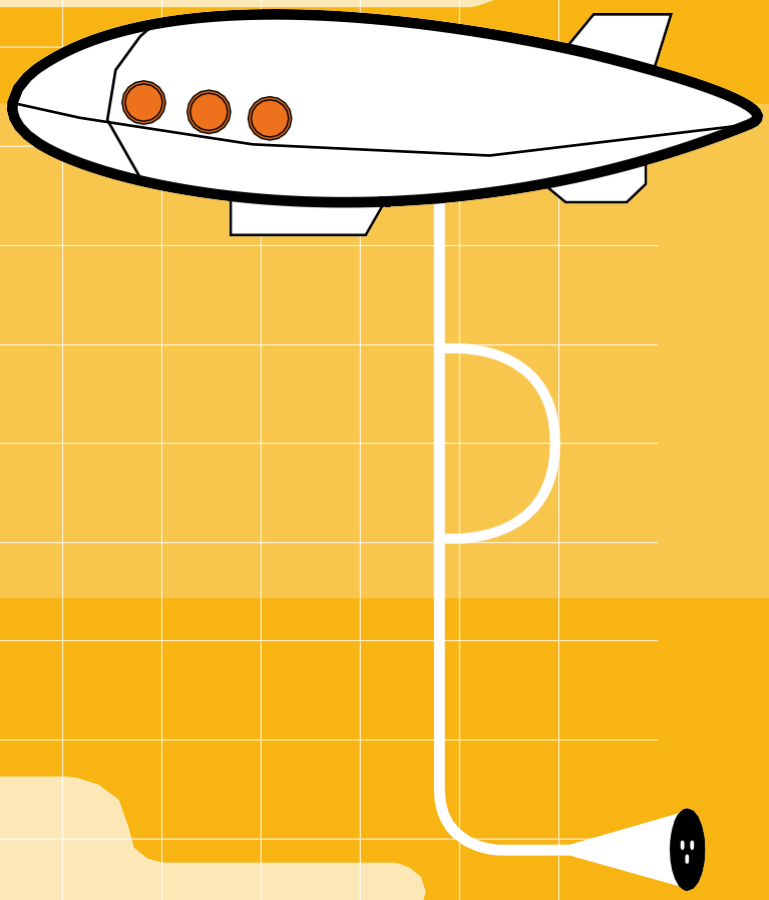

In Europe, the debate has for some time been focused on the opportunity to adopt the Nutri-score, a system that expresses judgements on the nutritional quality of foods through colours and letters. But there are still several flaws that characterise this labelling model. The concrete risk is that of favouring ultra-processed products, the result of manipulation to the detriment, however, of the excellence of the Mediterranean diet, a UNESCO intangible heritage of humanity. But let's try to understand more.

We've recently been hearing a lot about the Nutri-score, but what is it about? And, more importantly, is it a good food labelling system?

Abstract

- Europe has long been divided by an important debate over the choice of the FOP (front of pack) supplementary nutritional labelling system to be applied on the front of food product packaging. Specifically, the Nutri-score labelling system – developed in 2017 in France and still being tested – is at the centre of the debate, as it is considered a controversial labelling system.

- In fact, the Nutri-score if on the one hand has the objective of informing the consumer in the choice of products to buy and eat, on the other limits and conditions their freedom to purchase, assigning a score based on an overly approximate calculation.

- The Paper, therefore, while underlining the importance of introducing nutritional labelling that informs the consumer, highlights the fact that the Nutri-score is not yet a system ready to be used and underlines its limits and risks.

- The first and most significant limitation of the Nutri-score is that the system neglects the concept of portion and bases its calculation on a standard portion of 100 grams, without taking into account how much of that product is actually consumed, creating confusion and misinformation.

- The Nutri-score, for example, considers fats to be all the same and the system takes into account a very small portfolio of components. The risk is to reward products with less nutritional quality and more chemical additives.

- It is no coincidence that the Paper dwells on the risk of the Nutri-score of encouraging the consumption of ultra-processed products, given that it does not consider the transformations undergone by food. The Paper refers to the Nova system - which classifies products according to their degree of processing - underlining the paradoxical result that emerges from the calculation of the Nutri-score: ultra-processed foods are rewarded more (with letters such as A and B) than natural ones.

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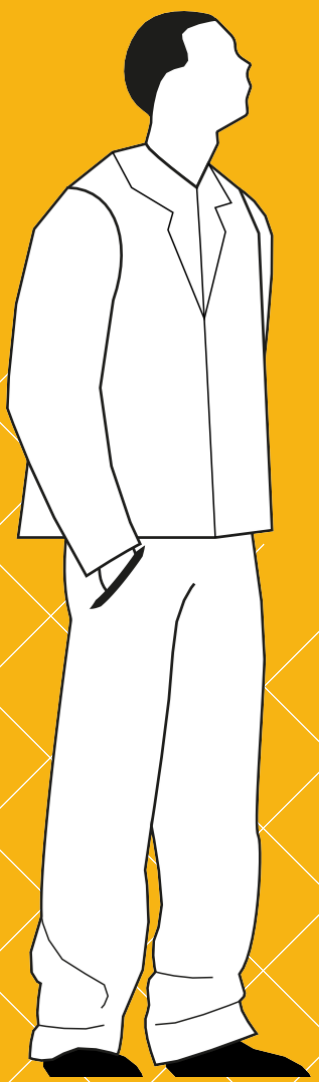

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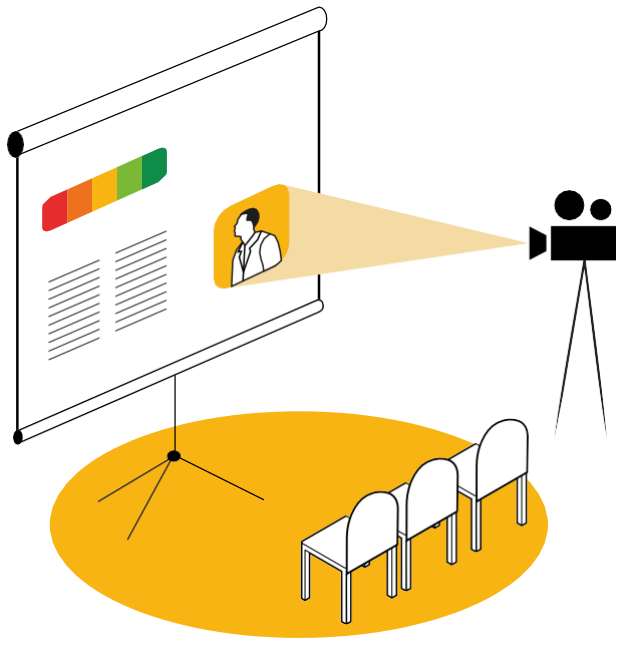

1. Hercberg against all

It is not the title of a film, but the distillation of the surreal debate we have witnessed in Europe about how to encourage the improvement of our eating styles, through the so-called pack front signs. Serge Hercberg is an emeritus professor of the Sorbonne Nord University and led the working group that for many years worked on the development of the "Nutri-score" system, the algorithm for classifying the nutritional qualities of food, which seemed destined to become mandatory in Europe in a very short space of time. But it didn't happen that way and the professor evidently took it personally. Responding personally to the perplexities that legitimately have arisen in the scientific community is okay, it is part of his job as a scientist, but Serge Hercberg must have really lost his patience when he realised that Europe probably would not have deliberated, at least not in this legislature, the adoption of his creature. He made a point of responding to every minister, national or European parliamentarian who appeared to be non-aligned, attributing to the food industry lobbies, especially the Italian one, the role of great manoeuvre. He even wrote a book (1) to denounce, among others, the fact that "*Italy has decided to side with the large industrial groups and not with consumers*". There are many reasons to smile and for those who felt affected by Hercberg's words, reacting was very, perhaps too easy. Italy, among the big players in the European agri-food sector, is the country that has the transformation system with the smallest average sizes and the circumstances in which to identify cases of large industrial groups are rare. On the contrary there are many and certainly more relevant, large, indeed very large, multinational food processing and distribution groups,

such as Nestlé and Carrefour, to name names that make the idea clear, which support the Nutri-score system. Helping the consumer to make healthy food choices is a fundamental issue for the political decision-maker given the increasingly alarming health implications of unbalanced diets, both in energy intake and in the quality of nutrients. The absolutely shared ambition of Europe is to simplify as far as possible the reading of the nutritional qualities of each food, with easily interpretable signs. But achieving this goal is of a remarkable complexity, it should be emphasised, because the choice of a food is only one piece of a much larger and more detailed puzzle called diet. But also because both the range of nutrients to be taken into consideration and the transformations which can be involved in food production are very intricate. Reducing this complexity into a colour, a letter, a number is undoubtedly a very useful task, but an extremely difficult one. The outcome of this process, which obviously cannot claim to replace the so-called nutritional indications, must first of all be careful not to create distortions, at least avoiding creating further damage and, once this condition has been ensured, must seek to maximise the benefits. This should be achieved by informing and consequently directing consumer choices towards more balanced food styles. The cases, not yet many, of pack front nutritional labelling have been and are the subject of experimental phases and some still have a voluntary nature. And even Professor Hercberg and his team who have dedicated a good part of their professional life to producing the Nutri-score, have not

seemingly finished yet. Proof of this is the fact that the latest change to the algorithm was approved recently, in July 2022, and made significant changes to the classification of many products, some penalised and others rewarded by the revision developed. And evidence of this is the announcement by the same professor, launched through an interview given to the French newspaper "Le Figaro", of further changes to be made in 2023. There will also be something wrong then, especially as the revisions intercept, and in fact acknowledge, the main critical issues raised during these months of debate. These are objections that concern the foundations of the algorithm and its ability to ensure or at least contain the risk of distortions in consumer perception. Instead of responding with interest to politicians who legitimately ask for clarifications and insights, also on the basis of a growing scientific dissent on the Nutri-score, the professor should realise that it is difficult to think of making something that is still being worked on mandatory.

We're not talking about improving the effectiveness of the algorithm, but about avoiding disasters. Hercberg's work is undoubtedly valuable and will certainly make an important contribution to the European strategy to improve communication with consumers, but it is worth reflecting on the criticisms leveled at the model, not only by Italy, to verify them and to question what is not working.

If it is the professor who confuses the discussion plans, throwing himself into the political brawl whereas in fact should there be any questions to be answered, these should come from those who read or listen to it.

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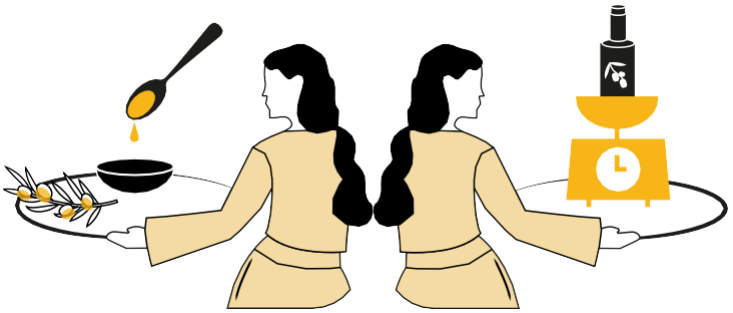


2. The Nutri-score: one hundred grams of confusion

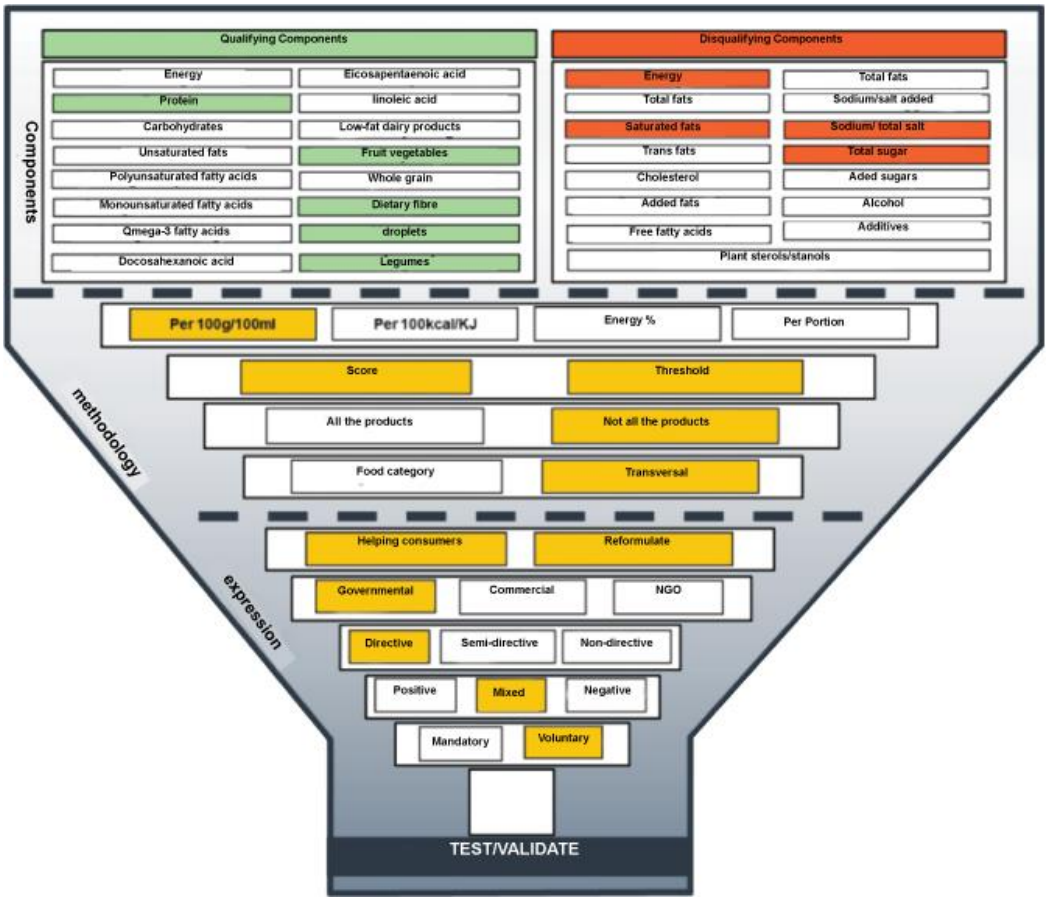
In Europe, the debate has long been focused on the opportunity to adopt the so-called "Nutri-score", a system that expresses, through colours and letters, the judgement on the nutritional qualities of foods. It is the result of an algorithm, developed in France by authoritative scholars, which assigns a negative score to the content of energy, simple sugars, saturated fats and sodium and, conversely, a positive score to the content of fruit, vegetables, fibres and proteins. The balance is determined starting from the negative component from which the score contributed by the positive nutritional contents is subtracted. On this basis, a food product can obtain a score from -15 to 40, which is the basis for the subsequent coding of its nutritional value (colours from dark green to dark orange which correspond to the letters from A to E). Much of the literature on the subject has extolled the potential advantages of this tool, highlighting in particular how the system satisfies some of the main nutritional recommendations shared internationally. However, many studies have highlighted the numerous disadvantages associated with the algorithm in question, which is associated with the paradoxical risk of promoting diets that are not at all balanced and that are above all poor in natural products.

The first and perhaps most significant limitation of the Nutri-score algorithm is its independence from the quantities consumed of the product being evaluated. In fact, the calculation method provides that the determination of the content of selected ingredients and energy is in any case performed on 100 g of product.

It will therefore be the same colour or letter that marks a given product regardless of the

quantity contained in the package. Neglecting the concept of portion leads to the first paradox of the algorithm, which conceived in this way risks promoting an increase in caloric intake and jeopardising the balance of diets. In fact, the consumption of negative nutrients grows with the increase in the quantities consumed, regardless of whether the balance with positive ones generates a "virtuous" Nutri-score (dark green and light green colours, letters A and B). The level of negative nutrients could also be very high and compensated by the addition of positive components. The Nutri-score could promote the consumption of more energy, more saturated fatty acids and even more sugars. This way of accounting for nutrients also penalises those products that are usually consumed in quantities of less than 100 grams. As in the case of cheeses, usually taken in very small average daily quantities. Consuming the right quantities of Parmigiano Reggiano, Grana Padano, Feta or Camembert can certainly be healthier than consuming larger quantities of some products to which the Nutri-score has given a better evaluation.

Fig. 2.1: The Funnel Model applied to the Nutri-score (a)



Source: Elaboration of Centro Studi Divulga on Funnel Model updated to 2019 (2)

3.

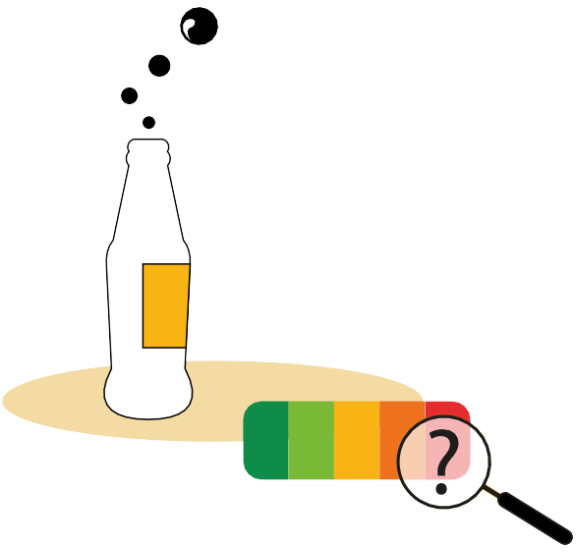
3. What is the purpose of vitamins and minerals?

Vitamins provide an essential contribution to metabolic functions and have the ability to be effective also in the prevention of certain diseases. Mineral salts are organic substances which are also essential for our body. In essence, they make it possible to make energy available for the performing of our daily activities. They are activators of many vital functions for humans. We are talking about nutrients that are universally recognised as essential for human well-being but which are not part of the Nutri-score calculation system. The content of vitamins, minerals and other ingredients, such as the so-called bio-actives (b) does not affect the outcome in any way and so a fruit juice or concentrate is evaluated worse than a soft drink enriched with sweetening substances. The sugar content of juices and concentrates, derived from the content of the original product, associated with the absence of proteins and dietary fibres, scores a Nutri-score which, expressed in letters, varies between C and D. Instead many artificially sweetened drinks receive a score equal to B despite being devoid of any nutritional value. Simply because they do not contain added sugars, although they do contain other compounds that we could define as anti-nutritional such as phosphoric acid and sweeteners. While the requests of nutritionists are to limit if not eliminate the consumption of artificially sweet drinks, particularly in the diet of children and adolescents, the Nutri-score could further promote their diffusion, also in place of other beverages, as in the case given for example of

fruit juices which, if consumed in the right doses, on the contrary have positive effects on health. If today it seems intuitive that it is better to drink a glass of currant or orange juice than one of "cola" type drinks, with a sticker certifying the nutritional superiority of the latter over the former, the situation could change.

Finally, the Nutri-score does not take into account many other health-promoting nutrients. Milk and dairy products, for example, are a source of conjugated linoleic acid dienes (CLA), which have anticancer and anti-atherosclerotic effects, as well as reducing fat synthesis and having a preventive effect against diabetes. Penalising these risks greatly impoverishing diets.

4.



4. Not all fats are created equal

There are fats and fats, but the system of letters and colours that interprets the Nutri-score considers them all the same. This can lead to the misconception that products with a higher fat content are always less healthy than those with a lower fat content. No distinction is made between saturated fats and essential fatty acids, the latter being necessary for the body to function properly. The same applies to the fat-soluble vitamins A, D, E and K. As the Nutri-score does not take into account the presence of beneficial fats, products with a higher content of essential fatty acids may receive a lower score only because they have a higher total fat content and a higher energy value when, in fact, they would be a desirable component of the diet. A reference case is the lower judgement received by fatty fish compared to lean ones, despite the fact that the former is associated with a higher content of unsaturated fatty acids, including those of the omega-3 family.

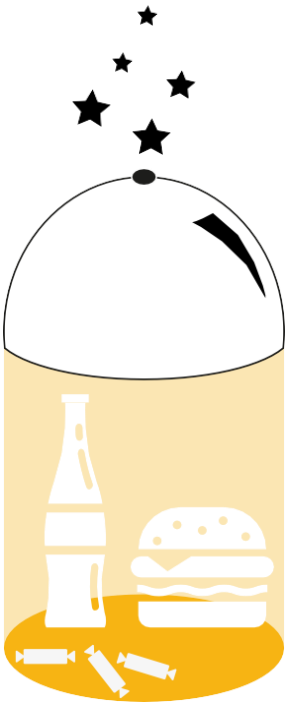
Fig. 4.1: Currant concentrate vs. cola-type drink. Ingredients and nutritional values

	ORGANIC BLACKCURRANT NECTAR	COLA WITH SWEETENER
INGREDIENTS	100% currant juice	Aqua, Carbon Dioxide, Caramel Colour, Acesulfame K, Aspartame, Sodium Cidamate, Sodium Citrate, Natural Flavours, Caffeine
ENERGY (Kj)	190	0,8
FATTY ACIDS SATURATED	0	0
PROTEINS	0	0
SUGARS	11	0
SALT	0	0
FIBRE	0	0
NUTRI - SCORE	A B C D E	A B C D E
VITAMIN C (Mg)	23	0
VITAMIN A (Mg)	8	0
VITAMIN E (Mg)	0,25	0
IRON (Mg)	1	0
NOVA GROUPS	1	4

Source: Divulga Study Centre Elaboration

The comparison highlights first of all that the Nutri-score attributes a good nutritional value to the cola-type drink which in reality has no nutritional value. All zeros, even if the ingredients, besides water, number approximately ten (carbon dioxide, caramel colouring, aspartame, acesulfame K, phosphoric acid, potassium benzoate, natural flavourings, citric acid, caffeine). Secondly, it is evident how the comparison rewards the product with less nutritional qualities.

5.



5. Promoting food reformulation and marginalising the role of natural foods

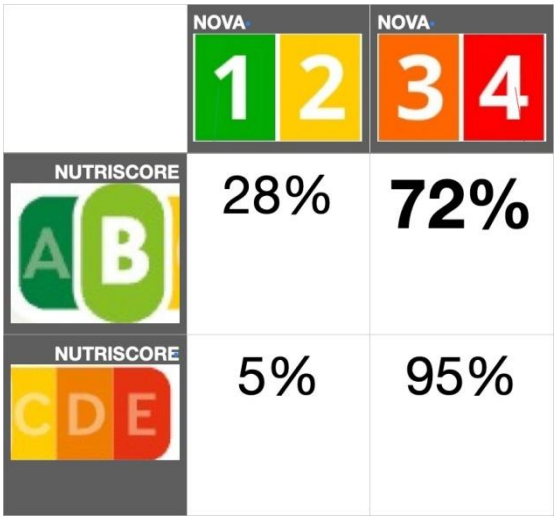
The third potential paradoxical result is the risk of encouraging the consumption of ultra-processed products. In fact, the algorithm does not even take into account the role of the processes and manipulations undergone by the products, including the addition of additives. As in fact already happens with many of the most used claims on the market, which focus mainly on the calorie content alone, the message could be heavily distorted. A highway could be opened for the consumption of products with a high degree of processing and in which the composition has been suitably modified to obtain better nutritional judgements, to the detriment of fresh and lightly processed foods. The fact that the systematic intake of so-called ultra-processed foods is harmful to human health is widely recognised and even recently some authoritative studies have raised important concerns. A study published in the American Journal of Preventive Medicine concluded that these foods probably contributed to approximately 10% of deaths among people aged 30 to 69 in Brazil in 2019. Another study, published in the Neurology journal, claims that a 10% increase in the consumption of ultra-processed foods corresponds to an

appreciable increase in the risk of dementia. Furthermore, studies carried out on communities of significant numbers have shown that the phenomenon contributes percentages of more than 40% to the diet of the young European generations (3). The judgement of the Nutri-score, as formulated, can be translated into an incentive to manipulate the ingredients, which with subtractions, additions and processing achieve the goal of an A or a B, working on the final balance between negative and positive components. In fact, the system as conceived runs the risk of becoming a very powerful marketing tool to be managed through the reformulation of products, leading the consumer over time to perceive ultra-processed products as being of equal or better quality than those that are not processed at all or slightly processed. It is enough to increase the proteins or fibres to adjust the balance of the algorithm and an addition of proteins to ice cream, which thus becomes highly proteinic, to mark the product with a letter B, making it preferable to a portion of Parmigiano Reggiano or Grana Padano. So you can suggest to a teenager that having a snack with a glass of sweetened "cola" and a protein ice cream is healthier than with a glass of fruit juice and a portion of Parmigiano Reggiano or Grana Padano. The first option would score a double B (light green colour), while the second risks with a double D (orange colour) being classified as "nutritionally poor" and on the penultimate step of the Nutri-score.

And yet there are systems of classification of foods according to their degree of transformation, which are widely recognised, such as Siga, which divides products into seven

degrees of food processing and Nova, which uses four. The latter has become a point of reference in the literature on the subject and was created with the aim of identifying the nutritional quality of products not only as a result of the basic ingredients, but also of the processes carried out, including enrichment with additives. The foods in the first group are those that are unprocessed or minimally processed, such as fruit, vegetables, eggs, meat, and milk, but also pasta and peeled tomatoes. Those in group 2 are the result of processes that aim to prolong the life of the products and concern in particular fats, such as oil and butter, aromatic herbs and other ingredients mainly intended for use in preparations. Group 3 includes processed foods which are obtained by combining foods from groups 1 and 2 and which usually have a limited number of ingredients. We are talking about bread, jams, ready-made sauces, canned fish and other products of this type. The last group, the fourth, includes all those foods that use many ingredients, including food additives, processed raw materials (hydrogenated fats, modified starches, etc.) and other substances that do not normally dwell in our kitchens. The suggestion to eat as much fresh food as possible, food only slightly processed and possibly without or with few additives seems entirely reasonable, but not for those who created the Nutri-score and above all not for those who defend it. Industry and distribution obviously see great opportunities emerging from the opportunity to shift the creation of nutritional and consequently also the economic value of food production downstream.

Fig. 5.1: The algorithm that promotes ultra-transformation. The Nutri-score and the Nova classification



Source: Divulga Study Centre Elaboration

The cases referred to in this work do not represent the exceptions, but rather the rule. A recent study (4) carried out on a sample of 9,931 food products that received both the Nutri-score and Nova evaluations, showed that in 72% of the cases marked by the green and light green colours of the Nutri-score (letters A and B) the reference Nova groups are 3 and 4. Only 22% of the products with the green light fall into groups 1 and 2 of the Nova classification, and mainly consist of fresh or lightly processed products.

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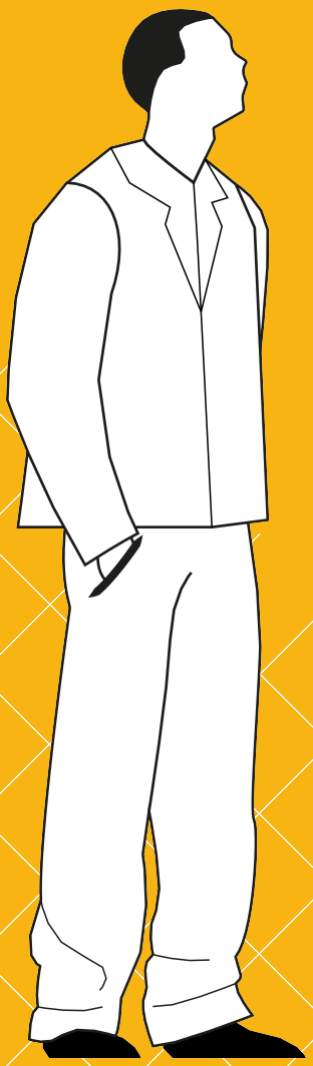
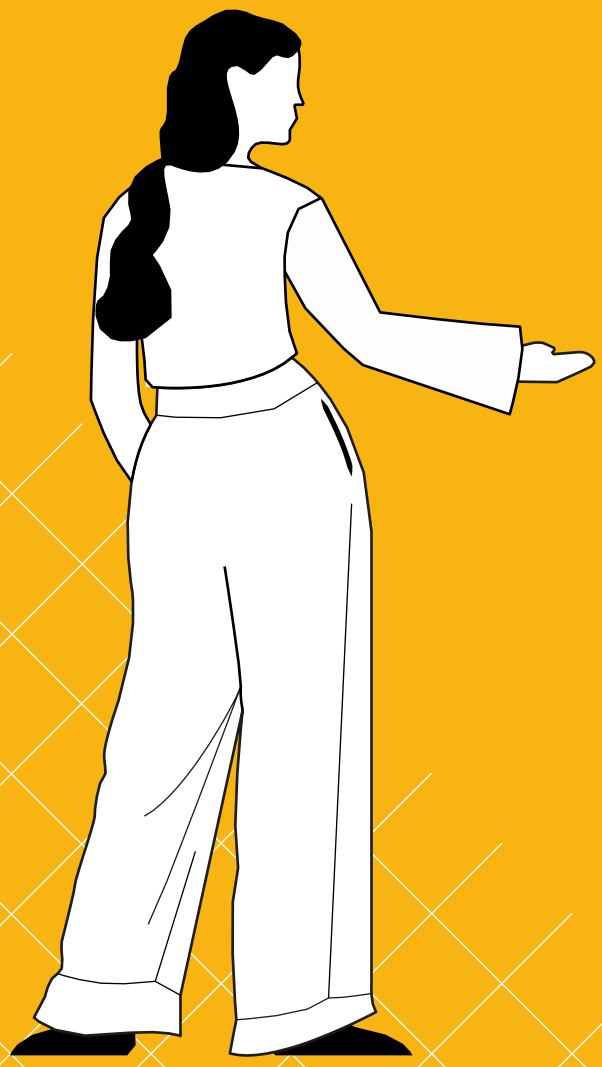


Notes

a) The Funnel Model describes the functional and visual aspects of labelling systems. The model summarises and helps to compare the different FOP (front of pack) labelling systems based on certain aspects: components, reference unit, measurement method, coverage, methodological approach, purpose, driver, directivity, tone of voice, usage. In the case of Nutri-score, the funnel highlights how this system considers a very small portfolio of components.

b) Such as anthocyanin from berries, hesperidin from oranges, lycopene from tomatoes and others.

b



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