Research Paper

Critical questions in cardiovascular risk: What nutrition labels should be used on food?

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A non-healthy diet is associated with increased risk for cardiovascular diseases (CVD), while a healthy diet can reduce this risk. Because nutrition labelling (NL) can support an informed, aware, and healthier food purchase, it could be an important policy tool to fight obesity and the diet-related CVD. Beginning in 2011, pre-packaged foods sold in the European Union must bear a nutrition declaration providing the product's energy value and the amounts of fats, saturated fats, carbohydrates, sugars, proteins and salt contained per 100 g (if the product is solid) or 100 ml (if it is liquid). Moreover, a logo, color coding, and key words in addition to mandatory nutritional information could constitute an immediate, easy-to-understand way to assist consumers in interpreting the nutritional composition of a food product and in distinguishing between products belonging to the same category.

There are already validated nutrition labels currently used as the so called "Positive" labels with endorsement logos (e.g. the Swedish Keyhole Label, the Slovenian Protective Food Symbol, the Finnish Heart Symbol, the Croatian Healthy Living, the Israeli Red Warning, the Chile Warning Label) or the algorithm labels based on a overall judgment of the food, such as the British Multiple Traffic Light (MTL), the French Nutri-Score (NS), the Australian Health Star Rating System, and the Italian Nutrinform [1,2].

The advantages of Positive logos are that other components such as trans fatty acids, cholesterol, fiber, and artificial sweeteners are included in the criteria, facilitate the comparison between food products belonging to the same category and they can be applied to dishes on a menu. Disadvantages of ths approach are that they don't provide information on less healthy foods, don't contain data on single nutrients, and since they focus on fats and salt, they are particularly useful to patients with hypercholesterolemia, high blood pressure, and CVD, but are less helpful to the general population.

The MTL expresses a judgement that can be positive (green colour), intermediate (amber), or negative (red) on the basis of the single nutrients contained in the product. The plus points are that it shows in a glance the nutritional value of each nutrient, helps the consumer to be aware of single nutrients, facilitates the comparison between food products belonging to the same category, with the red colour possibly discouraging to purchase of unhealthy foods. The minus points are that MTL can cause confusion in those cases there is more than one judgement (and more than one color) for the same product, and it considers only the quantity, but not the quality of fats.

The NS converts the nutritional value of the calories, saturated fats, sugars, fiber, proteins, vegetables, fresh fruit, dry fruit, and salt present in a food into a numerical score that provides a global qualitative judgment on the product that receives a color code ranging from A/dark green (a highly recommended product), to B/light green - C/yellow, a product somewhere in the middle range, and D/orange - E/red (least healthy product). Plus points are that this labeling approach is easy to help consumers see at a glance how healthy the product is, it considers fiber, vegetables, and fruit; it also is consistent with the food Pyramid of the Mediterranean Diet and nutritional Guide Lines, and the negative scores D and E may discourage the purchase of unhealthy foods [3]. It also helps the consumer to compare foods belonging to the same category. The minus points are that except for bread labeling, it does not differentiate between refined and whole grain pasta and rice, and individual components such as trans fatty acids, cholesterol, added fats, and artificial sweeteners are not included, and a global judgment may lead consumers to neglect examining the single nutrients a product contains.

The Nutrinform uses a charging light blue batteries system to calculate the percentages of energy, fats, saturated fats, sugars, and salt contained in a recommended serving of the product, within the context of an optimum daily intake. A plus point is that it does not exclude any food in the perspective of variation, moderation, and correct balance of all foods. Minus points are that the light blue coloring does not assist the consumer to understand at a glance the label's message, the system does not guide consumers in the interpretation of how healthy/unhealty a product is. Rather, consumers have to verify that the sum of the values of the foods consumed falls below 100% of the calories, total fats, saturated fats, sugars, and salt recommended for the daily diet of 2000 kcal usually recommended for an adult (it is not easy to calculate), and it does not facilitate a comparison of products within the same category.

Because each NL has several strengths, but also several weaknesses, we argue that we need a new algorithm with scientific validity, one that is easy to read and understand (also by people in the lower socio-economic-cultural level) [4]. NS, which expresses a global judgement, could be a good starting point, but it needs revision [5]. It should take into consideration other important nutrition facts such as the specific

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Keyhole Label

Multiple Traffic Light

Nutri-Score

Nutrinform
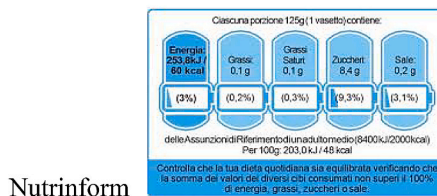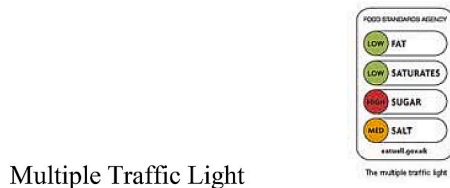
source of saturated fats (e.g. meat versus dairy), the presence of cholesterol, the presence of trans fatty acids that are well known health hazards, the difference between refined and wholegrain, the gycemic index, the difference between natural and added sugars, the amount of calcium, and vitamins and polyphenols, which have antioxidant protective properties. Additionally, information regarding the product's environmental impact (e.g. energy consumption, gas emission) could be provided. All these new food product elements, could be download from an app that decodes a bar code.

Moreover, to help the consumer understand health information related to a product, we propose expressing it in product units (e.g., one cracker, one hamburgher, one table spoon of oil, one cookie), with information on calories per unit (and not por portion expressed in grams).

All these actions, together with an educational campaign, would promote healthier food choices and would fight obesity and would help CVD prevention.

What kind of studies are needed to provide definitive answers to address the question?

To evaluate the impact of different NL on mortality from CVD, until now we have only modelling studies (Egnell M et al., Int J Behav Nutr Phys Act 2019; 16:1–11). Therefore, we need analysis on observational data and prospective data.

References

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