

## Scientific Evidence for Use of Warning Labels and Health Star Rating on Unhealthy-Ultra-processed Food Products

- 1. Predicting obesity reduction after implementing warning labels in Mexico: A modeling study, 2020** <https://pubmed.ncbi.nlm.nih.gov/32722682/>  
Warning labels may successfully reduce obesity and obesity-related expenses, according to a modelling study published in PLOS Medicine in 2020 that predicted obesity reduction following implementation in Mexico. Mexico is following Chile, Peru, and Uruguay in putting warning labels on processed goods, but similar intervention could benefit other countries as well.
- 2. Front-of-package labeling as a policy tool for the prevention of noncommunicable diseases in the Americas, 2020**  
([https://iris.paho.org/bitstream/handle/10665.2/52740/PAHONMHRF200033\\_eng.pdf?sequence=6&isAllowed=y](https://iris.paho.org/bitstream/handle/10665.2/52740/PAHONMHRF200033_eng.pdf?sequence=6&isAllowed=y))  
“HIGH/EXCESSIVE” systems, also known as nutritional warnings, provide direct information using front-of-package text-based seals. The seals allow consumers to correctly, quickly and easily identify products that contain excessive amounts of critical nutrients. Nutrition warning systems are the best fit for the purpose of the front-of package labeling.
- 3. Impact of color-coded and warning nutrition labelling schemes: A systematic review and network meta-analysis, 2021**  
(<https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1003765>)  
A meta-analysis of over 100 research published in 2021 indicated that nutrient warning labels are more effective than traffic lights and Nutri-Score labels in discouraging unhealthy product purchases and lowering calorie and saturated fat consumption.
- 4. Nutrient-Based Warning Labels May Help in the Pursuit of Healthy Diets, 2018**  
(<https://onlinelibrary.wiley.com/doi/epdf/10.1002/oby.22318>)  
In comparison to the Keyhole sign, multiple traffic light label, Health Star Ratings system, and 5-Color Nutrition label, the newest paradigm of front-of-package labels, represented by the qualities contained in the Chilean warning label, has the most potential to encourage healthy diets.
- 5. The Influence of Sugar-Sweetened Beverage Health Warning Labels on Parents' Choices, 2016** (<https://pubmed.ncbi.nlm.nih.gov/26768346/>)  
In studies from the United States and New Zealand, FOP warning labels on sugary drinks were connected to lower sugary beverage purchases, lower judgments of their healthfulness, and lower purchasing intent.
- 6. Impact of front-of-pack labels on the perceived healthfulness of a sweetened fruit drink: a randomised experiment in five countries (Australia, Canada, Mexico, United Kingdom (UK) and United States, 2022)** (<https://pubmed.ncbi.nlm.nih.gov/34726144/>)  
The most effective label in reducing perceived healthfulness was HIWL ('High-in' Warning Labels), which communicates clear, non-quantitative messages about high levels of nutrients of concern and demonstrated the greatest efficacy in reducing the perceived healthfulness of a sweetened fruit.
- 7. Taxes and front-of-package labels improve the healthiness of beverage and snack purchases: a randomized experimental marketplace, 2019**  
(<https://ijbnpa.biomedcentral.com/track/pdf/10.1186/s12966-019-0799-0.pdf>)  
Participants in a shopping trial in Canada who saw "high in" nutrient warning signs bought less calories, sugar, and saturated fat from beverages and less calories and sodium from foods than those who didn't see the FOP label.
- 8. Front-of-pack warning labels are preferred by parents with low education level in four (Argentinian, Chilean, Costa Rican, and Mexican) Latin American countries, 2019**  
(<https://worldnutritionjournal.org/index.php/wn/article/view/688/584>)  
According to a comprehensive survey of parents from four Latin American nations, the most vulnerable parents (those with a low education and who are overweight) preferred a warning label FOP system to GDAs or traffic light labels.
- 9. Front of pack nutritional labelling schemes: a systematic review and meta-analysis of recent evidence relating to objectively measured consumption and purchasing, May 2020**  
<https://onlinelibrary.wiley.com/doi/epdf/10.1111/jhn.12758>

A meta-analysis of five experiments assessing the effects of HSR labels on sales found no significant effect on calories or sugar consumed; similarly, combined findings from three research indicated no impact on saturated fat or salt purchased.

**10. Effect of front-of-package nutrition labeling on food purchases: a systematic review, 2021** <https://pubmed.ncbi.nlm.nih.gov/33517247/>

In a systematic review evidence from interventions on the effect of front-of-package (FOP) nutrition labeling on food purchases showed that 3 studies on health star ratings did not reveal an effect on food purchases compared with the control.

**11. Comparative performance of three interpretative front-of-pack nutrition labelling schemes: Insights for policy making, 2018** <https://www.sciencedirect.com/science/article/abs/pii/S0950329318300193>

The goal of this study was to assess three interpretive FOP label schemes in terms of attentional capture and processing time, as well as their effect on healthfulness perception and buy intention. The health star rating performed worse than the other two schemes across all of these steps, while the warnings performed the best.

**12. Warnings as a directive front-of-pack nutrition labelling scheme: comparison with the Guideline Daily Amount and traffic-light systems, 2017** <https://pubmed.ncbi.nlm.nih.gov/28625228/>

Results from this study suggest that warnings have potential as directive FOP nutrition labels to improve consumer ability to identify unhealthful products and highlight advantages compared with the traffic-light system

**13. Do nutritional warnings do their work? Results from a choice experiment involving snack products, 2019**

<https://bit.ly/3tOdhRh>

Results from the present work confirm the potential contribution of nutritional warnings to encourage healthful food choices among consumers. Nutritional warnings were effective in capturing consumers visual attention in their first exposure and led to an improvement in the nutritional composition of the products that consumers selected.

**14. Relative Impact of Nutritional Warnings and Other Label Features on Cereal Bar Healthfulness Evaluations, 2019**

<https://pubmed.ncbi.nlm.nih.gov/30819654/>

Findings of the current work confirm the potential of nutritional warnings to influence consumers' healthfulness perception, overriding the effect of other label cues used by the food industry to convey the concept of healthfulness