

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

- 1. An evaluation of Chile's Law of Food Labeling and Advertising on sugar-sweetened beverage purchases from 2015 to 2017: A before-and-after study, PLOS Medicine. 2020;17(2): e1003015,**
<https://journals.plos.org/plosmedicine/article/file?id=10.1371/journal.pmed.1003015&type=printable>
The impact of Chile's policy package, which includes FOP warning labels, child-directed marketing limitations, and prohibitions on the sale of unhealthy foods and beverages in schools, on SSB purchases is described in this paper. Purchases of high-in-calorie beverages decreased by about 24% after the introduction of this policy package; these reductions are bigger than those seen in Latin America after solo SSB reduction strategies, such as taxes.
- 2. Changes in food purchases after the Chilean policies on food labelling, marketing, and sales in schools: a before and after study; 2021;**
<https://www.thelancet.com/action/showPdf?pii=S2542-5196%2821%2900172-8>
A significant decrease in high-in packaged food and beverage was observed in purchases when phase 1 of Chile's food labelling and advertising law was enacted in 2016, resulting in minor but considerable reductions in purchased calories, salt, saturated fat, and sugars.
- 3. Responses to the Chilean law of food labeling and advertising: exploring knowledge, perceptions and behaviors of mothers of young children", 2019;**
<https://ijbnpa.biomedcentral.com/track/pdf/10.1186/s12966-019-0781-x.pdf>
After the first year of implementation, the degree to which participants used warning labels varied, but the majority believed that their children, particularly the youngest, have good attitudes regarding the regulation and have become change agents in their homes. Many moms also stated that they saw a significant shift toward healthier eating, which they believe would lead to a shift in eating social norms. This data aids in a better understanding of how regulatory actions may influence consumer behaviour.
- 4. Changes in the amount of nutrient of packaged foods and beverages after the initial implementation of the Chilean Law of Food Labelling and Advertising: A nonexperimental prospective study, 2020;**
<https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1003220>
Results show that, after initial implementation of the Chilean Law of Food Labelling and Advertising, there was a significant decrease in the amount of sugars and sodium in several groups of packaged foods and beverages.
- 5. The Influence of Front-of-Package Nutrition Labeling on Consumer Behavior and Product Reformulation, 2021; https://pubmed.ncbi.nlm.nih.gov/34339293/**
The existing research suggests that Guideline Daily Amount labels should be avoided and that the Health Star Rating and Nutri-Score systems are promising but that systems with warning labels like the one in Chile are likely to produce the largest public health benefits.
- 6. 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.
- 7. 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
"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.

8. 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.

9. 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.

10. 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. 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

17. Do nutritional warnings do their work? Results from a choice experimentinvolving 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.

18. 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

Evidence for HSR

1. 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

2. Effect of front-of-package nutrition labeling on food purchases: a systematic review, 2021

<https://pubmed.ncbi.nlm.nih.gov/32364292/>

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.

3. The Impact of the Australasian 'Health Star Rating', Front-of-Pack Nutritional Label, on Consumer Choice: A Longitudinal Study, 2018

[file:///E:/Downloads/The_Impact_of_the_Australasian_Health_Star_Rating%20\(1\).pdf](file:///E:/Downloads/The_Impact_of_the_Australasian_Health_Star_Rating%20(1).pdf)

The results indicate that the HSR may be beginning to influence consumer choice as it was predicted to, but the impact of the system is still small, and statistically sub-significant, relative to other consumer decision inputs presented on the package