Vital Strategies

GLOBAL FOOD RESEARCH PROGRAM
University of North Carolina
at Chapel Hill

What's in Our Food?

A guide to introducing effective front-of-package nutrient labels

Content

Overview

Labels on the front of food packages are an effective and efficient means of communication with consumers at the point of purchase. A number of countries have implemented or propose to implement front-of-package nutrient labels in an effort to communicate the (un)healthfulness of foods and beverages and to encourage healthy diets.

This document may serve as a guidebook for governments, researchers, civil society groups and other stakeholders engaged in the development of front-of-package nutrient labels. It is built on previous experiences and outlines the key considerations and lessons learned in the process of developing an effective front-of-package label. It is also built on a conceptual framework of how labels work, with the underlying objective of a nutrient labeling system to: 1) identify unhealthy foods and 2) discourage excess consumption of them.

The steps include strategies for research, communication and development of a front-of-package nutrient label. This guide outlines these steps, with a greater emphasis on communication and research. Many of these activities can be implemented simultaneously; early planning of all of these activities is crucial to success. The steps, described in detail below, are:

1. Define the public health problem.
2. Determine scientific criteria for labels.
3. Review existing labels from other settings for local context.
4. Engage civil society.
5. Form an expert advisory committee.
6. Build public support.
7. Test label designs and identify an effective label.
8. Develop graphic design guidelines for implementing labels.
9. Evaluate policy impact.

STEP 1:
Define the public health problem

1.1 WHY DO WE NEED FRONT-OF-PACKAGE NUTRIENT LABELS?

Over 2 billion people—nearly one-third of the world's population—are overweight or obese, including more than 41 million overweight children under age 5. This global epidemic is a key driver of noncommunicable disease, which causes more than 70% of global deaths.[1] Obesity and poor diet increase the risk of cancer, heart disease, stroke, Type 2 diabetes and related premature death.

Undernutrition and obesity often coexist, as people increasingly consume cheap ultra-processed foods and drinks, which lack nutrients but are dense in fat and calories.[2,3] Such unhealthy diets are estimated to be responsible for 11 million preventable deaths globally per year.[4-6]

The obesity epidemic places an unsustainable burden on individuals, governments and society and is a growing problem in low- and middle-income countries, undermining health and economic development.

As a result, policymakers and public health advocates alike are increasingly looking for policy levers to improve population nutritional status, in an effort to reduce the burden on health systems, support attempts to choose healthier options, and discourage consumption of ultra-processed foods and beverages.[7,8]

1.2 IMPORTANCE OF REDUCING CONSUMPTION OF ULTRA-PROCESSED PRODUCTS

Colombia
Bus stop poster that reads: "We have the right to information" was a part of Red PaPaz's front-of-package nutrient labeling mass media campaign in 2018.

Source: Red PaPaz archive

Increasingly, pre-packaged foods and beverages have become readily available in virtually every community across the globe, regardless of income level or population density.[9-13] Combined with aggressive marketing of these products, this has dramatically changed the way people eat in many countries, displacing traditional diets and resulting in diets that are much less healthy.[14-17]

Ultra-processed foods are generally shelf stable, ready-to-eat or ready-to-heat, high in energy density and low in beneficial nutrients (e.g., fiber).[18] Most of these pre-packaged foods are processed with high levels of added sugars, sodium, saturated fats and refined carbohydrates; research has found these nutrients of concern are connected to increased obesity and chronic nutrition-related diseases.[19-23] In addition, the current state of research shows that excessive consumption of ultra-processed food contributes to poor dietary quality and obesity.[3,24,25]

There is extensive evidence from one major randomized controlled trial run by the U.S. National Institutes of Health[26] and dozens of cohort studies that show increased consumption of ultra-processed foods is linked with increased overweight and obesity, diabetes, hypertension, cardiovascular disease, some

Figure 1: Countries with mandatory or voluntary food labels

Countries with either **mandatory** or **voluntary** interpretive labels on packaged foods
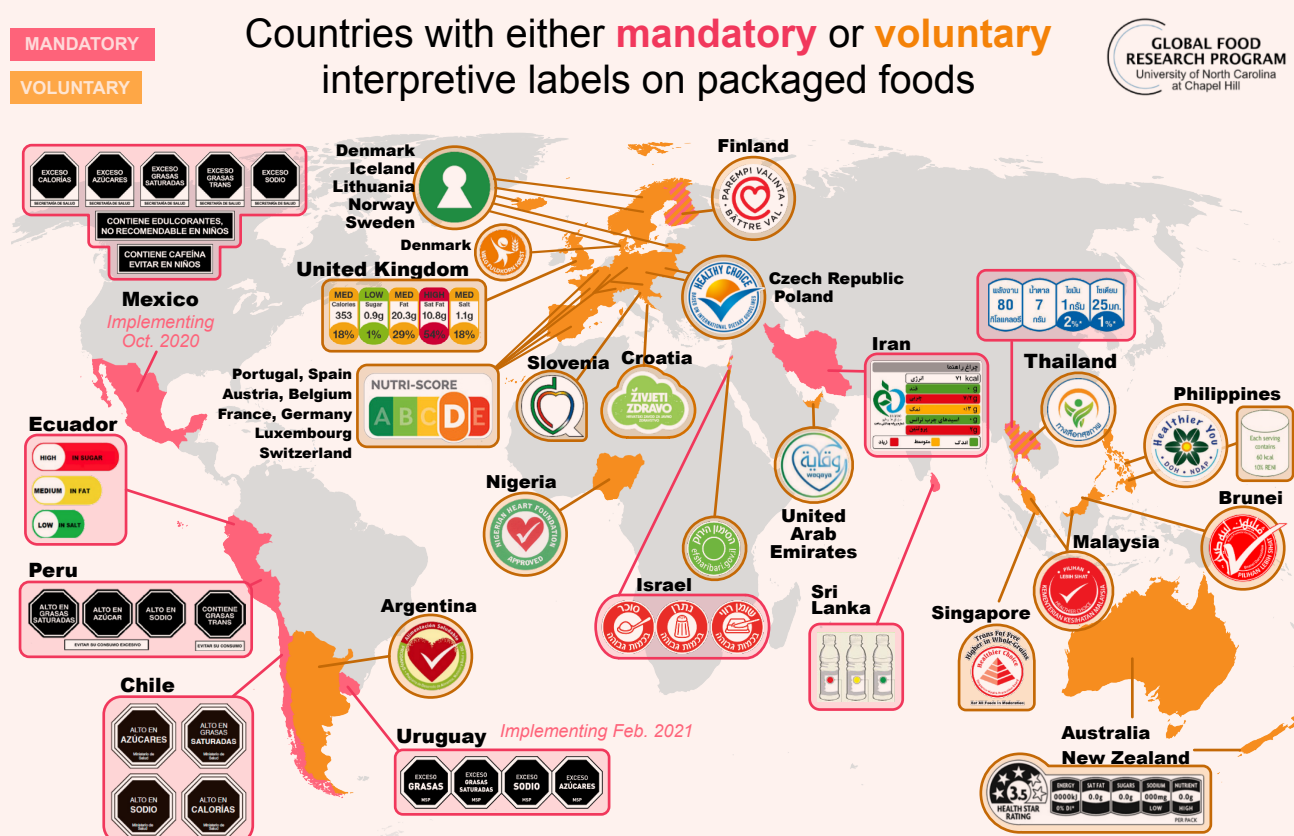
Last updated September 2, 2020 | © Copyright 2020 Global Food Research Program UNC

cancers, and mortality.[27-43] Reductions in unhealthy diet, particularly avoiding ultra-processed foods is key to reducing obesity.[26]

Furthermore, the consumption of ultra-processed products displaces the consumption of healthy foods, thereby limiting the consumption of other key ingredients and nutrients. To improve diet and health, leading health organizations such as WHO recommend reduction in consumption of these energy-dense, micronutrient-poor foods as a critical measure to tackle the growing obesity epidemic.[21,23,44-46]

Consumers need access to clear information to identify unhealthy foods and beverages so they can make healthier choices.

Not only have food and beverage products become less healthy over time, the sheer number of choices in stores makes it difficult and confusing for con-

Figure 2: Typology of front-of-package labels related to health[57] and nutrition. Note: The pictured labels are examples and not an exhaustive list of formats.
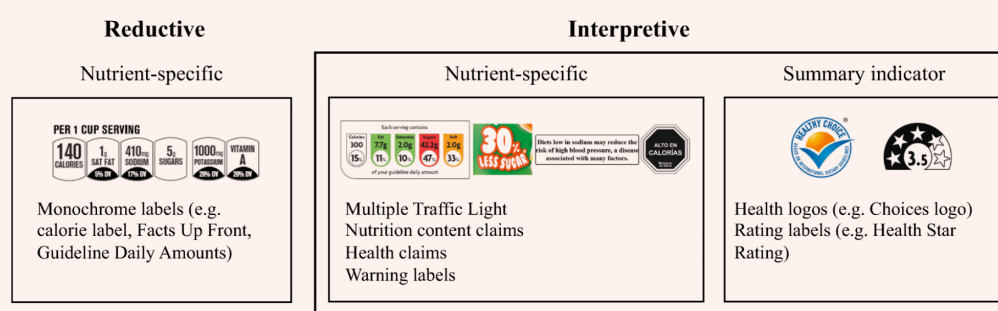
Source: Ikonen I, Sotgiu F, Aydinli A, Verlegh PW. Consumer effects of front-of-package nutrition labeling: an interdisciplinary meta-analysis. Journal of the Academy of Marketing Science. 2020;48(3):360-383.

Note: The pictured labels are examples and not an exhaustive list of formats.

sumers to select healthier foods.[47]

Typically, shoppers take less than 10 seconds to select grocery items—not enough time to read and interpret many complicated nutrition facts panels.[48-50] In essence, research has shown current back-of-the-package nutrition facts

panels do not work for quick, informed decision-making, and simpler, more effective options are needed.[51,52]

Adding to the confusion, unhealthy products may also feature misleading health and nutrition claims on their packages. Claims related to a particular nutrient (e.g., "high in calcium" or "low-fat") and direct or indirect claims about a food's potential health benefits can give an otherwise unhealthy product a "health halo effect," leading consumers to misunderstand its nutritional quality.[53-56]

Food packages are a highly effective means of communication with consumers at the point of decision-making and purchase.

Marketers have long considered the food package as a premium channel for appealing to consumer preferences and purchases. Through attractive packaging, labeling and claims, marketers have sought to increase sales. More recently, governments have sought to use packaging and labeling as a means of protecting consumers from unhealthy choices, as in the case of mandating graphic health warnings or plain packaging on tobacco products.

Labeling on the front of food packages has more recently emerged to address unhealthy diets. At least six countries have legally mandated front-of-package warning labels. In addition, at least five others are exploring front-of-package labeling systems or are soon to introduce the regulations. Many other countries have voluntary systems (See Figure 1).

1.3 LABEL SYSTEMS

There are now many published studies on the different types of front-of-package labels, and their ability to encourage manufacturers to reformulate food and improve consumer understanding, use, and purchasing behavior. See Figure 2 for different types of nutrition label systems.

"Reductive" nutrient-specific labels provide nutrient-level information with little interpretation. Examples include calorie labels, Facts Up Front, and Guideline Daily Amounts. The reductive nutrition facts panel is infrequently used by consumers, indicating there is a need for more accessible, user-friendly nutrition information.[58,59]

There is a wide range of "interpretive" labels. This category includes nutrient-specific models such as multiple traffic lights, nutrition content claims, health claims and warning labels, and summary indicator models such as health logos and rating labels (e.g., Healthy Choices, Health Star

Rating, Nutri-Score).

Research to date indicates that interpretive front-of-package labels are more effective than reductive front-of-package labels in facilitating healthier choices[58-60] and are more likely to be used and understood by consumers.[61]

Consumers may respond differently to different labeling types, and this may

An ad placed in South African newspapers to highlight the need to have clear, warning labels on unhealthy packaged food

Source: Healthy Living Alliance (HEALA)

influence diet-related health outcomes.[8] When labeling systems do not draw attention to nutrients of concern, there is a potential risk that consumers will try to choose healthier options from an array of unhealthy products. In contrast, simple warning labels are designed to help consumers easily identify unhealthy products and discourage consumers from choosing junk food and ultra-processed food.[8]

1.4 WARNING LABELS

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Front-of-package nutrient warning labels help consumers identify and discourage excess consumption of ultra-processed foods high in nutrients of concern.

A recent review found that while nutrient-based front-of-package warnings contain less information than other front-of-package labeling systems, the warnings were visually attended to by consumers, easy to understand, helped consumers identify products high in nutrients of concern, and discouraged consumers from purchasing these products.[8]

In summary, according to the University of North Carolina's Global Food Program, key elements of an effective front-of-package labeling system include:[8]
- A strong nutrient profiling model to set clear and meaningful criteria for the labels.
- Labels that are interpretative, simple and immediately visible with set size limits for all types of packaging as well as simple formats, colors and icons.
- Mandatory placement on all packaged products.
- An endorsement by a government or scientific organization (free of conflict of interest) to increase credibility.
- Implementation alongside restrictions on health and nutrition claims, since products containing both a warning label and a health or nutrition claim can be confusing to consumers.
- Labels warning about nutrients of concern (e.g., "high in sugar") tend to be more effective in discouraging purchases of ultra-processed food and beverages than other labeling systems.

An effective front-of-package warning label will deter consumers from choosing unhealthy foods. Other types of labels tend to try to positively position healthier choices yet, they have been shown to be less effective at influencing

Figure 3: How front-of-package labels work
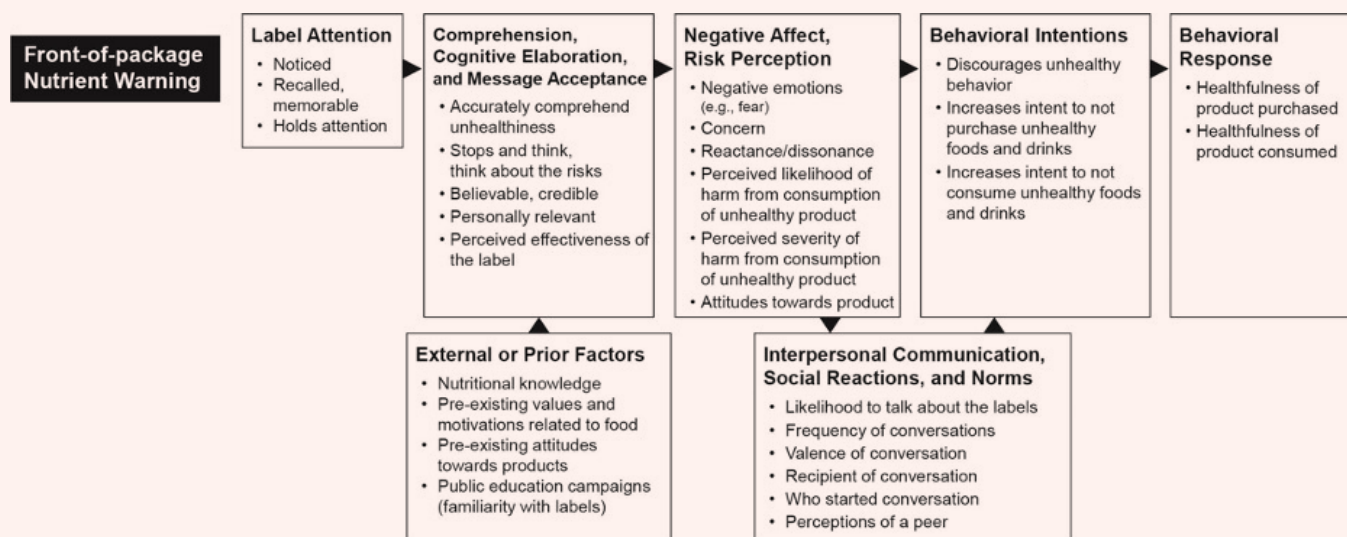
Source: Taillie Lindsey S HM, Popkin Barry M, Ng SW, Murukutla N., Experimental studies of front-of-package nutrient warning labels on sugar-sweetened beverages and ultra-processed foods: A scoping review. "Nutrients." 2020.

healthier choices overall than warning labels. The advantage of warning labels is that they are less likely to cause confusion and will clearly communicate which products consumers should consume less of.

STEP 2:
Understand the scientific basis for labels

The scientific basis for the development of a front-of-package label needs to be carefully considered in order to be able to identify nutrients of concern and/or health effects of concern. This step will provide the rationale for which products carry the front-of-package label. An appropriate nutrition profile model to distinguish between healthy and unhealthy products must be established. Another relevant factor is the nutritional profile underlying the front-of-package label.

Nutrition models play a crucial role in determining which nutrients appear on food packages and how and when they do so. Countries should review existing nutrient profile models and choose their own "nutrients of concern", including a review of whether these nutrients align with the concept of ultra-processing in their country context.

At this point, it is also crucial to review and collate the scientific evidence supporting the policy and to assess the political feasibility. It is also important to ensure the literature review considers only literature free of conflict of interest or industry influence.

Figure 4a: Example of front-of-package warning labels from Chile

Translation from left to right: High in sugars, High in saturated fats, High in sodium, High in calories. Ministry of Health. Source: The Chilean Food Labeling and Marketing Law, 2016

Figure 4b: Example of front-of-package warning labels from Mexico (2020)

Translation from left to right: Excess calories; Excess sugars; Excess saturated fats; Excess trans fats, Excess sodium, Secretariat of Health. Contains sweeteners, not recommended for children; Contains caffeine, avoid for children. Source: Mariel White & Simon Barquera (2020) Mexico Adopts Food Warning Labels, Why Now?, Health Systems & Reform, 6:1, e1752063, DOI: 10.1080/23288604.2020.1752063

Indeed, this paper describes that while front-of-package warning labels that are nutrient-based contain less information, they are able to more effectively capture attention, generate easy comprehension, and trigger risk perceptions. These warning labels help consumers more easily identify products that are high in nutrients of concern and discourage them from purchasing these products.[8]

Warning labels deter selection of unhealthy food.

The effectiveness of front-of-package warning labels has been demonstrated in policy evaluations. Chile has reduced purchases of sugary drinks by 24% through a comprehensive policy approach that ranges from educational policy to clear product labeling. Once the world's leading consumer of sugary drinks, Chile has achieved greater reductions in consumption than other countries across Latin America where standalone policies were implemented.[62] It is a model that is now influencing policy discussions and decisions across the world. Moreover, building on this real-world evaluation work, a recent meta-analysis of experimental studies found that sugary drink warnings led to lower purchases/selection of sugary drinks and have beneficial effects on precursors to long-term behavior change, such as greater attention to warnings.[63]

Analysis of country-specific data would help to frame the public health problem and link it to front-of-package nutrient labels. This initial step will be a foundation for the development of policies, and eventually could be useful for defending law or policy in possible international or trade disputes.

Building country-level understanding of the public health benefits of a food

Figure 5: Heart and Stroke Foundation and Diabetes South Africa food endorsement logos

APPROVED AS PART OF
THE HEART AND STROKE
FOUNDATION EATING PLAN
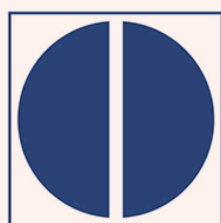
Diabetes
South Africa

STEP 3:
Review existing labels from other settings for local context

It is important to understand how the intended beneficiaries—the public—will respond to the policy. It may be useful to conduct exploratory research (e.g., focus groups with the public) to gain a good understanding of the types of images and messages that carry the most meaning and identify any barriers for comprehensibility (particularly for people with lower literacy) in the local context. The objectives would be to explore: people's decisions around purchasing food, particularly unhealthy packaged food; their knowledge of the food's ingredients; and the influence of product packaging and promotion on their knowledge and decisions. In addition, the research should aim to understand if people use labels (and other nutritional information) to make decisions, and to what degree are they influenced by potentially conflicting health claims and other forms of endorsements, either commercial (e.g. by celebrities or sports stars) or health organization endorsements, such as the icons from South Africa, shown in Figure 5, from the Heart and Stroke Foundation and Diabetes South Africa.

STEP 4.
Form an expert advisory committee

Setting up and consulting with an independent expert advisory panel or committee can provide a good sounding board for the development of labels, particularly in the research and policy drafting phases. Advisory committee members can also act as spokespeople and ambassadors for the introduction of front-of-package labels and be involved in the broader civil society coalition. Officials at health ministries or other government departments responsible for developing the policy should have no involvement in how the committee is formed or carries out its work. Keeping the committee independent from any government or industry interference legitimizes its recommendations, particularly in the face of industry opposition.

Who should be on an advisory committee?

Having a broad range of expertise on the committee will help to ensure you consult widely and can draw on experience from different fields such as communication, design, marketing and nutrition research. Members' commitment to the committee should ideally be made official by terms of reference that specify, among other things, that they have no affiliations with food and beverage companies. The following are some suggestions for fields of expertise:

- Experts with health and nutrition knowledge
- Experience in nutrition education
- Design and communication professionals
- Behavioral scientists
- Human rights experts, public policy experts and food system experts
- People with some experience working on initiatives to create warning labels (e.g., for tobacco or alcohol)
- Legal experts

See APPENDIX 1: Sample terms of reference for expert advisory groups

Note: it is important that all those participating in the coalition are free from any conflict of interest.

Members of the Alliance for an Adequate and Healthy Diet pressure Brazil's National Health Surveillance Agency for the approval of food warning labels.
Source: Jéssica Ribeiro

Billboard pressing the government to approve warning labels in Brasília, Brazil.
Source: IDEC/Aliança pela Alimentação Adequada e Saudável

STEP 5:
Engage civil society

A broad stakeholder/coalition group led by civil society can bring more voices and legitimacy to the call for a strong policy on front-of-package nutrient labels. Their primary role would be to build community knowledge, generate public debate, highlight the need and right for clear labels, then demonstrate to policymakers the weight of community and public health support (see Step 6, communication strategy). They could also play a role in showing policymakers the strength of the research on labeling locally and globally, explaining how labels can be implemented, and articulating the public benefits.

This group would be the source of in-country and international research exper-

Source: Alianza por la Salud Alimentaria, Mexico

In 2020, in Mexico, the mass media campaign "Let's Discover the Risks to Health" calls for "Clear Labels, Now!" The campaign, run by the Nutritional Health Alliance of Mexico depicts a front-of-package warning label on common ultra-processed foods that contain excess nutrients of concern.

tise and knowledge, and members could also become public spokespeople and ambassadors advocating for a desirable labeling model. These people will also have the credibility to counter industry opposition, however it is essential that nominated spokespeople are free from any food and beverage industry affiliation and are trained in dealing with the opposition narrative and in speak-

Figure 6: Communication framework for implementing front-of-package nutrient labels

	PHASE 1: BUILDING THE CASE FOR LABELS	PHASE 2: INTRODUCING LABELS	PHASE 3: IMPLEMENTING LABELS
MESSAGE/CONTENT	public and policymaker education education about contents of unhealthy packaged food and negative impact on health		
	Encourage consumers to scrutinize food packages & demand clear information on contents of unhealthy packaged food		
	Highlight inadequacies of current package labeling methods	Benefits of simple, informative labels to support consumers to make healthier choices & warn them about foods high in salt, sugar and saturated fat	
	Use evidence to highlight effectiveness of warning labels vs other types	Communicate that labels are sanctioned by government	
	Announce plans to introduce labels	Inform consumers, stakeholders of how and when labels will be rolled out	Continue discussing rollout of labels
	Label development process incl. design, research (formative, randomized controlled trial), consultations with independent expert comittee. Impact evaluation.		
	Draft policy or regulation: redraft, publication of draft, public consultations, consultations with CSOs & industry groups, promulgation of final policy or regulation		
	Counter industry messaging (with support from stakeholder group)		

Source: Vital Strategies

See Appendix 2 for a sample communication strategy

ing at various fora, including engagements with media. As a group, they would play a role in shaping and driving the advocacy strategy, providing guidance on the timing of when to exert pressure on or provide support for policymakers to implement effective policy.

While there may be some crossover with the expert advisors guiding research, it is important that this group retains a level of independence from government. Ideally, civil society would organize as a broad and diverse group of allies who not only represent public health issues but also food systems, children's rights, water rights, and agroecology as well as social movements, such as consumer movements, local food movements, and small-scale farmers movements.

Who should be involved?

- Researchers in population/public health, nutrition, marketing/communication
- Public health and nutrition experts
- Credible health associations e.g. dental, diabetes, heart and cancer associations
- School nutrition representatives
- Food policy advocates, consumer rights advocates, parents groups
- Representatives of consumers most likely to benefit from front-of-package labels, e.g., parents, people with Type 2 diabetes and other and other

Social media card with the tagline "When you open your mouth, don't close your eyes" to support black triangle warning labels and mobilize people to participate in the National Health Surveillance Agency's public consultation.

Source: IDEC/Aliança pela Alimentação Adequada e Saudável.

noncommunicable diseases
- Social, behavior change and communication specialists
- Legal experts: work closely with regulators or be able to scrutinize policy proposals

STEP 6:
Build public support

6.1 COMMUNICATION STRATEGY

The primary objective of the communication strategy is to increase the public's understanding, acceptance and support for adoption of front-of-package nutrient labels to deter unhealthy food purchases and enable consumers to make healthier food choices. A comprehensive communication strategy will also build confidence that the government undertook a thorough process to make sure they were providing important information for the benefit of its citizens.

Source: Red PaPaz archive

Bus stop poster that reads: "We have the right to the information" was a part of Red PaPaz's front-of-package labeling mass media campaign in 2018 in Colombia.

A phased approach will be necessary to ensure that communication objectives and messages are appropriate for each stage of label implementation. Figure 6 sets out the key phases, namely, building the case for front-of-package nutrient labels, introducing the labels to stakeholders and the public, and implementing the labels.

6.2 COUNTER OPPOSITION

Front-of-package labeling measures have been heavily contested in most countries, so it is realistic to expect opposition and interference at the policy and political level. As such, it is important to develop a strategy to preempt and counter opposition in a well-coordinated manner.

Advocates need to be well-versed in the facts, the supporting evidence, legal and rights-based justification, effectiveness of the proposed labels, and be able to clearly explain how labels could benefit people in the local context. A mapping should be done of those who will oppose the policy, why they are opposed, what their arguments will be, and where and when they exert their influence. This information can be used not only to equip spokespeople to counter industry arguments, but also to ensure they can control the narrative where industry exerts its influence.

Many of the arguments used by industry or governments in opposition to front-of-package label introduction are supposed job losses, store closures and cost of relabeling. Arguments may also be tied to legal or international trade issues, thus meriting a proactive and reactive legal strategy and a rights-based justification in defense of the labels.

STEP 7:

Test label designs and identify an effective label

New labels or adaptations of existing labels may be considered. It may also be possible to reuse or replicate an existing label from another jurisdiction.

If the decision is made to create a new design or modify existing designs to the local context, it is advisable to use the services of an experienced designer who can take into consideration the necessary design elements in the context of the packaging. In addition, researchers with experimental and behavioral science training should be engaged to guide the process of designing a testing study.

See Appendix 3 for a template for a design brief for the development of a new warning label design.

7.1 DESIGN TESTING RESEARCH

To test the new or adapted label, focus group methodology (or other suitable research approaches) should be used. Findings from this phase of research can then be used to select the most potentially effective design option or design features. Insights from the research can be used to further strengthen the design as necessary. A quantitative-qualitative method of study is the preferred methodology for this testing: the quantitative rating exercise used in such a methodology allows for an objective assessment of the label's effectiveness, while the qualitative discussion allows for a deeper understanding of the label's effectiveness and how its features may be further strengthened.

A systematic approach to the design testing is provided in Appendix 4.

7.2 RANDOMIZED CONTROLLED TRIAL

Following the selection of a preferred label, it is crucial to conduct a rigorous study of its effectiveness compared to other labels in a randomized controlled trial study design. A randomized controlled trial is the best way to gather evidence for the effectiveness of the chosen label compared to other potential labeling options. Labels that will serve as the alternate labels in the trial must be carefully selected. For example, a randomized controlled trial could test the impact of a warning label compared to the traffic light label, Nutri-Score label, or Guideline Daily Amounts. Researchers must also consider whether they want to include either a no-label option or a neutral label (such as a barcode, or neutral statement such as "always recycle") as a control label condition study design. There are a number of other study design considerations that must be carefully weighed, including the number and type of products to be used in the study and the order of presentation. It is important to be driven by the local data on food products, and study design considerations such as sample power. A formal power calculation process is essential in order to ensure that there are enough participants in each arm of the trial to detect differences between arms. A larger sample size will be needed to test differences between warnings and interpretive labels like traffic lights or Nutri-Score labels. A smaller sample size will be able to detect differences between warnings and neutral or no-label controls. The guidance of experts is crucial to these decisions.

In addition, the representativeness of the study sample in a randomized controlled trial is crucial and will be important to address the generalizability of the findings. Typically, this includes adults who are primarily responsible for purchasing groceries for their home. Using quota-based or purposive sampling can help achieve diversity in your study population related to important variables such as: literacy, education, socioeconomic status, parental status, geographic region, language and location (i.e., urban, rural). The decision of how to sample depends on 1) whether demonstrating representation is import-

ant for successful adoption or passing of the policy, and if so, representation of what population segment (for example, low-income adults may be particularly relevant, or particular minority groups); and 2) whether there is a concern or hypothesis that particular subgroups may respond differently to the label compared to other groups. This study may be done online or in-person.

Based on the conceptual model presented above in the Taillie et al. paper, (Figure 3) it is recommended that a randomized controlled trial include the following measures.

- Label comprehensibility, including measures of visibility, attention-catching ability, accuracy of information communicated.
- Message acceptance, including perceived message effectiveness, attitudes toward the product, negative affect, perceptions of risk
- Reactions or feelings of annoyance toward the label and perceptions that a label is too harsh.
- Behavioral intentions and behaviors, including intentions and actual consumption/purchases of products.
- Pre-existing influences: prior nutritional knowledge, use of the back-of-package nutrition facts panel, attitudes toward the policy.
- Demographics

Appendix 5 provides an example of the materials critical to the development and implementation of the Colombia Front-of-Package Label Phase 1 study.

STEP 8:
Develop graphic design guidelines

Once the final label is decided, graphic design guidelines will need to be developed for the implementation phase. The contents of the guidelines document must describe the graphic characteristics of the label. It should clearly outline requirements to be specified in the regulations. This task is separate from the design of the label. It specifies how the label design appears on the packaging and details size, placement and color. The guideline should ideally be developed with support from legal experts and regulators, as some specifications for implementing the proposed label (e.g. size, color, placement) may be legally challenged by the industry. It may also become an annexure of the regulation. Consider the following specifications for the guideline:

- All elements of the label design, including detail such as text font type, variant and minimal size and use of outlines (borders);
- Language of the text and type, variant (bold/regular) and size of font;
- Alignment and positioning (horizontal/vertical) of content contained by/inside the symbol (icon and text) and symbol and if in relation to a holding strap or label outline;
- Spacing between symbols;
- Size of symbols (relative to holding strap/label outline and size of package), icons (relative to symbol) and holding strap (height, width) in centimeters/inches;
- Color of symbols, icons and holding strap (CMYK or RGB formula) for ideal printing;
- Ideal print settings for optimal label quality including file size, paper type and glue used to apply labels to packages; and
- Position/placement of label on packages (based on legal guidelines) with gridlines.

Also for consideration in this guideline, is advice about **mandatory** placement on all packaged products. Placement of an endorsement statement or logo by a government or scientific organization will increase credibility and acceptability.

See Appendix 6 for a sample brief for creating a graphic guideline

References
STEP 9:
Evaluate policy impact

It is advisable for policymakers to start planning for policy evaluation while developing the policy for front-of-package labels by:

- Defining the public health problem and explaining how front-of-package nutrient labels could solve this issue;
- Identifying and allocating the necessary resources for evaluating the effectiveness of the labels after they have been on the market for a set period of time, for example, household purchase data and reliable data sources; and
- Designing the most suitable study methodology for the evaluation.

ADDITIONAL RESOURCES

Global Food Research Program, University of North Carolina at Chapel Hill

Dintrans, P. V., Rodriguez, L., Clingham-David, J., & Pizarro, T. (2020). Implementing a Food Labeling and Marketing Law in Chile. Health Systems & Reform, 6(1), e1753159.

Taillie, L. S., Hall, M. G., Popkin, B. M., Ng, S. W., & Murukutla, N. (2020). Experimental Studies of Front-of-Package Nutrient Warning Labels on Sugar-Sweetened Beverages and Ultra-Processed Foods: A Scoping Review. Nutrients, 12(2).

White, M., & Barquera, S. (2020). Mexico Adopts Food Warning Labels, Why Now? Health Systems and Reform, 6(1), e1752063. https://doi.org/10.1080/23288604.2020.1752063

Communication campaign resources at Vital Strategies' Media Beacon www.mediabeacon.org

References

1. Lozano R, Naghavi M, Foreman K, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet. 2012;380(9859):2095-2128.

2. Monteiro CA, Moubarac JC, Cannon G, Ng SW, Popkin B. Ultra-processed products are becoming dominant in the global food system. Obesity Reviews. 2013;14(Suppl 2):21-28.

3. Monteiro CA, Levy RB, Claro RM, de Castro IR, Cannon G. Increasing consumption of ultra-processed foods and likely impact on human health: evidence from Brazil. Public Health Nutr. 2011;14(1):5-13.

4. Mozaffarian D, Fahimi S, Singh GM, et al. Global sodium consumption and death from cardiovascular causes. New England Journal of Medicine. 2014;371(7):624-634.

5. Singh GM, Micha R, Khatibzadeh S, Lim S, Ezzati M, Mozaffarian D. Estimated Global, Regional, and National Disease Burdens Related to Sugar-Sweetened Beverage Consumption in 2010. Circulation. 2015:CIRCULATIONAHA. 114.010636.

6. Afshin A, Sur PJ, Fay KA, et al. Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet. 2019;393(10184):1958-1972.

7. Endevelt R, Itamar Grotto, Rivka Sheffer, Rebecca Goldsmith, Maya Golan, Joseph Mendlovic, Moshe Bar-Siman-Tov. Policy and practice - Regulatory measures to improve the built nutrition environment for prevention of obesity and related morbidity in Israel. Public Health Panorama. 2017;3(4):567-575.

8. Taillie Lindsey S HM, Popkin Barry M, Ng SW, Murukutla N., . Experimental studies of front-of-package nutrient warning labels on sugar-sweetened beverages and ultra-processed foods: A scoping review. Nutrients. 2020.

9. Reardon T, Timmer CP, Barrett CB, Berdegue JA. The rise of supermarkets in Africa, Asia, and Latin America. American Journal of Agricultural Economics. 2003;85:1140-1146.

10. Reardon T, Timmer CP, Minten B. Supermarket revolution in Asia and emerging development strategies to include small farmers. Proceedings of the National Academy of Sciences. 2012;109(31):12332-12337.

11. Popkin BM. Nutrition, agriculture and the global food system in low and middle income countries. Food Policy. 2014;47:91-96.

12. Zhou Y, Du S, Su C, Zhang B, Wang H, Popkin BM. The food retail revolution in China and its association with diet and health. Food Policy. 2015;55:92-100.

13. Popkin BM, Reardon T. Obesity and the food system transformation in Latin America. Obesity Reviews. 2018;19(8):1028-1064.

14. Anand SS, Hawkes C, de Souza RJ, et al. Food Consumption and its Impact on Cardiovascular Disease: Importance of Solutions Focused on the
Globalized Food System: A Report From the Workshop Convened by the World Heart Federation. Journal of the American College of Cardiology. 2015;66(14):1590-1614.

15. Imamura F, Micha R, Khatibzadeh S, et al. Dietary quality among men and women in 187 countries in 1990 and 2010: a systematic assessment. The Lancet Global Health. 2015;3(3):e132-e142.

16. Popkin BM, Adair LS, Ng SW. Global nutrition transition and the pandemic of obesity in developing countries. Nutrition Reviews. 2012;70(1):3-21.

17. Monteiro CA, Moubarac JC, Cannon G, Ng SW, Popkin B. Ultra-processed products are becoming dominant in the global food system. Obesity Reviews. 2013;14:21-28.

18. Harris JM, Shiptsova R. Consumer demand for convenience foods: Demographics and expenditures. J Food Distrib Res. 2007;38(3):22.

19. Malik VS, Popkin BM, Bray GA, Despres JP, Hu FB. Sugar-sweetened beverages, obesity, type 2 diabetes mellitus, and cardiovascular disease risk. Circulation. 2010;121(11):1356-1364.

20. Malik VS, Popkin BM, Bray GA, Despres JP, Willett WC, Hu FB. Sugar-sweetened beverages and risk of metabolic syndrome and type 2 diabetes: a meta-analysis. Diabetes Care. 2010;33(11):2477-2483.

21. WHO. Diet, Nutrition and the Prevention of Chronice Disease-Chapter. 2003. https://apps.who.int/iris/bitstream/handle/10665/42665/WHO_TRS_916.pdf?sequence=1

22. U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2015 – 2020 Dietary Guidelines for Americans. 8th Edition. . In. Washington DC: Government Printing Office; 2015. https://health.gov/sites/default/files/2019-09/2015-2020_Dietary_Guidelines.pdf

23. World Cancer Research Fund International. Curbing global sugar consumption: Effective food policy actions to help promote healthy diets and tackle obesity. 2015. http://www.wcrf.org/int/policy/our-policy-work/curbing-global-sugar-consumption.

References

24. Slimani N, Deharveng G, Southgate DA, et al. Contribution of highly industrially processed foods to the nutrient intakes and patterns of middle-aged populations in the European Prospective Investigation into Cancer and Nutrition study. Eur J Clin Nutr. 2009;63 Suppl 4:S206-225.

25. Mozaffarian D, Hao T, Rimm EB, Willett WC, Hu FB. Changes in diet and lifestyle and long-term weight gain in women and men. N Engl J Med. 2011;364(25):2392-2404.

26. Hall KD. Ultra-processed diets cause excess calorie intake and weight gain: A one-month inpatient randomized controlled trial of ad libitum food intake. Cell Matabolism. 2019 30:1-10.

27. Lawrence MA, Baker PI. Ultra-processed food and adverse health outcomes. BMJ. 2019;365:l2289.

28. Rico-Campà A, Martínez-González MA, Alvarez-Alvarez I, et al. Association between consumption of ultra-processed foods and all cause mortality: SUN prospective cohort study. bmj. 2019;365:l1949.

29. Srour B, Fezeu LK, Kesse-Guyot E, et al. Ultra-processed food intake and risk of cardiovascular disease: prospective cohort study (NutriNet-Santé). bmj. 2019;365:l1451.

30. Fiolet T, Srour B, Sellem L, et al. Consumption of ultra-processed foods and cancer risk: results from NutriNet-Santé prospective cohort. bmj. 2018;360:k322.

31. Rauber F, Campagnolo P, Hoffman DJ, Vitolo MR. Consumption of ultra-processed food products and its effects on children's lipid profiles: a longitudinal study. Nutrition, Metabolism and Cardiovascular Diseases. 2015;25(1):116-122.

32. Mendonça RdD, Pimenta AM, Gea A, et al. Ultraprocessed food consumption and risk of overweight and obesity: the University of Navarra Follow-Up (SUN) cohort study. The American journal of clinical nutrition. 2016;104(5):1433-1440.

33. Adjibade M, Julia C, Allès B, et al. Prospective association between ultra-processed food consumption and incident depressive symptoms in the French NutriNet-Santé cohort. BMC medicine. 2019;17(1):78.

34. Costa C, Rauber F, Leffa P, Sangalli C, Campagnolo P, Vitolo M. Ultra-processed food consumption and its effects on anthropometric and glucose profile: A longitudinal study during childhood. Nutrition, Metabolism and Cardiovascular Diseases. 2019;29(2):177-184.

35. Cunha DB, da Costa THM, da Veiga GV, Pereira RA, Sichieri R. Ultra-processed food consumption and adiposity trajectories in a Brazilian cohort of adolescents: ELANA study. Nutrition & diabetes. 2018;8(1):28.

36. Gómez-Donoso C, Sánchez-Villegas A, Martínez-González MA, et al. Ultra-processed food consumption and the incidence of depression in a Mediterranean cohort: The SUN Project. European Journal of Nutrition. 2019:1-11.

37. Kim H, Hu EA, Rebholz CM. Ultra-processed food intake and mortality in the USA: Results from the Third National Health and Nutrition Examination Survey (NHANES III, 1988–1994). Public Health Nutrition. 2019;22(10):1777-1785.

38. Mendonça RdD, Lopes ACS, Pimenta AM, Gea A, Martinez-Gonzalez MA, Bes-Rastrollo M. Ultra-processed food consumption and the incidence of hypertension in a Mediterranean cohort: the Seguimiento Universidad de Navarra Project. American Journal of Hypertension. 2017;30(4):358-366.

39. Rohatgi KW, Tinius RA, Cade WT, Steele EM, Cahill AG, Parra DC. Relationships between consumption of ultra-processed foods, gestational weight gain and neonatal outcomes in a sample of US pregnant women. PeerJ. 2017;5:e4091.

40. Rauber F, da Costa Louzada ML, Steele E, Millett C, Monteiro CA, Levy RB. Ultra-processed food consumption and chronic non-communicable diseases-related dietary nutrient profile in the UK (2008–2014). Nutrients. 2018;10(5):587.

41. Sandoval-Insausti, H., Blanco-Rojo, R., Graciani, A., Lopez-Garcia, E., Moreno-Franco, B., Laclaustra, M., ... & Guallar-Castillón, P. (2019). Ultra-processed Food Consumption and Incident Frailty: A Prospective Cohort Study of Older Adults (P01-012-19). Current developments in nutrition, 3(Supplement_1), nzz028-P01.

42. Schnabel L, Kesse-Guyot E, Allès B, et al. Association between ultraprocessed food consumption and risk of mortality among middle-aged adults in France. JAMA internal medicine. 2019;179(4):490-498.

43. Vandevijvere, S., Jaacks, L. M., Monteiro, C. A., Moubarac, J. C., Girling-Butcher, M., Lee, A. C., ... & Swinburn, B. (2019). Global trends in ultraprocessed food and drink product sales and their association with adult body mass index trajectories. Obesity Reviews, 20, 10-19.

44. Report of a WHO Forum and Technical meeting. Reducing Salt Intake in Populations. In: Organization WH, ed. Geneva: World Health Organization; 2006. https://www.who.int/dietphysicalactivity/Salt_Report_VC_april07.pdf

45. WHO. Taxes on sugary drinks: Why do it? In. Geneva: World Health Organization; 2016:4.

46. World Health Organization. Guideline: Sugar intake for adults and children. In: WHO Department of

Nutrition for Health and Development (NHD), ed. Geneva: WHO; 2015:50.

47. Poti JM, Mendez MA, Ng SW, Popkin BM. Is the degree of food processing and convenience linked with the nutritional quality of foods purchased by US households? The American Journal of Clinical Nutrition. 2015;99(1):162-171.

48. Cowburn G, Stockley L. Consumer understanding and use of nutrition labelling: a systematic review. Public Health Nutrition. 2005;8(1):21-28.

49. Rothman RL, Housam R, Weiss H, et al. Patient understanding of food labels: the role of literacy and numeracy. American Journal of Preventative Medicine. 2006;31(5):391-398.

50. Boon, C. S., Lichtenstein, A. H., & Wartella, E. A. (Eds.). (2010). Front-of-package nutrition rating systems and symbols: Phase I report. National Academies Press.

51. Sacks G, Rayner M, Stockley L, Scarborough P, Snowdon W, Swinburn B. Applications of nutrient profiling: potential role in diet-related chronic disease prevention and the feasibility of a core nutrient-profiling system. Eur J Clin Nutr. 2011;65(3):298-306.

52. Rayner M, Scarborough P, Kaur A. Nutrient profiling and the regulation of marketing to children. Possibilities and pitfalls. Appetite. 2013;62(0):232-235.

53. Abrams KM, Evans C, Duff BR. Ignorance is bliss. How parents of preschool children make sense of front-of-package visuals and claims on food. Appetite. 2015;87:20-29.

54. Andrews JC, Burton S, Netemeyer RG. Are some comparative nutrition claims misleading? The role of nutrition knowledge, ad claim type and disclosure conditions. Journal of Advertising. 2000;29(3):29-42.

55. Sundar A, Kardes FR. The role of perceived variability and the health halo effect in nutritional inference and consumption. Psychology & Marketing. 2015;32(5):512-521.

56. Tórtora G, Machín L, Ares G. Influence of nutritional warnings and other label features on consumers' choice: Results from an eye-tracking study. Food Research International. 2019;119:605-611.

57. Ikonen I, Sotgiu F, Aydinli A, Verlegh PW. Consumer effects of front-of-package nutrition labeling: an interdisciplinary meta-analysis. Journal of the Academy of Marketing Science. 2020;48(3):360-383.

58. Talati Z, Pettigrew S, Ball K, et al. The relative ability of different front-of-pack labels to assist consumers discriminate between healthy, moderately healthy, and unhealthy foods. Food Quality and Preference. 2017;59:109-113.

59. Talati Z, Pettigrew S, Neal B, et al. Consumers' responses to health claims in the context of other on-pack nutrition information: a systematic review. Nutrition Reviews. 2017;75(4):260-273.

60. Hersey JC, Wohlgenant KC, Arsenault JE, Kosa KM, Muth MK. Effects of front-of-package and shelf nutrition labeling systems on consumers. Nutrition Reviews. 2013;71(1):1-14.

61. WHO European Region Food and Nutrition Action Plan 2015-2020 accessed athttps://www.euro.who.int/__data/assets/pdf_file/0003/294474/European-Food-Nutrition-Action-Plan-20152020-en.pdf.

62. Taillie LS, Reyes M, Colchero MA, Popkin B, Corvalán C. 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.

63. Grummon A, Marissa H. Effectiveness of Sugary Drink Warnings: A Meta-Analysis of Experimental Studies. Current Developments in Nutrition. 2020;4(Supplement_2):1715-1715.

APPENDIX 1
Expert Advisory Committee — Sample Terms of Reference

Consider also how the committee's advice will be taken into account. For example: by majority or consensus or only under specific circumstances.

TASKS ASSOCIATED WITH ADVISORY COMMITTEE ON FOOD LABELS

As part of [country's] approach to address unacceptable obesity rates, the [name of government department] is exploring the opportunity to introduce front-of-package labels on packaged foods and beverages. The [government department or university setting up the committee] is interested in testing the potential effectiveness of different labels that could be applied to packaging of foods and beverages to help decrease consumption of unhealthy foods and to promote healthy diets in [country].

Several different label designs have been produced or adapted for consideration in terms of effectiveness. Two new/adapted label designs will be tested with other existing labels (from other countries) in a randomized blinded study [or describe study proposed] to determine which label model most clearly enables people to understand either the healthy or unhealthy nature of various products.

PURPOSE OF THE ADVISORY COMMITTEE

Advisory committee members are asked to provide ongoing technical advice to the research team [name of institution] on various stages of the development and testing of front-of-package label models for [country] primarily to help to identify ways to strengthen the label designs/identify design weaknesses before policy drafting takes place. Because this issue may attract much scrutiny in both public health and commercial worlds, it is critical this process be fully grounded in evidence and have strong scientific credibility. Invited advisory committee members will be asked to declare interests or fill out a declaration of interests to ensure independence.

The stages in the process and provisional timelines are as follows:

1. DESIGN OF POTENTIAL NEW LABELS

A design agency is to be contracted to develop a pictorial [or also with words] logo that can be used on processed packaged foods to identify those products

having high content of one of the specified nutrients. Specified nutrients for this purpose are: saturated fat, sodium, and sugar [also depending on country, trans fat and artificial sweeteners]. Food items can be high in one or more of the nutrients and logo(s) considered should be able to reflect this.

Advisory committee may be asked to comment on the first draft of logos by the design agency.

Timeframe: [date]

2. TESTING AND SELECTION OF MOST SUITABLE DESIGN(S)

A research agency will test the comparative effectiveness of the proposed labels with rural and urban focus groups. The advisory committee will be asked to review the results of this research and provide feedback to inform the second round of design.

Timeframe: [date]

3. DOUBLE BLIND RANDOMIZED CONTROL TRIAL AMONG CONSUMERS REPRESENTATIVE of the diversity of the [country] population to test the effectiveness of various labels to increase the likelihood of consumers making a healthy food choice or avoiding making an unhealthy choice.

The advisory committee will be asked to comment on the study design as well as the study instruments and results.

Timeframe: [date]

Most of the committee's contribution is intended to be done through review of documents that will be available electronically; one collaborative meeting is envisaged. Advisory committee members may be linked via Zoom or Skype if they cannot attend the meeting.

APPENDIX 2
Sample Communication Strategy

Communication strategy for the announcement and implementation phase

OVERVIEW

The [country] ministry of health, in partnership with nutrition researchers at the [country university], embarked on a project to supplement the existing body of evidence on the effectiveness of a front-of-package warning label in deterring unhealthy food purchases with data that is specific to the [country] context. This required identifying the design of an ideal warning label including what message it should convey to consumers as well as to determine its effectiveness against other front-of-package labeling systems. To achieve this, design experts developed a variety of prototypes with guidance from communications consultants as well as the researchers. A design and message testing study was conducted with focus groups with individuals representing different socioeconomic groups with varied levels of literacy, across different languages and regions to identify the most effective option. An independent expert committee comprised of experts like nutritionists and social marketers acted as a sounding board, weighing in on the design and research phases of the project.

In the second phase of research, a randomised control trial was carried out to confirm the effectiveness of the front-of-package warning labels under consideration against alternative options namely, the Guideline Dietary Amount (GDA) and Multiple Traffic Light labels. The labels were tested among a randomly selected sample of participants representative of the demographics of [country] and included low literacy and other vulnerable groups that the labels are intended to protect.

Timeframe
Research findings finalised and used to inform draft regulation
Presentation of results to stakeholders
Draft regulation finalised and published
Public comment period
Final regulation promulgated
Rollout of new front-of-package labels

COMMUNICATIONS STRATEGY

The primary objective of the communication strategy is to increase the understanding, acceptance and adoption of front-of-package warning labels in [country], to deter unhealthy food purchases and enable consumers of all demographics to make healthier food choices. A comprehensive communication strategy will also build confidence that policymakers undertook a thorough process to make sure they were committed to providing an important informational benefit for [country].

A government sponsored communication campaign would be rolled out in phases to coincide with milestones of the rollout of the front-of-package warning labels. Some objectives and messages may be relevant across different phases of front-of-package label rollout (i.e. educational messaging will be necessary throughout). Campaign messaging ought to be informed by research. For instance, key insights emerging from the label design testing study indicate a clear need for strong messaging and communications to support the labels such as through a public education media campaign. The research provides a useful basis for messaging about the labels suitable for people in different literacy, socio-demographic and language groups.

It is worthwhile to note that the food and beverage industry is likely to oppose the health ministry's proposal to introduce front-of-package warning labels, and the media will be among the platforms they use to push their own agenda.

It is crucial that the health ministry:
- initiates proactive communication to set an agenda before the industry sets its own;
- consistently communicates accurate, consistent, evidence-based messaging at all times (i.e. closed meetings, consultations, media briefings); and
- engages and mobilizes civil society groups to support them in mitigating pressure from industry. This also creates the perception that others are also concerned about the health issue and illustrates support for DoH's intentions to introduce a solution for the issue.

PHASE I—BUILDING THE CASE FOR LABELING

The initial focus is to educate the public about the contents of packaged foods to empower consumers to scrutinize food packages when shopping. In this phase, the health ministry should announce its intention to introduce warning labels to support consumers in making healthy choices. Consultations or meetings to brief stakeholders including civil society organizations can provide further opportunity to raise the profile of the need for this type of labeling method. Mass media campaigns and other communication approaches can help to make a compelling case for the labels among the general public and

mobilize their support. See www.mediabeacon.org for examples of campaigns that build the case for clear front-of-package labels.

PHASE II—INTRODUCE WARNING LABELS

This phase would announce to consumers that the front-of-package warning label system will be introduced and when. The focus would be on the benefits of a simple, easy to understand warning system to support consumers (parents, food purchasers) to make healthy choices.

PHASE III—IMPLEMENT WARNING LABELS

As packaging displaying the new labels hits the shelves, consumers will need to hear from the government that the labels are government sanctioned and see that they will make healthy choices easier.

TARGET AUDIENCES FOR A COMMUNICATION CAMPAIGN

The campaign's target audiences include the public, civil society, industry entities as well as other groups like the healthcare community. Each audience group needs to consider each audience group, and undertake communication activities to disseminate information. For instance, keep the industry abreast of the rollout plan for front-of-package warning labels via direct government communication with trade groups and businesses, while consumers would require clear explanations and information to help them understand why the warning labels are important. A well-executed national media campaign along with other communication activities—including media stories, social media, fact sheets for businesses, information sheets for health care workers, and an informative and interactive website—are effective in educating all audience groups.

Primary audience:
- Adults (aged 18+) who purchase food for themselves and their families
- Children and adolescents (aged <18) who can influence their guardians' purchasing habits

The secondary audience would include individuals with the power to influence the food environment and the potential to either support or undermine front-of-package warning labels:
- Industry (manufacturers, retailers)
- Other influential ministries (i.e. Ministry of Trade and Industry)
- Parliamentary Committee on Trade and Industry
- Civil society organizations and the representatives of the academic fraternity

Intermediaries:
- Health workers interfacing with patients at primary healthcare facilities i.e. dieticians
- Other influential professionals in the nutrition and noncommunicable disease field.

STRATEGIC COMMUNICATION APPROACH USING MASS MEDIA

A comprehensive and integrated communication strategy should include a national advertising campaign (and paid social media) executed on platforms with reach at community, provincial and national levels and in a format and language that is understood by the general population. It should also include news stories (earned media) and below-the-line activities as exemplified below with customized information to various audiences.

MASS MEDIA

The advertising campaign should be evidence–based with simple, clear, consistent information about the warning labels. The media can be run in several bursts (e.g., phase I, phase II and phase III) to be aligned with the front-of-package labels process and carefully timed to be consistent with key milestones along the policy development pipeline. The approach to selecting the most relevant media channels should be based on media usage among the target audience.

Below-the-line activities, such as branded community activations complement advertisements on radio, TV and newspapers, as they allow for more tailored and targeted communication with people. Engaging with the public in this manner also presents opportunities to mobilize them to participate in actions to advocate for implementation of the warning labels. The health department has a national footprint that also reaches remote areas through its static and mobile facilities. These resources should be included in the implementation plan. Health professionals can be trained and deployed to conduct activities which include displaying labels on packages and explaining how to use them. This below-the-line communication approach may not be cost-effective for rollout nationally as it requires a large investment of human and financial resources, therefore communities with low access to media and minimal literacy levels may be prioritized for this kind of activity.

EARNED MEDIA

A robust public relations plan, including social media strategy, amplifies the news that warning labels are being introduced. Editorial content in reputable media outlets (TV, radio, print and online), facilitated by knowledgeable

and respected spokespeople will contribute to establishing credibility for the front-of-package warning label initiative. The earned media approach would be effective for rolling out content that informs people about the intensive design and research that was conducted to create the front-of-package warning labels. Disseminating the research results in peer reviewed publications and at conferences or seminars would ideally be supported by a media relations and social media plan. It is important to also equip influential experts who do not necessarily represent the health ministry with key messages so they can speak publicly to endorse and advocate for front-of-package warning labels. This will not only help to raise the credibility for the government's proposal, but also to safeguard it from industry pressure.

To successfully execute an earned media strategy, work closely with trusted journalists, produce media releases and fact sheets that are accessible and clear, and hold media briefings to give journalists opportunities to engage directly with experts.

APPENDIX 3:
Creating a new design

1.1 CONTRACTING A DESIGN AGENCY

If the decision has been made to create a new design or modify existing designs, it is advisable to use the services of an experienced designer who can take into consideration the necessary design elements in the context of the packaging.

A design agency should respond to a request for a proposal and include the following information:

- Their capability to undertake the design work giving examples;
- Their experience in design work in the area of packaging and logo design;
- Details of design costs and project management costs separately and terms of business;
- The agency's approach to management of this project;
- An undertaking to meet the time constraints of this project and details of how this could be achieved; and
- They must also be free from conflict of interest (i.e., current or previous work with the food and beverage industry) and willing to sign a confidentially agreement.

Submissions should be evaluated based on the above criteria.

1.2 DESIGN BRIEF

Once a design agency is appointed, a clear design brief should be developed and reviewed by key stakeholders (including researchers). The brief should include a clear consumer-focused rationale for the labels to allow the designers to see the project from an end-user's perspective. It should also contain information on the different types of warning labels that are in place in other countries such as Chile, Peru and Uruguay.

As the brief is for a warning label, it is vitally important that the brief for the design communicate a warning about unhealthfulness of certain foods (not a rating of healthfulness) and to deter their purchase.

SAMPLE DESIGN BRIEF—FRONT-OF-PACKAGE WARNING LABELS

Project overview:

Researchers/department of health based in [COUNTRY], are interested in determining the most effective labels to be placed on food packaging that warn consumers about foods high in fat, salt, sugar [and total energy/calories if relevant in country].

althy over time, the fusing for consumers to select healthier foods.

Most shoppers spend fewer than 10 seconds selecting each item—not enough time to review current nutrition labels, which are complicated and ineffective. In essence, research has shown current back-of-the-package nutrition facts

Example of proposed products in Brazil.

"health halo effect," leading consumers to misunderstand its nutritional quality.

Consumers need a clear and easy way to make healthier choices among the vast array of products available to them.

Shoppers prefer simple front-of-package labels that are immediately visible and require less time to assess. Labels that minimize effort allow customers to quickly see which products are healthier and actually increase the intention to purchase a healthier product or conversely decrease the intention to purchase an unhealthy product. Front-of-package labels may also encourage manufacturers to improve the nutritional qualities of their food to meet the standards of healthier food.

Background

[Provide background on other examples including fact sheets and other additional reading material in appendix]

While several labeling approaches have been devised, simple negative warning labels that identify unhealthy products most effectively discourage junk food and ultra-processed food choices.

The front-of-package warning label format, such as the one used in Chile and proposed for Brazil, require processed foods that do not meet predetermined criteria for key nutrients to include warning labels on the front of the package, identifying the food as high in sugar, fat, salt, and/or total energy—whichever apply. These labels allow consumers to quickly identify those foods that are less healthy.

Figure 1: Chilean Warning Labels

Example of products from Chile.

SUMMARY OF EXPLORATORY RESEARCH FINDINGS

[summarize the key outcomes of any formative/exploratory research]

Overall Project Objectives:

[enable designers to understand the full scope of the project.]

To develop a front-of-package warning label that is simple, clear, interpretative and relevant across different SES groups, language groups and regions.

Design Objectives:

[what to you want to achieve from the design stage]

The objective is to produce front-of-package warning label designs that can be tested for effectiveness with the [country] public for potential use on packages for food products.

Design agency's scope of work:

1. Produce up to three sets of three warning labels (negative) suitable for placement on the front of packaged food products sold in [country]. Each set to consist of a label along with the words "high in saturated fat", "high in salt", "high in sugar" and "high in total energy/calories" and an icon that pictorially represents these ingredients.

2. Labels will convey a simple, easy to understand message to all consumers that the food product will not be beneficial to health or assist with a reduction of obesity, without them having to interpret the scientific basis behind it.

Design considerations

Consider:

- Color [which colors tested well in the formative research]
- Shape of symbol [octagon and triangle have tested well in other countries]
- Font of the text
- Imagery/icon of the three terms, saturated fat, salt, sugar and total energy/calories, needs to be instantly recognizable
- Ensure symbols are easily understandable for those with low literacy and of different cultural backgrounds
- This is not an "arty" logo but a functional design
- Symbols must be clear when placed on a visually crowded and colorful package that may have competing (health) claims
- Consider also the best contrasting color of the symbol (i.e., a black symbol could be placed on a white background and then applied to the food package)

Evaluation of Designs

[this may provide the designer with useful insight]

The sets of labels' designs will be first evaluated via focus group discussions based on the following criteria:
- How easy is it to spot the label/logo or how visible is it?
- How easily are participants able to understand the accurate meaning of the label?
- Is it believable?

- Is it culturally relevant? Are there aspects to the label that are either not relevant or culturally appropriate?
- Does it communicate the unhealthiness of the food?
- Does it increase concern—perceptions of personal risk—over consuming unhealthy foods?
- Does it increase motivation to avoid purchase of unhealthy foods (reduce intent to purchase the unhealthy food)?

Design agency deliverables

- Three sets of three symbols (not as finished art) for application on mock-up food packages. Use proportional placement to package size and place on a contrasting background.
- Four colored mock-up food package designs (close to real packages, no recognizable brand)—e.g., a beverage, yogurt container, cereal and crisps/chips. Unrecognizable packaging is used to avoid brand loyalty and trademark issues (it may be advisable to seek legal counsel from local legal experts).

Timelines	
Appoint design agency, discuss brief and expectations of project	1 month
Draft labels for feedback	2 weeks
Final three sets of labels and package mock-ups provided	1 month
Research—design testing	1 month
Potential redesign	2 weeks
	(Total: 4 months)

Ownership and intellectual property

It is a condition of accepting this project that the agency acknowledges and agrees that all ownership rights to the symbols, materials and all products of this work will be signed over to [name of institution].

APPENDIX 4
Warning label design testing protocol

1. RESEARCH OBJECTIVES

Note, an effective label is here defined as one that is: clearly visible and understood; that is believed and thought to be relevant; and that increases the likelihood that people will make a healthy choice instead.

Thus, this research seeks to answer the following questions about the warning label options:
- How easily are participants able to understand the accurate meaning of the label?
- Is it believable? Relevant?
- Is it culturally relevant? Are there aspects to the label that are either not relevant or culturally appropriate?
- Does it communicate the unhealthiness of the food?
- Does it increase concern—perceptions of personal risk—over consuming unhealthy foods?
- Does it increase motivation to avoid purchase of unhealthy foods?
- [IF APPROPRIATE] Is the label likely to be strengthened by placement of a government authority endorsement?

The study should assess the following:
- the labels help people identify unhealthy food and drink;
- the labels increase the likelihood that people will avoid purchse of unhealthy food products;
- the labels are clearly visible and accurately understood;
- the labels are believable and relevant;
- the design of the label, including color, shape, size, placement and text is effective; and
- there are any features that either enhance or detract from the effectiveness of the designed label.

Note, a greater number of groups are proposed with women than men. Specifically, there are no groups with men ages 18–29 currently proposed. This is because of the sample inclusion criteria of primary grocery shopper in each household, which is expected to be more likely to be women than men. Additionally, when men are included, they are done so for the higher age range because at this age they are more likely to have children that would be affected by their personal purchasing choices.

2. WARNING LABELS FOR TESTING

Mockups of label designs need to be prepared prior to conducting research. Each is to be presented on packages of different and typical product categories. These product categories should be chosen based on what categories are frequently consumed in the country, as well as categories for which additional front-of-package information about nutrition or health is likely to be informative (i.e., categories which might be harder for consumers to distinguish between healthy and less-healthy products). Example categories include:

- a bottle (beverage)
- a rectangular box (cereal)
- a square packet (chips/crisps)
- a yogurt container

Note, the labels should either be printed and pasted onto existing packs for the design-testing phase OR designed labels should be graphically superimposed onto images of existing packs. At the minimum, 2-D pictures of food packages with front-of-package warning labels should be used. Another consideration is whether to use mock brands or products that exist in another country but not in the country where the study is being conducted (for example, researchers in South Africa might consider products from the U.K.). This could be important to help avoid strong consumer preferences for existing brands.

Packs, within the aforementioned-categories of food, should ideally be selected for inclusion in the study by using a systematic process of identification, such as: using Euromonitor (or other sources of) data, selecting the top 5 sellers within each product category, and then shortlisting one product that is likely to carry the MOST number of warning labels (i.e., it contains the most number of harmful ingredients). Note: obviously and instantly recognizable as unhealthy products may not be the best choice.

Each label design is to be presented as a set (on varied packaging) during the testing. [Note: variations to each design—for example, background color—are also to be tested. But rather than test this systematically through quantitative ratings, varied design element options may be presented sequentially during the qualitative discussion and discussed in terms of the more or less effective design considerations.]

It is expected that the labels will be in the national language. However, the research itself may be conducted in languages most appropriate to the study population.

3. RESEARCH APPROACH

A standardized quantitative-qualitative methodology applied in a focus group setting and that has been used for testing graphic health warnings for use on tobacco packs has been adapted for use in testing front-of-package labels for unhealthy foods and drinks. Specific details are below.

4. SAMPLE CHARACTERISTICS

The study should be conducted with the primary target audience—likely to be women and men that are primarily responsible, or share responsibility, for grocery shopping for the household. Two-thirds of the recruited participants should be parents of children under the age of 16 [or of an age determined by each country's definition of a child]. Participants to be excluded if they work for market research, advertising, tobacco, food and beverage companies.

A total number of 12 focus groups, including two pilot groups, are suggested. Groups should be structured by the following variables: age, gender, location (rural vs. urban), and literacy [using country definition]. Label design order should be randomized across groups. Twelve participants will be recruited for each group with an expectation that at least 10 participants will be present in each group.

Group #	SES	Age	Gender	Literacy	Area
1	low	18 - 29 years	women	no literacy	rural
2	low	18 - 29 years	women	no literacy	urban
3	low	30 - 45 years	women	no literacy	rural
4	low	30 - 45 years	women	no literacy	urban
5	low	30 - 45 years	men	no literacy	rural
6	low	30 - 45 years	men	no literacy	urban
7	middle-high	18 - 29 years	women	literate	rural
8	middle-high	18 - 29 years	women	literate	urban
9	middle-high	30 - 45 years	women	literate	rural
10	middle-high	30 - 45 years	women	literate	urban
11	middle-high	30 - 45 years	wen	literate	rural
12	middle-high	30 - 45 years	men	literate	urban

5. RESEARCH PROCEDURE

In each group, the research will be conducted in three parts in a typical focus group room. Parts 1 and 2 will focus on collecting quantitative information about each of the warning label designs. Part 3 will involve a qualitative discussion to assess take-away message and understanding of each of the warning labels. The research will be conducted in languages appropriate to the composition of the group. Specific details of each part are below.

Part 1: In the first part of the study, participants will be shown each label design in order—they will be shown this on mockup packs and on varied packaging—and they will then rate each individual label design on a variety of attributes related to the label's comprehensibility, appropriateness and potential effectiveness. While literate participants will provide their ratings on a Likert scale; those participants with no literacy will need to be led through the exercise by the moderator and in place of a Likert scale, non-numerical measures to indicate extent of agreement should be provided (e.g., smiling faces. A cognitive debrief of the rating scales will be critical prior to implementation). Note that prior to the rating of the labels, participants will first be shown a "practice" label—a commonly found and identified label in [country]—to use as practice. The moderator will lead participants through the exercise of rating the practice label. It is critical that the moderator ensures that the task is clearly understood. Thereafter, the remaining labels will be rated according to their predetermined order of presentation. [see attachment a) moderator guide and attachment b) rating sheet, attachment c) recruitment screener.]

Part 2: Once each label design is rated, in part 2, participants will rate the label design that they considered most and least effective. The rating forms will then be removed and participants will then move to a moderator led discussion.

During part 3, the moderator led focus group discussion, participants will describe how their purchasing intentions are affected by labels in general and by the ones presented in this study more specifically. Each of the label designs will be assessed individually by the group in terms of the effectiveness of the design and information in guiding them away from unhealthy options and toward healthier alternatives.

6. ANALYSIS

The quantitative ratings from part 1 and 2 above will be analyzed by label design, group and sample characteristics. The quantitative ratings will be combined with qualitative insights from the focus group discussion to identify the comparatively more effective labels, features that make them effective or not, culturally appropriate or not, and means of their improvement for use as a

labeling scheme.

Attachment A: Label Design-Testing: Moderator Guide

Purpose of the moderator guide

This research guide has been developed for the use of the group moderator for efficient conduct of the research. This guide should be used to steer group discussion to the specified topic areas that need to be covered and the specific questions of interest within each topic area.

Overview of the moderator's Tasks

The moderator is required to lead participants through all components of the research. They are to provide instructions, answer questions, and maintain a level of focus and motivation among the group.

Before the study begins, the following need to be done:

- Label for testing must be prepared and ready to display to participants. This may be in the form of superimposed labels on mockup packages. Or, as an image projected onto a screen. If multiple labels are being tested, then it will be important to randomize the order of presentation of the labels to ensure that order effects are minimized. These decisions should be made prior to the conduct of the group and order of presentation should be systematically assigned across the groups.
- Some careful thought should be given to how the respondent are seated for the discussions. They should be seated so that they can all see the material that will be presented to them easily. The seating should also encourage involvement and discussion from all participants in the group.
- Prepare all recording and web casting equipment. Consider having a research assistant present to help with note taking.

During the group discussions, the moderator's roles and responsibilities are as follows.

1. The moderator will need to facilitate open discussion among all participants. They must also manage the duration of the discussion, ensuring that all elements of the label are given the same amount of discussion time, and that the discussion remains focused.
2. It is not necessarily intended that these questions be asked exactly as they are worded here. The discussion should be more like a conversation than a set of structured questions. The discussion should be as informal as possible and participants should be encouraged to speak openly and freely.

3. To the point above, the moderator should set the pace of questions appropriately—even as she probes in all questions in the moderator guide, she may increase or slow down the speed of the discussion based on participants' engagement in the discussion. The moderator will have to exercise her judgment to achieve a balance between thoroughness and avoidance of redundancy in the line of questioning.

4. The Moderator will need to probe with questions such as "Why?" and "What does that mean to you?" in order to fully understand participants' responses.

5. The Moderator will also need to make sure that all participants in the group have an opportunity to express their opinions at different times during the discussion.

6. Because each group of participants may be different, a responsive approach should be used for the research. That is, the moderator should be flexible in their conduct of each group, to allow for individual and group reactions to the each element of labels and discussion points. For this reason, the groups may vary in terms of the topics covered and the focus of issues that are discussed.

MODERATOR SCRIPT
1. INTRODUCTION AND EXPLANATION TO PARTICIPANTS:

"Hello, my name is…, I will be conducting the session today, and this is …, who will assist me by taking notes and helping in the conduct of the research.

Thank you for participating in this study today. We're interested in people's re- actions to proposed labels for the front of food and drink packages. I will show you a label that is being proposed. [Or: I will show you a few different labels that are being proposed.] I will ask you for your reactions to it.

This study is all about YOUR experiences. There are NO right or wrong answers to anything we discuss today. Having your honest opinion is very important. Please also be assured that your identity will not be revealed to anyone out- side this room. Your answers will be combined with the answers of others so that your identity cannot be known. Therefore, please answer all questions without hesitation. Does this sound okay to you? Shall we proceed? "

"With your permission, we would like to record the group. The recording will only be used to help us with analyzing the results. Your personal details are confidential, and we will not keep or pass on any personal information about you. Is it OK for us to record the group?"

[Turn the recording equipment on to record this part of the research—the recording will help with analyzing the results and key points from the discussion.]

WARM-UP: PARTICIPANTS' INTRODUCTION

Before we go on, it would help us to know a little bit about each of you and for us to get to know one another. Please tell us your name, where do you live, and something about yourself ... I'll start ....

[NOTE to moderator: The goal here is to introduce each person and make everyone comfortable with one another.]

GENERAL DISCUSSION ABOUT THE USE OF LABELS

[Continue now to a discussion on the use of labels during food and drink purchases.]

1. How often do you use nutrition labels on the BACK of food and drink packages to guide your purchasing decisions?
2. How often do you use nutrition labels on the FRONT of food and drink packages to guide your purchasing decisions?
3. What information do you typically look for? What information on packages either increases or decreases your likelihood of purchasing a certain food or drink?

RESPONSES TO THE PROPOSED LABEL(S)

"In this portion of this discussion, I will be showing label(s) under consideration for use on the front of food and beverage packages. I will show you each label. I will then ask you to rate the label on a number of questions. I will ask you do this silently and privately, without discussion. After that is completed, we will spend some time discussing each of your opinions on the label. Please remember, there is no right or wrong answer, and everything you say will remain confidential. Please give honest and complete answers."

LABEL OPTION 1

Now, I am first going to show you the a practice label to make sure you can see it clearly and to explain how to complete the rating exercise. Once that is completed, we will begin the main portion of the study.

[Project a trial image—or show the products—and ensure that all respondents can see it clearly. Talk through the rating exercise and ensure that all participants understand the exercise.

Then, proceed to show the main image for testing.

Display the product with the test label for upto 10 seconds or so until

everyone seems to have seen it clearly. Then turn off the image or put away the products.]

RATING EXERCISE

"There are a few short questions on the front page of the booklet, please answer these questions now."

[Ask everyone to fill out the rating sheet. Again, remind them not to discuss it and ask them to fill in the one-page questionnaire. The moderator may have to assist participants in completing the rating items and ensuring that participants understand the task. Once completed, display the label again, and once viewed, remove the image/products and proceed to the discussion.]

Visibility/ Memorability
- Did you see the image clearly? What did you see? What else?
- Did you notice any labels on the packages? What did you notice?
- What did the label say? What else?
- Where there any other labels that you noticed? What did they say? [If necessary: did you notice any labels about the nutritional value of the product? If yes, tell me more about it.]
- Can you recall it for me now? What exactly did it look like? What do you recall of its shape, color? Was their any text in it? What did it say? [Without leading their answers, probe respondents' memory of its shape, color, text etc.]
- What did you understand from the labels?
- Were the labels indicating that the food and drinks were healthy or unhealthy?

"Now, I'm going to project the image back up again [place the products before you] and this time I want you to focus closely on a set of labels you will see on the upper right corner of the food and drink packages. Study this set of labels closely and I will ask you some questions about it." [Project the image back again for about 10 seconds. Once all participants have seen it clearly, turn off the image and ask the following questions.]

[If necessary, reiterate the following: I would like to reiterate that your experience is really important and there is no right and wrong answers. Also, as we are talking about your personal opinions and experiences, it is not necessary for everyone to agree with each other. It is helpful for us to find out the different opinions that people have, as well as where people have the same opinions, so please feel free to tell us whatever you think and feel, even if it might be different to what other people in the room are saying. Also, let's please make sure that only one person speaks at a time. Please allow each person to complete what they are saying.]

Comprehensibility

- Was the label easily visible? Did it grab your attention? How visible was it? Was it immediately visible or not? Did it catch your eye?
- Was the label memorable?
- What did you understand from the label? Were the labels indicating that the food and drinks were healthy or unhealthy?
- Was it easy to understand? Is there anything you did not understand or that confused you about it?
- Who is it directed to? Do you think it is directed to you? If not you who do you think it is directed to?
- Was it believable?
- Is there anything about this label that is culturally inappropriate? Is there anything about it that is likely to be difficult to understand/interpret in [your country]?

Reactions to the Label

- Did it change your attitudes towards the food/ drinks that you just saw?
- Did it make the product seem more or less ... attractive or unattractive? ... Pleasant or unpleasant? ... Tasty or distasteful? ... Healthy or unhealthy?

Potential Effectiveness

- If you were to see this label on packages in a store, would it affect your decision to purchase a product or not?
- In your opinion, what would be the benefits of placing warning labels like this on unhealthy foods? Whom will they help? Are there any harms of placing warning labels like this on unhealthy foods? Whom would they hurt?
- How do you think that warning labels like this can help/hurt your society? Do you think they would be effective in addressing the unhealthy diets among adults? ... Among children? Why or why not?

Alterations to the label design

[If modifications to the original design are proposed, then proceed with this section.]

"Now, we'd like to consider various elements of the label design, and I'd like your views on whether changing it would improve the effectiveness of the label or not. I'll show original label again and show you the original and the same design with some alterations."

"And, here you see both the original label and the altered one.
- Do the modifications improve or decrease the effectiveness of the original design? Why?
- Do the modifications make label ...."
  - ... more attention-grabbing? Memorable?
  - ... easier to see/ more easily visible on a pack?
  - ... easier to understand?
  - Do the alterations increase or decrease or have no effect on the label's effectiveness as a warning about the product's unhealthiness?
  - Do the alterations increase or decrease or have no effect on your intent to consume the product?
  - Is there anything you don't like about the changes?

[Repeat above questions for all labels under consideration.]

COMPARATIVE EFFECTIVENESS OF PROPOSED LABELS

[If multiple labels are presented, then proceed with this section. If only a single label is proposed, then this portion of the study does not apply.]

"We showed you [insert number] labels today that are currently being considered for use on the front of food and beverage packages. You've already rated and discussed each of them. In this final part of the study, we would like to ask you to tell us how these labels compare against one another.

Please turn to the last page in the booklet. You will see a few questions there. Please answer these questions silently and privately."

[Once completed, the booklets may be set aside.]

"Now that you've completed this exercise, I'd like to understand why you chose the labels that you did.
- We asked you to select the label that MOST grabbed your attention. Can you tell me which labels you selected and why? What other labels did others choose and why? Was there something in the design of the labels that made you choose it? What specifically ...? What about the label that LEAST grabbed your attention? Can you tell me which labels you selected and why? What other labels did others choose and why? Was there something in the design of the labels that made you choose it? What specifically ...? [Moderator: Please pay particular attention to design features that seemed to contribute to the participants' selection of the labels.]

- We asked you to select the label that was MOST likely to influence your

Attachment B: Sample Rating Questionnaire for Use in Design Testing Focus Group Discussion

<div style="text-align:right; border:1px solid; display:inline-block; padding:10px;">
Image on mocked
up pack
</div>

Design Option 1

Considering the label you just saw, please tell me how much do you agree with each statement.

This label …	Strongly disagree	Slightly agree	Neither agree or disagree	Slightly agree	Strongly agree
1. … is easy see (is visible)	☐	☐	☐	☐	☐
2. … grabs my attention	☐	☐	☐	☐	☐
3. … is easy to understand	☐	☐	☐	☐	☐
4. … makes me stop and think	☐	☐	☐	☐	☐
5. … taught me something new	☐	☐	☐	☐	☐
6. … is believable	☐	☐	☐	☐	☐
7. …is relevant to me	☐	☐	☐	☐	☐
8. … makes me feel concerned about the effects of THIS product on my health	☐	☐	☐	☐	☐
9. … would influence my decision to <u>consume</u> this product	☐	☐	☐	☐	☐
10. … would influence my decision to <u>purchase</u> this product	☐	☐	☐	☐	☐
11. You would talk to someone else about the message in this image	☐	☐	☐	☐	☐

12. Considering this label: Please tell me how effective you think this label would be in warning people about the unhealthiness of this product.

☐	☐	☐	☐	☐
Not at all effective	Slightly effective	Somewhat effective	Very effective	Extremely effective

Repeat through for all labels (Completion of set)

Comparative Ratings

1. Of the labels that you saw today, which one MOST grabbed your attention? (Check one only)

    ☐ [insert picture of first label]
    ☐ [insert picture of second label]
    ☐ [insert picture of third label]

    ☐ [insert picture of fourth label]
    ☐ [insert picture of fifth label]
    ☐ [insert picture of sixth label]

2. Of the labels that you saw today, which one LEAST grabbed your attention? (Check one only)

    ☐ [insert picture of first label]
    ☐ [insert picture of second label]
    ☐ [insert picture of third label]

    ☐ [insert picture of fourth label]
    ☐ [insert picture of fifth label]
    ☐ [insert picture of sixth label]

3. Of the labels that you saw today, which ONE of the labels do you think would be MOST likely to influence your decision to consume a food or drink? (Check one only)

    ☐ [insert picture of first label]
    ☐ [insert picture of second label]
    ☐ [insert picture of third label]

    ☐ [insert picture of fourth label]
    ☐ [insert picture of fifth label]
    ☐ [insert picture of sixth label]

4. Of the labels that you saw today, which ONE of the labels do you think would be LEAST likely to influence your decision to consume a food or drink? (Check one only)

    ☐ [insert picture of first label]
    ☐ [insert picture of second label]
    ☐ [insert picture of third label]
    ☐ [insert picture of fourth label]
    ☐ [insert picture of fifth label]
    ☐ [insert picture of sixth label]

5. Of the labels that you saw today, which ONE of the labels do you think would be MOST effective as a label about the unhealthiness of a food or drink? (Check one only)

    ☐ [insert picture of first label]
    ☐ [insert picture of second label]
    ☐ [insert picture of third label]

    ☐ [insert picture of fourth label]
    ☐ [insert picture of fifth label]
    ☐ [insert picture of sixth label]

6. Of the labels that you saw today, which ONE of the labels do you think would be LEAST effective as a label about the unhealthiness of a food or drink? (Check one only)

    ☐ [insert picture of first label]

    ☐ [insert picture of second label]
    ☐ [insert picture of third label]

2

    ☐ [insert picture of fourth label]
    ☐ [insert picture of fifth label]
    ☐ [insert picture of sixth label]

ASK ALL

Do you have any final comment on any of the labels you saw today? [INTERVIEWER: Pause and take notes. Once general comments have been noted, then ask the next part of the question:] Did you feel that the labels were appropriate for use in our country? Was there any label that you thought was offensive to our culture or not appropriate for use in our country? Please note, I am not asking whether you liked or disliked a label, whether it made you comfortable or not comfortable. I only want to know if you thought the label were **offensive** to our country and culture.

Int.: Note down the number and make sure that we are talking about offensiveness, not discomfort).

Image Number	Comments (Open- ended)

Thank you for your valuable participation in this study!

Attachment C: Recruitment screener drink. Can you tell me which label you
selected and why? What other labels did others choose and why?

The following is intended as a generic version of a screening questionnaire that can be used for recruiting participants to the research.

Participant Profile:
- **Inclusion criteria:** men and women aged 18 – 45, belonging to socioeconomic classes (specify), who reside in (specify).
- **Exclusion criteria**: Health professionals, tobacco industry, sugary drinks and unhealthy food industry related workers, market research companies
- Within each group, ensure a mix of participants: parents; high and low sugary drinks and/or unhealthy food consumers, diversity of participants.

Recruitment Instructions
- Recruit 12 participants, for 8 people per in-person focus group; (for online groups, smaller numbers than this may be optimal.)

Recruitment script
Introduction: Hello, my name is ...., we are recruiting people to take part in a research study. We are not conducting the study now but are asking people to take part in a group discussion in a few days later.

Your participation in the research is entirely voluntary and anything you say will be kept confidential you are free not to participate or not to answer any question. We will use your answers to develop public service announcements to improve policies and communications related to healthy food and drinks. We may also disclose the results of the study (without identifying you) to our donors, in press releases and/or in journal articles.

Do you agree to answer a few questions to find out if you are eligible for the research?

Informed Consent:

☐　　　　YES, I have been informed of the study and I consent to participate ☐ *Proceed with screener questions*

☐　　　　No, I do not consent to participate ☐*End the screener questions*

1. Record sex:
   - ☐　　　Male　(check quotas)
   - ☐　　　Female (check quotas)

2. How old are you (record age in completed years)?

   　(record age) (check quotas)

3. Which region/state do you live in?
   [list out administrative units – drop down]

4. Please indicate your highest level of education attained:
   - ☐　None

☐   Basic/primary
☐   High school
☐   Technical school
☐   College degree
☐   Post-graduate degree

5.   Are you the parent or primary caregiver for children under the age of 16 years? (check quotas)

☐   Yes, parent (*check quotas and ensure a mix of participants*)

☐   Yes, primary caregiver (*check quotas and ensure a mix of participants*)

☐   No

6.   In a typical week, how often if at all do YOU consume SUGARY DRINKS? *By sugary drinks, I mean all beverages that are high in natural or added sugars.*

☐   Never

☐   Rarely (Less than once a week)

☐   Once a week

☐   A few times a week

☐   About once a day

☐   Multiple times a day

7.   In a typical week, how often if at all do you consume junk foods or foods that are high in sugar, fats or salt. *By this I mean foods that referred to as unhealthy foods since they do not add nutritional value, and they include items such as chips, fries, burgers, ice cream, cake, candy.*

☐   Never

☐   Rarely (Less than once a week)

☐   Once a week

☐   A few times a week

☐   About once a day

☐   Multiple times a day

8.   Do you work in any of the following industries?

☐   Health promotion   (thank and terminate)

☐   Market Research   (thank and terminate)

☐   Advertising   (thank and terminate)

☐   Tobacco industry   (thank and terminate)

☐   Food and Beverage industry   (thank and terminate)

☐   None of these   (continue)

Based on your answers to those questions, you would be eligible to participate in the research project. Participating in this research would involve attending a group session with about 10 other people to look at some advertisement concepts, complete a questionnaire and then talk about

issues related to the ads. The group will last about 2 hours. All of the information you provide will be treated confidentially. And, you will be given a gift of [insert incentive] in thanks for your time.

9. Are you interested in participating in the research?

☐   Yes   (continue)

☐   No   (thank and terminate)

The group you are eligible for is on   (date) at   (time). The location is

_____.

10. Are you able to attend at this time?

☐   Yes (continue).

☐   No (thanks and terminate)

11. What's the phone number you prefer us to contact you later?

Phone (L): _____

Phone (M): _____

APPENDIX 5

Colombia Front-of-Package Label: Randomized Control Trial (RCT)

Introduction
The purpose of this document is to share materials critical to the development and implementation of the Colombia Front of Package Label (Colombia FOPL) research study. The research study was a randomized control trial (RCT) consisting of a between-within subjects design. The study was designed in collaboration between researchers at Javeriana University, The Global Food Research Program at the University of North Carolina and Vital Strategies.

<u>International Research Worksheet:</u>

1. **Provide a description of the context of cultural norms or local laws and differences with U.S. culture with respect to autonomy of individuals or groups, consent procedures, recruitment techniques and age of majority. Include an explanation of what cultural sensitivities will be required to conduct the study.** Colombia has a more conservative and collective culture compared to the United States. We have kept this in mind, and received feedback from our Colombian colleagues, through development of our online survey. For example, we originally had questions about sexual orientation and household income in our survey. Our colleagues mentioned that these questions are quite sensitive and would not be ideal for the survey. As a result, we removed both questions from the survey. Our Colombian colleagues have helped to advise us throughout this process is what is and is not culturally acceptable/legal in Colombia.

2. **Describe the qualifications the researcher has in relevant coursework, past experience or training to justify his/her international research capabilities.** The PI, Lindsey Smith Taillie, has years of experience working in international research. She has lead studies in numerous countries in Latin America and has also worked in research in Africa and Asia. Additionally, the PI has been working collaboratively with Colombian colleagues on policy research collaborations for approximately three years.

3. **Explain the researcher's ability to speak, read or write the language of the potential participant.** The PI will not interact with research participants. The participant research will be conducted via online survey.

4. **Describe what knowledge or expertise the researcher has of the local, state or national laws that may impact the research.** The research survey is being developed in close collaboration with Colombian colleagues. Through this collaboration, we are able to stay attuned to the legality of the research and how it could impact policy.

5. **Describe if the researcher was invited into the community or how the researcher will gain culturally appropriate access to the community.**

6. **If the researcher is a <u>student</u>, describe how the student will communicate with the faculty advisor while conducting the research. Describe how the advisor will oversee research activities.** N/A

7. **If you have not obtained documentation of local IRB or other ethics approval, please provide justification.** We are conducting this study through UNC. We spoke with our colleagues in Colombia, and because we will be handling the data at UNC, documentation through the local IRB is not necessary. Our Colombian colleagues have spoken with other faculty and have confirmed that we do not need to submit any documentation through the local ethics committee.

For Pre-Registration on AsPredicted.Org

1. Data collection. Have any data been collected for this study already?
No

2. Hypothesis. What's the main question being asked or hypothesis being tested in this study?
The overall purpose of this study is to identify which front-of-package nutrient warning helps Colombian consumers identify unhealthy foods and beverages, reduces their intentions to purchase these products, and is perceived as being effective at discouraging consumption of these products, compared to a control label. The primary objectives of this study are to evaluate our hypotheses that all nutrition warnings will lead to:

1. Higher Perceived Message Effectiveness (PME): extent to which the warning discourages wanting to consume the product with warnings.
2. Better ability to correctly identify a product as having high levels of nutrients of concern (sugar, saturated fat, or sodium).
3. Better ability to correctly identify which product of a set of two has higher levels of sugar.

4. Lower selection of the less healthy product as the product the consumer most wants to buy.
5. Lower likelihood of purchasing an unhealthy product in the next week if it were available.

We will also examine whether responses to #1-5 differ by respondent's educational level. We hypothesize that there will be no differences in response to the nutrient warnings by education level.

3. Dependent variable. Describe the key dependent variable(s) specifying how they will be measured.
The primary outcome is PME, measured using 3 items adapted from Baig et al. (2018): concern, unpleasantness, and discouragement. We will average responses on the 3 items to create a PME score. All 3 items are measured using a 4-point Likert scale, as noted below.

Question: How much does this message...
…make you concerned about the health effect of consuming an unhealthy product? (Not at all concerned, a little concerned, concerned, very concerned)
…discourage you from wanting to eat an unhealthy product? (It does not discourage me at all, it discourages me a little, it discourages me, it discourages me a lot)
…make eating an unhealthy product seem unpleasant to you?(Very unpleasant, unpleasant, pleasant, very pleasant)

Secondary outcomes are:
A) The ability to correctly identify which of two products is highest in sugar.
B) The ability to correctly identify which of two products is unhealthy.
C) The selection of the less healthy product as being the product the consumer most wants to buy.
D) The ability to correctly assess whether a single product contains excess sugar, saturated fat, or sodium.
E) Likelihood of purchasing an unhealthy product in the next week if it were available.

Other outcomes are whether:

A) The label grabs the participants' attention.
B) The label makes the consumers think about health problems caused by consuming this product
C) The label would be culturally acceptable to Colombians
D) The label is liked
E) The label is easy to understand.
F) The label teaches the participant something new.
G) The product would be healthy for a child aged 1 to 12 years to consume every day.
H) The product with the label is appealing
We will also examine which label consumers select as most discouraging them from wanting to consume an unhealthy product, and whether they had been previously exposed to warning labels prior to the study.

4. Conditions. How many and which conditions will participants be assigned to?

This is a multi-part study in which participants will respond to questions presented in a random order.

1. Between-person experiment comparing participants' assessment of two fruit drinks. Participants will be randomized to view one of 4 labels: a control label (barcode), an octagonnutrient warning label, a triangle nutrient warning label,and a circle nutrient warning label. First, participants will be shown two fruit drinks, one without any label and one with the label they were assigned to. They will then be asked a series of questions about which product is most unhealthy, which product is highest in sugar, and which product they most want to buy.

2. Between-within subjects experiment where the between subjects factor is warning type and the within subjects factor is product type (a cookie, bread, and a soda, randomly presented). Participants will see each product with the label to which they were assigned, and then answer a series of questions about the product, including PME of the label and whether the label grabs their attention, makes them think about the health problems associated with consuming the product, or teaches them something new. For each product, they will also rate how likely they would be to purchase it in the next week, how unhealthy it would be for a child age 1 to 12 to consume it, and how appealing the product is.

3. All participants will then see all labels, displayed in random order, and select which label would <u>most</u> discourage them from wanting to consume an unhealthy product.

5. Analyses. Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will use a two-sided critical alpha of 0.05 to conduct all statistical tests. We will use complete case analysis to handle any missing data. We will descriptively report unadjusted means (and standard deviations) and percentages for the primary and secondary outcomes. For our main outcome, PME, we will take the average of the 3 items for each product type if alpha>.70. We will then assess whether our primary and secondary outcomes vary by warning message type by fitting a mixed effects linear regression model for continuous outcomes (including PME) and a mixed effects negative binomial model or logistic regression model (if the negative binomial model does not converge) for binary outcomes (including product selection, label selection, identification of healthier products), treating the intercept as random to account for repeated measures. We will include indicator variables for warning message (between-subjects) and product type (within-subjects), as well as an interaction of warning message and product type. If the interaction term is not significant, we will present the model without the interaction as our main model. We will use postestimation commands to conduct pairwise comparisons of the predicted means. We will correct for multiple comparisons. To evaluate the most discouraging label, we examine the proportion of participants that selected each warning label as the most discouraging and will conduct z-tests to explore statistical significance of these differences. To assess whether the effect of the warning label on PME differs by education, we will test for an interaction of warning label with education level (specified as dummy variables), and use a Wald chunk test to determine the joint interaction. We will use postestimation commands to predict means by warning label and education level, and conduct pairwise comparisons of the predicted means.

6. Outliers and Exclusions. Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations. NA

7. Sample Size. How many observations will be collected or what will determine sample size? 2000

8. Other. Anything else you would like to pre-register? NA

9. Name. Give a title for this AsPredicted pre-registration.

Developing Warning Messages about Ultraprocessed Food in Colombia

Consent form: Testing product messages for Colombia

Instructions

We would like to invite you to take part in a brief research study to better understand people's thoughts and perceptions about product messages. To join the study is voluntary. You may choose not to participate, or you may withdraw your consent to be in the study, for any reason, without penalty. This survey is open to Colombian residents aged 18 and over.

You will complete a survey with questions about food product messages and your demographics. You may choose not to participate, or you may withdraw your consent to be in the study, for any reason, without penalty, at any time.

About 2500 people will be in this research study. You will be in the study for about 12 to 15 minutes. This will be a one-time survey with no follow up expected. You will receive points through Offerwise for completion of this survey.

There are no direct risks or benefits to participating that we are aware of.

Privacy and Confidentiality

We will not collect any sensitive information from you. Your responses will be linked with a generated participant ID, which will not be identifiable. Note that that the Offerwise platform is NOT meant to support participant anonymity, but your responses to this survey will remain confidential. Research personnel will keep data from this study on a password-protected computer server and your responses will not be identifiable.

Your Offerwise ID will only be collected for the purposes of distributing points and will not be associated with survey responses.

Please only take this survey one time.

If you have questions about the study, you can contact us at xxx@email.unc.edu. If you have questions about your rights as a research subject, contact the UNC Institutional Review Board at 919-966-3113 or IRB_subjects@unc.edu.

By clicking on the link to the study, you acknowledge that you have read the information above and agree to be in this research study. Thank you!

At the end of the survey, you will receive a code to receive credit for completing our study. Please enter your Qualtrics completion code in the box after you complete the survey so that you can receive your payment.

Colombia FOPL Phase 1 – FINAL Codebook

- Study design: Between-within subjects design
  - First, participants will be shown two similar products, one with a label (control or warning, randomized) and one without a label, and be asked to select which product is less healthy and which product they prefer. Then participants will see the label they were randomized to on a series of products (excess sugar, excess sodium, excess saturated fat); at the end, participants will see all labels across all groups and select which most discourages them from wanting to consume the products
- Primary outcome:
  - Extent to which the warning discourages wanting to consume the product with the warnings
- Secondary outcomes:
  - Ability to identify a product as having excess of [X nutrient]
  - Correct selection of the less healthy product [in first task]
- Other potential outcomes:
  - Message acceptance, cognitive elaboration, negative reaction to the warning, likelihood of purchasing the product if it were available, grabs attention
- Desired survey length: 12-15 minutes - ASSUMPTION: 5 items/min
- Current item count: 57 items (12 minutes, on average) Label-specific items
- Ability to identify the "high in" product; ability to identify the unhealthy product (secondary outcome)
- PME discourage (primary outcome): How much does the label discourage you from wanting to consume the product?
- Perceived amount of nutrient (secondary outcome): Is this product excessive in [nutrient]?
- Purchasing likelihood: How likely would you be to buy this product, if it were available?
- Learning something new: Did you learn something new from this label?
- Perceived product appeal: How unappealing or appealing is this product?
- Grabs attention: How strongly do you disagree or agree that this label grabs your attention?

Programming notes:
- For all items, request response, unless noted otherwise
- All images for this survey are in Appendix

Theory/Evidence	# construct (ref)	Item	Response scale
		Screener	
		Welcome! Thank you for your interest in participating in our research study. Please answer the following questions so we can find out if you are eligible to participate. Do you agree to take the screening survey? Click the arrow to continue if you agree. [page break]	
	Age	What is your age (in years)?	____ [if less than 18, ineligible] [quota: 17% - 18-24 22% - 25-34 19% - 35-44 16% - 45-54 7% - 55-59 19% - 60+] *require response
	Gender	How would you describe your gender identity?	1=Man 2=Woman 3=Other, please specify: [quota: 49% male, 51% female] *require response

https://www.mineducacion.gov.co/1759/articles-356787_recurso_1.pdf https://www.mineducacion.gov.co/1759/w3-article-233839.html?_noredirect=1	E60 Education	[page break] What is the highest educational level you have reached?	None Basic/primary High school Technical school College degree Post-graduate degree [quota: 50% answer 1-3 50% answer 4-6] *require response
	dept	Which department do you live in? If you live in Bogota, select Bogota. [page break]	[list out 32 departments] – drop down [quota: 23% - Guajira, Cesar, Magdalena, Atlantico, San Andres, Bolivar, Sucre, or Cordoba 19% - Santander, Norte de Santander, Boyaca, Cundinamarca, Meta 24% - Antioquia, Caldas, Risaralda, Quindio, Tolima, Huila, Caqueta 16% - Valle del cauca, Cauca, Narino, Choco 3% - Arauca, Casanare, Guainia, Vichada, Amazonas, Putumayo, Gauviare, Vaupes 15% - Bogota] *require response
		Thank you for answering the questions. You are eligible to participate. Please, click the arrow to read the consent.	
		Initial prompts and questions	
	Consent	Insert Consent Here [page break]	
	Instruct_nextpg	Please read each question carefully. You will not be able to change your answers after you advance to the next page. [page break]	

		Label vs. no Label	
	Prompt_drinks	The next questions are about drink products. [page break] (randomize order of image presented – one image of fruit drink with label & one image of similar fruit drink without label; randomize order of the three questions in this section)	
	Unhealthier_sug	In your opinion, which one of these products is most unhealthy?	1 = (image of product with nutrient label) 2 = (image of product without nutrient label) (Randomize their order)
	Higher_sug	Which of these products is highest in sugar?	1 = (image of product with nutrient label) 2 = (image of product without nutrient label) (Randomize their order)
	Buywhich_sug	Which of these products would you most want to buy? [page break]	1 = (image of product with nutrient label) 2 = (image of product without nutrient label) (Randomize their order)

		Label – Between Subjects	
Grummon, Hall, Taillie, and Brewer (In press)	Prompt_labels	[one-time prompt] The next questions are about labels on food and drink products. You will look at a few labels on different products and answer questions about each one. [Randomize people to one of 4 arms. Arm 1 (Control Label): Products 1-3 Arm 2 (Circle label): Products 4-6 Arm 3 (Octagon label): Products 7-9 Arm 4 (Triangle label): Products 10-12 (Randomize order of nutrient presented – sat fat, sugar, sodium - within each arm) [Repeated prompt with each new messages' set of questions] [Insert page break]	
Label – Saturated Fat			
Baig et al. (2018) Grummon et al. (In press)	PME_conc_sat-fat	How much does this label make you concerned about the health effects of consuming this product?	1 = Not at all concerned 2 = A little concerned 3 = Concerned 4 = Very concerned
Baig et al. (2018) Grummon et al. (In press)	PME_unpl_sat-fat	How much does this label makes consuming this product seem pleasant or unpleasant to you?	1 = Very unpleasant 2 = Unpleasant 3 = Pleasant 4 = Very pleasant

(UNC PME scale)	Pme_disc_satfat	How much does this label discourage you from wanting to consume this product?	1 = Not at all discouraged 2 = A little discouraged 3 = Discouraged 4 = Very discouraged
	Nutr_excs_satfat	Do you think this product has excess saturated fat?	1 = Yes 0 = No [randomize order of yes and no]
	Attn_grab_satfat	How much does this label grab your attention?	1 = Not at all 2 = A little 3 = A lot 4 = A ton
	Cog_elab_satfat	How much does this label makes you think about the health problems caused by consuming this product?	1 = Not at all 2 = A little 3 = A lot 4 = A ton
	Learn_new_satfat	Did this label teach you something new? [page break]	1 = Yes 0 = No [randomize order of yes and no]
	Buy_lkly_satfat	How likely would you be to buy this product in the next week, if it were available?	1=Not at all likely 2=A little likely 3= Likely 4= Very likely
Bollard (2016)	Child_satfat	How unhealthy or healthy would it be for a child aged 1 to 12 to consume products this product every day?	1=Very unhealthy 2=Somewhat unhealthy 3=Somewhat healthy 4=Very healthy
Perceived product appeal	Ppa_satfat	How unappealing or appealing is this product? [page break]	1=Very unappealing 2=Somewhat unappealing 3=Somewhat appealing 4=Very appealing

Label—sugar			
Baig et al. (2018) Grummon et al. (In press)	PME_conc_sug	How much does this label make you concerned about the health effects of consuming this product?	1 = Not at all concerned 2 = A little concerned 3 = Concerned 4 = Very concerned
Baig et al. (2018) Grummon et al. (In press)	PME_unpl_ sug	How much does this label makes consuming this product seem pleasant or unpleasant to you?	1 = Not at all unpleasant 2 = Unpleasant 3 = Pleasant 4 = Very pleasant
(UNC PME scale)	Pme_disc_ sug	How much does this label discourage you from wanting to consume this product?	1 = Not at all discouraged 2 = A little discouraged 3 = Discouraged 4 = Very discouraged
	Nutr_excs_ sug	Do you think this product has excess sugar?	1 = Yes 0 = No [randomize order of yes and no]
	Attn_grab_ sug	How much does this label grab your attention?	1 = Not at all 2 = A little 3 = A lot 4 = A ton
	Cog_elab_ sug	How much does this label makes you think about the health problems caused by consuming this product?	1 = Not at all 2 = A little 3 = A lot 4 = A ton
	Culture_sug	How acceptable would this label be in Colombian society?	1=Not acceptable 2=Slightly acceptable 3= Acceptable 4=Very acceptable
(Talati 2019)	Like_sug	Do you like this label?	1 = Yes 0 = No [randomize order of yes and no]

(talati 2019)	Trust_sug	Do you trust this label?	1 = Yes 0 = No [randomize order of yes and no]
(Talati 2019)	Understand_sug	Is this label easy to under-stand?	1 = Yes 0 = No [randomize order of yes and no]
	Learn_new_ sug	Did this label teach you something new? [page break]	1 = Yes 0 = No [randomize order of yes and no]
	Buy_lkly_ sug	How likely would you be to buy this product in the next week, if it were available?	1=Not at all likely 2=A little likely 3=Likely 4= Very likely
Bollard (2016)	Child_ sug	How unhealthy or healthy would it be for a child aged 1 to 12 to consume products this product every day?	1=Very unhealthy 2=Somewhat unhealthy 3=Somewhat healthy 4=Very healthy
Perceived product appeal	Ppa_ sug	How unappealing or appeal-ing is this product? [page break]	1=Very unappealing 2=Somewhat unappealing 3=Somewhat appealing 4=Very appealing
Label –sodium/salt			
Baig et al. (2018) Grummon et al. (In press)	PME_conc_sod	How much does this label make you concerned about the health effects of con-suming this product?	1 = Not at all concerned 2 = A little concerned 3 = Concerned 4 = Very concerned
Baig et al. (2018) Grummon et al. (In press)	PME_unpl_ sod	How much does this label makes consuming this product seem pleasant or unpleasant to you?	1 = Very unpleasant 2 = Unpleasant 3 = Pleasant 4 = Very pleasant

(UNC PME scale)	Pme_disc_ sod	How much does this label discourage you from wanting to consume this product?	1 = Not at all discouraged 2 = A little discouraged 3 = Discouraged 4 = Very discouraged
	Nutr_excs_ sod	Do you think this product has excess sodium/salt?	1 = Yes 0 = No [randomize order of yes and no]
	Attn_grab_ sod	How much does this label grab your attention?	1 = Not at all 2 = A little 3 = A lot 4 = A ton
	Cog_elab_ sod	How much does this label makes you think about the health problems caused by consuming this product?	1 = Not at all 2 = A little 3 = A lot 4 = A ton
	Learn_new_ sod	Did this label teach you something new? [page break]	1 = Yes 0 = No [randomize order of yes and no]
	Buy_lkly_ sod	How likely would you be to buy this product in the next week, if it were available?	1=Not at all likely 2=A little likely 3=Likely 4=Very likely
Bollard (2016)	Child_ sod	How unhealthy or healthy would it be for a child aged 1 to 12 to consume products this product every day?	1=Very unhealthy 2=Somewhat unhealthy 3=Somewhat healthy 4=Very healthy
Perceived product appeal	Ppa_ sod	How unappealing or appeal-ing is this product? [page break]	1=Very unappealing 2=Somewhat unappealing 3=Somewhat appealing 4=Very appealing

Label Comparison—Most Discourages—Primary Outcome			
	Prompt_label-compare	The next questions are about different labels. [Randomize the participant to see the "most_disc_*" item for one of the three nutrients, not all three]	
	Most_disc_salt	Which of these labels would discourage you most from wanting to consume this product? [display image of excess salt product w/o label] [page break]	[answer choices are each of the label types, including control, randomly displayed]
	Most_disc_sat-fat	Which of these labels would discourage you most from wanting to consume this product? [display image of excess sat fat product w/o label] [page break]	[answer choices are each of the label types, including control, randomly displayed]
	Most_disc_sugar	Which of these labels would discourage you most from wanting to consume this product? [display image of excess sugar product w/o label] [page break]	[answer choices are each of the label types, including control, randomly displayed]
Exposure to Media Campaigns			
	Media_p	Before today, have you previously seen this label? [image of Peru label]	0 = No 1 = Yes
	Media_ch	Before today, have you previously seen this label? [image of Chile label]	0 = No 1 = Yes

	Media_c	Before today, have you previously seen this label? [image of MoH proposed Colombia label]	0 = No 1 = Yes
Demographics			
	Children	Are you the parent or caregiver of any children (ages 0-18) who currently live in your household?	1=Yes 0=No
	Children_hhld	How many children (ages 0-18) who currently live in your household are you the parent of caregiver of?	___ [restricted to 1-15] [show Q if children=1]
	Age_children_hhld	What is the age of each child that you are the parent or caregiver of? [page break]	[Have list of children age to enter based on # entered in children_hhld] Child X: ____ years old [program as drop down]
2018 Colombian Census	etnia	¿De acuerdo con su cultura, pueblo o rasgos físicos, como se reconoce usted? (Marque todo lo que corresponda)	1= Indígena 2= Gitano/a o rom 3 = Raizal del Archipiélago de San Andrés, Providencia y Santa Catalina 4 = Negro/a, mulato/a, afrodescendiente, Afrocolombiano/a 5 = Otro grupo étnico 6= Ningún grupo étnico
Adapted from Hedrick et al. (2012)	Satfat_consume	In the past 30 days, how often did you consume cookies? [sat fat product]	1=Never or less than 1 time per week 2=1 time per week 3=2-3 times per week 4=4-6 times per week 5=1 time per day 6=2 times per day 7=3 or more times per day

Adapted from Hedrick et al. (2012)	Sod_consume	In the past 30 days, how often did you consume sliced bread? [sodium product]	1=Never or less than 1 time per week 2=1 time per week 3=2-3 times per week 4=4-6 times per week 5=1 time per day 6=2 times per day 7=3 or more times per day
Adapted from Hedrick et al. (2012)	Sug_consume	In the past 30 days, how often did you consume soda? [sugar product]	1=Never or less than 1 time per week 2=1 time per week 3=2-3 times per week 4=4-6 times per week 5=1 time per day 6=2 times per day 7=3 or more times per day
	height	How tall are you? Enter your height in meters.	[Numerical free response. Allow entries > 1.0m and <2.3m. Allow 2 decimal places.].
	weight	How much do you weigh? Enter your weight in kilograms.	[Numerical free response. Allow entries > 18kg and <408kg].
	Finance_sit	How would you describe your household's financial situation right now? Would you say that: [page break]	4 = After paying the bills, you still have enough money for special things that you want 3 = You have enough money to pay the bills, but little spare money to buy extra or special things 2 = You have money to pay the bills, but only because you have to cut back on things 1 = You are having difficulty paying the bills, no matter what you do
		End of Study	
	open_answer	Anything you want to tell us about the study? Please leave your comments below.	[Free text]

References

Lora KR, Davy B, Hedrick V, Ferris AM, Anderson MP, Wakefield D. Assessing initial validity and reliability of a beverage intake questionnaire in Hispanic preschool-aged children. Journal of the Academy of Nutrition and Dietetics. 2016;116(12):1951-1960.

DeFrank JT, Rimer BK, Gierisch JM, Bowling JM, Farrell D, Skinner CS. Impact of mailed and automated telephone reminders on receipt of repeat mammograms: A randomized controlled trial. Am J Prev Med. 2009;36(6):459-467.

NHANES https://wwwn.cdc.gov/nchs/nhanes/2011-2012/fsq_g.htm

Baig, S. A., Noar, S. M., Gottfredson, N. C., Boynton, M. H., Ribisl, K. M., & Brewer, N. T. (2018). UNC Perceived Message Effectiveness: Validation of a brief scale. *Annals of Behavioral Medicine*. doi:10.1093/abm/kay080

Grummon, A. H., Hall, M. G., Taillie, L. S., & Brewer, N. T. (In press). How should sugar-sweetened beverage health warnings be designed? A randomized experiment. *Preventive Medicine*.

Hedrick, V. E., Savla, J., Comber, D. L., Flack, K. D., Estabrooks, P. A., Nsiah-Kumi, P. A., . . . Davy, B. M. (2012). Development of a brief questionnaire to assess habitual beverage intake (BEVQ-15): sugar-sweetened beverages and total beverage energy intake. *Journal of the Academy of Nutrition and Dietetics, 112*(6), 840-849.

Puhl, R., Peterson, J. L., & Luedicke, J. (2013). Fighting obesity or obese persons? Public perceptions of obesity-related health messages. *International Journal of Obesity (2005), 37*(6), 774-782. doi:10.1038/ijo.2012.156

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Before today, have you seen this label?

APPENDIX 6
Development of Graphic Design Guidelines

Sample Brief for creating a graphic guideline for front-of-package warning labels

Rationale

In support of the [country] obesity prevention efforts, a front-of-package warning label has been designed and tested for potential effectiveness.

The front-of-package warning label format being developed for [country] requires processed foods that do not meet predetermined criteria for key nutrients to include warning labels on the front of the package, identifying the food as high in sugar, fat, salt, or total calories [whichever apply].

Researchers have concluded design testing research to test the suitability, cultural appropriateness and potential effectiveness of a front-of-package label prototype designed for the [country] population.

The qualitative research involved moderated discussions by 12 focus groups of men and women living in the urban, per-urban and rural areas of four provinces. Participants belonged to different age and socio-economic groups and had varying literacy levels. The groups included parents or caregivers of children and consumers of packaged foods.

The preliminary results of this study suggest that respondents found the following design elements to be effective (see appendix for full report):
- Iconography;
  - Preference for the inclusion of the icons to make the labels more universally relevant;
  - No strong preference for any of the icon alternatives presented;
  - Some considerations for making icons more effective: icons portraying movement and icons showing a large quantity of salt, sugar or fat;
- Warning device: the triangle symbol with an exclamation mark to affirm the warning;
- Symbol shape: the triangle shape was recognized as a warning compared to an octagon;
- Symbol color: black was preferred over red;
- Holding strap: a label with a black holding strap was preferred;
- Label placement: the label at the right upper corner was preferred; and
- Label size: the biggest proportionate size option was preferred

i.e., 20% of package area (though legal considerations would need