University of California
Research Consortium
on Beverages and
Health

July 14, 2025

Dockets Management Staff (HFA-305)
Food and Drug Administration
5630 Fishers Lane, Rm. 1061
Rockville, MD 20852

**Re: Food Labeling: Front-of-Package Nutrition Information,
A Proposed Rule by the Food and Drug Administration (Docket No. FDA-2024-N-2910)**

Dear Dockets Management Staff:

Our Research Consortium on Beverages and Health, consisting of senior faculty across the University of California system who study nutrition science, programs and policies, with a focus on added sugars and sugary beverages, respectfully submits these comments on the U.S. Food and Drug Administration's (FDA's) proposed rule to require front-of-package labels (FOPLs) on packaged foods and beverages.
We, the undersigned, are in strong support of the FDA's proposal to require a mandatory, interpretive FOPL highlighting nutrients to limit. In this comment, we detail **five additional strong recommendations**, and list two more recommendations, for amendments that we believe will make the proposed rule more effective.

Science, including three recent experimental studies, is the basis for our recommendations.

We strongly support the following current aspects of the FDA's proposal to:

1. Adopt an FOPL system.
2. Require a mandatory FOPL instead of relying on voluntary labeling.
3. Use an interpretive FOPL rather than a (solely) numeric FOPL.
4. Highlight only nutrients to limit (saturated fat, sodium, and added sugars) rather than ones to increase (e.g., fiber, vitamin D).

We strongly recommend the following amendments to the proposed rule:

5. Require a "High In" labeling scheme, which would display labels only on products high in saturated fat, sodium, and added sugars.
6. Require a multi-label scheme with separate labels for high amounts of each of saturated fat, sodium, and added sugars (e.g., "High in Sodium," and "High In Added Sugars").
7. Add design elements (e.g., red color, exclamation mark, triangle icon) that make the labels easier to see and understand.
8. Require the new FOPL on foods marketed for infants and toddlers.
9. Mandate a non-sugar sweetener disclosure to accompany the new FOPL.

We suggest the following additional amendments to the proposed rule:

10. Use a density-based nutrient profile model for "high-in" that ensures that all products high in saturated fat, sodium, and added sugars are indicated as such, regardless of portion size.
11. Develop a consumer education campaign to accompany the release of the new FOPL.

A mandatory, interpretive FOPL system can help to address high rates of chronic disease in the U.S.

Diet and nutrition have a significant impact on health. Poor nutrition has contributed to the rise in U.S. obesity rates and the prevalences of heart disease, type 2 diabetes, cancer, stroke, and other chronic conditions. Nearly half of U.S. adults (47 percent) have high blood pressure, a major risk factor for heart disease and stroke, over half of U.S. adults have diabetes (14 percent) or prediabetes (46 percent), and 42 percent of U.S. adults have obesity.[1] The prevalence of diet-related chronic conditions among children and adolescents is also high.[2] The good news is that diet quality is a modifiable risk factor and improving diet and nutrition can reduce the burden of chronic disease and improve health.

Consumers want to buy healthy foods, but labels do not always make it easy for consumers to identify healthy choices and comply with dietary guidance. Nutrition Facts labels are important tools for helping people select healthy foods and limiting less healthy foods, and they display a % Daily Value that is meant to convey how a particular food can fit into the total daily diet. However, only 40% of U.S. adults report consistently using the Nutrition Facts label when deciding to buy a food product (*i.e.,* always or most of the time as opposed to sometimes, rarely, or never)[3] and regular use of the Nutrition Facts label varies across the U.S. population, with lower use among men, those with

[1] Martin SS, Aday AW, Allen NB, et al; on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Committee. 2025 Heart disease and stroke statistics: a report of US and global data from the American Heart Association. *Circulation*. 2025;151:e41–e660. doi: 10.1161/CIR.0000000000001303.
[2] Martin SS, Aday AW, Allen NB, et al; on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Committee. 2025 Heart disease and stroke statistics: a report of US and global data from the American Heart Association. *Circulation*. 2025;151:e41–e660. doi: 10.1161/CIR.0000000000001303.
[3] Primary analysis of NHANES 2017-March 2020 Consumer Behavior Phone Follow-up Module conducted by CSPI. 2025.

lower education levels, those with lower incomes, and those with limited English proficiency.[4,5,6] Furthermore, only 63 percent of adults understand how to interpret the % Daily Value and only 57 percent know how to tell when a food is "High" in a nutrient, with lower rates among those with less education.[7]

Additional nutrition labeling that is interpretive, prominently displayed on the front of food packaging, and provides a more accessible description of certain information contained in the Nutrition Facts label can empower consumers to make healthier choices. Dozens of countries have implemented FOPL, and over one hundred experimental and real-world studies have tested the effects of different FOPL systems.[8,9,10,11] These studies find that well-designed interpretive FOPL can significantly improve the healthfulness of foods selected by consumers and prompt product reformulation. The U.S. should learn from experiences abroad and follow the science to select a system with optimal potential to promote equitable access to information, improve diets, promote reformulation, and advance public health.

Others' comments provide extensive rationale in support of current aspects of FDA's proposed rule and will not be repeated in this comment. We do wish, however, to highlight our following five strong recommendations for amendments to the proposed rule (as also listed above):

1. **Require a "High In" labeling scheme, which would display labels only on products high in saturated fat, sodium, and added sugars.**

[4] Ollberding, N.J., R.L. Wolf, and I. Contento. "Food Label Use and Its Relation to Dietary Intake Among US Adults." *Journal of the American Dietetic Association.* 2010;110(8):1233-1237. *https://dx.doi.org/10.1016/j.jada.2010.05.007*.
[5] Storz, MA. "Nutrition Facts Labels: Who is Actually Reading Them and Does it Help in Meeting Intake Recommendations for Nutrients of Public Health Concern?" *BMC Public Health.* 2023;23(1), 1947. *https://doi.org/10.1186/s12889-023-16859-2*
[6] Christoph MJ, Larson N, Laska MN, et al. "Nutrition Facts Panels: Who Uses Them, What Do They Use, and How Does Use Relate to Dietary Intake?" *Journal of the Academy of Nutrition and Dietetics.* 2018;118(2):217-228. *https://doi.org/10.1016/j.jand.2017.10.014*.
[7] Lando A, Verrill L, Wu F. FDA's Food Safety and Nutrition Survey: 2019. US Food and Drug Administration. March 2021. Available at: https://www.fda.gov/media/146532/download?attachment
[8] Roberto CA, Ng SW, Ganderats-Fuentes M, et al. The Influence of Front-of-Package Nutrition Labeling on Consumer Behavior and Product Reformulation. *Annu Rev Nutr*. 2021;41:529-550. doi:10.1146/annurev-nutr-111120-094932.
[9] Croker H, Packer J, Russell SJ, Stansfield C, Viner RM. Front of pack nutritional labelling schemes: a systematic review and meta-analysis of recent evidence relating to objectively measured consumption and purchasing. *J Hum Nutr Diet*. 2020;33(4):518-537. doi:10.1111/jhn.12758.
[10] Song J, Brown MK, Tan M, et al. Impact of color-coded and warning nutrition labelling schemes: A systematic review and network meta-analysis. *PLoS Med*. 2021;18(10):e1003765. doi:10.1371/journal.pmed.1003765.
[11] Rebolledo N, Ferrer-Rosende P, Reyes M, Smith Taillie L, Corvalán C. Changes in the critical nutrient content of packaged foods and beverages after the full implementation of the Chilean Food Labelling and Advertising Law: a repeated cross-sectional study. *BMC Medicine*. 2025;23(1):46. doi:10.1186/s12916-025-03878-6.

There is a large body of evidence from experimental studies[12,13,14,15,16,17] and real-world policies[18,19] that "High In" labels, which appear only on products that are high in nutrients of concern, significantly improve consumer understanding of nutrition information, improve food and beverage selections, and can encourage manufacturers to reformulate products to contain lower levels of nutrients of concern. In contrast, the FDA's proposed FOPL, which would appear on nearly all products and gives a low/med/high descriptor for each nutrient of concern, is less studied.

The FDA's proposed label may not lead to meaningful industry reformulation because all products will have to receive a label regardless of nutrient levels.

Based on recently conducted experimental Studies 1[20] and 2[21] (see summary table of studies in Appendix), "Nutrition Info" schemes can lead to the unintended consequence of unhealthy foods being misperceived as healthier when the label is mixed, for example a soda that is "low" is saturated fat and sodium but "high" in added sugars. This unintended consequence was observed in both Study 1 and Study 2. In Study 1, "Nutrition Info" schemes (without %DV) led to higher perceived healthfulness of soda and candy than the control, while this effect was not observed for the "High In" schemes. In Study 2, "Nutrition Info" schemes also led to higher perceived healthfulness compared to "High In" schemes. It should be noted that the FDA's experiment did not report on perceived healthfulness and did not examine consumer response to mixed labels (with at least one nutrient that was "high" and at least one "low").[22]

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[12] An RP, Liu JX, Liu RD, Barker AR, Figueroa RB, McBride TD. Impact of Sugar-Sweetened Beverage Warning Labels on Consumer Behaviors: A Systematic Review and Meta-Analysis. *Am J Prev Med*. Jan 2021;60(1):115-126. doi:10.1016/j.amepre.2020.07.003

[13] Croker H, Packer J, Russell SJ, Stansfield C, Viner RM. Front of pack nutritional labelling schemes: a systematic review and meta-analysis of recent evidence relating to objectively measured consumption and purchasing. *J Hum Nutr Diet*. Aug 2020;33(4):518-537. doi:10.1111/jhn.12758

[14] Grummon AH, Hall MG. Sugary drink warnings: A meta-analysis of experimental studies. *PLoS Med*. May 2020;17(5):e1003120. doi:10.1371/journal.pmed.1003120

[15] Roberto CA, Ng SW, Ganderats-Fuentes M, et al. The Influence of Front-of-Package Nutrition Labeling on Consumer Behavior and Product Reformulation. *Annu Rev Nutr*. Oct 11 2021;41:529-550. doi:10.1146/annurev-nutr-111120-094932

[16] Khandpur N, Sato PdM, Mais LA, et al. Are front-of-package warning labels more effective at communicating nutrition information than traffic-light labels? A randomized controlled experiment in a Brazilian sample. *Nutrients*. 2018;10(6):688. doi:10.3390/nu10060688

[17] White-Barrow V, Gomes FS, Eyre S, et al. Effects of front-of-package nutrition labelling systems on understanding and purchase intention in Jamaica: results from a multiarm randomised controlled trial. *BMJ Open*. 2023;13(4):e065620. doi:10.1136/bmjopen-2022-065620

[18] 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 Med*. 2020;17(2):e1003015-e1003015. doi:10.1371/journal.pmed.1003015

[19] Taillie LS, Bercholz M, Popkin B, Rebolledo N, Reyes M, Corvalán C. Decreases in purchases of energy, sodium, sugar, and saturated fat 3 years after implementation of the Chilean food labeling and marketing law: An interrupted time series analysis. *PLoS Med*. 2024;21(9):e1004463. doi:10.1371/journal.pmed.1004463

[20] Falbe J, Lemmon B, Grummon AH, Musicus AA, Hall MG, Roberto CA, Wang A, Wolf EC. Front-of-package nutrient labels: Efficacy and unintended consequences in an online experiment. *SSRN Pre-Print.* 2025; https://ssrn.com/abstract=5336591

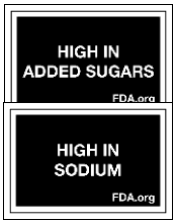
[21] Lemmon B, Grummon AH, Marquez A, Miller LMS, Au LE, Brown SD, Wang A, Powell LM, Falbe J. An Online Randomized Controlled Trial Comparing Front-Of-Package Nutrient Labels on Consumer Understanding, Perceptions, and Behavior. *SSRN Pre-Print*. 2025; https://ssrn.com/abstract=5309812

[22] Quantitative Research on Front of Package Labeling on Packaged Foods (OMB No. 0910-0920) (2024).

Moreover, in Studies 1 and 2, “High In” schemes resulted in faster response times when evaluating products than “Nutrition Info,” “Nutrition Info Color,” and “Nutrition Info %DV” schemes. “Nutrition Info %DV” resulted in the slowest responses.[20,21]

Based on this research, and to avoid confusion and maximize efficacy, FDA should consider shifting to the more straightforward, evidence-based “High In” labeling scheme.

2. **<u>Require a multi-label scheme</u> with separate labels for high amounts of each of saturated fat, sodium, and added sugars (e.g., “High in Sodium,” and “High in Added Sugars”).**



In addition to recommending a “High In” scheme, <u>we specifically recommend a multi-label format wherein each nutrient of concern has a distinct label</u> (e.g., a product high in added sugars and sodium would carry one “high in added sugars” label and one “high in sodium” label).

In Study 2, the multi-label “High In” scheme (“Multi High In”) outperformed “Nutrition Info %DV” in helping participants correctly identify the least healthy nutrient profiles ($p<0.05$) and in correctly assessing high nutrient content ($p<0.05$). Compared to all other label conditions, “Multi High In” yielded the highest label content recall and highest reported use (all $p<0.001$). Additionally in a hypothetical shopping task, “Multi High In” significantly reduced the likelihood of participants’ selecting a high-in product for themselves compared to all other FOPL schemes including “Nutrition Info %DV” (all $p<0.001$). “Multi High In” also produced the quickest response times and was perceived as easier to use than the FDA’s proposed label.

In recently conducted experimental Study 3[23] (see summary table in Appendix), “Multi High In” significantly outperformed four other single “High In” schemes (listing all nutrients on one label). The multi-label format better helped participants correctly identify items high in sodium (78% correct vs 68-71% correct, all $p<0.01$) and items high in saturated fat (85% correct vs 76-79% correct, all $p<0.01$) than single “High In” schemes. Additionally, “Multi High In” was perceived as most effective at discouraging participants from consuming products high in nutrients of concern (all $p<0.001$).

Requiring a separate label for each excess nutrient of concern (i.e., “High in Sodium,” “High in Saturated Fat,” “High in Added Sugars”) provides a straightforward and intuitive method for consumers to evaluate healthfulness because items with more labels have less healthy nutrient profiles than those with fewer labels. This format could be understood at all ages and literacy levels. For example, in Chile (which implemented a multi-label “High In” scheme), teachers and parents were able to successfully instruct

[23] Lemmon B, Musicus AA, Grummon AH, Hall MG, Roberto C, Greenthal E, Falbe J. “High-In” Front-of-Package Labeling of Foods High in Added Sugars, Sodium, and Saturated Fat: A Randomized Experiment. *SSRN Pre-Print*. 2025; https://ssrn.com/abstract=5265374

children in selecting healthier foods by counting the number of labels.[24] This style of label is currently implemented in 10 countries and is the most common type of mandatory FOPL globally. [25]

3. Add design elements (e.g., red color, exclamation mark, triangle icon) that make the labels easier to see and understand.

We recognize that FDA's experimental study found that the inclusion of the magnifying glass icon did not meaningfully affect U.S. consumers' attention to or use of the proposed FOPL. The FDA therefore chose not to include an icon in its proposed label and concluded that "including a graphic image, such as a magnifying glass icon, could add unnecessary complexity and clutter to the [FOPL]."[26] Similar to the FDA's findings, in Study 3 we found that a magnifying glass icon did not improve consumer understanding or increase the perceived discouragement of consuming foods high in nutrients of concern.[22]

However, Study 3 found that all designs with exclamation point icons increased perceived discouragement, a measure that is predictive of behavior.[22,27] Studies have found that designs including exclamation points improve consumer understanding, have higher perceived effectiveness, and are preferred by consumers.[28,29,30,31]

Including color in the label design could also improve efficacy. Study 2 found that the "Nutrition Info Red" scheme, which highlighted "High" in red, outperformed the FDA's proposed label in accurate identification of the healthiest and least healthy nutrient profiles and accurate assessment of high nutrient content (all $p<0.001$). However, it is important to note that Nutrition Info schemes in general, including "nutrition Info Red," produced the unintended consequence of increasing the perceived healthfulness of unhealthy foods with mixed nutrient profiles.[20,22] This is another reason we recommend "High In" schemes.

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[24] Correa T, Fierro C, Reyes M, Dillman Carpentier FR, Taillie LS, Corvalan C. Responses to the Chilean law of food labeling and advertising: exploring knowledge, perceptions and behaviors of mothers of young children. *International Journal of Behavioral Nutrition and Physical Activity*. 2019;16:1-10. doi:10.1186/s12966-019-0781-x

[25] Global Food Research Program at UNC Chapel Hill. Labeling Regulations. https://www.globalfoodresearchprogram.org/policy-research/labeling-regulations/

[26] Quantitative Research on Front of Package Labeling on Packaged Foods (OMB No. 0910-0920) (2024).

[27] Baig SA, Noar SM, Gottfredson NC, Boynton MH, Ribisl KM, Brewer NT. UNC Perceived Message Effectiveness: Validation of a Brief Scale. *Ann Behav Med*. Aug 2019;53(8):732-742. doi:10.1093/abm/kay080

[28] Falbe J, Montuclard A, Engelman A, Adler S, Roesler A. Developing sugar-sweetened beverage warning labels for young adults. *Public Health Nutr*. Oct 2021;24(14):4765-4775. Pii s1368980021002287. doi:10.1017/s1368980021002287

[29] Bopape M, Taillie LS, Frank T, et al. South African consumers' perceptions of front-of-package warning labels on unhealthy foods and drinks. *PLoS One*. 2021;16(9):e0257626. doi:10.1371/journal.pone.0257626

[30] Goodman S, Vanderlee L, Acton R, Mahamad S, Hammond D. The impact of front-of-package label design on consumer understanding of nutrient amounts. *Nutrients*. 2018;10(11):1624. doi:10.3390/nu10111624

[31] Acton R, Vanderlee L, Roberto C, Hammond D. Consumer perceptions of specific design characteristics for front-of-package nutrition labels. *Health Education Research*. 2018;33(2):167-174. doi:10.1093/her/cyy006

Food companies have reduced the salience of FOPLs by adding health or nutrient claims or other marketing.[32,33] Therefore, eye-catching visual cues are critical for ensuring the FDA's labels are seen by consumers. Studies across countries have shown that shapes and colors associated with warnings (e.g., exclamation points, triangles, red coloring) outperform neutral designs (e.g., magnifying glass icon).[34,35,36,37] Symbols can also improve label efficacy among populations with lower literacy.[38,39,40,41] We recommend the FDA consider incorporating design elements known to improve label efficacy, such as an exclamation icon and red color.

4. FDA's FOPL system should apply to foods marketed for infants and toddlers in addition to foods marketed for individuals aged 4 years and older.

We disagree with the exclusion of foods marketed for children under 4 years old from the FDA's proposal. In the proposal, the FDA notes that the Daily Reference Values (DRVs) for children 1-3 years codified at 21 CFR 101.9(c)(9) are currently not aligned with the 2020-2025 *Dietary Guidelines for Americans* (DGA). These DRVs should be updated, and the FDA should require FOPLs on products marketed to children 1-3 years old based on the DRVs for children 1-3 years and resultant percent Daily Values (DVs) that are required on the Nutrition Facts labels of such foods. The FDA should apply the same %DV cutoffs for determining when a food is high in (or high, medium, and low in) added sugars, sodium, and saturated fat as apply for foods marketed for individuals aged 4 years and older.

Requiring FOPL on foods for children ages 1-3 is important because many products marketed for young children are high in nutrients of concern. For example, nutrition and public health organizations and experts across the US have raised concerns over potentially misleading marketing of "toddler milks," which contain high amounts of added

[32] Yadin S. Manipulating Disclosure: Creative Compliance in the Israeli Food Industry. *St Loius University Law Journal*. 2021;66:149.
[33] Crosbie E, Alvarez MGO, Cao M, et al. Implementing front-of-pack nutrition warning labels in Mexico: important lessons for low-and middle-income countries. *Public Health Nutr*. 2023;26(10):2149-2161. doi:10.1017/S1368980023001441
[34] Goodman S, Vanderlee L, Acton R, Mahamad S, Hammond D. The impact of front-of-package label design on consumer understanding of nutrient amounts. *Nutrients*. 2018;10(11):1624. doi:10.3390/nu10111624
[35] Jáuregui A, Vargas-Meza J, Nieto C, et al. Impact of front-of-pack nutrition labels on consumer purchasing intentions: a randomized experiment in low-and middle-income Mexican adults. *BMC Public Health*. 2020;20:1-13. doi:10.1186/s12889-020-08549-0
[36] Cabrera M, Machín L, Arrúa A, et al. Nutrition warnings as front-of-pack labels: influence of design features on healthfulness perception and attentional capture. Article. *Public Health Nutr*. Dec 2017;20(18):3360-3371. doi:10.1017/s136898001700249x
[37] Grummon AH, Hall MG, Taillie LS, Brewer NT. How should sugar-sweetened beverage health warnings be designed? A randomized experiment. Article. *Prev Med*. Apr 2019;121:158-166. doi:10.1016/j.ypmed.2019.02.010
[38] Goodman S, Vanderlee L, Acton R, Mahamad S, Hammond D. The impact of front-of-package label design on consumer understanding of nutrient amounts. *Nutrients*. 2018;10(11):1624. doi:10.3390/nu10111624
[39] Acton R, Vanderlee L, Roberto C, Hammond D. Consumer perceptions of specific design characteristics for front-of-package nutrition labels. *Health Education Research*. 2018;33(2):167-174. doi:10.1093/her/cyy006
[40] Cabrera M, Machín L, Arrúa A, et al. Nutrition warnings as front-of-pack labels: influence of design features on healthfulness perception and attentional capture. Article. *Public Health Nutr*. Dec 2017;20(18):3360-3371. doi:10.1017/s136898001700249x
[41] Hall MG, Lazard AJ, Grummon AH, et al. Designing warnings for sugary drinks: A randomized experiment with Latino parents and non-Latino parents. *Prev Med*. Jul 2021;148106562. doi:10.1016/j.ypmed.2021.106562

sugars, [42,43,44,45,46,47] despite the 2020-2025 DGA recommendation that children aged 2-3 years consume less than 25 grams of added sugar per day (and that children under 2 avoid added sugars entirely).[48]

5. FDA should mandate prominent disclosures on the front of products containing low-/no-calorie sweeteners (LNCS) to discourage industry reformulation with additives that are not recommended for children.

A mandatory FOPL is likely to have the unintended consequence of increasing industry's use of LNCS (also known as non-sugar sweeteners) across the food supply as food companies reformulate products to avoid FOPLs indicating "high" added sugars. For example, following Chile's FOPL implementation, the percentage of products containing LNCS in certain categories (including beverages, dairy-based beverages, yogurts, and desserts and ice creams) increased.[49] Furthermore, the proportion of foods and beverages with LNCS, purchases of LNCS-containing products, and LNCS consumption increased, including among children.[50,51]

Health organizations, such as the American Heart Association and the American Academy of Pediatrics, recommend that children not consume LNCS as the health effects of long-term consumption are still unknown and early exposure to non-sugar sweeteners may influence lifelong dietary patterns as it increases sweet taste

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[42] Lott M, Callahan E, Welker Duffy E, et al. Healthy beverage consumption in early childhood: recommendations from key national health and nutrition organizations. Technical scientific report. *Durham, NC: Healthy Eating Research.* 2019;144(5):e20192765. doi: 10.1542/peds.2019-2765. PMID: 31659005.
[43] Harris JL, Pomeranz JL. Infant formula and toddler milk marketing: opportunities to address harmful practices and improve young children's diets. *Nutrition Reviews.* 2020;78(10):866-83.
[44] Richter AP, Grummon AH, Falbe J, Taillie LS, Wallace DD, Lazard AJ, Golden SD, Conklin JL, Hall MG. Toddler milk: a scoping review of research on consumption, perceptions, and marketing practices. *Nutrition Reviews.* 2024;82(3):425-36.
[45] Fleming-Milici F, Phaneuf L, Harris JL. Marketing of sugar-sweetened children's drinks and parents' misperceptions about benefits for young children. *Maternal & Child Nutrition.* 2022;18:e13338. https://doi.org/10.1111/mcn.13338.
[46] Richter APC, Duffy EW, Higgins IC, et al. Toddler milk perceptions and responses to front-of-package claims and product warnings: A qualitative study of caregivers of toddlers. *Journal of the Academy of Nutrition and Dietetics*. 2023;123(11):1568-1577. e3. doi:10.1016/j.jand.2023.06.281
[47] Duffy EW, Taillie LS, Richter APC, Higgins IC, Harris JL, Hall MG. Parental perceptions and exposure to advertising of toddler milk: A pilot study with Latino parents. *International Journal of Environmental Research and Public Health*. 2021;18(2):528. doi:10.3390/ijerph18020528
[48] U.S. Department of Agriculture (USDA) and U.S. Department of Health and Human Services (USDHHS). Dietary Guidelines for Americans, 2020-2025. December 2020. https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf.
[49] Zancheta Ricardo C, Corvalán C, Smith Taillie L, Quitral V, Reyes M. Changes in the Use of Non-nutritive Sweeteners in the Chilean Food and Beverage Supply After the Implementation of the Food Labeling and Advertising Law. *Front Nutr*. 2021;8. doi:10.3389/fnut.2021.773450.
[50] Rebolledo N, Bercholz M, Adair L, et al. Sweetener purchases in Chile before and after implementing a policy for food labeling, marketing, and sales in schools. *Current Developments in Nutrition.* 2023;7:100016. https://doi.org/10.1016/j.cdnut.2022.100016.
[51] Rebolledo N, Reyes M, Popkin BM, et al. Changes in nonnutritive sweetener intake in a cohort of preschoolers after the implementation of Chile's Law of Food Labelling and Advertising. *Pediatric Obesity*. 2022;17(7):e12895. doi:10.1111/ijpo.12895.

preferences.[52,53,54,55,56] Many parents in the US try to avoid LNCS for their children but are unsuccessful due to confusing product labels. In one study, parents reported they wanted to avoid non-sugar sweeteners but failed to identify the majority (77%) of foods and beverages with non-sugar sweeteners and about a quarter of the products they selected for their families contained non-sugar sweeteners.[57] In another study, the majority of parents (62%) could not identify beverages that contained non-sugar sweeteners even when provided the ingredient list.[58]

To prevent excess intake of LNCS among children as an unintended consequence of FOPL, FDA should mandate clear accompanying disclosures for products that contain LNCS that explicitly state that they are not recommended for children. For products requiring FOPL related to added sugars, these disclosures should appear immediately adjacent to such labels. These disclosures could alleviate confusion and aid parents in selecting healthier products for their children.[59] Mexico did this as part of its FOPL policy and saw a reduction in LNCS in several food categories after the policy's implementation.[60] FDA should determine the best pathway for mandating this disclosure—either as part of the FOPL rule or as a separate rule.

In conclusion, and as highlighted in this comment, we strongly support the FDA's proposal for the US to adopt a mandatory, interpretive front-of-package nutrition labeling system that solely highlights key nutrients to limit, and we also urge the FDA to improve this rule in several ways to ensure it will maximally improve health for the entire US population. We urge federal agencies to act quickly on these recommendations to enable consumers to access the information they need to make healthy choices for themselves and their families.

Sincerely,

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[52] US Department of Agriculture and US Department of Health and Human Services. *Dietary Guidelines for Americans 2020-2025*. 2020. DietaryGuidelines.gov

[53] Johnson RK, Lichtenstein AH, Anderson CA, et al. Low-calorie sweetened beverages and cardiometabolic health: a science advisory from the American Heart Association.

[54] Baker-Smith CM, De Ferranti SD, Cochran WJ, et al. The use of nonnutritive sweeteners in children. *Pediatrics*. 2019;144(5):e20192765. doi:10.1542/peds.2019-2765

[55] Lott M, Reed L, Deuman K, Story M, Cradock A, Patel A. *Healthy Beverage Consumption in School-Age Children and Adolescents: Recommendations from Key National Health and Nutrition Organizations. Consensus Statement.* 2025. http://healthyeatingresearch.org/

[56] Toews I, Lohner S, de Gaudry DK, Sommer H, Meerpohl JJ. Association between intake of non-sugar sweeteners and health outcomes: systematic review and meta-analyses of randomised and non-randomised controlled trials and observational studies. *Br Med J*. 2019;364doi:10.1136/bmj.k4718

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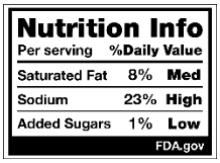
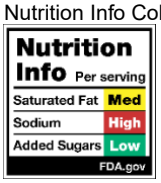
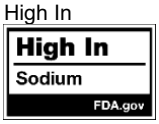
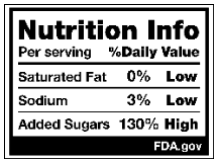
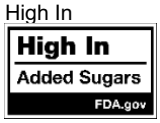
Appendix

Table. Three recently completed studies (pre-prints) testing multiple FOPL schemes.

The comment authors wish to thank Brittany Lemmon, MS, Graduate Group in Epidemiology, University of California, Davis, for kindly providing this table.

	Study 1	Study 2	Study 3
Pre-print citation	Falbe J, Lemmon B, Grummon AH, Musicus AA, Hall MG, Roberto CA, Wang A, Wolf EC. Front-of-package nutrient labels: Efficacy and unintended consequences in an online experiment. *SSRN Pre-Print.* 2025; https://ssrn.com/abstract=5336591	Lemmon B, Grummon AH, Marquez A, Miller LMS, Au LE, Brown SD, Wang A, Powell LM, Falbe J. An Online Randomized Controlled Trial Comparing Front-Of-Package Nutrient Labels on Consumer Understanding, Perceptions, and Behavior. *SSRN Pre-Print*. 2025; https://ssrn.com/abstract=5309812	Lemmon B, Musicus AA, Grummon AH, Hall MG, Roberto C, Greenthal E, Falbe J. "High-In" Front-of-Package Labeling of Foods High in Added Sugars, Sodium, and Saturated Fat: A Randomized Experiment. *SSRN Pre-Print*. 2025; https://ssrn.com/abstract=5265374
Design	Online randomized controlled trial	Online randomized controlled trial	Online experiment
Sample	9,223 U.S. adults approximating sociodemographic characteristics of the U.S.	13,929 U.S. adults approximating sociodemographic characteristics of the U.S.	4,023 U.S. adults approximating sociodemographic characteristics of the U.S.
Conditions (FOPL schemes)	1. No-label Control 2. Nutrition Info %DV  3. Nutrition Info  4. Nutrition Info Color  5. High In  6. High In Color 	1. No-label Control 2. Nutrition Info %DV  3. Nutrition Info Red  4. High In  5. Multi High In 	1. High In  2. High In Magnifying-glass Icon  3. High In Exclamation Mark Icon on Black  4. High In Exclamation Mark Icon on White  5. Multi High In Exclamation 
Procedures	Participants viewed real branded products labeled according to	Participants viewed real branded products labeled according to	Participants viewed mock products labeled according to condition.

	condition. Brief information about label was provided to mimic real-world familiarity consumers would quickly acquire with mandatory FOPLs.	condition. Brief information about labels was provided to mimic real-world familiarity consumers would quickly acquire with mandatory FOPLs.	

Key Findings	Study 1	Study 2	Study 3
Consumer understanding (% correct)	**Correct assessment of high nutrient content** • All schemes significantly outperformed Control. • "High In" (92%), "High In Color" (92%), and "Nutrition Info Color" (91%) significantly outperformed "Nutrition Info %DV" (89%).	**Identification of healthiest and least healthy nutrition profiles** • All schemes significantly outperformed Control. • "Nutrition Info Red" (89% and 84%) significantly outperformed "Nutrition Info %DV" (83% and 81%) in accurate identification of the healthiest and least healthy nutrient profiles. • "Multi High In" (82%) performed significantly better than "Nutrition Info %DV" (81%) for identification of the least healthy nutrient profiles. **Correct assessment of high nutrient content** • All schemes significantly outperformed Control. • "Nutrition Info Red" (94%) and "Multi High In" (93%) significantly outperformed "Nutrition Info %DV" (92%) and "High In" (92%).	**Identification of healthiest and least healthy nutrition profiles** • No differences between schemes. **Correct assessment of high nutrient content** • A significantly higher percentage of participants assigned to "Multi High In" correctly identified items high in sodium (78%) and saturated fat (85%) than all other schemes (68-71% and 76-79%, respectively).
Unintended consequences: Perceived healthfulness of unhealthy products	• Nutrition Info and "Nutrition Info Color" significantly misperceived soda and candy as healthier vs. Control. • "High In" did *not* increase perceived healthfulness of unhealthy products vs. Control.	• "Nutrition Info Red" and "Nutrition Info %DV" misperceived unhealthy items as healthier relative to the High In schemes.	• N/A
Response time	• "High In" and "High In Color" significantly faster than control and all Nutrition Info schemes. • "Nutrition Info %DV" significantly slower times than all other schemes when assessing product nutrient contents.	• "Multi High In" significantly faster than all other schemes for identifying nutrient profiles. • "Nutrition Info %DV" significantly slower than all other schemes.	• N/A
Selection of high-in products during shopping task	• All schemes reduced selection of high-in products vs. Control. No differences between schemes.	• All schemes reduced selection of high-in product vs Control. • "Multi High In" reduced selection significantly more than all other schemes (91% vs 94-95%).	• N/A
Recall, reported label use (i.e., reporting they used it to select items in a shopping task), & perceived label effectiveness	• N/A	• "Nutrition Info %DV" had significantly lower recall (57%) of nutrients on the label and reported use (46%) than the "High In" schemes (recall: 61-66%, use: 50-60%). • "Multi High In" had the highest recall of nutrients on the label (66%) and reported use (60%), followed by High In (61% and 50%).	• All High In schemes with exclamation marks (conditions 3-5) were perceived as significantly more effective in discouraging consumption of high-in foods than the High In scheme (condition 1) and the magnifying glass icon scheme (condition 2).
Key differences from FDA experiment[1]	Tested additional label designs; showed a variety of branded products including those with mixed nutrient profiles; displayed the same products and nutrient profiles across all conditions; provided brief information about FOPLs; assessed behavior; compared individual schemes to a control and one another.	Tested additional label designs; showed a variety of branded products including those with mixed nutrient profiles; displayed the same products and nutrient profiles across all conditions; provided brief information about FOPLs; assessed behavior; compared individual schemes to a control and one another; instructed participants to consider saturated fat, sodium, and added sugars when identifying "nutrient profiles."	Tested additional label designs; displayed same products and nutrient profiles across all conditions; instructed participants to consider saturated fat, sodium, and added sugars when identifying "nutrient profiles."

Abbreviations: FOPL—front-of-package