

Do Food Packaging Health Claims Correlate with Healthiness Or Mislead our Patients?



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Introduction

Primary care physicians regularly implore patients to buy and eat healthy foods. But as our patients amble their grocery store aisles, will food packaging health claims show our patients the healthier foods? Perhaps, conversely, health claims adorn the least healthy foods (Pollan¹, 2007). We conducted a field study of the most commonly purchased foods and beverages in America to assess whether packaging health claims correlate with healthiness so that physicians can advise patients on whether and when promotional claims indicate actual healthy items.

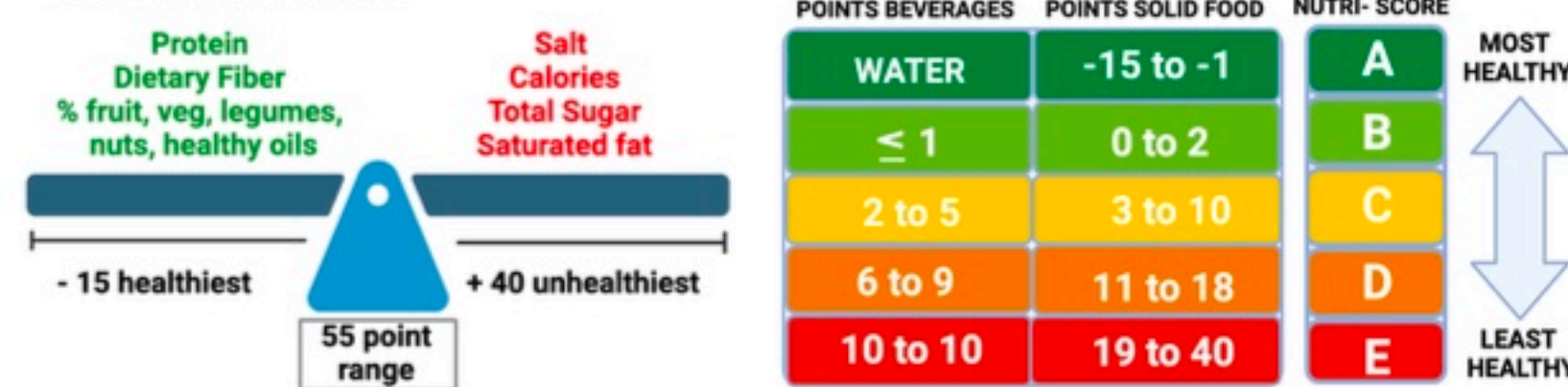
Research Question

Do Food Packaging Health Claims Correlate with Healthiness Or Mislead our Patients?

Materials and Methods

▪ **Foods surveyed:** Utilized WWEIA NHANES data² to identify 5 items from 122 subcategories in 11 general food categories based on consumption frequency and chose these items randomly from among all available in each category at nation's largest grocer, Walmart.com.

▪ **Healthfulness of foods:** Nutri-Score³ is a health rating and labeling scheme widely adopted across Europe and endorsed by the WHO. We quantified the healthfulness of items by calculating the raw Nutri-Score nutritional score.



▪ **Packaging claims:** the FDA recognizes 3 classes of promotional claims on food and beverage packaging⁴: **restricted health claims** (supported by evidence and FDA approved), **nutrition content claims**, and **function claims**. Two raters counted each type of claim from the front of the item's packaging. Discrepancies of more than 1 were settled by raters' consensus.

Cereal packaging with annotations indicating 8 nutrient content claims, 1 FDA claim and 1 function claim



Milk packaging with annotations indicating 6 nutrient content claims

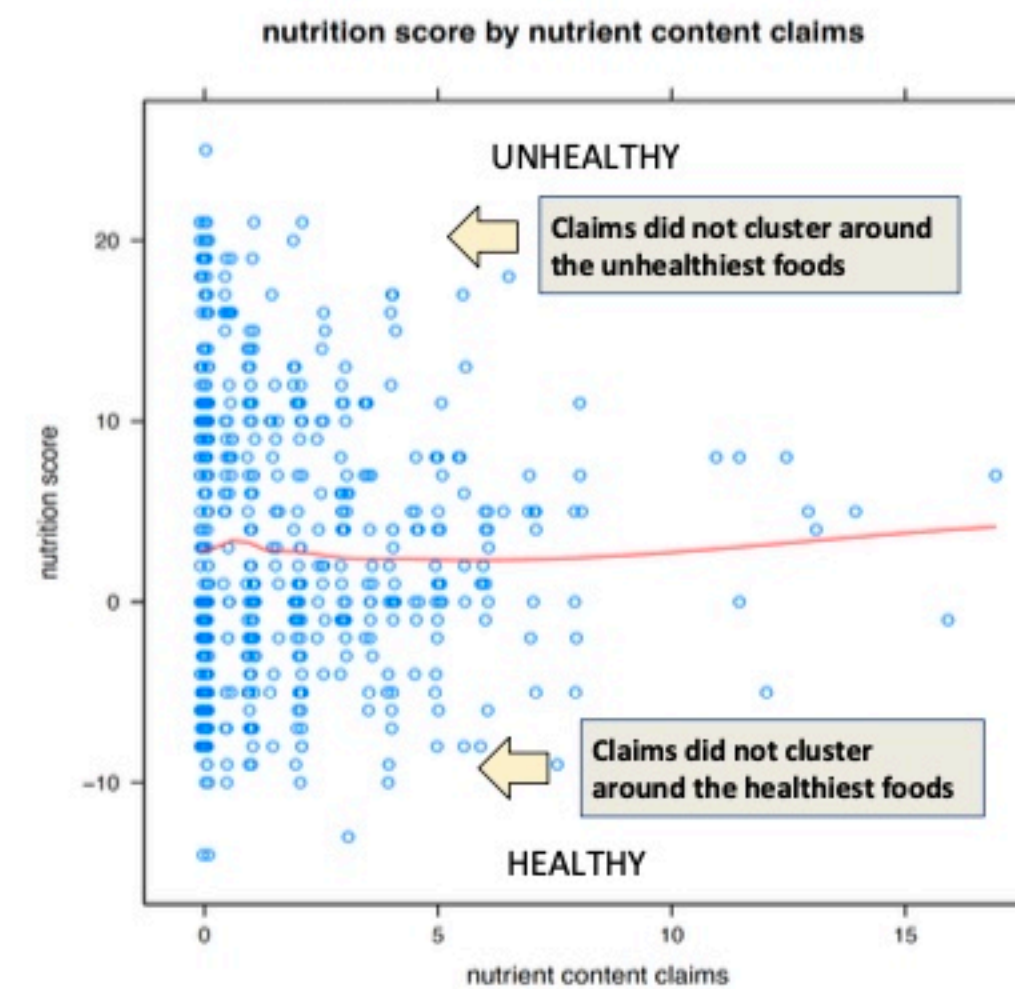
- Nutrient Content Claim
- Restricted Health Claim (FDA approved)
- Function Claim

Results

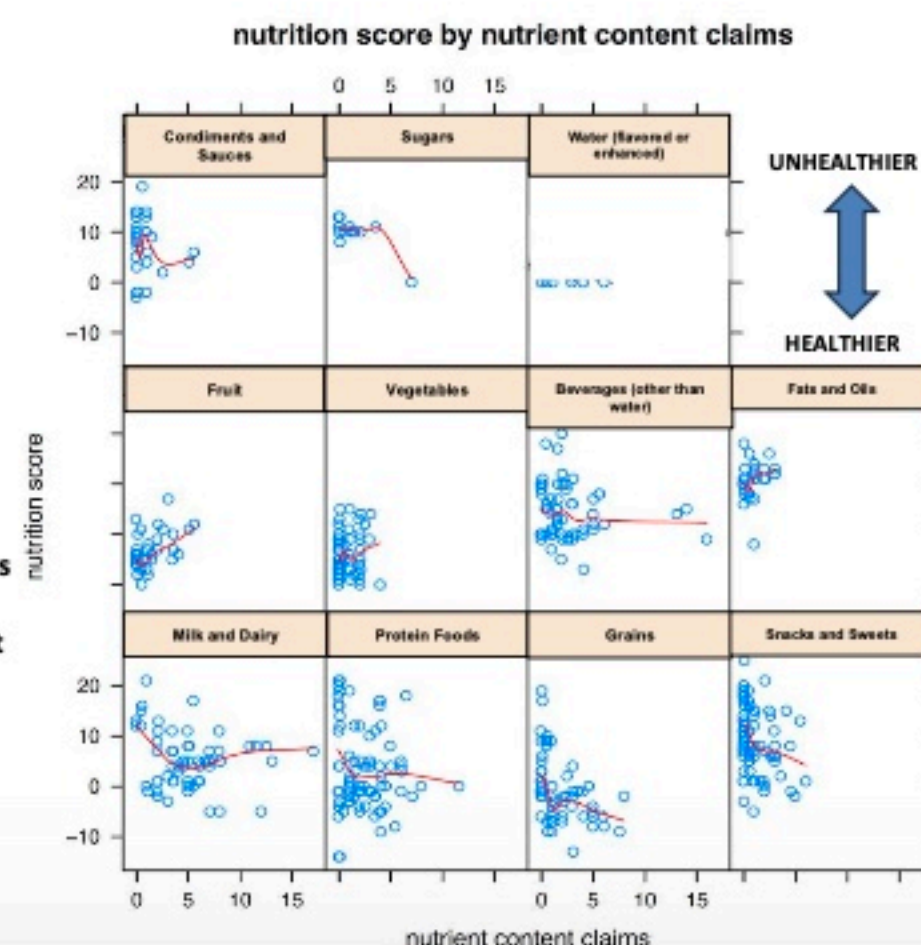
Vast majority of promotional claims on food packaging surveyed from 597 foodstuff items August, 2023, were nutrition content claims.

Category Surveyed	Items	Nutritional content claims	Total claims			Claims per item		
			Restricted health claims	Function claims	Nutritional content claims	Restricted health claims	Function claims	
protein foods	89	202	2	0	2.3	0.2	0	
vegetables	89	51	3	1	0.57	0.03	0.006	
snacks & sweets	82	84	0	0	1.02	0	0	
beverages (not water, milk)	70	162	0	6	2.31	0	0.086	
milk & dairy	67	334	1	10	4.99	0.007	0.14	
grains	60	105	7	3	1.75	0.1	0.05	
fruit	55	47	0	0	0.85	0	0	
fats and oils	30	26	0	1	0.85	0	0.03	
condiments & sauces	30	21	1	0	0.7	0.02	0	
sugars	15	19	0	1	1.27	0	0.067	
water flavored or enhanced	10	22	0	0	2.15	0	0	
TOTALS	597	1073	14	22				

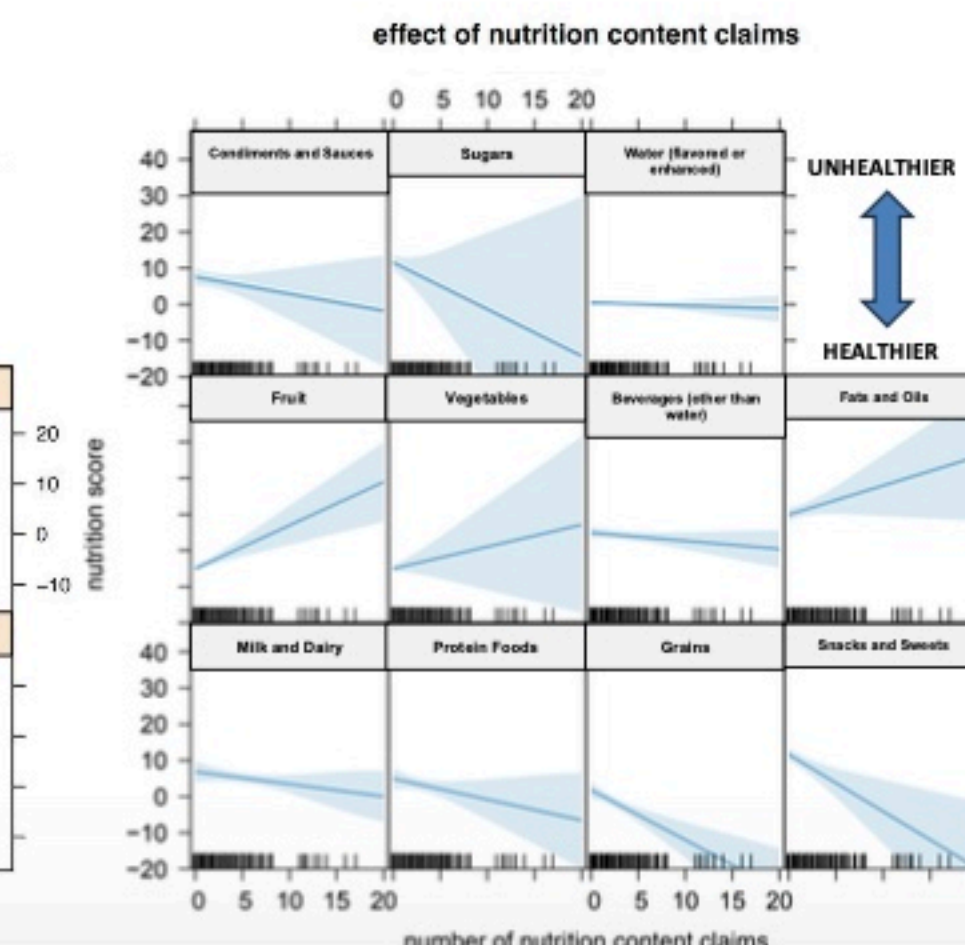
No relationship found in our sample between the number of nutrient content claims and Nutri-Score, with much scatter.



Varying relationships in our data between nutrient content claims and Nutri-Score by item category, no patterns, much scatter.



Model of relationships between nutrient content claims and Nutri-Score by item category, no patterns, wide confidence ranges.

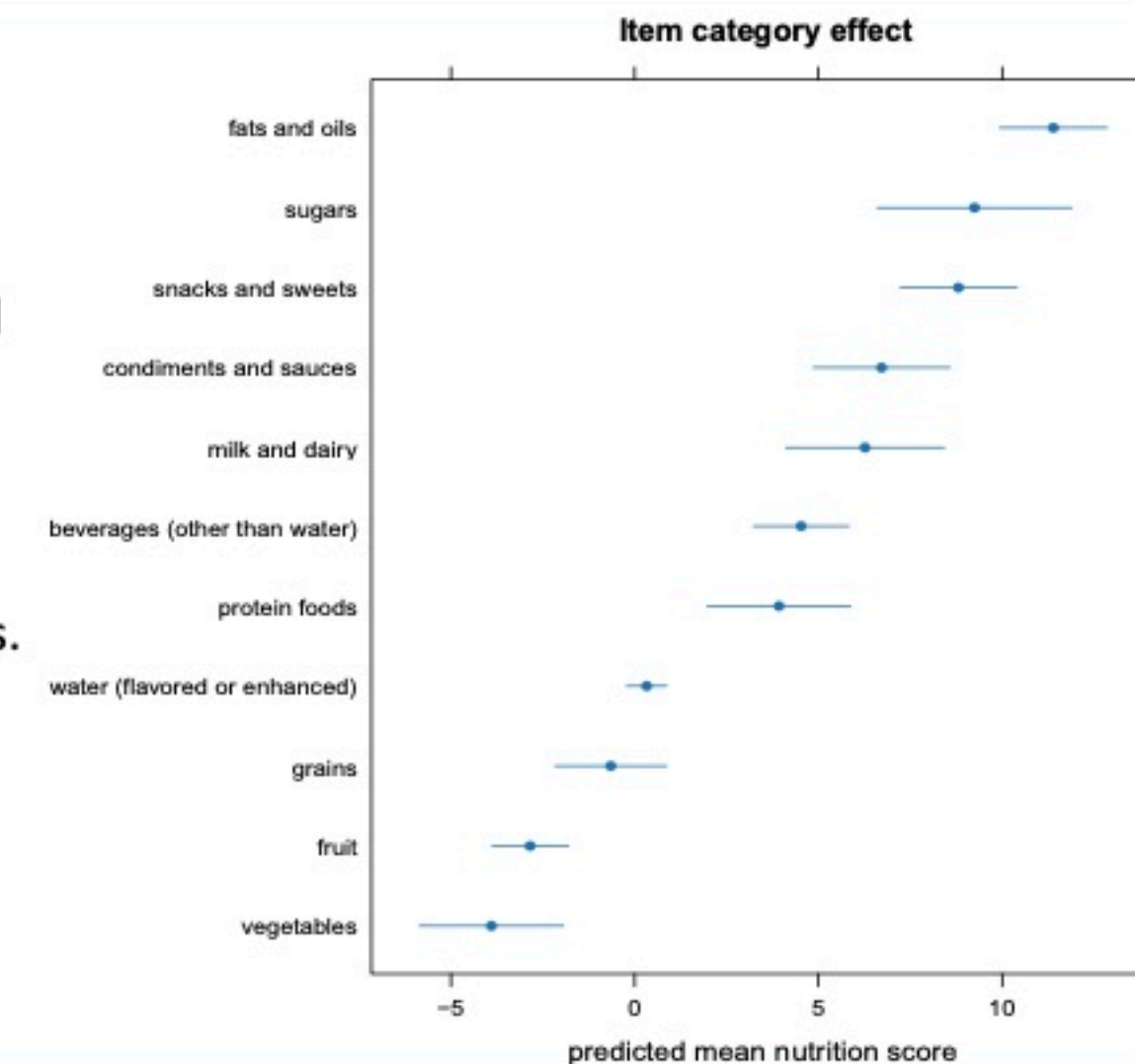


Results (cont.)

Data did reveal one relationship with Nutri-Score. The category of food correlated with food healthiness.

Vegetables scored best, followed by fruits and then grains.

The least healthy foods were snacks and sweets, sugars, and fats and oils.



Conclusions

In our broad sample weighted towards the foods Americans eat most, we found that packaging health claims do not consistently point our patients towards healthy foods, nor do they consistently denote unhealthy foods. The health of foods does not associate with presence or absence of health claims on its packaging. However, we did confirm in our large sample and model that the categories of foods well-known to be healthy do correlate with healthiness. Thus we can advise our patients how to choose foods in the grocery store. Choose foods from categories already known to be healthy (i.e. vegetables, fruits, grains). Do not choose guided by front-of-packaging health claims.

References

- Pollan M, The Omnivore's Dilemma, Penguin Press, 2006.
- USDA Food and Nutrient Database for Dietary Studies, 2017-March 2020. Beltsville, MD: Agricultural Research Service, Food Surveys Research Group. The National Health and Nutrition Examination Survey (NHANES) report titled "What We Eat In America" (WWEIA) is a collection of data from phone surveys conducted in partnership with the US Department of Agriculture and US Department of Health and Human Services.
- Hercberg S, Touvier M, Salas-Salvado J, on behalf of the Group of European scientists supporting the implementation of Nutri-Score in Europe. The Nutri-Score nutrition label. Int J Vitam Nutr Res. 2021;92(3-4):1-11
- Label Claims for Conventional Foods and Dietary Supplements, U.S. Food & Drug Administration, <https://www.fda.gov/food/food-labeling-nutrition/label-claims-conventional-foods-and-dietary-supplements>, accessed October 4, 2023.

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