APPENDIX 1: METHODOLOGY

Sales Analysis

The approach taken by researchers at the University of Oxford is based on a protocol used in peer reviewed published research[1,2] and is similar to the approach taken by the Access to Nutrition Initiative (ATNI) for their product profile.[3]

1 **Identify top 10 manufacturers using sales data**

The top 10 global food and soft drink manufacturers based on sales of packaged food and drinks in the UK were identified based on Euromonitor global sales data for 2022[4]. A list of brands for each manufacturer was produced based on Euromonitor sales data, and this list was verified by checking the company website.

Brands for Cereal Partners Worldwide were reassigned to global brand owner Nestle in this study. The following exclusions were applied: non-food products (e.g. home care and pet food), alcohol and low-alcohol products, tobacco, dried tea and coffee, infant formula, baby food and seasonal products.

In total 241 brands and 5,298 products were included in the analysis.

2 **Identify nutrition information using foodDB[5]**

The nutrition information for each brand was identified using foodDB, a database of product information collected from 7 retailer websites in May 2022 (Asda, Iceland, Morrisons, Sainsbury's, Tesco, Ocado, Waitrose), which was the most recently available data to researchers. By modifying existing code, products from foodDB were matched to the brands and companies identified in Step 1. Duplicate products were identified and removed based on exact matches for product name and calorie and salt content per 100g.

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[1] Bandy L, Hollowell S, Harrington R, et al. (2021) Assessing the healthiness of UK food companies' product portfolios using food sales and nutrient composition data. *PLoS ONE* 16(8): e0254833.
[2] Bandy L, Jewell J, Luick M. et al. (2023) The development of a method for the global health community to assess the proportion of food and beverage companies' sales that are derived from unhealthy foods. *Global Health* 19,94.
[3] ATNI product profile: https://accesstonutrition.org/index/global-index-2018/product-profile/
[4] Euromonitor International. https://www.euromonitor.com/
[5] Harrington R, Adhikari V, Rayner M, et al. (2019) Nutrient composition databases in the age of big data: foodDB, a comprehensive, real-time database infrastructure. *BMJ Open* 9**:**e026652

3 **Applying the UK nutrient profile model**

The UK FSA/Ofcom nutrient profile model (NPM)[6] was applied to each product. Data given per 100ml was assumed to be equal to 100g, which we acknowledge as a limitation. Foods that scored 4 or more and soft drinks that scored 1 or more were classified as high in fat, sugar or salt (HFSS) or 'unhealthy'. Work was done to identify % fruit, nut and vegetable (FNV) content of products in order to apply the NPM thresholds for FNV based on their category. 57 brands could not be matched with any product data. 22 brands (representing 9% of total value sales) were included based on the reasonable assumption that they were obviously either HFSS (ice cream, chocolate confectionery) or not (bottled water). 35 brands (representing 1% of total value sales) were excluded.

4 **Identifying brands with multiple product variants**

Brand-level sales data, as opposed to individual product-level sales data, was used in this project. It was assumed that the sales of each product variant was equal for brands where matched products were 100% or 0% HFSS (n = 199). Brands with multiple product variants that had different nutrition content (i.e. flavour variants) and different NPM scores were identified. 42 brands were identified - referred to here as 'mixed brands' and went through an additional verification process.

5 **Mixed brand verification**

Product and brand level data from the 42 mixed brands were shared with Data Scientists at Nesta[7] to cross check sales weighting using a separate more detailed sales database which includes detailed product-level sales data. This allowed researchers to more accurately calculate what proportion of sales come from HFSS products rather than assuming that all products under the same brand had equal sales. Euromonitor brand names were matched to the products in the more detailed sales database based on the similarity of the product descriptions using a cosine similarity score. Extra manual steps were then added to ensure that the product names matched were from the same brand as the Euromonitor dataset. The final list of matched products were used to collect all remaining products from those brands in the new more detailed dataset. The proportion of sales from HFSS was then recalculated.

A manual comparison between the Euromonitor HFSS sales proportions and the recalculated sales proportions were carried out by the University of Oxford researchers and Data Scientists at Nesta. The total number of products matched to each brand and the proportion of HFSS sales were compared between the original and additional database. Each brand was discussed between the researchers and a decision by consensus whether to use the additional database was made for each brand.

Of the 42 mixed brands, the proportion of HFSS for 26 brands was recalculated using the additional database while 16 remain equally weighted.

6 **Calculating proportion of sales**

The proportion of each brand and company's sales that are classed as HFSS, as defined by the UK NPM, were calculated.

[6] Department of Health (2011). Nutrient Profiling Technical Guidance.
[7] Nesta. The UK's innovation agency for social good. https://www.nesta.org.uk/about-us/

Limitations

Densities for each category were not available, and therefore 100ml was assumed to be 100g.

Both the product data from foodDB and the sales data from Euromonitor were from 2022 and therefore will not reflect new product launches, discontinuations or reformulation of products that have taken place since.

While Euromonitor is an internationally recognised database that is used industry-wide, we are not able to independently verify the accuracy of the sales data they provided.

Advertising Analysis

Analysis was undertaken by members of the Bite Back team and reviewed by Nielsen Ad Intel.

1 Advertising data was accessed from the Nielsen Ad Intel database[8] on 27.07.2023.

2 The data was downloaded on digital and social media spend covering January 1st to December 31st 2022 of particular food and drink categories of concern to children's diets (based on their inclusion in the UK Government's calorie or sugar reduction programmes[9] and/ or their contribution to children's sugar intake)[10].

3 The data was divided into retailers and manufacturers and analysed by 'Product Category Minor' field in the Nielsen Ad Intel database. This categorisation was done by Bite Back, as Nielsen Ad Intel does not define retailers and manufacturers.

4 Advertising spend for brands included in the sales portfolio analysis were identified and grouped for key categories. The contribution of the top 10 businesses' collective advertising spend to total category spend was calculated.

5 The data is owned by Nielsen Ad Intel and the report has been checked and approved by their team. Advertising spend is estimated based on Nielsen Ad Intel costing methodologies

Limitations
Advertising spend is reported by category of concern to children's diets. Adverts included may have featured HFSS and non-HFSS products.

Nielsen Ad Intel does not include Tik Tok, so online advertising spend will be underestimated.

[8] Nielsen Ad Intel. https://www.nielsen.com.
[9] Office for Health Improvement and Disparities. Sugar, salt and calorie reduction and reformulation https://www.gov.uk/government/collections/sugar-reduction
[10] Office for Health Improvement and Disparities. National Diet and Nutrition Survey. https://www.gov.uk/government/collections/national-diet-and-nutrition-survey

Reformulation Analysis

Research was undertaken by members of the Bite Back team. Data on the top 10 businesses' reformulation progress was collated from the Office for Health Improvement and Disparities 2022 report: Sugar reduction – industry progress 2015 to 2020[11].

[11] Office for Health Improvement and Disparities (2022). Sugar reduction programme: industry progress 2015 to 2020. https://assets.publishing.service.gov.uk/media/6388cd71d3bf7f328c0ded27/Sugar-reduction-and-reformulation-progress-report-2015-to-2020.pdf

APPENDIX 2: MANUFACTURER RESPONSES

The Top 10 businesses were given the opportunity to provide a written response to our research. The following were provided:

Danone, Groupe
Consumers are increasingly health conscious, but still want to enjoy the taste of the nutritious foods they buy. Reformulating products to meet these needs is challenging. But we have worked hard to make our portfolio healthier and have now made ambitious commitments to hold us to the high standards we have reached. Our commitment is that 90% of our dairy, beverages and plant-based products by sales volume will be non-HFSS*. We'll also never again produce an HFSS product for children. Making these commitments means we will continue to develop innovative ways to make products both healthy and delicious, because it's important that food businesses can grow healthily and sustainably.

* as defined by the UK Government's current policy and legislation relating to HFSS

Nestlé SA
We are supportive of transparent reporting and welcome any efforts to help harmonise industry reporting. This report excludes the sales of over half of our products in scope of the UK Nutrient Profiling Model including coffee and coffee mixes which are more than 98% non-HFSS. We publish data regarding the status of our entire portfolio with HFSS products accounting for only 27% of our portfolio in 2022. The huge discrepancy between this report and our published data is due to a vastly different scope, diverse methodologies and inconsistencies in HFSS calculations and demonstrates the importance of a consistent approach to reporting.

PepsiCo Inc
PepsiCo UK has led the crisps and savoury snacks category for almost 20 years in developing healthier products without compromising on taste and quality. In 2022, we set a new ambition to make half our snacks sales come from healthier alternatives by 2025, targeting 30% to come from non-HFSS products and 20% from portions of 100 calories or less.* During 2023, we were over halfway to reaching this goal after only a year into an initial three-year investment of £35 million to drive product innovation and reformulation. Over 90% of the colas we sell are sugar-free versions and 99% of our Quaker portfolio is non-HFSS. We know there's more to do and are working hard to shift even more of our sales to healthier alternatives.

* Not classified as high in fat, salt or sugar or from portions of 100 Calories or less per packet. This includes a small percentage of snacks that are exempt from the HFSS product placement restrictions that came into force in October 2022 even though they may not meet the definition under the 2004/2005 Nutrition Profile Model.

Unilever Group
At Unilever we have taken action to reduce the salt, sugar and calories in our products whilst keeping their great taste and have set stretching nutritional targets to accelerate our impact. We share Bite Back's ambition for greater transparency and accountability in reporting and were the first company to assess and publicly report our portfolio against six government-endorsed Nutrient Profile Models (NPM). Bite Back's analysis captures only 63% of Unilever's UK portfolio (648 products across 26 brands). Using Unilever's own published data, capturing 100% of our product portfolio (1031 products across 34 brands) as of 2022, 32% of our UK portfolio is non-HFSS.

No responses were provided by the following businesses:

- Coca-Cola Co, The
- Ferrero & related parties
- Kellogg Co
- Kraft Heinz Co
- Mars Inc
- Mondelez International Inc