



**The Food  
Foundation**

# **The Broken Plate 2025: Technical Report**

DATE: January 2025

**The Food Foundation**

+44(0)20 3086 9953 | [foodfoundation.org.uk](http://foodfoundation.org.uk) | [@Food\\_Foundation](https://www.instagram.com/Food_Foundation)

## Metric 1: Food promotions

### Data source(s)

Questionmark Foundation

### Methodology

We worked with [Questionmark Foundation](#), an international non-profit think tank, to look at what type of foods are included as part of multibuy and price reduction promotions. Data was collected for the period 4<sup>th</sup> – 6<sup>th</sup> March 2024. We looked at food and drink promotions available across six of the major UK retailer’s webshops, representing a market share of 77%; Aldi, ASDA, Iceland, Morrisons, Sainsbury’s and Tesco.

Questionmark identified a total of 17,686 multibuy and price reduction promotions. Where multiple promotions were detected for the same product, price reduction promotions were selected over multibuy promotions.

Nutritional information was scraped for each of products on promotion, and we used the Government’s Nutrition Profiling Model (NPM) to assess the healthiness of offers. Using these criteria foods scoring 4 or more points, and drinks scoring 1 or more points, are classified as high in sugar, salt and/or fat (HFSS).

Note that the Government’s NPM and its definition of HFSS were applied to all products and categories, not just the limited categories within scope as per the government’s definition for the restriction of location-based and volume promotions of HFSS foods.

Products where nutrient information is missing online, which makes it difficult to calculate an (accurate) NPM score and determine whether the product is HFSS or not, were categorised as “unknown”. This included dried herbs, spices & marinades. Vitamins, medicines, and other non-food products were excluded, as were alcoholic drinks and baby/toddler foods. In the case of soft drinks, products which contain less than 4.5g of sugar/100ml (0 score NPM) were categorised as non-HFSS even if the ingredients stated fruit.

We calculated the total number and proportion of multibuy and price reduction promotions for each NPM category.

### Additional sweeteners and emulsifiers analysis:

Questionmark also identified promotions on products containing sweeteners based on the [NHS](#) and [FSA](#) lists of sweeteners approved in the UK, as well as the following additional sweeteners:

- Fructo-Oligosaccharide
- Xylose
- Thaumatin
- Cyclamate
- Glycerol
- “Sweetener” (the generic term, sometimes mentioned in the ingredients)

Additives that can be used both as a sweetener and for other functions, e.g. dextrin, isomalto-oligosaccharide, some forms of starch, were not generally included.

For emulsifiers, promotions including the word “emulsifier” in the ingredients were filtered in Excel. Products with no

ingredient data were excluded from the analysis.

The total number and proportion of multibuy and price promotions that contained sweeteners and/or emulsifiers for three categories – yogurts, cereal bars and breakfast cereals. These categories are the focus of this metric because, unlike products such as cakes and confectionery, they are often selected by people who believe they are part of a healthy diet. Each category included the following sub-categories as assigned by Questionmark:

- Yogurt: "Yogurts" and "Dairy-free yogurts". "Plain yogurt (unsweetened natural)" was excluded these products are not covered by the [HFSS promotion restrictions](#).
- Breakfast cereals: "Cereals (dry)", "Cereals - porridge oats, plain (dry)", "Cereals - porridge oats, flavoured (sachets)", "Cereals / porridge - in pots (dry)" and "Cereals / porridge - ready to eat".
- Cereal Bars: "Cereal bars".

This part of the analysis excluded promotions on products whose NPM score could not be calculated ("unknown"). Promotion counts were as follows: yogurts n = 302 (unknown = 5); breakfast cereals n= 326 (unknown = 3); cereal bars n = 165 (unknown = 63).

## Metric 2: Advertising expenditure on food

### Data source(s)

Nielsen Ad Intel

### Methodology

Nielsen measures advertising expenditure across all media channels. Nielsen's advertising expenditure is used by advertisers and networks to shape the buying and selling of advertising.

Nielsen ran a report for use in Broken Plate for the 12-month period August 2023 to July 2024. This included data on advertising spend across seven different traditional media channels (cinema, direct mail, door drops, outdoor, press, radio and TV) for the 273 minor product categories which are included within the 'food' and 'drink' major product categories. This year Nielsen also ran a report on food and drink advertising spend on digital and social media channels during this period. Given the fast-moving and highly targeted nature of spend on these channels, this data is indicative rather than capturing actual spend.

Comparison to previous years' is from data included in previous Broken Plate reports.

There is a significant amount of volatility year on year in terms of where advertising spend goes. As a result, each year some minor product categories drop off the list and new ones come in, with spend per minor category fluctuating a fair amount.

Minor product categories were allocated to one of the following groups (with the exception of a small number of excluded categories – see below):

- Brand advertising (not on a specific product or category of food)
- Desserts
- Snacks
- Confectionery
- Soft drinks
- Fruit and vegetables
- Carbohydrates
- Condiments
- Cereals
- Convenience foods
- Ready meals
- Meat and fish
- Dairy and alternatives
- Water, tea and coffee
- Other

The categories which were excluded from the analysis were those relating to alcoholic drinks and baby foods.

The "Dairy and alternatives" category was further analysed by comparing spend on dairy-based minor product categories, and spend on the "Lifestyle & Dietary - Dairy Alternatives" and "Lifestyle & Dietary - Milk Alternatives" minor product categories.

The total advertising spend in sterling and percentage (%) spend was then calculated per grouping for traditional media channels. We analysed the proportion of spend on the different food and drink sub-categories within digital and social media channels rather than actual spend due to the nature of the data.

## Metric 3: Marketing of infant foods

### Data source(s)

Action on Salt and Sugar

### Methodology

Action on Salt and Sugar collected data on baby and toddler snacks including nutritional content and claims on the front of packaging. All products were initially collected in store and assessed against the inclusion and exclusion criteria.

#### *Inclusion criteria:*

- Incomplete meals often consumed on the go or in between meals, e.g. biscuits, bars, fruit-based snacks
- Located in the baby food aisle
- Products that have an age guidance on them for 4-36 months

#### *Exclusion criteria:*

- Snacks advertised for children without an age guidance
- Yogurts

Products were collected between January and April 2024 from Aldi, Asda, the Co-operative, Iceland, Lidl, Marks and Spencer's, Morrisons, Sainsbury's, Tesco and Waitrose.

A total of 136 snacks met the inclusion criteria.

The packaging was assessed for front-of-pack claims, and 759 claims were identified across the 136 snacks- an average of six claims per product.

The claims on the packaging were classified using the [WHO's Nutrient and Promotion Profile Model \(NPPM\) for promoting products for infants and young children aged 6–36 months](#) (see Table 1). The NPPM's promotional requirements aim to improve messaging for caregivers by clarifying product age suitability, improving product naming, warning about high sugar content, and restricting health, nutrient, and marketing claims.

According to the WHO:

- **Nutrition claim** means any representation which states, suggests or implies that a food has nutritional properties, including but not limited to the energy value and the content of protein, fat and carbohydrates, as well as the content of vitamins and minerals.
- **Marketing claim** is defined as product promotion, distribution, selling, advertising, product public relations and information services.
- **Health claim** means any representation that states, suggests or implies that a relationship exists between a food (or a constituent of that food) and health.

Nutrition information was gathered for products that met the inclusion criteria and were available for sale at the time of collection. Sugar content is total sugars i.e. any added, free or naturally present sugars. Most of the sugars in these products are likely to be free sugars. 'Free' means that they are sugars not contained within a cell structure, and consuming too much can cause tooth decay.

There is no front-of-pack colour coding criteria specifically for baby foods. Therefore, the standard criteria, based on adult

recommendations, has been used. It is important to note that the maximum amount that is healthy to consume is far less for children, especially infants, than for adults. Front-of-pack nutrition label thresholds are based on total sugars per 100g and are based on guidelines for total sugar intake among adult women. For the reasons exposed above, sugar per portion, free sugars and specific sugar recommendations for children are not taken into consideration and thus these figures likely underestimate the concerning level of sugar.

Of the products included:

- 36 (26%) products were green (low) for sugars per 100g
- 67 (49%) products were amber (medium) for sugars per 100g
- 33 (24%) product was red (high) for sugars per 100g
- Average sugars per 100g is 17.7g.

Table 1:

Prohibited compositional, health and marketing claims on promotional materials (pack labels and other marketing materials) by WHO		
Category	Subcategory	Details / Examples
Composition and nutrition claims	Statements relating to the presence or absence of ingredients generally perceived to be harmful or beneficial	“no...”, “no added...”, “low in...” [sugar, salt, condiments, artificial flavour/colour, maltodextrin, modified starch, additives/preservatives, GMO, junk, etc.] “contains only naturally occurring...” [sugars, salt, etc.]
	Statements relating to the natural or healthful nature of ingredients	“contributes one of your five-a-day [fruit/vegetables]” “contains three types of vegetables”, “contains vegetables” “organic food”, “natural”, “fresh”, “100% natural”, “real fruit/vegetables”
	Statements implying nutritional idealism, high nutrient content or presence of nutrients generally not considered in home-prepared foods	No product should imply that commercial foods are nutritionally superior to home-prepared foods or otherwise undermine important public health recommendations. for example: “nutritionally balanced”, “perfect/unique balance of vitamins/minerals”, “ideal nutrients”, “provides good nutrition to children” “contains...” “a source of...” [minerals, vitamins, iron, vitamin B1 , a host of nutrients, dietary fibre, omega-3, probiotics, prebiotics, protein, amino acids, phospholipids, DHA, carbohydrate, arachidonic acid, etc.]
Health claims	Statements relating to beneficial health or development resulting from the food or ingredients	“good for...”, “supports...”, “improves...”, “...needed for...” [healthy growth, development, digestion, appetite, learning to chew, learning to hold, constipation, defecation, bones and teeth, enteric flora, the brain, eyes, vision, skin health, thyroxine synthesis, red blood cell synthesis, preventing iron deficiency anaemia, collagen synthesis, metabolism, cognitive development, immune system etc.]

	Statements relating to the general healthful nature of ingredients or recipes	<p>“healthy”</p> <p>“goodness of cereals”, “extra goodness with wholegrain oats”, “infant cereal is the ideal foundation to a healthy and balanced diet”, “perfectly balanced to support growth”</p> <p>“draws inspiration from the Mediterranean approach to health and well-being”</p>
Marketing claims	Statements relating to ideal taste	<p>“delight for tiny taste buds/tiny tummies”, “tasty/yummy/delicious”, “suitable for picky eaters”, “in my home the whole family loves them”, “my flavours are a new journey for tiny taste buds”, “exotic dishes are full of variety and flavour”, “simple flavour”</p>
	Statements relating to high product quality	<p>“picked at the peak of ripeness”, “bursting with goodness and flavour”, “individually steam cooked”, “we use over 27 different fruits and vegetables”, “we only use specially selected ingredients”</p>
	Statements relating to ideal food texture	<p>“smooth”, “no bits/chunks”, “easy-to-swallow texture that is great for helping your little one as they start to explore solid foods”, “perfectly smooth texture has been specially developed as an ideal first weaning food”</p> <p>“I’m textured”, “yummy crispy bits will encourage your baby to begin to chew”, “ideally suited to promote exposure to textures”</p>
	Statements relating to convenience or lifestyle	<p>“convenient”, “great for a busy and active life”, “ideal for breakfast or meals on the go”, “simply to top up between meals”</p> <p>“great way to make fruit fun”</p> <p>“closest thing to homemade with all of the goodness and none of the guilt”</p> <p>“inspired by my favourite home-cooked recipes”</p>
	Statements conveying ideals on optimum feeding	<ul style="list-style-type: none"> <li>• “making the right feeding choices for you and your baby”</li> <li>• “helps to build confidence and enjoyment with food”</li> <li>• “we’ve been pioneering research into infant and toddler nutrition for over 50 years to help you give your baby the best start in life”</li> <li>• “carefully prepared by our baby-food experts”</li> <li>• “grown by farmers we know and trust”</li> <li>• “nothing unnecessary”, “no junk”, “nothing nasty”</li> <li>• “encourages self-feeding”, “perfect for small hands”</li> <li>• “perfect/ideal/optimum... way to feed/introduce foods”</li> <li>• “breakfast is one of the most important meals of the day”</li> <li>• “we guarantee our products provide the best</li> </ul>



		possible start for your baby”
	Statements encouraging dismissal of public health recommendations,	<ul style="list-style-type: none"> <li>• “the government advises that you don’t need to wean your little one until they are 6 months old. Every baby is different!”</li> <li>• “the Department of Health and the World Health Organisation recommend exclusive breastfeeding for the first six months. However, if you choose to wean earlier, our ingredients are suitable from 4 months”</li> <li>• Any text or other representation that is likely to undermine or discourage breastfeeding, or that makes a comparison to breastmilk or that suggests that the product is nearly equivalent or superior to breastmilk;</li> </ul>
	Statements/labels implying product or brand support from experts and trustworthy or influential individuals, groups or organisations	No product should convey an endorsement or anything that may be construed as an endorsement by a professional or other body, unless this has been specifically approved by relevant national, regional or international regulatory authorities. For example: <ul style="list-style-type: none"> <li>• “quality approved by Mums”</li> <li>• “approved by nutrition experts/celebrities”</li> <li>• “endorsed by paediatricians/national child’s association”</li> </ul>
	Statements conveying other idealistic or charitable attributes of the product or brand	<ul style="list-style-type: none"> <li>• “committed to giving 10% of profits to help fund food education charities”</li> <li>• B corporation certification, Hain Celestial or other corporate certification implying superior or other ethical or charitable brand attributes and unrelated to product nutrition or content</li> </ul>
<b>Allowed promotional messages (packs, labelling and marketing) by WHO</b>		
No compositional, nutritional, health or marketing claims	Statements relating to common allergens	(such as containing or being “free from... [gluten, dairy/lactose, or nuts]” etc.)
	statements relating to religious or cultural requirements	(such as “meat-free”, “vegetarian”, “contains meat”, “Kosher”, “Halal”, etc.)
	descriptive words may be used within the ingredient list	(such as “organic carrots” and “wholegrain wheat flour”)
Promotion and protection of breastfeeding	Statement on the importance of continued breastfeeding for up to two years or beyond and the importance of not introducing complementary feeding before 6 months of age	<p>"Breastfeeding is recommended for at least the first two years of life. Complementary foods should not be introduced before six months of age."</p> <p>"Our products are designed to complement your baby's diet after six months."</p>

## Metric 4: Sugar in children’s food products

### Data source(s)

Action on Salt and Sugar

### Methodology

Action on Salt and Sugar collected full nutritional data of breakfast cereals and yogurts, following strict inclusion and exclusion criteria for what would be deemed ‘child friendly packaging’ based on previous surveys for the Broken Plate. These two product categories are the focus of this metric because, unlike products such as cake and confectionery, yogurt and cereal are often chosen by parents who believe they are part of a healthy diet, unaware that hidden sugars are among the main ingredients.

Data were collected in stores between January and April 2024 and a total of nine major supermarkets were included: Aldi, ASDA, Lidl, Ocado (including Marks & Spencer’s), Morrisons, Sainsbury’s, Tesco, The Co-operative and Waitrose & Partners.

#### Inclusion criteria:

- Child friendly imagery (such as cartoon characters)
- Child friendly style (such as bright colours, animated)
- Child friendly brand character (such as Tony the Tiger)
- Child friendly font (such as balloon letters and child friendly fronts)
- Child friendly media partnerships (such as Disney)
- Child friendly offers (such as a free game)
- Child themed language (such as ‘made for kids’)
- Child friendly activities (such as word searches on the back of pack)

#### Exclusion criteria:

- Animations that are part of company logos
- Non-child themed lifelike drawings (such as pencil like drawings or sketches)
- Duplicates of the same product, in but in different packaging sizes

Products that met the inclusion criteria were assessed against the Government’s Front-of-Pack Nutrition Labelling Guidance to note how many products were high, medium, or low in sugar.

Nutrition information was gathered for products that met the inclusion criteria and were available in store for sale at the time of data collection. Cereal and yogurts that were collected the previous year but not found in-store were then sought online, and if in stock on any retailer’s website (including Ocado) and still meeting the inclusion criteria, they were included in the final dataset.

**Table 1 – Sugar labelling criteria for 100g of food**

	Low	Medium	High
Colour Code	Green	Amber	Red
(Total) Sugars	≤5.0g/100g	≤5.0g to <22.5g /100g	≥22.5g /100g

A total of 136 breakfast cereals and 66 yogurts met the inclusion criteria. There are differences in the total number of products surveyed each year due to factors such as: new product development, changes in product packaging which

falls in or out of scope of the inclusion criteria, and the availability of products in-store and online at the time of data collection.

## Metric 5: Places to buy food

### Data source(s)

Data from Ordnance Survey and analysed with the MRC Epidemiology Unit at the University of Cambridge. © Crown copyright and database rights 2024 Ordnance Survey. This product includes data licensed from PointX © Database Right/Copyright (2024) and OS © Crown Copyright (2024). All rights reserved.

### Methodology

Data on the proportion of fast-food outlets out of the total number of food outlets for each local authority was obtained from Ordnance Survey's Points of Interest (OS POI) dataset. OS POI data for June 2024 contains information from over 170 suppliers and is one of the most complete sources of food outlet locations available in England. Data were extracted for the locations of cafes, convenience stores, restaurants, supermarkets, specialty and takeaway food ('fast-food') outlets (Ordnance survey, 2018b). OS POI classes 'fast food and takeaway outlets', 'fast food delivery services', 'fish and chip shops' and 'bakeries' which were combined as fast-food food outlets. Though fast-food outlets not necessarily unhealthy, they are typically associated with highly calorific meals options, and are used as a proxy unhealthy food outlets in this metric.

Fast-food outlets as a proportion of all food outlets (%) within local authorities was then calculated. This method is consistent with the method that has been used in previous Broken Plate reports and the data have been compared to data from previous Broken Plate reports to assess changes over time.

To assess the proportion of local authorities that have seen an increase or decrease, percentage change in proportion of fast-food outlets since June 2023 for each local authority was calculated. Percentage change was classified as an increase or decrease if it was 5% or greater.

Local authority deprivation scores were from the Index of Multiple Deprivation 2015. All local authorities were numbered according to their IMD ranking and divided into quintiles in equal proportions. The average density of fast-food outlets for each quintile of deprivation was then calculated.

## Metric 6: Cost of more sustainable options

### Data source(s)

The prices (per litre) and nutritional content (per 100ml) of all almond, oat, rice and soya plant-based milk alternatives sold online from Aldi, Tesco and Waitrose were collected between 18<sup>th</sup> and 24<sup>th</sup> September 2024 (once per retailer). Original product prices were gathered, rather than any promotional prices. The per-litre price of fresh semi-skimmed cows' milk sold in 2-pint bottles was also collected from the three retailers. This bottle size was chosen because it is closest to the container size in which plant-based milk alternatives are often sold (1 litre).

### Methodology

A database containing cows' milk and plant-based milk alternatives from each retailer was created and compared with the Broken Plate 2022 dataset. Information included: type of milk/plant-based alternative, retailer, brand/own brand, price (£/litre), sweetened/unsweetened, fortified/unfortified, organic/inorganic, fresh/UHT. Nutritional information collected included: energy (kcal), fat (g), saturated fat (g), sugar (g), fibre (g), protein (g), salt (g), vitamin D (µg), vitamin B12 (µg), vitamin B2 (µg), calcium (mg), iron (mg), iodine (µg), zinc (mg) and potassium (mg).

Where the same product was sold across more than one retailer, the average price was calculated and recorded in the final database. Retailers were selected to represent a range of price points in the UK supermarket sector - Aldi as the cheapest, Waitrose as the most expensive, and Tesco which falls in the middle but is the supermarket with the largest market share. Aldi's online availability fluctuates considerably; products included from this retailer were those available during the data collection period. We excluded flavoured milk alternatives e.g. chocolate, as well as plant-based milk alternatives not targeted at the general population e.g. children's alternative milks. Coconut milk alternatives are not included due to the absence of comparable environmental data for this sub-category, meaning that they were not included in the 2022 dataset. Rice milk alternatives continue to be included in the 2024 average price (despite only two product lines in 2024) to ensure comparability of the two datasets.

From the final database, the average (mean) price of each type of milk/plant-based milk alternatives (cow, almond, oat, rice and soya) was then calculated per litre, as well as for the whole plant-based milk alternatives category. Average prices were compared with those collected in May 2022 for Broken Plate 2022 using the same method.

## Metric 7: Cost of healthy food

### Data source(s)

Analysis of the Office for National Statistics (ONS) Consumer Price Index (CPI) continuous dataset; National Diet and Nutrition Survey (NDNS) waves 9-11.

Analysis by the MRC Epidemiology unit at the University of Cambridge.

### Methodology

The MRC Epidemiology unit at the University of Cambridge built on food price research first conducted in this 2014 [paper](#) and matched price data for food and drink items that have been tracked by the Office for National Statistics' Consumer Price Index (CPI) between 2014-2024 to food and nutrient data from the National Diet and Nutrition Survey.

Price per 1,000 kilocalories in each quarter of each year was calculated for each item and mean price across each quarter in each year calculated. Using price per kilocalorie is a helpful way to understand the relative prices of foods which make up diets and meals, rather than comparing individual products within specific food categories.

Each item was categorised as either 'more healthy' or 'less healthy' using the nutrient profiling model developed by the Food Standards Agency (FSA) in 2004 and updated by the Department of Health and Social Care (DHSC) in 2011. The method plotted trends in median price per 1000kcal per year for more and less healthy items.

#### *Imputation of prices*

For a number of products, prices were not collected across all quarters. In these cases, missing price data was imputed using the price of the quarter before (i.e. last value carried forward). Furthermore, in the first two quarters of 2019 no prices were collected. As such, the prices of the last quarter of 2018 were used instead.

#### *Data differences old analysis (in Broken Plate 2023) versus new analysis (Broken Plate 2025)*

This year we have updated the methodology from previous Broken Plate reports and therefore the findings are not directly comparable. For this year's report, we included food items from each CPI basket from 2014 to 2024, without excluding items that were not consistently present throughout the entire period. The methodology was refined to reflect price changes due to shifts in food costs or variations in items included. Since the Office of National Statistics selects the most popular items for its basket, including all items could provide a more accurate like-for-like indicator of the price trends for popular foods.

In previous years, we removed certain food items from the analysis if they were replaced by new ones. For example, we excluded items 211602 and 211603 (EGGS-MEDIUM-PER DOZ OR 2 X 6 & EGGS-LARGE-PER DOZ OR 2 X 6) when they were replaced by item 211604 (EGGS PER DOZEN OR 2 X 6 BOX). However, this year, we included all these items, as it was no longer necessary for food items to be present in the CPI basket for all 11 years of the study.

Additionally, the calorie content of food items has been updated. Older CPI items (used in the Broken Plate analyses prior to 2021) were linked to NDNS data from years 3-7 and only new CPI items were linked to more recent NDNS data from years 9-11.

Given that the calorie content of NDNS items can change over time (for instance, due to the introduction of the SDIL tax, which reduced the sugar content in fizzy drinks) and considering evolving consumption habits, the calories of all CPI items in baskets from 2014 to 2024 have now been updated and linked to NDNS data from years 9-11. For

example, In NDNS years 1-4 data, the items "COLA NOT CANNED NOT LOW CALORIE NOT CAFFEINE FREE" and "COLA LOW CALORIE NOT CANNED NOT CAFFEINE FREE" were both consumed by approximately 1,600 participants. This means their calorie contributions were equally weighted when calculating the calories for the CPI item "FIZZY BOTTLED DRINK 500ML". However, in NDNS years 9-11, these items were consumed 160 and 408 times respectively, indicating that the calories for the CPI item would now be more influenced by the NDNS food item that is consumed more frequently.

#### *Other comments*

Similar to previous years, we removed items which contain no calories such as water, tea and diet coca cola. We also removed the food items protein powder and baby food as these are consumed by a very specific population.

This year we also removed outlier items -products with a price per 1000 calories greater than the mean by more than three standard deviations. Excluding these outliers, such as chewing gum, peppers, blueberries, and mushrooms (which are high in price per 100 grams but low in calorie content), reduced the overall price levels across both healthy and less healthy FSA categories. However, this adjustment did not affect the trends in price development over time.

## Metric 8: Affordability of a healthy diet

### Data source(s)

Dr Asha Kaur and Prof Peter Scarborough (2023), '[The cost of achieving the Eatwell Guide diet 2023 update](#)'.

Department for Work and Pensions, '[Households below average income: for financial years ending 1995 to 2023 – part of the Family Resources Survey \(FRS\)](#)'.

Analysis by London School of Hygiene & Tropical Medicine.

### Methodology

The 2022/23 Households below average income (HBAI) dataset was used in conjunction with an estimate of the daily cost of adhering to Eatwell Guide to calculate the average proportion of unequivalised household disposable income (after housing costs) that would be used up by the estimated household Eatwell cost, by income quintile.

The cost of the Eatwell Guide was estimated using a methodology based on [modelling published by Scarborough et al., 2016](#). The updated methodology uses a more comprehensive database of food items and prices (13,912 food and drink items for the 2022 analysis vs. 7,575 items which were used in the 2016 modelling). The cost of the Eatwell Guide was estimated to be £7.48 per adult per day, based on food price data for 18,441 products from May 2022. To take inflation into account, the £7.48 figure was therefore adjusted based on the headline CPI inflation figure for 'food and nonalcoholic beverages' inflation from May 2022 to April 2024, taking the Eatwell Guide cost to £9.00.

A secondary analysis of the FRS was then conducted, in which the estimated cost of an 'Eatwell' diet was considered in relation to UK household disposable income from 2022/2023, building on the methodology set out in The Food Foundation's 2018 report, '[The Affordability of the Eatwell Guide](#)'.

Weekly Eatwell cost per household was determined based on household composition. To consider different dietary intakes of children under 19 years, as well as economies of scale that would likely affect the overall Eatwell cost for a household, the McClement's equivalence scale was used to adjust the per-person cost. Although a crude method, the McClement's scale was chosen over alternative equivalisation scales (e.g. OECD) because it better captures age group differences. This approach was also chosen over adjusting the adult cost based on recommended energy requirements (EAR) by age group/sex because it considers economies of scale with increasing numbers of household members, which an EAR approach would not.

Disposable income was defined as the amount of money available for spending and saving after direct taxes (such as income tax, national insurance and council tax) and after housing costs (AHC) are removed. It includes income from earnings and employment, private pensions and investments, and cash benefits provided by the state. Disposable income in the HBAI also includes the value of Free School Meals. Housing costs removed from disposable income included: rent; water rates, community water charges and council water charges; mortgage interest payments; structural insurance premiums; and ground rent and service charges.

To analyse the cost of adhering to the Eatwell Guide for each income quintile at the population level, we examined the average proportion of disposable income that would be allocated by households to the Eatwell Guide costs across different quintiles. Within these population-level income quintiles, we further broke down the analysis to compare households with children to those without children, providing a nuanced view of how the cost burden varies depending on household composition.

The cost of achieving the Eatwell Guide was estimated using a methodology that is comparable to the findings in the



Broken Plate 2022 and 2023, but not directly comparable to the figures provided in Broken Plate Reports from 2019, 2020 and 2021 which used a different methodology.

## Metric 9: Nutritious food consumption

### Data source(s)

National Diet and Nutrition Survey (NDNS) waves 9-11.

### Methodology

Data were analysed from the National Diet and Nutrition Survey Year 9-11 for children less than 19 years old. Quintiles represent equivalised income. The results were considered significant at  $P < 0.05$ .

## Metric 10: Greenhouse gas emissions from the food system

### Data source(s)

Henry Dimbleby (2021), "The National Food Strategy: The Plan"

Tara Garnett (2008), "Cooking up a storm. Food, greenhouse gas emissions and our changing climate".

Department of Energy Security and Net Zero (2024), "2022 UK Greenhouse Gas Emissions, Final Figures".

Analysis by Green Alliance

### Methodology

This analysis provides an updated assessment of emissions from the food system, building on the findings from the National Food Strategy. The data presents the emissions breakdowns across the following categories: agriculture, fertiliser manufacturing, food manufacturing, packaging, transportation, home-related, retail, catering, and waste disposal for the years 2008, 2018 and 2022. Emissions data for 2008 were sourced from *Cooking up a Storm* by Garnett, T. (2008), and subsequently updated for 2018 by the National Food Strategy authors, and for 2022 by Green Alliance for Broken Plate. These updates reflect the decarbonisation progress in each sector of the UK economy, as reported in the Department of Energy Security and Net Zero, 2022 UK Greenhouse Gas Emissions, Final Figures.

## Metric 11: Children's weight

### Data source(s)

England: National Child Measurement Programme, NHS Digital.

Wales: Child Measurement Programme, NHS Wales.

Scotland: Primary 1 Body Mass Index (BMI) statistics Scotland, Public Health Scotland.

### Methodology

The Child Measurement Programmes in the three nations are annual surveillance programmes that measure the weight of children.

For England, the data reported is for children in Reception (age 4-5). Due to disruptions caused by Covid-19, fewer children than usual were measured in 2020/21. Statistical weighting was therefore applied to data collected to produce estimates of the prevalence of underweight, healthy weight, overweight, obese and severely obese children at national level that can be compared to data from previous years. Deprivation is measured by the Index of Multiple Deprivation (IMD) and is based on postcode of the school. The Food Foundation took the average of the two most deprived deciles to provide an estimate of the prevalence by quintile of deprivation.

For Wales, the data refer to children aged 4-5 years. Due to pandemic restrictions, there were insufficient data to produce an official statistics report for 2019/20, and limited data were available for 2020/21 and 2021/22 and therefore there is a gap in the data available. Deprivation is based on postcode area of the child's home. Postcodes are mapped to the Welsh Index of Multiple Deprivation (WIMD), a relative measure that ranks 1,909 small geographical areas in Wales from least deprived to most deprived. The WIMD is derived from eight domains: employment, health, education, access to services, community safety, physical environment, and housing. For reporting purposes, the 1,909 areas are grouped into quintiles. Health board and local authority figures use local fifths of deprivation, and no independent analysis was conducted by The Food Foundation.

For Scotland, the data are for children in Primary 1 (age 4.5-6.25). Similarly, Covid-19 disruption means that fewer children than usual were measured 2020/21, and there was also variability in coverage within and between areas. In view of this, detailed analysis was carried out to check whether the data submitted was comparable to previous years, and at a national level, these analyses indicate that they are sufficiently comparable to earlier years to provide meaningful trend data. Deprivation was measured by the Scottish Index of Multiple Deprivation (SIMD). Data definitions are based on epidemiological categories (rather than clinical categories) which defines obesity as a BMI greater than or equal to 95th centile. The data are presented as published by Public Health Scotland and no independent analysis was conducted by The Food Foundation.

Northern Ireland report on children's weight using international definitions of overweight and obesity rather than the definitions used by the other three nations in the UK and therefore hasn't been included as it is not comparable to the other countries

## Metric 12: Diabetes-related amputations

### Data source(s)

NHS Digital, [National Diabetes Audit](#).

### Methodology

The Complications and Mortality Outcomes data presents demographic information for each complication/outcome and diabetes type, using data from the National Diabetes Audit (NDA), Hospital Episode Statistics (HES), Patient Episode Database for Wales (PEDW), and the Office for National Statistics (ONS). Data on lower limb amputations is shown for England and Wales for the calendar years 2009 to 2022. Deprivation quintiles are based on the Index of Multiple Deprivation.

## Metric 13: Dental decay

### Data source(s)

Office for Health Improvement and Disparities, National Dental Epidemiology Programme (NDEP) for England: oral health survey of children in year 6, 2023.

Office for Health Improvement and Disparities, Hospital tooth extractions in 0 to 19 year olds, 2023

### Methodology

The data presented are from the sixth National Dental Epidemiology Programme survey of children in year 6 in England, 2023 conducted by the Office for Health Improvement and Disparities. The data was collected during the 2022/23 school year. Deprivation groups are based on the index of multiple deprivation 2019 (IMD 2019) scores based on the home postcodes of the participants. Deprivation scores were used to allow weighting of the data to more closely match the actual distribution of deprivation quintiles in the source population. The figures presented are for dental decay and do not include enamel decay.

The data on hospital-based tooth extractions for individuals aged 0 to 19 was sourced from the Admitted Patient Care (APC) records within the Hospital Episode Statistics (HES) dataset, provided by NHS Digital. This dataset captures inpatient and day-case care from NHS hospitals across England. Each recorded unit, known as a finished consultant episode, represents the time a patient spends under the care of a single hospital consultant.

The data are presented exactly as published by the UK Government and are not independently analysed by The Food Foundation.

