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# Food Reformulation Task Force:

# Benchmarking the nutrient content of children's meals sold in the foodservice sector and guiding principles for their reformulation

MONITORING & SURVEILLANCE SERIES

**Food Reformulation Task Force: Benchmarking the nutrient content of children's meals sold in the foodservice sector and guiding principles for their reformulation**

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# Glossary

| Term | Text |
|---|---|
| **AR** | Average Requirement |
| **CATI** | computer aided telephone interviewing |
| **DRVs** | Dietary Reference Values |
| **EC** | European Commission |
| **EFSA** | European Food Safety Authority |
| **FBDG** | Food-Based Dietary Guidelines |
| **FRT** | Food Reformulation Task Force |
| **FSA** | Food Standards Agency in Northern Ireland |
| **FSAI** | Food Safety Authority of Ireland |
| **g** | gram (s) |
| **IQR** | interquartile range |
| **IUNA** | Irish Universities Nutrition Alliance |
| **Kcal** | kilocalories |
| **min-max** | minimum and maximum values |
| **mL** | millilitres |
| **n** | number of samples |
| **NCDs** | noncommunicable diseases |
| **NCFS** | National Children's Food Survey |
| **NI** | Northern Ireland |
| **NMR** | Nuclear Magnetic Resonance |
| **OOH** | out-of-home |
| **PAL** | Physical Activity Level |
| **RI** | Reference Intake |
| **SD** | standard deviation |
| **TE** | total energy |
| **UK** | United Kingdom |
| **WHO** | World Health Organization |

# 1. Introduction

## 1.1 Purpose

The purpose of this survey was to establish a 2024 benchmark of the nutrient content of popular meals offered on children's menus in the Irish foodservice[1] sector. This benchmark will be used to inform guiding principles to improve the nutrient quality of children's meals[2] sold in Irish foodservice outlets.

## 1.2 Background

The World Health Organization (WHO) characterises obesity as a complex chronic disease, defined by abnormal or excessive fat accumulation that may impair health (WHO, 2024). It is driven by a variable interplay of multifactorial aspects such as genetic predisposition, obesogenic environments, behavioural, societal and psychosocial factors, with no singular determinant (Swinburn *et al*., 2019; WHO, 2024).

Childhood obesity is widely identified as a growing, complex, public health challenge (Safefood, 2021). Obesity tracks the life course, and children who live with obesity are more likely to live with obesity as adults, increasing their risk of noncommunicable diseases (NCDs) such as diabetes and cardiovascular diseases at a younger age (Venn *et al*., 2007; Simmonds *et al*., 2016; WHO *et al*., 2024). Poor diet quality[3] and dietary behaviours may be modifiable risk factors for childhood obesity (Asghari *et al*., 2017). The determinants of dietary intake are numerous and complex, with multiple factors influencing a child's individual diet, including personal preferences, medical factors, family dynamics, social economic status and physical or social environment (Han *et al*., 2010; Scaglioni *et al*., 2018).

In Ireland, the prevalence of overweight and obesity remains high, with 17.7% of children living with overweight or obesity (Kilduff *et al*., 2024). Overweight and obesity follow a social gradient in Ireland, meaning children from lower socio-economic backgrounds have a higher prevalence of overweight and obesity, compared to children from higher socio-economic backgrounds (25.4% versus 16.1%, respectively) (Kilduff *et al*., 2024). As a result, addressing childhood obesity remains

[1] Foodservice or out-of-home (OOH) sector are terms commonly used to describe any establishment where food and drink are prepared outside of the home for immediate consumption, e.g. restaurant, café, take-away, public house.
[2] Children's meals are defined as menu items offered on children's menus labelled on foodservice menus aimed at those aged 1–12 years.
[3] Diet quality is defined as the degree to which a diet reduces the risk of diet-related NCDs (Asghari *et al*., 2017).

a significant public health challenge and warrants continuous prioritisation of strategies in terms of prevention and intervention policies.

Analysis of the Irish Universities Nutrition Alliance (IUNA) National Children's Food Survey (NCFS) (2003–2004) and the NCFS II (2017–2018) highlighted that children aged 5–12 years exceed health-based thresholds for dietary intakes of saturated fat, free sugars and salt (Kehoe *et al.,* 2023). It is estimated that the percentage of total energy (TE) from dietary saturated fat intakes was 14.9% in children aged 1–4 years and 14.0% in children aged 5–12 years, exceeding the WHO's health-based threshold of <10% TE (IUNA, 2012; IUNA, 2020; WHO, 2023a). The percentage of energy from dietary intakes of free sugar ranged from 11.0–14.1% TE in children aged 1–4 years and was on average, 9.5% in children aged 5–12 years, exceeding the WHO's health-based threshold of <10% TE and the conditional recommendation of <5% TE (Lyons *et al*., 2022; Crowe *et al*., 2020; IUNA 2020; WHO, 2015). In addition, average dietary salt intakes in children aged 1–4 years was 3.0 g, and 4.2 g in children aged 5–12 years, exceeding the Food Safety Authority of Ireland's (FSAI) population level target of 2 g for children aged 1–3 years and 3 g for children aged 4–6 years (IUNA, 2012; IUNA, 2020; WHO, 2023b; FSAI, 2016).

In 2021, the *Roadmap for Food Product Reformulation in Ireland* published reformulation targets to reduce the energy, sugar, saturated fat and salt across 40 food categories prioritised for reformulation (FSAI, 2023). The targets apply to all parts of the food industry including food manufacturers, food retailers, ingredient suppliers and the foodservice sector (Department of Health, 2021). The *Roadmap for Food Product Reformulation in Ireland* requires the foodservice sector to play its part in reducing dietary intakes of target nutrients. The Roadmap states; "the eating out of home sector is expected to procure and/or make products that meet the relevant targets" (Department of Health, 2021).

Evidence suggests that the consumption of food from the foodservice sector is increasing and due to its high energy (calories), fat, sugar and salt content, is a contributor to poor diet quality amongst children (Young *et al*., 2019; Schneider *et al*., 2020; WHO, 2022; Trapp *et al*., 2022; Food Standards Agency, 2024). In Ireland, food served in the foodservice sector is estimated to account for 13% of children's energy intake (IUNA, 2020).

Research commissioned by Safefood in 2013, found children's menus offered by foodservice outlets across the island of Ireland were of poor nutrient quality and limited in terms of the provision of healthier options, with sausages, beef burgers and chicken nuggets reported as the most widely available main course options (Safefood, 2013; McGuffin *et al*., 2013). In addition, chips were noted as the main accompaniment offered with a main course compared to the limited availability of vegetables provided (Safefood, 2013; Food Standards Agency, 2024).

Recent research completed by the Food Standards Agency (FSA) in Northern Ireland (NI), found popular children's meals were, on average, high in energy (calories), saturated fat and salt per meal, such as burger and chips (827 kcal/meal, 11.2 g/meal of saturated fat and 2.8 g/meal of salt), sausage and chips (692 kcal/meal, 11.3 g/meal of saturated fat and 3.3 g/meal of salt) and coated fried chicken and chips (709 kcal/meal, 5.1g/meal of saturated fat and 1.6 g/meal of salt) (FSA, 2024). Similarly, in the United Kingdom (UK), on average, a burger main meal contained 509 kcal per serving (min-max: 165–906 kcal), 5.6 g of saturated fat per serving (min-max: 0.5–17.2 g) and 1.83 g of salt per serving (min-max: 0.70–4.20 g) (Action on Salt, 2024).

The evidence summarised here indicates that children's meals sold in foodservice outlets are high in saturated fat, sugar and salt. Therefore, there is a need to determine an up-to-date benchmark of the nutrient content of children's meals sold in Irish foodservice outlets.

# 2. Aim and Objectives

## 2.1 Aim

The aim of this survey was to benchmark the nutrient content (energy (calories)), total fat, saturated fat, total sugar and salt) (g/100 g and g/meal) of a convenience sample of children's meals sold in foodservice outlets in County Dublin between September and October 2024, and to outline guiding principles for the reformulation of children's meals sold in the foodservice sector.

## 2.2 Objectives

The objectives of this survey were to:

1. Determine the most popular meals offered on children's menus in foodservice outlets from standalone restaurants, hotel restaurants, takeaways and pubs that serve food in the Republic of Ireland, in February 2024.
2. Collect a convenience sample of the most popular children's meals offered by foodservice outlets in County Dublin, between September and October 2024.
3. Establish a 2024 benchmark of the energy (calories), total fat, saturated fat, total sugar and salt content of sampled children's meals (g/100 g and g/meal) between September and October 2024.
4. Examine the percentage contribution of each children's meal subcategory to the recommended intakes of each nutrient for both younger and older children from the European Food Safety Authority (EFSA) and the World Health Organization (WHO) (EFSA, 2010; 2013; 2019; WHO, 2023a).
5. Outline guiding principles to provide healthier children's meal options in Irish foodservice outlets.

# 3. Methodology

The methodology followed is described in this section of the report and is outlined in Figure 1. To benchmark the nutrient content of children's meals offered on menus in the Irish foodservice sector, the following steps were undertaken:

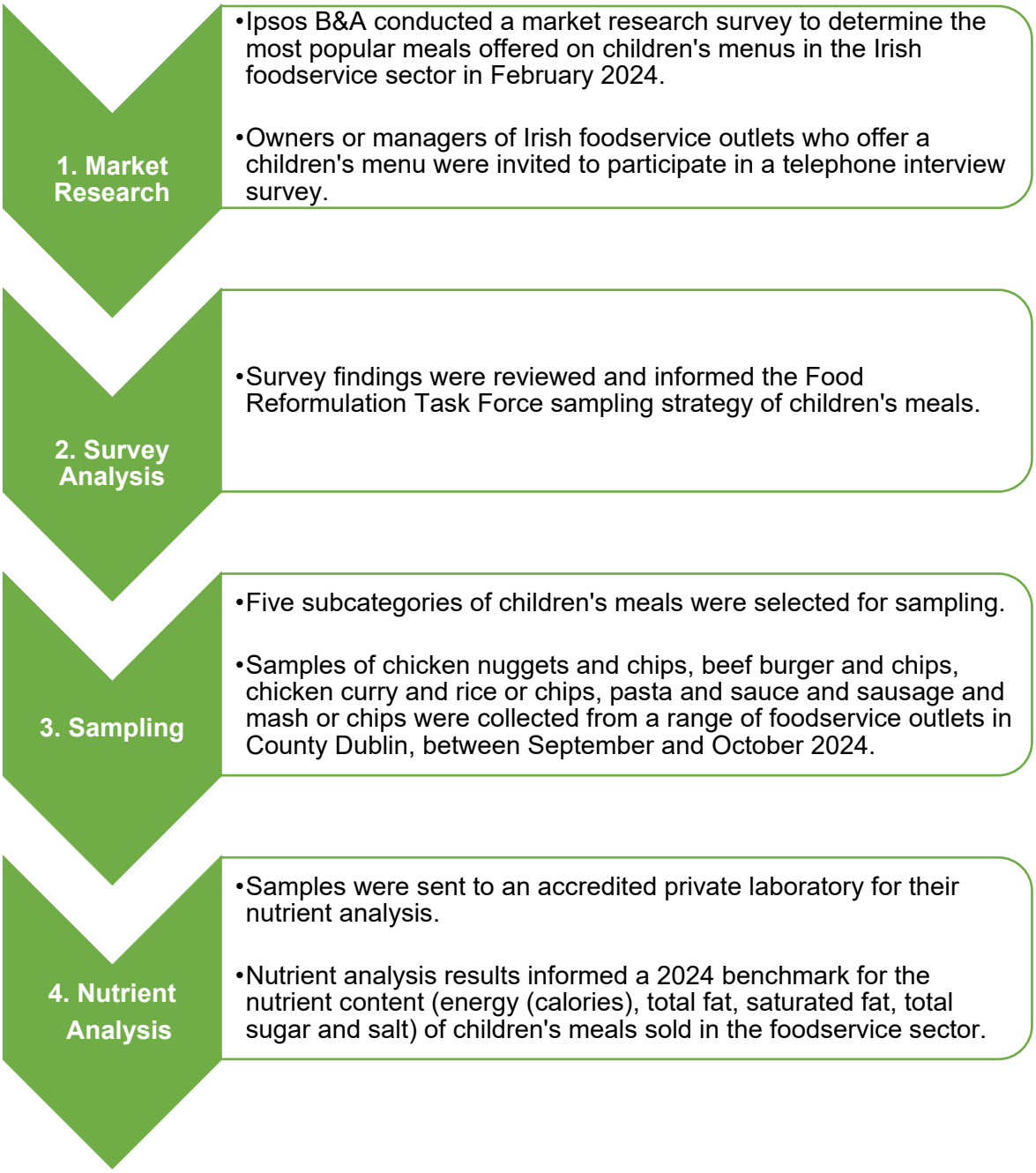


**Figure 1** Methodology followed in benchmarking the nutrient content of children's meals sold in the foodservice sector

## 3.1 Market research

In February 2024, a market research survey was defined by the Food Reformulation Task Force (FRT) by adapting a market research survey that was initially developed by the FSA in NI. The survey included 26 questions which related to food offering, food price, preparation practices and customer preference. The aim of the survey was to determine the most popular meals offered on children's menus in the foodservice sector in the Republic of Ireland, to measure attitudes and perceived barriers to offering healthier options on children's menus, and to identify opportunities for reformulating children's meals sold in the foodservice sector. The FRT commissioned Ipsos B&A to implement the survey.

The sample for the survey was drawn from business listings based on the NACE[4] code categorisation (CODE Accommodation and Food Services 55.1 and 56.1–56.29). Foodservice outlets including standalone restaurants, hotel restaurants, takeaways, and pubs that serve food who offer a children's menu to those aged 1–12 years were invited to participate in the survey. All cuisine types were included. Cafés, delicatessens, bakeries, service stations, sandwich bars, chain (fast-food) restaurants, and foodservice outlets that offered no children's menu were excluded.

The market research survey was implemented in February 2024. Interviews were conducted with owners or managers of the relevant foodservice outlet providers using computer aided telephone interviewing (CATI). The interviews were 5 to 6 minutes long.

## 3.2 Market research survey analysis

Participant survey data and responses were extracted from the CATI survey platform and transferred to Microsoft Excel. The survey responses were analysed using quantitative descriptive statistical analysis. Survey results were submitted to the FSAI in a Microsoft Excel file and Microsoft PowerPoint presentation report format.

## 3.3 Sample selection, categorisation, and collection of children's meals

Informed by the market research described in sections 3.1–3.2, the FRT collected a convenience sample[5] of children's meals from a range of Irish foodservice outlets, including standalone

[4] NACE is the statistical classification of economic activities in the European Union.
[5] Please note that there was no specific randomised approach employed for sampling.

restaurants[6], hotel restaurants[7], takeaways[8] and pubs that serve food[9]. International chain (fast-food) takeaways and restaurants, cafés, sandwich bars, delicatessens, bakeries, service stations and foodservice outlets with no children's menu were excluded. A sampling standard operating procedure was developed, and sampling was completed in line with procedures agreed. Sampling was undertaken by six sampling officers, across County Dublin, between September and October 2024. Based on the capacity and resources of the FRT, pragmatic decisions were made to include samples that were feasible to collect and to exclude pizza, which was previously sampled in 2024 (FSAI, 2024). Five subcategories of meals were prioritised for sampling based on their popularity on children's menus, as informed by Ipsos B&A, including chicken nuggets and chips[10], beef burger and chips[11], chicken curry and rice or chips[12], pasta and sauce[13] and sausage and mash or chips[14].

Samples were collected from foodservice outlets using two collection methods: online food delivery services (including Deliveroo and Just Eat) were used to order samples and deliver them to the FSAI, and samples were also collected at the premises within the locality of the sampling officers. If a variety of portion sizes was offered for the meal samples, this was documented. Children's meals were sampled as they were served by the foodservice outlets and stored in a collection container. Each sample was made up of one complete product as served (children's main meal). In the sample of children's meals, each individual foodservice outlet was represented no more than once for each meal subcategory.

Following collection, samples were labelled with a unique identifier code and sample code. Photographs of all samples and corresponding weight measurement (weight of meal) were captured and stored electronically. A minimum sample size of 200 g per children's meal was

[6] Standalone restaurants refer to any full-service establishment that offers food for on-site consumption.
[7] Hotel restaurants refer to any hotel establishment with a full-service restaurant that offers food for on-site consumption.
[8] Takeaways refer to local-chain traditional takeaway establishments with or without limited seating, that offers food for off-site consumption.
[9] Pubs that serve food refer to any public house that serve alcoholic drinks and offers food for on-site or off-site consumption.
[10] Samples of chicken nuggets and chips include chicken goujons and chicken tenders.
[11] Samples of beef burger and chips include hamburger, beef burger with or without cheese, beef burger with tomato ketchup and onions and beef burger served with lettuce and tomato ketchup.
[12] Samples of chicken curry and rice or chips include chicken korma with naan bread and sweet and sour dip, chicken korma served with broccoli, red peppers and carrots, tikka masala and massaman curry.
[13] Samples of pasta and sauce include pasta with tomato sauce and cheese or parmesan, spaghetti pomodoro, pasta and sauce with garlic bread, penne al pomodoro with cheese, penne pasta with parmesan cheese in a creamy mushroom sauce.
[14] Samples of sausage and mash or chips include bangers and mash with gravy. Samples of sausage and chips were sampled from takeaway outlets only, due to no availability of sausage and mash in this outlet type.

required by an accredited laboratory for nutrient analysis. The total weight (g) of the children's meal as served, including the collection container, was weighed using an electronic weighing scale. The actual weight (portion size) (g/meal) of the children's meal was measured by subtracting the weight of the collection container (96 g) from the total weight (g) measured for each sample. All weight measurements of the children's meal samples were documented in a Microsoft Excel spreadsheet. All samples were packed in sealed protective packaging and transported under refrigeration by a courier to an accredited private laboratory for their nutrient analysis.

## 3.4 Laboratory sample analysis

All samples were analysed by an accredited private laboratory to determine energy (kcal), total fat (g), saturated fat (g), total sugar (g), and salt (g) content per 100 g. Summary details of the laboratory analytical methods used are outlined in Appendix 1. Laboratory data results were submitted to the FSAI in Microsoft Excel documents and as hard-copy reports.

## 3.5 Data and statistical analysis

The results were analysed using RStudio v4.4.0. The nutrient content (energy (kcal), total sugar (g) total fat (g), saturated fat (g), and salt (g)) of samples per 100 g (g/100 g) and per portion size (meal as served) (g/meal) were determined using the following statistical tests: mean, (standard deviation (SD)), median (interquartile range (IQR)) and minimum and maximum values (min-max).

The nutrient content results per 100 g and per portion size (meal as served) were calculated. The results per portion size were determined by individual adjustments of the nutrient content based on the weight of each meal. Throughout this report, the salt equivalent is referred to as the salt content (g/100 g and g/meal). To convert sodium to salt, the sodium value was multiplied by 2.54. All values are rounded to the nearest two decimal places.

## 3.6 Contribution of meals to recommended intakes of nutrients

To answer objective 4, using the available energy (calories), total fat and salt, EFSA Dietary Reference Values (DRVs) and the WHO health-based thresholds for saturated fat (WHO, 2023a), a comparison was undertaken with the median nutrient content per portion (g/meal) for each meal subcategory (EFSA, 2010; 2013; 2019). This is shown in Table 1.

**Table 1** Recommended intakes of each nutrient for 3 and 12-year-old children

| Recommended daily nutrient intakes for children | | | | |
|---|---|---|---|---|
| | | EFSA DRVs | | WHO Guideline |
| **Nutrient** | **Age** | **Boys** | **Girls** | **Children** |
| Energy (kcal/day)[15] | 3-year-old | 1174 | 1096 | |
| | 12-year-old | 2174 | 2004 | |
| Total fat (g/day)[16] | 3-year-old | 35–40% of energy intake | | |
| | 12-year-old | 20–35% of energy intake | | |
| Saturated fat (g/day)[17] | 3-year-old | No recommendation | | 10% of total energy intake |
| | 12-year-old | | | |
| Total sugar (g/day)[18] | 3-year-old | No recommendation | | |
| | 12-year-old | | | |
| Sodium (g/day)[19] | 3-year-old | 1.1 | | |
| | 12-year-old | 2 | | |

[15] Energy figures were derived from EFSA's recommended Average Requirement (AR) for daily energy intake (kcal/day) and adjusted to a moderate physical activity level (PAL) in boys and girls aged 3 years (PAL=1.4) and 12 years (PAL=1.6) (EFSA, 2013).
[16] Total fat figures were calculated using EFSA's recommended Reference Intake (RI) for total fat in boys and girls aged 3 years and 12 years (EFSA, 2010).
[17] Saturated fat figures were calculated using the WHO strong recommendation that "children reduce saturated fatty acid intake to 10% of total energy intake" (WHO, 2023a).
[18] There is no recommendation for total sugars. The nutrient content analysis provided in this report is based on the total sugar content of each meal type and not for free sugars, therefore a comparison to the WHO recommendation for free sugars was not determined (WHO, 2015).
[19] Sodium figures were obtained from EFSA's safe and adequate intake for sodium (g/day) in boys and girls aged 3 years and 12 years (EFSA, 2019). To convert sodium to salt, the sodium value was multiplied by 2.54.

# 4. Results

## 4.1 Market research survey main findings

### 4.1.1 Description of foodservice outlets surveyed

In total, n=197 foodservice outlets were surveyed. Of these, n=82 were standalone restaurants, n=29 were hotel restaurants, n=13 were takeaways, n=31 were standalone takeaway or restaurants and n=42 were pubs that serve food. Of the outlets surveyed, 23% (n=45) were part of national chains across Ireland, meaning a series of restaurants that are either owned or operated by the same food company.

### 4.1.2 Most popular meals offered on children's menus

Respondents reported the most popular main course offered on menus were chicken nuggets and chips at 49%, followed by pasta and sauce (11%), other chicken option (9%), beef burger and chips (7%), pizza (4%), chicken curry (3%), roast dinner (3%), and sausage and mash or chips (2%). This is shown in Table 2.

**Table 2** Most popular main course meals offered on children's menus

| Children's main meal subcategory | Foodservice respondents (n=197) |
|---|---|
| Chicken nuggets and chips | 49% |
| Pasta and sauce | 11% |
| Other chicken option | 9% |
| Beef burger and chips | 7% |
| Pizza | 4% |
| Chicken curry | 3% |
| Other pasta option | 3% |
| Roast dinner | 3% |
| Sausage and mash or chips | 2% |
| Fish fingers/goujons and chips | 2% |
| Baby bowl (mash, vegetables and gravy) | 1% |
| Other | 6% |
| Not sure | 2% |

Just over 9 out of 10 outlets (93%) offering children's menus offered chips as an accompaniment to a main course, compared to 70% for vegetables and 55% for salad. Further information on the accompaniments offered with main course meals can be found in Appendix 2.

### 4.1.3 Portion sizes

While almost 4 out of 10 outlets (38%) offered different meal portion sizes for different age groups, the majority of outlets (62%) did not.

### 4.1.4 Making children's meals

The majority of foodservice outlets made their children's meals solely onsite (88%). Deep frying was the most commonly used method to cook children's meals, with 84% of outlets citing this method. Salt was added by 37% of outlets when cooking children's meals.

### 4.1.5 Healthier options

When it came to offering healthier options, just over half of the outlets surveyed (55%) had healthier options (such as meals made without frying, incorporating a wholegrain component into meals, or avoiding the addition of salt during cooking) on their children's menus. Of those who offered healthier options, 96% offered them as a main course, 35% as starters and 25% as desserts, with a further 4% offering another healthier option. While healthier options were on offer, 89% of those who offered them claimed that the fact they were healthier was not declared on their children's menu. However, 6 in 10 stated that their healthier options were popular, while 24% stated that they were unpopular. Of those who offered healthier options, the vast majority (86%) stated that there was no additional cost involved in their preparation. Of those who didn't offer healthier options, 44% claimed this was due to lack of demand, while a further 36% stated there was no particular reason why.

### 4.1.6 Other information provided on children's menus

The majority of outlets (78%) reported that they do not declare any information related to the calorie, fat, salt, or sugar content of meals on their menus. Almost all outlets (97%) stated that they display allergen information in written format on their menus[20].

[20] National legislation stipulates that food allergen information for non-prepacked foods such as meals provided in restaurants, takeaways, or delivered to the home, must, as a minimum, be provided in written format and be accessible before the food is purchased (FSAI, 2015).

### 4.1.7 Devising of children's menus

Just over 1 in 10 foodservice outlets (14%) used a registered dietitian or nutritionist, while just over one third (34%) of outlets referred to nutrition standards or healthy eating guidelines when devising their children's menu. Of those who referred to guidelines when devising menus, 36% stated that they referred to the *Healthy eating, food safety and food legislation, a guide supporting the Healthy Ireland Food Pyramid* (FSAI, 2019), followed by the nutrition standards for school meals at 15% (Department of Health, 2020a).

### 4.1.8 Pricing and promotions

Just over half (55%) of outlets who offered children's menus, priced each menu item individually, while 25% offered a set-price menu (e.g. for drink, main course and dessert) and a further 20% offered a combination of the two. The most common offering included in a set-price children's menu was a main course with a drink (26%), followed by a main course and dessert with a drink (21%). The most commonly offered promotion on menus was a kid's meal deal (free drink or dessert with the main course) (30%), followed by a family meal deal or set-price family meal (16%) and kids eat free with a full price adult meal (8%).

### 4.1.9 Opportunities to improve the nutrient content of children's meals

The vast majority (75%) of the managers or owners of foodservice outlets surveyed, felt that the out-of-home foodservice sector has a role to play in improving children's diets. A user-friendly toolkit that includes guidance on healthier cooking methods and ingredients, sample meal plans and recommended portion sizes was the most popular solution (63%) to support foodservice outlets to do this.

## 4.2 Description of children's meal samples collected for laboratory analysis

In total, n=84 children's meals were sampled. Of these, n=18 were chicken nuggets and chips, n=17 were beef burger and chips, n=17 were chicken curry and rice or chips, n=16 were pasta and sauce, and n=16 were sausages and mash or chips. Children's meals were sampled from standalone restaurants (n=17), hotel restaurants (n=10), takeaways (n=14), and pubs that serve food (n=10). This is shown in Figure 2.

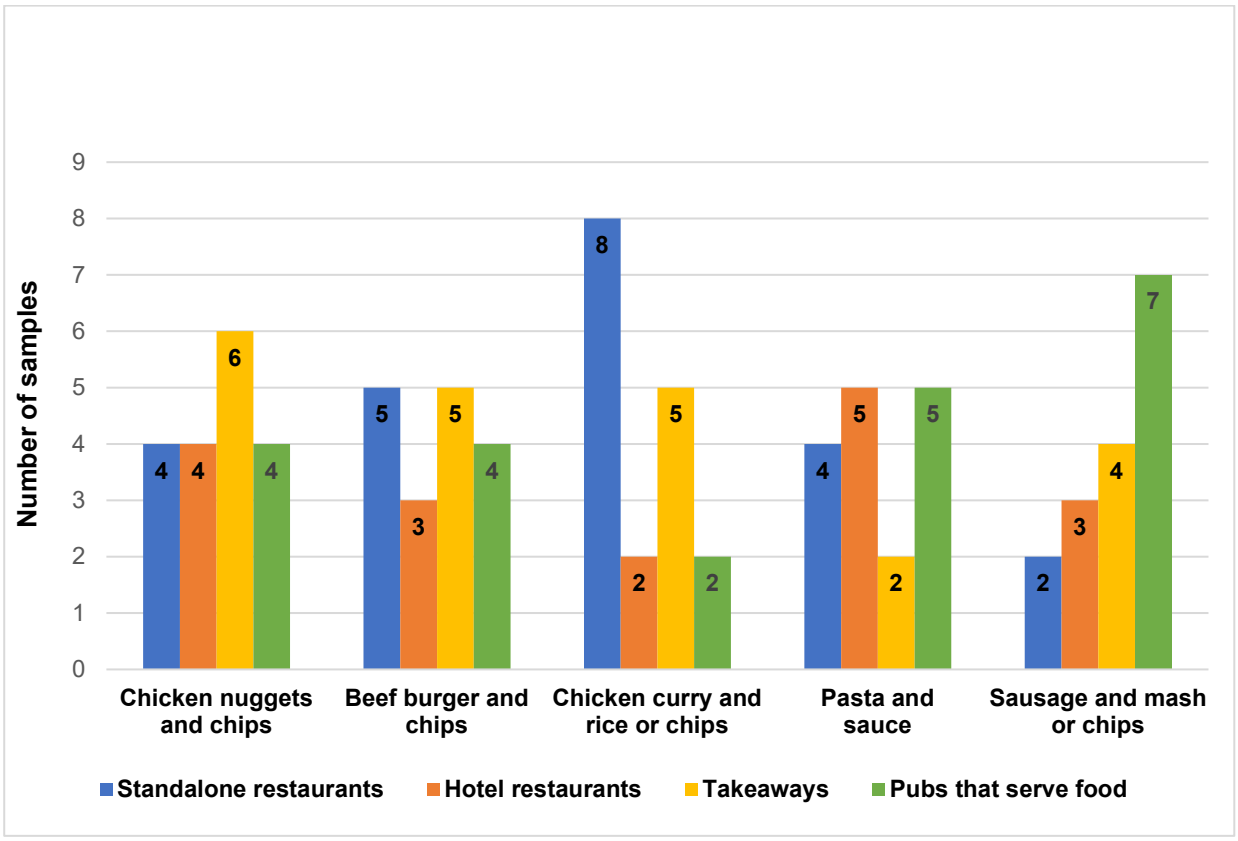


**Figure 2** Number of children's meals sampled, disaggregated by meal subcategory and foodservice type

## 4.3 Weight and portion size of children's meals

Across all meal subcategories sampled, variation in both weight and portion sizes were observed. Table 3 provides an overview of the mean (SD), median (IQR) and minimum-maximum (min-max) weight of each meal subcategory. The weight of the children's meals sampled ranged from 208 g/meal to 1032 g/meal across all subcategories.

Chicken curry and rice or chips had the highest median weight of 524 g/meal, followed by beef burger and chips weighing 420 g/meal, sausage and mash or chips weighing 390 g/meal, pasta and sauce weighing 380 g/meal and chicken nuggets and chips weighing 347 g/meal. A large variation was observed in weight range across all subcategories; for example, the weight of chicken curry and rice or chips ranged from 284–1032 g/meal.

Of the meals offered on children's menus (n=84), no foodservice outlet (n=0) offered different portion sizes for younger and older children.

**Table 3** Overview of the portion size of children's meals

| | | Weight of meal (g/meal)[(a)] | | |
|---|---|---|---|---|
| **Meal subcategory** | **n** | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Chicken nuggets and chips | 18 | 351.33 (75.14) | 347.00 (81.50) | 224.00–526.00 |
| Beef burger and chips | 17 | 416.59 (79.30) | 420.00 (90.00) | 300.00–580.00 |
| Chicken curry and rice or chips | 17 | 565.18 (184.86) | 524.00 (178.00) | 284.00–1032.00 |
| Pasta and sauce | 16 | 381.25 (94.51) | 380.00 (172.00) | 248.00–540.00 |
| Sausage and mash or chips | 16 | 396.12 (76.98) | 390.00 (88.00) | 208.00–504.00 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). **(a)** All children's meal samples were analysed as sold.

## 4.4 Analysed nutrient content of chicken nuggets and chips

The mean (SD), median (IQR) and minimum-maximum (min-max) nutrient content of the chicken nuggets and chips subcategory is described in Table 4. Of note, chicken nuggets and chips had the lowest median salt (g) content containing 1.87 g/meal (min-max: 0.68–4.28 g) and the lowest median total sugar content (g) containing 1.81 g/meal (min-max: 0.29–3.84 g), across all meal subcategories. The results per 100 g are described in Appendix 3.

**Table 4** Analysed nutrient content of chicken nuggets and chips

| **Meal subcategory (n=18)** | | **Chicken nuggets and chips[(a)]** | | |
|---|---|---|---|---|
| **Nutrient content per meal** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/meal | 892.13 (152.35) | 892.50 (123.17) | 629.44–1157.20 |
| Total sugar | g/meal | 1.80 (1.02) | 1.81 (0.82) | 0.29–3.84 |
| Total fat | g/meal | 41.94 (9.97) | 40.18 (18.52) | 25.17–58.80 |
| Saturated fat | g/meal | 9.79 (6.66) | 7.91 (4.56) | 3.60–25.62 |
| Salt | g/meal | 2.04 (0.98) | 1.87 (1.11) | 0.68–4.28 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). Median portion size for chicken nuggets and chips was 347.00 g, with a minimum of 224.00 g and a maximum of 526.00 g. **(a)** All children's meal samples were analysed as sold.

## 4.5 Analysed nutrient content of beef burger and chips

The mean (SD), median (IQR) and minimum-maximum (min-max) nutrient content of the beef burger and chips subcategory is described in Table 5. Of note, beef burger and chips had the highest median energy (kcal) content containing 1046.18 kcal/meal (min-max: 740.94–1449.96 kcal) and the highest median total fat (g) content containing 48.72 g/meal (min-max: 28.94–78.86 g), across all meal subcategories.The results per 100 g are described in Appendix 3.

**Table 5** Analysed nutrient content of beef burger and chips

| **Meal subcategory (n=17)** | | **Beef burger and chips[a]** | | |
|---|---|---|---|---|
| **Nutrient content per meal** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/meal | 1094.75 (184.86) | 1046.18 (210.80) | 740.94–1449.96 |
| Total sugar | g/meal | 8.48 (3.89) | 7.60 (3.11) | 3.90–18.55 |
| Total fat | g/meal | 52.27 (12.84) | 48.72 (15.27) | 28.94–78.86 |
| Saturated fat | g/meal | 14.70 (4.97) | 12.78 (6.09) | 8.55–24.65 |
| Salt | g/meal | 2.83 (1.13) | 2.95 (1.81) | 1.43–5.56 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). Median portion size for beef burger and chips was 420.00 g, with a minimum of 300.00 g and a maximum of 580.00 g. **(a)** All children's meal samples were analysed as sold.

## 4.6 Analysed nutrient content of chicken curry and rice or chips

The mean (SD), median (IQR) and minimum-maximum (min-max) nutrient content of the chicken curry and rice or chips subcategory is described in Table 6. Of note, chicken curry and rice or chips had the highest median total sugar (g) content per meal containing 13.94 g/meal (min-max: 3.01–61.92 g) and the highest median saturated fat (g) content per meal containing 18.72 g/meal (min-max: 2.36–59.66 g), across all meal subcategories. The results per 100 g are described in Appendix 3.

**Table 6** Analysed nutrient content of chicken curry and rice or chips

| **Meal subcategory (n=17)** | | **Chicken curry and rice or chips[(a)]** | | |
|---|---|---|---|---|
| **Nutrient content per meal** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/meal | 1035.17 (505.94) | 908.20 (576.10) | 369.20–2342.64 |
| Total sugar | g/meal | 16.53 (13.35) | 13.94 (8.55) | 3.01–61.92 |
| Total fat | g/meal | 48.43 (34.10) | 36.08 (36.71) | 6.25–134.16 |
| Saturated fat | g/meal | 21.54 (15.53) | 18.72 (17.88) | 2.36–59.66 |
| Salt | g/meal | 3.55 (1.34) | 3.48 (1.82) | 1.65–6.51 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). Median portion size for chicken curry and rice or chips was 524.00 g, with a minimum of 284.00 g and a maximum of 1032.00 g. **(a)** All children's meal samples were analysed as sold.

## 4.7 Analysed nutrient content of pasta and sauce

The mean (SD), median (IQR) and minimum-maximum (min-max) nutrient content of the pasta and sauce subcategory is described in Table 7. Of note, pasta and sauce had the lowest median energy (kcal) content containing 486.28 kcal/meal (min-max: 287.64–782.40 kcal), the lowest median total fat (g) content containing 8.18 g/meal (min-max: 2.78–30.49 g) and the lowest median saturated fat (g) content containing 3.36 g/meal (min-max: 0.71–18.44 g), across all meal subcategories. The results per 100 g are described in Appendix 3.

**Table 7 Analysed nutrient content of pasta and sauce**

| Meal subcategory (n=16) | | Pasta and sauce[(a)] | | |
|---|---|---|---|---|
| **Nutrient content per meal** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/meal | 497.57 (139.71) | 486.28 (191.63) | 287.64–782.40 |
| Total sugar | g/meal | 9.09 (3.00) | 9.07 (2.91) | 2.07–14.94 |
| Total fat | g/meal | 12.17 (9.61) | 8.18 (9.72) | 2.78–30.49 |
| Saturated fat | g/meal | 4.84 (5.59) | 3.36 (2.56) | 0.71–18.44 |
| Salt | g/meal | 2.66 (2.19) | 2.29 (0.94) | 0.62–10.26 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). Median portion size for pasta and sauce was 380.00 g, with a minimum of 248.00 g and a maximum of 540.00 g. **(a)** All children's meal samples were analysed as sold.

## 4.8 Analysed nutrient content of sausage and mash or chips

The mean (SD), median (IQR), and minimum and maximum (min-max) nutrient content of the sausage and mash or chips subcategory is described in Table 8. Of note, sausage and mash or chips had the highest median salt (g) content containing 4.66 g/meal (min-max: 2.17–6.85 g), across all meal subcategories. The results per 100 g are described in Appendix 3.

**Table 8** Analysed nutrient content of sausage and mash or chips

| **Meal subcategory (n=16)** | | **Sausage and mash or chips[(a)]** | | |
|---|---|---|---|---|
| **Nutrient content per meal** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/meal | 801.15 (189.43) | 814.80 (261.88) | 503.36–1155.96 |
| Total sugar | g/meal | 3.52 (2.80) | 2.48 (1.32) | 0.49–10.58 |
| Total fat | g/meal | 48.34 (12.37) | 47.44 (21.62) | 33.20–69.92 |
| Saturated fat | g/meal | 20.35 (6.61) | 18.61 (5.51) | 12.31–36.94 |
| Salt | g/meal | 4.62 (1.58) | 4.66 (2.38) | 2.17–6.85 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). Median portion size for sausage and mash or chips was 390.00 g, with a minimum of 208.00 g and a maximum of 504.00 g. **(a)** All children's meal samples were analysed as sold.

## 4.9 Percentage contribution of meals to recommended nutrient intakes

### 4.9.1 Energy content

Of the meals sampled (n=84), the minimum energy content (287.64 kcal/meal) was measured in pasta and sauce, and the maximum energy content (2342.64 kcal/meal) was measured in chicken curry and rice or chips. In addition, 21% (n=18) of meals sampled exceeded the Average Requirement (AR) for the daily intake of energy in 3 year-old girls, and 1% (n=1) of meals exceeded the AR for energy in 12 year-old boys (EFSA, 2013). This is shown in Figure 3.

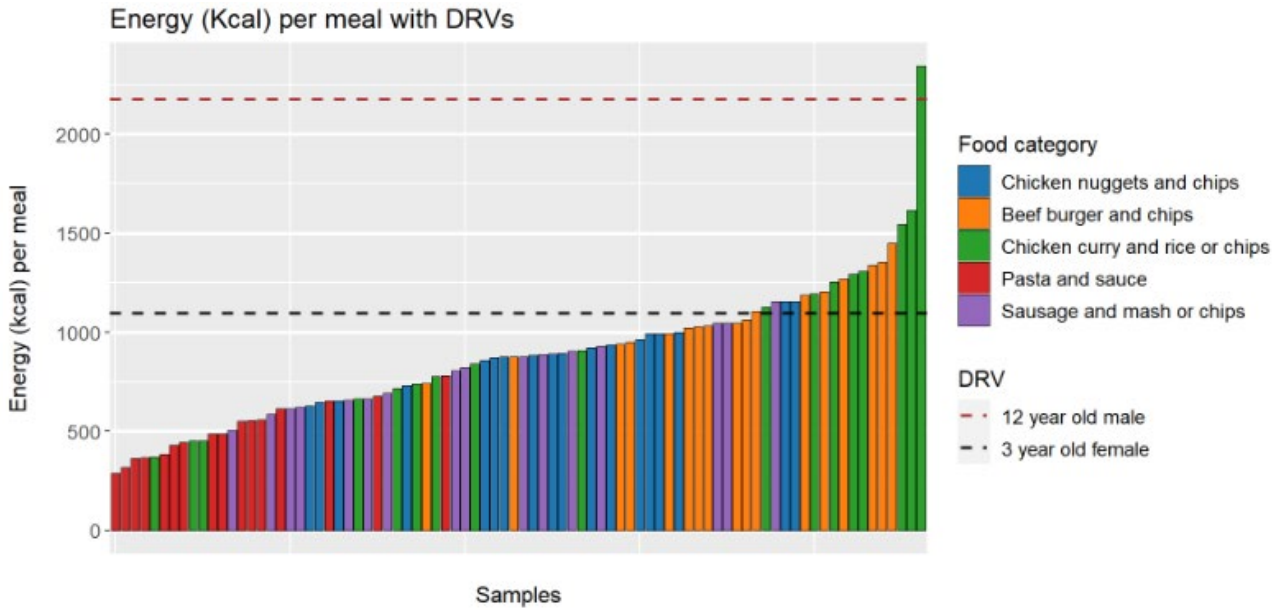


**Figure 3** Comparison of the energy (kcal) content per meal to the Average Requirement for energy intake in children

### 4.9.2 Total fat content

Of the meals sampled (n=84), the minimum total fat content (2.78 g/meal) was measured in pasta and sauce, and the maximum total fat content (134.16 g/ meal) was measured in chicken curry and rice or chips. In addition, 33% (n=28) of the meals sampled exceeded the Reference Intake (RI) for the daily intake of total fat in 3 year-old girls, and 2% (n=2) of meals exceeded the RI for the daily intake of total fat in 12 year-old boys (EFSA, 2010). This is shown in Figure 4.

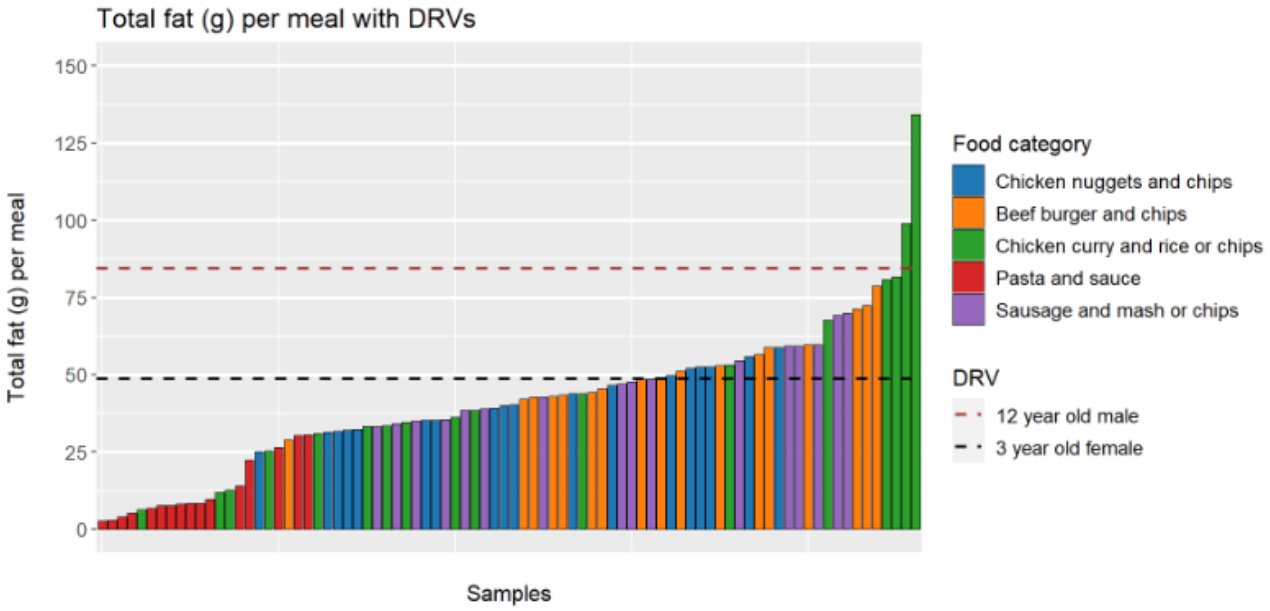


**Figure 4** Comparison of the total fat (g) content per meal to the Reference Intake for total fat intake in children

### 4.9.3 Saturated fat content

Of the meals sampled (n=84), the minimum saturated fat content (0.71 g/meal) was measured in pasta and sauce, and the maximum saturated fat content (59.66 g/meal) was measured in chicken curry and rice or chips. In addition, 57% (n=48) of the meals sampled exceeded the WHO recommendation for the daily intake of saturated fat in 3 year-old girls, and 14% (n=12) of meals exceeded the WHO recommendation for the daily intake of saturated fat in 12 year-old boys (WHO, 2023a). This is shown in Figure 5.

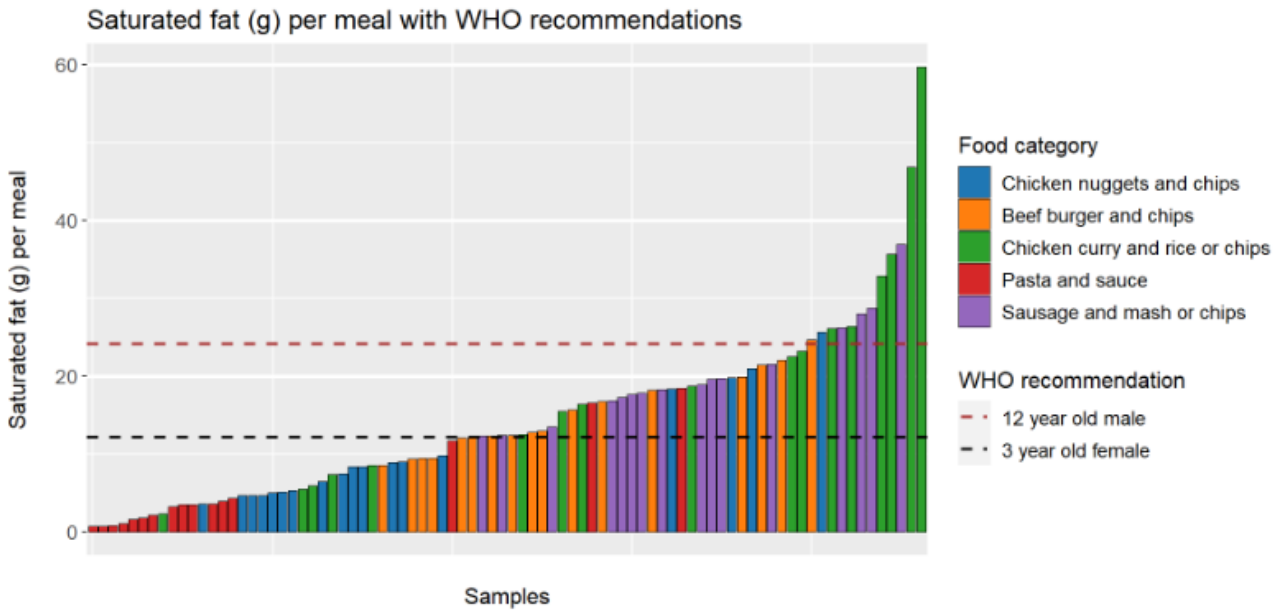


**Figure 5** Comparison of the saturated fat (g) content per meal to the WHO recommendation for saturated fat intake in children

### 4.9.4 Salt content

Of all the meals sampled (n=84), both the minimum salt content (0.62 g/meal) and maximum salt content (10.26 g/meal) was measured in pasta and sauce. In addition, 52% (n=44) of the meals sampled exceeded EFSA's recommended safe and adequate daily intake for salt in 3 year-old girls, and 13% (n=11) of meals exceeded EFSA's recommended safe and adequate daily intake for salt in 12 year-old boys. (EFSA, 2019). This is shown in Figure 6.

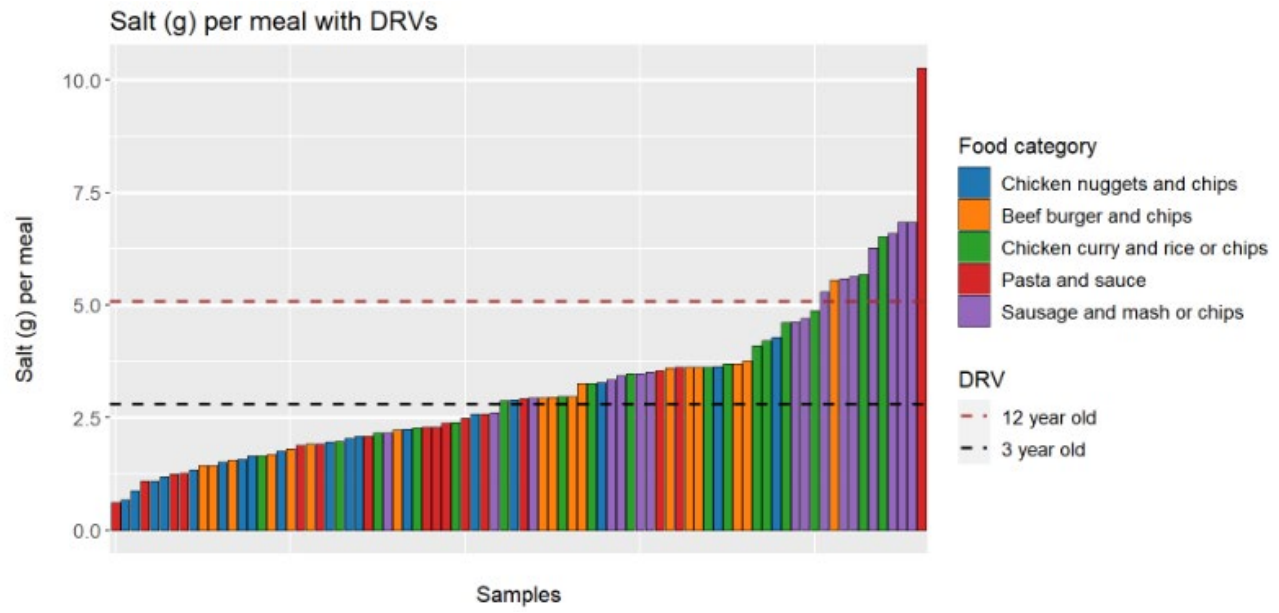


**Figure 6** Comparison of the salt (g) content per meal to the Adequate Intake levels for salt in children

# 5. Discussion

This survey established a 2024 benchmark of the nutrient content in a variety of children's meals sold across restaurants, hotel restaurants, takeaways and pubs that serve food in Dublin. This survey found that some meals offered on children's menus in Irish foodservice outlets are high in energy (calories), total fat, saturated fat, total sugar and salt, and in many instances exceed the EFSA DRVs and WHO recommended daily nutrient intakes, particularly for younger children. The survey findings are in agreement with other studies completed in Ireland in 2013 and in NI and the UK in 2024 (Safefood, 2013; FSA, 2024; Action on Salt, 2024). These findings demonstrate a need to improve the energy (calories), and nutrient content of children's meals offered in the foodservice sector in Ireland.

The majority of foodservice operators surveyed agreed that the foodservice sector has a role to play in improving children's diets, with some efforts made to incorporate healthier option on their menus. However, there was low adherence to the Department of Health's *Healthy Eating for 1 to 4 year-olds; The Children's Food Pyramid Guidelines* and the FSAI's *Scientific Recommendations for Food-Based Dietary Guidelines (FBDGs) for 1 to 5 year-olds in Ireland*. For example, most foodservice operators used deep-frying as their cooking method, with some also adding salt when preparing children's meals (Department of Health, 2020b; FSAI, 2020). Addressing this issue is important, as eating habits developed during childhood can influence dietary patterns and taste preferences for foods high in fat, sugar and salt that can persist into adulthood (De Cosmi *et al*., 2017).

## 5.1 Nutrient content of some meals offered on children's menus

This survey revealed some meal subcategories were high in energy (calories), total fat, saturated fat, total sugar and salt which exceeded the EFSA DRVs and WHO's recommended daily nutrient intakes, particularly amongst younger children. For example, 21% of meals exceeded the EFSA DRVs for the daily intake of energy in 3 year-old girls. There is a need to reformulate children's meals to lower their energy (calories), total fat, saturated fat, total sugar and salt content. The presence of children's meals with a lower content of energy (calories), total fat, saturated fat, total sugar and salt content in each meal subcategory demonstrates that it is technically feasible and acceptable to consumers for foodservice outlets to offer healthier children's meals with an improved nutrient content.

The most popular children's meals found in this survey were of poor macro-nutrient quality, and depending on the frequency of consumption, could potentially have negative implications on children's health (Powell and Nguyen, 2013; Schneider *et al*., 2020; Young *et al*., 2019). These findings are consistent with previous research by Safefood (2013), who found sausages, beef

burgers and chicken nuggets as the most widely available main course options. In addition, chips were offered as the main accompaniment to a main course meal, while the availability of vegetables was limited, which is similar to the findings of the market research survey (Safefood, 2013; FSA, 2024). This demonstrates there has been little improvement in the meals offered to children since they were last surveyed in Ireland in 2013. Therefore, there is a need to provide healthier options on children's menus.

Promotional strategies also featured across some children's menus with a kid's meal deal (free drink or dessert with the main course). There is an opportunity for foodservice operators to incorporate healthier food choices such as fruit and vegetables into these strategies as default menu offerings. This approach may help parents to encourage their children to select these menu items (McGuffin *et al*., 2015).

## 5.2 Portion sizes of meals offered on children's menus

Despite younger children requiring less energy (calories) intake than older children, this survey found no specific portion size information or no option for smaller portions on foodservice outlet menus (EFSA, 2013). Food portion size is considered a modifiable environmental determinant of total energy (calories) intake that may contribute to the development of weight gain due to the availability of larger portions (Livingstone *et al*., 2014). Offering a variety of portion sizes is needed to reduce the amount of energy (calories), sugar, saturated fat and salt offered.

# 6. Conclusion

Based on the findings of this survey, and the need to improve the nutrient quality of children's meals, efforts are warranted by Irish foodservice operators to improve the healthfulness of children's menus so that meals offered are aligned with national FBDGs.

# 7. Guiding principles for the reformulation of children's meals served in the foodservice sector

## 7.1 Provision of healthier, nutritious and balanced meals for children

In line with existing healthy eating guidelines and national nutritional standards, such as the Nutrition Standards for Hot School Meals, a child's daily food intake typically includes breakfast, lunch, evening meal and two snacks in between meals, with a lunch meal recommended to account for approximately a third of total daily energy intake (Department of Social Protection, 2021; Department of Health, 2016; 2020b). The Food Pyramid should be used as a guide for serving sizes of different food groups, including fruits and vegetables, wholemeal cereals and breads, potatoes and pasta, dairy and various protein sources such as poultry, fish, eggs and beans, while reducing offering of foods that are high in energy (calories), saturated fat, sugar and salt (Department of Social Protection, 2021, Department of Health, 2016; 2020b).

Based on the findings of this report, the guiding principles outlined below are suggested approaches to improve the nutrient quality of children's meals and are not exhaustive. They are intended to support all stakeholders in the foodservice sector to improve the nutrient content of meals offered on children's menus, in line with FBDGs recommendations.

## 7.2 Guiding principles to improve the nutrient content of children's meals in foodservice outlets, by food business type[21]

### 7.2.1 Guiding principles for the food supply chain

- Provide a range of affordable, fresh and healthier ingredients and food products to support foodservice operators improve the healthfulness of their meals e.g. wholemeal burger buns, chicken nuggets with a lower salt content and ketchup with a lower salt and sugar content. Choose local and seasonal options to help improve sustainability.
- Offer ingredients and food products that are lower in energy (calories), total fat, saturated, total sugar and salt/sodium as the default option and not an alternative option.

[21]Guiding principles are based on guidance recommended in the Healthy eating, food safety and food legislation, a guide supporting the Healthy Ireland Food Pyramid (FSAI, 2019), the Nutrition Standards for Hot School Meals (Department of Social Protection, 2021) and the Children's Food Pyramid (Department of Health 2020b).

### 7.2.2 Guiding principles for foodservice operators

- Review and source alternative ingredients that are lower in energy (calories), total fat, saturated fat, total sugar and salt/sodium.
- Check nutrition information on food labels with similar competitor products and select the lower or reduced energy (calories), total fat, saturated fat, total sugar and salt/sodium ingredients.
- Prepare meals using whole fresh ingredients where possible, and particularly for children's meals to control the energy (calories), total fat, saturated fat, total sugar and salt/sodium content of meals.
- Offer and promote the healthier meals as affordable and where possible the default option on menus.
- Encourage selection of healthier options by using a child-friendly interactive colourful menu design and names.

### 7.2.3 Guiding principles for improving the nutrient composition of children's meals

**Reduce the energy (calories) content of meals:**

- Reduce the portion size of meals offered on a child's menu and offer different portion sizes, recognising that younger children need smaller meals than older children. This will also help reduce food waste.
- The energy content (calories) of some children's meals needs to be reduced. The FSAI provides an online menu tool called MenuCal[22] to help foodservice outlets to calculate the energy (calories) content of meals.

**Reduce the total fat and saturated fat content of meals:**

- Where possible, use alternative healthier cooking methods that use little or no fat such as boiling, steaming and grilling instead of deep-frying or pan-frying.
- Limit the addition of fat, such as butter or cream, to vegetables and potatoes during cooking, and avoid adding butter to them after they are cooked.
- Select healthier cooking oils, e.g. low-fat polyunsaturated oils such as sunflower oil, low-fat monounsaturated oils such as rapeseed oil or olive oil. Use oils sparingly.

[22]MenuCal can also assist foodservice outlets to manage allergen information for their menus (FSAI, 2025).

- Where possible, select low-fat ingredients such as low-fat or skimmed milk varieties and low-fat spreads as an alternative to butter.
- Minimise the use of processed meats such as sausages and burgers, chicken nuggets and foods cooked in batter or breadcrumbs.
- Offer low-fat meat options such as chicken, turkey and fish, and other sources of protein such as plant-based meat-alternatives.
- Where possible, use lean cuts of meats and remove all visible fat from meat before cooking and cook without added fats or oils.
- Offer alternative protein sources that are low in fat such as beans and eggs.

**Reduce the total sugar content of meals:**

- Avoid adding sugar during food preparation and cooking.
- Where possible, aim to cook from scratch and avoid using processed or convenience ingredients to help control the amount of added sugar.
- Select alternative food products with less added sugar such as reduced sugar tomato ketchup.
- Offer fresh drinking water and milk instead of sugar-containing drinks.
- Limit unsweetened fruit juice and smoothies to a maximum portion of 150 ml.

**Reduce the salt or sodium content of meals:**

- Source products with less than 1.5 g of salt per 100 g or 100 ml.
- Where possible, choose fresh and whole ingredients and aim to cook from scratch and use homemade recipes to control the amount of added salt.
- Aim to avoid adding salt during cooking and as a seasoning when cooking pasta, rice or other starchy foods.
- To flavour, use alternative to salt such as herbs, spices, garlic, lemon, or onions.
- Limit the use of high salt products, stock cubes, instant gravies and packet soups. Use reduced salt alternatives where these are necessary.
- Offer lean meat and poultry and fish instead of processed meat.
- Select alternative low salt varieties of foods products such as reduced salt tomato ketchup.
- Remove saltshakers or cellars from dining tables.
- Avoid seasoning meals with salt prior to serving, particularly in takeaway outlets.

### 7.2.4 Guiding principles for the frequency of offering some foods

- Incorporate a variety of colourful fruit, salad and vegetables as a default standard menu option to main meals.
- Where practical, cut fruit and vegetables into smaller pieces to make it easier to eat for younger children.
- Limit offering fried food and other high fat products, such as chips and fried potatoes, as a menu option.
- Limit offering chips as a main default accompaniment to main meals and offer healthier starchy alternative foods such as boiled potatoes, pasta or rice.
- Avoid offering both rice and chips as a default accompaniment to main meals.
- Limit offering processed meats, such as chicken nuggets, burgers and sausages, however, if you do, consider the nutrient content of different brands and choose products with lower energy (calories), saturated fat and salt. Also consider incorporating alternative options such as a chicken or turkey burger served with a salad or low-fat cheese topping, or plant-based meat alternatives.
- Offer smaller versions or portions from the adult's main menu.

### 7.2.5 Guiding principles for the portion size of children's meals

- Use smaller utensils when serving children's portions and consider the use of smaller plates, bowls and the use of child-sized cutlery.
- Be aware of 'supersize' portions which can distort the perception of what is needed.
- Review and consider whether the portion size of meals offered on children's menus are age appropriate and all food offered on plate are nutritious and balanced.
- Reduce the portion size of meals offered on a children's menu and offer small and standard portions, recognising small children need smaller meals than older children. This approach can also help reduce food waste and improve sustainability.

## 7.3 Application and monitoring of adherence to achieve reformulation targets

This survey data has informed guiding principles to support the foodservice sector to improve the nutrient quality of meals offered on children's menus and reduce the dietary intakes of target nutrients, as required by the *Roadmap for Food Product Reformulation in Ireland* (Department of Health, 2021). Given this, the FRT will continue to monitor progress by the foodservice sector in improving the nutrient quality of children's meals by reducing their energy (calories), total fat, saturated fat, total sugar and salt content, **within a 1-year period.** Whilst achieving reformulations, it is important to note that foods placed on the Irish market must be safe, as required by Regulation (EC) No 178/2002, Article 14. The results of the nutrient content of children's meals sold by Irish foodservice outlets in 2024 will be used as a baseline and will be monitored by repeating a survey in line with the methodology for sampling and analysis outlined in this report in the future.

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# 10. Appendix

## Appendix 1: Methods used to determine the nutrient content of children's meals

**Table 9** Methods used for the determination of the nutrient content of children's meals

| Analysis | Method summary |
|---|---|
| **Fat and moisture** | This test utilizes the CEM SMART Trac II™ and the Smart6™/Oracle Rapid Fat and Moisture/Solids Analyzer. SMART Trac produces moisture results by removing water (evaporation) via microwave energy and measuring the weight loss on drying. The dried sample is transferred into a plastic sleeve using the Compression Station and inserted into the NMR instrument where it receives a pulse of radio-frequency energy from the NMR for analysis of fat content. |
| **Fatty acids composition** | Fat is extracted from a sample by microwave digestion – saponification in methanolic Potassium Hydroxide solution when fats are converted to free fatty acids (salts). The fatty acids are derivatised to their methyl esters by treatment with a Methylation solution of Sulphuric Acid in Methanol and then extracted with Hexane. Identification and quantification of fatty acids is achieved by gas chromatography using flame ionization detection and Hydrogen as a carrier gas. Total fat content of the sample is obtained using procedure outline above. |
| **Energy calculation** | According to the European Union regulation (REG CE1169) the calculations are performed as follows:<br>Energy (Kcal/100 g) = (Px4) + (Fx9) + (Cx4) + (DFx2)<br>Energy (kJ/100 g) = (Px17) + (Fx37) + (Cx17) + (DFx8) |
| **Total sugars** | Total sugars are extracted from a sample portion with deionised water. The mixture of sample and water is clarified using Carrex I & II reagents, followed by filtration. The obtained clean solution of various sugars is treated with acid to invert (hydrolyse) non-reducing disaccharides as sucrose into reducing monosaccharides as fructose and glucose. The total sugars are then detected by titration according to the Luff-Schorl principle. |
| **Salt** | Food samples are digested using a microwave digestion unit. Sodium is quantified by analysis of the resulting solution using Atomic Absorption Spectrometry. A Varian Spectra 220 is used. The sodium result is then expressed as sodium chloride (salt). |

## Appendix 2: Ipsos B&A market research survey findings

This section provides further information on the main accompaniments offered with a main course meal for children, as informed by Ipsos B&A market research findings. This is shown in Table 10.

**Table 10** Most popular accompaniment offered with main course meal

| Accompaniments offered with main course | Foodservice respondents (n=197) |
|---|---|
| Chips | 93% |
| Potatoes | 72% |
| Vegetables | 70% |
| Gravy | 58% |
| Salad | 55% |
| Rice | 53% |
| Beans | 34% |
| Pasta | 8% |
| Noodles | 1% |
| Other | 5% |

## Appendix 3: Analysed nutrient content of children's meals per 100 g

This section provides an overview of the mean (SD), median (IQR) and minimum-maximum (min-max) nutrient content of children's meals per 100 g. This is shown in Table 11, Table 12, Table 13, Table 14 and Table 15.

**Table 11** Analysed nutrient content of chicken nuggets and chips per 100 g

| Meal subcategory (n=18) | | Chicken nuggets and chips[(a)] | | |
|---|---|---|---|---|
| **Nutrient content per 100 g** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/100 g | 257.00 (27.09) | 257.50 (39.50) | 214.00–317.00 |
| Total sugar | g/100 g | 0.53 (0.29) | 0.50 (0.27) | 0.10–1.00 |
| Total fat | g/100 g | 12.18 (2.92) | 11.65 (4.15) | 7.90–18.40 |
| Saturated fat | g/100 g | 2.71 (1.52) | 2.34 (1.59) | 1.26–5.89 |
| Salt | g/100 g | 0.63 (0.36) | 0.53 (0.48) | 0.13–1.40 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). **(a)** All children's meal samples were analysed as sold.

**Table 12** Analysed nutrient content of beef burger and chips per 100 g

| Meal subcategory (n=17) | | Beef burger and chips[(a)] | | |
|---|---|---|---|---|
| **Nutrient content per 100 g** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/100 g | 265.94 (37.08) | 263.00 (56.00) | 224.00–343.00 |
| Total sugar | g/100 g | 1.98 (0.57) | 2.00 (0.50) | 1.10–3.30 |
| Total fat | g/100 g | 12.80 (3.40) | 12.40 (4.30) | 8.40–19.90 |
| Saturated fat | g/100 g | 3.60 (1.28) | 3.12 (1.61) | 2.17–6.62 |
| Salt | g/100 g | 0.69 (0.29) | 0.65 (0.50) | 0.33–1.28 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). **(a)** All children's meal samples were analysed as sold.

**Table 13** Analysed nutrient content of chicken curry and rice or chips per 100 g

| Meal subcategory (n=17) | | Chicken curry and rice or chips[(a)] | | |
|---|---|---|---|---|
| **Nutrient content per 100 g** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/100 g | 176.65 (44.81) | 172.00 (71.00) | 121.00–270.00 |
| Total sugar | g/100 g | 2.78 (1.27) | 2.80 (1.00) | 0.60–6.00 |
| Total fat | g/100 g | 7.94 (4.15) | 6.90 (3.80) | 2.20–15.30 |
| Saturated fat | g/100 g | 3.66 (2.25) | 3.76 (3.28) | 0.83–9.04 |
| Salt | g/100 g | 0.64 (0.18) | 0.65 (0.23) | 0.23–0.93 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). **(a)** All children's meal samples were analysed as sold.

**Table 14** Analysed nutrient content of pasta and sauce per 100 g

| Meal subcategory (n=16) | | Pasta and sauce[(a)] | | |
|---|---|---|---|---|
| **Nutrient content per 100 g** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/100 g | 131.50 (24.46) | 128.50 (31.25) | 94.00–188.00 |
| Total sugar | g/100 g | 2.41 (0.69) | 2.40 (0.85) | 0.70–3.60 |
| Total fat | g/100 g | 3.25 (2.62) | 2.20 (2.72) | 0.60–10.30 |
| Saturated fat | g/100 g | 1.28 (1.57) | 0.74 (0.90) | 0.15–6.23 |
| Salt | g/100 g | 0.66 (0.38) | 0.62 (0.33) | 0.25–1.90 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). **(a)** All children's meal samples were analysed as sold.

**Table 15** Analysed nutrient content of sausage and mash or chips per 100 g

| Meal subcategory (n=16) | | Sausage and mash or chips[(a)] | | |
|---|---|---|---|---|
| **Nutrient content per 100 g** | | **Mean (SD)** | **Median (IQR)** | **Min-max** |
| Energy | kcal/100 g | 205.19 (44.29) | 189.00 (60.50) | 145.00–313.00 |
| Total sugar | g/100 g | 0.86 (0.54) | 0.70 (0.52) | 0.10–2.10 |
| Total fat | g/100 g | 12.50 (3.53) | 11.60 (3.05) | 8.20–20.70 |
| Saturated fat | g/100 g | 5.18 (1.50) | 4.99 (1.33) | 3.38–9.72 |
| Salt | g/100 g | 1.19 (0.38) | 1.22 (0.68) | 0.53–1.65 |

Data provided as mean and standard deviation (SD), median and interquartile range (IQR), and minimum and maximum values (min-max). **(a)** All children's meal samples were analysed as sold.

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