The Food Reformulation Task Force Progress Report 2023

Údarás Sábháilteachta Bia NA hÉIREANN
Food Safety AUTHORITY OF IRELAND

hi Healthy Ireland

The Food Reformulation Task Force

Progress Report 2023

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Abbreviations

CACF	commercially available complementary foods
EC	European Commission
ECO	European Congress on Obesity
EU	European Union
FSAI	Food Safety Authority of Ireland
INDI	Irish Nutrition and Dietetic Institute
INFID	Irish National Food Ingredient Database
ISBNPA	International Society of Behavioral Nutrition and Physical Activity
IUNA	Irish Universities Nutrition Alliance
MESL	Minimum Essential Standard of Living
NANS	National Adult Nutrition Survey
NPPM	Nutrient and Promotion Profile Model
NPNS	National Pre-School Nutrition Survey
RTEBC	ready to eat breakfast cereal
PHE	Public Health England
UCD	University College Dublin
WHO	World Health Organization

Glossary

Brand type: An own brand or branded product.

Category analysis*:* Data analysis of the nutritional composition of an entire food category that is available on the market (and to the consumer), at a given time.

Matched pair analysis: Data analysis of the same food product (within a priority food category) at two different time points. Matched pairs are the exact same products on the market in both years, and are matched using product name, manufacturer name, and net weight.

Other breakfast cereals: Breakfast cereals that require additional cooking or heating prior to consumption, such as porridges made from oats and other cereals.

Per suggested serving size analysis: Data analysis of the composition of a food according to the manufacturer suggested serving size on a food label.

Ready to eat breakfast cereal: Breakfast cereals that require no preparation and are usually consumed with the addition of milk or a non-dairy alternative to milk.

Subcategory analysis: Data analysis of a group of products with similar nutritional characteristics within a food category when it is composed of a varying range of product types with broad nutritional characteristics.

Yoghurt: In the context of this report natural yoghurt is a dairy-based yoghurt made with yoghurt cultures and without the addition of flavouring. Flavoured yoghurt is a dairy-based yoghurt made with yoghurt cultures and with additional ingredients to add flavour. Non-dairy yoghurt alternatives are alternatives to yoghurt made from plant-based ingredients.

Opening statement

Dr Pamela Byrne,

Chief Executive Officer,

Food Safety Authority of Ireland.

Mr Matthew Doyle,

Head of Healthy Ireland,

Department of Health.

The food in supermarkets, shops, and at local markets has evolved in recent years, changing the diversity of food we can purchase and consume. Eating meals that have been cooked out-of-home from food trucks, cafés, delis, restaurants, takeaways, together with the use of central kitchens and meal delivery apps, are also changing the types of food we eat, the quantity of food, and the nutritional composition of our diets. There is compelling scientific evidence that excess energy, sugar, salt, and saturated fat levels in certain foods is contributing to obesity and related health problems in young children, teens, and adults in Ireland. The Food Reformulation Task Force, which was established in late 2021 to implement A Roadmap for Food Product Reformulation in Ireland (2021–2025), continues to support retailers, manufacturers, and the foodservice sector in their efforts to reformulate foods and improve the nutritional content of food. Although obesity is a complex issue, food reformulation is a proven measure that improves consumer nutrient intakes.

The task force completed a substantial amount of work in reformulation monitoring and in supporting food businesses to make progress towards reducing calories, salt, saturated fat, and sugar in everyday pre-packed foods and drinks in 2023. The work focused on retail market monitoring and surveillance; widespread communicating of reformulation targets; raising awareness among food businesses of solutions to help meet targets; providing support to manufacturers, retailers, and foodservice businesses; drafting targets for commercially available weaning foods; carrying out foodservice project work; and preparing for the future. Details of the work undertaken in 2023 are outlined in this progress report.

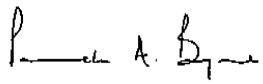
In 2023, the task force focused on ensuring food businesses were clear about whether the reformulation targets applied to their business and helped them understand their baseline data. Food businesses have been encouraged to examine their ingredients and supply chains and actively seek out ingredients and foods that are lower in calories, salt, saturated fat, and sugar. Food businesses have consistently been encouraged to contact the task force for support, to put reformulation on their business agenda, and to establish teams whose responsibility it is to implement reformulation targets. Food businesses actively working towards the reformulation targets advise others that it is only through deliberate and determined action that food businesses will achieve success. At every opportunity food businesses have been encouraged to consider their product development plans against the reformulation targets and to publish their commitments to Irish targets on their websites. The task force communicated with stakeholders through many channels in 2023: one-to-one meetings; technical webinars; workshop; conference presentations; food category briefings;

surveillance and monitoring reports on salt and sugar in foods; label verification report; an 8-week social media information campaign aimed at small and medium food businesses and foodservice sectors; regular emails to the Food Reformulation Network; reformulation website updates; and a targeted consultation.

The task force adopted some new ways of working to deliver the Roadmap. They collaborated with industry to increase awareness of the targets for food reformulation among a wider audience by leveraging collaborator networks and communication channels. This is an efficient and effective route to amplify the task force's message on reformulation. A co-created solution was developed to overcome a data challenge in the project, and the task force also sought the research capability of other public sector organisations (e.g. *safe*food, Munster Technological University and University College Dublin), covering areas such as extending knowledge on consumer attitudes and perceptions of reformulation, setting a benchmark for salt intakes and establishing the building blocks for future reformulation monitoring by way of a scoping review on a branded food database, respectively.

The monitoring programme shows that some excellent progress has been made in certain food categories, such as breakfast cereal and yoghurt, likely due to the early engagement and commitment to food reformulation by these manufacturers. However, there is more progress to be made by some products within these categories. Parts of the foodservice industry have made headway in addressing the calorie, salt, and saturated fat content of meals served to hundreds of thousands of people every day in the workplace in Ireland, which has created a huge positive impact. Great strides in salt reformulation have taken place due to the commitment to salt reduction in Ireland which started 20 years ago. However, there is scope for further salt reformulation within many food categories. Although some gains have been made in reducing salt, sugar, and saturated fat, entire food categories must yet improve, and this is particularly relevant for both own-brand (private label) as well as branded foods. Engagement with ingredient suppliers reinforces the fact that although food reformulation may be challenging in certain food categories where substantial nutrient compositional changes are needed, there are many ingredient substitutions and solutions to help achieve good-tasting food with greatly improved nutritional composition. Our engagement with chefs leaves us in no doubt that they are important allies of public health. Finally, the response from some parts of the retail sector has been inspiring and the development of company reformulation policies is warmly welcomed.

Dr Pamela Byrne



Chief Executive Officer

Food Safety Authority of Ireland

Mr Matthew Doyle

Head of Healthy Ireland

Department of Health

Food Reformulation Task Force year 2 overview

The Food Reformulation Task Force is a strategic partnership between the Food Safety Authority of Ireland (FSAI) and Healthy Ireland. It was established in 2022 to implement A Roadmap for Food Product Reformulation in Ireland, a core element of Ireland's Obesity Policy and Action Plan (Department of Health, 2021). The task force is made up of a dedicated team in the FSAI and an oversight group, chaired by Matthew Doyle, head of Healthy Ireland.[1] Actions completed by the task force in 2023 to realise the ambitions set out in the Roadmap are described in Goals 1–15 in this report. Key highlights of actions completed in 2023 include:

- To raise awareness of the Irish food reformulation targets and communicate progress to general, food industry and scientific audiences, 24 presentations, and 113 stakeholder meetings were completed in 2023.
- To continue informing the food industry of the reformulation targets set out in the Roadmap, a variety of communication approaches were used, including a social media campaign; publication of information and reports; hosting of a technical webinar; food category specific meetings; a collaboration for health workshop; and issuing of communications to the Food Reformulation Network.
- The task force commissioned research to determine salt intakes in the adult population living in Ireland. This research found salt intakes have decreased in both males (11.6 vs 9.5 g/day) and females (8.8 vs 7.5 g/day) between 2008 and 2022. Despite this progress, current intakes remain above the FSAI population salt target of 6 g/day.
- To monitor reformulation progress over time, the task force established a data repository which compiles national branded food composition datasets. This repository can be used to trend the evolution of the nutritional composition of food categories prioritised for reformulation over time and was used in the compilation of the monitoring section of this report.
- The FSAI participated in the European Union's (EU) Joint Action Best-ReMaP – Healthy Food for a Healthy Future. Using data collected as part of this project, this report benchmarks target nutrients in 16 priority food categories in 2021. The nutrient values presented in this report and can be used to measure future reformulation efforts.

[1] Oversight group members include Catherine Curran, Assistant Principal Officer, Health and Wellbeing Unit, Department of Health; Fiona Ward, Policy Advisor for Nutrition and Obesity, Health and Wellbeing Unit, Department of Health; Dr Pamela Byrne, Chief Executive Officer, FSAI; Dr Wayne Anderson, Director of Food Science and Standards, FSAI; and Professor Ivan Perry, School of Public Health, University College Cork.

- A detailed review of the evolution of nutritional composition of yoghurts, other breakfast cereals, and ready to eat breakfast cereal between 2016 and 2021 is presented in this report. In summary, a trend towards target nutrient reductions per 100 g was observed for energy, sugar, and saturated fat but not salt. Changes in energy and nutrient content differed between brand and own brand products.
- A review of trends in the sodium content of food categories prioritised under the Salt Reduction Programme (commenced by the FSAI in 2003) saw the rate of decline in sodium content per 100 g stagnate in more recent years in food categories that have data for more than one time point, except snack products, processed cheese, and soups.
- An examination of sodium content, measured by laboratory analysis, of breads sampled in 2022 concluded that although some types of bread have made progress in reducing their sodium content, there has also been an increase in the sodium content of other types of bread, for example in wholegrain and unpackaged breads.
- An examination of the sugar content, measured by laboratory analysis, of soups and sauces in 2022 found on average manufacturer suggested serving size of soup contains 9.5 g/100 g and manufacturer suggested serving size of sauce contains 10.33 g/100 g. There was wide variation in sugar content and suggested serving size, meaning there is opportunity for reformulation.
- A review of the accuracy of declared nutrition labels on soups, sauces, and breads sampled in 2022 found 98.4% of nutrition declarations were conformant with European Commission (EC) guideline nutrition labelling tolerances for sugar, in soups and sauces, while 99% of labels were conformant with EC guideline nutrition labelling tolerances for salt in soups, sauces, and breads. The declared nutrition labels on these products are a reliable source of information for monitoring salt and sugar composition.
- The Irish National Food Ingredient Database (INFID) is made up of branded foods consumed by participants of National Food Consumption Surveys undertaken by the Irish Universities Nutrition Alliance (IUNA). For this report, INFID 4–6 (2011–2019) datasets were used to identify trends in nutrient composition in the 40 food categories prioritised for food reformulation. Of note, there was a trend towards a decline in the sugar content of beverages between 2011 and 2019. Salt reduction in many food categories stagnated, indicating a slowing down in salt reformulation efforts.
- An examination of the salt, saturated fat, and sugar content of gluten-free breads, cakes, and biscuits was undertaken and found that gluten-free varieties have a similar saturated fat, sugar, and salt content to the gluten-containing varieties. This finding means that gluten-free foods require reformulation alongside gluten-containing products.

- A review of the nutrient composition of a sample of commercially available complementary foods (foods marketed for infants and young children under 36 months of age) on the Irish market in 2021, using the World Health Organizaion (WHO), Nutrient and Promotion Profile Model, was completed. This informed the setting of reformulation targets which were published for consultation in late 2023.
- To embed a health equity lens into the reformulation monitoring approach, in 2023 the task force included the following actions:
    - A pilot project benchmarking target nutrients in food products included in the Minimum Essential Standard of Living food basket, which can be used to measure reformulation progress over time.
- Data analysis disaggregated by brand and own-brand.

Further details on these highlights are given throughout this report.

Background to food reformulation in Ireland

The goal of reformulation is to reduce energy (calories) and target nutrients (salt, saturated fat, and sugar) without increasing the energy or nutrients of concern and to ensure the nutritional composition of foods and drinks are improved. Some food businesses have just begun work in this area. Others have been reformulating their food since 2015 or later, in line with the United Kingdom sugar and salt reduction programmes, or to comply with the Food (Promotion and Placement) (England) Regulations, 2021, and have redirected their reformulation plans to meet the targets set out in A Roadmap for Food Product Reformulation in Ireland (Department of Health, 2021). An additional impetus to reformulation has been the anticipation of tighter EU food regulation on labelling, including the proposed introduction of mandatory front-of-pack nutrition labelling and nutrient profiles.

Goal 1: Regular communications

The task force used many communication channels to reach as many stakeholders as possible, for example: workshop; webinars – food industry technical briefing and Irish Nutrition and Dietetic Institute (INDI); scientific community and policymakers via conferences – International Society of Behavioral Nutrition and Physical Activity (ISBNPA), European Congress on Obesity (ECO), Nutrition Society, Best-ReMaP,[2] Sugar and Calorie Reduction Network, *safe*food; FSAI industry fora meetings; and food industry category briefings. A sample of key presentations during 2023 are listed in Table 1.

Table 1: Key presentations in 2023

Date	Presentation title
8 March	FSAI sodium sampling and monitoring, Ministry of Health, Labour and Welfare, Japan
14 March	Food reformulation update, FSAI Retail Forum
5 April	Technical briefing on food reformulation – industry queries: webinar
17 April	University College Dublin (UCD) Research Bites – benchmarking the healthiness of food retail in Ireland
26 April	Food reformulation in Ireland: a workshop for food businesses
11 May	Update on food reformulation, INDI webinar
19 May	The prominence of healthy and unhealthy food in supermarkets in urban Ireland, ECO
8 June	Educators' forum on food reformulation targets in Ireland
14 June	Can food reformulation be monitored using information from online retailers? – a pilot study, Nutrition Society Irish Section Conference 2023
15 June	Sodium snackdown: comparing branded vs private label savoury snacks from 2008 and 2021 against the WHO global sodium benchmarks, Nutrition Society Irish Section Conference, 2023
17 June	Availability of healthy and unhealthy food in supermarkets in urban Ireland, ISBNPA
26 June	Presentation to trainers' network on food reformulation targets in Ireland
28 June	Food industry category meeting on results of sodium monitoring in snack foods

[2] Best-ReMaP (2021–2023) was a joint action funded by the EU's Health Programme. The project aimed to develop and implement policy proposals in food reformulation to help shape healthier food choices for children.

Date	Presentation title
29 June	Food industry category meeting on results of sodium monitoring in bread
29 June	Update on the Salt Reduction Programme and Reformulation Monitoring Projects, European Salt Action Network (ESAN), Switzerland
12 September	Food reformulation presentation to local enterprise office (incubation hub managers)
14 September	Key results from EU Joint Action Best-ReMaP on reformulation of processed food monitoring, Dublin
19 September	Food reformulation in Ireland, EU partners of the Best-ReMaP reformulation, Monitoring Group, Ministry of Solidarity and Health, France
10 October	Food reformulation update to FSAI Retail Forum
11 October	Reformulation targets in Ireland, Teagasc Conference
19 October	Food reformulation in the foodservice sector: webinar
21 November	Availability and prominence of healthy and unhealthy food in supermarkets in urban Ireland, *safe*food All-Island Obesity Action Forum
22 November	Food industry category meeting on sugar monitoring in soups and sauces
23 November	Reformulation monitoring in Ireland, WHO Sugar and Calorie Reduction Network

Food reformulation annual workshop

To be successful in implementing the Roadmap for Food Product Reformulation in Ireland, it is important for all stakeholders to share ideas and work together. Food reformulation is for all sectors of the food industry, both small and large businesses, and applies to entire product portfolios.

Top tips from "Food Reformulation in Ireland: A Workshop for Food Businesses, April 2023"

1. **Awareness:** Ensure external business stakeholders are aware of your reformulation goals and keep them informed about your progress, e.g. invite ingredient suppliers to tell you about innovation in their sector and bring ideas to you. Work with them as you reformulate your product portfolio.
2. **Target market:** You must know your customer well and check in with them throughout the reformulation process, e.g. conduct sensory testing and attitudinal research to ensure new product recipes/use of new ingredients are acceptable.
3. **Research:** If you are a small or medium enterprise, learn from others in your sector. Review the capabilities and opportunities that others have shown by looking at competitor product ingredients and nutritional composition.

4. **Seek expert help:** Use available supports such as those mentioned on the food reformulation webpage.

Food reformulation webpage

The Food Reformulation webpage on the FSAI website had new sections and updates for food businesses added in 2023.

- **New to reformulation:** There is a section for businesses new to reformulation entitled 'How does my food business begin to reformulate our meals/products/ingredients?'.
- **Case studies:** There is a case studies section where food businesses have described how they reduced sugar, saturated fat, and salt. A calorie reduction project by the foodservice sector is also included. These industry case studies help provide information to support others in making the food environment healthier.
- **Updates:** An updates section has been added to the website and contains updates on a lactose allowance for yoghurts and advice on the use of artificial sweeteners.

Social media campaign

In the fourth quarter of 2023, a comprehensive stakeholder social media awareness campaign focused on food reformulation. The primary objective was to enhance understanding of the targets for food reformulation among small and medium food businesses and the foodservice sector. The campaign utilised multiple social media platforms, such as Facebook, X (formerly Twitter), Instagram, and LinkedIn. Posts were developed with optimised hashtags and social tagging to maximise reach and visibility.

The campaign resulted in a notable growth of followers to the FSAI website, with a significant increase in clicks to the task force's dedicated website page compared with previous months, highlighting the positive impact on engagement and interest during the campaign.

Stakeholder engagement

Figure 1 shows the stakeholder engagement in 2023.

*Stakeholders consist of manufacturers, retailers, foodservice sector, professional groups, governmental organisations, universities, academic institutions, data providers and EU reformulation networks.

Figure 1:Stakeholder engagement in 2023

Goal 2: Report on sodium dietary intakes in adults living in Ireland

The estimation of dietary sodium intakes and key dietary sources of salt in adults in Ireland, by urinary and dietary analysis, was undertaken by lead institute, Munster Technological University, and partner institute, University College Cork. The report is based on the 2022 National Adult Nutrition Survey (NANS) II.

The findings from the current study show that estimated salt intakes are lower for both males (11.6 vs 9.5 g/day) and females (8.8 vs 7.5 g/day) compared with the previous NANS 2008–2010 (Irish University Nutrition Alliance, 2011).[3] Although salt intakes are lower among adults in Ireland than previously reported (2008–2010), population intakes are still above the FSAI population maximum target level of 6 g/day for both males and females, indicating that further reductions are necessary to meet recommendations.

Goal 3: Establish and maintain a data repository

The Food Reformulation Task Force Data Repository was established to enable monitoring of changes in the composition of reformulation target nutrients (salt (g), saturated fat (g), and sugar (g)) and energy (calories) in priority food categories. The aim of the data repository is to create a single location for all data sources. Food label data are added to the data repository to represent the nutrient status of food on the Irish market at a given point in time. The data repository currently holds nutritional information on 17,380 food products across all 40 priority food categories, from 11 data sources.

[3] Urinary salt equivalents determined from spot urine samples in NANS (2008–2010) and NANS II (2021–2022) corrected with sex-specific 24-hour urine volume estimations derived from *Perry I, Browne G, Loughrey M, Harrington J, Lutomski J, Fitzgerald A. Dietary Salt Intake and Related Risk Factors in the Irish Population. Safefood. 2010*. (men 1.97L vs women 1.67L).

Goal 4: Participate in European Joint Action Best-ReMaP – work package 5 reformulation monitoring

The FSAI took part in an EU Joint Action Best-ReMaP work package 5, sharing best practice in reformulation monitoring between 2020 and 2023. A dissemination event of key findings, organised by Healthy Ireland and University College Cork, took place on 14 September 2023 in Dublin. It provided a platform for the task force to outline some of the results and learnings in food reformulation monitoring from FSAI's participation in the project.

The close-out conference for the Best-ReMaP project took place on 18–20 September 2023 and was hosted at the Ministry of Solidarity and Health in Paris. A two-day general assembly of the Best-ReMaP Joint Action partners showcased the accomplishments of the Joint Action Best-ReMaP. The event convened experts from across Europe who engaged in discussions regarding the most recent research findings and policy advancements in food reformulation, food marketing directed at children, and the public procurement of food.

In 2021, prior to the establishment of the task force, market snapshots of five food categories were completed by the FSAI as part of the Joint Action Best-ReMaP project. These data were provided to the Food Reformulation Task Force and, in 2023, the data were recategorised using the IUNA food categorisation structure that has been adopted by the task force. In total the data represented 16 priority food categories. Summary statistics are presented in Tables 2–5 for 13 of the categories and the other 3 food categories are presented in a detailed analysis under Goal 7. Only the specific target nutrients for reformulation are shown for each food category.

Table 2: Mean (SD), median (IQR) and minimum and maximum target nutrient content per 100 ml of beverages

Priority food category	Statistic	Sugar (ml)
Alternative to milk & milk-based beverages (n=164)	mean (SD)	9.31 (13.65)
	median (IQR)	4.75 (6.70)
	min–max	0–62
Carbonated beverages (n=375)	mean (SD)	3.59 (3.72)
	median (IQR)	4.00 (4.72)
	min–max	0–18
Fruit juices & smoothies (n=82)	mean (SD)	9.91 (1.30)
	Median	10 (2)

Priority food category	Statistic	Sugar (ml)
	min–max	5.50–12.60
Squashes, cordials & fruit juice drinks (n=126)	mean (SD)	3.32 (2.87)
	Median	3.90 (3.78)
	min–max	0.05–16.00
Other beverages (n=56)	mean (SD)	1.47 (2.50)
	median (IQR)	0.15 (2.30)
	min–max	0–9

SD= standard deviation, IQR= interquartile range, min-max= minimum – maximum, kcal= kilocalories, n= sample size, NT= not targeted

Table 3: Mean (SD), median (IQR) and minimum and maximum target nutrient content per 100 g of desserts

Priority food category	Statistic	Sugar (g)
Desserts (n=54)	mean (SD)	17.74 (7.33)
	median (IQR)	18.45 (8.35)
	min–max	1.60–31.00

SD= standard deviation; IQR= interquartile range; min-max= minimum – maximum; kcal= kilocalories; g= gram; n= sample size; NT= not targeted

Table 4: Mean (SD), median (IQR) and minimum and maximum target nutrient content per 100 g of breads

Priority food category	Statistic	Energy (kcal)	Sugar (g)	Salt (g)
Other breads (n=178)	mean (SD)	NT	NT	0.99 (0.37)
	median (IQR)	NT	NT	0.97 (0.30)
	min–max	NT	NT	0.10–2.50
White sliced bread & rolls (n=175)	mean (SD)	260.49 (36.23)	4.77 (3.07)	1.06 (0.22)
	median (IQR)	257 (47)	3.70 (3.85)	1.10 (0.12)
	min–max	184–368	0.19–16	0.10–2.80
Wholemeal & brown bread & rolls (n=146)	mean (SD)	242.29 (28.82)	2.83 (1.46)	1.10 (0.29)

Priority food category	Statistic	Energy (kcal)	Sugar (g)	Salt (g)
	median (IQR)	234.50 (34.50)	2.60 (1.60)	1.06 (0.20)
	min–max	173–331	0.10–9	0.10–2.29

SD= standard deviation; IQR= interquartile range; min-max= minimum – maximum; kcal= kilocalories; g= gram; n= sample size; NT= not targeted

Table 5: Mean (SD), median (IQR) and minimum and maximum target nutrient content per 100 g of meat and meat products

Food category	Statistic	Energy (kcal)	Saturated fat (g)	Salt (g)
Bacon & ham (n=334)	mean (SD)	NT	3.54 (2.71)	2.66 (1.68)
	median (IQR)	NT	3.20 (4.40)	2.50 (0.90)
	min–max	NT	0.40–14.00	0.80–27.00*
Beef & veal (n=22)	mean (SD)	NT	1.21 (0.67)	NT
	median (IQR)	NT	1 (0.28)	NT
	min–max	NT	0.60–3	NT
Chicken, turkey & game (n=73)	mean (SD)	128.74 (32.61)	NT	1.31 (0.54)
	median (IQR)	120 (18)	NT	1.10 (0.90)
	min–max	95–273	NT	0.50–2.60
Sausages (n=191)	mean (SD)	NT	10.28 (3.38)	2.66 (1.10)
	median (IQR)	NT	9.80 (3.60)	2.10 (2.03)
	min–max	NT	0.70–19	1.10–6.50

*NOTE: 27 g/100 g of salt declared on the label for prosciutto ham, this value accurately reflects the label information; however, it is a high value and an outlier, and should be interpreted with caution.
SD= standard deviation; IQR= interquartile range; min-max= minimum – maximum; kcal= kilocalories; g= gram; n= sample size; NT= not targeted

The nutrient content of yoghurts and breakfast cereals in 2021, also collected as part of this project, are presented under Goal 7.

Goal 5: Explore new technology to support reformulation monitoring

The Food Reformulation Task Force foresee web scraping[4] as a potential tool to add efficiencies to monitoring the nutritional composition of food (using the nutrient declaration on food labels). The task force has gained experience in piloting web scraping software, particularly from work undertaken as part of the EU Joint Action Best-ReMaP project and a student project with Technological University Dublin (TUD) (O'Neil et al., 2023). Early experience with web-scraped data suggests it offers a time-saving opportunity to monitor the 40 food categories prioritised for food reformulation. Further work will continue to investigate the feasibility and usefulness of web-scraped data in the monitoring work of the task force.

Goal 6: Implement the reformulation monitoring plan

A significant role for the task force is to monitor progress in reducing energy (calories) and target nutrients (salt, saturated fat, and sugar) in the 40 food categories prioritised for food reformulation in Ireland. The Food Reformulation Task Force Progress Report 2022 summarised the monitoring approach, including food categories to be captured in annual market snapshots and food categories for sampling and laboratory analysis (Food Safety Authority of Ireland, 2023a). This year, food label verification work, comparing laboratory analysed values with labelled food values, was added to the monitoring approach. All three elements of the monitoring plan were implemented in 2023 (retail market snapshot, laboratory analysis, and label verification).

Market snapshot:

In 2023, the task force collected food product label information for the following food categories:

1. Soups, sauces and miscellaneous;
2. Savouries;
3. Cheese.

[4] Web scraping is the process by which information is collected from websites using software tools. The information can be automatically collected from websites at regular intervals and recorded in a database. The information can then be organised for analysis.

In total, food label information was collected for over 3,060 food products across the three food categories. The results of these market snapshots will be published in the 2024 progress report.

Sampling and laboratory analysis:

In 2023, the task force completed food product sampling in the following food categories which were sent for laboratory analysis[5] to determine the content of nutrients of interest:

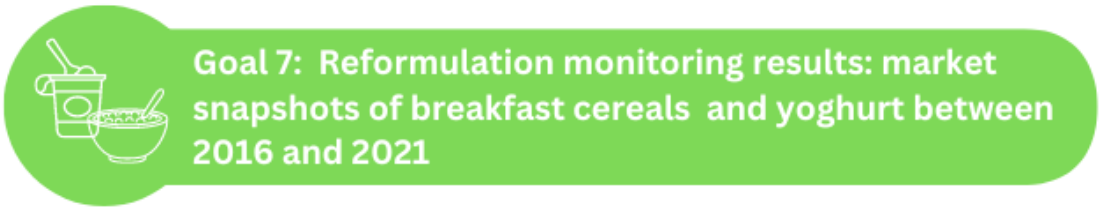
1. Processed cheese (salt);
2. Carbonated sugar-sweetened beverages (sugar);
3. Pizza sold in foodservice outlets (salt).

The results of these analysis will be published in 2024.

Label verification

Verification of the accuracy of nutrition declarations on food products collected and sent for laboratory analysis in 2023 (processed cheese, carbonated sugar-sweetened beverages, and pizza sold in foodservice outlets (where nutrition information was provided)) will be completed and published in 2024.

[5] The Food Reformulation Task Force would like to acknowledge Public Analyst's Laboratory, Galway who completed salt and sugar analysis for foods sampled in 2023.



Other breakfast cereals

Definition: 'Other breakfast cereals' are breakfast cereals that require additional cooking or heating prior to consumption, such as porridges made from oats and other cereals.

In 2016, nutrition declaration and food label information were collected from 122 other breakfast cereals on the Irish market from five of the leading grocery retailers, convenience stores, and health food shops. In 2021, nutrition declaration and food label information were collected for 62 other breakfast cereals from four of the leading grocery retailers, who accounted for at least 60% of market share. The difference in the numbers of other breakfast cereals collected at the two time points is explained by the exclusion of health food and convenience stores in 2021, due to more limited data collection during the COVID–19 pandemic.

The nutritional composition data were analysed per 100 g (as per information contained in the nutrient declaration on the label) and per manufacturer suggested serving size.

Category analysis of other breakfast cereals per 100 g

Category analysis provides an overview of the average nutritional composition of a food category on the market and available to the consumer at a given time. In the Irish Food Reformulation Programme, other breakfast cereals are prioritised for the reduction of energy (calories) (20%), saturated fat (10%), and sugar (20%). The energy and nutrient composition of the category other breakfast cereals in 2016 and 2021 is shown in Table 6 and Figure 2.

Table 6: Nutrient and energy (calories) composition of other breakfast cereals samples in 2016 and 2021 per 100 g

Measure	2016			2021		
	Energy (kcal)	Saturated fat (g)	Sugar (g)	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean	367.35	1.02	5.71	367.29	1.02	5.10
SD	22.33	0.39	7.24	18.81	0.23	7.78
Median	368.50	1.00	1.50	371	1.00	1.10
IQR	14.75	0.40	10.08	13	0.28	3.05
Min	273	0.00	0.00	269.10	0.70	0.10
Max	416	2.70	32	415	1.50	32
Sample (n)	122	119	120	62	62	62

SD= standard deviation; IQR= interquartile range; Min= minimum; Max= maximum; n= sample size; kcal= kilocalories; g= gram

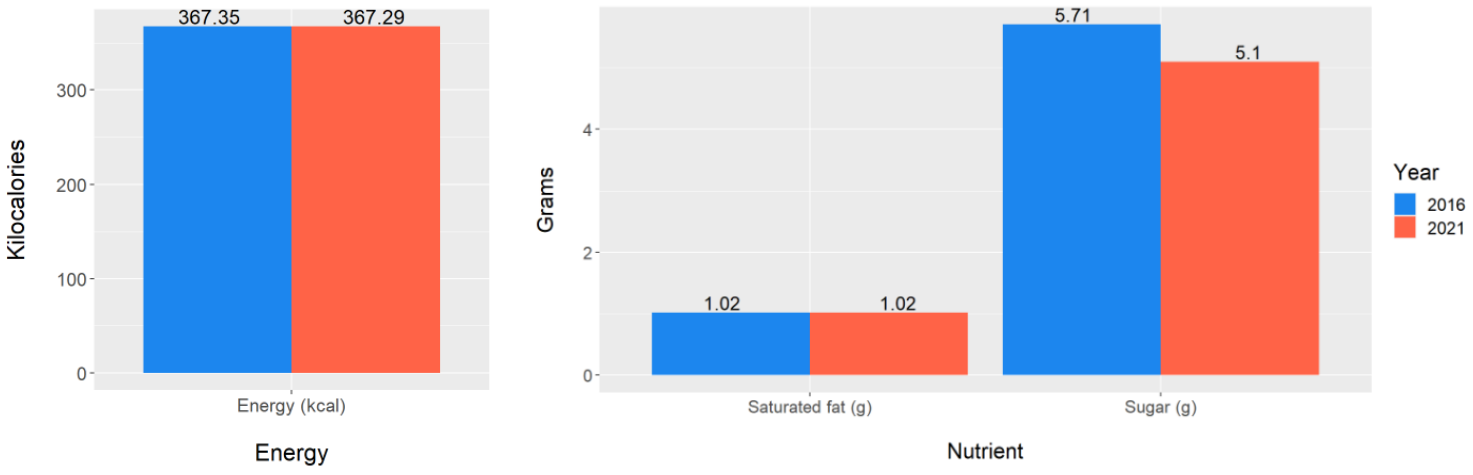


Figure 2: Mean energy (calories), saturated fat (g), and sugar (g) content per 100 g of other breakfast cereals in 2016 and 2021

There was a 10.68% (0.61 g) reduction in the sugar content per 100 g of other breakfast cereals between 2016 and 2021. There was minimal change in the energy (calorie) content and no change in saturated fat content of other breakfast cereals. This is shown in Table 7. **Although good progress has been made in reducing sugar at category level in other breakfast cereals, continued reformulation efforts are needed by the food industry to meet all targets.**

Table 7: Percentage change in mean energy (calories), saturated fat (g), and sugar (g) content of other breakfast cereals per 100 g between 2016 and 2021

Measure	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean difference % (kcal/g)	–0.02% (–0.06)	0% (0.0)	–10.68% (–0.61)

%= percentage; kcal= kilocalories; g= gram

Matched pair analysis of other breakfast cereals per 100 g

Matched pair analysis provides an in-depth examination of the nutritional composition of the same food product within a priority food category, over time. A detailed review of the other breakfast cereal products available in 2016 and 2021 identified nine matched pairs, (matched pairs are the exact same products on the market in both years, the matching was completed using product name, manufacturer name and net weight). As the sample was small, differences in the median energy (calories), saturated fat (g), and sugar (g) content per 100 g between the matched pairs were explored. **This analysis identified no percentage difference between median matched product pair energy (calories), saturated fat (g), and sugar (g) content between 2016 and 2021. There was no improvement in the nutrient composition of this sample of products that remained on the market between 2016 and 2021.** An illustrated example of progress per /100 g is described in Appendix 1.

Brand type analysis of other breakfast cereals per 100 g

The Roadmap for Food Product Reformulation requires that the retail market is monitored by brand type. When other breakfast cereals were disaggregated by brand type into **branded** and **own brand**, there was a difference in the change in energy (calories), saturated fat (g), and sugar (g) content per 100 g between 2016 and 2021.

Between 2016 and 2021, own brand other breakfast cereals saw a 1.32% (4.81 kcal) increase in energy, a 2.36% (0.13 g) increase in sugar, and a 3.16% (0.03 g) increase in saturated fat per 100 g, which is shown in Figure 3. **Own brand other breakfast cereals require inclusion in**

reformulation plans by the food industry. Branded other breakfast cereals saw a 0.77% (2.84 kcal) decrease in energy (calories), a 1.89% (0.02 g) decrease in saturated fat, and a 17.53% (1.02 g) decrease in sugar content per 100 g between 2016 and 2021, which are also shown in Figure 3. **Although particularly good progress has been made in reducing sugar in branded other breakfast cereals, additional reformulation efforts of energy and saturated fat are needed by the food industry to meet the targets.**

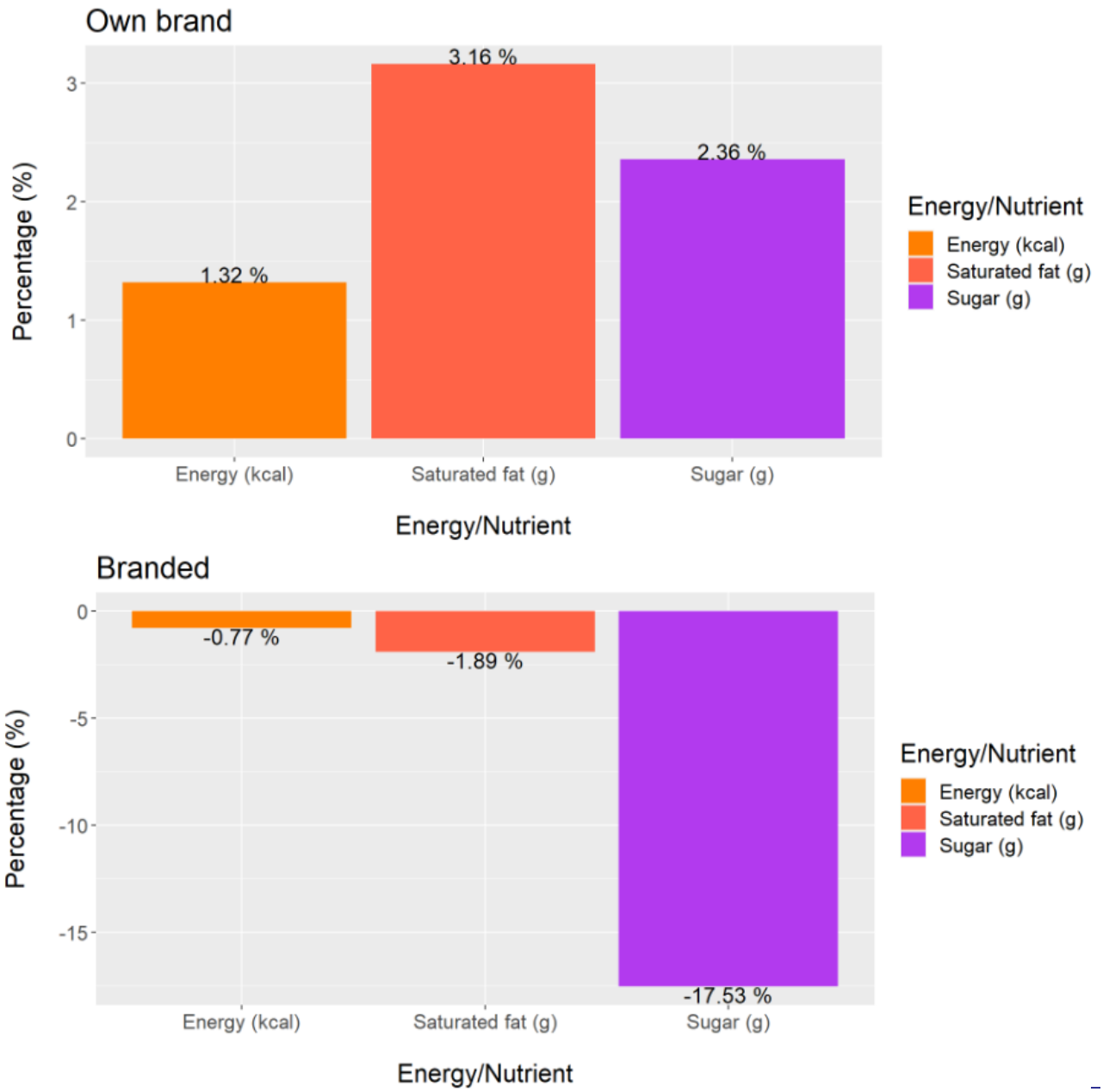


Figure 3: Percentage difference in mean energy (calories), saturated fat (g), and sugar (g) content per 100 g of own brand and branded other breakfast cereals between 2016 and 2021

Analysis per suggested serving size

The Roadmap for Food Product Reformulation states that portion size will be integrated into the methodology for measuring progress. Manufacturer suggested serving size on food labels is used as a proxy for portion size in the monitoring section of this report. Analysis per suggested serving size provides information on the typical nutritional composition in a portion as recommended by manufacturers.

Category analysis per suggested serving size of other breakfast cereals

Category analysis provides an overview of the average nutritional composition of a food category on the market and available to the consumer at a given time. The mean (SD), median (IQR), minimum and maximum energy (calories), saturated fat (g), and sugar (g) content per suggested serving size of other breakfast cereals in 2016 and 2021 are shown in Table 8 and Figure 4. In 2016, 100% of other breakfast cereals provided a suggested serving size, where serving size ranged from 27 g to 75 g. In 2021, 95.7% of other breakfast cereals provided a suggested serving size, where serving size ranged from 27 g to 57 g. The manufacturer suggested serving size of other breakfast cereals decreased between 2016 and 2021.

Table 8: Nutrient and energy (calories) composition of other breakfast cereals in 2016 and 2021 per suggested serving size

Measure	2016			2021		
	Energy (kcal)	Saturated fat (g)	Sugar (g)	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean	143.56	0.40	2.47	142.43	0.39	2.27
SD	33.14	0.19	3.58	24.44	0.11	3.69
Median	145.60	0.40	0.50	147.20	0.36	0.40
IQR	42.42	0.16	3.39	29.59	0.09	1.76
Min	84	0	0	104.22	0.24	0.20
Max	281.25	1.35	18.24	209.76	0.75	18.24
Sample (n)	122	119	120	59	59	59

SD= standard deviation; IQR= interquartile range; Min= minimum; Max= maximum; n= sample size; kcal= kilocalories; g= gram

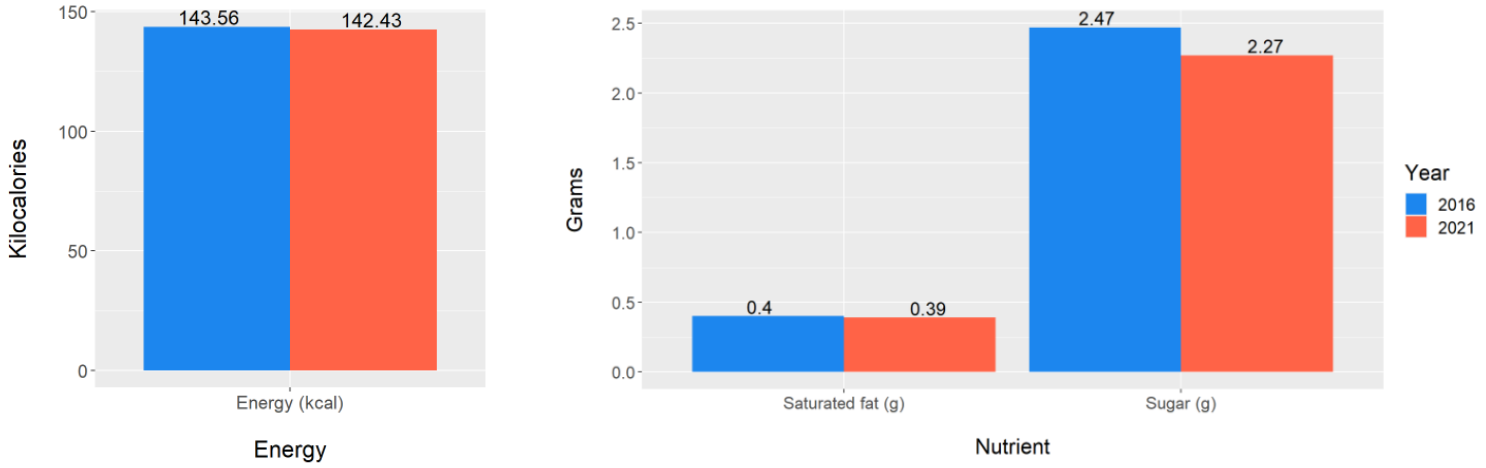


Figure 4: Mean energy (calories), saturated fat (g), and sugar (g) content per suggested serving size of other breakfast cereals in 2016 and 2021

There was a 2.5% (0.01 g) reduction in the saturated fat content and an 8.1% (0.2 g) reduction in the sugar content per suggested serving size of other breakfast cereals between 2016 and 2021. There was minimal change in the energy (calorie) content of other breakfast cereals, which is shown in Table 9. **When serving size is accounted for, further progress in reformulation of energy, saturated fat, and sugar is needed in the other breakfast cereal category to meet all the reformulation targets**.

Table 9: Percentage change in mean energy (calories), saturated fat (g), and sugar (g) content of other breakfast cereals per suggested serving size between 2016 and 2021

Measure	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean difference % (kcal/g)	–0.79% (–1.13)	–2.50% (–0.01)	–8.1% (–0.2)

% = percentage; kcal = kilocalories; g = gram.

Matched pair analysis per suggested serving size of other breakfast cereals

Matched pair analysis provides an in-depth examination of the nutritional composition of the same food product within a priority food category over time. A detailed review of the other breakfast cereal product nutrient composition per suggested serving size available in 2016 and 2021 identified eight matched pairs, (matched pairs are the exact same products on the market in both years; matching was completed using product name, manufacturer name, and net weight.) As the sample size was

small, differences in the median energy (calories), saturated fat (g), and sugar (g) content per suggested serving size between the matched pairs were explored. **This analysis identified a 38.10% (0.16 g) increase in median sugar content of the matched pairs between 2016 and 2021. Although the percentage is large, the actual gram amount is small. Nonetheless, the sugar content is moving in the wrong direction in this sample of products, which remained on the market between 2016 and 2021.**

Brand type analysis per suggested serving size of other breakfast cereals

The Roadmap for Food Product Reformulation requires that the retail market is monitored by brand type. When other breakfast cereals were disaggregated by brand type into **branded** and **own brand**, there was a difference in changes to mean energy (calories), saturated fat (g), and sugar (g) content per suggested serving size between 2016 and 2021.

Between 2016 and 2021, own brand other breakfast cereals saw a 4.53% (6.7 kcal) decrease in energy, a 5.13% (0.02 g) decrease in saturated fat, and a 12.64% (0.35 g) decrease in sugar per suggested serving size. Branded other breakfast cereals saw a 1.52% (2.14 kcal) increase in energy (calories), a 4.76% (0.02 g) decrease in saturated fat, and a 4.37% (0.1 g) decrease in sugar content per suggested serving size between 2016 and 2021, which are shown in Figure 5. **Some progress has been made in reformulation of branded and own brand other breakfast cereals per suggested serving size; however, additional reformulation is required by the food industry to meet the reformulation targets.**

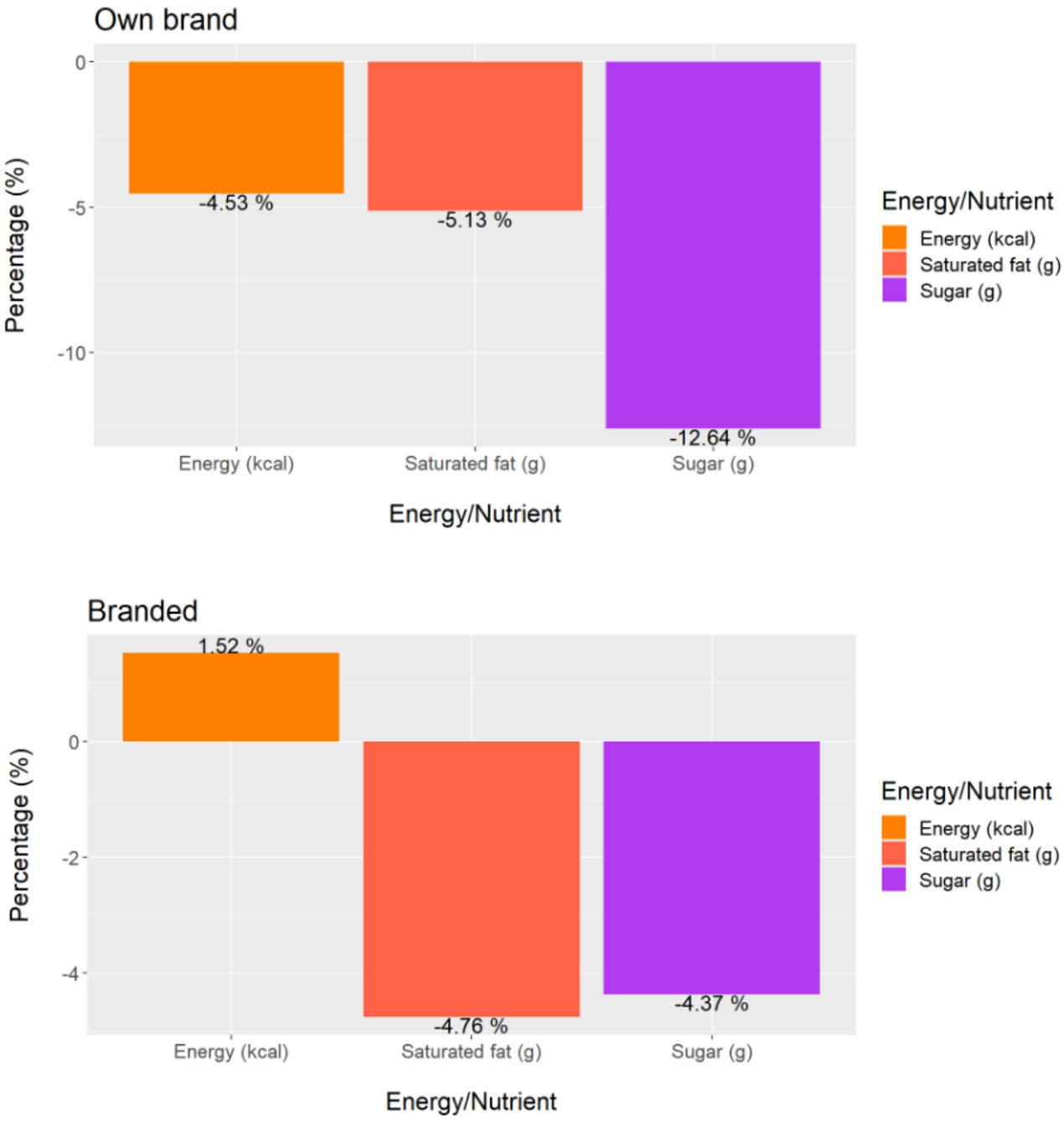


Figure 5: Percentage difference in mean energy (calories), saturated fat (g), and sugar (g) content of own brand and branded other breakfast cereals per suggested serving size between 2016 and 2021

Ready to eat breakfast cereal

Definition: 'Ready to eat breakfast cereal' (RTEBC) are breakfast cereals that require no preparation and are usually consumed with the addition of milk or a non-dairy alternative to milk.

In 2016, nutrition declaration and food label information were collected for 330 RTEBC from five of the leading grocery retailers, convenience stores, and health food shops. In 2021, nutrition declaration and food label information were collected for 297 RTEBC from four leading grocery retailers, making up at least 60% of market share.

Category analysis of ready to eat breakfast cereal per 100 g

Category analysis provides an overview of the average nutritional composition of a food category on the market and available to the consumer at a given time. In the Irish Food Reformulation Programme, RTEBC are prioritised for the reduction of energy (calories) (20%), salt (g) (10%), and sugar (g) (20%). The mean (SD), median (IQR), minimum and maximum energy (calories), salt (g), and sugar (g) content per 100 g are shown in Table 10 and Figure 6.

Table 10: Nutrient and energy (calories) composition of ready to eat breakfast cereal samples in 2016 and 2021 per 100 g

Measure	2016			2021		
	Energy (kcal)	Salt (g)	Sugar (g)	Energy (kcal)	Salt (g)	Sugar (g)
Mean	401.39	0.40	18.10	395.18	0.42	16.59
SD	48.05	0.39	8.50	39.06	0.34	7.74
Median	385.50	0.28	18.50	385	0.37	17.00
IQR	54.77	0.65	11.10	49	0.60	10.60
Min	311	0.00	0.09	206	0.00	0.50
Max	592	2.26	41.40	511	1.20	38.3
Sample (n)	330	320	324	297	297	297

SD= standard deviation; IQR= interquartile range; Min= minimum; Max= maximum; n= sample size; kcal= kilocalories; g= gram

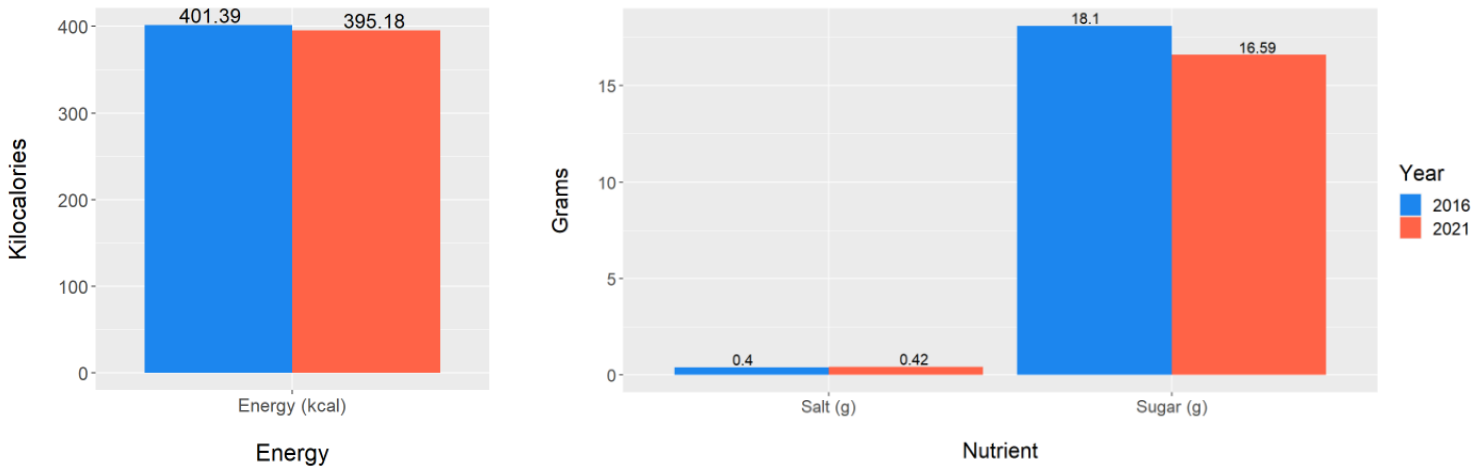


Figure 6: Mean energy (calories), salt (g), and sugar (g) content per 100 g of ready to eat breakfast cereal in 2016 and 2021

There was a 1.55% (6.21 kcal) decrease in energy (calories), a 5% (0.02 g) increase in salt, and an 8.34% (1.51 g) decrease in the sugar content per 100 g of RTEBC between 2016 and 2021. This is shown in Table 11. **Additional reformulation is needed to achieve the reformulation targets. The increase in salt is consistent with the observed trend towards an increase in sodium content of breakfast cereals determined by laboratory analysis and described under Goal 8 of this report.**

Table 11: Percentage change in mean energy (calories), salt (g), and sugar (g) content of ready to eat breakfast cereal per 100 g between 2016 and 2021

Measure	Energy (kcal)	Salt (g)	Sugar (g)
Mean difference % (kcal/g)	–1.55% (–6.21)	+5% (0.02)	–8.34% (–1.51)

%= percentage; kcal= kilocalories; g= gram

Matched pair analysis of ready to eat breakfast cereal per 100 g

Matched pair analysis provides an in-depth examination of the nutritional composition of the same food product within a priority food category over time. A detailed review of RTEBC in 2016 and 2021 identified 20 matched pairs, (matched pairs are the exact same products on the market in both years; matching was completed using product name, manufacturer name, and net weight). As the sample

size was small, differences in the median energy (calories), salt (g), and sugar (g) content per 100 g between the matched pairs were explored. **This analysis identified no percentage difference between median matched pair energy (calories) and salt (g) content in RTEBC between 2016 and 2021. The matched pair analysis identified a 15.48% (3.25 g) decrease in sugar content between 2016 and 2021.** An infographic of progress per 100 g is shown in Appendix 1.

Brand type analysis of ready to eat breakfast cereal per 100 g

The Roadmap for Food Product Reformulation requires that the retail market is monitored by brand type. When RTEBC were disaggregated by brand type into **branded** and **own brand**, there was a difference in changes to energy (calories), salt (g), and sugar (g) content per 100 g between 2016 and 2021. Between 2016 and 2021, own brand RTEBC saw a 0.81% (3.19 kcal) decrease in energy (calories), a 17.07% (0.07 g) decrease in salt, and an 11.22% (2.14 g) decrease in sugar content per 100 g. Branded RTEBC saw a 2.23% (9.06 kcal) decrease in energy (calories), a 23.08% (0.09 g)[6] increase in salt, and a 5.27% (0.91 g) decrease in sugar content per 100 g between 2016 and 2021. This is shown in Figure 7**. There is large variance in reformulation efforts between own brand and branded RTEBC.**

[6] The absolute change in mean salt composition in branded cereals represents a small change in gram but results in a large percentage difference.

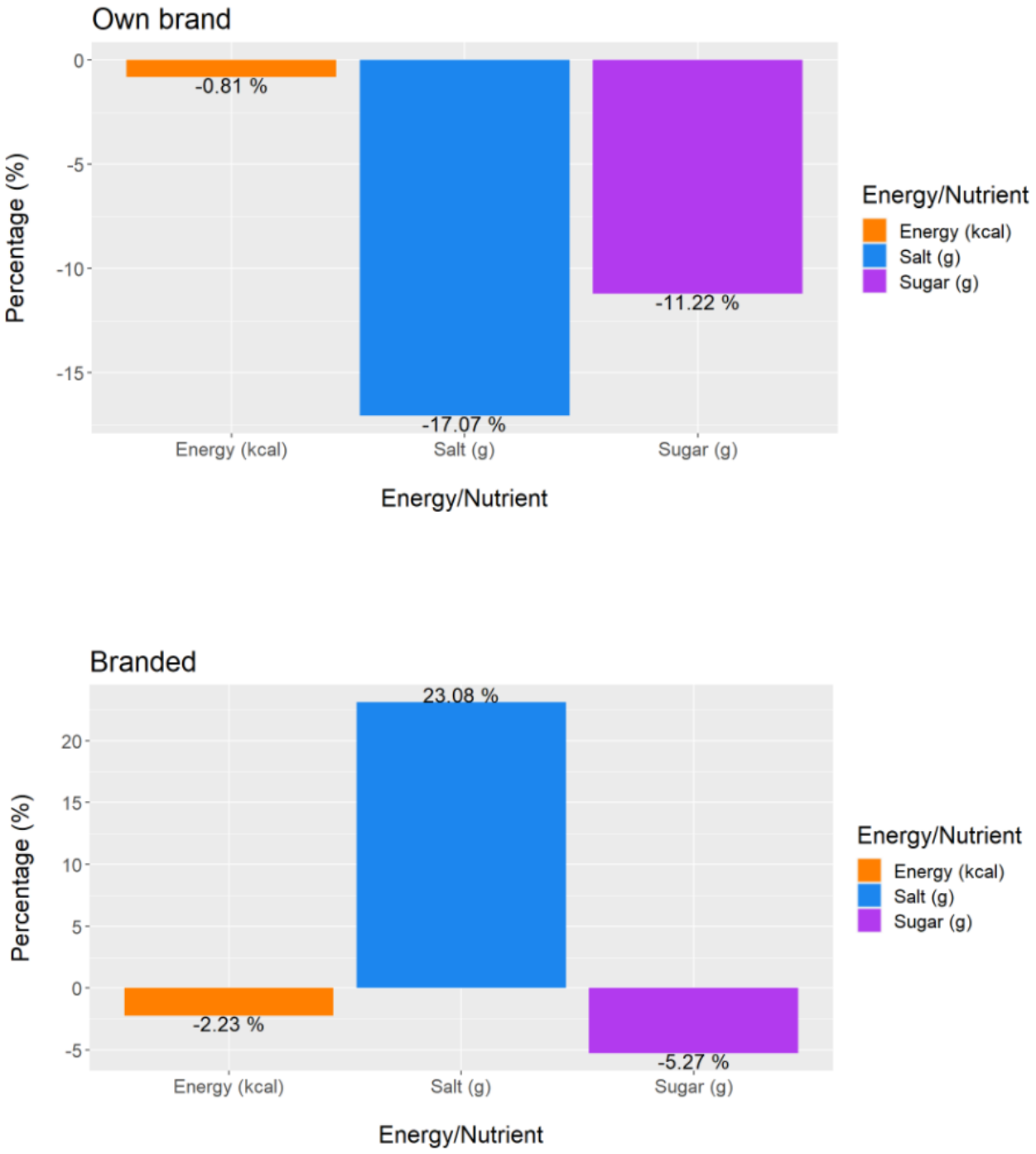


Figure 7: Percentage difference in mean energy (calories), salt (g), and sugar (g) content per 100 g of own brand and branded ready to eat breakfast cereal between 2016 and 2021

Subcategory analysis of ready to eat breakfast cereal per 100 g

The RTEBC category comprises of a varying range of product types, meaning they have a broad range of nutrient composition. For this reason, RTEBC were further subcategorised into **RTEBC with low sugar content**, defined as RTEBC with a sugar content of <5 g per 100 g, as per the condition of use for the 'low sugar' nutrition claim in Regulation (EC) 1924/2006 on nutrition and health claims made on food.

In 2016, some 8.8% (n=29) of RTEBC fell into the low sugar subcategory and in 2021 this increased slightly to 11.11% (n=33). The percentage changes in energy (calories), sugar, and salt in RTEBC between 2016 and 2021 are outlined in Table 12.

Table 12: Percentage change in mean energy (calories), salt (g), and sugar (g) content per 100 g of ready to eat breakfast cereal subcategorised into <5 g per 100 g and ≥5 g per 100 g sugar subcategories, between 2016 and 2021

RTEBC subcategory	Energy (kcal)	Salt (g)	Sugar (g)
RTEBC sugar <5 g mean difference % (kcal/g)	–1.89% (7.36)	–16.13% (0.05)	+14.48% (0.43)
RTEBC sugar ≥5 g mean difference % (kcal/g)	–1.42% (5.75)	+10% (0.04)	–6.89% (1.35)

RTEBC= ready to eat breakfast cereal; %= percentage; kcal= kilocalories; g= gram

A review of product innovation in ready to eat breakfast cereal in 2021 per 100 g

Using the Mintel Global New Products Database, the average energy (calories), salt (g), and sugar (g) content of RTEBC products new to market in 2021 was compared with 2021 food category averages.[7] In 2021, RTEBC new to market had a higher average energy (calorie) content of 418.91 kcal (SD 35.25) per 100 g compared with the category average of 395.18 kcal (SD 39.06) per 100 g. New RTEBC to market in 2021 also had a higher sugar content of 17.78 g (SD 4.63) per 100 g when compared with the category average of 16.59 g (SD 7.74). Salt content was lower in RTEBC new to market in 2021, at 0.21 g (SD 0.29) per 100 g when compared with the category average

[7] The sample size of RTEBC new to market in 2021 is small; this analysis should therefore be considered indicative and interpreted cautiously.

content of 0.42 g (SD 0.34) per 100 g. This analysis shows that new products may be driving up the category average for energy and sugar. **The food industry should consider reformulation targets as part of new product development.**

Analysis per suggested serving size

The Roadmap for Food Product Reformulation states that portion size will be integrated into the methodology for measuring progress. Manufacturer suggested serving size on food labels is used as a proxy for portion size in the monitoring section of this report. Analysis per suggested serving size provides information on the typical nutritional composition in a portion as recommended by the manufacturer.

Category analysis of ready to eat breakfast cereal per suggested serving size

Category analysis provides an overview of the average nutritional composition of a food category on the market and available to the consumer at a given time. The mean (SD), median (IQR), minimum and maximum energy (calories), salt (g), and sugar (g) content per suggested serving size of RTEBC in 2016 and 2021 are shown in Table 13 and Figure 8. In 2016, 100% of RTEBC provided a suggested serving size range of 23–60 g and, in 2021, some 95.96% of RTEBC provided a suggested serving size range of 20–65 g. There was minimal change in manufacturer suggested serving size between 2016 and 2021.

Table 13: Nutrient and energy (calories) composition of ready to eat breakfast cereal samples in 2016 and 2021 per suggested serving size

Measure	2016			2021		
	Energy (kcal)	Salt (g)	Sugar (g)	Energy (kcal)	Salt (g)	Sugar (g)
Mean	154.19	0.13	6.91	149.58	0.15	6.38
SD	39.50	0.12	3.44	38.41	0.12	3.15
Median	152.12	0.11	7.20	144.40	0.14	6.72
IQR	64.90	0.21	4.97	63.60	0.20	4.26
Min	76.59	0	0.03	61.80	0	0.22
Max	250.50	0.55	18.63	302.25	0.46	17.24
Sample (n)	330	320	324	285	285	285

SD= standard deviation; IQR = interquartile range; Min = minimum; Max = maximum; n= sample size; kcal= kilocalories; g= gram

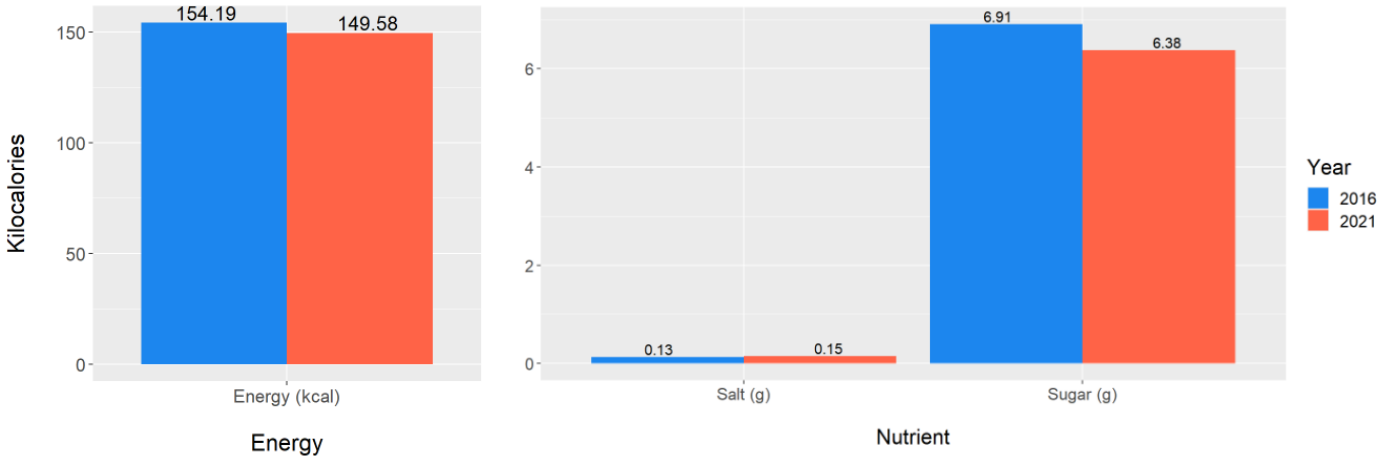


Figure 8: Mean energy (calories), salt (g), and sugar (g) content of ready to eat breakfast cereal per suggested serving size in 2016 and 2021

There was a 2.99% (4.61 kcal) decrease in energy content, a 15.38% (0.02g) increase in salt content and a 7.67% (0.53 g) decrease in sugar content per suggested serving size of RTEBC between 2016 and 2021. This is shown in Table 14. **When serving size is accounted for, further reformulation of energy, salt, and sugar is needed in RTEBC to meet the targets. The increase in salt content requires attention by the food industry.**

Table 14: Percentage change in mean energy (calories), salt (g), and sugar (g) content of ready to eat breakfast cereal per suggested serving size between 2016 and 2021

Measure	Energy (kcal)	Salt (g)	Sugar (g)
Mean difference % (kcal/g)	–2.99% (–4.61)	+15.38% (0.02)	–7.67% (–0.53)

%= percentage; kcal= kilocalories; g= gram.

Matched pair analysis of ready to eat breakfast cereal per suggested serving size

Matched pair analysis provides an in-depth examination of the nutritional composition of the same food product within a priority food category over time. A detailed review of the RTEBC product nutrient composition per suggested serving size available in 2016 and 2021 identified 18 matched pairs, (matched pairs are the exact same products on the market in both years; matching was completed using product name, manufacturer name, and net weight). As the sample size was small, differences in the median energy (calories), salt (g), and sugar (g) content per suggested serving size between the matched pairs were explored. This analysis identified a 0.67% (1 kcal) decrease

in median energy, a 10% (0.02 g) decrease in median salt, and a 16.05% (1.42 g) decrease in median sugar content of the matched RTEBC product pairs between 2016 and 2021. **This indicates the nutrition composition of products which remained on the market between 2016 and 2021 improved.**

Brand type analysis of ready to eat breakfast cereal per suggested serving size

The Roadmap for Food Product Reformulation requires that the retail market is monitored by brand type. When RTEBC were disaggregated by brand type into **branded** and **own brand**, there was a difference in the change of mean energy (calories), salt (g), and sugar (g) content per suggested serving size between 2016 and 2021.

Between 2016 and 2021, own brand RTEBC saw a 0.27% (0.41 kcal) decrease in energy, a 7.69% (0.01 g) decrease in salt, and a 10.5% (0.76 g) decrease in sugar content per suggested serving size. Branded RTEBC saw a 5.13% (8.07 kcal) decrease in energy, a 21.43% (0.03 g) increase in salt, and a 4.97% (0.33 g) decrease in sugar content per suggested serving size between 2016 and 2021. These are shown in Figure 9. **Salt content in branded RTEBC is moving in the wrong direction and needs to be addressed by the food industry.**

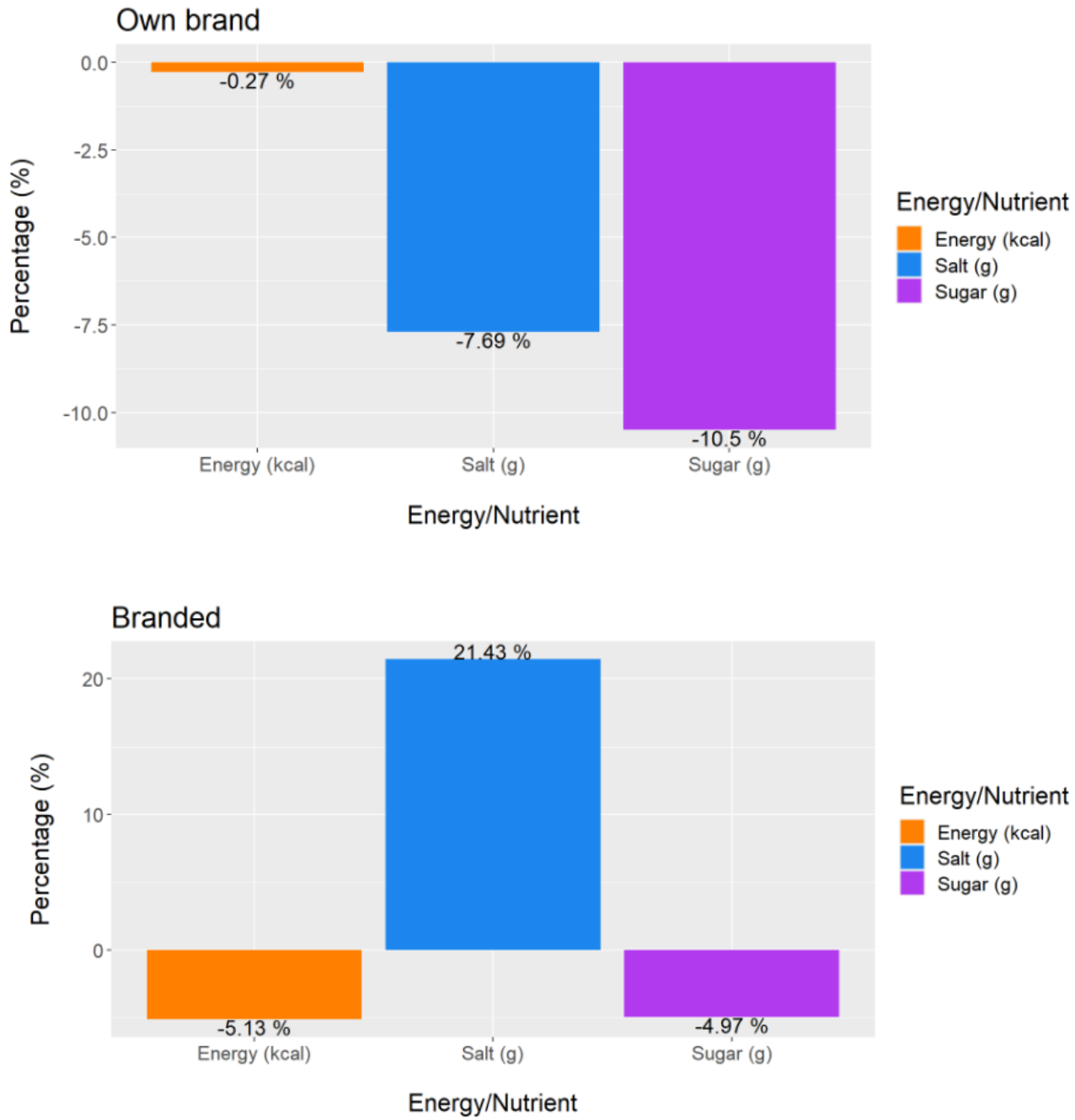


Figure 9: Percentage difference in mean energy (calories), salt (g), and sugar (g) content of own brand and branded ready to eat breakfast cereal per suggested serving size between 2016 and 2021

Subcategory analysis of ready to eat breakfast cereal per suggested serving size

The RTEBC category comprises a varying range of product types. For this reason, RTEBC were further subcategorised into **RTEBC with low sugar content**, defined as RTEBC with a sugar content of <5 g per 100 g, as per the condition of use for the 'low sugar' nutrition claim in Regulation (EC) 1924/2006 on nutrition and health claims made on food.

In 2016, some 8.8% (n=29) of RTEBC fell into the low sugar subcategory and in 2021 some 9.9% (n=27) of RTEBC fell into the low sugar subcategory. The percentage changes in energy (calories), salt (g), and sugar (g) content of RTEBC between 2016 and 2021 are outlined in Table 15. **The increase in salt content of RTEBC with a sugar content ≥5 g indicates that this is a subcategory higher in salt and sugar and requires specific attention to improve its overall nutrient composition.**

Table 15: Percentage change in mean energy (calories), salt (g), and sugar (g) content per suggested serving size of ready to eat breakfast cereal subcategorised into products with <5 g per 100 g and ≥5 g per 100 g sugar, between 2016 and 2021

RTEBC subcategory	Energy (kcal)	Salt (g)	Sugar (g)
RTEBC sugar <5 g mean difference % (kcal/g)	+4.51% (6.76)	–18.18% (0.02)	+15.04% (0.17)
RTEBC sugar ≥5 g mean difference % (kcal/g)	–3.72% (5.75)	+14.29% (0.02)	–7.62% (0.57)

RTEBC = ready to eat breakfast cereal; % = percentage; kcal = kilocalories; g = gram

Yoghurt

Definition: For the purposes of this report, natural yoghurt is a dairy-based yoghurt made with yoghurt cultures and without the addition of flavouring. Flavoured yoghurt is a dairy-based yoghurt made with yoghurt cultures and with additional ingredients to add flavour. Non-dairy yoghurt alternatives are alternatives to yoghurt made from plant-based ingredients.

In this section of the report, the energy and target nutrient composition changes in yoghurt, which is further subcategorised into natural, flavoured, and non-dairy alternatives, between 2016 and 2021 is outlined. For this analysis, a 3.8 g lactose allowance was applied to dairy-based yoghurts in recognition of their natural sugar content from lactose. Further information on the lactose allowance can be found on the Food Reformulation webpage updates section, here. In doing so, sugar reduction and percentage reductions for dairy-based yoghurts have been calculated following the deduction of the 3.8 g lactose allowance.

In 2016, nutrition declaration and food label information were collected for 576 yoghurts and non-dairy yoghurt alternatives on the Irish market from five of the leading grocery retailers, convenience stores, and health food shops. In 2021, nutrition panel and food label information were collected for 633 yoghurts and non-dairy yoghurt alternatives from four leading grocery retailers, making up at least 60% of market share.

Category analysis of yoghurt per 100 g

Category analysis provides an overview of the average nutritional composition of a food category on the market and available to the consumer at a given time. In the Irish Food Reformulation Programme, yoghurts are prioritised for the reduction of energy (calories) (20%), saturated fat (g) (10%), and sugar (g) (20%). The mean (SD), median (IQR), minimum and maximum energy (calories), saturated fat (g), and sugar (g) content of yoghurt per 100 g in 2016 and 2021 are shown in Table 16 and Figure 10.

Table 16: Nutrient and energy composition of yoghurt samples in 2016 and 2021 per 100 g

Measure	2016			2021		
	Energy (kcal)	Saturated fat (g)	Sugar (g)	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean	94.38	2.01	6.88	88.74	1.75	5.32
SD	34.44	2.20	3.98	35.73	1.83	3.74
Median	91	1.70	7.20	82	1.50	5.60
IQR	43	2.30	6.30	43	2.30	6.10
Min	43	0	0	27	0	0
Max	245	22	19.20	222	7.80	17.60
Sample (n)	576	574	571	633	633	633

SD= standard deviation; IQR= interquartile range; Min= minimum; Max= maximum; n= sample size; kcal= kilocalories; g= gram

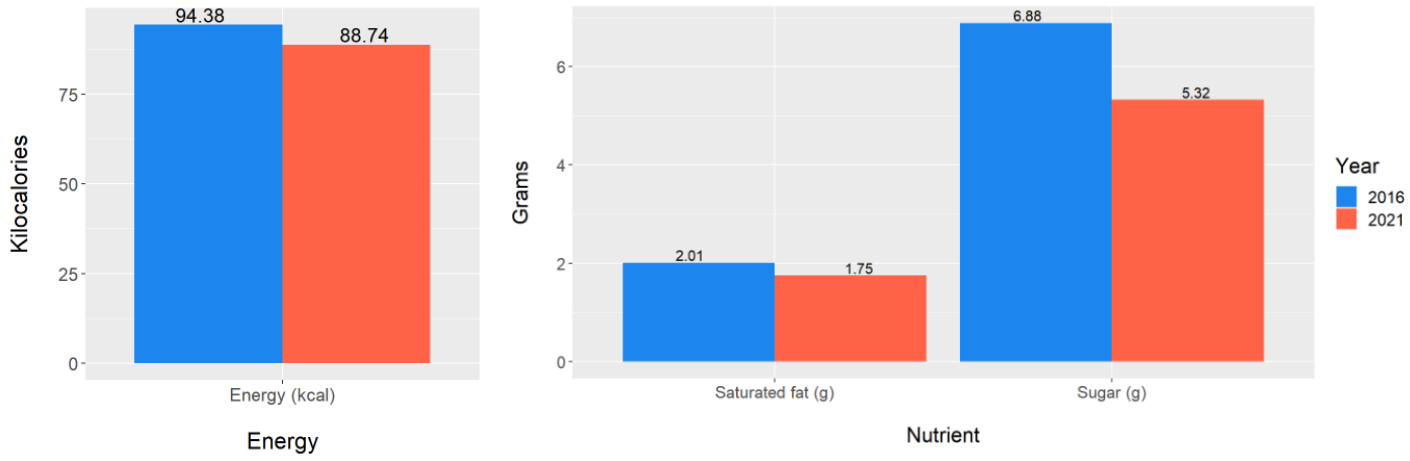


Figure 10: Mean energy (calorie), saturated fat (g), and sugar (g) content per 100 g of yoghurt in 2016 and 2021

There was a 5.98% (5.64 kcal) reduction in energy (calories), a 12.94% (0.26 g) reduction in saturated fat, and a 22.67% (1.56 g) reduction in sugar content per 100 g of yoghurts between 2016 and 2021, which are shown in Table 17. **Progress has been made in reducing the saturated fat and sugar content of yoghurt at overall category level and reformulation targets have been exceeded. However, product reformulation to meet the target for energy requires additional work by the food industry.**

Table 17: Percentage change in mean energy (calories), saturated fat (g), and sugar (g) content of yoghurt per 100 g between 2016 and 2021

Measure	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean difference % (kcal/g)	–5.98% (–5.64)	–12.94% (–0.26)	–22.67% (–1.56)

%= percentage; kcal= kilocalories; g= gram. Note: There were eight coconut-based yoghurt alternatives on the market in 2016 and none in 2021. With these eight products excluded from the analysis, the percentage differences for energy, saturated fat, and sugar were –5.39%, –8.38% and –22.45%, respectively. The numeric difference for saturated fat reduction changed from 0.26 g to 0.16 g.

Matched pair analysis of yoghurt per 100 g

Matched pair analysis provides an in-depth examination of the nutritional composition of the same food product within a priority food category over time. A detailed review of yoghurt in 2016 and 2021 identified 17 matched pairs, (matched pairs are the exact same products on the market in both years; matching was completed using product name, manufacturer name, and net weight). As the sample size was small, differences in the median energy (calories), saturated fat (g), and sugar (g) content per 100 g between the matched pairs were explored. This analysis identified an 11.37% (12 kcal) decrease in median energy, an 11.63% (0.25 g) decrease in median saturated fat, and a 15.43% (1.25 g) decrease in median sugar content between 2016 and 2021. **This analysis indicates that the nutrient composition of products which remained on the market between 2016 and 2021 has improved.** An infographic of progress per 100 g is shown in Appendix 2.

Brand type analysis of yoghurt per 100 g

The Roadmap for Food Product Reformulation requires that the retail market is monitored by brand type. When yoghurts were disaggregated by brand type into **branded** and **own brand**, there was a difference in changes of energy (calories), saturated fat (g), and sugar (g) content per 100 g, **with greater decreases in target nutrients occurring in branded yoghurt between 2016 and 2021.**

Between 2016 and 2021, own brand yoghurt saw a 5.53% (5.56 kcal) decrease in energy (calories), an 11.89% (0.29 g) decrease in saturated fat, and a 21.75% (1.57 g) decrease in sugar per 100 g. Branded yoghurt saw an 8.14% (7.34 g) decrease in energy (calories), a 19.41% (0.33 g) decrease

in saturated fat, and a 24.32% (1.61 g) decrease in sugar content per 100 g between 2016 and 2021. These are shown in Figure 11.

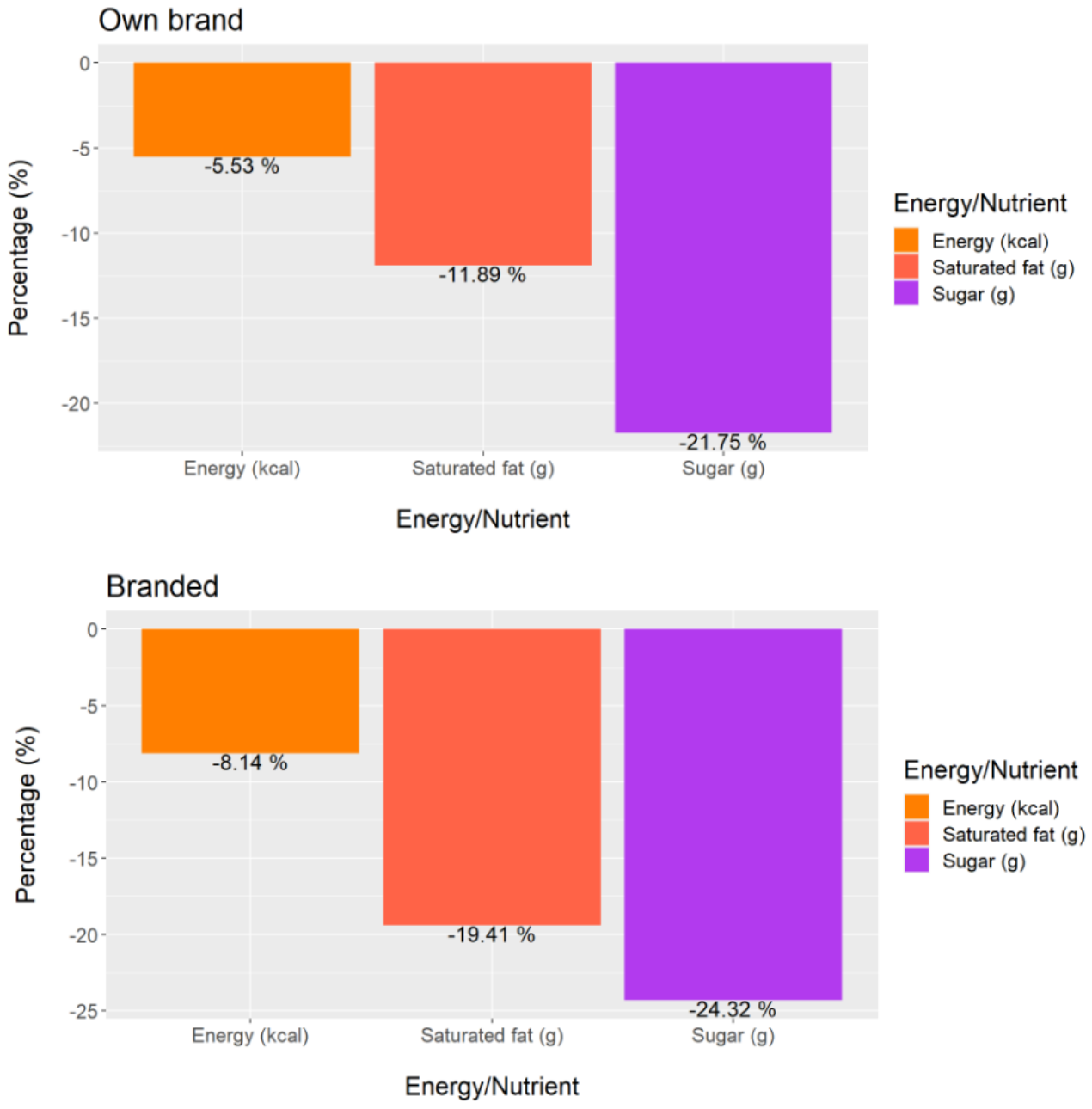


Figure 11: Percentage difference in mean energy (calories), saturated fat (g), and sugar (g) content per 100 g of own brand and branded yoghurt between 2016 and 2021

Yoghurt subcategory analysis per 100 g

The yoghurt category is composed of a varying range of product types with broad nutritional characteristics. For this reason, yoghurts were further subcategorised into natural, flavoured, and non-dairy yoghurt alternatives.

Definition: Natural yoghurt is a dairy-based yoghurt made with yoghurt cultures and without the addition of flavouring. Flavoured yoghurts is a dairy-based yoghurts made with yoghurt cultures and with additional ingredients to add flavour. Non-dairy yoghurt alternatives are alternatives to yoghurt made from plant-based ingredients.

In 2016, there were 12% (n=70), 84% (n=483), and 4% (n=23) natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives, respectively. In 2021, there were 13% (n=80), 80% (n=504), and 8% (n=49) natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives, respectively. The percentage changes in energy (calories), saturated fat (g), and sugar (g) in natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives between 2016 and 2021 per 100 g are outlined in Table 18. The reduction in the saturated fat content of natural yoghurt is notable, and learnings on how this was achieved could be applied to flavoured yoghurt by the food industry to further reduce saturated fat in this subcategory. **There has been no sugar reduction in non-dairy yoghurt alternatives, which needs to be addressed by the food industry.**

Table 18: Percentage change in mean energy (calories), saturated fat (g), and sugar (g) content per 100 g of natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives between 2016 and 2021

Yoghurt subcategory	Energy (kcal)	Saturated fat (g)	Sugar (g)
Natural yoghurt mean difference % (kcal/g)	–5.40% (4.31)	–15.15% (0.43)	–27.11% (0.45)
Flavoured yoghurt mean difference % (kcal/g)	–4.50% (4.34)	–4.79% (0.09)	–24.02% (–1.83)
Non-dairy yoghurt alternatives mean difference % (kcal/g)	–20.97% (–20.29)	–73.77% (–2.84)	+1.41% (0.1)

%= percentage; kcal= kilocalories; g= gram. Note: When the eight coconut-based yoghurt alternatives available on the market in 2016 and no longer available in 2021 were removed from the Non-dairy yoghurt alternatives analysis, there was a +0.59% increase in energy, a –16.53% decrease in saturated fat, and a +7.13% increase in sugar.

A review of product innovation in flavoured yoghurts

Using the Mintel Global New Products Database, the average energy (calories), saturated fat (g), and sugar (g) content of flavoured yoghurts new to market in.[8] In 2021, yoghurts new to market had a higher average energy (calories), saturated fat (g), and sugar (g) content than the category average. Yoghurts new to market had an energy (calories), saturated fat (g), and sugar (g) content of 107.89 kcal (39.9), 3.05 g (2.38), and 6.42 g (2.66) per 100 g, respectively. The category average energy (calories), saturated fat (g), and sugar (g) content were 92.03 kcal (37.3), 1.79 g (1.77), and 5.79 g (3.6), respectively. This analysis shows that new products had a higher category average for energy (calories), saturated fat (g), and sugar (g). **The food industry should consider reformulation targets as part of new product development.**

Analysis per suggested serving size

The Roadmap for Food Product Reformulation states that portion size will be integrated into the methodology for measuring progress. Manufacturer suggested serving size on food labels is used as a proxy for portion size in the monitoring section of this report. Analysis per suggested serving size provides information on the typical nutritional composition in a portion, as recommended by the manufacturer.

Category analysis of yoghurt per suggested serving size

Category analysis provides an overview of the average nutritional composition of a food category on the market and available to the consumer at a given time. The mean (SD), median (IQR), minimum and maximum energy (calories), saturated fat (g), and sugar (g) content per suggested serving size of yoghurt in 2016 and 2021 are shown in Table 19 and Figure 12. In 2016, 100% of products provided a suggested serving size, ranging from 40 g to 250 g. In 2021, some 91% of products provided a suggested serving size ranging from 25 g to 350 g. **There was a wider range of portion sizes of yoghurt on the market in 2021.**

[8] The sample size of yoghurts new to market in 2021 is small; this analysis should therefore be considered indicative and interpreted cautiously.

Table 19: Nutrient and energy (calories) composition of yoghurt samples in 2016 and 2021 per suggested serving size

Measure	2016			2021		
	Energy (kcal)	Saturated fat (g)	Sugar (g)	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean	118.59	2.53	8.66	113.9	2.20	6.87
SD	55.10	3.00	5.76	62.73	2.53	5.28
Median	105	1.60	7.41	98.50	1.08	5.83
IQR	64.46	3.30	8.48	80	3.04	8.61
Min	29.20	0	0	16.20	0	0
Max	306.25	27.50	33.60	377.40	10.65	22.80
Sample (n)	576	574	571	576	576	576

SD= standard deviation; IQR= interquartile range; Min= minimum; Max= maximum; n= sample size,; kcal= kilocalories; g= gram

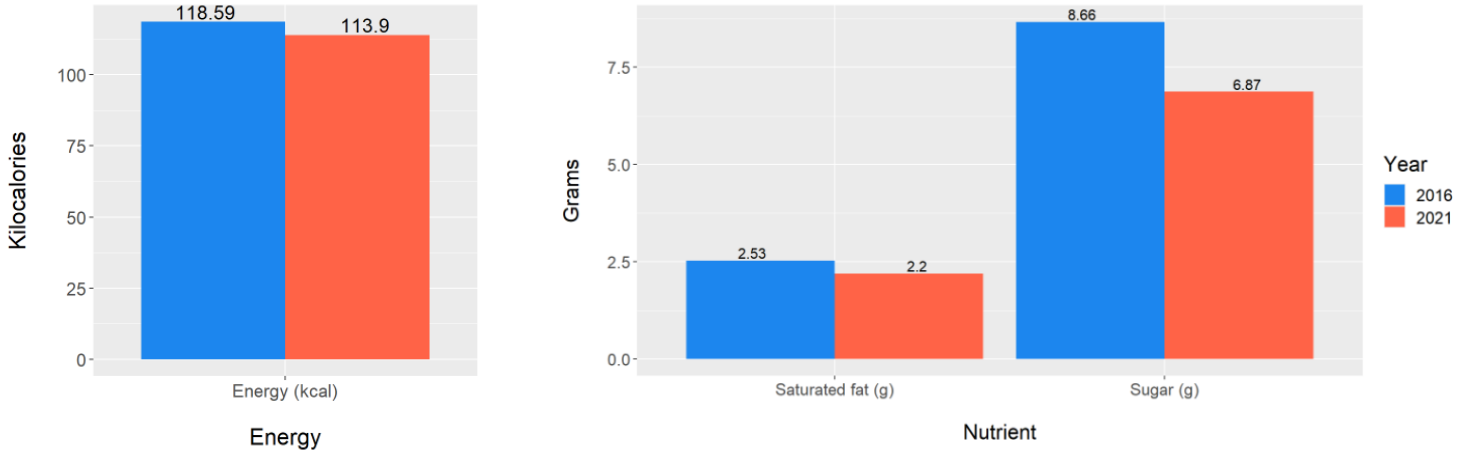


Figure 12: Mean energy (calories), saturated fat (g), and sugar (g) content per suggested serving size of yoghurt in 2016 and 2021

There was a 3.95% (4.69 kcal) reduction in energy, a 13.04% (0.33 g) reduction in saturated fat, and a 20.67% (1.79 g) reduction in sugar content per suggested serving size of yoghurt between 2016 and 2021. **Similar to all the results in the per 100 g yoghurt analysis, the reduction in sugar and saturated fat content per serving of yoghurt is positive; and additional reformulation is required to achieve energy reduction.** This is shown in Table 20.

Table 20: Percentage change in mean energy (calorie), saturated fat (g), and sugar (g) content of yoghurt per suggested serving size between 2016 and 2021

Measure	Energy (kcal)	Saturated fat (g)	Sugar (g)
Mean difference % (kcal/g)	–3.95% (4.69)	–13.04% (0.33)	–20.67% (1.79)

%= percentage; kcal= kilocalories; g= gram

Matched pair analysis per suggested serving size

Matched pair analysis provides an in-depth examination of the nutritional composition of the same food product within a priority food category over time. A detailed review of the yoghurt product nutrient composition per suggested serving size available in 2016 and 2021 identified 17 matched pairs, (matched pairs are the exact same products on the market in both years; matching was completed using product name, manufacturer name, and net weight). As the sample size was small, differences in the median energy (calories), saturated fat (g), and sugar (g) content per suggested serving size between the matched pairs were explored. This analysis identified an 8.65% (11.25 kcal) decrease in median energy, a 0.83% (0.02 g) decrease in median saturated fat, and a 12.55% (1.38 g) decrease in median sugar content of the matched pairs between 2016 and 2021. **In these matched pair products, the analysis shows reduced sugar and energy (calorie) content of yoghurts that remained on the market between 2016 and 2021. However, the same was not seen for saturated fat.**

Brand type analysis per suggested serving size

The Roadmap for Food Product Reformulation requires that the retail market is monitored by brand type. When yoghurts were disaggregated by brand type, into **branded** and **own brand**, there was a difference in changes of mean energy (calories), saturated fat (g), and sugar (g) content per suggested serving size between 2016 and 2021.

Between 2016 and 2021, own brand yoghurt saw a 7.33% (9.8 kcal) reduction in energy, a 14.85% (0.49 g) reduction in saturated fat, and a 24.61% (2.38 g) reduction in sugar content per suggested serving size. Branded yoghurt saw a 4.99% (5.4 kcal) decrease in energy (calories), a 23.62% (0.47 g) decrease in saturated fat and a 19.27% (1.53 g) decrease in sugar content per suggested serving size between 2016 and 2021. These are shown in Figure 13. **The analysis shows that both branded and own brand yoghurt have made excellent progress towards achieving the**

saturated fat and sugar targets; however, the target for energy requires further reformulation efforts by the food industry.

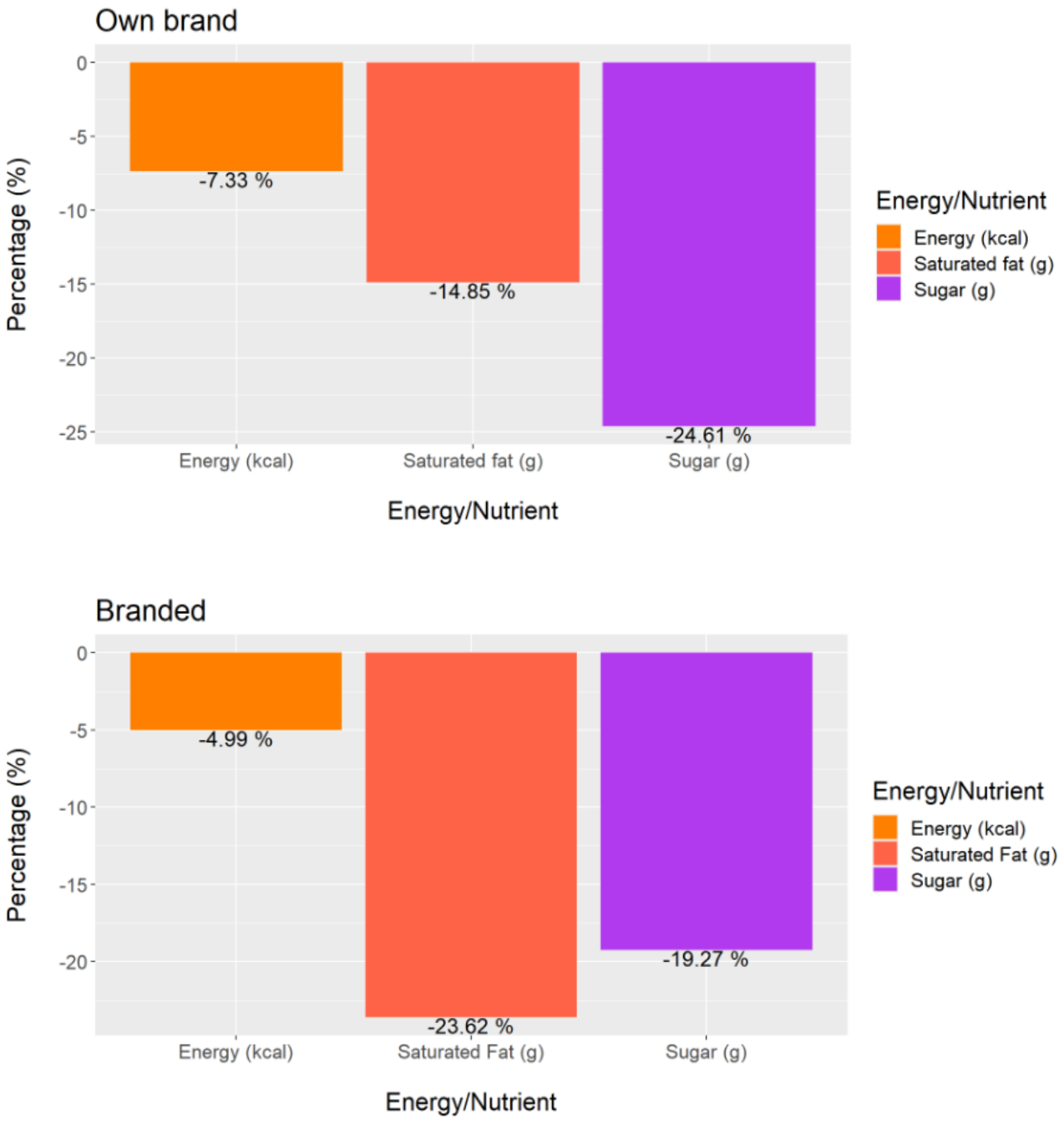


Figure 13: Percentage difference in mean energy (calories), saturated fat (g), and sugar (g) content of own brand and branded yoghurt per suggested serving size between 2016 and 2021

Yoghurt subcategory analysis per suggested serving size

As previously stated, yoghurts were further subcategorised into natural, flavoured, and non-dairy yoghurt alternatives. In 2016, there were 12% (n=70), 84% (n=483), and 4% (n=23) natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives, respectively. In 2021, there were 9% (n=54), 83% (n=475), and 8% (n=47) natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives, respectively. The percentage changes in energy (calories), saturated fat (g), and sugar (g) in natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives between 2016 and 2021 are shown in Table 21. Due to a reduction in the availability of coconut plant-based alternatives to yoghurt, the saturated fat in plant-based alternatives to yoghurt reduced significantly. **This analysis at subcategory level shows that additional work is needed to reduce saturated fat in dairy-based yoghurt and sugar in non-dairy yoghurt alternatives. Dairy-based yoghurt requires additional reformulation to achieve the energy reduction target.**

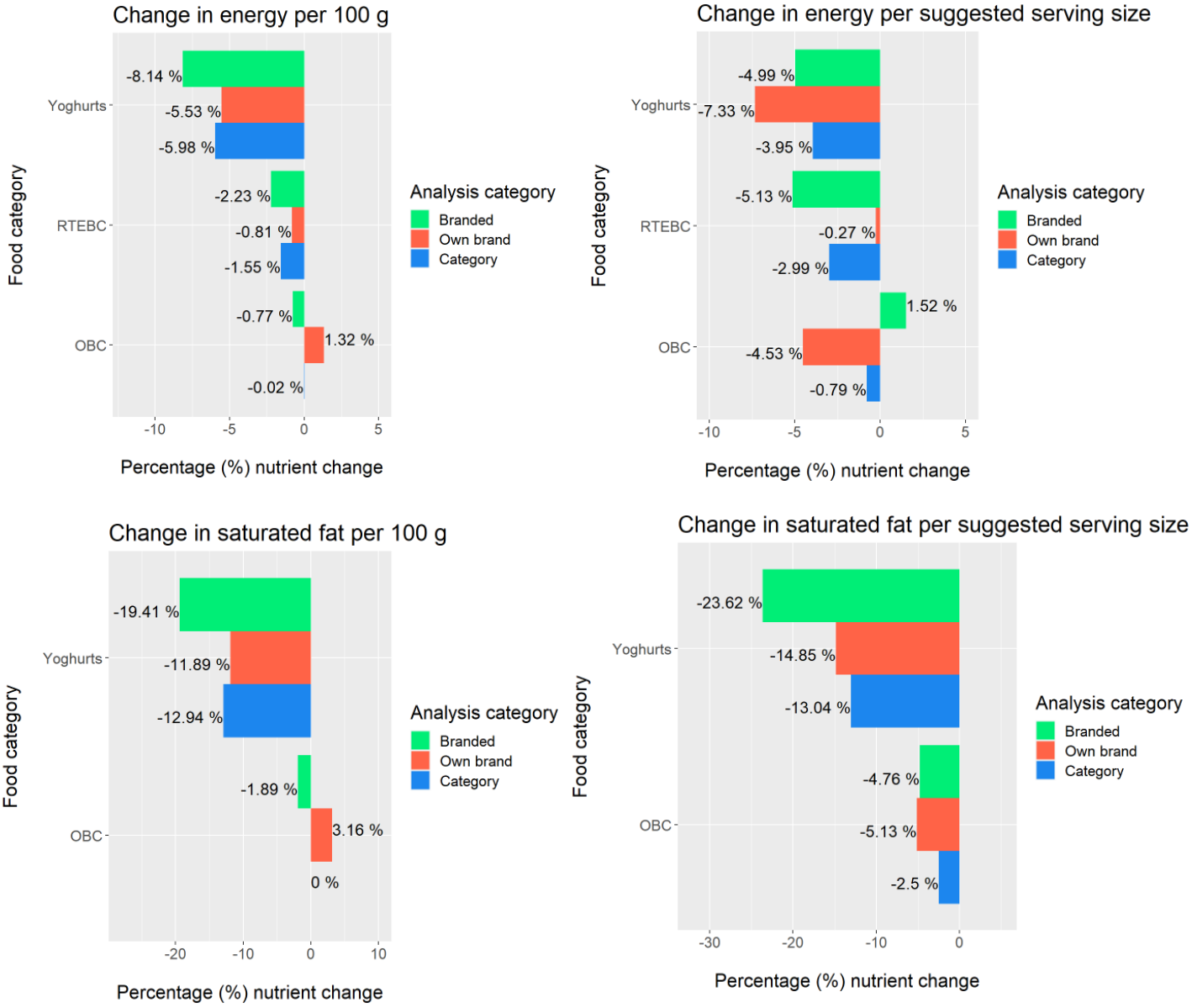
Table 21: Percentage change in mean energy (calories), saturated fat (g) and sugar (g) content per suggested serving size of natural yoghurt, flavoured yoghurt, and non-dairy yoghurt alternatives between 2016 vs 2021

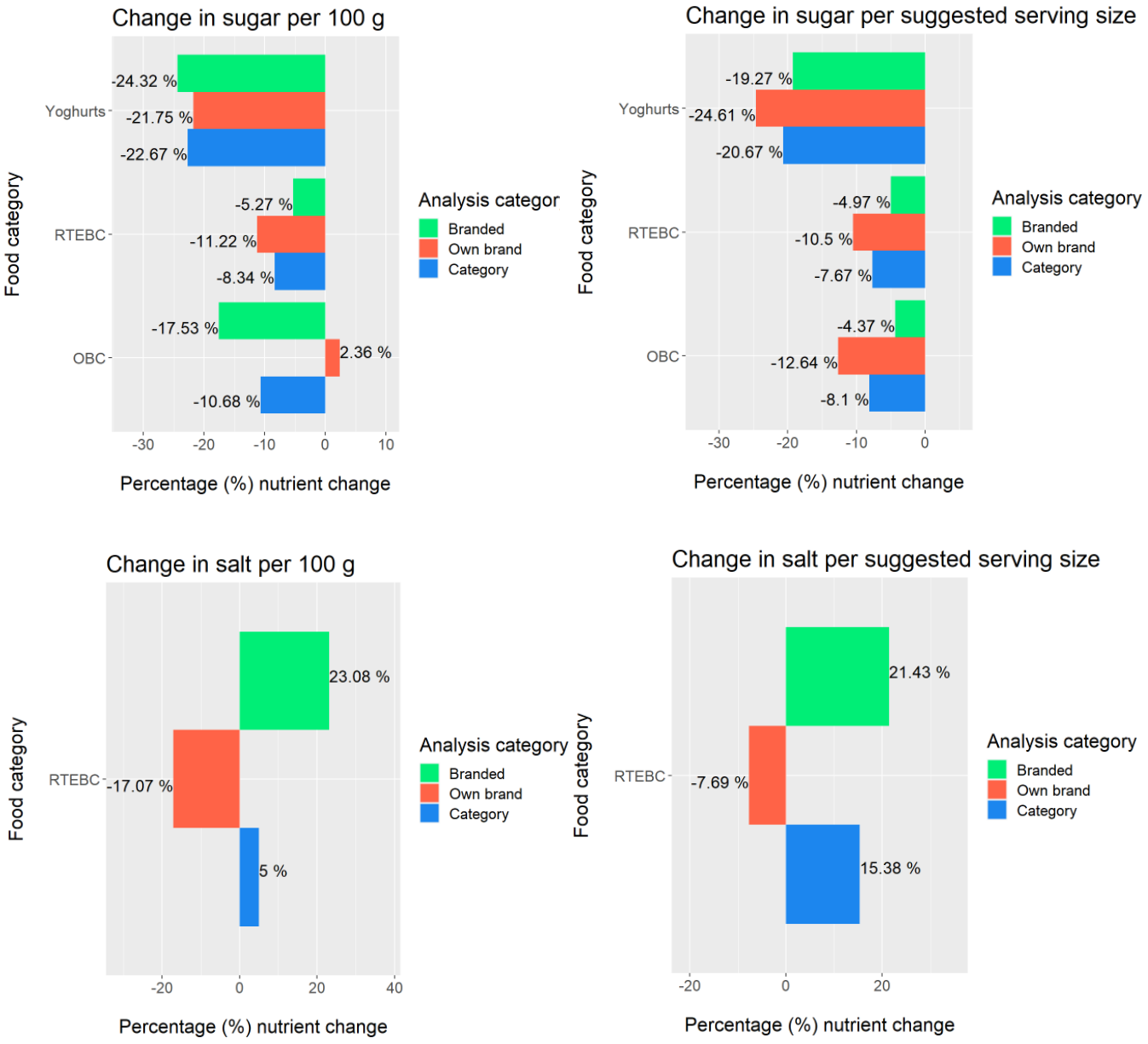
Yoghurt subcategory	Energy (kcal)	Saturated fat (g)	Sugar (g)
Natural yoghurt mean difference % (kcal/g)	–1.98% (1.97)	–1.78% (0.05)	–33.50% (0.68)
Flavoured yoghurt mean difference % (kcal/g)	–2.69% (3.26)	–5.44% (0.13)	–24.04% (2.31)
Non-dairy yoghurt alternatives mean difference % (kcal/g)	–24.03% (–28.58)	–81.01% (3.84)	+0.80% (0.07)

%= percentage; kcal= kilocalories; g= gram. Note: There were eight coconut-based alternatives to yoghurt on the market in 2016 and none in 2021. With these eight products excluded, the percentage differences for energy (calories), saturated fat, and sugar were –3.84% (–3.61 kcal), –36.17% (–0.51 g) and 5.5% (–0.46 g), respectively.

Summary of percentage reductions in energy (calories) and target nutrients per 100 g and per suggested serving size between 2016 and 2021

A summary of the percentage energy and target nutrient changes described under Goal 7 is presented Figure 14. Although percentage changes varied depending on analysis type, **a trend was seen towards a decrease in energy, sugar, and saturated fat at category level per 100 g. Changes in energy and nutrient content differed between brand and own brand products.**





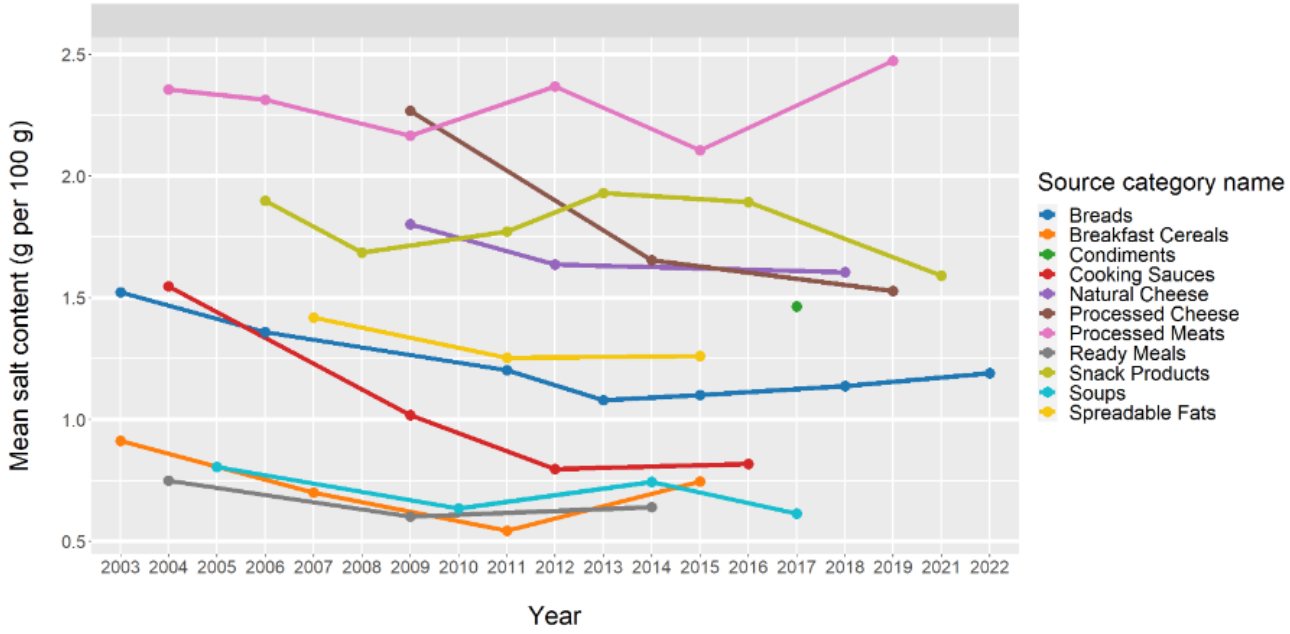
RTEBC= Ready to eat breakfast cereal; OBC= other breakfast cereal.

Figure 14: Summary of percentage energy (calories) and target nutrient changes per 100 g and suggested serving size, overall and by brand type between 2016 and 2021

Goal 8: Reformulation monitoring results: sodium and sugar sampling and laboratory analysis

Since 2003, the FSAI has been monitoring the sodium content of 11 food categories, which is considered a priority for reformulation due to their contribution to salt in the diets of people living in Ireland. The background and methodology used in the Salt Reduction Programme is described in the Monitoring Sodium and Potassium in Processed Foods, September 2003 to December 2022 report (Food Safety Authority of Ireland, 2023d).

Trends in the sodium (mg/100 g) content of the 11 food categories are shown in Figure 15. **The trend analysis shows that the rate of decline in sodium content has reversed or stagnated in all food categories that have data for more than one time point, except for snack products, processed cheese, and soups.**



Note: Dried soup has been excluded from soups, as dried soup was not collected after 2014.

Figure 15: Trends in mean sodium (mg/100 g) content in 11 food categories monitored as part of the FSAI Salt Reduction Programme between 2003 and 2022

Overview of sodium content in breads in 2022

As confirmed by National Consumption Surveys in adults and children, bread is a significant source of salt in the diet. In 2022, a convenience sample of 98 breads were sampled from the Irish market and analysed for sodium content by the Public Analyst's Laboratory, Galway. Full details of the product sampling and laboratory analysis were previously published in the Monitoring Sodium and Potassium in Processed Foods, September 2003 to December 2022 report (Food Safety Authority of Ireland, 2023d).

The direction of change for breads found to have a statistically significant increase or decrease in sodium or potassium content, as determined by laboratory analysis, are summarised in Figures 16 and 17.

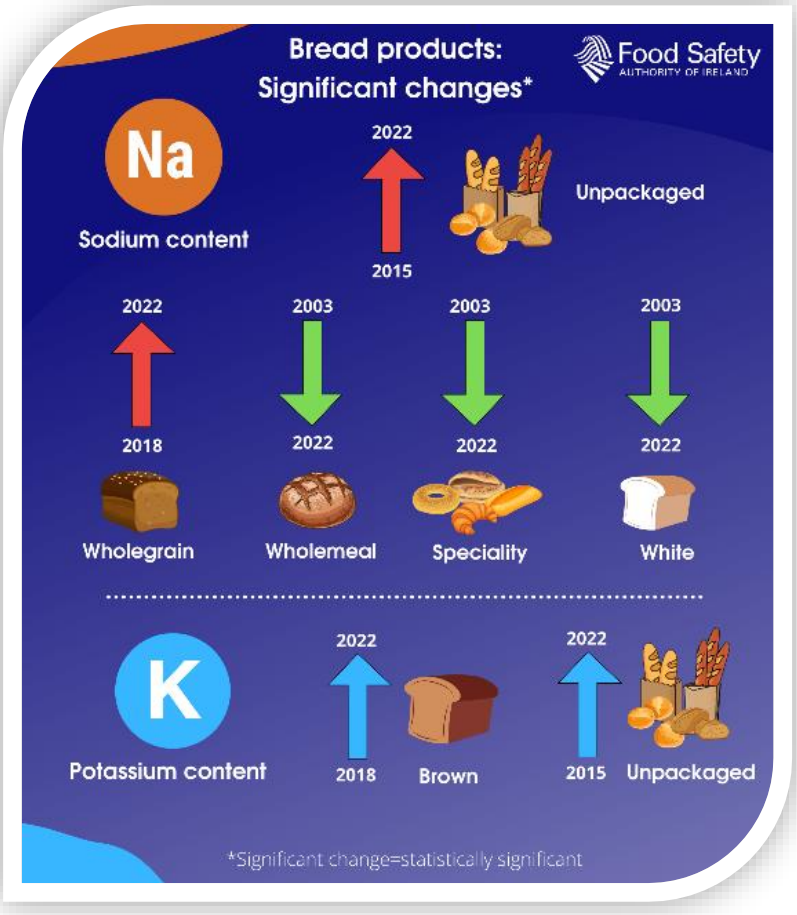


Figure 16: Statistically significant changes in mean sodium and potassium (mg/100 g) content of bread products between 2003 and 2022

- A statistically significant reduction in the sodium content of white (p <0.001), wholemeal (p <0.001), and speciality (p <0.001) breads was observed between 2003 and 2022, as shown in Figure 16.
- A statistically significant increase in the sodium content of unpackaged bread (p <0.001) was observed between 2015 and 2022 and in wholegrain bread (p=0.022) between 2018 and 2022.
- A statistically significant increase in potassium content of brown bread (p=0.009) was observed between 2018 and 2022 and in unpackaged bread (p <0.001) between 2015 and 2022.

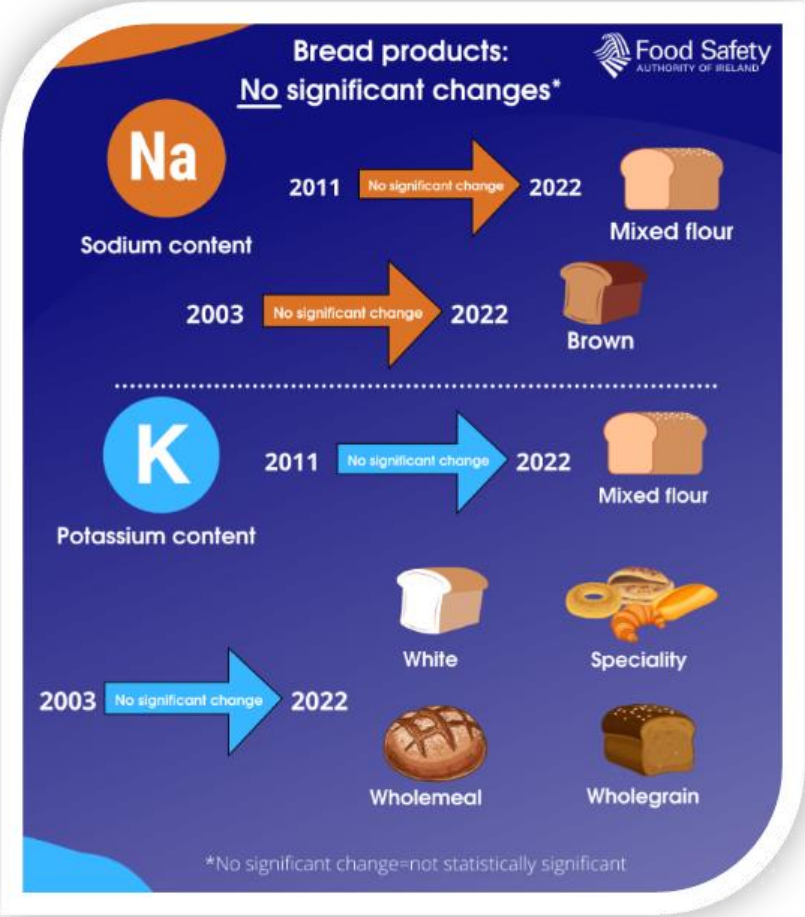


Figure 17: Non-statistically significant changes in mean sodium and potassium (mg/100 g) content of bread products between 2003 and 2022

- No statistically significant change in the sodium content of mixed flour bread was observed between 2011 and 2022 and in brown bread between 2003 and 2022, as shown in Figure 17.
- No statistically significant change in the potassium content of white, speciality, wholemeal, and wholegrain bread was observed between 2003 and 2022 and in mixed flour bread between 2011 and 2022.

The results show that although some types of bread have made progress in reducing sodium content, there were increases in the sodium content of other types of bread, for example, in wholegrain and unpackaged breads.[9] It is vitally important that all manufacturers play their part in food reformulation, otherwise category gains are easily hidden/ or lost.

Monitoring sugar in prepacked food using analysed content 2022: soups and sauces

Following the establishment of the Food Reformulation Task Force, a programme of sugar sampling and laboratory analysis, informed by the FSAI sodium sampling programme, was designed and implemented. The background and methodology used in the sugar sampling programme is described in the Food Reformulation Task Force: Monitoring Sugar in Processed Foods in 2022 report (Food Safety Authority of Ireland, 2023b).

High sugar content is obvious to the consumer in some food categories such as confectionery, but it is less obvious in other food categories such as soups, sauces, and condiments. Samples collected in 2022 (soups, sauces, and condiments) were analysed by the Public Analyst's Laboratory, Galway for determination of total sugar, monosaccharides, and disaccharides. The results showed there is approximately two and a half teaspoons of sugar in an average serving of soup (when sugar is listed in the ingredients) and, similarly, approximately two and a half teaspoons of sugar in an average serving of sauce. The results of the monitoring of sugar in soups and sauces show there is scope for reformulation of sugar in these products. Figure 18 provides a summary of the total sugar content of soups in this sample. Detailed results describing the monosaccharides, disaccharides, and total sugar content of soups per 100 g, and per suggested serving size can be found in the full report.

[9] Unpackaged breads include various loose breads, baguettes, rolls (seed, multigrain, diamond, pumpkin, cheese/onion), baps, ciabatta, panini, and whole unsliced loaves. Many of these breads are bought in a prepared raw state and baked in-store. Many retailers now sell these bread products from their in-store bakeries and shelves.

* Each product's total sugar content was individually calculated based on its suggested serving size, and then the average calculated. Products without a suggested serving size were excluded

Figure 18: Mean total sugar (g) content of soups per 100 g and per suggested serving size*, with the teaspoon equivalent of total sugar per suggested serving size

- The mean total sugar content in soups was 3.95 g per 100 g.
- The mean total sugar content for products with information on suggested serving size on soup labels was 9.56 g per serving size (equivalent to 2.4 teaspoons of sugar).
- Twenty-five percent of products (n=7) did not provide information on suggested serving size on the label.
- The average suggested serving size was 230 g.

In July 2022, some 35 sauce products were sampled from the Irish market and sent to the Public Analyst's Laboratory, Galway for the determination of sugar content. Figure 19 provides a summary of total sugar in sauces. Detailed results describing the monosaccharides, disaccharides and total sugar content of sauces per 100 g and per suggested serving size can be found in the full report.

* Each product's total sugar content was individually calculated based on its suggested serving size, and then the average calculated. Products without a suggested serving size were excluded

Figure 19: Mean total sugar (g) content of sauces per 100 g and per suggested serving size*, with the teaspoon equivalent of total sugar per suggested serving size

- The mean total sugar content in sauces was 16.83 g per 100 g.
- The mean total sugar content for products per suggested serving size was 10.33 g (equivalent to 2.6 teaspoons of sugar).
- Fourteen percent (n=5) of sampled sauces did not provide information on suggested serving size on the label.
- The average serving size of sauces was 71.30 g.

Goal 9: Reformulation monitoring results: nutrition declaration verification

Accurate nutrition declarations on food labels are relied on to truly monitor progress in reformulation. Verifying food label information began in the FSAI in 2019 with the approach adopted by the task force for monitoring purposes in 2023. Label verification will continue throughout the implementation of the Roadmap up to 2025. The aim of this work was to examine the accuracy of the declared sugar and salt content on soup and sauce labels, as well as the salt content on bread labels which were sampled in reformulation monitoring in 2022. Accuracy was defined as conformance with EC guideline nutrition labelling tolerances (European Commission, 2012).

When EC guideline nutrition labelling tolerances for sugar were applied to the declared sugar content of soups and sauces (n=63), some 98.4% (n=62) of soups and sauces were conformant. The declared sugar content of one soup (n=1) was outside the EC guideline nutrition labelling tolerances for sugar. These findings are summarised in Figure 20 and further detail can be found in the report titled Food Reformulation Task Force: The Accuracy of Nutrition Declarations on the Labels of Pre-Packed Soups, Sauces, and Breads Sampled in 2022 (Food Safety Authority of Ireland, 2023c).

Figure 20: Accuracy of sugar nutrition label declarations on soups and sauces (n=63) sampled and analysed in 2022

When EC guideline nutrition labelling tolerances for salt were applied to the declared salt content of soups and sauces (n=63), 100% (n=63) of soups and sauces were conformant. For breads (n=72), 98.6% (n=71) of breads were conformant. The declared salt content of one 'other bread' (n=1) was outside the EC guideline nutrition labelling tolerance for salt. These are summarised in Figure 21.

Figure 21: Accuracy of salt nutrition label declarations on soups (n=28), sauces (n=35), and breads (n=71) sampled and analysed in 2022

The report shows that there is good agreement between labelled and analysed values for sugar in soups and sauces, and for salt in breads, soups, and sauces. Therefore, the declared nutrition labels on these products are a reliable source of information for monitoring salt and sugar.

Goal 10: Reformulation monitoring results: trend analysis of the Irish National Food Ingredient Database (2011–2020)

The Irish National Food Ingredient Database (INFID) is made up of branded foods consumed by participants of National Food Consumption Surveys undertaken by IUNA (Gilsenan et al., 2002). INFID has been made available to the task force by the Dietary Surveys Team at the Institute of Food and Health, UCD.

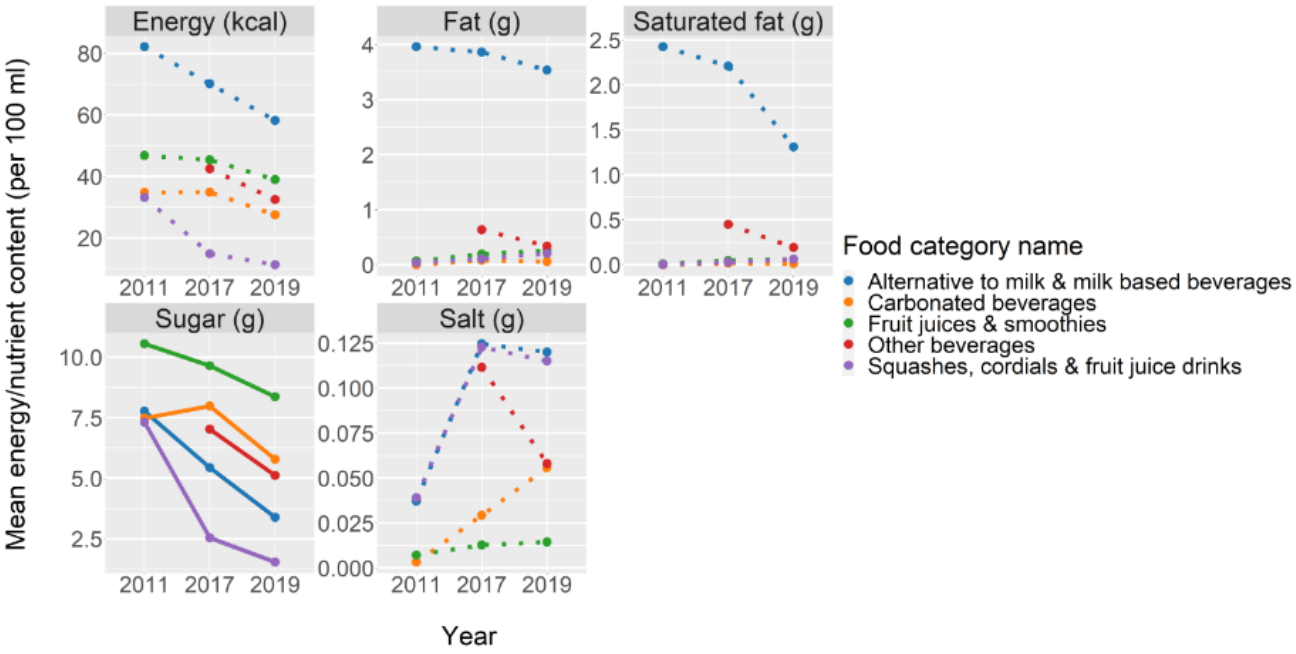
Food products contained within INFID are the foods most commonly eaten by a representative group of the population in Ireland at a particular time. The task force obtained access to INFID 4–6 datasets, which are described below.

- **INFID 4:** Dataset collected as part of the National Pre-School Nutrition Survey and provided by UCD. It contains information on 1,652 branded food products consumed by survey participants between 2011 and 2012 and across the 40 priority food categories.
- **INFID 5:** Dataset collected as part of the National Children's Food Survey II and provided by UCD. It contains information of 3,058 branded food products consumed by survey participants between 2017 and 2018 and across the 40 priority food categories.
- **INFID 6:** Dataset collected as part of the National Teens' Food Survey II and provided by UCD. It contains information on 2,026 branded food products consumed by survey participants between 2019 and 2020 and across the 40 priority food categories.

Analysis of INFID data provides an insight into the nutritional composition of the foods that were **consumed** by survey participants. This provides a picture of the nutrient changes in commonly consumed foods, as distinct from market snapshot analysis, which investigates all food products in a food category **for sale on the market**. Monitoring the nutritional composition of food products in INFID provides a unique insight into the nutritional composition of popular brand choices, by people living in Ireland. The INFID datasets have been used to determine trends in nutrient composition across the 40 priority food categories for food reformulation and are outlined in Figures 22–30. Trends in energy (calories), fat (g), saturated fat (g), sugar (g) and salt (g) per 100 g/100 ml, are shown for groups of similar types of foods. **Trends are indicative and should be interpreted cautiously given that the INFID data are for different population groups.**

Trend graph: energy (calories) and nutrient content of beverage food categories

There was a trend towards a decline in the sugar content of beverages between 2011 and 2019, this is shown in Figure 22.

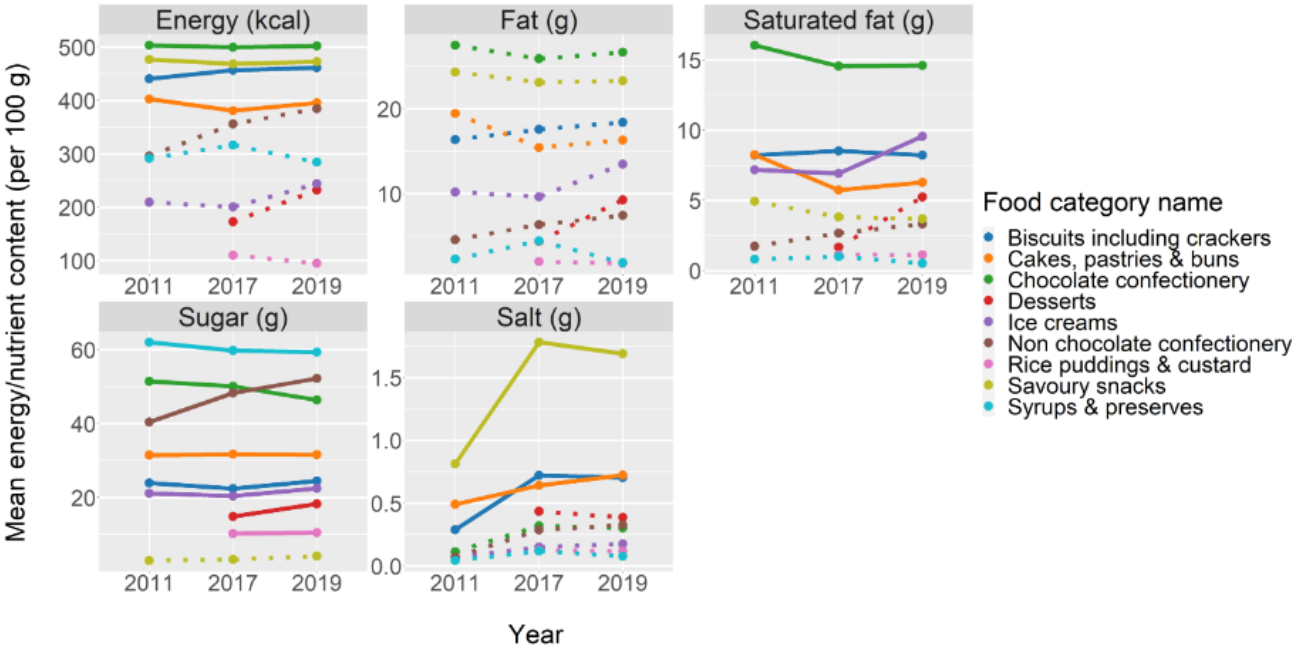


Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 22: Energy (calories) and target nutrient content trend graph per 100 ml of beverage priority food categories between 2011 and 2019, based on INFID 4–6

Trend graph: energy (calories) and nutrient content of confectionery, snacks and dessert food categories

There was a trend towards an increase in the sugar content of non-chocolate confectionery (sugary sweets) between 2011 and 2019. There was a noticeable increase in the salt content of savoury snacks and biscuits and crackers between 2011 and 2017, however this could be due to the different populations included in these surveys. This is shown in Figure 23.

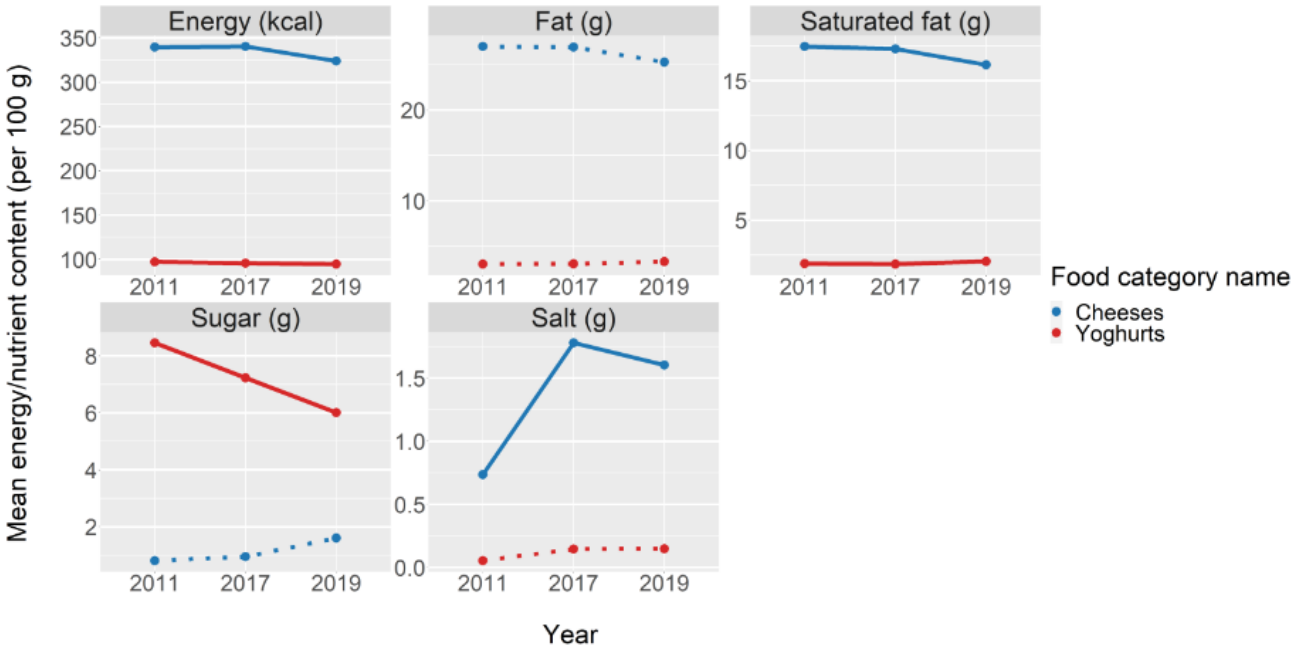


Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 23: Energy (calories) and target nutrient content trend graph per 100 g of confectionery, snacks, and dessert priority food categories between 2011 and 2019, based on INFID 4–6

Trend graph: energy (calories) and nutrient content of cheese and yoghurt food categories

There was a trend towards decreasing amounts of energy, salt, and saturated fat in cheese between 2017 and 2019 and a trend towards lower sugar in yoghurt between 2011 and 2019. There is no corresponding decrease in energy in yoghurt during this time, this is shown in Figure 24.

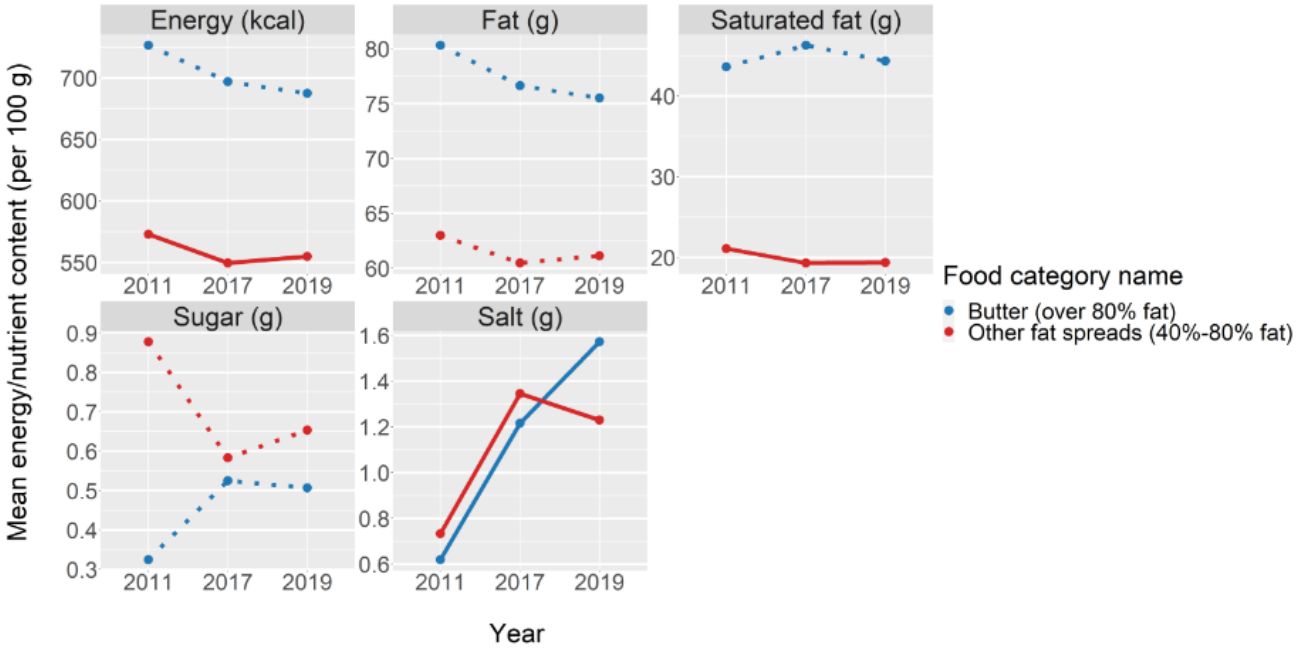


Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 24: Energy (calories) and target nutrient content trend graph per 100 g of cheese and yoghurt priority food categories between 2011 and 2019, based on INFID 4–6

Trend graph: energy (calories) and nutrient content of fats and spreads food categories

There was a trend towards an increase in the salt content of butter, while the salt content of other fat spreads reduced between 2017 and 2019, this is shown in Figure 25.

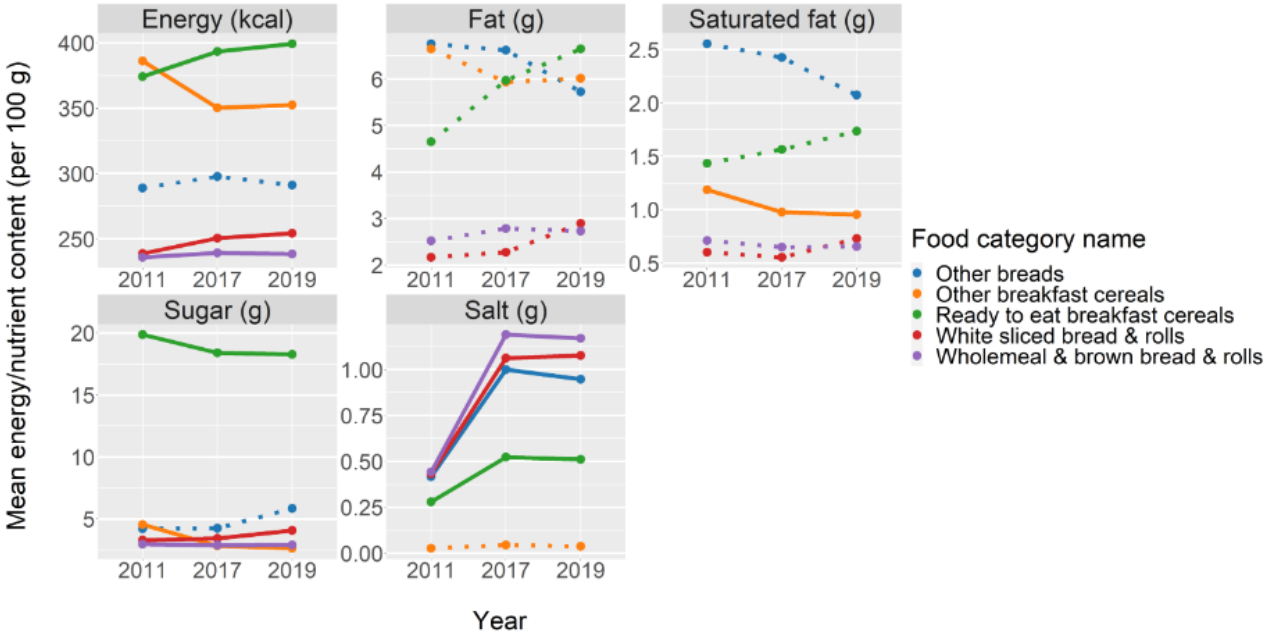


Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 25: Energy (calories) and target nutrient content trend graph per 100 g of fats and spreads priority food categories between 2011 and 2019, based on INFID 4–6

Trend graph: energy (calories) and nutrient content of cereal and bread food categories

There was no consistent trend in the energy content of cereals and breads between 2011 and 2017. Other breakfast cereals saw a reduction in energy, whereas RTEBC saw an increase in energy content. Between 2017 and 2019, the salt content of bread and cereals mostly remained stable, this is shown in Figure 26. The sharp increase in the salt content observed between 2011 and 2017 could be due to the different populations included in these surveys.

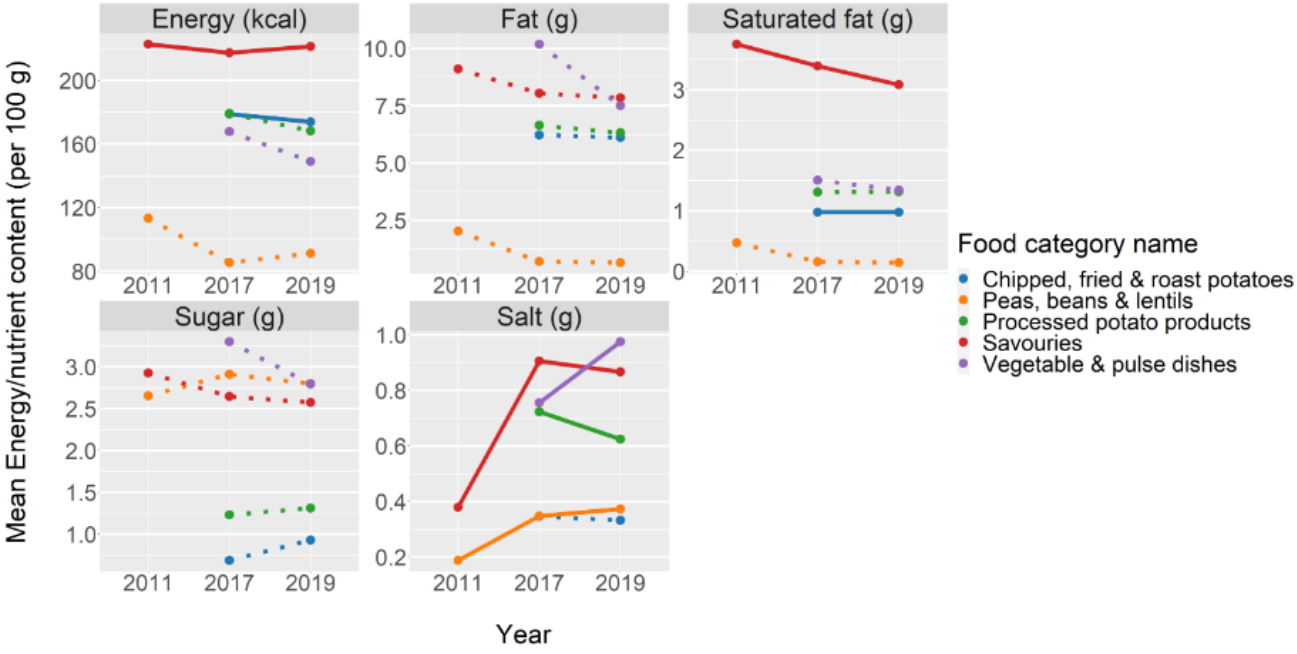


Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 26: Energy (calories) and target nutrient content trend graph per 100 g of cereal and bread priority food categories between 2011 and 2019, based on INFID 4–6

Trend graph: energy (calories) and nutrient content of vegetable, potato and savoury food categories

Energy and saturated fat content remained mostly stable or saw a slight decrease in all food categories. Between 2011 and 2017, there was an increase in the salt content of savouries; however, this could be due to the different populations included in these surveys. Salt increased in vegetable and pulse dishes between 2017 and 2019**,** this is shown in Figure 27.

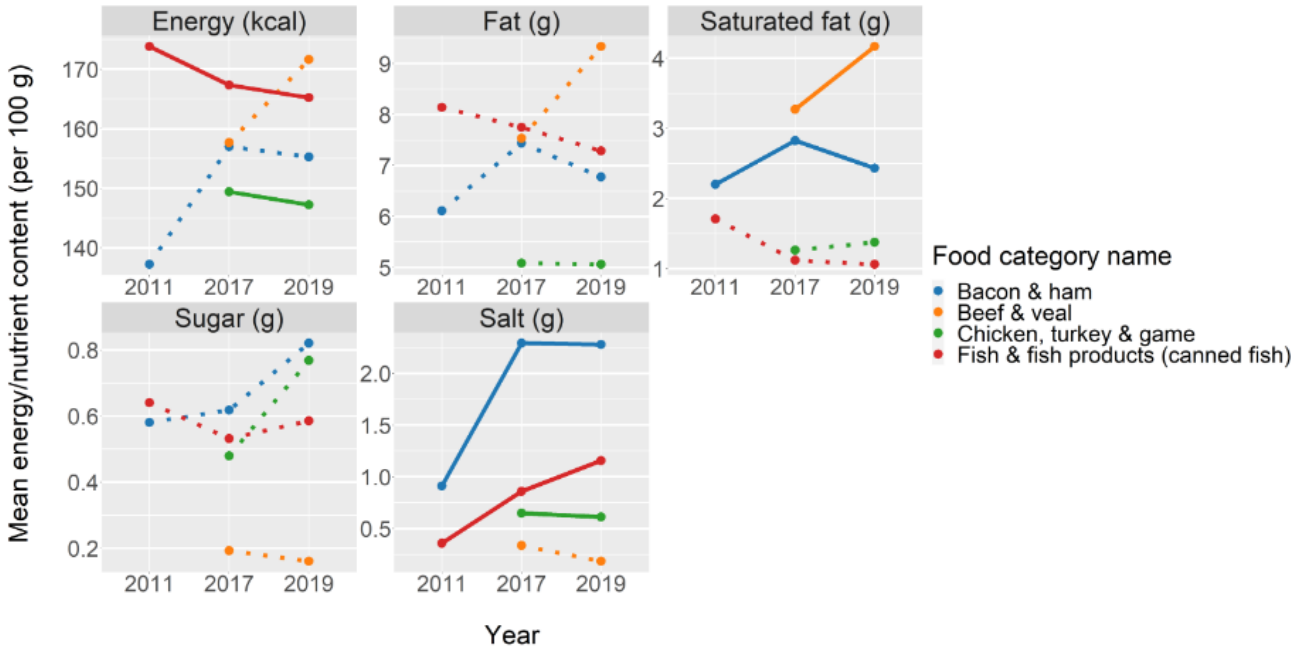


Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 27: Energy (calories) and target nutrient content trend graph per 100 g of vegetable, potato, and savouries priority food categories between 2011 and 2019, based on INFID 4–6

Trend graph: energy (calories) and nutrient content of meat and fish food categories

There was a trend towards a decrease in the energy content of fish and fish products. These products also saw a consistent increase in salt content between 2011 - 2019. There was a trend towards an increase in the saturated fat content of beef and veal foods between 2017 and 2019, this is shown in Figure 28.



Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 28: Energy (calories) and target nutrient content trend graph per 100 g of meat and fish product priority food categories between 2011 and 2019, based on INFID 4–6

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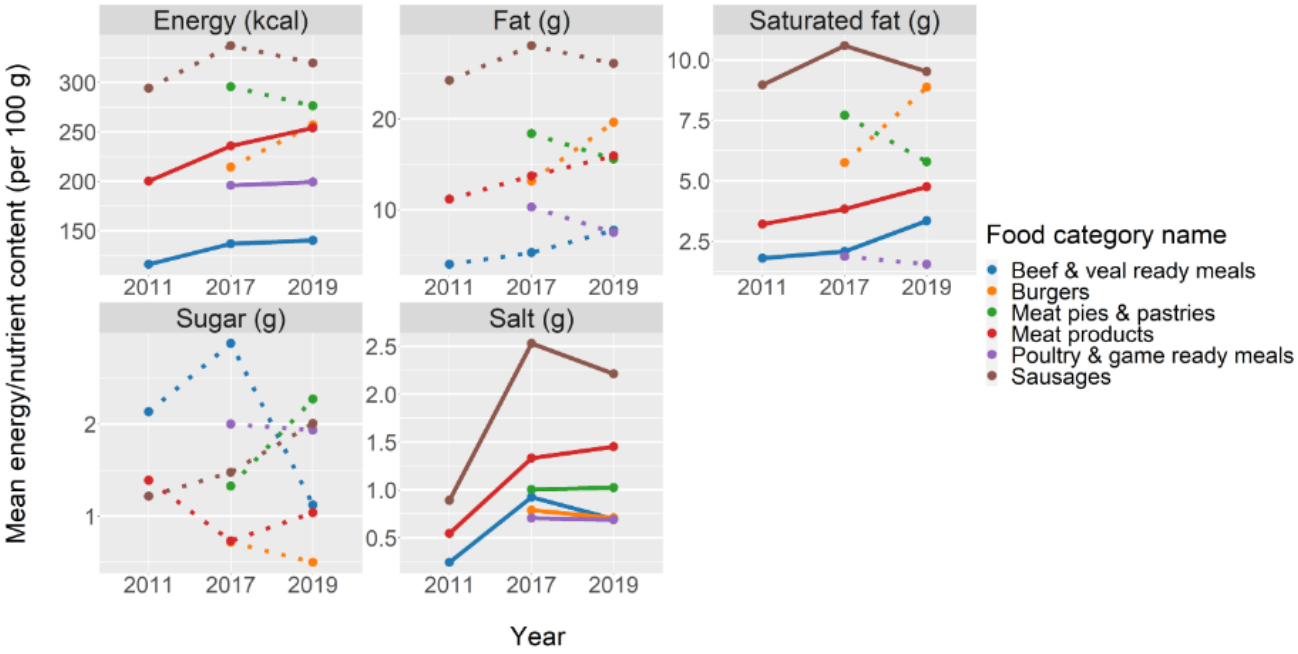
Trend graph: energy (calories) and nutrient content of meat-based products and convenience food categories

There was a trend towards an increase in the energy, salt, and saturated fat content of meat products between 2011 and 2019. Salt reduced or remained stable in all other food categories, except meat products, between 2017 and 2019. Beef and veal ready meals saw a trend towards an increase in energy and saturated fat content between 2011 and 2019. There was a trend towards a reduction in the saturated fat and salt content in sausages between 2017 and 2019, this is shown in Figure 29.

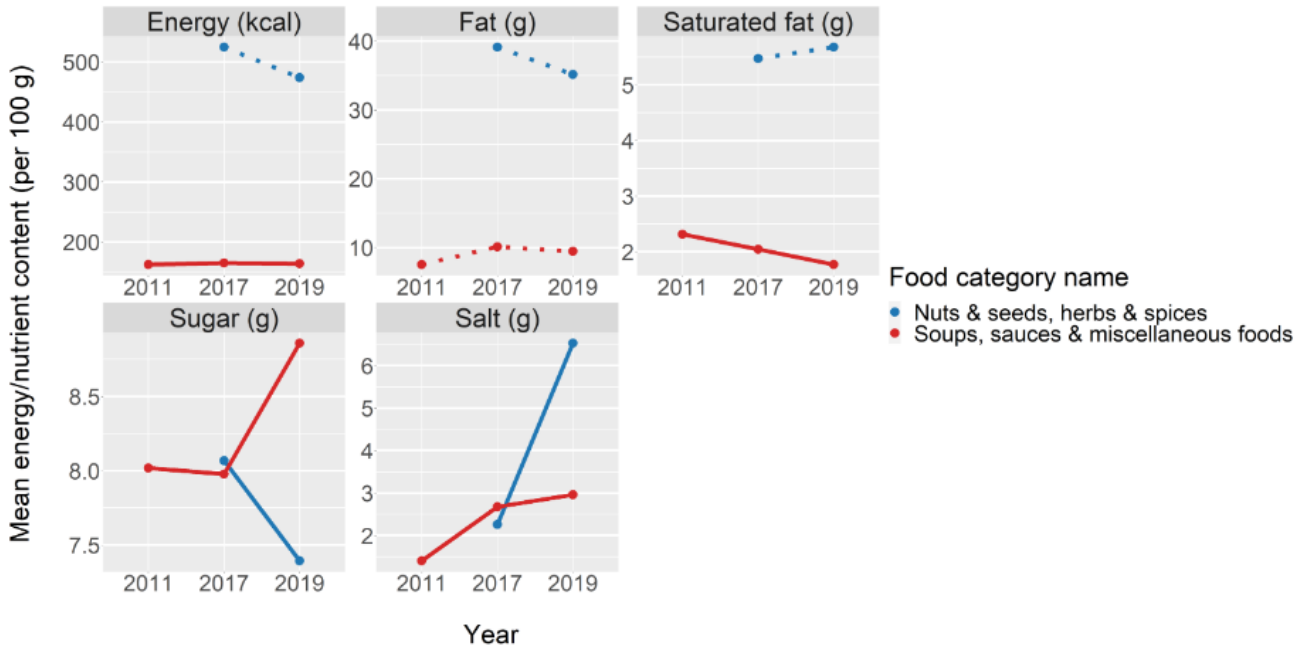


Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 29: Energy (calories) and target nutrient content trend graph per 100 g of meat-based products and convenience food priority food categories between 2011 and 2019, based on INFID 4–6

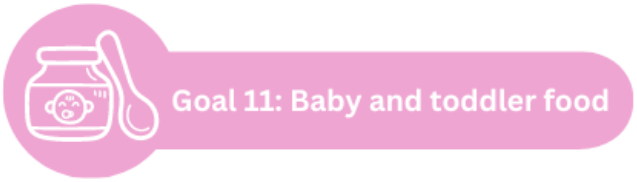
Trend graph: energy (calories) and nutrient content for other food categories

There was a trend towards an increase in the salt content of nuts, seeds, herbs, and spices as well as soups, sauces, and miscellaneous foods between 2011 and 2019. Soups, sauces, and miscellaneous foods saw a trend towards a decrease in the saturated fat but a sharp rise in sugar content, this is shown in Figure 30.



Note: Food categories represented with an unbroken line are prioritised for reformulation of the target nutrient, while food categories represented with a broken line are not prioritised for reformulation of the target nutrient.

Figure 30: Energy (calories) and target nutrient content trend graph per 100 g of priority food categories classified as other food categories between 2011 and 2019, based on INFID 4–6



An analysis of the nutrient composition of a sample of commercially available complementary foods and their contribution to dietary intake of sugar and sodium in 1 - 4-year-olds

Commercially available complementary foods (CACF) are manufactured food or beverages marketed as suitable for feeding infants (under 12 months) and young children (12–36 months). Vitamin and mineral supplements targeted to infants and young children and infant and young child formulas are not considered CACF for the purposes of this report.

CACF are not an essential part of the diets of infants and young children. Infant feeding guidelines state that no added sugar or salt should be used as ingredients in complementary foods (Food Safety Authority of Ireland, 2012) (Food Safety Authority of Ireland, 2011). Despite this, a review of CACF sold on the Irish market in 2012, 2017, and 2021 found products high in added sugar and salt, which is not in keeping with infant feeding guidance (Bennett et al., 2012, Geraghty et al., 2018, Taleghani et al., 2018, Curtis-Davis et al., 2022, McGovern et al., 2022). This situation is not unique to Ireland, and in response WHO and the University of Leeds developed and published the Nutrient and Promotion Profile Model (NPPM), which aims to address the high levels of sugar and salt in CACF. Addressing this issue is important, as children aged under 36 months are a vulnerable population, and developing a taste preference for sugar and salt in early childhood can increase the risk of obesity and chronic disease in later life.

The Roadmap for Food Product Reformulation states that “2025 targets will be developed for this category, based on the FSAI’s work in 2012 and repeated in 2018 addressing the nutritional composition and quality of products in this category. Infant milk formula is not included in the Roadmap” (Department of Health, 2021). It outlines that the task force will build on work completed to date by the FSAI on assessing the nutritional composition and appropriateness of CACF sold on the Irish market. In addition, the Roadmap states the reformulation approach will, where possible, align with that of Public Health England (Public Health England, 2020)[10]

In 2022, the task force commissioned a review of the IUNA National Pre-School Nutrition Survey (NPSN) (2011–2012) by the Dietary Survey Team at UCD. An analysis with a specific focus on

[10] *now referred to as the Office for Health Improvement and Disparities (OHID)*

CACF[11] found they contributed 10.58% of sugar and 2.82% of sodium intakes in preschool children aged 1–2 years and 6.64% of sugar and 1.08% of sodium intakes in preschool children aged 3–4 years. Puréed fruit and smoothies and fromage frais were found to be significant contributors of sugar in the diets of children aged 1–4 years.

The WHO NPPM was applied to a sample (n=77) of CACF sold on the Irish market in 2021, in line with the NPPM rapid evaluation methodology (World Health Organisation, 2022). This analysis found that 45% (n=22/49) exceeded the <15% of energy from total sugar threshold for savoury meals and meal components, dry and semi-dry snacks, and finger foods. In meals, 44% (n=16/36) exceeded the <15% energy from total sugar threshold, with those failing this criterion (n=16) having a mean of 23% energy from sugar. Similarly, 46% (n=6/13) of snacks failed, with the mean energy from sugar in failing products being 34%. Some 22% (n=17/77) of products contained added free sugars, which under the NPPM is not permitted.

Of the products assessed, 31% (n=24/77) failed the NPPM sodium threshold of 50 mg/100 kcal (or 100 mg when cheese is within the product name in savoury meal products and dairy-based foods).

In 2023, the FSAI issued draft reformulation targets for sugar and salt in CACF for consultation. The consultation feedback is currently being synthesised and targets are expected to be finalised by Q2 2024.

[11] The NPNS includes nine food categories specific to infant and young child foods as well as the standard 68 IUNA food categories.

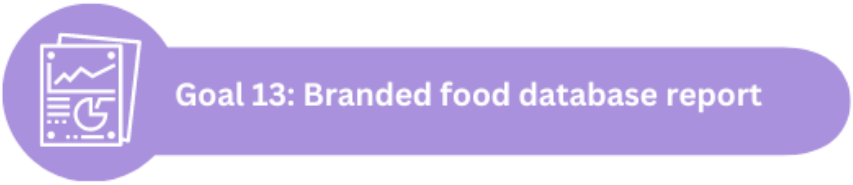
The Roadmap for Food Product Reformulation states that the out-of-home food sector or foodservice sector is expected to procure and/or make products that meet the reformulation targets in priority food categories, drawing on experience from Northern Ireland and Great Britain**.**

Salt in pizza

As part of reformulation in Ireland, priority food categories for salt reduction include 'savouries', of which pizza is a subcategory. The Salt in Pizza Project will provide information on the salt content of pizza sold in the Irish foodservice market. This pilot project will establish a baseline sodium content and subsequent determination of the salt equivalent of pizza. Samples from takeaways and restaurants were collected and sent to the Public Analyst's Laboratory, Galway for analysis in September 2023 and results will be published in 2024. In addition, the salt content of prepacked pizza sold in supermarkets (collected in the 2023 market snapshot) will be compared with the salt content of pizza available for adults and children in the foodservice sector.

Evaluating children's menus

The purpose of this pilot project is to complete a comprehensive survey of foodservice outlets that offer children's menus. This project takes an all – island approach and is informed by work completed by Food Standards Agency in Northern Ireland. A market research company will collaborate with the task force to identify the most commonly consumed children's menu options across a range of foodservice outlets, including restaurants, hotels, and DEIS (Delivering Equality of Opportunity in Schools) school settings. This survey will examine barriers and explore opportunities to improve children's menus. Additionally, the survey will provide source data on the types of meals sampled for laboratory analysis in 2024. The combined analyses from the task force and the Food Standards Agency in Northern Ireland will serve as the foundation for an all-island initiative.

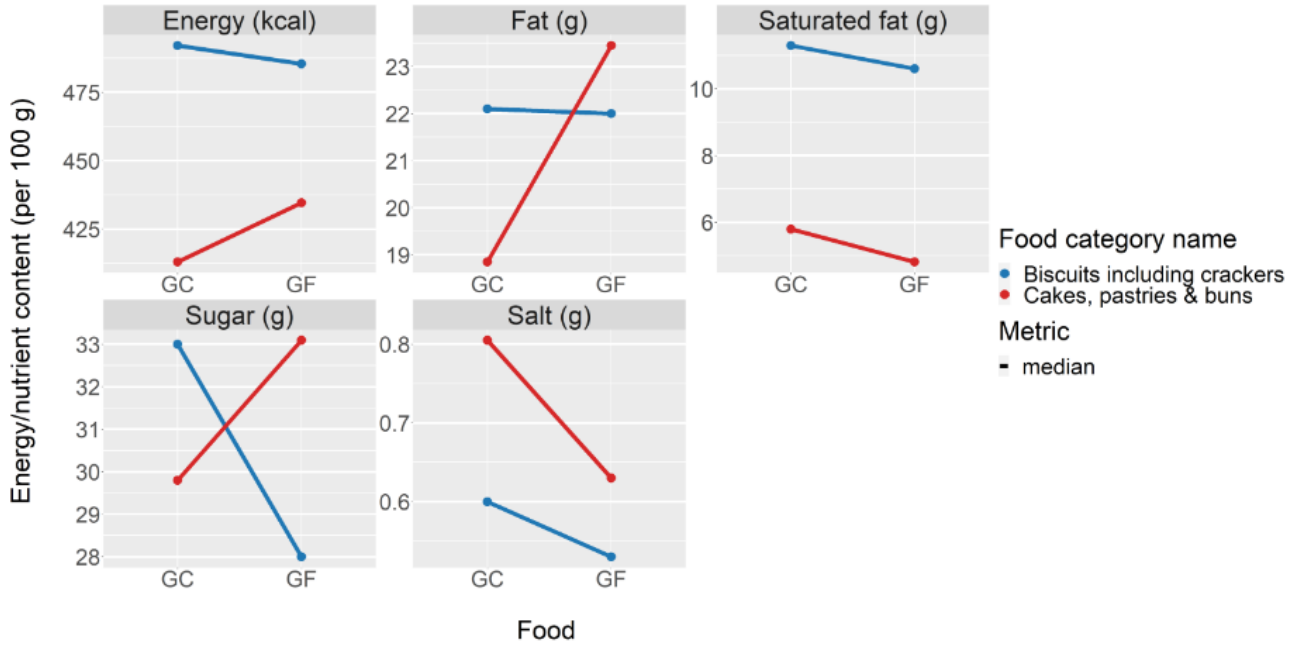


The development of a comprehensive, accurate, and up-to-date national branded food database in Ireland – providing product label information, including the barcode, the nutritional composition, ingredients, and other characteristics of branded food products – is critical to support monitoring the effect of food and nutrition policy, including food reformulation. In 2022, the task force piloted a branded food database for use in Ireland called the Nutrition Composition and Labelling Information System (CLAS), which was developed by the Institute for Nutrition; Slovenia (O'Mahony et al., 2023, Pravst et al., 2022). To build on this work, the task force commissioned a scoping review by UCD, of the published literature on 18 branded food databases together with key insights from stakeholders who develop, contribute to, manage, or use branded food databases. It provides valuable insights into how a world class tool can be constructed and maintained.

In 2023, the task force in partnership with UCD Institute of Food and Health completed an analysis of the energy (kcal), saturated fat (g), sugar (g), and salt (g) content of gluten-free biscuits cakes, buns and pastries foods. Subsequently, the task force expanded the analysis to breads. This was of interest because people living with coeliac disease rely on a small pool of gluten-free foods in their diets and are at an increased risk of dietary related noncommunicable disease, such as cardiovascular disease. The evidence is mixed on the nutritional quality of gluten-free alternatives. The aim of this analysis was to determine the sugar, salt, and saturated fat content of gluten-free cakes, pastries and buns, biscuits, and breads and to investigate how these compare with their gluten-containing alternatives.

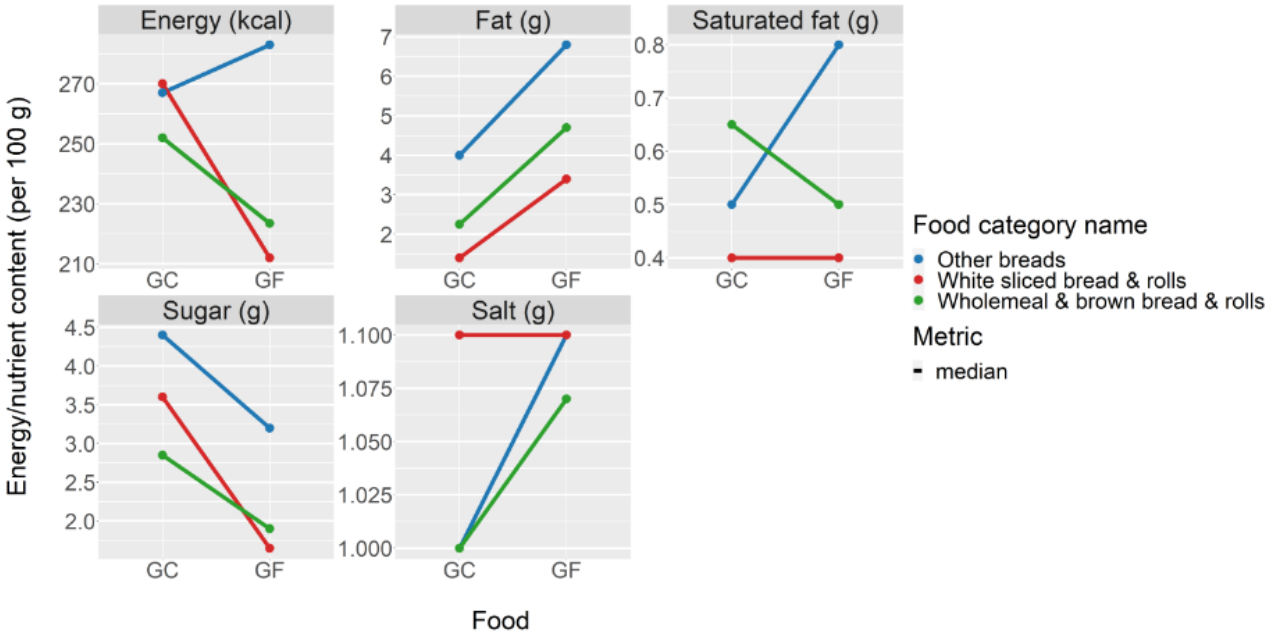
Breads sold on the Irish market in 2021 and cakes, pastries, buns, and biscuits sold on the Irish market in 2022 were included in this study. Gluten-free products were matched with similar gluten-containing products and a review of their nutrition composition was completed.

Small differences in the energy, saturated fat, sugar, and salt content were observed; however, differences were not statistically significant. These are shown in Figures 31 and 32. Reformulation targets therefore apply equally to gluten-free and gluten-containing breads, cakes, pastries, buns, and biscuits.



GC= gluten-containing; GF= gluten-free.

Figure 31: Trends in energy (calories) and target nutrient content of gluten-containing (n=7) and gluten-free (n=7) biscuits and gluten-containing (n=6) and gluten-free (n=6) cakes, pastries, and buns on the Irish marked in 2022



GC= gluten-containing; GF= gluten-free.

Figure 32: Trends in energy (calories) and target nutrient content of gluten-containing (n=11) and gluten-free (n=11) other breads, gluten-containing (n=15) and gluten-free (n=15) white sliced breads and rolls, and gluten-containing (n=10) and gluten-free (n=10) wholemeal and brown bread and rolls on the Irish marked in 2022

Goal 15: Food reformulation and health equity

Preventative health policies, such as a reformulation strategy, should be defined and implemented in a way that ensures those with the greatest need benefit the most from the policy (Marmot M, 2020). Across Ireland, the prevalence of overweight and obesity follows a social gradient, meaning that people living in areas of higher deprivation are at an increased risk of developing these conditions and related comorbidities (Moore Heslin et al., 2023, O'Donnell et al., 2020, Mitchell L and Cacciottolo, 2020). Research in Ireland shows that people living in higher deprivation have higher intakes of free sugar and saturated fat (McCartney et al., 2013). The Food Reformulation Task Force is completing reformulation monitoring activities that are sensitive to health equity; two of these projects are described as follows.

Project 1: Comparison of sodium content in snack products by brand type

In 2023, the sodium content of branded and own brand savoury snacks in 2008 and again in 2021 were compared. This was of interest for two reasons: first, own brand market share is increasing and, second, own brand products are relied on by lower income households, who carry the highest burden of obesity and noncommunicable diseases in Ireland. **From this analysis, we found no statistically significant difference between the mean sodium content (mg/100 g) of own brand savoury snacks and branded savoury snacks from 2008 to 2021.** This is shown in Figure 33. This means that both branded and own brand savoury snacks require reformulation to reduce sodium content.

	Mean (SD) sodium (mg/100g) content per year of survey		Statistical significance (2008 vs 2021)
	2008	2021	
Branded	660.92 (321.76)	681.79 (300.35)	NS*
Own brand	667.97 (385.06)	668.73 (378.62)	NS*
Statistical significance (branded vs own brand)	NS*	NS*	

Figure 33: Mean (SD) sodium (mg/100 g) content of branded and own brand savoury snacks in 2008 and 2021

Project 2: Equitable food reformulation monitoring

The Food Reformulation Task Force are taking steps to monitor food reformulation progress through a health equity lens. The Minimum Essential Standard of Living (MESL) healthy food basket, developed by *safe*food, is a basket that everyone should be able to afford in line with the consumer price index (see Figure 34) (safefood, 2021). The task force, in partnership with UCD, has established the median energy (calories), saturated fat, sugar, and salt content of foods on the market in 2022, included in the MESL food baskets (2020 edition). This approach will be repeated in 2025 and comparative analysis will be undertaken to measure reformulation progress in food items considered part of MESL food basket.

Figure 34: Overview of methodology for monitoring reformulation using the minimum essential standard of living food basket

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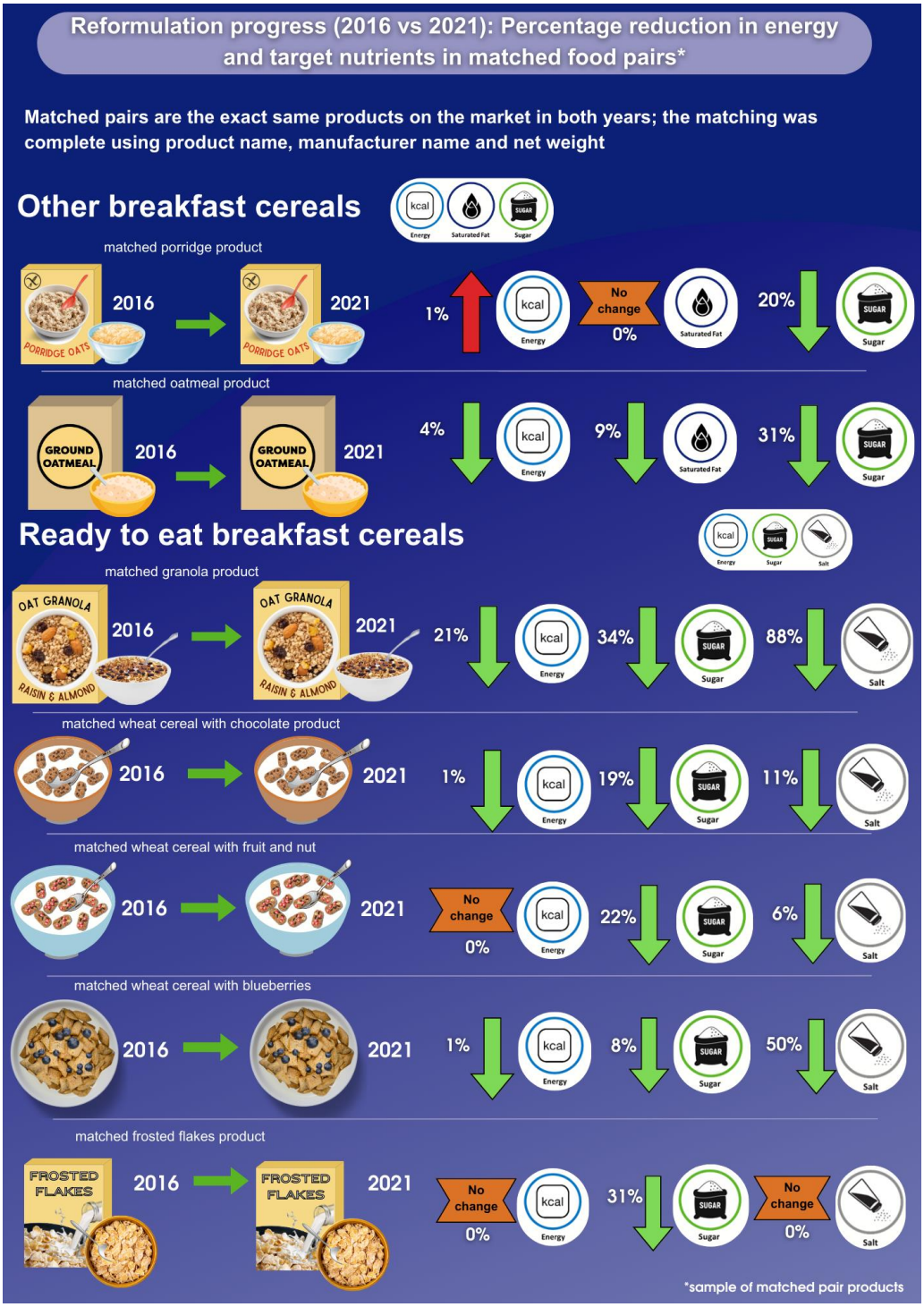
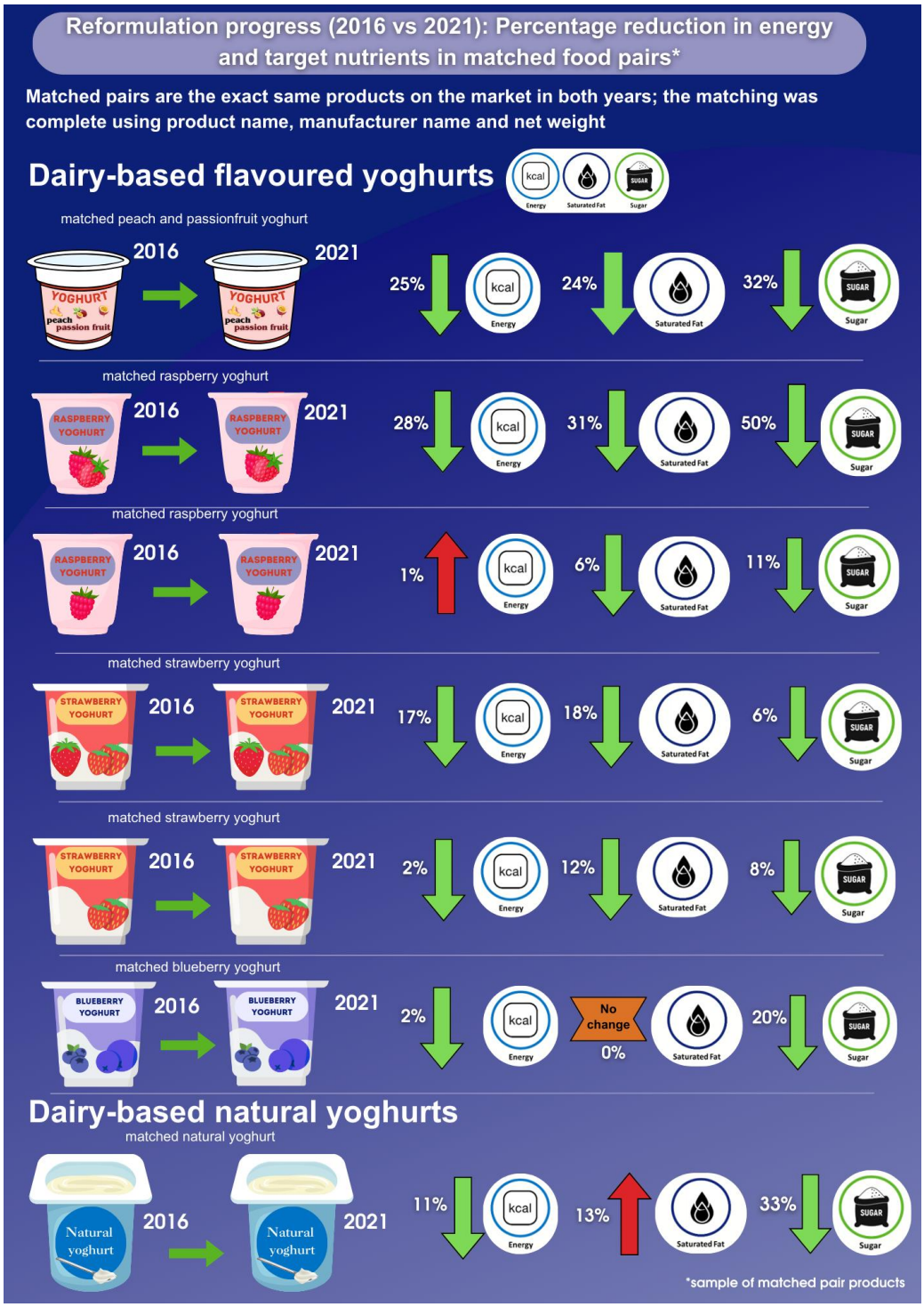
Appendix 1: Reformulation progress in matched pair breakfast cereals, 2016 vs 2021



Note: The examples shown in the infographic are a sample of what was on the market. Green arrow: percentage decrease; red arrow: percentage increase; amber arrow: no percentage change.

Appendix 2: Reformulation progress in matched pair yoghurts, 2016 vs 2021



Note: The examples shown in the infographic are a sample of what was on the market. Green arrow: percentage decrease; red arrow: percentage increase; amber arrow: no percentage change.

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