



Food Reformulation Task Force:

The Accuracy of Nutrition Declaration Labels of Prepacked Sugar-Sweetened Carbonated Beverages and Processed Cheeses

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The Accuracy of Nutrition Declaration Labels of Prepacked Sugar-
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Acronyms

Acronym	Definition
DRV	dietary reference value
EC	European Commission
EFSA	European Food Safety Authority
EU	European Union
FRT	Food Reformulation Task Force
FSAI	Food Safety Authority of Ireland
GPAL	Public Analyst's Laboratory, Galway
INFORMAS	International Network for Food and Obesity / Non-communicable Diseases (NCDs) Research, Monitoring and Action Support
IQR	interquartile range
NANS	National Adult Nutrition Survey
NCDs	non-communicable diseases
RTEBC	Ready-to-eat breakfast cereal
TE	total energy
UK	United Kingdom
WHO	World Health Organization

Version history and updates

Version name	Date of change	Description of change
Food Reformulation Task Force: The Accuracy of Nutrition Declarations on the Labels of Pre-Packed Sugar-Sweetened Carbonated Beverages and Processed Cheeses and Sampled in 2023	05/12/24	N.A



Executive summary

According to the Irish National Food Consumption Surveys, 56.0% of adults, 23.6% of adolescents and 16.4% of children are living with overweight and obesity in Ireland (Irish Universities Nutrition Alliance, 2024a; Moore Heslin *et al.*, 2023; O' Donnell *et al.*, 2020). Amongst the adult population living in Ireland, mean dietary intakes of free sugar (8–9% of total energy (TE)), saturated fat (13.5% TE) and salt (9.5 g and 7.8 g /day for males and females, respectively) exceed health based upper thresholds set by the World Health Organization (WHO) (Irish Universities Nutrition Alliance, 2024a; 2024b; World Health Organization, 2015; 2023a; 2023b). Therefore, there is a need to reduce dietary intakes of nutrients of public health concern such as sugar, saturated fat and salt, in order to improve population health.

[The Obesity Policy and Action Plan – A Healthy Weight for Ireland](#), published in 2016, outlines 10 steps to be taken within a 10-year time frame to prevent and treat overweight and obesity in Ireland (Department of Health, 2016). Step 3 of the plan relates to food reformulation. It aims to “secure appropriate support from the commercial sector to play its part in obesity prevention and agree food industry reformulation targets and review progress”. To realise this, a Food Reformulation Subgroup of the Obesity Policy Implementation Oversight Group developed [A Roadmap for Food Product Reformulation in Ireland](#) (Department of Health, 2021).

To deliver the Roadmap, the Food Reformulation Task Force (FRT), a strategic partnership between Healthy Ireland and the Food Safety Authority of Ireland (FSAI), was established in 2022. The FRT implements the Roadmap and monitors progress made in reducing energy (calories), saturated fat, sugar, and salt in processed packaged food and non-alcoholic beverages. Food label nutrition declarations are used as an information source for the nutrient content of foods, to monitor reformulation progress. The International Network for Food and Obesity/Non-communicable Diseases (NCDs) Research, Monitoring and Action Support (INFORMAS) network supports the validation of declared nutrition information on food labels used for monitoring (Neal *et al.*, 2013). The aim of this study was to examine the conformance of declared nutrition information on sugar-sweetened carbonated beverages and processed cheese with European Commission (EC) guideline nutrition labelling tolerances (European Commission, 2012).

In 2023, sugar-sweetened carbonated beverages (n=95) and processed cheeses (n=95) were sampled from the Irish market as part of the FRT's salt and sugar monitoring programmes.

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Sugar-sweetened carbonated beverages and processed cheeses were analysed in the Public Analyst's Laboratory, Galway (GPAL) using accredited laboratory analysis methods for salt and sugar.

Conformance of declared nutrition information on food product labels with EC guideline nutrition labelling tolerances was reviewed (European Commission, 2012). This assessment involved using a Nutrition Tolerance Calculator built by the FSAI in Microsoft Excel. The Nutrition Tolerance Calculator set the initial bounds for that specific nutrient, applied the tolerance permitted, giving consideration to whether or not a claim was made on the food, and finally applied the rounding principle as set out in Section 6 of the [EC guideline nutrition labelling tolerances](#) (European Commission, 2012).

To examine the accuracy of the declared nutrition information on the food product labels, labelled and analysed values for sugar in sugar-sweetened carbonated beverages and salt in processed cheeses were analysed using RStudio Version 4.4.0. Descriptive statistics (mean, standard deviation (SD), median, interquartile range (IQR) and minimum and maximum values) were determined.

When EC guideline nutrition labelling tolerances for sugar were applied to the declared sugar content of sugar-sweetened carbonated beverages (n=95), 98.9% (n=94) of the declared sugar content in sugar-sweetened carbonated beverages were conformant. The declared sugar content of one sugar-sweetened carbonated beverage (n=1) was outside the EC guideline nutrition labelling tolerances for sugar (European Commission, 2012).

When EC guideline nutrition labelling tolerances for salt were applied to the declared salt content of processed cheeses (n=95), 90.5% (n=86) of declared salt content in processed cheeses were conformant. The declared salt content of nine processed cheeses was outside the EC guideline nutrition labelling tolerance for salt (European Commission, 2012), five of which were due to minor deviations.

The findings of this study indicate that the declared sugar content on the labels of sugar-sweetened carbonated beverage products (n=95) and the declared salt content on the labels of processed cheeses (n=95) may accurately reflect changes in the nutrient composition of food products over time and reflect true food reformulation efforts. The FRT will continue to investigate the accuracy of nutrition declarations of other food categories using the same methodology.



1. Introduction and background

According to the World Health Organization (WHO), non-communicable diseases (NCDs) cause 90% of deaths in the WHO European Region (World Health Organization, 2022). In Ireland, it is estimated that 105 to 141 per 100,000 deaths are related to dietary intakes (Afshin, Ashkan *et al.*, 2019). There are numerous risk factors for the development of diet-related NCDs, including overconsumption of sugar and salt in the diet, which increase the risk of developing coronary heart disease, stroke, type 2 diabetes, and some cancers (Nettleton *et al.*, 2017; Fiolet *et al.*, 2018). Overweight and obesity are also risk factors for diet-related NCDs and out of 53 European countries, Ireland has the ninth highest prevalence rate of adults living with obesity (World Health Organization, 2022). According to the Irish National Consumption Surveys, 56.0% of adults, 23.6% of adolescents and 16.4% of children are living with overweight and obesity in Ireland (Irish Universities Nutrition Alliance, 2024a; Moore Heslin *et al.*, 2023; O' Donnell *et al.*, 2020). Amongst the adult population living in Ireland, mean dietary intakes of free sugar (8–9% of total energy (TE)), saturated fat (13.5% TE) and salt (9.5 g and 7.8 g /day for males and females, respectively) exceed health based upper thresholds set by the WHO (Irish Universities Nutrition Alliance, 2024a; 2024b; World Health Organization, 2015; 2023a; 2023b). Therefore, there is a need to reduce dietary intakes of nutrients of public health concern such as sugar, saturated fat and salt, in order to improve population health.

To address high rates of overweight and obesity in the Irish population, the Department of Health published [*The Obesity Policy and Action Plan – A Healthy Weight for Ireland*](#) in 2016 (Department of Health, 2016). This action plan sets out 10 steps to tackle the high rates of overweight and obesity. Step 3 commits to securing appropriate support from the commercial sector to play its part in obesity prevention, and food reformulation is identified as one measure to achieve this. In order to realise this step, [*A Roadmap for Food Product Reformulation in Ireland*](#) was developed by the Obesity Policy Implementation Oversight Group's Food Reformulation Subgroup (Department of Health, 2021). To implement the Roadmap, the Food Reformulation Task Force (FRT), a strategic partnership between the Food Safety Authority of Ireland (FSAI) and Healthy Ireland at the Department of Health, was established in 2022. The Roadmap sets out that food products and non-alcoholic beverages which are significant contributors to sugar and salt in the Irish diet, will reduce their sugar content by 20% and salt content by 10%.

The FRT has published a report titled [*Priority Food Categories for Reformulation in Ireland Version 3*](#) which outlines 40 priority food categories for food reformulation in Ireland (Food

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Safety Authority of Ireland, 2023a). Fifteen food categories and 5 non-alcoholic beverage categories are prioritised for sugar reduction, and 25 food categories are prioritised for salt reduction. These priority food categories are listed in [Appendix 1](#).

On 13 December 2016, the [European Food Information to Consumers \(FIC\) Regulation \(EU\) No 1169/2011](#) was entered into force ((European Parliament, 2011). This regulation requires the mandatory provision of nutritional information per 100 g (energy, total fat, saturated fat, carbohydrate, sugars, protein, and salt) of prepacked foods (European Parliament, 2011). Mandatory nutrition declarations on prepacked foods and non-alcoholic beverages offers a convenient source of information to monitor food composition over time and identify changes in food product nutrition composition.

European Union (EU) regulations require that the labelled nutritional values are average values for the food in its manufactured state, and that these average values can be based on analytical measurement or published values (European Parliament, 2011). Moreover, [European Commission \(EC\) guidance](#) with regard to tolerances for the average nutrient values declared on a label (hereafter referred to as “guideline nutrition labelling tolerances”) sets out the variability accepted for official controls purposes in relation to the measured nutritional content of a food sample in comparison to the declared nutrition content on the label of that food (European Commission, 2012). The range of what is allowable depends on the type of food, whether a claim is made on the food, and the type and amount of the nutrient in the food. Once the analysed nutrient value of a particular food or non-alcoholic beverage is within the accepted tolerance for that specific nutrient, as outlined in the guideline nutrition labelling tolerances, it is acceptable for the analysed and labelled value to be different (European Commission, 2012).

The International Network for Food and Obesity/Non-communicable Diseases (NCDs) Research, Monitoring and Action Support (INFORMAS) recommends, where resources allow, the validation of declared nutrition information on food labels of food products surveyed in the monitoring of important nutrients in the food supply (Neal *et al.*, 2013). The FRT primarily uses declared nutritional information on prepacked food and non-alcoholic beverage labels to monitor reformulation progress overtime. To complement this, verification exercises are completed to determine the accuracy of nutrition declarations on food product labels. Research on the accuracy of nutrition declarations on food labels for monitoring the nutrient content of foods has previously been carried out by the FSAI in a sample of yoghurts in 2018, breakfast cereals in 2019, and soups and sauces and breads in 2022 (Food Safety Authority of Ireland, 2021a; 2021b; 2023b).



2. Aims and objectives

The aim of this study was to examine the accuracy of declared sugar content on sugar-sweetened carbonated beverage labels and declared salt content on processed cheese product labels sampled from the Irish market in 2023.

The objectives of this study were to:

1. Examine the declared and analysed sugar content (mean and median per 100 ml) in sugar-sweetened carbonated beverages (n=95) sold on the Irish market in May and June 2023.
2. Examine the declared and analysed salt content (mean and median per 100 g) in processed cheeses (n=95) sold on the Irish market in July 2023.
3. Determine if the sugar declarations on sugar-sweetened carbonated beverage labels (n=95) sold on the Irish market in May and June 2023 were within the EC guideline nutrition labelling tolerances for sugar.
4. Determine if the salt declarations on processed cheese labels (n=95) sold on the Irish market in July 2023 were within the EC guideline nutrition labelling tolerances for salt.



3. Methodology

In 2023, the FRT undertook surveys to determine the sugar content in sugar-sweetened carbonated beverages (n=95) and salt content in processed cheeses (n=95) by laboratory analysis.

3.1 Sampling and laboratory analysis of sugar-sweetened carbonated beverages and processed cheeses

All samples were analysed by the Public Analyst's Laboratory, Galway (GPAL) [Irish National Accreditation Board Registration Number: 9T](#). The methodologies followed in the sampling surveys are outlined in the [Monitoring Sugar in Processed Foods](#) report (Food Safety Authority of Ireland, 2023c) and the [Monitoring Sodium and Potassium in Processed Foods](#) report (Food Safety Authority of Ireland, 2023d).

3.2 Food categories and number of products reviewed against EC guideline nutrition labelling tolerances

3.2.1 Sugar-sweetened carbonated beverages

Sugar-sweetened carbonated beverages (n=95) were assessed for conformance with EC guideline nutrition labelling tolerances for sugar, as shown in Table 1.

3.2.2 Processed cheeses

Processed cheeses (n=95) were assessed for conformance with EC guideline nutrition labelling tolerances for salt, as shown in Table 1.

3.2.3 EC guideline nutrition labelling tolerances for sugar

The EC guideline nutrition labelling tolerances for sugar are defined as a tolerance of ± 2 g if the product contains <10 g of sugar per 100 g, and a tolerance of $\pm 20\%$ if the product contains 10–40 g of sugar per 100 g (Table 1). These nutrition labelling tolerances apply to products without a nutrition or health claim for sugar (European Commission, 2012).

3.2.4 EC guideline nutrition labelling tolerances for salt

The EC guideline nutrition labelling tolerances for salt are defined as a tolerance of ± 0.375 g if the product contains <1.25 g of salt per 100 g, and a tolerance of $\pm 20\%$ if the product contains ≥ 1.25 g of salt per 100 g (Table 1). These nutrition labelling tolerances apply to products without a nutrition or health claim for salt (European Commission, 2012).



3.2.5 EC guideline nutrition labelling tolerances when nutrition and health claims are made

If a nutrition or health claim is made on a food or beverage product, e.g. low sugar claim, the upper tolerance is set at the condition of use for the nutrition or health claim, as outlined in the Annex of [Regulation \(EC\) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods \(European Parliament, 2006\)](#).

Table 1 Food category breakdown with corresponding considered nutrient

Overall sample	Food or beverage category	Nutrient considered	EC guideline nutrition labelling tolerance for sugar	EC guideline nutrition labelling tolerance for salt
All products (n=190)	Sugar-sweetened carbonated beverages (n=95)	Sugar	10 g per 100 g: ± 2 g 10–40 g per 100 g: $\pm 20\%$	
	Processed cheeses (n=95)	Salt		<1.25 g per 100 g: ± 0.375 g ≥ 1.25 g per 100 g: $\pm 20\%$

3.3 Conformance of food products with EC guideline nutrition labelling tolerances

The conformance of the sugar-sweetened carbonated beverages and processed cheese products (n=190) with EC guideline nutrition labelling tolerances for sugar and salt, respectively, were assessed using a Nutrition Tolerance Calculator built by the FSAI in Microsoft Excel. The following variables were entered into the Nutrition Tolerance Calculator to determine declared nutrition value conformance: declared nutrient content (g per 100 g/ml), analysed nutrient content (g per 100 g/ml), the nutrition claim stated on the product (if present)



and the measurement of uncertainty that was given for the analytical test in the analytical report provided by GPAL. The Nutrition Tolerance Calculator set the initial bounds for each product, applied the tolerance permitted for the nutrient type and amount of that nutrient, and applied the rounding principle as outlined in Section 6 of the EC guideline nutrition labelling tolerances report (European Commission, 2012). The findings from the Nutrition Tolerance Calculator classified the products as either within or outside the tolerance range.

3.4 Data and statistical analysis

In this analysis, the sodium content (mg per 100 g) reported in the [*Monitoring Sodium and Potassium in Processed Foods*](#) report was converted into a salt equivalent (g per 100 g) by multiplying the sodium value by 2.54 and dividing by 1000. Throughout this study, the salt equivalent was referred to as salt content (g per 100 g).

To examine the accuracy of the declared sugar and salt content, labelled and analysed values for sugar in sugar-sweetened carbonated beverages and salt in processed cheeses were analysed using RStudio Version 4.4.0. Descriptive statistics (mean, standard deviation (SD), median, interquartile range (IQR) and minimum and maximum values) were determined to assess the declared and analysed sugar content of sugar-sweetened carbonated beverages and declared and analysed salt content of processed cheeses. Declared and analysed mean, SD, medians, IQR, and minimum and maximum values were rounded to the nearest two decimal places. All percentages (%) were rounded up to the nearest one decimal place.

3.5 Study limitations

The study had the following limitations:

1. The study used one sample per product to measure the sugar or salt content of food products, rather than a number of samples from different batches of the same product. Using a number of samples from different batches of the same product would have increased the reliability of the analysed values for each product.
2. The study used a convenience sample of sugar-sweetened carbonated beverages and processed cheeses on the Irish market and was therefore not considered representative of the market.



4. Results

4.1 Description of samples

In total the study included n=190 food products (n=95 sugar-sweetened carbonated beverages, and n=95 processed cheeses) as shown in Figure 1. Sugar-sweetened carbonated beverages included cola, citrus and fruit flavoured, energy drinks and tonics. Processed cheeses included cheese blocks, strips, slices, spreads and reduced-fat alternatives in addition to plant-based cheese alternatives. The study found that 4.2% (n=4) of sugar-sweetened carbonated beverages (n=95) made a nutrition claim related to their sugar content. The two nutrition claims for sugar content were a 'low sugar' claim on two beverages (n=2) and a 'reduced sugar' claim on the remaining two beverages (n=2). No processed cheeses (n=95) made a nutrition or health claim related to their salt content.

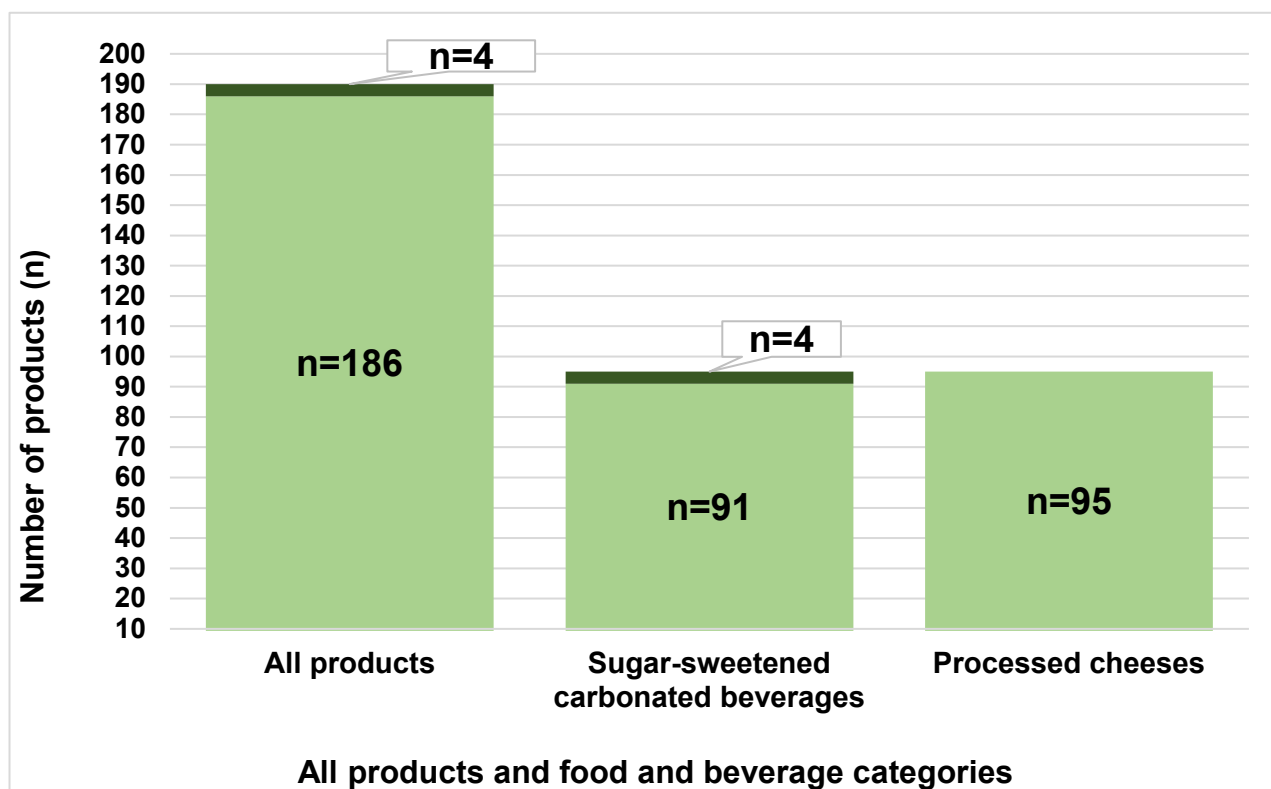


Figure 1 The number of sugar-sweetened carbonated beverages and processed cheese products with or without nutrition and health claims for sugar and salt



4.2 Sugar

4.2.1 Declared and analysed sugar content of sugar-sweetened carbonated beverages

The mean declared and analysed sugar content of sugar-sweetened carbonated beverages was 4.99 g and 5.09 g per 100 ml, respectively. The median declared and analysed sugar content of sugar-sweetened carbonated beverages was 4.60 g and 4.70 g per 100 ml, respectively. The minimum and maximum declared and analysed sugar content of sugar-sweetened carbonated beverages was 1.40–14 g per 100ml and was 1.50–14 g per 100ml, respectively. This is outlined in Table 2.

Table 2 Declared and analysed sugar content (g per 100 ml) of sugar-sweetened carbonated beverages (n=95)

Beverage category	Source of nutrition information	Mean (SD) sugar content (g per 100 ml)	Median (IQR) sugar content (g per 100 ml)	Minimum and maximum sugar content (g per 100 ml)
Sugar-sweetened carbonated beverages (n=95)	Declared	4.99 (2.31)	4.60 (0.65)	1.40–14
	Analysed	5.09 (2.39)	4.70 (0.90)	1.50–14

g=grams; SD=standard deviation; IQR=interquartile range

4.2.2 Conformance of sugar-sweetened carbonated beverages with EC guideline nutrition labelling tolerances for sugar

Of the sugar-sweetened carbonated beverages (n=95) analysed, 98.9% (n=94) were within the EC guideline nutrition labelling tolerances for sugar. A sugar-sweetened carbonated beverage (n=1) was non-conformant as a result of the analysed sugar content being below the lower tolerance.

The trend in nutrition labelling tolerances for sugar is outlined in Figure 2.

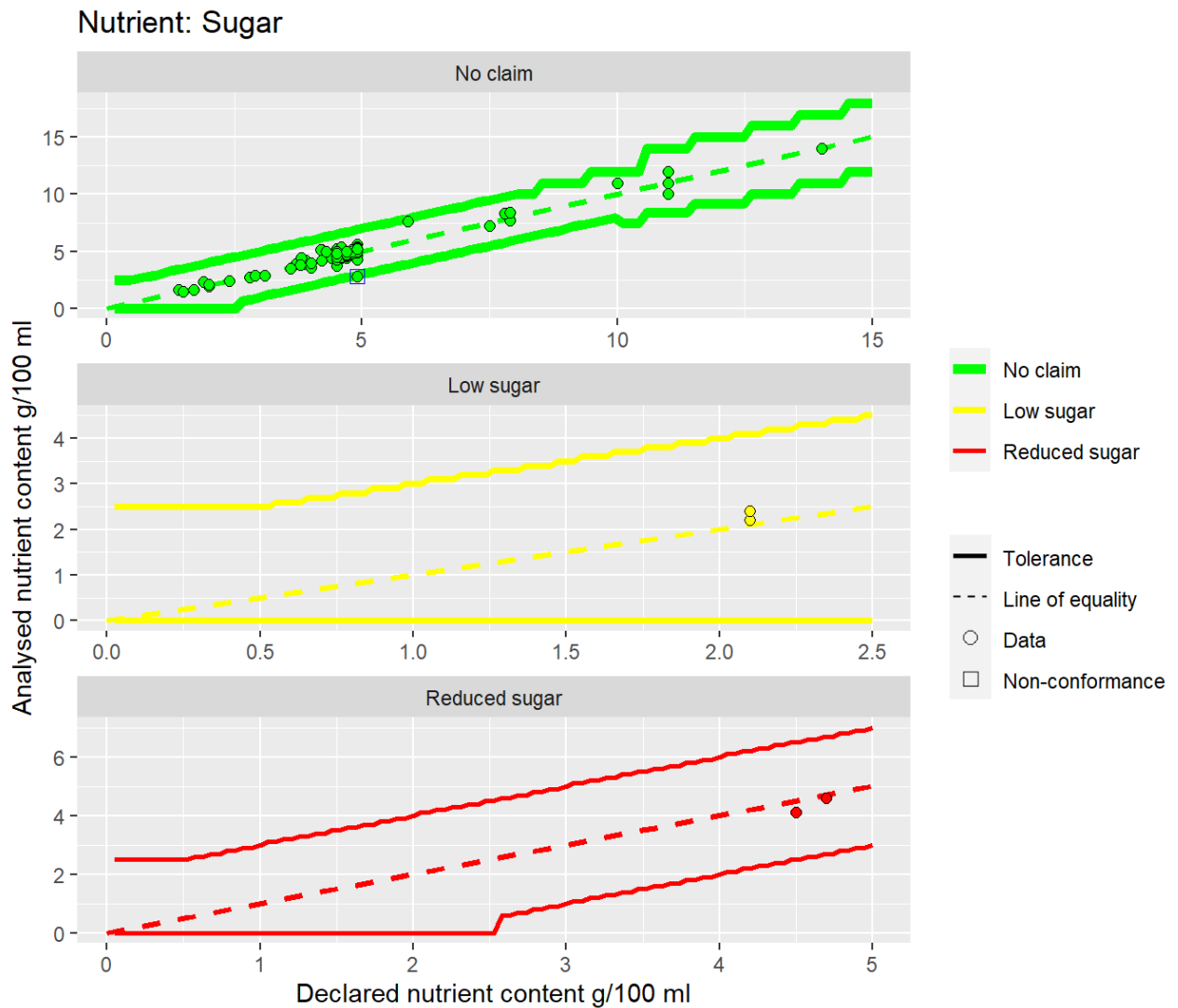


Figure 2 Trend in sugar nutrition labelling tolerances for sugar-sweetened carbonated beverages (n=95)



4.3 Salt

4.3.1 Declared and analysed salt content of processed cheeses

The mean declared and analysed salt content of processed cheeses was 1.62 g and 1.55 g per 100 g, respectively. The median declared and analysed salt content of processed cheeses was 1.62 g and 1.63 g per 100 g, respectively. The minimum and maximum declared and analysed salt content of processed cheeses was 0.35–3.30 g per 100 g and 0.36–3.66 g per 100 g, respectively. This is outlined in Table 3.

Table 3 Declared and analysed salt content (g per 100 g) of processed cheeses (n=95)

Food category	Source of nutrition information	Mean (SD) salt content (g per 100 g)	Median (IQR) salt content (g per 100 g)	Minimum and maximum salt content (g per 100 g)
Processed cheeses (n=95)	Declared	1.62 (0.72)	1.62 (0.96)	0.35–3.30
	Analysed	1.55 (0.69)	1.63 (0.94)	0.36–3.66

g=grams; SD=standard deviation; IQR=interquartile range

4.3.2 Conformance of processed cheeses with EC guideline nutrition labelling tolerances for salt

Of processed cheeses (n=95) analysed, 90.5% (n=86) were within the EC guideline nutrition labelling tolerances for salt. Of the 9.5% (n=9) of processed cheeses outside the EC guideline nutrition labelling tolerances for salt; 66.7% (n=6) had a salt content below the lower tolerance.

It is worth noting that of the total non-conformant processed cheeses (n=9), 55.6% (n=5) were due to minor deviations ranging from -0.0078 to -0.0378 g/100 g below the EC guideline nutrition labelling lower tolerances for salt and from 0.0082 to 0.0288 g/100 g above the EC guideline nutrition labelling upper tolerances for salt.

The trend in label tolerances for salt is outlined in Figure 3.

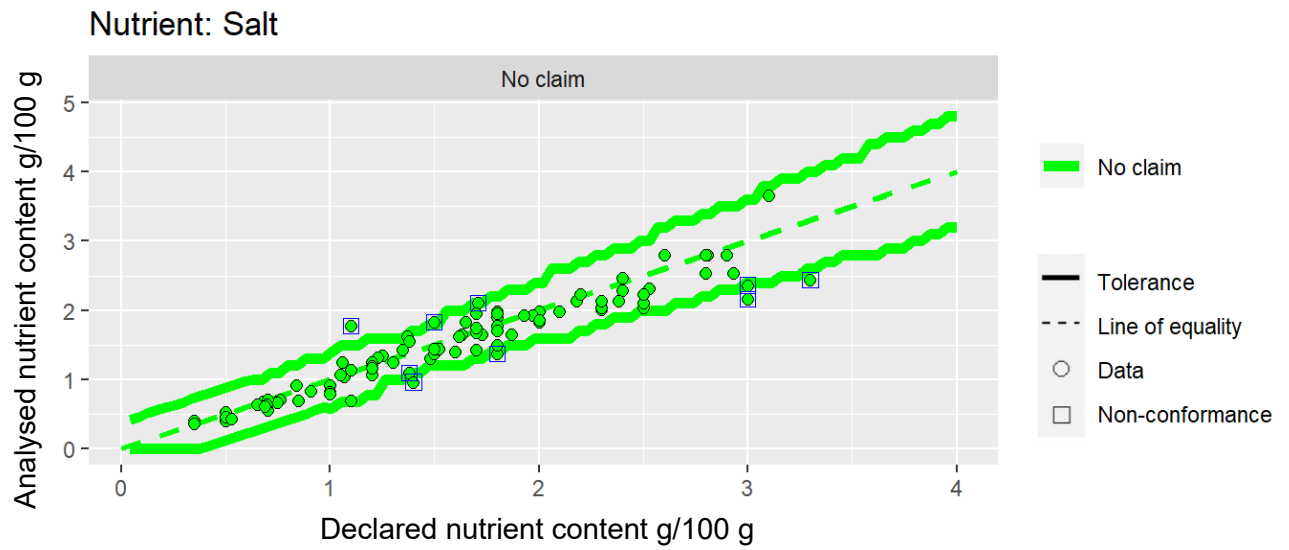


Figure 3 Trend in salt nutrition labelling tolerances for processed cheeses (n=95)



5. Discussion, conclusion and recommendations

The aim of this study was to examine the accuracy of declared sugar content on sugar-sweetened carbonated beverage labels and declared salt content on processed cheese product labels sampled from the Irish market in 2023.

The introduction, in 2016, of mandatory nutrition declaration of energy, total fat, saturated fat, carbohydrate, sugars, protein, and salt on prepacked food per 100 g, under Regulation (EU) No 1169/2011, provides a readily available and cost-effective source of information for monitoring nutrition composition of the prepacked food supply and identifying food reformulation progress (European Parliament, 2011). However, this is only the case if the nutrition declaration on food product labels is accurate, which for the most part they were in this study.

The study observed that only 1.1% (n=1) of analysed sugar-sweetened carbonated beverages (n=95) were outside EC guideline nutrition labelling tolerances for sugar. These findings indicate that declared nutrition labels provide a reliable source of information for sugar monitoring in sugar-sweetened carbonated beverages. The high level of conformance observed in this study is in agreement with similar findings in previous research (Yusta-Boyo *et al.*, 2020; Hafner *et al.*, 2022). A study by Yusta-Boyo *et al.* (2020) reported that 95.3% (n=41) of sugar-sweetened beverages (n=43) on the Spanish market were conformant with EC guideline nutrition labelling tolerances for sugar. Similarly, Hafner *et al.* (2022) reported that all sugar-sweetened beverages sampled from the Slovenian market and included in the study (n=51) were within the EC guideline nutrition labelling tolerances for sugar.

This present study observed that 9.5% (n=9) of processed cheeses (n=95) were outside the EC guideline nutrition labelling tolerances for salt with more than half of the non-conformant processed cheeses (n=5) due to minor deviations. Section 2.4 of the EC guideline nutrition labelling tolerances states that if the analysed value is outside the tolerance for the value declared on the label, the nature of the deviation, in addition to the extent of the deviation needs to be taken into consideration (European Commission, 2012). In this case, the majority of deviations were minor. In general, the conformance of salt declarations on food products with EC guideline nutrition labelling tolerances has been good in Ireland. Other studies completed by the FSAI investigating conformance of salt declarations on food label with EC guideline nutrition labelling tolerances found high rates of conformance. A previous FSAI study found that of 98.5% (n=196) of breakfast cereals were within the EC guideline nutrition labelling tolerances for salt (FSAI, 2021b). This high level of conformance was also seen in

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the more recent FSAI study on soups, sauces and breads which concluded that 99.3% (n=133) of all products analysed (n=134) were within the EC guideline nutrition labelling tolerances for salt (FSAI, 2023b).

The findings of this study indicate that the declared sugar content on the labels of sugar-sweetened carbonated beverage products (n=95) and the declared salt content on the label of processed cheeses (n=95) may accurately reflect changes in the nutrient composition of food products over time and reflect the true food reformulation efforts.

Based on the findings of this study, it is recommended that the FRT should continue to investigate the accuracy of nutrition declarations of other food categories using the same methodology.



6. References

Afshin, Ashkan *et al.* (2019) Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*, Volume 393, Issue 10184, 2019, Pages 1958-1972, ISSN 0140-6736. Available at: [https://doi.org/10.1016/S0140-6736\(19\)30041-8](https://doi.org/10.1016/S0140-6736(19)30041-8).

Department of Health (2016) *A Healthy Weight for Ireland: Obesity Policy and Action Plan 2016–2025*. Available at: <https://assets.gov.ie/10073/ccbd6325268b48da80b8a9e5421a9eae.pdf>

Department of Health (2021) A Roadmap for Food Product Reformulation in Ireland: Obesity Policy Implementation Oversight Group (OPIOG) Reformulation Sub-Group. Available at: <https://www.gov.ie/pdf/?file=https://assets.gov.ie/206207/c921f454-a94f-4f8f-a021-4e3de140463a.pdf#page=null>

European Commission (2012) Guidance with regard to the setting of tolerances for nutrient values declared on a label. Brussels: European Commission.

European Parliament (2006) European Parliament and the Council Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods. In: *J. Eur. Union* L 2006, 9–25., ed2006. Available at: [EUR-Lex - 32006R1924 - EN - EUR-Lex \(europa.eu\)](EUR-Lex - 32006R1924 - EN - EUR-Lex (europa.eu))

European Parliament (2011) Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004. Available at: [EUR-Lex - 32011R1169 - EN - EUR-Lex \(europa.eu\)](EUR-Lex - 32011R1169 - EN - EUR-Lex (europa.eu))

Fabiansson SU (2006) Precision in nutritional information declarations on food labels in Australia. *Asia Pac J Clin Nutr*, 15(4): 451–458.

Fiolet T, Srour B, Sellem L, Kesse-Guyot E, Allès B, Méjean C, Deschasaux M, Fassier P, Latino-Martel P, Beslay M and Hercberg S (2018) Consumption of ultra-processed foods and cancer risk: results from NutriNet-Santé prospective cohort. *BMJ* 2018; 360: k322.

Food Safety Authority of Ireland (2021a) Reformulation of Yogurt: The Accuracy of Nutrition Declaration on Food Labels for the Monitoring of Food Reformulation in Ireland. Available at: [https://www.fsai.ie/getmedia/d56974f2-29a1-4bdc-9a1c-872b3f54a03b/reformulation-of-yogurt-the-accuracy-of-nutrition-declaration-on-food-labels-for-the-monitoring-of-food-reformulation-in-ireland-\(v1\).pdf?ext=.pdf](https://www.fsai.ie/getmedia/d56974f2-29a1-4bdc-9a1c-872b3f54a03b/reformulation-of-yogurt-the-accuracy-of-nutrition-declaration-on-food-labels-for-the-monitoring-of-food-reformulation-in-ireland-(v1).pdf?ext=.pdf)

Food Safety Authority of Ireland (2021b) Reformulation of Breakfast Cereals: The Accuracy of Nutrition Declaration on Food Labels for the Monitoring of Food Reformulation in Ireland. Available at: <https://www.fsai.ie/getmedia/422004ed-42b3-4d88-a63b-7ae71913c4f3/reformulation-of-breakfast-cereals-the-accuracy-of-nutrition-declaration-on-food-labels-for-the-monitoring-of-food-reformulation-in-ireland.pdf>

The Accuracy of Nutrition Declaration Labels on Prepacked Sugar-Sweetened Carbonated Beverages and Processed Cheeses



MONITORING & SURVEILLANCE SERIES | NUTRITION

Food Safety Authority of Ireland (2023a) Food Reformulation Task Force: Priority Food Categories for Reformulation in Ireland Version 3. Available at:

<https://www.fsai.ie/publications/food-reformulation-task-force-priority-food-catego>

Food Safety Authority of Ireland (2023b) Food Reformulation Task Force: The Accuracy of Nutrition Declarations on the Labels of Pre-Packed Soups, Sauces, and Breads Sampled in 2022. Available at: <https://www.fsai.ie/publications/food-reformulation-task-force-the-accuracy-of-nutr>

Food Safety Authority of Ireland (2023c) Monitoring of Sugar in Processed Foods. Available at: [Food Reformulation Task Force: Monitoring Sugar in Processed Foods | Food Safety Authority of Ireland \(fsai.ie\)](https://www.fsai.ie/publications/food-reformulation-task-force-monitoring-sugar-in-processed-foods)

Food Safety Authority of Ireland (2023d) Monitoring of Sodium and Potassium in Processed Foods. Period: September 2003 to December 2022. Available at: [Monitoring of Sodium and Potassium in Processed Foods](https://www.fsai.ie/publications/food-reformulation-task-force-monitoring-sodium-and-potassium-in-processed-foods)

Hafner E, Lavriša Ž, Hribar, M, Krušič S, Kušar A, Žmitek K, Skrt M, Poklar Ulrih N and Pravst I (2022) Verifying the Use of Food Labeling Data for Compiling Branded Food Databases: A Case Study of Sugars in Beverages. *Front Nutr* 2022 Feb 3:9:794468. doi: 10.3389/fnut.2022.794468. eCollection 2022

Irish Universities Nutrition Alliance (2024a) National Adult Nutrition Survey II: Summary Report. Available at: [https://irp.cdn-website.com/46a7ad27/files/uploaded/NANS_II_Summary_Report_\(May_2024\).pdf](https://irp.cdn-website.com/46a7ad27/files/uploaded/NANS_II_Summary_Report_(May_2024).pdf)

Irish Universities Nutrition Alliance (2024b) National Adult Nutrition Survey II: Applications and Methods. Available at: [https://irp.cdn-website.com/46a7ad27/files/uploaded/NANS_II_Launch_of_summary_findings_presentation_slides_\(January_2024\).pdf](https://irp.cdn-website.com/46a7ad27/files/uploaded/NANS_II_Launch_of_summary_findings_presentation_slides_(January_2024).pdf)

McKinsey Global Institute (2014) *How the World Could Better Fight Obesity*. Available at: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/how-the-world-could-better-fight-obesity>

Moore Heslin, A. and McNulty, B. (2023) "Adolescent nutrition and health: characteristics, risk factors and opportunities of an overlooked life stage," Proceedings of the Nutrition Society. Cambridge University Press, 82(2), pp. 142–156. doi:10.1017/S0029665123002689.

Neal B, Sacks G, Swinburn B, Vandevijvere S, Dunford E, Snowdon W, Webster J, Barquera S, Friel S, Hawkes C, Kelly B, Kumanyika S, L'Abbé M, Lee A, Lobstein T, Ma J, Macmullan J, Mohan S, Monteiro C, Rayner M, Sanders D, Walker C and INFORMAS (2013) Monitoring the levels of important nutrients in the food supply. *Obes Rev* 2013 Oct:14 Suppl 1:49-58. doi: 10.1111/obr.12075

Nettleton JA, Brouwer IA, Geleijnse JM and Hornstra G (2017) Saturated Fat Consumption and Risk of Coronary Heart Disease and Ischemic Stroke: A Science Update. *Ann Nutr Metab*, 70(1): 26–33.

O'Donnell, A., Buffini, M., Kehoe, L., Nugent, A., Kearney, J., Walton, J., Flynn, A. and McNulty, B. (2020) "The prevalence of overweight and obesity in Irish children between 1990



and 2019,” *Public Health Nutrition*. Cambridge University Press, 23(14), pp. 2512–2520. doi: 10.1017/S1368980020000920.

World Health Organization (2015) *Guideline: Sugars intake for adults and children*. Geneva: World Health Organization. Available at: <https://apps.who.int/iris/rest/bitstreams/668769/retrieve>

World Health Organization (2022) Regional Office for Europe. *WHO European Regional Obesity Report 2022*. Available at: [9789289057738-eng.pdf \(who.int\)](https://iris.who.int/bitstream/handle/10665/370419/9789240073630-eng.pdf?sequence=1)

World Health Organization (2023a) Saturated fatty acid and trans-fatty acid intake for adults and children: WHO guideline. Geneva: World Health Organization; 2023. Available at: <https://iris.who.int/bitstream/handle/10665/370419/9789240073630-eng.pdf?sequence=1>

World Health Organization (2023b) WHO global report on sodium intake reduction. Geneva: World Health Organization; 2023. Available at: <https://iris.who.int/bitstream/handle/10665/366393/9789240069985-eng.pdf?sequence=1>

Yusta-Boyo MJ, Bermejo LM, García-Solano M, López-Sobaler AM, Ortega RM, García-Pérez M and Dal-Re Saavedra MÁ (2020) Sugar Content in Processed Foods in Spain and a Comparison of Mandatory Nutrition Labelling and Laboratory Values. *Nutrients*, 12(4), 1078. Available at: <https://doi.org/10.3390/nu12041078>



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Appendix 1

Table 4 Salt and sugar food categories for food reformulation

Nutrient	Target	Priority food categories
Salt	10% reduction ^a	Biscuits including crackers, Cakes, pastries & buns, Soups, sauces & miscellaneous foods, Savouries, White sliced bread & rolls, RTEBC, Cheeses, Other fat spreads (40-80% fat), Beef & veal ready meals, Meat products, Wholemeal & brown bread & rolls, Sausages, Bacon & ham, Nuts & seeds, herbs & spices, Fish & fish products, Savoury snacks, Chicken, turkey & game ^b , Poultry & game ready meals, Butter (over 80% fat), Peas, beans & lentils, Other breads, Burgers ^b , Meat pies & pastries, Processed potato products and Vegetable & pulse dishes.
Sugar	20% reduction ^c	Biscuits including crackers; Cakes, pastries & buns, Soups, sauces & miscellaneous foods, Chocolate confectionary, White sliced bread & rolls, RTEBC, Yoghurts, Other breakfast cereals, Wholemeal & brown bread & rolls, Ice-creams, Nuts & seeds, herbs & spices, Sugars, syrups, preserves & sweeteners, Non-chocolate confectionary, Carbonated beverages, Alternatives to milk & milks-based beverages, Desserts, Fruit juices & smoothies, Rice puddings & custard, Other beverages, Squashes, cordials & fruit juice drinks.

^a 75 food categories that are currently the focus of the Public Health England** salt reduction programme are represented in this list. Scotch eggs excluded as not a contributor of salt to the Irish diet.

^b Chicken, turkey and game and Burgers are contributors to sodium dietary intake in children and adolescence only.

^c Nine food categories that are currently the focus of the Public Health England** sugar reduction programme are represented in this list.

** PHE: Public Health England, now called the Office for Health Improvement and Disparities (OHID)



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