



Public Health
England

Protecting and improving the nation's health

Sugar reduction

Report on progress between 2015 and 2019

October 2020

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing and reduce health inequalities. We do this through world-leading science, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

Public Health England
Wellington House
133-155 Waterloo Road
London SE1 8UG
Tel: 020 7654 8000
www.gov.uk/phe
Twitter: [@PHE_uk](https://twitter.com/PHE_uk)
Facebook: www.facebook.com/PublicHealthEngland

Prepared by: Nick Coyle, Emma Little, Sarah Williamson, Sakhi Dodhia, Victoria Targett, Samantha Montel, Paul Niblett, Adele Mildon, Kate Hutchinson, Gabrielle Owtram, Dr Alison Tedstone, and others at PHE

For queries relating to this document, please contact:
Dietary.Improvement@phe.gov.uk



© Crown copyright 2020

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v3.0. To view this licence, visit [OGL](https://www.ogil.io). Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

Published October 2020
PHE publications
gateway number: GW-1564

PHE supports the UN
Sustainable Development Goals



Contents

About Public Health England	2
Executive summary	4
Introduction	13
Methodology	16
Results	23
Conclusions and next steps	61
Appendix 1: Guide to the category tables and charts	65
Appendix 2: Details of the data sources and methods used to assess progress of the sugar reduction programme	72
Appendix 3: Methodology and results for juice and milk based drinks	87
References	106

Acknowledgements

PHE would like to thank the food and drink businesses across all sectors, trade bodies and non-governmental organisations for their engagement in the development of the data and metrics for this report. PHE would also like to thank food and drinks businesses for provision of data and for giving permission for their data to be published, where applicable.

Executive summary

Public Health England (PHE) oversees the voluntary sugar reduction programme and the wider reformulation programme on behalf of the government. The sugar reduction programme is a key commitment in all chapters of 'Childhood obesity: a plan for action'^{i,ii,iii}, and in the government strategy paper 'Tackling obesity: empowering adults and children to live healthier lives' published in July 2020^{iv}. This programme challenges all sectors of the food industry to reduce sugar by 20%¹ by 2020 in the categories of food that contribute most to the sugar intakes of children aged up to 18 years.

In May 2018 unsweetened juice and sweetened milk based drinks were incorporated into the sugar reduction programme, and technical guidelines published^v. All sectors of industry were challenged to reduce sugar by 5% in juice based drinks, and 20% for milk based drinks by 2021. Milk based drinks also have an interim ambition of 10% reduction by 2019. The ambition for mono juices is no increase in the baseline simple average sugar content. In January 2019 fermented (yogurt) drinks were added to the programme, with a sugar reduction ambition of 20% by 2021.

This latest report presents a detailed assessment of progress made by industry, over the first 3 years of the sugar reduction programme, towards the 20% reduction ambition. For retailers and manufacturer branded products, this analysis is based on data for the year ending 8 September compared with a baseline of year 2015. For the eating out of home sector, a comparison over time is made for the year ending August 2019 against a baseline year of 2017.

For the first time, there is also an assessment of changes in sugar across the range of juice and milk based drink categories in scope of the programme. A comparison over time is made for the year 2019 against a baseline year of 2017. To monitor the full impact of the programme, an assessment of the change in calories likely to be consumed on a single occasion (calories per single serve) is included for all categories across the sectors.

PHE monitors progress of the Soft Drinks Industry Levy (SDIL)^{vi} on behalf of HM Revenue and Customs (HMRC). Therefore, this report also includes an assessment of the changes in the sugar content and sales of drinks covered by SDIL between 2015 and 2019.

Progress is reported for retailers and manufacturer branded products purchased for consumption in the home, and for products sold in those businesses that provide the food and meals that we buy and eat out of the home, take away or have delivered to

¹ This is measured by sales weighted average total sugar content in grams per 100g.

the home (which will now be referred to as the eating out of home sector²). The results are not comparable across the sectors due to the difference in metrics used; sales weighted average for retailers and manufacturer branded products and simple averages for the eating out of home sector. To enable a comparison across the sectors, the simple average is also calculated for retailers and manufacturer branded products.

It is worth highlighting that all comparisons made in this progress report are made based on data which precedes the Coronavirus (COVID-19) pandemic.

Headline results

Sugar content of food products

Retailers and manufacturer branded products

The main findings were (see Table ES1a):

- overall there was a 3.0% reduction in the sales weighted average total sugar per 100g in products sold between baseline (2015) and year 3 (2019)
- there were larger reductions for specific product categories, yogurts and fromage frais down 12.9%, and breakfast cereals down 13.3% compared with baseline
- there was a small increase in the puddings category³

Eating out of home sector

The main findings were (see Table ES1a):

- overall there has been hardly any change in the simple average sugar content from 24.6g per 100g at baseline (2017) to 24.5g per 100g in year 3 (2019)⁴
- the largest decreases were 17.1% for breakfast cereals, 6.8% for cakes and 3.9% for biscuits
- there was an increase for chocolate confectionery of 10.7%

For most categories, the simple average sugar content per 100g in products from the eating out of home sector is roughly the same as in retailers and manufacturer branded products in year 3 (2019).

² The data for the eating out of home sector only captures purchases which are not eaten at home, therefore very few purchases of takeaways and delivery services are included in this assessment of progress. However, the overall ambition remains inclusive of these business models.

³ The increase for puddings can be attributed to the inclusion of mince pies for the first time in 2019 data when they did not appear in the baseline. Excluding them from the 2019 data results in a sales weighted average decrease of 2.4%.

⁴ Progress for the eating out of home sector is compared with a baseline of 2017, because robust data for 2015 is not available. Progress is also based on simple averages rather than sales weighted averages, as the available data does not match purchases with nutrition information at product level.

The analysis for the eating out of home sector is based on more limited data and less comprehensive nutrition information than that used for retailers and manufacturer branded products.

Table ES1a. Summary of change in sugar content by food category

Product Category	Sugar per 100g	
	Retailers and manufacturers (% change in SWA ⁺)	Eating out of home sector (% change in SA ^{\$})
Overall	-3.0	-0.3
Biscuits	-1.6	-3.9
Breakfast cereals	-13.3	-17.1
Chocolate confectionery	-0.4	10.7
Ice cream, lollies and sorbets	-6.4	-2.3
Puddings	2.0	2.4
Sweet spreads and sauces	-5.6	N/A
Sweet confectionery	-0.1	N/A **
Yogurts and fromage frais	-12.9	2.4
Cakes	-4.8 *	-6.8
Morning goods	-5.6 *	-0.4

Notes

- + Sales weighted average is the mean weighted by total sales, giving more influence to products with higher sales
- \$ Simple average is the simple arithmetic mean. Products are given equal influence. The baseline is 2017
- * The baseline for cakes and morning goods for retailers and manufacturers is 2017 rather than 2015
- ** Data for sweet confectionery in the eating out of home sector has been excluded due to incomparability of results

Calorie content of food products likely to be consumed on a single occasion

Retailers and manufacturer branded products

The main findings were (see Table ES1b):

- overall there has been hardly any change, since 2015, in calories in products likely to be consumed on a single occasion (sales weighted average 146 kcals per portion in 2015 and 147 kcals in 2019)
- there have been some changes at category level; the largest decreases were 7.8% for yogurts and fromage frais, and 3.1% for chocolate confectionery
- the largest increase was 9.0% for puddings⁵
- cakes had an increase of 2.2% and morning goods had an increase of 2.5%, both against a 2017 baseline⁶

⁵ The increase for puddings can be attributed to the inclusion of mince pies for the first time in 2019 data when they did not appear in the baseline. Excluding them from the 2019 data results in a sales weighted average increase of 4.9%.

⁶ Only a small amount of data was collected for cakes and morning goods in 2015, therefore progress is being compared with a baseline year of 2017. More information is given in the methodology chapter and Appendix 2.

Eating out of home sector

The main findings were (see Table ES1b):

- overall there has been a reduction in average calories per portion from 394 kcals in 2017 to 355 kcals in 2019, which represents a decrease of 9.7%
- ice creams, lollies and sorbets (down 17.6%), cakes (down 11.5%) and puddings (down 9.1%) showed the largest decreases
- chocolate confectionery had the largest increase in calories per portion (up 6.1%)

Calories in products likely to be consumed on a single occasion in the eating out of home sector are higher than in retailers and manufacturer branded products across all categories, apart from chocolate confectionery.

Table ES1b. Summary of change in calories likely to be consumed on a single occasion (per single serve) by food category

Product Category	Calories per single serve	
	Retailers and manufacturers (% change in SWA ⁺)	Eating out of home sector (% change in SA ^{\$})
Overall	0.9	-9.7
Biscuits	0.3	-4.4
Breakfast cereals	N/A **	1.9
Chocolate confectionery	-3.1	6.1
Ice cream, lollies and sorbets	-1.5	-17.6
Puddings	9.0	-9.1
Sweet spreads and sauces	N/A **	N/A **
Sweet confectionery	0.2	N/A ***
Yogurts and fromage frais	-7.8	1.0
Cakes	2.2 *	-11.5
Morning goods	2.5 *	-2.7

Notes

+ Sales weighted average is the mean weighted by total sales, giving more influence to products with higher sales

\$ Simple average is the simple arithmetic mean. Products are given equal influence. The baseline is 2017

* The baseline for cakes and morning goods is 2017 rather than 2015

** Products not generally sold in single serve portions

*** Data for sweet confectionery in the eating out of home sector has been excluded due to incomparability of results

There is a great deal of variation in the change in the sugar and calorie content of products at business and brand level, with some businesses moving towards or doing more than the guidelines set, while others have not changed or have seen an increase in sugar and/or calorie content.

The full assessment of changes made in retailers and manufacturer branded food products and food products in the eating out of home sector can be found in the results chapter.

Volume of sales for retailers and manufacturer branded products

Total sales of sugar

- overall there has been a 2.6% increase in the tonnes of sugar sold from the product categories included in the programme between baseline and year 3
- the population of Great Britain increased during this period, therefore this increase represents no change in sugar purchased per person
- the largest increases in tonnes of sugar sold were 16.3% for chocolate confectionery and 7.2% for sweet confectionery
- the largest decreases were 15.9% for yogurts and fromage frais, and 13.9% for breakfast cereals

Total volume sales

- there has also been an overall increase in the tonnes of products sold from the categories included in the programme of 3.4% between baseline and year 3
- this represents a 0.8% increase per person after accounting for the increase in population in Great Britain over the same time
- large increases in sales of chocolate confectionery (up 16.3%), sweet spreads and sauces (up 12.0%), and ice cream, lollies and sorbets (up 8.0%) were seen
- sales decreased in 3 categories; breakfast cereals (down 0.5%), puddings (down 3.0%), and yogurts and fromage frais (down 3.3%)
- equivalent figures for the eating out of home sector are not available

Juice and milk based drinks

Retailers and manufacturer branded products – changes in sugar and calorie content

The main findings were (see Table ES1c):

- there have been reductions in the sales weighted average sugar per 100ml for some categories, including 22.1% for pre-packed milk based drinks, 5.3% for pre-packed flavoured milk substitute drinks and 13.4% for pre-packed fermented (yogurt) drinks
- there were also some reductions in the simple average sugar per 100ml, in particular 17.8% for coffee and tea powders, syrups and pods as consumed, and 12.1% for milkshake powders, syrups and pods as consumed (both made up as per manufacturer's instructions)

- there was a 3.6% reduction in the sales weighted average sugar per 100ml for pre-packed blended juices. For pre-packed mono juices there was no increase in the simple average sugar per 100ml
- the number of calories likely to be consumed on a single occasion decreased in all categories other than pre-packed mono juices

Table ES1c. Summary of change in sugar content and the number of calories likely to be consumed on a single occasion (per single serve) by juice and milk based drink category in retailers and manufacturer branded products

Product category	% Change in SWA* or simple average**	
	Sugar per 100ml	Calories per single serve
Pre-packed milk based drinks	-22.1 *	-11.2 *
Pre-packed flavoured milk substitute drinks	-5.3 *	-2.9 *
Pre-packed fermented (yogurt) drinks‡	-13.4 *	-4.1 *
Coffee and tea powders, syrups and pods as consumed	-17.8 **	N/A †
Hot chocolate and malt powders, syrups and pods as consumed	0.2 **	N/A †
Milkshake powders, syrups and pods as consumed	-12.1 **	N/A †
Pre-packed mono juices	-1.2 **	2.0 **
Pre-packed blended juices	-3.6 *	-6.1 *

Notes

* Sales weighted average is the mean weighted by total sales, giving more influence to products with higher sales

** Simple average is the simple arithmetic mean. Products are given equal influence

† Not reported due to the format in which products are sold

‡ Pre-packed fermented (yogurt) drinks are a subset of the yogurts and fromage frais food category due to the composition and similarity, but are reported with milk based drinks

Eating out of home sector – changes in sugar and calorie content

The main findings were (see Table ES1d):

- there was an increase in the simple average sugar content for open cup milkshakes of 4.1%, but a decrease in the number of calories likely to be consumed on a single occasion of 10.3%
- there was a decrease in the simple average sugar content of 9.5% for open cup hot/cold drinks, but an increase in the number of calories likely to be consumed on a single occasion of 10.0%
- there has been a 4.7% decrease in the simple average sugar content of blended juices, and hardly any change in the calories likely to be consumed on a single occasion

Table ES1d. Summary of change in sugar content and the number of calories likely to be consumed on a single occasion (per single serve) by juice and milk based drink category in the eating out of home sector

Product category	Change (%) in simple average*	
	Sugar per 100ml	Calories per single serve
Open cup milkshakes	4.1	-10.3
Open cup hot/cold drinks	-9.5	10.0
Blended juices	-4.7	-0.8

Notes

* Simple average is the simple arithmetic mean. Products are given equal influence

The results for the assessment of progress in juice and milk based drinks can be found in Appendix 3.

Soft Drinks Industry Levy

The main findings were:

- for retailers and manufacturer branded products, there was a 43.7% reduction in the total sugar content per 100ml between 2015 and 2019 for the drinks subject to the levy
- overall sales (in litres) of drinks subject to the levy have increased by 14.9%, but the total sugar sales from the soft drinks decreased by 35.4%
- the total sugar purchased per household from drinks subject to the SDIL has decreased across all socio-economic groups. The reduction is largest in Group C2 (those households where the main wage earner is in a skilled manual occupation) with 38.5%, and then is similar across all remaining socio-economic groups (between 32.7% and 35.1% reduction)
- the number of calories likely to be consumed on a single occasion fell by 35.2% between 2015 and 2019
- in the eating out of home sector, there was a reduction of 38.5% in the simple average total sugar content for drinks subject to the SDIL and a reduction of 37.7% in the calories for drinks likely to be consumed on a single occasion

The percentage decreases from the SDIL are much greater than those seen for the food categories included in the voluntary sugar reduction programme. The full assessment of changes made in drinks subject to the SDIL can be found in the results chapter.

The analysis of changes in sugar purchased by socio-economic group has not accounted for other factors that could be causing some of the differences in purchasing, such as price changes and other household characteristics (such as size and family composition). Further analysis would be required to fully understand the changes seen.

Limitations

There are a number of limitations to the data and analysis presented in this report. It is not possible to test the statistical significance of the changes over time which means that some of the changes or differences between food categories could have occurred by chance. In addition, PHE acknowledge that not all reformulation progress will be captured in the data used to assess progress in this report.

For the eating out of home sector, it is not possible to produce the sales weighted average sugar content of products in grams per 100g due to problems linking sales and nutrition data. Therefore, simple averages have been used, but these have the disadvantage of not taking into account the volume of sales of the product which means that low selling products are given the same weight as high selling products. Also, there may be bias as nutrition information is not available for some outlets.

The baseline used for retailers and manufacturer branded products is 2015. However only a small amount of data was collected for cakes and morning goods in 2015 so progress for these categories is being compared with a baseline year of 2017. Analysis of the eating out of home sector also uses a 2017 baseline as individual business level data was unavailable before this.

For juice and milk based drinks, it is not possible to calculate sales weighted averages for retailers and manufacturer branded products which are not sold as consumed (that is, they have to be made up as per manufacturer's instructions). Therefore, simple averages are used. In the eating out of home sector, for juices and milk based drinks, there is an assumption that the product will be made in such a way that it is identical to the drink used to calculate the nutrition information and that the consumer does not add sugar or additional milk. More details can be found in Appendix 3.

Next steps

Transparent monitoring of the sugar reduction programme, and further expert advice on the potential levers to address excess sugar consumption, will continue to be provided to government.

The next progress report, due in 2021, will provide a fourth annual assessment of progress by all sectors of industry towards achieving the 20% reduction ambition for the food categories included in the programme. This report will also include a second

assessment of progress made by industry towards the ambitions set for juice and milk based drinks. Consideration is being given to the measurement period and timing of data for this report due to changes in food purchases caused by Coronavirus (COVID-19).

Next steps for the wider reformulation programme, during 2020, include the publication of guidelines to improve the nutrient content of commercial baby foods and drinks. There will continue to be engagement with stakeholders on the reduction and reformulation programme where appropriate.

Introduction

Public Health England (PHE) oversees the government's voluntary sugar reduction and wider reformulation programme, as set out in all chapters of the Childhood Obesity Plan^{i,ii,iii} and in the government strategy paper 'Tackling obesity: empowering adults and children to live healthier lives' published in July 2020^{iv}.

The ambition of the sugar reduction programme is for all sectors of the food industry to reduce the amount of sugar in the foods that contribute most to the intakes of children by 20% by 2020. This means that retailers, manufacturers and the businesses that provide the food and meals that we buy and eat out of the home, take away or have delivered to the home (this will now be referred to as the eating out of home sector⁷) are all expected to take action. This comparison is made against a baseline of 2015 for retailers and manufacturer branded products (year ending 31 January 2016). For the eating out of home sector the comparison is against a baseline year ending 10 September 2017, primarily due to a change in data provider between 2015 and 2017. More detail is given in the year 1 progress report^{vii}.

The categories included in the programme are biscuits; breakfast cereals; cakes; chocolate confectionery; ice cream, lollies and sorbets; morning goods (such as pastries and buns); puddings; sweet confectionery; sweet spreads and sauces; and yogurts and fromage frais. The programme covers children up to the age of 18 years. As children eat a wide range of foods, not just those that are manufactured for or marketed to children, all foods in each category are included.

In March 2017 PHE published a technical report^{viii} outlining guidelines for total sugar content per 100g and calories per single serve portion, for the categories included in the programme, to help industry in achieving the programme's overall ambition. This technical report also included the baseline analysis for each category. Both the sugar and calorie guidelines were set as sales weighted averages which are used to assess progress against the ambition for sugar reduction. A maximum calorie per single serve portion guideline was also set for most categories.

In April 2018 HM Revenue and Customs (HMRC) introduced the Soft Drinks Industry Levy (SDIL)^{vi} which is aimed at the producers and importers of added sugar soft drinks, and is designed to encourage producers to reformulate their overall product ranges by reducing added sugar content, helping customers choose lower/no added sugar products and reducing portion size. It was amongst the commitments in the government's 'Childhood obesity: a plan for action' (published in August 2016ⁱ).

⁷ The data for the eating out of home sector only captures purchases which are not eaten at home, therefore very few purchases of takeaways and delivery services are included in this assessment of progress. However, the overall ambition remains inclusive of these business models.

PHE was asked to monitor progress of the SDIL by HMRC, and this report includes an assessment of the changes in sugar content and sales of drinks covered by SDIL between 2015 and 2019. It also includes an analysis of the trend in the sales of drinks covered by SDIL by socio-economic group.

Although not in scope of the SDIL, unsweetened juices and sweetened milk based drinks can also contribute to children's sugar and calorie intakes, particularly given some of the larger products available that are likely to be consumed on a single occasion. In May 2018 these drinks were incorporated into the sugar reduction programme, and technical guidelines published^v to help industry to achieve these. Every sector of the drinks industry (retailers, manufacturers and the eating out of home sector) is expected to reduce the overall sugar content of juice based drinks by 5% and milk based drinks by 20% by 2021. The guidelines include an interim sugar reduction ambition for milk based drinks of 10% by 2019⁸. Further details on the methodology and results for juice and milk based drink can be found in Appendix 3.

In January 2019 PHE published a sugar reduction ambition for fermented (yogurt) drinks of a 20% reduction by 2021^{ix}. These drinks form a sub-category to the yogurts and fromage frais category of the sugar reduction programme due to the composition and similarity between fermented (yogurt) drinks and yogurts.

Businesses can adopt 1 of 3 mechanisms for taking action: reducing the amount of sugar per 100g or 100ml (reformulation); reducing portion size; or, shifting consumers' purchasing patterns towards lower/no added sugar products. For all food and drink categories included in the programme, reductions in sugar should also be accompanied by reductions in calories where possible, with no increases in saturated fat and the achievement of current salt targets^x if applicable.

In September 2019 PHE published the second assessment of industry progress between 2015 and 2018^{xi}. Overall, this showed a 2.9% reduction in the sales weighted average total sugar per 100g for retailers and manufacturer branded products and a 4.9% reduction in simple average of total sugar per 100g for the eating out of home sector (against a baseline of 2017). The average sugar content of drinks subject to the SDIL decreased by 28.8% in retailers and manufacturer branded products (measured in sales weighted average grams per 100ml) and 27.2% for the eating out of home sector.

This latest report details progress made by all sectors of industry in the third year of the programme. This includes an assessment of changes in sugar content and sales of drinks covered by the SDIL between 2015 and 2019, and an analysis of the trend in the sales of drinks covered by the SDIL by socio-economic group.

⁸ Progress on the interim sugar reduction ambition of 10% for milk based drinks will be taken into account when HM Treasury reviews the continuation of their exemption from the Soft Drinks Industry Levy (SDIL) in 2020.

The assessment of progress for retailers and manufacturer branded products is based on the analysis of data for the year ending 8 September 2019, compared with the baseline year of 2015. For the eating out of home sector, a comparison over time is made for the year ending August 2019 against a baseline year of 2017, as earlier detailed data were not available.

For the first time, the current report also includes an assessment of changes made for juice and milk based drinks. This first assessment of progress is made for the year 2019 against a baseline year of 2017. The results of this analysis are available in Appendix 3.

The 2015 baseline figures published previously have been revised to reflect improvements in methodology. Further details can be found in the methodology chapter and Appendix 2.

All comparisons in this progress report are made against data which precedes the Coronavirus (COVID-19) pandemic. Case studies are not included in this report.

Methodology

Introduction

This section briefly sets out descriptions of the underlying data sources and analytical methods used to produce this report. A more detailed description of the methodology, including limitations to the data and analysis, can be found in Appendix 2.

Product categories covered by the sugar reduction programme (a fuller description of each category is given in Appendix 2) are:

- biscuits
- breakfast cereals
- cakes
- chocolate confectionery
- ice cream, lollies and sorbets
- morning goods
- puddings
- sweet confectionery
- sweet spreads and sauces
- yogurts and fromage frais

This report also includes the first assessment of progress made in unsweetened juice and sweetened milk based drinks, further details are available in Appendix 3. There is also an assessment of changes in drinks covered by the SDIL⁹.

Metrics used to measure progress

A series of metrics have been used to monitor progress and these can be mapped to the 3 options businesses are likely to be taking to reduce sugar content of products covered by the programme. Some businesses may choose to use just 1 of these options and some may choose to implement a combination. The options are:

- reducing the amount of sugar per 100g or 100ml (reformulation)
- reducing the portion size of a product likely to be consumed on a single occasion
- shifting consumers' purchasing patterns towards lower or no added sugar products

⁹ The SDIL covers drinks that contain added sugar and have total sugar levels of 5g per 100ml and over. The levy does not cover unsweetened juices and sweetened milk based drinks for which PHE published separate guidelines in May 2018.

Retailers and manufacturer branded products

This report uses 4 metrics for retailers and manufacturer branded products to measure progress against the sugar reduction ambitions.

Sales weighted average total sugar content (grams per 100g or 100ml)

The average (mean) sugar content of each food product is weighted by its total sales volume in weight (kilogrammes) to give more influence to products with higher sales. Therefore, changes to the sugar content of products with higher sales will have a greater impact on the sales weighted average than changes for products with fewer sales. For the SDIL and juice and milk based drinks, sales in litres are used to weight the sugar content of each product to give a sales weighted average grams per 100ml.

Simple average: the simple arithmetic average of total sugar content (grams per 100g or 100ml)

Products are not weighted according to volume sales in this calculation, so this measures the average (mean) sugar content of products regardless of how much are sold. Again, there is a SDIL and juice and milk based drinks equivalent expressed as grams per 100ml.

Sales weighted average calories in products likely to be consumed on a single occasion (single serve)

This measure is restricted to a subset of products which are likely to be consumed on a single occasion. It is the average (mean) number of calories (expressed as kcals) per serving of each product, where the contribution of each product to the average is weighted by its total sales volume in servings.

Portion size has been estimated through analysis and consumption information and is not always consistent with portion size information provided on product packaging by retailers or manufacturers.

The proportion of single serve products included in this analysis varies between categories, with around three-quarters of products being included for morning goods but only around a third for chocolate and sweet confectionery. Breakfast cereals and sweet spreads and sauces are not included in this analysis as consumers take variable sized servings out of individual packs and it is therefore not possible to measure single serve portions as there is no standard size. Powders and syrups in the milk based drinks analysis have been excluded for the same reason. Pods and sachets have also not been included as consumers could have more than a single pod or sachet to make up their drink.

This metric is designed to adjust for any potential negative impacts of reducing sugar such as increasing calories at the same time or increasing the size of a portion.

Total sugar sales

This is the total volume of sugar sold (in tonnes) in the categories included in the programme. It is calculated by multiplying the sugar content of each product by the volume sales of that product. Therefore, it will reflect both changes in sales volumes and changes in sugar content of products.

The metrics align against the mechanisms available for change as shown in Box 1.

Box 1: Metrics used to assess sugar reformulation programme for retailers and manufacturer branded products				
Metric	Simple average of sugar per 100g/ml	Sales weighted average of sugar per 100g/ml	Sales weighted average of calories per single serve	Total sugar sales
1. Reformulate to reduce sugar content in products	✓	✓	✓	✓
2. Reduce the portion size for products likely to be consumed on a single occasion			✓	✓
3. Shift consumer purchasing patterns towards lower or no added sugar products		✓	✓	✓

For retailers and manufacturers, the headline metrics in this report are largely based on the sales weighted average total sugar content per 100g or 100ml, and the sales weighted average calories in products likely to be consumed on a single occasion. However, the other metrics help to monitor the full impact of the reformulation programme. The sales weighted average total sugar per 100g or 100ml is used as the main metric for monitoring progress because it is based on all products purchased (apart from some juice and milk based drinks categories), whereas the calories metric is based on those which have a single serve portion size (as determined by PHE) which is a subset of all products purchased.

Eating out of home sector

Following publication of the report on the first year of progress, PHE reviewed the data and metrics used for the eating out of home sector. For this and all subsequent reports,

PHE intends to use simple averages to track progress for this sector rather than sales weighted averages. This is because of limitations with the commercially available dataset used for this sector, which mean that it is not possible to link the nutrition data to purchases at product level with the same level of accuracy as for retailers and manufacturer branded products. Therefore, only the following metrics are used for the eating out of home sector.

Metrics used in this report to assess progress of the sugar reduction programme for the eating out of home sector

1. Simple average total sugar content per 100g (or 100ml for SDIL and juice and milk based drinks).
2. Simple average for calories in products likely to be consumed on a single occasion (calories per single serve).

These metrics are also compared against the equivalent simple average metrics for retailers and manufacturer branded products.

Time periods covered

For retailers and manufacturer branded products, comparisons are generally made between the baseline year of 2015 and the third year (2019) of the programme.

An exception relates to cakes and morning goods, where the 2015 baseline data for these categories was not considered to be robust and the data for subsequent years has been gradually improved to include more products. Therefore, for these 2 categories the data for 2017 (year 1) has been used as the baseline instead of 2015, with comparisons therefore being made between 2017 and 2019.

While this approach also has some limitations, the 2017 data is more complete than the 2015 data for these categories so allows for more robust comparisons to be made. However, comparisons between 2017 and 2019 should still be made with caution, because data were collected for around 40% more products in 2019 compared with 2017 (the number of products included in the analysis can be seen in Table 1).

To enable an overall comparison for all categories combined to be made with the updated baseline year of 2015, the 2017 data for cakes and morning goods has been used to replace the 2015 data for these 2 categories. This may underestimate overall change between 2015 and 2019 because it implies that there has been no change for cakes and morning goods between 2015 and 2017.

As reported in the year 1 sugar reduction progress report, it is not possible to report on progress for Aldi and Lidl in the same way as for other businesses due to a lack of

baseline data. Data is now available for these retailers for 2017 (year 1) and 2019 (year 3), and therefore progress reported for these retailers' products will be based on comparisons between year 1 and year 3.

More information on this methodology and other small changes in the time periods used for comparisons is available in Appendix 2. For juice and milk based drinks this is set out in Appendix 3.

For the eating out of home sector, comparisons are made between 2017 and 2019, making 2017 the baseline period for this sector. For juice and milk based drinks, comparisons are made between 2017 and 2019.

Data sources

Retailers and manufacturer branded products

The baseline and year 3 analyses for retailers and manufacturer branded products use commercially available data from Kantar FMCG's consumer panel (formerly Kantar Worldpanel). This includes data on volume of sales and nutrition information. The baseline year for this report used data collected over 52 weeks ending 31 January 2016 and the third-year dataset covers the 52 weeks ending 8 September 2019.

Nutrition data is collected at category level on a rolling basis throughout the year and the frequency of data collection increased from every 6 months in the baseline year to every 4 months in year 3. Therefore, nutrition data for all categories will have been collected in the 4 months leading up to 8 September 2019. If no nutrition information for a product was found in 2019 then the most recently collected nutrition information available from a previous year was used. In 2019 Kantar FMCG also undertook a one-off exercise after the initial data collection period had ended to improve nutrition information, focusing particularly on the top sellers in each category.

Despite this improvement, some reformulation changes may not be identified and reported on in the year that they occur if the reformulated products appeared on the shelves after the last set of nutrition data was collected for that category. More information on the data collection methodology used by Kantar FMCG is provided in Appendix 2.

There are no confidence intervals associated with the estimates calculated, as described in Appendix 2. This means that the statistical significance of the changes cannot be assessed.

Eating out of home sector

The sales data for this sector are from a commercially available dataset provided through a consumer survey run by Lumina Intelligence (formerly MCA). Nutrition information for the eating out of home sector has been collected by PHE from businesses and additionally by Lumina Intelligence from business websites. Comparisons are made between 2017 and 2019 and a fuller description of the eating out of home sector data is provided in Appendix 2.

As with the analysis for retailers and manufacturer branded products, there are no confidence intervals associated with the estimates calculated as described in Appendix 2. This means that the statistical significance of the changes cannot be assessed.

Geographical coverage

Both commercially available datasets cover Great Britain, therefore the results presented in this report are representative of Great Britain as a whole. A dataset covering just England was not available.

Quality assurance

The data sources and methodology used in this report were presented to external stakeholders (including retailers, manufacturers, eating out of home businesses, trade bodies and non-governmental organisations) before the first-year progress report was produced. Feedback received from stakeholders was used to check that PHE's proposals, the category definitions, analytical methods, and data sources used were appropriate.

The commercial datasets used from Kantar FMCG and Lumina Intelligence have quality control measures built into their production process. In addition, PHE has carried out quality control checks of all data used and all analyses to mitigate against issues remaining with the data. These include:

- checking datasets for implausible values and excluding those from the analysis
- checking the consistency of nutrition variables across a product line
- cross-referencing to other datasets or online information
- replicating analyses as a quality control measure
- examining data behind business-specific results to ensure they are plausible and comparable (otherwise excluded from the analysis)
- checking data against information supplied by businesses

Specific data checks and questions were sent to data suppliers as and when they arose, where there were anomalies, or other queries over the collection of certain variables or the viability of data collection from certain outlets.

More information related specifically to quality assurance for juice and milk based drinks data is available in Appendix 3.

Obtaining permission to publish individual business data for retailers and manufacturers

Due to limitations placed on the use of individual business sales data by Kantar FMCG, PHE requested written agreement from each retailer or manufacturer to show the percentage change in the sales weighted average sugar and calories for their products in the report.

This applies to all categories included in the sugar reduction programme – food and juice and milk based drinks – and to the drinks subject to the SDIL. Where permission was declined or no response was received, the relevant data was not included in Appendix Tables 2, 3, 4 and 9, and the appropriate reason given next to the business name.

Of the 129 businesses that were contacted, 80 replied and gave permission; 8 replied and did not give permission; 41 did not reply.

Results

Introduction

This chapter has 3 sections as follows:

1. Retailers and manufacturer branded products - this provides an assessment of changes made between baseline (2015) and year 3 (2019) in retailers and manufacturer branded food products included in the programme.
2. Eating out of home sector - this provides an assessment of changes between year 1 (2017) and year 3 (2019) for the food products included in the programme.
3. The SDIL - this provides an assessment of changes between baseline (2015) and year 3 (2019) across the sectors, and an analysis by socio-economic group for retailers and manufacturer branded products.

The results for juice and milk based drinks are available in Appendix 3.

The analysis presented in this chapter is supplemented by detailed tables which accompany this report. These are described in Appendix 1.

All percentage changes presented in this report have been calculated from unrounded data, so it may not be possible to reproduce them from the rounded data which follows.

Retailers and manufacturer branded products

Sales weighted average total sugar content per 100g for retailers and manufacturer branded products

The sales weighted average is quoted in Chapter 1 of the Childhood Obesity Planⁱ as the main metric by which progress towards the 20% reduction ambition will be measured. There are some limitations on whether this metric captures all reformulation activity as discussed in Appendix 2. However, despite these limitations it remains the best metric to assess progress against the 20% reduction ambition.

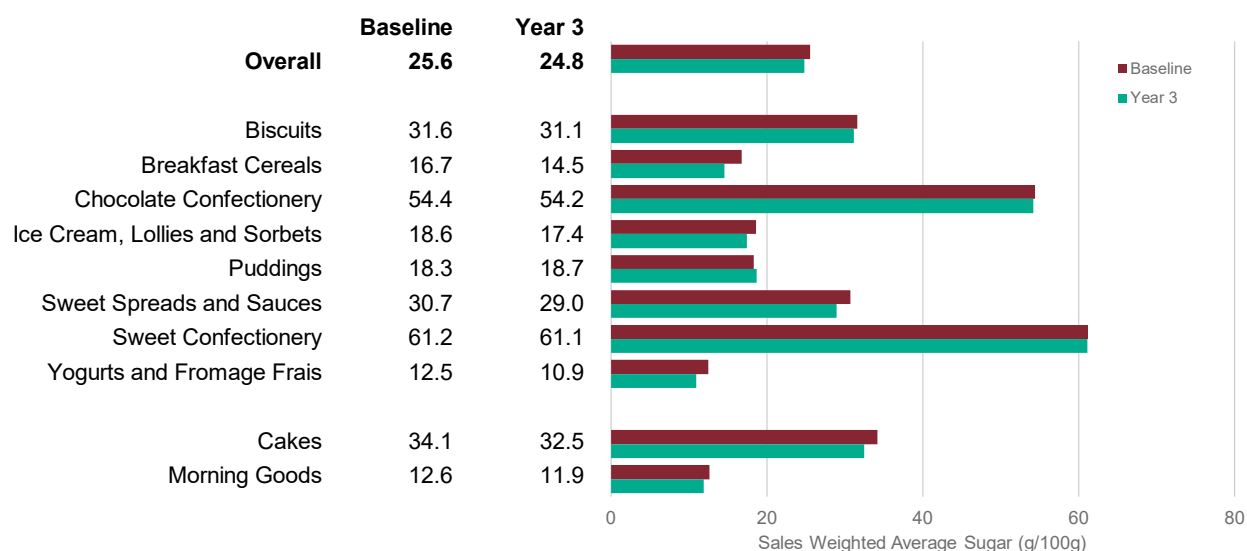
The overall and product category level sales weighted average total sugar content per 100g for retailers and manufacturer branded products at baseline (2015) and year 3 (2019), are shown in Figure 1.

Figure 2 shows the percentage change between the same period. It can be seen that:

- overall there was a 3.0% reduction in total sugar per 100g in products sold between baseline (2015) and year 3 (2019)

- there were larger reductions for some specific product categories (yogurts and fromage frais down 12.9%, and breakfast cereals down 13.3% compared with the 2015 baseline)
- there was a reduction of 6.4% for ice creams lollies and sorbets and 5.6% for sweet spreads and sauces compared with 2015¹⁰
- there were reductions of 4.8% for cakes and 5.6% for morning goods, compared with their baseline of 2017¹¹
- there were much smaller reductions for 3 other categories: biscuits (1.6%), chocolate confectionery (0.4%) and sweet confectionery (0.1%)
- there was a small increase in the puddings category¹² (Table 1)

Figure 1: Sales weighted average total sugar (g/100g) by category for baseline (2015) and year 3 (2019) for retailers and manufacturer branded products

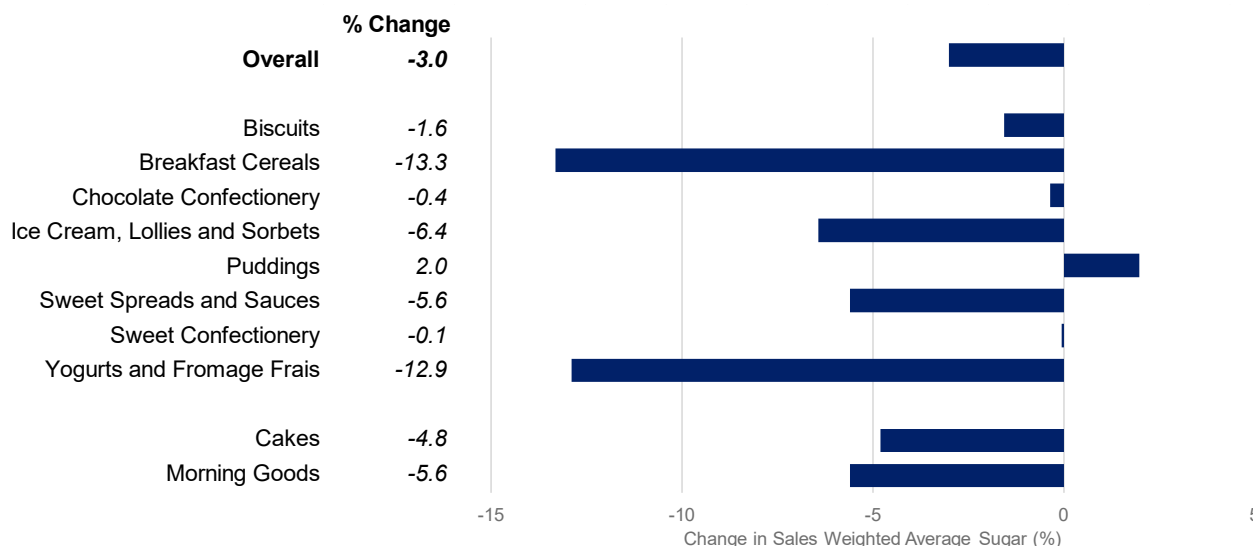


¹⁰ The decrease for spreads and sauces is largely due to an increase in the proportion of sales in that category which are due to peanut butter. Peanut butter has a much lower sugar content than chocolate spreads, fruit spreads and desert toppings which make up the remainder of that category. Therefore, an increase in the proportion of sales for peanut butter relative to the other products resulted in a decrease in the sales weighted average total sugar g/100g, though there was actually an increase in sugar content for most peanut butter brands.

¹¹ Only a small amount of data was collected for cakes and morning goods in 2015 so progress is being compared with a baseline year of 2017. More information is given in the methodology chapter and Appendix 2.

¹² The increase can be attributed to the inclusion of mince pies for the first time. Excluding them results in a decrease in sales weighted average total sugar per 100g for puddings of 2.4%

Figure 2: Percentage change in sales weighted average total sugar (g/100g) by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Simple average total sugar content per 100g for retailers and manufacturer branded products

This metric is a simple arithmetic average of the products purchased in each category and therefore does not give more influence to those products which have higher sales. The simple average is used later in this chapter to compare retailers and manufacturer branded products with businesses operating in the eating out of home sector.

Figure 3 shows the simple average at both overall and product category level for baseline (2015) and year 3 (2019). Figure 4 shows the change between this period. It can be seen that:

- overall there has been a 2.2% reduction in the simple average total sugar per 100g
- the largest decreases at a category level were 17.7% for sweet spreads and sauces, 13.8% for yogurts and fromage frais, and 13.6% for breakfast cereals
- other categories had much smaller changes, and there was an increase for biscuits of 0.6% and for puddings of 0.9%¹³
- there was a decrease for cakes (down 1.5%) and morning goods (down 1.8%) from 2017¹⁴ (Table 1)

¹³ The increase can be attributed to the inclusion of mince pies for the first time. Excluding them results in a decrease in simple average for puddings of 0.5%

¹⁴ Only a small amount of data was collected for cakes and morning goods in 2015 so progress is being compared with a baseline year of 2017. More information is given in the methodology chapter and Appendix 2.

In general, the changes seen in the simple average for each category are similar to those seen for the sales weighted average. The most noticeable difference is for spreads and sauces which had a decrease of 17.7% for the simple average compared with a decrease of 5.6% for the sales weighted average. This is primarily due to one of the largest selling brands not changing their sugar content between baseline and year 3. As the products within this brand account for around 20% of sales for this category they have quite a large influence on the sales weighted average, but the same influence as all the other products in this category on the simple average.

Figure 3: Simple average total sugar (g/100g) by category for baseline (2015) and year 3 (2019) for retailers and manufacturer branded products

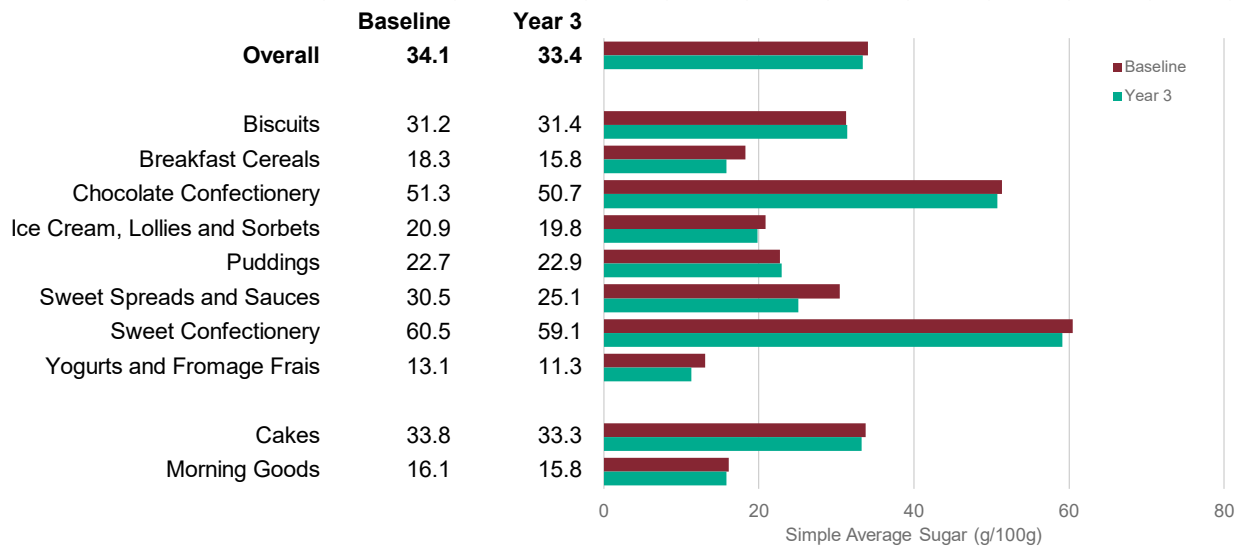
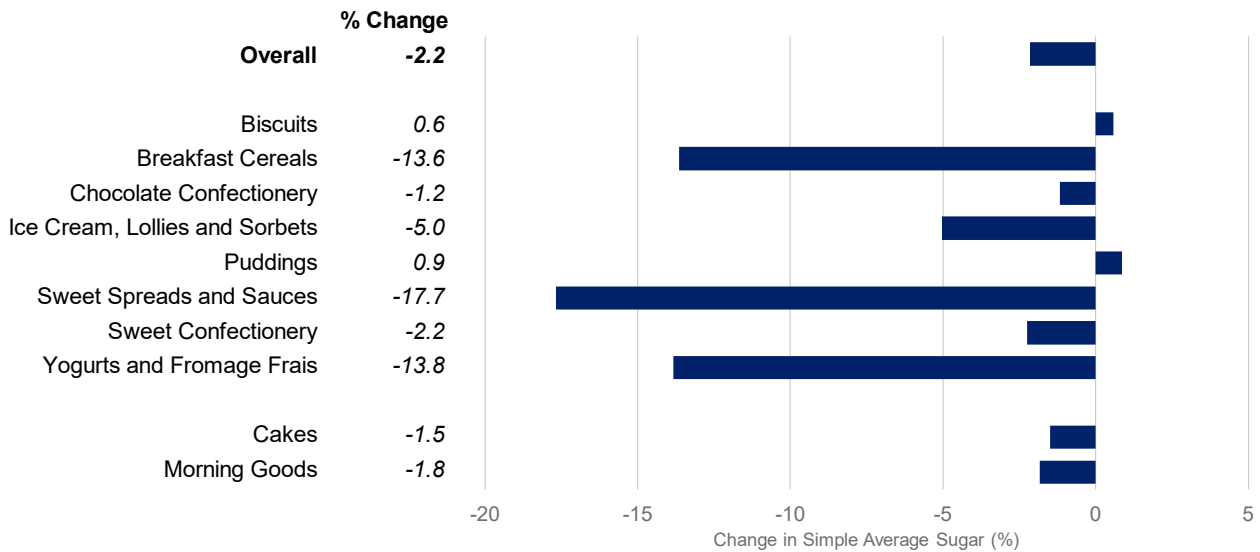


Figure 4: Percentage change in simple average total sugar (g/100g) by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Sales weighted average calories in products likely to be consumed on a single occasion (single serve) for retailers and manufacturer branded products

For some categories, such as chocolate and sweet confectionery, the mechanisms for action are more limited due to technical limitations and issues around consumer acceptability. This may mean that the primary mechanism that businesses can use to take action is to reduce the portion size of the product, because reducing the sugar content may alter the taste or texture of the product quite significantly which could affect sales. Products that are likely to be consumed on a single occasion, and where a portion size could be calculated, were identified and the following analysis is restricted to that subset.

Changes over time which are discussed in the remainder of this section may be due to the portion sizes of existing products changing and/or new products being introduced which have different portion sizes to those already on the market.

Figure 5 shows the sales weighted average for calories in a single serve portion at category and overall level for baseline (2015) and year 3 (2019). Figure 6 shows the change during this period, it can be seen that:

- overall there has been hardly any change, since 2015, in calories in products likely to be consumed on a single occasion (146 kcals per portion in 2015 and 147 kcals in 2019)
- there have been some changes at category level and the largest decreases were 7.8% for yogurts and fromage frais, and 3.1% for chocolate confectionery
- the largest increase was 9.0% for puddings¹⁵
- cakes had an increase of 2.2% against the 2017 baseline¹⁶ and morning goods had an increase of 2.5%
- other categories had smaller changes (Table 3)

¹⁵ Much of the increase can be attributed to the inclusion of mince pies for the first time. Excluding them results in an increase in sales weighted average for puddings of 4.9%.

¹⁶ Only a small amount of data was collected for cakes and morning goods in 2015 so progress is being compared with a baseline year of 2017. More information is given in the methodology chapter and Appendix 2.

Figure 5: Sales weighted average calories (kcal) for products likely to be consumed on a single occasion by category for baseline (2015) and year 3 (2019) for retailers and manufacturer branded products

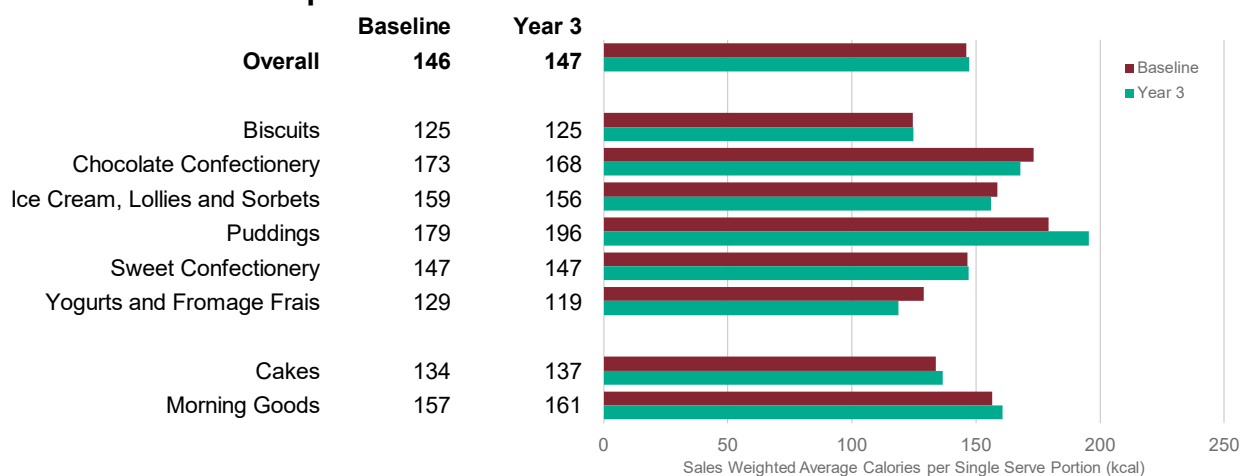
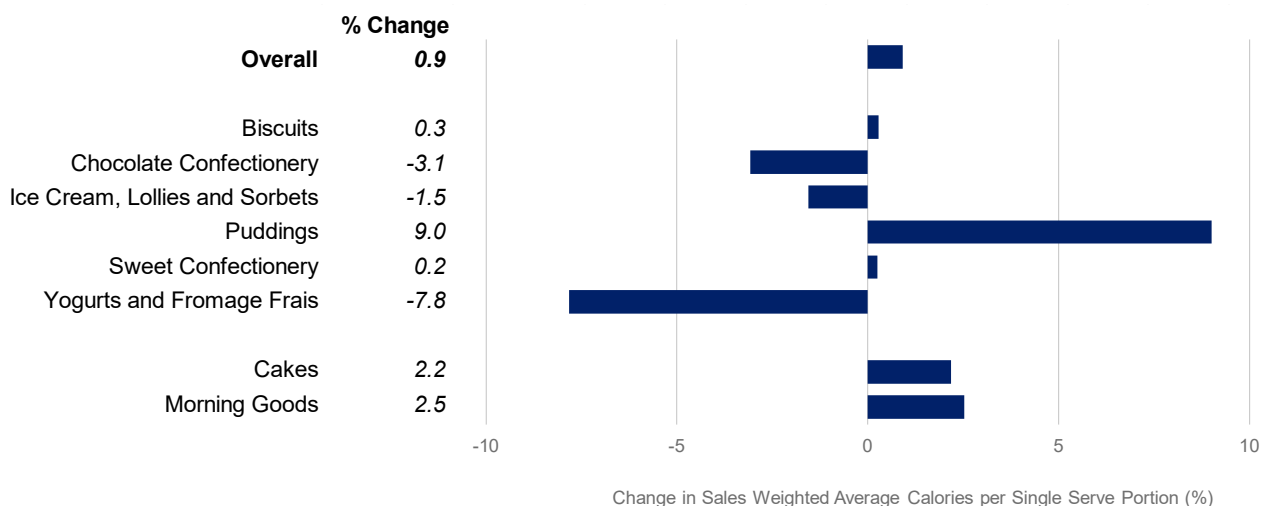


Figure 6: Percentage change in sales weighted average calories for products likely to be consumed on a single occasion by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Differences between retailers and manufacturers

This section compares progress made in retailers and manufacturer branded products using the sales weighted average total sugar content per 100g (Figure 7) and the sales weighted average calories for products likely to be consumed on a single occasion (Figure 8).

It can be seen that:

- overall, retailers made more progress than manufacturers in reducing total sugar per 100g (decreasing 4.6% and 1.7% respectively)

- this was not the case for calories in products likely to be consumed on a single occasion, where manufacturers had a decrease of 1.2% while retailers had an increase of 3.6%
- in terms of sugar per 100g, manufacturers made greater progress than retailers for most categories (breakfast cereals, chocolate confectionery, ice cream, lollies and sorbets, puddings, sweet spreads and sauces, yogurts and fromage frais, cakes, and morning goods)
- retailers made more progress than manufacturers in biscuits and sweet confectionery
- for calories per portion, manufacturers made more progress than retailers for biscuits, chocolate confectionery, yogurts and fromage frais, cakes, and morning goods
- however, this was not the case for ice cream, lollies and sorbets, puddings and sweet confectionery where retailers had larger decreases or smaller increases in calories per portion than manufacturers (Table 2 and 4)

Figure 7: Percentage change in sales weighted average total sugar per 100g by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products

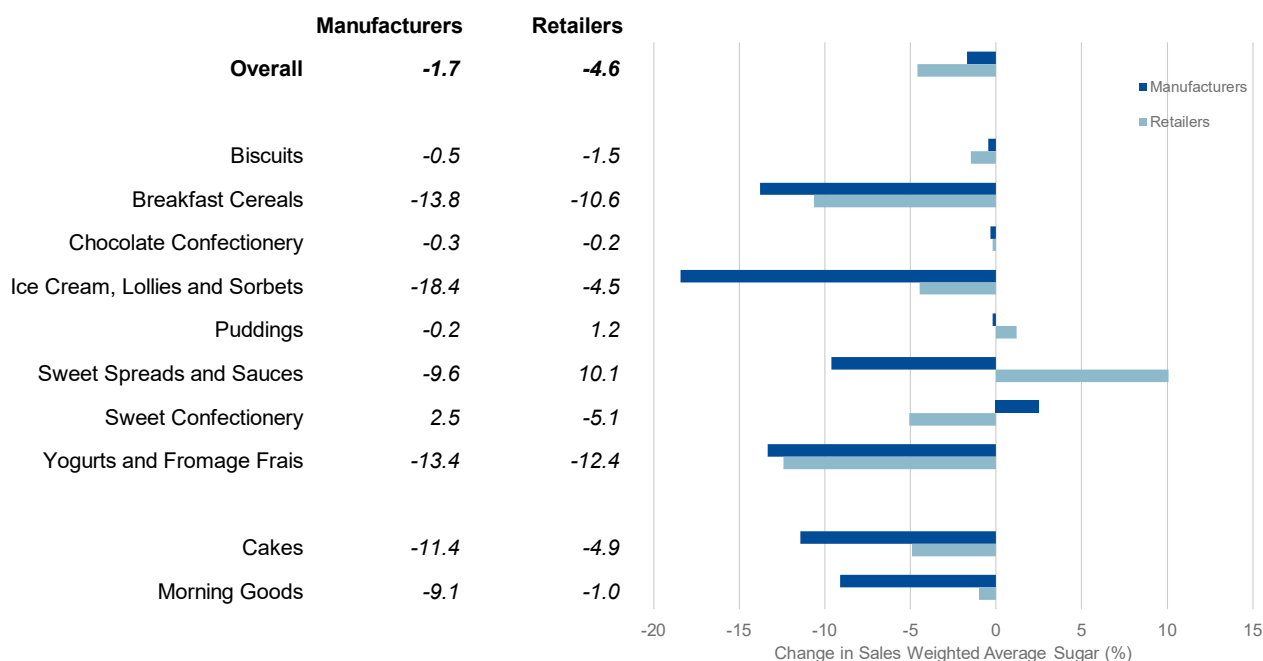
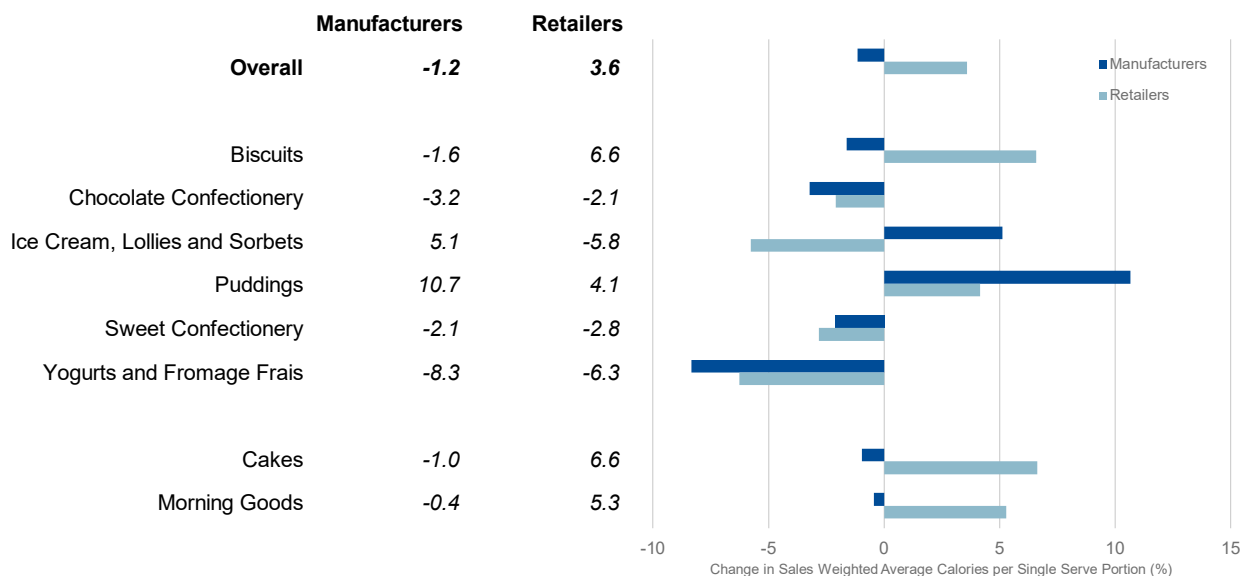


Figure 8: Percentage change in sales weighted average calories for products likely to be consumed on a single occasion by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Progress at brand level

This section looks at the brand level analysis reported in Table 4. The top selling 20 brands in each category (based on volume of sales) were analysed for changes in sugar content. The analysis was completed separately for the top 20 selling retailer brands and top 20 selling manufacturer brands¹⁷.

Any brand owned by businesses who did not give permission for their sales weighted averages to be shown have had their figures suppressed in the report tables. There were also some businesses which did not respond to the request to show their data, and others where the results were removed because they were not felt to be comparable between the baseline and year 3¹⁸.

In total, 258 retailers and manufacturer branded products were analysed and of these, Figure 9 shows that:

- 114 brands (44%) showed a decrease in sales weighted average total sugar content per 100g of more than 2%¹⁹

¹⁷ Manufacturer brands were only included if they contributed more than 1% of sales in both the baseline year and year 3. This was to avoid including comparisons which may only be based on a small number of products.

¹⁸ In all these cases, the data for these brands was still used to calculate overall and category level averages.

¹⁹ The figure of 2% was chosen so that a reasonable number of brands would show a difference of more than this, given that the average decrease is 3.0%.

- 50 brands (19%) showed an increase in sales weighted average total sugar content per 100g of more than 2%
- 94 brands (37%) showed either no change or a change of less than 2% (Appendix Table 4)

Figure 9: Proportion of brands showing changes of 2% or more in the sales weighted average total sugar per 100g between baseline (2015) and year 3 (2019)

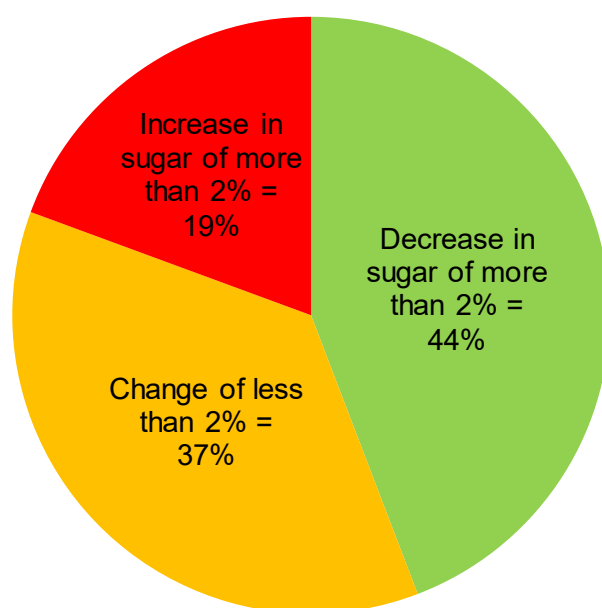
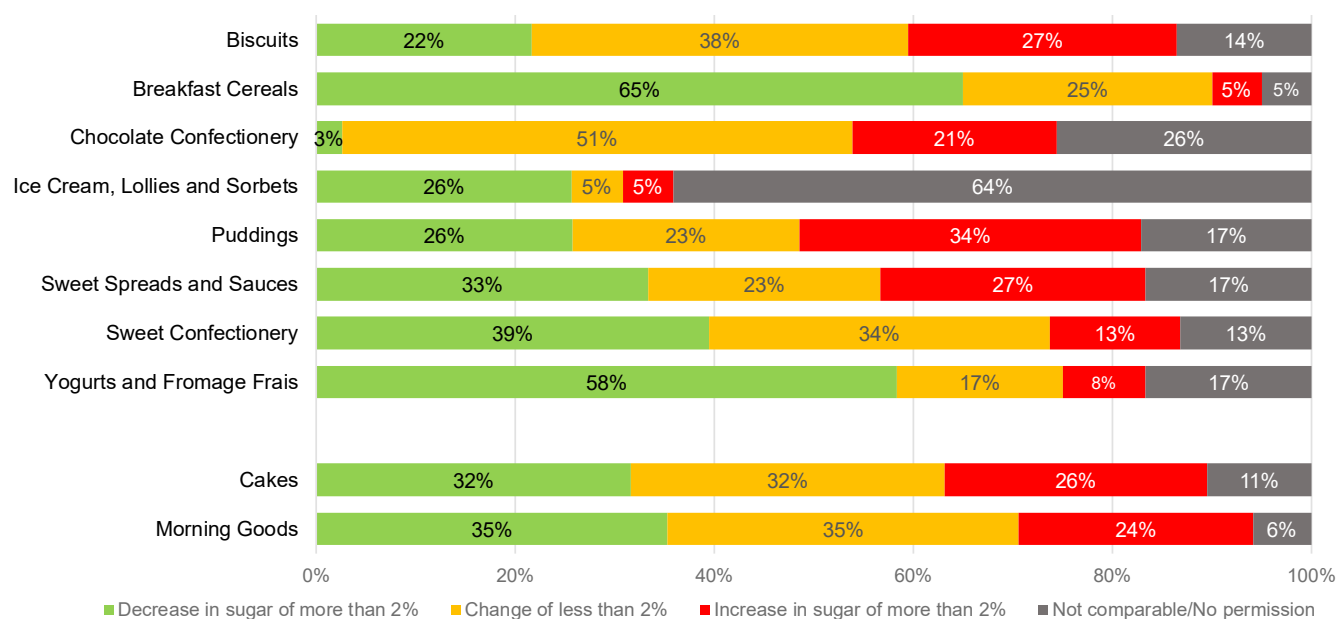


Figure 10 shows the same information but within each category. It also includes the proportion of brands where the sales weighted averages were either not comparable between years or the business did not give permission for their data to be shown.

It shows that:

- the highest proportion of brands with a decrease in their sales weighted average total sugar per 100g of 2% or more were in the breakfast cereals (65%) and yogurts and fromage frais (58%) categories
- puddings (34%), biscuits (27%), sweet spreads and sauces (27%) and chocolate confectionery (21%) were the categories with the highest proportion of brands increasing their sales weighted average total sugar per 100g by 2% or more (Table 4)

Figure 10: Proportion of brands showing changes of 2% or more in the sales weighted average total sugar per 100g between baseline (2015) and year 3 (2019) by category



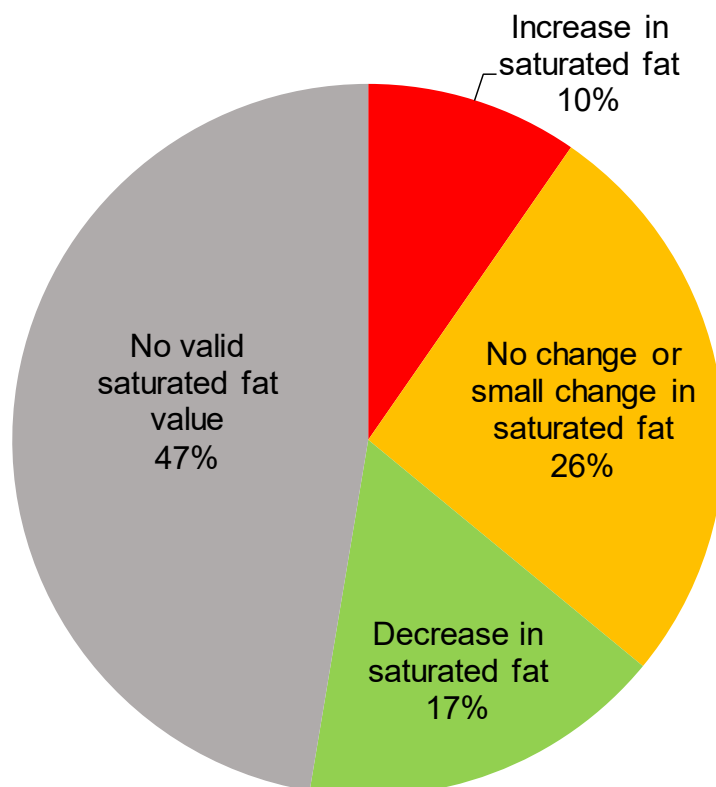
For the 114 brands which showed a decrease in sales weighted average sugar content of more than 2%, further analysis was conducted to see if this resulted in an increase in saturated fat.

Of these brands, Figure 11 shows that:

- 19 brands (17%) showed a decrease in saturated fat of more than 10%²⁰
- 30 brands (26%) showed no change or a change of less than 10% in saturated fat
- 11 brands (10%) showed an increase in saturated fat of more than 10%
- the remaining 54 brands (47%) did not have a valid saturated fat value (Appendix Table 4).

²⁰ The figure of 10% was chosen as it would clearly show where brands were clearly adding saturated fat to compensate for a decrease in sugar.

Figure 11: Analysis of changes in saturated fat for top selling brands with more than a 2% decrease in sugar



There is also an assessment of changes in salt content, available in Appendix Table 4.

Progress at business level

Figure 12 shows comparisons between baseline (2015) and year 3 (2019) for the sales weighted average total sugar per 100g at business level for retailers and manufacturers. The green dotted line represents the 20% reduction ambition for 2020. It can be seen that very few businesses have reached this ambition so far and some had increases in their sales weighted average total sugar per 100g (Figure 12 and Appendix Table 2).

A restriction on the use of the data from Kantar FMCG meant that businesses had to give permission to have their results shown in Figure 12 and Appendix Table 2. Therefore, some data has been omitted where permission was not given, and some additional data has been removed where there were concerns around the comparability of the results between baseline and year 3.

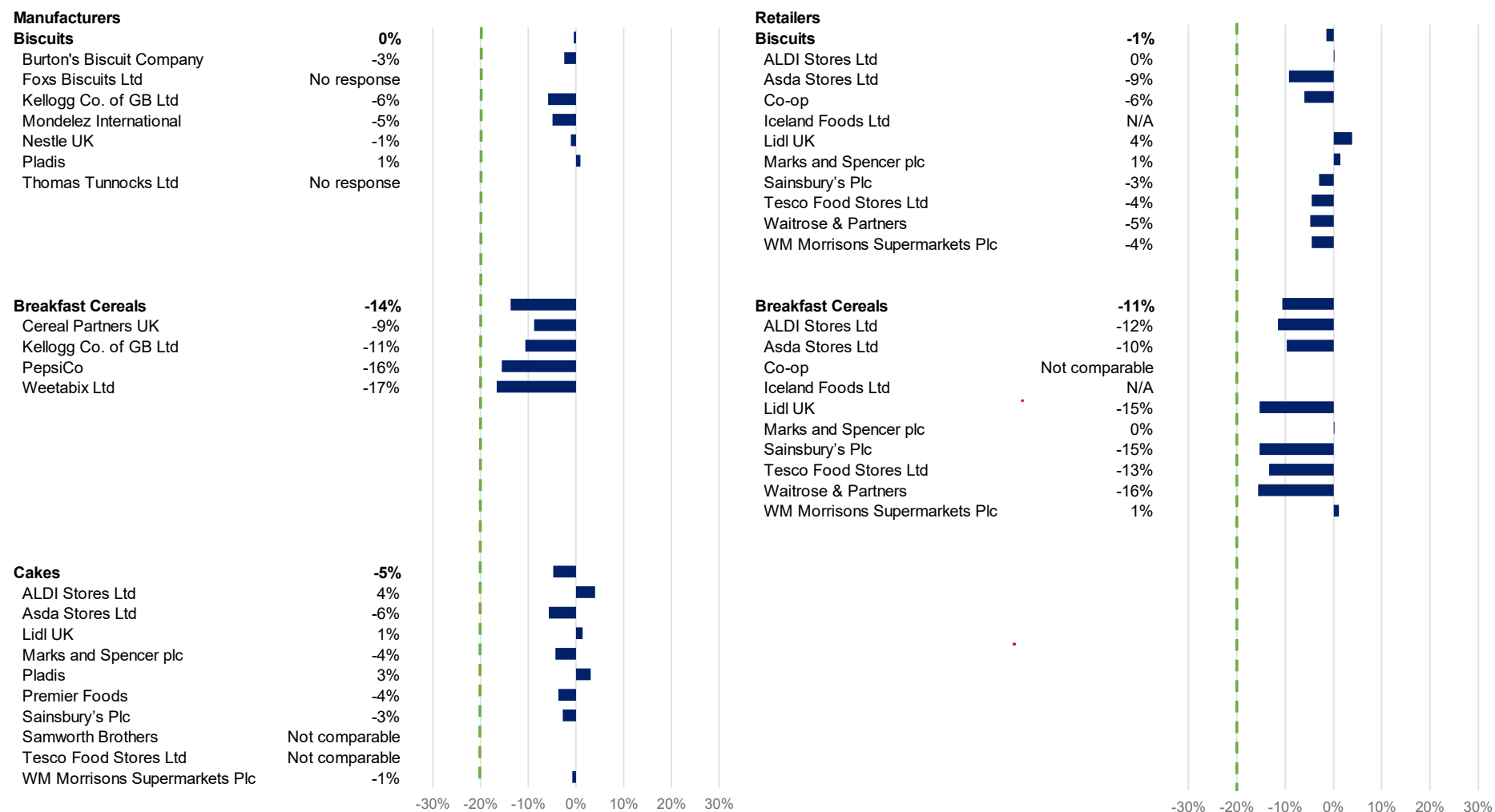
Figure 13 shows a similar comparison between baseline (2015) and year 3 (2019) for the sales weighted average calories (kcal) for products likely to be consumed on a single occasion at a business level for retailers and manufacturers (Appendix Table 3).

The same restrictions apply in terms of requiring permission to show businesses figures and non-comparable figures have also been removed. Puddings have not been included in Figure 12 and 13 as the analysis of this category is additionally complicated by the inclusion of more mince pies in 2019 than in the baseline data, due to improvements in the coverage of seasonal products during this period. Therefore, analysis for this category both including and excluding this product are shown in Appendix Table 2 and 3.

Progress at product level

Appendix Table 5 shows the calories in products likely to be consumed on a single occasion for the top 30 products by total servings for each category. Of the 135 products where it is possible to make a comparison between the baseline and year 3, 39 (29%) show a decrease in calories per serving of 2% or more.

Figure 12: Changes in sales weighted average total sugar per 100g by category and business between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note:

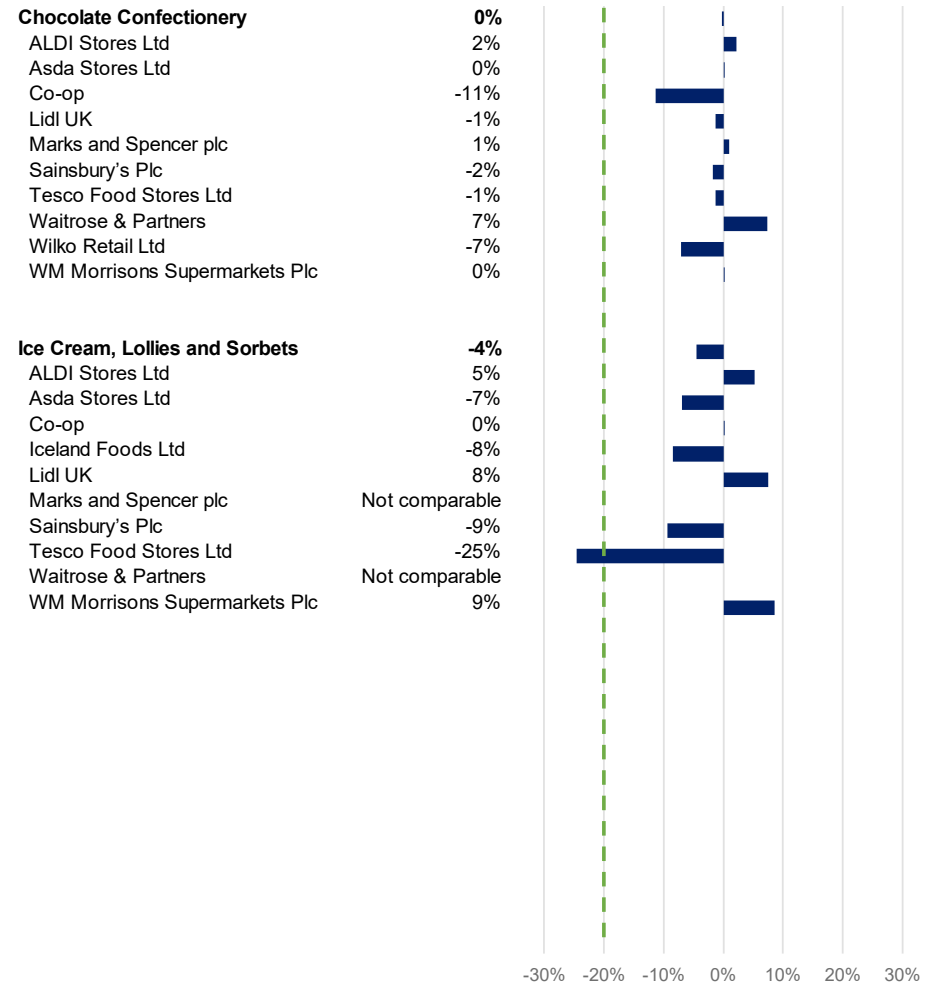
1. The baseline year for cakes and morning goods is 2017 rather than 2015. The list of businesses for cakes and morning goods is a combined list of manufacturers and retailers.
2. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of sugar sales. The list includes those who account for the top 80% of sugar sales. For manufacturers, any businesses which did not have at least 1% of sales in 2015 and 2019 were removed.

Sugar reduction: report on progress between 2015 and 2019

Manufacturers



Retailers

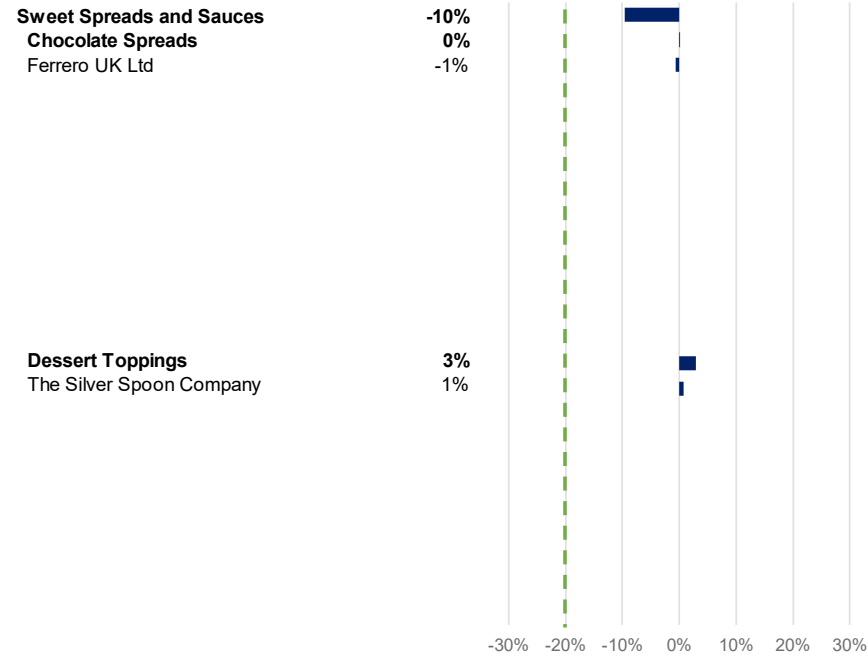


Note:

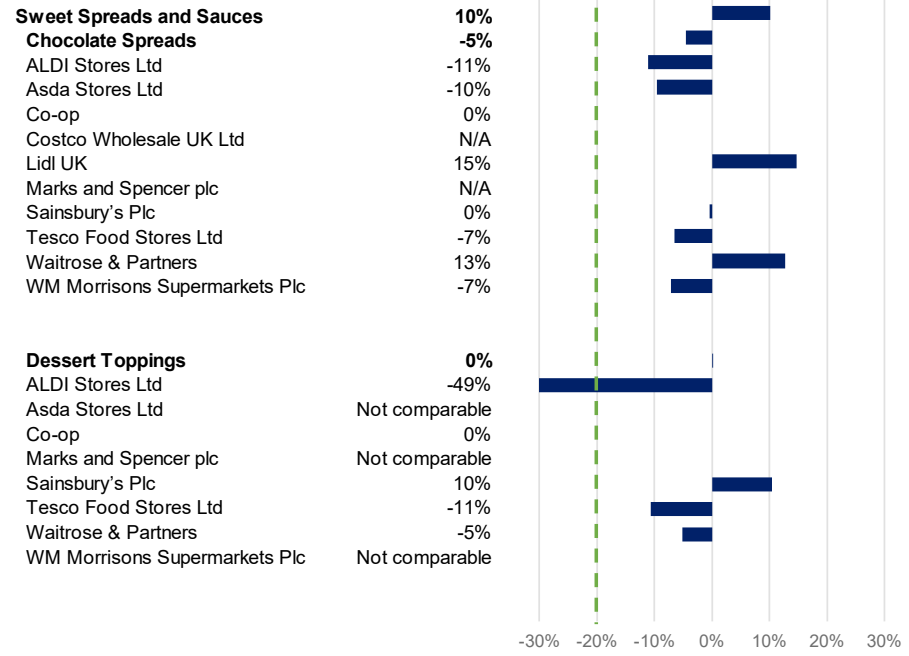
1. The baseline year for cakes and morning goods is 2017 rather than 2015. The list of businesses for cakes and morning goods is a combined list of manufacturers and retailers.
2. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of sugar sales. The list includes those who account for the top 80% of sugar sales. For manufacturers, any businesses which did not have at least 1% of sales in 2015 and 2019 were removed.

Sugar reduction: report on progress between 2015 and 2019

Manufacturers



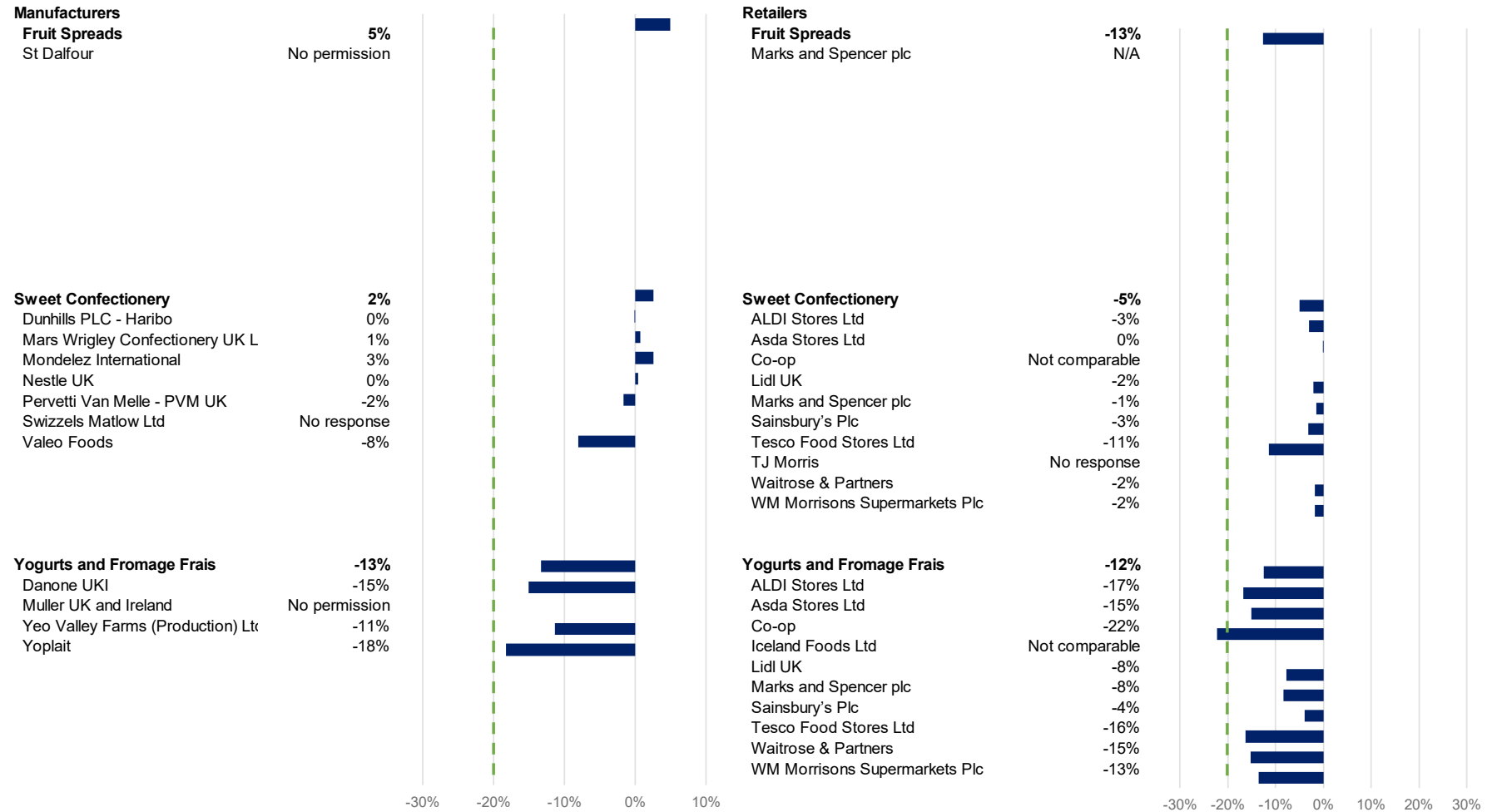
Retailers



Note:

1. The baseline year for cakes and morning goods is 2017 rather than 2015. The list of businesses for cakes and morning goods is a combined list of manufacturers and retailers.
2. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of sugar sales. The list includes those who account for the top 80% of sugar sales. For manufacturers, any businesses which did not have at least 1% of sales in 2015 and 2019 were removed.

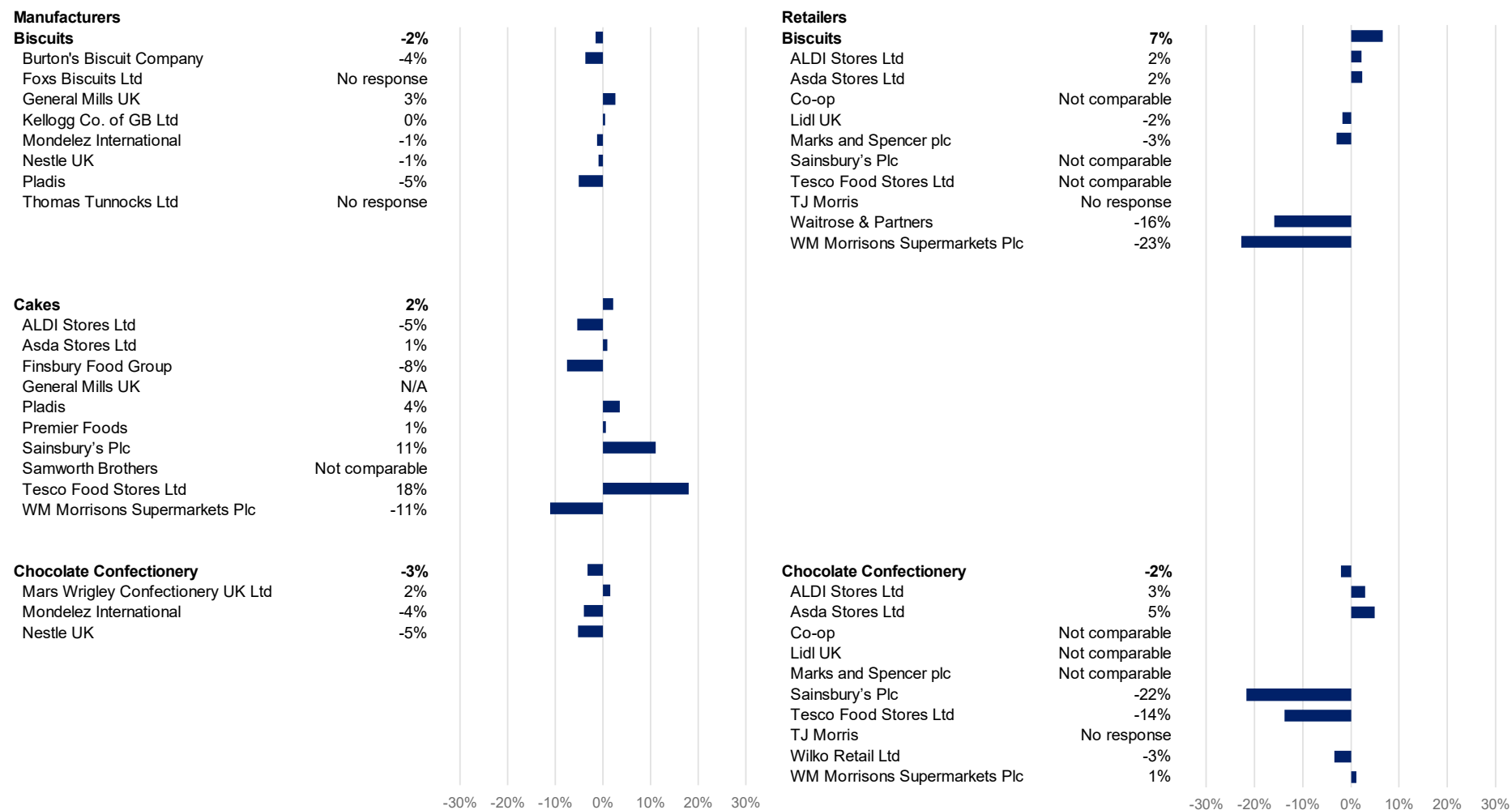
Sugar reduction: report on progress between 2015 and 2019



Note:

1. The baseline year for cakes and morning goods is 2017 rather than 2015. The list of businesses for cakes and morning goods is a combined list of manufacturers and retailers.
2. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of sugar sales. The list includes those who account for the top 80% of sugar sales. For manufacturers, any businesses which did not have at least 1% of sales in 2015 and 2019 were removed.

Figure 13: Changes in sales weighted average calories (kcal) for products likely to be consumed on a single occasion by category and business between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note:
 1. The baseline year for cakes and morning goods is 2017 rather than 2015. The list of businesses for cakes and morning goods is a combined list of manufacturers and retailers.
 2. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of servings. The list includes those who account for the top 80% of servings. For manufacturers, any businesses which did not have at least 1% of servings in 2015 and 2019 were removed.

Sugar reduction: report on progress between 2015 and 2019

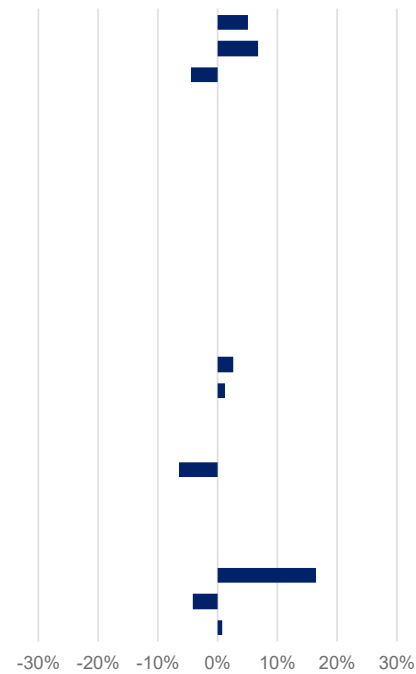
Manufacturers

Ice Cream, Lollies and Sorbets

Froneri	7%
Unilever UK	-4%

Morning Goods

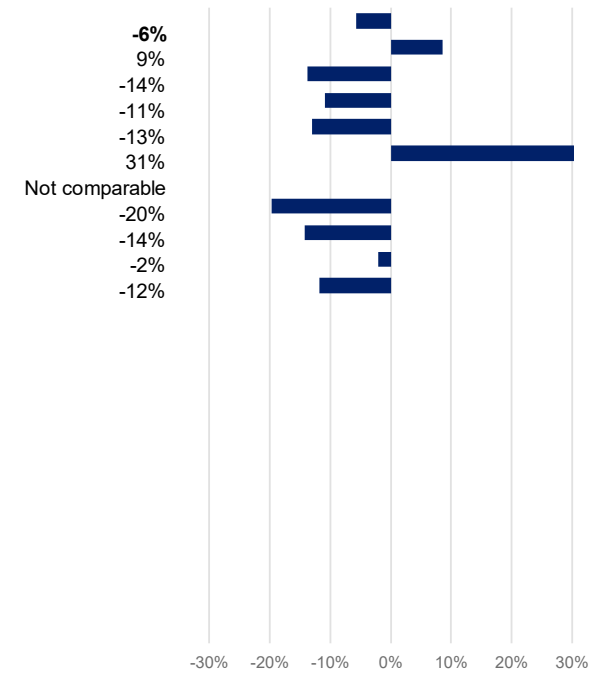
ALDI Stores Ltd	1%
Asda Stores Ltd	Not comparable
Brioche Pasquier SA	No permission
Lidl UK	-6%
Marks and Spencer plc	Not comparable
New York Bagel Co Ltd	No response
Sainsbury's Plc	Not comparable
Tesco Food Stores Ltd	16%
Warburtons Ltd	-4%
WM Morrisons Supermarkets Plc	1%



Retailers

Ice Cream, Lollies and Sorbets

ALDI Stores Ltd	9%
Asda Stores Ltd	-14%
Co-op	-11%
Iceland Foods Ltd	-13%
Lidl UK	31%
Marks and Spencer plc	Not comparable
Sainsbury's Plc	-20%
Tesco Food Stores Ltd	-14%
Waitrose & Partners	-2%
WM Morrisons Supermarkets Plc	-12%



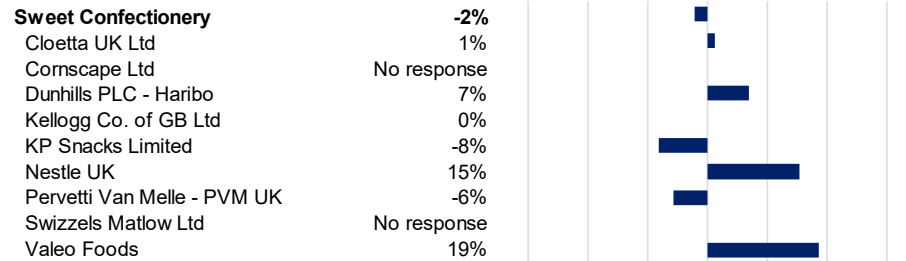
Note:

1. The baseline year for cakes and morning goods is 2017 rather than 2015. The list of businesses for cakes and morning goods is a combined list of manufacturers and retailers.
2. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of servings. The list includes those who account for the top 80% of servings. For manufacturers, any businesses which did not have at least 1% of servings in 2015 and 2019 were removed.

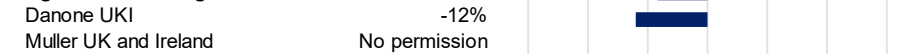
Sugar reduction: report on progress between 2015 and 2019

Manufacturers

Sweet Confectionery

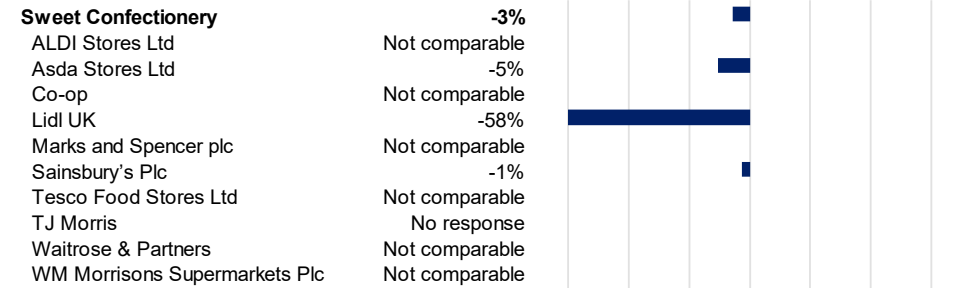


Yogurts and Fromage Frais

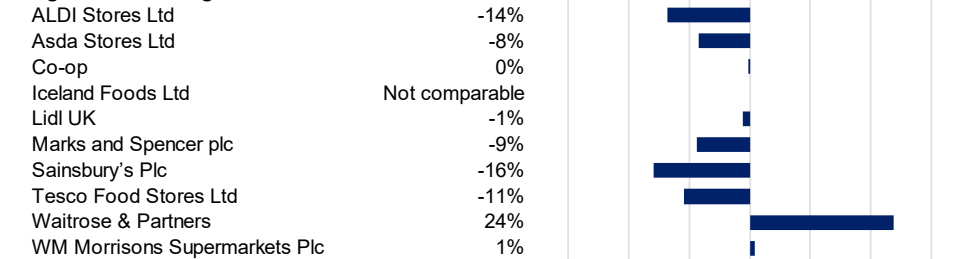


Retailers

Sweet Confectionery



Yogurts and Fromage Frais



Note:

1. The baseline year for cakes and morning goods is 2017 rather than 2015. The list of businesses for cakes and morning goods is a combined list of manufacturers and retailers.
2. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of servings. The list includes those who account for the top 80% of servings. For manufacturers, any businesses which did not have at least 1% of servings in 2015 and 2019 were removed.

Volume of sales for retailers and manufacturer branded products

This section looks at the volume of sales for the categories included in the sugar reduction programme and change between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products.

For this analysis data for cakes and morning goods are excluded. This is due to substantially more products being captured for these categories in year 3 (2019) compared to other years due to improvements in data collection (see Appendix Table 1 for the number of products).

Therefore, the sales figures quoted in this section are underestimates of the total amount of sugar purchased because cakes and morning goods are excluded.

The section is split into 2 parts:

1. Total sales of sugar – this analysis looks at the volume of sugar being purchased and how this has changed over time.
2. Total volume sales – this analysis looks at the volume of products being purchased.

It is important to look at how the total volume sales for each product and category vary over time as the product level sales are being used to weight the contribution of each product in the sales weighted average calculation. Therefore, if the sales of higher sugar content products increase relative to lower sugar content products then this can lead to an increase in the sales weighted average, even if some of those higher sugar products have been reformulated to decrease their sugar content. In other words, increases in sales of some of the higher sugar categories and/or decreases in lower sugar categories can neutralise any reformulation work overall, as the average product purchased will have a higher average sugar content.

Total sales of sugar

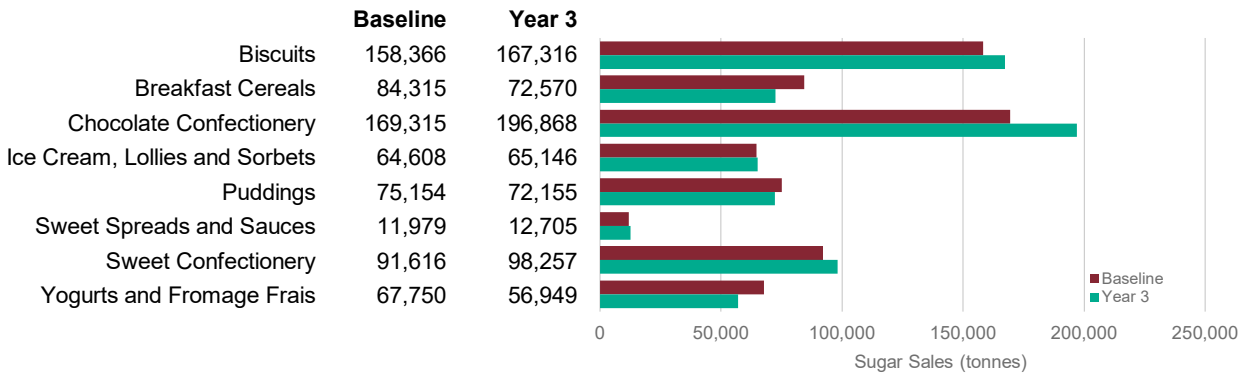
Figure 14 shows the sales in tonnes of sugar sold by category (excluding cakes and morning goods) for baseline and year 3. Figure 15 shows how this has changed over time.

For retailers and manufacturers, it can be seen that:

- overall there has been an increase from 723,103 tonnes of sugar sold at baseline to 741,966 tonnes in year 3 which represents an increase of 2.6% (the overall sugar sales are shown in Figure 15)
- as the population of Great Britain increased during this period the increase in sugar sold represents no change in sugar purchased per person from the food product categories included in the programme

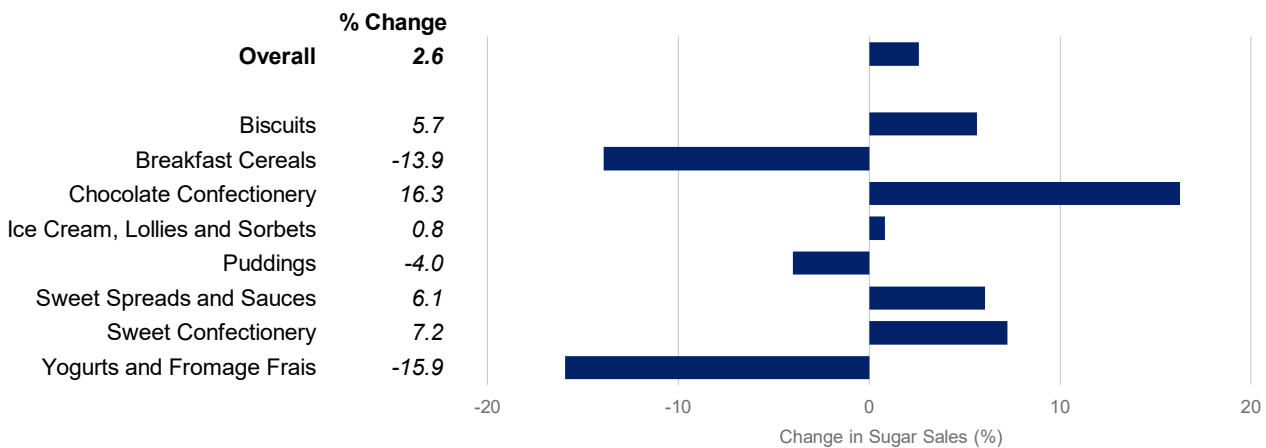
- the largest increases in tonnes of sugar sold were 16.3% for chocolate confectionery, 7.2% for sweet confectionery, 6.1% for sweet spreads and sauces, and 5.7% for biscuits
- the largest decreases were 15.9% for yogurts and fromage frais, 13.9% for breakfast cereals and 4.0% for puddings (Table 5)

Figure 14: Sales of sugar by category in baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note: Cakes and morning goods are excluded from this chart. This is because there are around 50% more products in the 2019 dataset compared to 2017 so a comparison of sales would show a large increase which would be due to an increase in data quality rather than an increase in sales.

Figure 15: Percentage change in sales of sugar by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note: Cakes and morning goods are excluded from this chart. This is because there are around 50% more products in the 2019 dataset compared to 2017 so a comparison of sales would show a large increase which would be due to an increase in data quality rather than an increase in sales.

Total volume sales

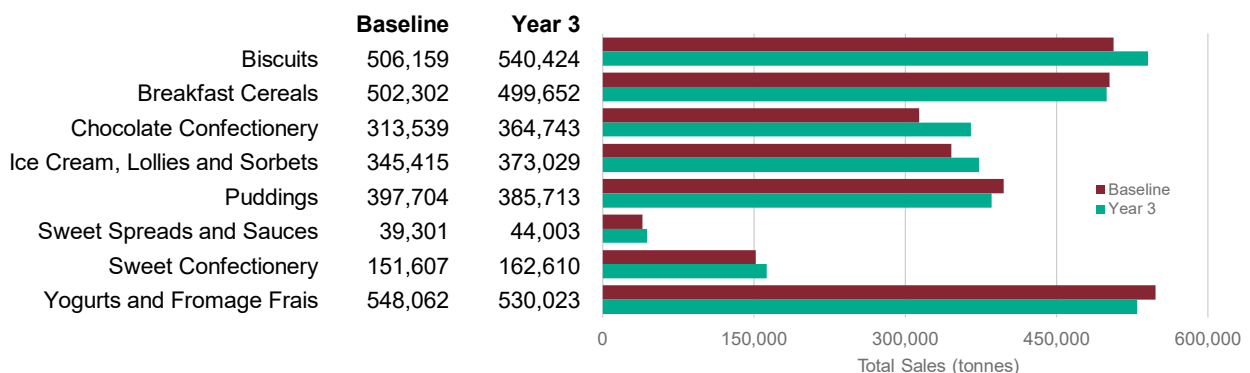
This section looks at the total volume of sales in the same categories (excluding cakes and morning goods). It firstly looks at the actual level of sales and then it analyses the proportion of sales each category contributes to the overall total, as this indicates the contribution each category is making to the overall sales weighted average²¹.

Figure 16 shows the total volume sales by category for baseline and year 3 and Figure 17 shows how this has changed over time.

For retailers and manufacturers, they show that:

- overall there has been an increase from 2,804,089 tonnes of products sold at baseline to 2,900,197 tonnes in year 3 which represents an increase of 3.4% (the overall total sales are shown in Figure 17)
- as the population of Great Britain increased during this period, the increase in tonnes of products sold represents a 0.8% increase per person from food product categories included in the programme
- sales decreased in 3 categories: breakfast cereals (down 0.5%), puddings (down 3.0%), and yogurts and fromage frais (down 3.3%)
- there were increases in sales in other categories including chocolate confectionery (up 16.3%), sweet spreads and sauces (up 12.0%), ice cream, lollies and sorbets (up 8.0%), sweet confectionery (up 7.3%) and biscuits (up 6.8%) (Table 5)

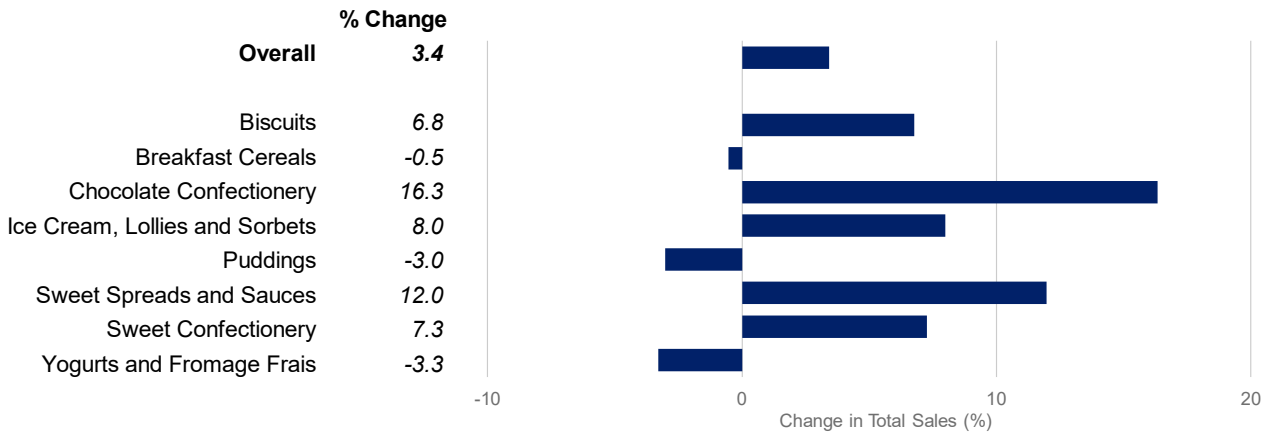
Figure 16: Total volume sales by category in baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note: Cakes and morning goods are excluded from this chart. This is because there are around 50% more products in the 2019 dataset compared to 2017 so a comparison of sales would show a large increase which would be due to an increase in data quality rather than an increase in sales.

²¹ The sugar content of each product is weighted according to its total sales in the calculation of the sales weighted average. Therefore, looking at how the proportion of sales each category contributes to the total and how this has changed between baseline and year 3 is a good proxy for seeing how the contribution of high and low sugar products will have changed over time.

Figure 17: Percentage change in total volume sales by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



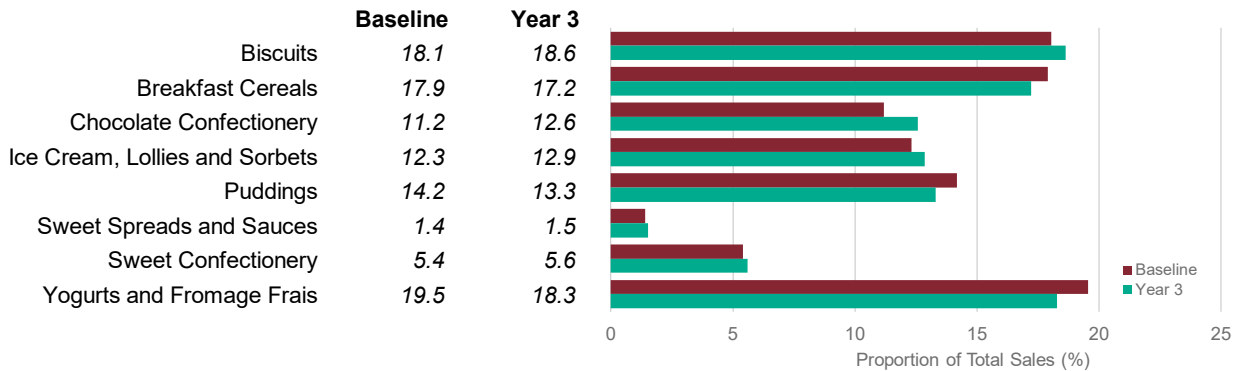
Note: Cakes and morning goods are excluded from this chart. This is because there are around 50% more products in the 2019 dataset compared to 2017 so a comparison of sales would show a large increase which would be due to an increase in data quality rather than an increase in sales.

Figure 18 shows the proportion of sales each food category contributes to overall total volume sales and Figure 19 shows how this has changed over time.

For retailers and manufacturers, they show that in 2019:

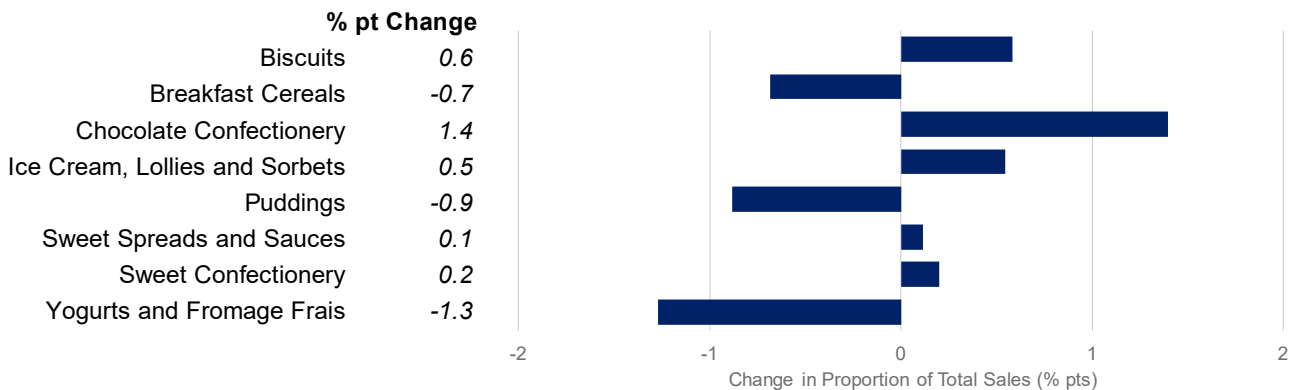
- biscuits (18.6%), yogurts and fromage frais (18.3%), and breakfast cereals (17.2%) account for over half the sales from the 8 categories shown
- by contrast, sweet spreads and sauces account for only 1.5% of sales
- the proportion of sales accounted for by yogurts and fromage frais, and breakfast cereals has fallen by 1.3 percentage points and 0.7 percentage points respectively, meaning that although these categories had large reductions in their total sugar sales weighted average per 100g, the impact of this improvement on the overall sugar reduction (across all categories) will have been diluted as their proportion of sales has reduced
- the proportion of sales accounted for by chocolate confectionery has increased by 1.4 percentage points which will increase the overall sales weighted average (across all categories) as it is one of the categories with the highest sugar content (Table 5)

Figure 18: Percentage of total volume sales by category in baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note: Cakes and morning goods are excluded from this chart. This is because there are around 50% more products in the 2019 dataset compared to 2017 so a comparison of sales would show a large increase which would be due to an increase in data quality rather than an increase in sales.

Figure 19: Percentage point change in the proportion of total volume sales by category between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note: Cakes and morning goods are excluded from this chart. This is because there are around 50% more products in the 2019 dataset compared to 2017 so a comparison of sales would show a large increase which would be due to an increase in data quality rather than an increase in sales.

Eating out of home sector

This section focuses on progress made by businesses operating in the eating out of home sector, which covers businesses such as:

- quick service restaurants
- casual dining restaurants
- contract caterers (foodservice)
- cafés and coffee shops
- sandwich and bakery led shops
- pubs
- vending
- retail food on the go

- takeaway and delivery services²²

Due to limitations in the data, simple averages are the sole metric used to assess progress in this sector. More information is given in Appendix 2, however in summary, it is not possible to link purchases and nutrition data in the eating out of home sector with the same level of accuracy as for retailers and manufacturer branded products.

Simple averages for each category in the eating out of home sector are presented in this chapter, in addition to a comparison with the simple averages for retailers and manufacturer branded products as presented earlier.

Quality of data

There are fewer products in the eating out of home sector dataset (1,112 in 2019 with data for sugar per 100g and 2,300 with data for calories per single serve portion) compared with the data for retailers and manufacturer branded products (15,465 for sugar per 100g and 6,435 for calories per single serve portion). In the commentary which follows, large changes based on a small number of products are mentioned as potentially not being robust. Also, some very large changes which were based on quite different sets of products in each year have been removed, because the products were not considered comparable between the 2 years.

Data for contract caterers is not presented in this report as there is much less data for these types of businesses in year 3, making meaningful comparisons very difficult.

Time periods covered

No data is available for the baseline period of 2015, so comparisons are made between year 1 (2017) and year 3 (2019). This is primarily due to a change in data provider between 2015 and 2017 and more detail on this is given in the year 1 report^{vii}.

Therefore, for the eating out of home sector, year 1 is the baseline for the analysis in this report.

Simple average total sugar per 100g for the eating out of home sector products

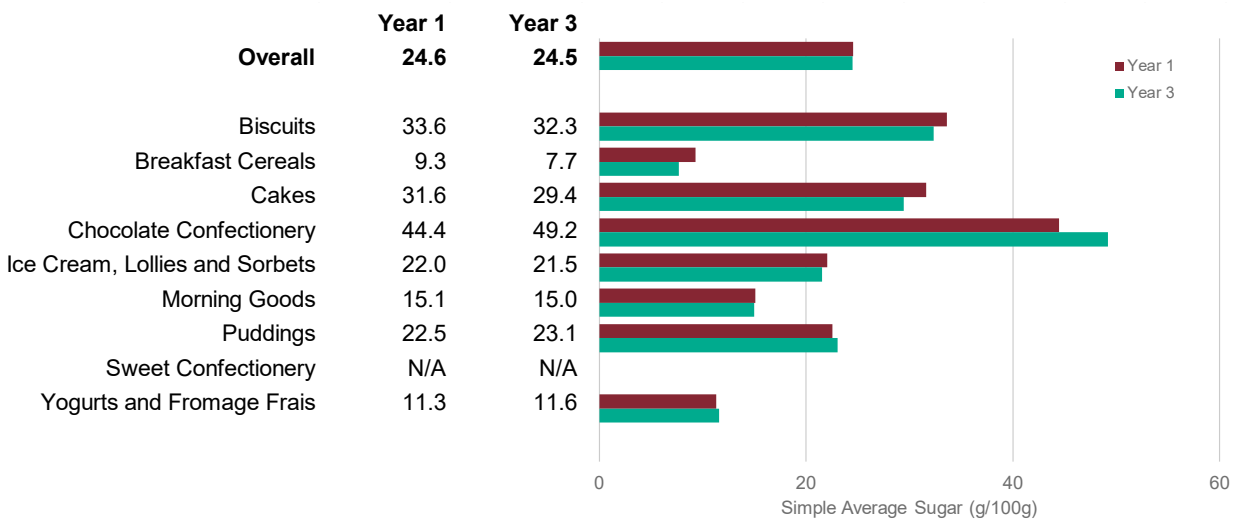
Figures 20 and 21 show the simple average total sugar at category level and overall for year 1 (2017 – baseline year for the analysis for this sector) and year 3 (2019), and the change during this period.

²² The data for the eating out of home sector only captures purchases which are not eaten at home, therefore very few purchases of takeaways and delivery services are included in this assessment of progress. However, the overall ambition remains inclusive of these business models.

For businesses in the eating out of home sector:

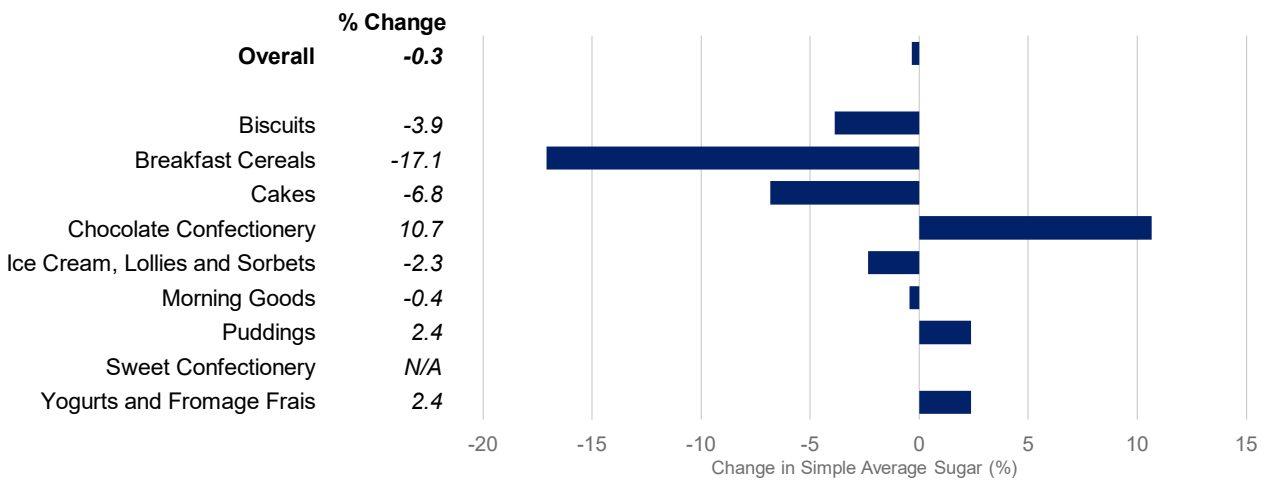
- overall there has been hardly any change in the simple average sugar content from 24.6g per 100g in 2017 to 24.5g/100g in 2019
- the largest decreases were 17.1% for breakfast cereals, 6.8% for cakes, and 3.9% for biscuits
- there was an increase for chocolate confectionery of 10.7% (Table 8)

Figure 20: Simple average total sugar (g/100g) by category for year 1 (2017) and year 3 (2019) for products in the eating out of home sector



Note: Data for sweet confectionery has been excluded as the businesses providing data for 2019 were quite different to those providing data in 2017 so comparisons were not reliable. It is also excluded from the "Overall" row as it was found to be distorting the comparison.

Figure 21: Percentage change in simple average total sugar (g/100g) by category between year 1 (2017) and year 3 (2019) for products in the eating out of home sector



Note: Data for sweet confectionery has been excluded as the businesses providing data for 2019 were quite different to those providing data in 2017 so comparisons were not reliable. It is also excluded from the "Overall" row as it was found to be distorting the comparison.

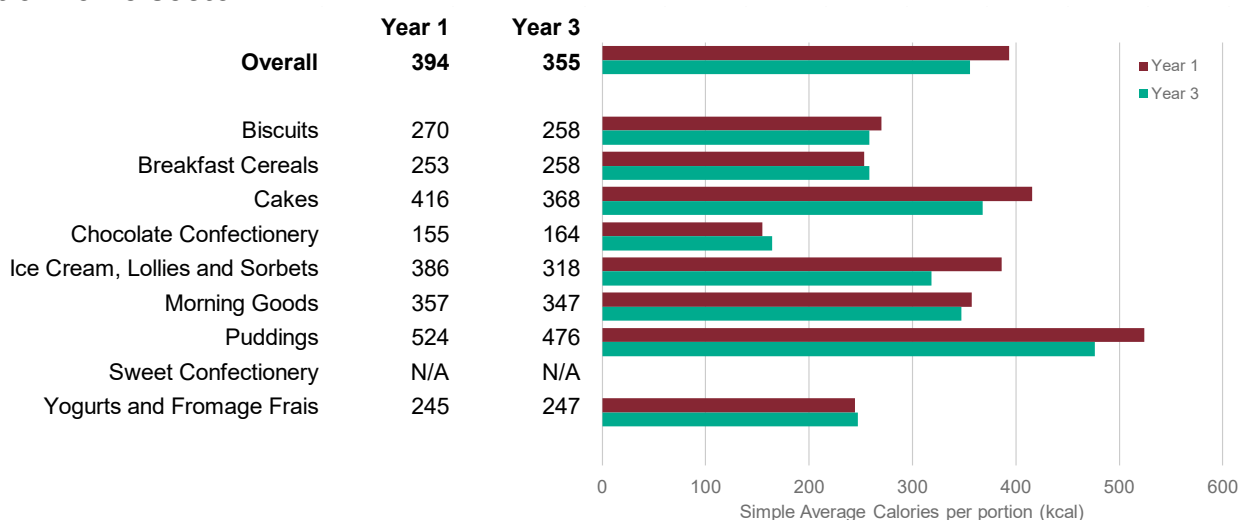
Simple average calories in products likely to be consumed on a single occasion (single serve) in the eating out of home sector

Figures 22 and 23 show the simple average calorie content of products likely to be consumed on a single occasion at category level and overall for year 1 (2017) and year 3 (2019), and the change during this period.

It can be seen that:

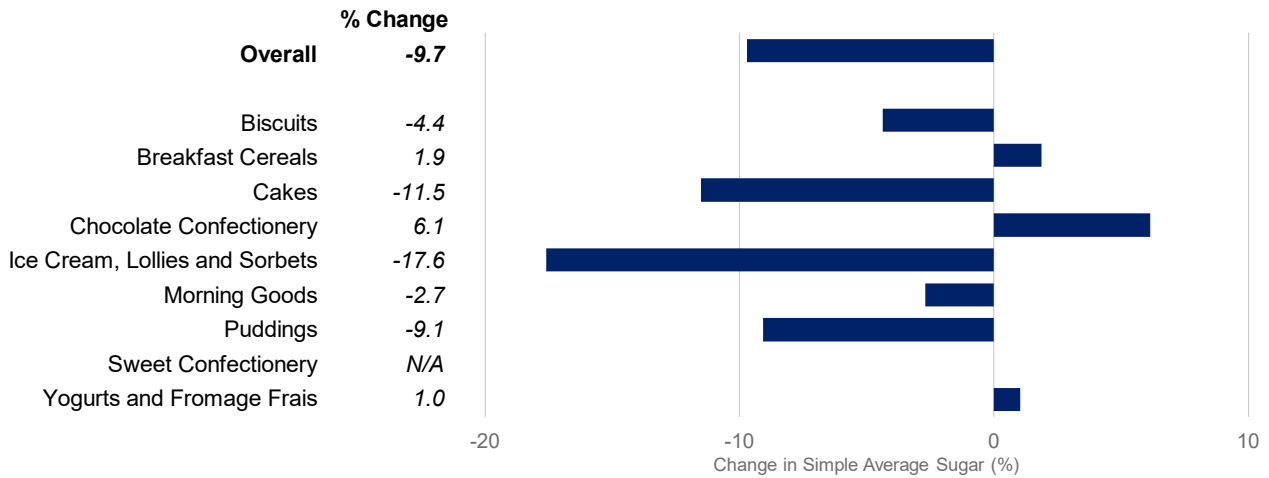
- overall there has been a decrease in average calories per single serve portion from 394 kcals in 2017 to 355 kcals in 2019 which represents a decrease of 9.7% (Figure 22)
- ice creams, lollies and sorbets (down 17.6%), cakes (down 11.5%) and puddings (down 9.1%) showed the largest decreases
- chocolate confectionery had the largest increase in calories per single serve portion (up 6.1%)
- other categories had smaller changes (Table 9)

Figure 22: Simple average calories (kcals) for products likely to be consumed on a single occasion by category for year 1 (2017) and year 3 (2019) for products in the eating out of home sector



Note: Data for sweet confectionery has been excluded as the businesses providing data for 2019 were quite different to those providing data in 2017 so comparisons were not reliable. It is also excluded from the "Overall" row as it was found to be distorting the comparison.

Figure 23: Percentage change in simple average calories for products likely to be consumed on a single occasion by category between year 1 (2017) and year 3 (2019) for products in the eating out of home sector



Note: Data for sweet confectionery has been excluded as the businesses providing data for 2019 were quite different to those providing data in 2017 so comparisons were not reliable. It is also excluded from the "Overall" row as it was found to be distorting the comparison.

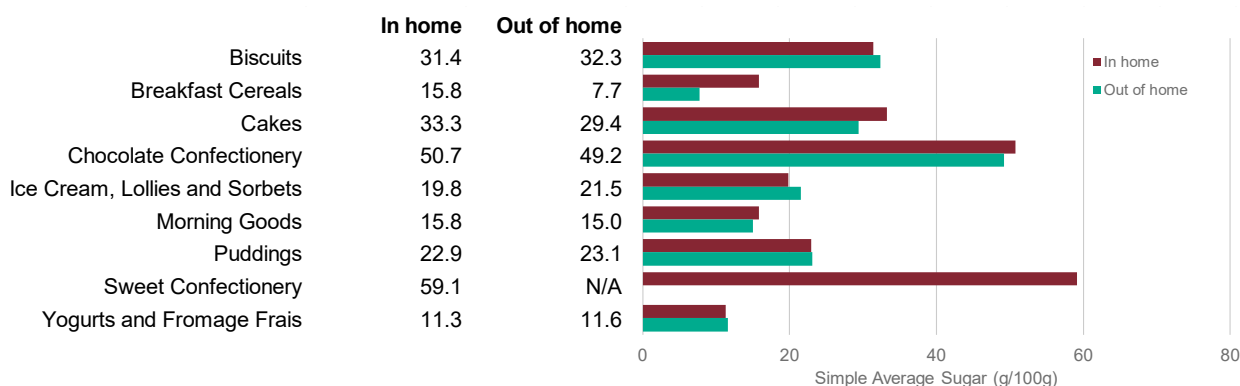
Differences between the eating out of home sector and retailers and manufacturer branded products

This section compares the simple average sugar content in the eating out of home sector with products sold through retailers and manufacturers, as presented earlier in this report. Only simple averages should be used when comparing across the sectors, as due to the difficulty of linking sales and nutrition information, sales weighted averages are not available for the eating out of home sector. The simple average total sugar per 100g (Figure 24) and the simple average number of calories in products likely to be consumed on a single occasion (Figure 25) are shown for each sector.

It can be seen that:

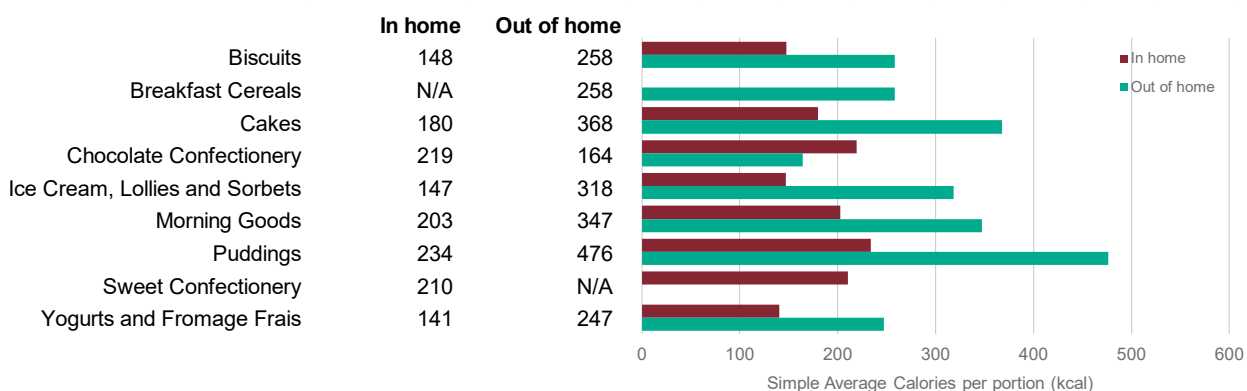
- for most categories, the simple average sugar content per 100g in products in the eating out of home sector is roughly the same as the simple average for retailers and manufacturer branded products, except for breakfast cereals
- calories in products likely to be consumed on a single occasion in the eating out of home sector are higher than for retailers and manufacturer branded products across all categories apart from chocolate confectionery (Tables 1, 3, 8 and 9)

Figure 24: Simple average total sugar per 100g by category in year 3 (2019) for retailers and manufacturer branded products (in home) and products in the eating out of home sector (out of home)



Note: Data for sweet confectionery has been excluded for out of home as the businesses providing data for 2019 were quite different to those providing data in 2017 so comparisons were not reliable.

Figure 25: Simple average calories for products likely to be consumed on a single occasion by category in year 3 (2019) for retailers and manufacturer branded products (in home) and products in the eating out of home sector (out of home)

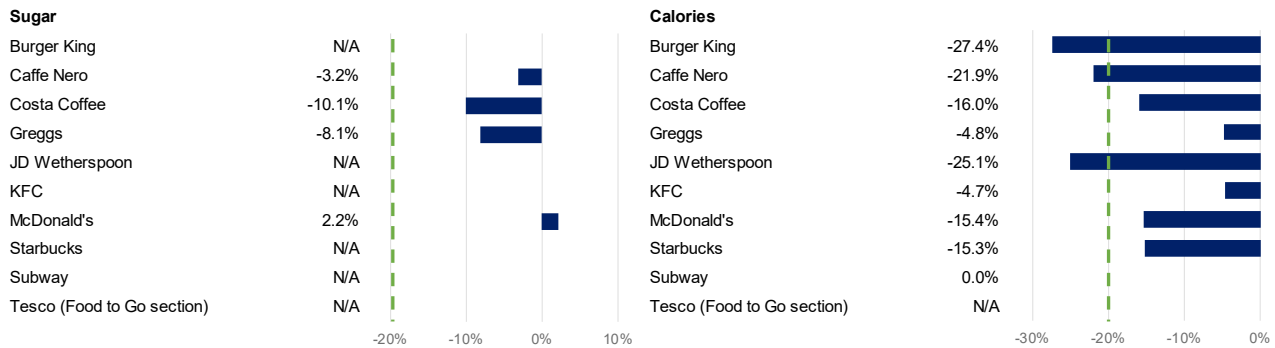


Note: Data for sweet confectionery has been excluded for out of home as the businesses providing data for 2019 were quite different to those providing data in 2017 so comparisons were not reliable.

Progress at business level

Figure 26 shows a comparison between year 1 (2017) and year 3 (2019) for the simple average total sugar per 100g at business level and calories in products likely to be consumed on a single occasion (based on most portions sold). The green dotted line represents the 20% sugar reduction ambition for 2020. It can be seen that no businesses have achieved this guideline so far in terms of sugar reduction, though it appears some progress has been made in terms of calories per single serve portion (Appendix Table 6).

Figure 26: Changes in simple average total sugar per 100g and calories for products likely to be consumed on a single occasion by brand between year 1 (2017) and year 3 (2019)



Contract caterers

It is not possible to compare the 2019 figures for contract caterers to 2017 because there are around half the number of products in the 2019 dataset. Therefore, any comparison would not be made on a like-for-like basis (Table 11).

Soft Drinks Industry Levy

Introduction

The SDIL was announced in the Budget in March 2016^{xii} and introduced in April 2018^{vi}. It applies to sugar sweetened beverages containing added sugar and was introduced as part of the government’s initiative to tackle childhood obesity by encouraging manufacturers and retailers to reduce the sugar content in their drinks products.

There are 2 rates of tax, depending on the sugar content:

- the ‘standard rate’ (18p per litre) applies to drinks with total sugar content between 5g and up to (but not including) 8g per 100ml
- the ‘higher rate’ (24p per litre) applies to drinks with total sugar content equal to or greater than 8g per 100ml

There is no tax applied to drinks with sugar content of less than 5g per 100ml.

All drinks subject to the SDIL, including those with a sugar content of less than 5g per 100ml, are included in the analysis in this section. It is important to include this lower sugar group of drinks so that consumers switching from higher sugar drinks and any reformulation of products can be monitored.

Unsweetened juice and sweetened milk based drinks are not in scope of the SDIL. They are included in the sugar reduction programme and the first report on progress can be

found in Appendix 3. As detailed in Chapter 2 of the Childhood Obesity Planⁱⁱ and the prevention green paper 'Advancing our health: prevention in the 2020's – consultation document'ⁱⁱⁱ, progress on the interim sugar reduction ambition of 10% for milk based drinks will be taken into account when HM Treasury reviews the continuation of their exemption from the SDIL in 2020.

Retailers and manufacturer branded products

Figure 27 shows the sales in litres of products subject to the SDIL for the baseline year (2015) and year 3 (2019) for retailers and manufacturer branded products. Figure 28 shows the proportion of these sales by the different levy rates.

It can be seen that:

- overall, sales (in litres) of soft drinks classified within the 3 sugar tiers of the levy have increased by 14.9% from 3,542,574 thousand litres in 2015 to 4,070,902 in 2019, which was due to an increase in sales of drinks containing less than 5g of sugar per 100ml²³
- at the same time the total sugar sales from the soft drinks decreased by 35.4% from 135,501 tonnes in 2015 to 87,602 tonnes in 2019

Further results of this analysis are available in the supplementary data Table 7, which shows:

- the sales weighted average total sugar content fell from 3.8g per 100ml in 2015 to 2.2g per 100ml in 2019, which is a decrease of 43.7%
- the sales weighted average number of calories for products likely to be consumed on a single occasion fell from 64 kcals per single serve to 41 kcals, which is a fall of 35.2%
- there has been a large shift in sales towards lower sugar products, as sales (in litres) of products with no levy attached (less than 5g sugar per 100ml) have increased by 54.2%, while sales of products with a levy attached have fallen by 79.1% for those in the 5g to less than 8g per 100ml group and by 54.8% for those in the 8g or more per 100ml group
- the proportion of sales with no levy attached has also increased from 66% to 88% while the proportion of products with no levy attached has increased from 48% to 78%

²³ Drinks containing less than 5g of sugar per 100ml are subject to the SDIL but no tax is applied as their sugar content is below the taxation threshold.

Figure 27: Sales (thousand litres) of drinks subject to the Soft Drinks Industry Levy by total sugar content per 100ml in baseline (2015) and year 3 (2019) for retailers and manufacturer branded products

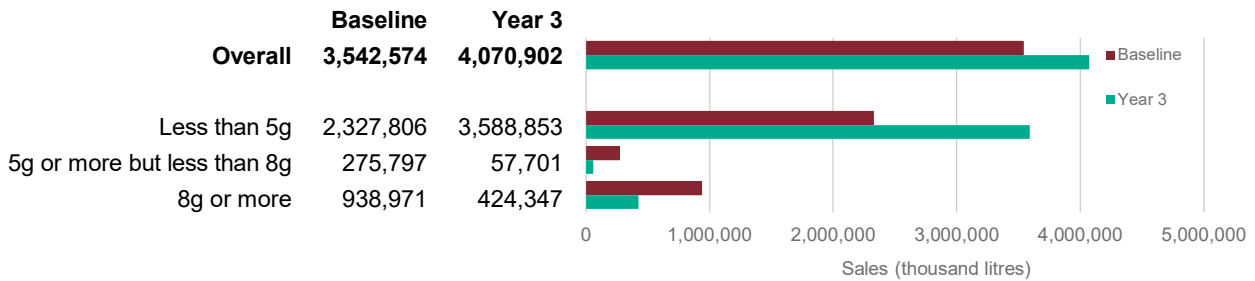


Figure 28: Proportion of sales of drinks subject to the Soft Drinks Industry Levy by total sugar content per 100ml in baseline (2015) and year 3 (2019) for retailers and manufacturer branded products

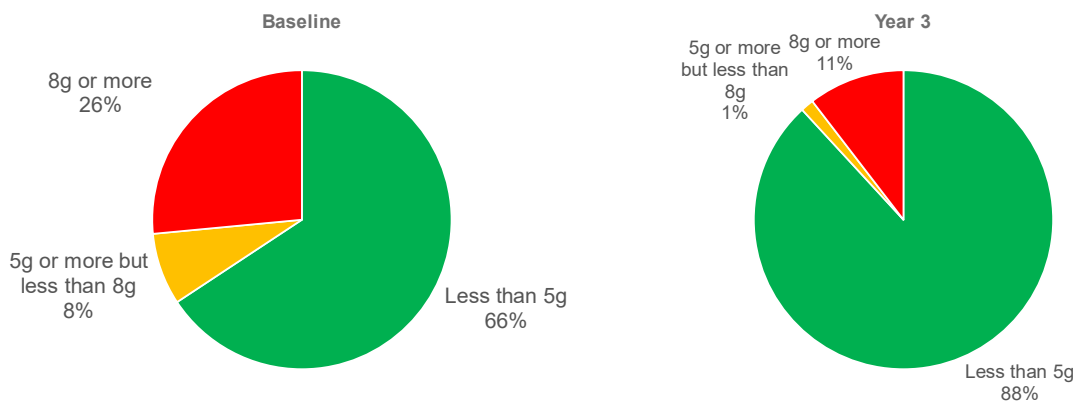
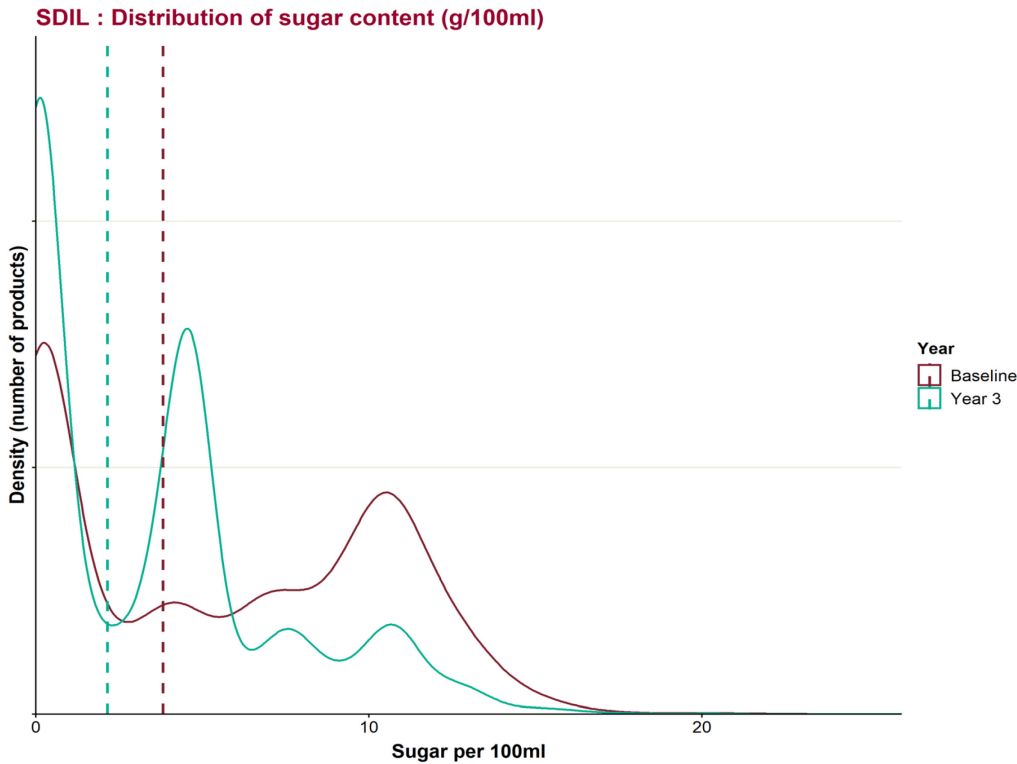


Figure 29 shows how the distribution of products purchased by their sugar content has changed over time. The curves show the number of products sold by their total sugar content per 100ml for baseline (2015) and year 3 (2019), and the vertical lines show the sales weighted average sugar content for the same time periods.

The general shift in the distribution to the left between 2015 and 2019 indicate that drinks being purchased are on average lower in total sugar per 100ml in year 3 than they were in the baseline year.

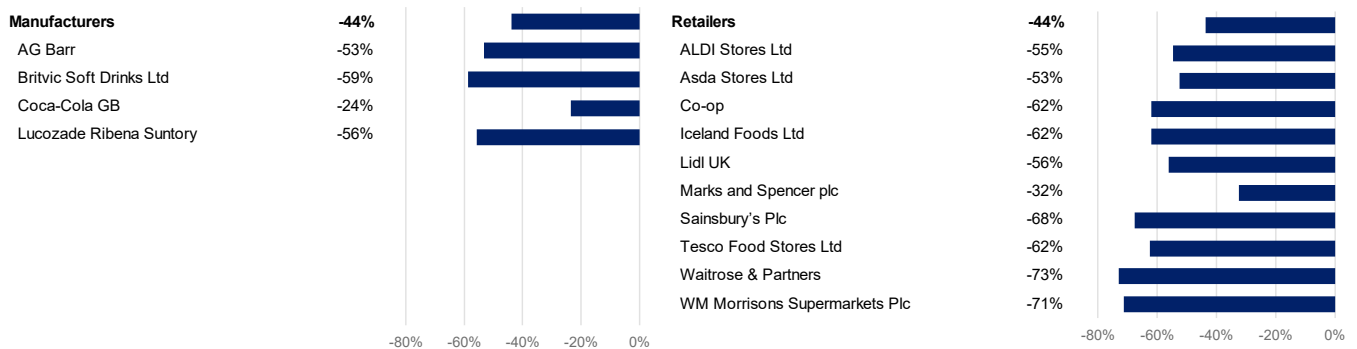
Figure 29: Number of drinks subject to the Soft Drinks Industry Levy purchased by total sugar per 100ml for baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Note: The lines on this chart are a smoothed line of best fit through the underlying data points which allow the general direction of change to be seen clearly. Therefore, the number of products for a particular sugar content per 100ml is an approximation rather than the exact number. In particular, there are steeper drops than this line indicates close to the sugar content levels where the levy increases.

Figure 30 shows a comparison between baseline (2015) and year 3 (2019) for the sales weighted average total sugar per 100ml at business level for drinks subject to the SDIL. While there is no comparable reduction ambition for soft drinks as there is for categories in the sugar reduction programme, all of the top selling brands have shown a decrease in their sales weighted average sugar content per 100ml (where figures are available) and many have reduced this by more than 60% (Appendix Table 2).

Figure 30: Changes in sales weighted average total sugar per 100ml of drinks subject to the Soft Drinks Industry Levy by business between baseline (2015) and year 3 (2019) for retailers and manufacturers



Note: The overall percentage change is a combined figure for manufacturers and retailers.

Note: Cott Beverages Ltd are now owned by Refresco Beverages UK Ltd. This is not reflected in the data above

Eating out of home sector

Although data for the eating out of home sector are more limited, it is possible to look at changes in sugar and calories between year 1 (2017) and year 3 (2019) and the distribution of products and sales by the different sugar levy bands for drinks covered by the SDIL. However, comparisons should be treated with caution as there are a different number of products analysed in each year (more details are available in Table 10).

The main findings are:

- the simple average total sugar content fell from 5.8g per 100ml in year 1 to 3.6g per 100ml in year 3 (down 38.5%)
- the simple average calorie content for products likely to be consumed on a single occasion fell from 95 kcals to 59 kcals, which is a fall of 37.7%
- the equivalent year 3 simple averages for retailers and manufacturer branded products are 3.5g per 100ml and 66 kcals for products likely to be consumed on a single occasion (Table 7 and 10)

It is not possible to compare the level of sales (expressed as servings) in the eating out of home sector between 2017 and 2019 as they are based on a different number of products; 220 products in 2017 and 108 products in 2018. Therefore, the fall in the number of servings would be due to data for less products being collected rather than a real decrease in servings.

Retailers and manufacturer branded products – analysis by socio-economic group

This section looks at changes in the sales of products subject to the SDIL by socio-economic group of households for retailers and manufacturer branded products. The groups considered are:

- A: higher managerial, administrative and professional workers
- B: intermediate managerial, administrative and professional workers
- C1: supervisory, clerical and junior managerial, administrative and professional workers
- C2: skilled manual workers
- D: semi-skilled and unskilled manual workers
- E: people on long term state benefits, casual and lowest grade workers, unemployed with state benefits only

The Kantar FMCG data assigns each household to a group based on the head of the household. Groups A and B are combined in the dataset.

Group E is quite different to the other groups in terms of the number of people in the household and the age of the main shopper. This group made up only 11.5% of households in the 2019 dataset. In year 3, 48% of the main shoppers in Group E were retired compared with 28% for the dataset as a whole. Group E had more single person households (55%) compared with 31% for all the groups combined, and fewer families²⁴ (11% of the households in the group) compared with 28% for all the groups combined.

The analyses presented here do not take into account differences in household structure and how this may be influencing the findings seen by socio-economic group. In addition, the analyses do not consider price changes and how these could affect the results seen. For these reasons, conclusions cannot be drawn on the independent effects of the SDIL on different socio-economic groups.

Figure 31 shows the percentage change in total volume sales of drinks that are subject to the SDIL by socio-economic group, and the change in the total sugar in those drinks between baseline (2015) and year 3 (2019).

It shows that:

- overall there has been an increase of 14.9% in sales of all soft drinks included in the SDIL analysis, but a reduction in the total sugar sales from those drinks of 35.4%, reflecting the shift in sales towards lower sugar drinks

²⁴ A family is defined as a household containing children aged below 17 years old.

- all groups have shown an increase in volume of drinks purchased and a reduction in sugar purchased, but there are some differences by socio-economic group
- the largest increase in sales was for Group E (up 20.5%), with groups C1 (up 18.1%) and AB (up 15.9%) also increasing by similar amounts
- there has been an increase in the total drinks purchased per household and a reduction in the total sugar purchased per household, across all socio-economic groups; the reduction in total sugar is largest in Group C2 (38.5%) and then is similar across all remaining socio-economic groups (between 32.7% and 35.1% reduction)
- groups AB, C1 and C2, which contain over three-quarters of the families in the dataset, had increases in total sales of 15.9%, 18.1% and 9.0% respectively, and their decreases in total sugar purchased were 35.1%, 34.2% and 38.5% respectively

Figure 31: Change in total volume sales (litres) of drinks subject to the Soft Drinks Industry Levy and change in total sugar content of those drinks by socio-economic group between baseline year (2015) and year 3 (2019) for retailers and manufacturer branded products

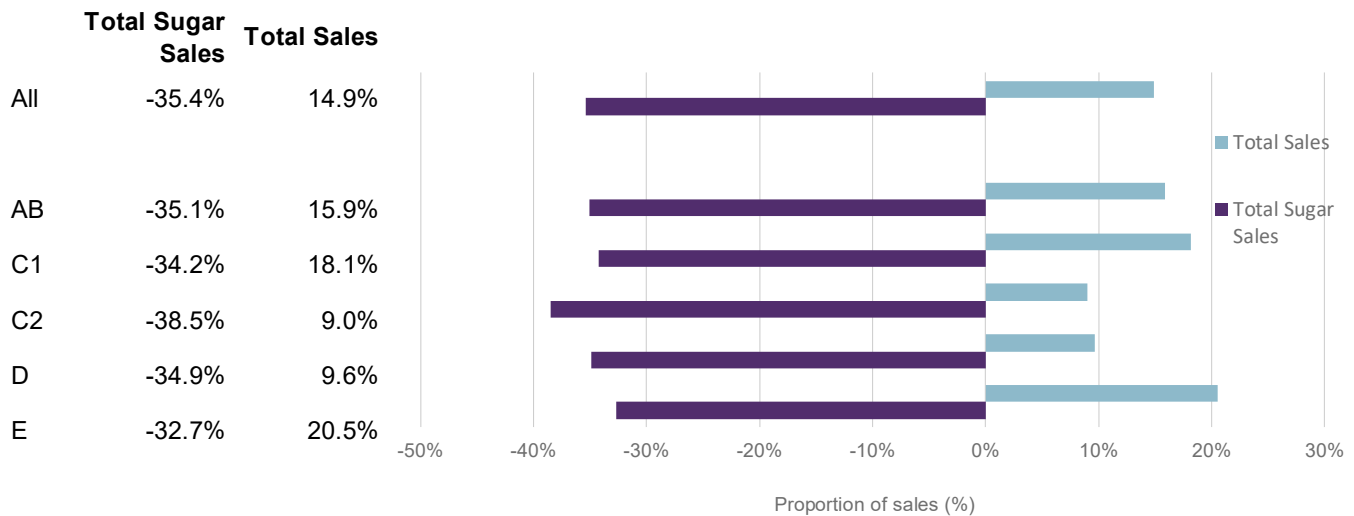
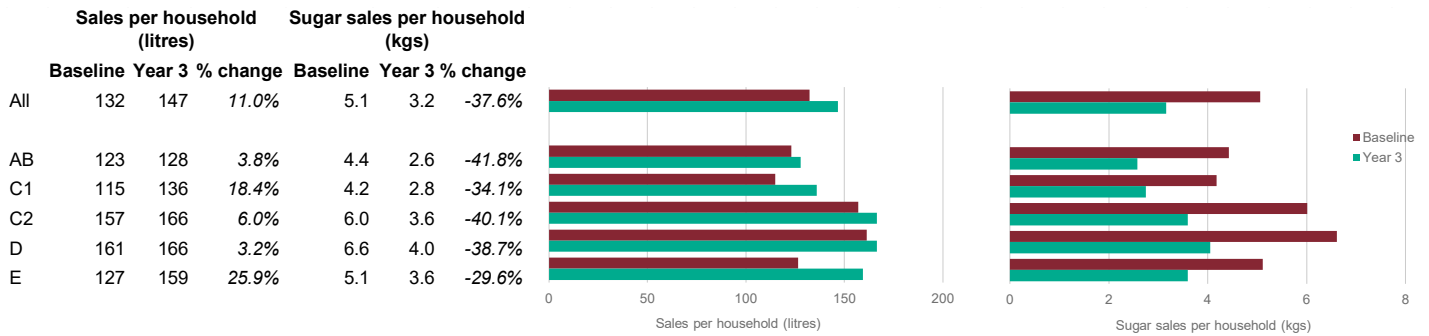


Figure 32 shows the total purchases of drinks subject to the SDIL and the total sugar purchased from these drinks, per household by socio-economic group.

It shows that:

- there has been an increase in the total drinks purchased per household and a reduction in the total sugar purchased per household, across all socio-economic groups; however, households in group E had the lowest reduction of all groups (29.6% compared with 37.6% overall)
- sugar purchases per household in year 3 in groups C2 (3.6kg), D (4.0kg) and E (3.6kg) are now similar

Figure 32: Total volume sales (litres) of drinks subject to the Soft Drinks Industry Levy and change in total sugar sales from those drinks by socio-economic group between baseline year (2015) and year 3 (2019), for retailers and manufacturer branded products



Figures 33 and 34 show the sales weighted average total sugar content per 100g both overall and at product category level for baseline (2015) and year 3 (2019), and the change between this period.

It can be seen for retailers and manufacturers that:

- in both baseline and year 3, the drinks purchased by those in the lower socio-economic groups had a slightly higher average sugar content than the drinks purchased by those in the higher socio-economic groups
- all socio-economic groups have shown a reduction in sales weighted average total sugar content per 100ml by approximately the same amount across all groups (Table 7)

Figure 33: Sales weighted average total sugar (g/100ml) of drinks subject to the Soft Drinks Industry Levy by socio-economic group in baseline year (2015) and year 3 (2019) for retailers and manufacturer branded products

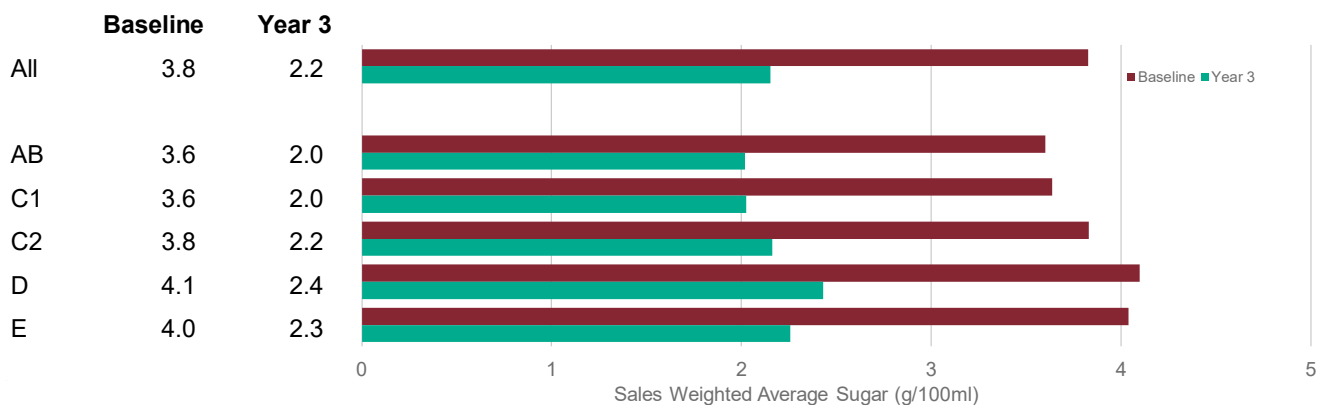


Figure 34: Percentage change in sales weighted average total sugar (g/100ml) of drinks subject to the Soft Drinks Industry Levy by socio-economic group between baseline (2015) and year 3 (2019) for retailers and manufacturer branded products

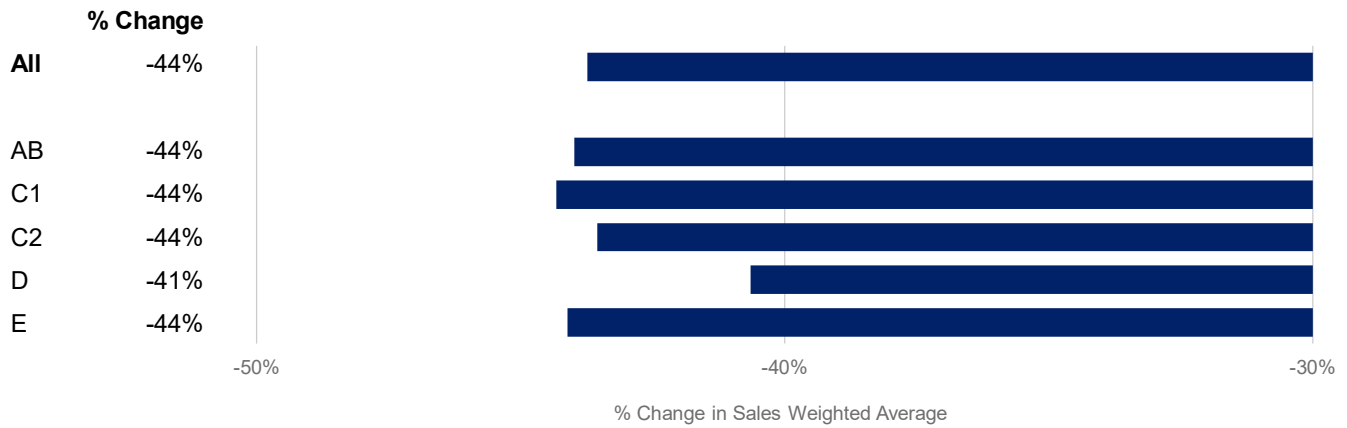
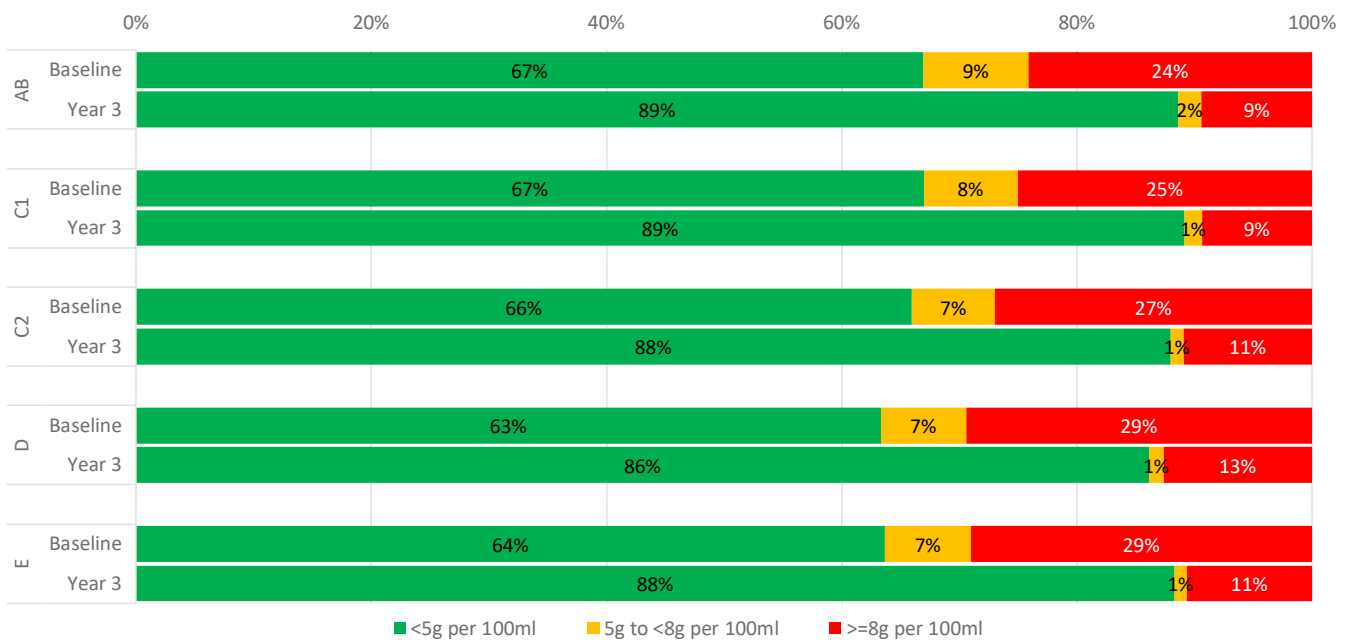


Figure 35 shows the sales in litres of products subject to the SDIL for the baseline year (2015) and year 3 (2019) for retailers and manufacturer branded products by the different taxation levels.

It can be seen that:

- there has been an increase in the proportion of sales with no levy attached (<5g per 100ml) for all socio-economic groups
- the proportion of drinks purchased that have no levy attached is similar across the groups (Table 7)

Figure 35: Proportion of sales of drinks subject to the Soft Drinks Industry Levy by total sugar content per 100ml by socio-economic group in baseline (2015) and year 3 (2019) for retailers and manufacturer branded products



Conclusions and next steps

The results presented in this report give a detailed assessment of the third year of progress for the food categories included in the programme. Also included is an assessment of the first year of progress made by industry towards the ambitions set for unsweetened juice and sweetened milk based drinks.

For retailers and manufacturer branded products, overall progress achieved is comparable to previous annual reports. There has been progress in some, but not all, food categories. Sustained progress in sugar reduction has been seen for breakfast cereals (down 13.3%) and yogurt and fromage frais (down 12.9%). However, as described previously, these reductions are not being fully realised in the programme overall. This is due to a reduction in the proportion of total sales from these lower sugar categories and increases in sales in higher sugar categories such as chocolate confectionery (which is reporting hardly any change in total sugar per 100g).

Overall these changes have resulted in more sugar from these products now appearing in shopping baskets than was the case in 2015. Given that some categories are showing hardly any progress in product reformulation accompanied by increasing volume sales (up by 16.3% for chocolate confectionery), it is likely that further action will be needed to drive change and meet the ambition. This includes limiting the promotion and advertising of higher sugar foods, as set out in the government's strategy paper 'Tackling obesity: empowering adults and children to live healthier lives'^{iv}.

For the eating out of home sector, there has been hardly any change in the simple average sugar content since the baseline of 2017. Comparisons for this sector between different years of the programme should be treated with caution due to the differing number and profile of products included in each dataset. The analysis shows a reduction of 9.7% in the calories likely to be consumed on a single occasion suggesting that, for the products included in the current analysis, this sector has focused more on reducing portion size than the sugar content of products. However, the simple average calories per single serve remains higher than for retailers and manufacturer branded products across all categories, apart from chocolate confectionery.

Progress achieved by retailers and manufacturers at brand and product level is mixed. Some businesses are making progress whilst others are showing little or no change, and some brands are showing increases in their sales weighted average for both sugar and calorie content. Data suggests that overall, retailers branded products have changed to a greater extent than manufacturer branded products (a reduction of 4.6% compared to 1.7% in sales weighted average total sugar per 100g).

The first assessment of sugar reduction in juice and milk based drinks shows some positive progress. For milk based drinks there has been progress against the interim sugar reduction ambition. Progress has also been seen for juices where there is more limited scope for sugar reduction. Although there is more work to do for some categories, for example in milk based drinks in the eating out of home sector, this is an encouraging start towards meeting the ambitions for the programme.

The sugar levels of soft drinks subject to the SDIL have continued to fall. The reductions have been much larger when compared with the food categories in the sugar reduction programme and have been achieved despite an overall increase in sales of soft drinks. It should be noted, however, that reducing sugar in drinks is more straightforward than it is for some food categories because sugar generally does not provide functionality beyond taste to drinks (that is, it does not often contribute to colour or structure).

The analysis of retailers and manufacturer branded product purchases shows that, between 2015 and 2019, patterns of purchases of drinks subject to the SDIL have changed across all socio-economic groups. All groups purchased fewer high sugar drinks and more lower sugar drinks in 2019 than in 2015 for consumption in the home. This change in the balance of drinks purchased has resulted in all socio-economic groups purchasing less sugar from drinks subject to the SDIL.

From this analysis, conclusions cannot be drawn on the extent to which these changes are caused by the levy as this analysis does not take into account other factors or trends that could be important in determining patterns of drink purchases, including price changes.

The analysis by socio-economic group presented in the current report broadly fits with time trend analysis from the National Diet and Nutrition Survey (NDNS) which shows a downward trend in children's consumption of sugar-sweetened soft drinks between 2008/09 and 2016/17. Changes for adults are in the same direction but less marked.

Although consumption patterns have not been assessed in this report (only purchases), if the findings translate into reduced sugar consumption from drinks, other dietary components remain unchanged and these trends are sustained over time, then all socio-economic groups are likely to accrue the health benefits linked to lower levels of sugar in the diet^{xiii}.

There are a number of limitations to the data and analysis presented in this report, which have been described elsewhere.

Monitoring of sugar reformulation programme using other data sources

Changes in nutrient intakes and sources of sugar in the diet will also continue to be monitored via other surveys and datasets. The most recently published results from the NDNS^{xiv} showed that free sugars intake as a percentage of energy fell in children between 2008/09 and 2016/17 by 2.4 to 3.5 percentage points in each age group²⁵, and by 1.2 percentage points in adults. However, intakes remained at least double the maximum recommendation of no more than 5% of total energy over the whole period.

Monitoring of the prevalence of obesity in both children and adults takes place regularly through the National Child Measurement Programme^{xv} (NCMP) and Health Survey for England^{xvi} (HSE).

It is not expected that changes will be seen in these data for some time as there is likely to be a significant lag between reductions in intakes and any change in obesity levels. The fieldwork for the NDNS, NCMP and the HSE monitoring programmes has been impacted by the Coronavirus (COVID-19) pandemic.

Next steps

Transparent monitoring of the sugar reduction programme, and further expert advice on the potential levers to address excess sugar consumption, will continue to be provided to government.

The next progress report, due in 2021, will provide a fourth annual assessment of progress by all sectors of industry towards achieving the 20% reduction ambition for the food categories included in the programme. This report will also include a second assessment of progress made by industry towards the ambitions set for juice and milk based drinks. Consideration is being given to the measurement period and timing of data for this report due to changes in food purchases caused by Coronavirus (COVID-19).

We anticipate that businesses will be invited to submit case studies ahead of the publication of the next progress report. These highlight specific reformulation activity carried out which may not have been captured in the datasets used to assess progress, but which could be used as evidence to demonstrate activity towards the 20% sugar reduction ambition (and 5% for juice based drinks). This will apply to all categories included in the sugar reduction programme – food and juice and milk based drinks – and to the drinks subject to the SDIL.

In September 2020 following continued commitment from government to tackling obesity, PHE published calorie reduction guidelines^{xvii} for industry to achieve by 2024.

²⁵ Child year groups used in NDNS reporting are 1½ to 3 years, 4 to 10 years and 11 to 18 years.

At the same time, PHE also published a second progress report^{xviii} towards the 2017 salt targets and the latest set of revised salt targets^x for industry to achieve by 2024.

Next steps for the wider reformulation programme, during 2020, include the publication of guidelines to improve the nutrient content of commercial baby foods and drinks. There will continue to be engagement with stakeholders on the reduction and reformulation programme where appropriate.

Appendix 1: Guide to the category tables and charts

A range of statistical tables and charts highlighting progress between the baseline year and 2019 are provided for each of the categories included in the sugar reduction programme. These are available in the supplementary excel tables. This Appendix explains how these tables have been created and how to interpret them. See Appendix 2 for further information about the data sources and methodology used.

For all tables, percentage changes have been calculated on unrounded figures.

Main tables for retailers and manufacturer branded products

Table 1: Simple average and sales weighted average total sugar content (g/100g) for retailers and manufacturer branded products

This table provides the simple average and sales weighted average total sugar content per 100g. Figures are given for baseline (2015) and year 3 (2019) as well as the percentage change for both metrics over this period.

Table 2: Simple average and sales weighted average total sugar content (g/100g) by retailers and manufacturer branded products

As Table 1, but with separate analysis of progress for retailers and manufacturers. The combined retailers and manufacturer figures from Table 1 are also included for comparison purposes.

Table 3: Simple average and sales weighted average calories in products consumed on a single occasion (single serve) for retailers and manufacturer branded products

This table provides simple average and sales weighted average calories per single serve portion for baseline (2015) and year 3 (2019), as well as the percentage change for both metrics over this period.

Table 4: Simple average and sales weighted average calories in products consumed on a single occasion (single serve) for retailers and manufacturer branded products

As Table 3, but with separate analysis of progress for retailers and manufacturers. The combined retailers and manufacturer figures from Table 3 are also included for comparison purposes.

Table 5: Total volume sales and total sugar sales for retailers and manufacturer branded products

This table provides total volume sales and total sugar sales in tonnes for baseline (2015) and year 3 (2019). It also shows the proportion of sales each category contributes to the overall level. The percentage change in total volume and total sugar sales is given over this period along with the percentage point change in the contribution each category makes to the total.

Table 6: Total volume sales and total sugar sales by retailers and manufacturer branded products

As Table 5, but with separate analysis for retailers and manufacturers. Also shown is the contribution of total category sales by retailers and manufacturers. The combined retailers and manufacturer figures from Table 5 are also included for comparison purposes.

Table 7: Sales (litres) and sales weighted average total sugar content (g/100ml) and sales weighted average single serve calories per portion (kcal) for drinks covered by Soft Drinks Industry Levy (SDIL) for retailers and manufacturer branded products by socio-economic group

This table provides information on sales in litres, sales weighted average total sugar content per 100ml, and calories per single serve portion for products covered by the SDIL by socio-economic group. Figures are given for baseline (2015) and year 3 (2019) as well as the percentage change for these metrics over this period.

Main tables for the eating out of home sector

Table 8: Simple average total sugar content (g/100g) for the eating out of home sector

This table provides the simple average total sugar content per 100g. Figures are given for baseline (2017) and year 3 (2019) as well as the percentage change for this metric over this period.

Table 9: Simple average calories in products consumed on a single occasion (single serve) for the eating out of home sector

This table provides simple average calories per single serve portion. Figures are given for baseline (2017) and year 3 (2019) as well as the percentage change for this metric over this period. It also includes the equivalent simple averages for retailers and manufacturer branded products.

Table 10: Simple average total sugar content (g/100ml) and simple average single serve calories per portion (kcal) for drinks covered by Soft Drinks Industry Levy (SDIL) for the eating out of home sector

This table provides information on the simple average total sugar content per 100ml and single serve calories per portion for products covered by the SDIL for the eating out of home sector. Figures are given for baseline (2017) and year 3 (2019) as well as the percentage change for both metrics over this period. It also includes the equivalent simple averages for retailers and manufacturer branded products.

Table 11: Simple average total sugar content (g/100g) and simple average single serve calories per portion (kcal) for products consumed on a single occasion (single serve) for contract caterers in the eating out of home sector

This table provides the simple average total sugar content per 100g and single serve calories per portion for catering companies in the eating out of home sector for year 3 (2019). No comparison is made to baseline (2017) as the number of products for which data was collected in each year is very different.

Appendix tables for retailers and manufacturers

Appendix Table 1: Sales weighted average total sugar content (g/100g) and sales weighted average single serve calories per portion (kcal) for retailers and manufacturer branded products

Appendix Table 1 provides information on the following metrics by category for baseline (2015), year 1 (2017), year 2 (2018) and year 3 (2019) and the percentage change over this period:

Sales weighted average total sugar (g/100g)

- number of products with real nutrition information
- proportion of all products that have real nutrition information (% of all products in category)
- proportion of volume sales with real nutrition information (% of all sales in category)

- volume sales by category as a proportion of all sales (%)
- sales weighted average total sugar content (g/100g)

Calories in products likely to be consumed on a single occasion (single serve)

- number of products with real nutrition information
- proportion of all products that have real nutrition information (% of all products in category)
- proportion of volume sales with real nutrition information (% of all sales in category)
- volume sales by category as a proportion of all sales (%)
- sales weighted average calories per portion (for single serve products - kcal)

Appendix Table 2: Percentage change in sales weighted average total sugar for the top 10 manufacturers and top 10 retailers based on total sugar sales in the category

Appendix Table 2 provides information on the change in sales weighted average total sugar 100g between baseline (2015) and year 3 (2019) for the top 10 selling manufacturers and retailers defined by their total sugar sales.

Manufacturers and retailers are listed in alphabetical order in each category. They are not listed by volume of sugar sales. The list includes those who account for the top 80% of sugar sales in the category. For manufacturers, any businesses which did not have at least 1% of sales in both 2015 and 2019 were removed. A maximum of 10 manufacturers and 10 retailers are shown.

Aldi and Lidl brands and all cakes and morning goods, are compared with a baseline of 2017 rather than 2015 as their data for the earlier year are not robust.

Appendix Table 3: Percentage change in sales weighted average calories for products likely to be consumed on a single occasion for the top 10 manufacturers and top 10 retailers based on total servings in the category

Appendix Table 3 provides information on the change in sales weighted average calories between baseline (2015) and year 3 (2019) for the top 10 selling manufacturers and retailers defined by their total sales.

As with Appendix Table 2, manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of sugar sales. The list includes those who account for the top 80% of sugar sales in the category. For manufacturers, any businesses which did not have at least 1% of sales in 2015 and 2019 were removed. A maximum of 10 manufacturers and 10 retailers are shown.

Aldi and Lidl brands and all cakes and morning goods, are compared with a baseline of 2017 rather than 2015 as their data for the earlier year are not robust.

Appendix Table 4: Percentage change in sales weighted average of nutrients per 100g for top 20 manufacturer and retailer brands based on total sugar sales in a category

Appendix Table 4 provides information on the change between baseline (2015) and year 3 (2019) for the top 20 selling manufacturer retailer brands defined by their total sugar sales. Brands are listed in alphabetical order within each category.

Aldi and Lidl brands, and all cakes and morning goods, are compared with a baseline of 2017 rather than 2015 as their data for the earlier year are not robust.

The metrics shown are the percentage change for:

- sugar (%)
- calories (%)
- saturated fat (%)
- salt (%)

Appendix Table 5: Calories in products consumed on a single occasion (single serve) for the top 30 products by total servings in a category

Appendix Table 5 provides information on the change in calories per single serve portion between baseline (2015) and year 3 (2019) for the top 30 selling manufacturer and retailer products defined by sales in servings.

Aldi and Lidl brands, and all cakes and morning goods, are compared with a baseline of 2017 rather than 2015 as their data for the earlier year are not robust.

Product density curves

This shows the product density curves for each category for total sugar per 100g and calories for products likely to be consumed on a single occasion. The curve is a smoothed line of best fit through the underlying data points which allow the general direction of change to be seen clearly. Therefore, the number of products for a particular content of sugar is an approximation rather than the exact number.

Appendix tables for the eating out of home sector

Appendix Table 6: Percentage change in simple average total sugar (g) and calories per portion (kcal) for the top eating out of home businesses based on total sugar sales in the category

Appendix Table 6 provides information on the change in the simple average total sugar per 100g, between year 1 (2017) and year 3 (2019), for the top 10 selling businesses defined by their total sugar sales for brands with nutrition data.

Tables for juice and milk based drinks

Appendix Table 7: Simple average and sales weighted average sugar content per 100ml of milk based drink and juice categories for retailers and manufacturer branded products

This table provides the simple average and sales weighted average total sugar content per 100ml for baseline (2017) and year 1 (2019). Figures are given for baseline (2017) and year 1 (2019) as well as the percentage change for both metrics over this period. The percentage change is based on added sugar rather than total sugar for the milk based drink categories.

Appendix Table 8: Simple average and sales weighted average calories per serving of milk based drink and juice categories for retailers and manufacturer branded products

This table provides the simple average and sales weighted average calories per serving for baseline (2017) and year 1 (2019). Figures are given for baseline and year 1 as well as the percentage change for both metrics over this period.

Appendix Table 9: Percentage change in simple average or sales weighted average sugar per 100ml value for the top 10 manufacturers and retailers based on total sugar sales in the category

This table provides information on the change in simple average or sales weighted average total sugar content per 100ml between baseline (2017) and year 1 (2019) for the top 10 selling manufacturer and retailer brands defined by their total sugar sales. The percentage change is based on added sugar rather than total sugar for the milk based drink categories. Brands are listed in alphabetical order within each category.

Appendix Table 10: Proportion of products meeting the maximum calories per serving guideline in year 1 (2019) for the top 10 manufacturers and retailers based on total servings sold in the category

This table provides information on the number and proportion of products meeting the maximum calories per portion guideline in year 1 (2019) for the top 10 manufacturers and retailers based on total servings sold. Brands are listed in alphabetical order within each category.

Appendix Table 11: Simple average sugar content per 100ml of milk based drink and juice categories in the eating out of home sector

This table provides the simple average total sugar content per 100ml for baseline (2017) and year 1 (2019) for the eating out of home sector. Figures are given for baseline and year 1 as well as the percentage change for this metric over this period. The percentage change is based on added sugar rather than total sugar for the milk based drink categories.

Appendix Table 12: Simple average calories per serving of milk based drink and juice categories in the eating out of home sector

This table provides the simple average calories per serving for baseline (2017) and year 1 (2019) for the eating out of home sector. Figures are given for baseline and year 1 as well as the percentage change for this metric over this period.

Appendix Table 13: Percentage change in simple average total sugar per 100ml and proportion meeting maximum calories per portion guideline in the top eating out of home sector businesses based on total sugar sales for milk based drink and juice categories.

This table provides information on the change between baseline (2017) and year 1 (2019) for the top eating out of home businesses defined by their total sugar sales for milk based drinks and juice products. Businesses are listed in alphabetical order within each category.

The metrics shown are the simple average sugar content grams per 100ml, percentage change in simple average sugar content (based on added sugar rather than total sugar for the milk based drink category), and the proportion of products at or below the maximum calories per portion guideline.

Appendix 2: Details of the data sources and methods used to assess progress of the sugar reduction programme

Analysis has been undertaken to examine trends in the sugar and calorie content of products in the food categories included in the sugar reduction programme. For retailers and manufacturers the comparison is between baseline (2015) and year 3 (2019), and for the eating out of home sector it is between year 1 (2017) and year 3 (2019).

A list of the food categories included in the programme are:

- biscuits
- breakfast cereals
- cakes
- chocolate confectionery
- ice creams, lollies and sorbets
- morning goods
- puddings
- sweet confectionery
- sweet spreads and sauces
- yogurts and fromage frais

This report contains the first progress report for unsweetened juice and sweetened milk based drinks. For this analysis, the sources of data used are the same as for both the food categories and the Soft Drinks Industry Levy (SDIL), but the baseline year is 2017, and year 1 is the most recent year (2019). There are methodological considerations specific to these drinks described in Appendix 3.

An analysis has also been carried out to assess changes in the sugar content of drinks covered by the SDIL between 2015 and 2019.

Data sources

Retailers and manufacturer branded products

The baseline and year 3 estimates of sugar and calorie content by food group for retailers and manufacturers use data from Kantar FMCG's (formerly Kantar Worldpanel) take home consumer panel. Kantar FMCG is a global market research business which runs a continuous reporting panel of 30,000 households across Great Britain, recording

details of all food and drink purchases brought in to the home, including the volume of sales.

Kantar FMCG's sample of households reflects the demographic makeup of the British population. Demographic targets for the sample are based on region, social class, age of main shopper, household composition and household size. The data collected are weighted to provide a representative picture of total food and drink purchasing in Great Britain over the time period for which data are provided.

The 2019 dataset used for monitoring progress in year 3 of the sugar reduction programme covers the 52 weeks ending 8 September 2019. It includes total volume of sales in kilograms/litres/servings and nutrition data for individual food products per 100g/100ml/serving as well as details of pack size (such as number of products included in multipacks). The baseline dataset covered the 52 weeks ending 31 January 2016.

Kantar FMCG aims to collect all nutrition data from food labels on individual products through the use of fieldworkers, who visit key retail stores and capture the information provided on packaging on a rolling 4 monthly basis. This is an improvement from the data being collected every 6 months in the baseline year. Kantar FMCG also receive nutrition information from third parties; Brandbank on a continuous basis and MySupermarket at intervals throughout the year. The most recent nutrition information from these sources is then used. If no nutrition information for a product was found in 2019 then the most recently collected nutrition information available from a previous year is used. Therefore, if the product has been reformulated since the last time nutrition information was collected then this reformulation will not be captured in the analysis, but it will be included in future reports when the nutrition information is refreshed.

Where Kantar FMCG is able to collect the nutrition data, usually for the majority of products in a category, this is termed 'real' (real and found) data. Where this is not possible, nutrition values are either copied across from similar products in the same brand (for example using a different pack size, known as 'cloned') or an average value for the category or product type is calculated and used instead. This is known as 'imputed' data. For 2019 Kantar FMCG undertook a one-off exercise after the initial collection period had ended to update the nutrition information for some of the cloned data or older nutrition data, focussing particularly on the top sellers in each category.

Only real and cloned data has been used for the analyses in this report which present average nutrition information. This is because an imputed value would not take account of any recent reformulation of a particular product unless there has been wholesale reformulation within the product category. The imputed data is used in the analyses of sales volumes to ensure the total level of sales is reported.

Time periods covered for retailers and manufacturers

For retailers and manufacturers, comparisons are made between the baseline (2015) and year 3 of the programme (2019) where possible. This is the case for most categories and businesses included in the report.

However, there are 3 instances where comparisons are made to a baseline of 2017 rather than 2015.

Data for cakes and morning goods has been gradually improved since the programme began and while limitations with the data for cakes and morning goods remain, the data included in the 2015 dataset for these categories had a substantially greater degree of limitation and so has not been used as the baseline for these categories. Improvements were made to the data for these categories in the 2017 dataset, and further improvements were subsequently made for the 2018 and 2019 datasets. Therefore, it was decided to use 2017 as the baseline period for both these categories. Comparisons with 2017 should still be made with caution, as data were collected for around 50% more products in 2019 than 2017. The 2017 cakes and morning goods data has been used to estimate the data for 2015 in tables that include data for all categories combined so that progress can be measured against a baseline. Therefore, any progress made between 2015 and 2017 for these categories will not be included.

There was no specific collection of nutrition data for Aldi and Lidl in 2015 so comparisons in the appendix tables use 2017 as the baseline for these retailers. However, the 2015 data for these retailers has been used in the calculation of the overall and category level figures in this report as including and excluding these data was shown to have little impact.

Due to an error with how nutrition information was labelled on Häagen-Dazs ice cream, data for 2015 cannot be used. As a result, any comparisons made for this range of products uses the 2017 data as a baseline and comparisons are made against this.

Eating out of home sector

Unlike the retail and manufacturing sectors, there is no single data source that provides both sales and nutrition information for the eating out of home sector. There is currently no legal obligation to provide nutrition information for foods consumed out of the home although many businesses do provide this on their websites, leaflets or menus. The government has announced that, as part of its obesity strategy, calorie labelling for the eating out of home sector will be mandatory.

Sales data for foods in the eating out of home sector

For the baseline data presented for 2015, PHE used data on food purchases collected by NPD from their Consumer Reports on Eating Share Trends (CREST) survey. Following a competitive tender process, the contract for providing sales data for the eating out of home sector for 2017 and subsequent years was awarded to Lumina Intelligence (formerly MCA). Unlike the NPD sales data available for the 2015 baseline analysis, Lumina Intelligence's consumption data (based on the reported number of servings of product consumed²⁶) is provided at individual business level which is invaluable to PHE in its monitoring of the programme. As a result, the 2019 data for the eating out of home sector is compared with data from 2017, as opposed to 2015.

Lumina Intelligence's Eating Out Panel is a monthly tracker of consumer behaviour in relation to the eating out of home sector. Each year there are 72,000 in-depth online interviews conducted, equating to 6,000 per month. The panel is representative of the adult population in the UK in terms of age, gender and region. It is a continuous tracker interviewing respondents every day of the year, but not a continuous set of the same panel members.

The Eating Out Panel interviewees provided:

- frequency of eating and drinking out generally and at different times of the day (breakfast, lunch, dinner and snacking)
- full detail of the most recent eating and drinking out occasions
 - most recent breakfast, lunch and dinner visits within the last 2 weeks and snack visit on the previous day
 - details requested include channel and operator brand, reason for eating out, what was eaten and how much money was spent per head per visit

In addition to providing data from their existing Eating Out Panel, Lumina Intelligence also conduct 2 bespoke surveys which were:

- a nationally representative survey of 5,000 parents in the UK to gather information about children's food and drink consumption in the eating out of home sector
- a survey of 2,000 adults to collect information about drinking in the eating out of home sector on occasions where food is not consumed

All 3 datasets were combined in the data used in this analysis.

²⁶ Note that additions to meals such as extra chips might not be recorded by the panel member.

Nutrition information for the eating out of home sector

Nutrition information for the eating out of home sector has been collected by PHE from businesses and additionally by Lumina Intelligence from company websites. From 2017 a far more comprehensive range of information has been collected, providing a more representative picture of the eating out of home sector compared with 2015. This was further improved upon in 2018 and 2019.

For the majority of products in the eating out of home sector there is no one-to-one mapping between the nutrition data that was collected and purchases by item. For example, a panellist may say that they had an ice cream in a restaurant, but the type of ice cream is not recorded. As the restaurant has several flavours of ice cream, all of which have different nutrition data, it is not possible to accurately match the nutrition data to the actual ice cream purchased. On other occasions nutrition data may not be available for a particular operator but is available for the same type of product at similar operators.

As it is not possible to match purchases and nutrition information at product level, the decision was taken from 2018 to move to reporting simple averages using only the nutrition data provided to PHE by businesses (and additionally by Lumina Intelligence). This ensures that nutrition information is correctly ascribed to products and businesses.

Data cleaning and categorisation

Before any analysis is carried out on either set of data it is cleaned and categorised.

Cleaning the data involves making several checks and adjustments to the nutrition data to ensure that it is as accurate as possible. This process includes checking the nutrition data of a product to see whether it relates to the product as sold or as consumed, decisions around whether to exclude products based on their sugar content and conversion or dilution factors being applied to some foods and drinks (for squashes and cordials for example).

The commercial datasets used from Kantar FMCG and Lumina Intelligence have quality control measures built into their production processes. In addition, PHE has carried out its own quality control checks of all data used and all analyses. These include:

- checking datasets for implausible values, and excluding those from the analysis
- checking the quality of certain variables by cross checking against other variables that show product detail in the datasets, or cross-referencing to other datasets
- specific data checks and questions sent to data suppliers as and when they arise

Products are categorised into one of the sugar reduction categories as described in the table below or classified as a soft drink in scope of the SDIL as set out by HM Treasury^{vi}. Please refer to Appendix 3 for more information on the categorisation of juice and milk based drinks.

Product category	Category description
Biscuits	All types of sweet biscuits; cereal bars and toaster pastries; breakfast biscuits; rice cakes; gluten free sweet biscuits; in-store bakery products.
Breakfast cereals	All breakfast cereals, for example: ready to eat cereals, granola, muesli, porridge oats, instant porridge, and other hot oat cereals.
Cakes	All types of cakes, ambient and chilled, including cake bars and slices.
Chocolate confectionery	Includes chocolate bars, filled bars, assortments, carob, diabetic and low-calorie chocolate and seasonal products.
Ice cream, lollies and sorbets	All types of ice cream, dairy and non-dairy, choc ices, ice cream-based desserts, milk ice lollies, ice lollies; low fat/low calorie ice cream; sorbet; frozen yogurt.
Morning goods	Includes croissants, crumpets, English muffins, pancakes, buns, teacakes, scones, waffles, Danish pastries, fruit loaves and bagels.
Puddings	All types of ambient, chilled and frozen large and individual pies, tarts and flans, cheesecake, gateaux, dairy desserts, sponge and rice puddings and seasonal products such as mince pies.
Sweet confectionery	Includes boiled sweets, gums, pastilles, fudge, chews, mints, rock, liquorice, toffees, chewing gum, sweet popcorn, nougat and halva, seasonal products.
Sweet spreads and sauces	Includes chocolate spread, peanut butter, ice cream and dessert sauces, dessert toppings and compotes, jam type spreads that do not fall under relevant legislation.
Yogurts and fromage frais	Includes all sweetened dairy and dairy alternative yogurt and fromage frais products and all yogurts containing low/non-caloric sweeteners.

At the same time, work has also been undertaken to determine which products can be included in the analysis of calories per single serve products. These products, which are likely to be consumed by an individual on a single occasion, have been identified for each category (except for breakfast cereals and sweet spreads and sauces) to study the distribution of calories per portion. A description of the types of products included in the portion size analysis is provided in the table below. Items sold both individually and in multi-packs have been considered.

Product category	Single serve items
Biscuits	<p>Includes:</p> <ul style="list-style-type: none"> biscuit/cereal bars, including two-finger Kit Kats, Penguin bars, etc mini bags ($\leq 80g$) of biscuits/chocolate mallows/rice cakes large biscuits (for example giant custard cream) and individual cookies up to 80g packets of 3 biscuits (for example short bread, bourbons), toaster pastries <p>Excludes: all products below 10g or above 80g (for example roll packs, packet biscuits, large packs of rice cakes), selection/assortment boxes, boxes of cookies.</p>
Cakes	<p>Includes: single portions/slices of cake products, and single serve items in multipacks</p> <p>Excludes: all products below 10g (for example 'bitesize' products) or above 150g (for example large whole cakes, pies, tarts, Swiss rolls), small whole cakes marketed for sharing occasions.</p>
Chocolate confectionery	<p>Includes:</p> <ul style="list-style-type: none"> individual chocolate bars (sold as single items or part of multi packs) ($\leq 80g$) mini and treat size bags ($\leq 80g$) duo, trio and bar and half chocolate chocolate lollipops single seasonal items ($\leq 80g$) (for example chocolate bunnies, Santa's or eggs) <p>Excludes: all products below 10g or above 80g (for example moulded chocolate bars/slabs, sharing bags), boxes/tins of chocolate, seasonal products sold as multiple miniature items (for example chocolate coins, Christmas tree decorations, advent calendars).</p>
Ice cream, lollies and sorbets	<p>Includes:</p> <ul style="list-style-type: none"> miniature ice creams ice cream in a cone or on a stick lollies, choc ices ice cream or sorbet cups/tubs ($\leq 120g$) <p>Excludes: all products exceeding 120g.</p>
Morning goods	<p>Includes: morning goods sold as single items or single serve items in multipacks</p> <p>Excludes: all products below 10g (for example 'bitesize' products) or above 150g; all pancakes and small waffles (people generally consume more than one); finger buns.</p>
Puddings	<p>Includes: individually wrapped puddings, puddings in multipacks (for example 2 pack sticky toffee puddings)</p> <p>Excludes: all products below 35g (for example 'bitesize' products) or above 200g, patisserie/party selections.</p>
Sweet confectionery	<p>Includes:</p> <ul style="list-style-type: none"> lollipops, tubes and packs of sweets ($\leq 100g$) multipacks where individual items are less than or equal to 100g <p>Excludes: all products below 10g or above 100g, products sold in pellets or pieces, wafers/cones.</p>
Yogurts and fromage frais	<p>Includes: yogurts between 100-200g</p> <p>Excludes: all products below 100g or above 200g.</p>

Analysis

For retailers and manufacturer branded products, 3 metrics have been calculated for each product and category, where possible, using the most recent data. These are: sales weighted averages (SWA) of total sugar content (g/100g); simple averages of the total sugar content of products sold; and calories in products likely to be consumed in a single occasion (single serve). The value for 2019 is then compared with the baseline year (2015 for all categories apart from cakes and morning goods where a 2017 baseline is used, due to poor data quality in 2015) and a percentage change between the years is calculated. This is done for the whole category, as well as for manufacturers and retailers individually. In addition, an estimate has been made of the total tonnes of sugar sold and of how this is split between the different sugar categories included in the programme.

For retailers and manufacturer branded drinks in scope of the SDIL, the SWA and simple average total sugar content and calories in products likely to be consumed on a single occasion have been calculated for each of the different levy categories (less than 5g per 100ml, 5g or more but less than 8g per 100ml and 8g or more per 100ml) and overall for the most recent year of data available. As with the food categories, these have been compared with the 2015 data and a percentage change calculated. In addition, an analysis by socio-economic group has been conducted.

For the eating out of home sector, only the simple average total sugar content and calories per serving for products sold have been calculated. These have been compared with the data available for 2017 (the baseline for the eating out of home sector) and percentage changes have been calculated. The data has been presented alongside the simple average for the retailers and manufacturer branded products to provide some context.

The simple average total sugar content of products sold have also been used to look at the drinks included in the SDIL which are purchased in the eating out of home sector. As for retailers and manufacturer branded products, the 3 different categories of the levy have been presented in addition to the percentage change.

This analysis is broadly the same as for assessing progress in juice and milk based drinks. Please see Appendix 3 for specific considerations relevant to these products.

Several supplementary tables have also been produced. For retailers and manufacturer branded products these include:

- an overview of the category (Appendix Table 1)

- a table looking at the change in SWA total sugar content for those manufacturers and retailers that make up the majority of the market share (80%) for each category (Appendix Table 2)
- an equivalent table for calories for products likely to be consumed on a single occasion (Appendix Table 3)
- the SWA of sugar content and nutrient changes for the top 20 brands (based on total tonnes of sugar sold) by category (Appendix Table 4)
- the average of calories per portion for the top 30 products (based on total servings sold) by category (Appendix Table 5)

For the eating out of home sector, due to the limitations of the data, only 1 supplementary table has been produced. This looks at the change in simple average total sugar content and calories per single serving for the top 10 businesses (based on total tonnes of sugar sold, Appendix Table 6).

Monitoring the change per single serving is more appropriate than monitoring averages expressed in g/100g/ml or calories per 100g/ml, because averages per 100g/ml will not pick up any reformulation work which was solely based on reducing product size.

This is best explained by using an example. Consider a product which weighs 50g and contains 10g of total sugar and 200 kcals, equating to a sugar and calorie content per 100g of 20g and 400 kcals respectively. If it was reformulated solely by reducing the product size to 40g and reducing the sugar and energy content proportionately to 8g of sugar and 160 kcals, then the averages per 100g remain at 20g of sugar and 400 kcals so it would appear as if no progress had been made. This change, however, would be picked up in the analysis of calories per single serve portion.

Product category-specific considerations and exceptions

Breakfast cereals and sweet spreads and sauces

Both categories have been excluded from the analysis of calories per single serve. This is because no standard portion sizes have been set for these categories, as consumers take multiple servings from individual packs and it is not possible to measure single portions from these.

Cakes and morning goods

Volume of sales of cakes and morning goods in the Kantar FMCG dataset are generally presented in terms of portions or servings and information on portion size is not routinely available for many products. To estimate sugar content (g/100g) for many products in these categories the portion size is needed and must be collected through fieldwork in retail stores. Kantar FMCG conducted these exercises in 2017, 2018 and

2019. In 2019, a particular emphasis was placed on collecting the weights of more seasonal products. Cake mixes have been excluded from the analysis as nutrition information is predominantly provided 'as sold', which skews sugar content in the category towards the higher end.

Information on the difficulties associated with collecting data on cakes and morning goods was mentioned previously and an explanation given for why 2019 data in this category is compared with 2017 as the baseline.

Ice creams, lollies and sorbets

Analysing the nutrient data for ice creams, lollies and sorbets is more problematic than it is for some other categories covered by the programme. This is because the nutrition information given on pack for these products can be expressed as either grams of total sugar per 100 ml or grams of total sugar per 100g, rather than always being stated as grams of total sugar per 100g (as it is for the other categories). Some businesses may add air to their products which makes the total sugar content lower when expressed per 100ml than per 100g. Therefore, an adjustment needs to be made to ensure comparisons are on a like-for-like basis.

The analysis included for ice creams, lollies and sorbets in the year 1 progress report was based on the year 1 (2017) dataset and used conversion factors to change any on pack nutrition information per 100ml to per 100g. The conversion factors went some way to accommodate the different types of ice cream by using different factors for soft scoop or premium ice cream for example, but there were some concerns expressed from stakeholders about the accuracy of this process.

This process was modified for the year 2 report. The nutrition information was used as provided on pack regardless of whether it was expressed per 100g or per 100ml. While this was a more simplistic method it did allow the sugar content of ice cream, lollies and sorbets to be tracked over time as long as the ratio of products where this information is in ml or grams stayed roughly constant over time.

However, in the 2018 (year 2) Kantar FMCG dataset there were more products with nutrition information expressed in millilitres (around 30% of all ice cream products) than there were in 2015 (around 10%). This was primarily due to the data provider changing from using nutrition information per 100g as the default if it was provided in both units in 2015 and 2017 to using nutrition information per 100ml as the default in 2018.

If this was not adjusted for it would give a misleading comparison and may lead to an artificial decrease in sugar content in products over the analysis period, which would reflect the shift to more products having their nutrition information expressed as grams of total sugar per 100ml, rather than any real reduction in sugar content.

This change was adjusted for by scaling up the influence of the nutrition information expressed per 100ml in 2015 and 2017 (by weighting) and scaling down the influence of the information expressed per 100g for the same years, so it matches as much as possible the distribution of products in 2018.

For 2019 (year 3) this process has evolved further to help increase the accuracy of reporting in this category. This has been achieved by:

1. Scaling factors (proportion of grams (g) vs millilitres (ml) products in 2019 used to weight previous year's data to enable comparability):
 - a. In the year 2 report, these were only created at an overall level for sugar and calories and applied to all data at a manufacturer/retailer and business level when presenting more granular data.
 - b. In the year 3 report, separate scaling factors are created for manufacturer/retailer and business level tables to ensure sales are not falsely inflated/deflated at a more granular level.
2. Applying scaling factors to simple average calculations:
 - a. In the year 2 report, simple averages were calculated by dividing the sum of the ice cream products sugar per 100g value by the sum of the scaling factors derived from the proportion of ice cream sales in g vs ml, that is, the calculation was using sales data which should only be adjusted for when calculating SWA not simple average. This approach was aiming to adjust the simple average calculations to reflect the changing proportion of g vs ml products throughout the years, but rather than adjusting for the count of products in g vs ml, instead adjusted for the sales of these products.
 - b. In the year 3 report, a count-specific weight (created at an overall, manufacturer vs retailer, and business level as per point 1 above) has been created for the simple average calculations, based on the ratio of the *count* (not sales) of ice creams products measured per 100g vs per 100ml, and the following weighted mean formula is used to calculate the simple average:
Weighted mean = $\text{sum}(X * \text{weight}) / \text{sum}(\text{weight})$.
3. Conversion factors (single serve analysis specific):
 - a. In the year 2 report, to calculate per serving information of ice cream products, per 100g/ml nutrition information and pack weight was used and the standard approach used for all other categories. However, due to ice creams being measured in both g and ml a problem would arise if a product's nutrition information was in g, but its pack size was in ml or vice versa, and per serving information would be calculated using a mix of units which resulted in less accurate per serving values.
 - b. In the year 3 report, to reduce the number of products with a g vs ml discrepancy, the first step was to attempt to use the pack weight information in a product's description field as this would sometimes contain the pack weight value in both g and ml. Then to enable products with nutrition information in g and pack size in ml or vice versa to be used in the single serve analysis and have more accurate single serve values, conversion factors would have been applied to the per 100 nutrition information to convert from g to ml or ml to g ensuring the nutrition information unit matched the pack weight unit.

Conversion factors were derived based on the ice cream sub-category defined by Kantar, and from previously used conversion factors produced for the year 1 report in addition with cross-checking products online to ensure accuracy.

A further issue for ice cream is that there was an error with how nutrition information was labelled on Häagen-Dazs ice cream in 2015 and therefore data for this brand from that year cannot be used. As a result, any comparisons made for this range of products uses the 2017 data as a baseline and comparisons are made against this.

Puddings

Quick-set jellies, powdered desserts and custards have been excluded from the analysis for the pudding category because nutrition information is predominantly provided 'as sold', which skews sugar content in the category towards the higher end. Some products from this category are also part of the weighing exercise Kantar FMCG undertake each year (for more information on this please see the sections on cakes and morning goods). It should also be noted that the weighing exercise for 2019 included more seasonal products meaning that mince pies were included in the analysis for the first time. This has had an impact on results in this category and these have been noted throughout the report.

A small number of products in this category are also part of the weighing exercise for cakes and morning goods which was explained earlier. Therefore, the business level analyses presented in appendix tables 2 and 3 for puddings also contains an additional column to show the results excluding mince pies so users of this report can make a more valid comparison.

Soft Drinks Industry Levy

Where nutrition information for dilutable fruit squashes has been provided 'as sold' (assumed for squash products with more than 12.5g sugar per 100g), this has been converted to nutrition information 'as consumed' by dividing by a factor of 5 to account for dilution. The cut-off of 12.5g and dilution factor were agreed by examining the nutrition information and dilution instructions for a sample of products online.

Sweet confectionery

Sweet confectionery has been excluded from analysis of the eating out of home sector due to the data between the 2 years not being comparable. This is because the nutrition information collected in 2017 and 2019 was from different business sectors which resulted in misleading results for the category as a whole.

Yogurts and fromage frais

Some errors are known to be present in the nutrition information for certain products such as implausible sugar content. Yogurts and fromage frais is the only category where a minimum sugar content of 3.8g per 100g was agreed due to the naturally occurring lactose present; all products with a sugar content lower than this have been excluded from the analysis. Natural yogurts and unsweetened yogurts are excluded from the category and, therefore also excluded from the analysis. In this progress report, sugar content, sugar SWAs and simple averages for yogurts are presented without any adjustment for lactose.

This current report provides an assessment of the changes in milk based drinks for the first time. This also includes an analysis of changes in fermented (yogurt) drinks, which are a sub set of the yogurt and fromage frais category. Please refer to Appendix 3 for further information.

Aldi and Lidl

As reported in the year 1 progress report, it was not possible to report on progress for Aldi and Lidl due to lack of baseline data. Data is now available for these retailers for 2017 and 2019 and therefore progress reported for these retailers and their products will compare year 1 (2017) with year 3 (2019).

Data limitations

Retailers and manufacturer data

The data received from Kantar FMCG is based on a survey sample. Consequently, there is a degree of uncertainty present in the results calculated but Kantar FMCG calculate confidence intervals around the estimates.

Kantar FMCG's fieldworkers enter stores to collect nutrition information on a rolling 4-month basis but this does not update all products in the dataset each time. This means that some reformulation changes may not be picked up and reported on in the year that they occur.

Eating out of home sector data

Only simple averages are published due to problems linking purchases and nutrition data, as explained previously. Comparisons between year 1 (2017) and year 3 (2019) should also be treated with caution due to differing numbers and profile of products included in each year's analysis.

Quality assurance

As previously mentioned, the commercial datasets used from Kantar FMCG and Lumina Intelligence have quality control measures built into their production processes and the data has also been cleaned by PHE. In addition to this, the analysis has been independently replicated and business specific results have been examined to ensure they are plausible and comparable.

Specific data checks and questions were sent to data suppliers as and when they arose where there were anomalies or other queries over the collection of certain variables or the viability of data collection from certain outlets.

Impact of changes in sales on sales weighted averages

The SWA total sugar g/100g and calories for products likely to be consumed on a single occasion presented in this report are determined by either the sugar or calorie content respectively, and the volume of sales of each product expressed in tonnes. The sales volume determines the contribution (or weight) each product makes to the overall sugar or calorie SWA. Therefore, a top selling product would make a higher contribution to the SWA than a lower selling product. It is also the case that an increase in sales of a product with a higher sugar content relative to other products can cancel out any contribution of the reduction in the sugar content of that product to the change in the SWA.

This is demonstrated by the following example: consider there are 3 chocolate confectionery products A, B and C, which have the following sales (in tonnes of product sold) and sugar content per 100g in periods 1 and 2 respectively.

The table shows that between the 2 periods there was an increase in sales for product A of 35% and a decrease in sugar content for product A of 4%.

Product	Period 1		Period 2		Change	
	Sales (tonnes)	Sugar (g/100g)	Sales (tonnes)	Sugar (g/100g)	Sales (%)	Sugar (%)
A	1,000	50	1,350	48	35	-4
B	500	30	500	30	0	0
C	100	20	100	20	0	0

The impact on the SWA sugar per 100g is as follows:

$$SWA = \frac{\sum sales \times sugar}{\sum sales}$$

$$SWA \text{ in period 1} = \frac{((1000 \times 50) + (500 \times 30) + (100 \times 20))}{(1000 + 500 + 100)} = 41.9 \text{ g/100g}$$

$$SWA \text{ in period 2} = \frac{((1350 \times 48) + (500 \times 30) + (100 \times 20))}{(1350 + 500 + 100)} = 41.9 \text{ g/100g}$$

This example shows that even though product A has been reformulated to contain less sugar, the overall SWA sugar content in g/100g across the 3 products has remained the same. This is because sales for product A have increased and product A has a higher sugar content than products B and C. Overall this increase in sales has cancelled out the impact of the decrease in sugar content in product A.

In other words, even though product A has less sugar in period 2, there are more high sugar products in total sold in period 2 than in period 1.

Whilst this is a theoretical example designed to show the impact of a change in sales, the results in this report have been impacted in this way.

As seen in the results section in Figure 2, there was a decrease of 0.4% in the SWA total sugar per 100g for chocolate confectionery. However, Figure 19 showed there has been an increase of 1.4 percentage points in the proportion of total sales that are chocolate confectionery. Therefore, when looking at the overall change for all categories, as chocolate is a relatively high sugar product, this increase in sales will offset some of the reduction in total sugar content per 100g for chocolate.

This can also work the other way around if the proportion of products sold that have low sugar content decreases over time. Between 2015 and 2019, there was a decrease of 0.7 percentage points in the proportion of sales from breakfast cereals, so some of the 13.3% reduction in SWA total sugar per 100g for breakfast cereals will be nullified when looking at the average across all categories. This is because breakfast cereals in general have lower sugar content than the average of all categories included in the analysis.

Appendix 3: Methodology and results for juice and milk based drinks

This section sets out the methodological approach used for the analysis of juice and milk based drinks and the results of that analysis.

Methodology

Much of the methodology used in the analysis of products that come under the different categories of juice and milk based drinks is the same as that used in the analysis of the different food categories in the voluntary sugar reformulation programme and the drinks that fall under the Soft Drinks Industry Levy (SDIL)^{vi}. This is detailed elsewhere in this report and therefore this section will focus on the methodological aspects of the analysis that are relevant only to juice and milk based drinks.

Time periods covered

The baseline year for juice and milk based drinks is 2017 and year 1 is 2019 for retailers and manufacturer branded products and for relevant products sold in the eating out of home sector.

Reporting metrics, categories and ambitions

Details of the drinks in scope, baseline figures, sugar reduction ambitions, sugar allowances and maximum calorie guidelines for products likely to be consumed on a single occasion can be found in the Public Health England (PHE) technical guidelines published in May 2018^v.

As is consistent with the rest of the sugar reduction programme, a series of metrics have been used to measure progress in these drinks categories. Two commercial datasets have been used to establish baseline sugar levels and monitor progress in sugar and calorie reduction for juice and milk based drinks: Kantar FMCG (formerly Kantar Worldpanel) for retailers and manufacturer branded products, and Lumina Intelligence (formerly MCA) for the eating out of home sector.

The categories and associated reporting metrics for juice and milk based drinks are presented below in Table 1. These apply to all sectors of the drinks industry:

- retailers and manufacturer branded products for consumption in the home
- the eating out of home sector (such as restaurants, takeaways, pubs and cafes)

Table 1. Summary of metrics, guidelines and examples of products for retailers and manufacturer branded and the eating out of home sector juice and milk based drink categories

Category	Simple average (SA) against baseline sugar (g per 100ml)	Sales weighted average (SWA) against baseline (g sugar per 100ml)	Calorie (Kcal) guidelines for products likely to be consumed in a single occasion	Reduction ambitions	Product examples
Sweetened milk based drinks – retailers and manufacturer branded products					
Pre-packed milk based drinks ⁱⁱ		✓	✓	Sugar per 100ml: - 10% interim reduction SWA ⁱ - 20% final reduction SWA ⁱ Kcals single serve: - 300kcal max	Milkshakes, flavoured milks, coffees, smoothies with larger % dairy
Pre-packed flavoured milk substitute drinks		✓	✓	Sugar per 100ml: - 10% interim reduction SWA ⁱ - 20% final reduction SWA ⁱ Kcals single serve: - 300kcal max	Drinks in scope made with milk substitutes, including flavoured varieties
Pre-packed fermented (yogurt) drinks		✓	✓	Sugar per 100ml: - 20% final reduction SWA ⁱ Kcals single serve: - 300kcal max	Kefirs, pre and probiotics, lassis, plant stanols and sterols
Coffee and tea powders, syrups and pods as consumed ⁱⁱⁱ	✓			Sugar per 100ml: - 10% interim reduction SA ⁱ - 20% final reduction SA ⁱ	
Hot chocolate and malt powders, syrups and pods as consumed ⁱⁱⁱ	✓			Sugar per 100ml: - 10% interim reduction SA ⁱ - 20% final reduction SA ⁱ	

Milkshake powders syrops and pods as consumed ⁱⁱⁱ	✓			Sugar per 100ml: - 10% interim reduction SA ⁱ - 20% final reduction SA ⁱ	
Sweetened milk based drinks – eating out of home sector					
Open cup hot/cold drinks ^{iv}	✓		✓	Sugar per 100ml: - 10% interim reduction SA ⁱ - 20% final reduction SA ⁱ Kcals single serve: - 300kcal max	Coffees, hot chocolate, tea, frappes, seasonal beverages. Includes drinks in scope made with milk substitutes
Open cup milkshakes ^{iv}	✓		✓	Sugar per 100ml: - 10% interim reduction SA ⁱ - 20% final reduction SA ⁱ Kcals single serve: - 300kcal max	Includes drinks in scope made with milk substitutes
Unsweetened juices – retailers and manufacturer branded products					
Pre-packed mono juice	✓		✓	Sugar per 100ml: - No increase in baseline SA Kcals single serve: - 150kcal max	For example, 100% apple, 100% orange, 100% carrot juice
Pre-packed blended juices		✓	✓	Sugar per 100ml: - 5% final reduction SWA Kcals single serve: - 150kcal max	Mixed 100% juices, includes blended juices with dairy where the greater % is juice. Juice with water combinations drinks (minimum 20% juice), nut and plant sap waters

Unsweetened juices – eating out of home sector					
Blended juices	✓		✓	Sugar per 100ml: - 5% final reduction SA Kcals single serve: - 150kcal max	Mixed 100% juices, includes blended juices with dairy where the greater % is juice. Juice with water combinations drinks (minimum 20% juice), nut and plant sap waters

i Adjusted for sugar allowance for naturally occurring lactose or a basic level of sweetening for milk substitute drinks

ii Containing more than 75% milk

iii Made up to manufacturer's instructions

iv Whole drink as sold, with additions such as syrups, flavourings, and toppings

Progress for blended juices will be reported separately across the sectors. For retailers and manufacturer branded blended juices progress against the ambition is assessed using a sales weighted average, whereas for the eating out of home sector progress is assessed using a simple average. Mono juices are reported on only for retailers and manufacturer branded products and are monitored against the baseline simple average not increasing.

The ambitions for juice and milk based drinks include maximum calorie guidelines for products likely to be consumed on a single occasion for all categories apart from powders, pods and syrups, due to the format in which these products are sold. The individual categories of juice and milk based drinks have different calorie guidelines for products likely to be consumed on a single occasion, as found in the juice and milk based drinks technical guidelines^v and detailed in Table 1 above.

Retailers and manufacturer branded powdered, syrup and pod-based drinks

Kantar FMCG typically collects nutrition information for products as they are sold. There are some products which are not consumed in the same way in which they are sold (for example, milkshake and coffee powders, syrups or pods) and the information available on packaging is for the product as it is consumed. Kantar FMCG provide a flag on their dataset to indicate if the nutrition information is for the product 'as consumed' or 'as sold'. In instances where the information is provided 'as sold', efforts were made by PHE nutritionists to source the 'as consumed' values through online searches, and where this was not possible a standardised/individual dilution factor was applied to the nutrition values.

No powders, syrups or pod products were used in the eating out of home sector analysis.

Sugar allowances

Allowances have been made for naturally occurring sugars in milk (lactose) and a basic level of sweetening for milk substitute drinks, as the sugars per 100ml guidelines are based on a percentage reduction of the added sugar content rather than the total sugar content. These allowances were established in collaboration with relevant trade bodies and industry for the technical guidelines^v.

The sugar allowances for milk based drinks vary by category as detailed in Table 2.

Table 2: Sugar allowances for milk based drinks by category

Category	Sugar allowance per 100ml
Pre-packed milk based drinks Milkshake powders, syrups and pods (as consumed) Open cup milkshakes (eating out of home sector)	5.2g
Coffee and tea powders, syrups and pods (as consumed)	1.5g
Hot chocolate and malt powders, syrups and pods (as consumed)	2.8g
Pre-packed fermented (yogurt) drinks	3.8g
Open cup hot/cold milk based drinks (eating out of home sector)	3.8g
Pre-packed milk substitute drinks	2.0g

When calculating the percentage change from baseline (2017) to year 1 (2019) a similar calculation takes place so the percentage change in added sugar content is compared and not total sugar. For example, for pre-packed milk based drinks 5.2g sugar is removed from both the baseline and year 1 sales weighted average sugar per 100ml values before calculating the percentage difference between these values.

The milk based drinks categories for the eating out of home sector contain a combination of cow's milk and milk substitute products within the same categories. Therefore, an average sugar allowance was created for these categories which may vary between baseline and subsequent years depending on the ratio of cow's milk to milk substitute products included in the analysis.

The following is an example of applying sugar allowances to an eating out of home sector category which contains a combination of cow's milk and milk substitute products to calculate percentage reduction guidelines.

The example is based on the open cup milkshake category:

1. For the guideline reduction to be based on added sugar rather than total sugar, an average sugar allowance needs to be calculated which is then removed from the baseline (2017) simple average total sugar per 100ml value. This allowance

is specific to each year's dataset (as the category may have a differing proportions of cow's milk vs milk substitute products for example 60:40 in baseline vs 70:30 in year 1) and is calculated by summing the product specific sugar allowances (5.2g for cow's milk products and 2.0g for milk substitute products) and dividing by the number of products in the category.

2. For example, using a hypothetical category with 30 cow's milk products and 20 milk substitute products, the average sugar allowance would be: $((30 * 5.2) + (20 * 2.0)) / 50 = 3.9\text{g}$ sugar per 100ml. This allowance is then removed from the category's baseline simple average sugar per 100ml value, which for this example is 10g per 100ml: $10 - 3.9 = 6.1\text{g}$ added sugar per 100ml.
3. The 20% reduction guideline for added sugar is then calculated by reducing the baseline added sugar value (6.1g/100ml) by 20% to give 4.9g/100ml ($6.1 * 80\% = 4.9$). This is the guideline for added sugar.
4. To obtain the guideline value for total sugar, 3.9g sugar (the average sugar allowance) is added back in to give 8.8g/100ml ($4.9 + 3.9 = 8.8$).

When calculating the percentage change from baseline (2017) to year 1 (2019) a similar calculation takes place so the percentage change in added sugar is compared as opposed to total sugar. This requires the average sugar allowance for the category in the year 1 dataset to be calculated as in step 1. This allowance is then removed from the year 1 simple average sugar per 100ml value before calculating the percentage difference between these values. For example, if there was a 70:30 split of cow's milk to milk substitute products in year 1, the average sugar allowance for year 1 would be 4.2g sugar per 100ml ($((70 * 5.2) + (30 * 2.0)) / 100 = 4.2\text{g}$).

Results

Retailers and manufacturer branded products

Sugar content of juice and milk based drinks products

For milk based drinks (excluding fermented (yogurt) drinks), there are interim and overall ambitions of a 10% reduction in sugar content by 2019 and a 20% reduction in sugar content by 2021 respectively. These ambitions are either based on the simple average or sales weighted average sugar content depending on the category (see Table 1). For juices, there is a 5% ambition for sugar reduction in the sales weighted average in blended juices and an ambition for mono juices of no increase in the baseline simple average sugar content.

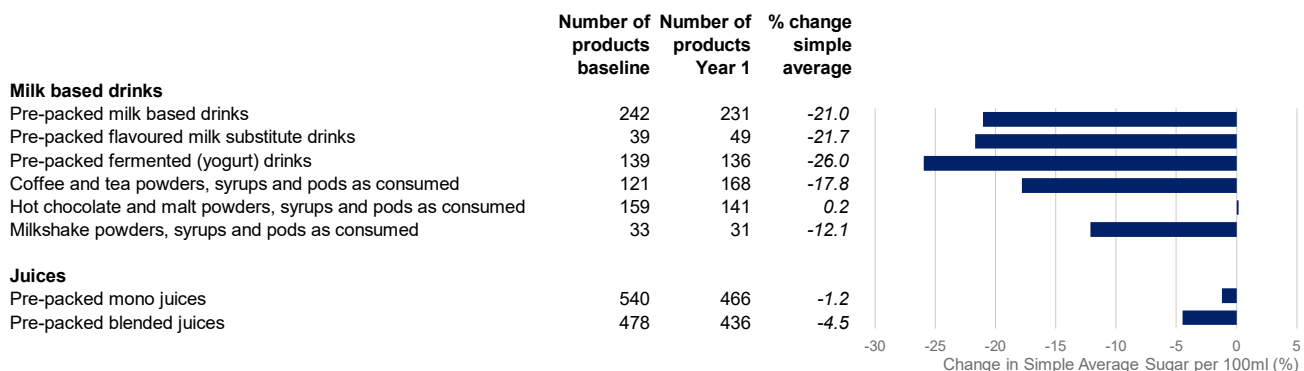
In this section, simple averages are presented first as this provides an overview for all categories.

Figure 1 shows that, for milk based drinks, there has been a reduction of more than 10% in the simple average sugar content (grams per 100 ml) in 5 of the 6 categories between baseline (2017) and year 1 (2019).

Specifically, it can be seen that for the simple average sugar content (g/100ml):

- there were large reductions for pre-packed fermented (yogurt) drinks (down 26.0%), pre-packed flavoured milk substitute drinks (down 21.7%), pre-packed milk based drinks (down 21.0%), coffee and tea powders, syrups and pods as consumed (down 17.8%), and milkshake powders, syrups and pods as consumed (down 12.1%)
- only hot chocolate and malt powders, syrups and pods (as consumed) have shown no progress (0.2% increase)
- progress was also seen for the 2 juice based drinks categories, with a reduction of 1.2% average sugar content for pre-packed mono juice and 4.5% for pre-packed blended juice

Figure 1: Percentage change in simple average sugar by juice and milk based drinks category between baseline (2017) and year 1 (2019) for retailers and manufacturer branded products

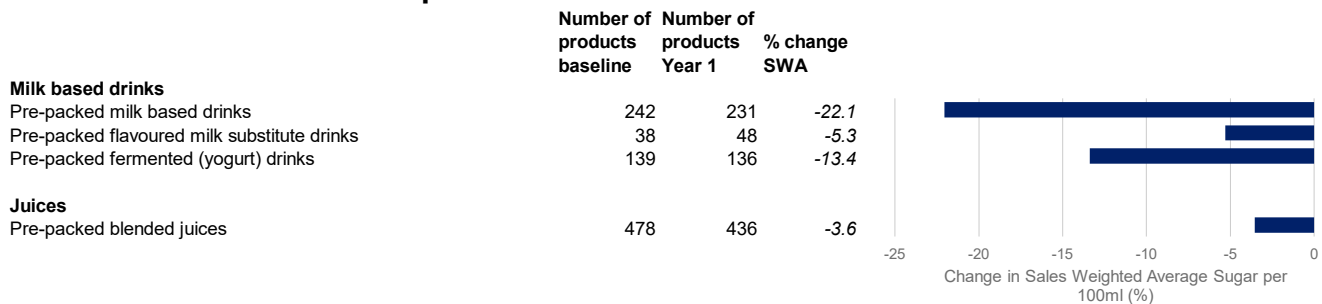


Note: The percentage change is based on added sugar rather than total sugar for the milk based drink categories, meaning the sugar allowance values are removed from both the baseline and Year 1 total sugar values before the percentage change is calculated.

The sales weighted average sugar content (g/100ml) is being used to monitor progress for 4 categories. These are presented in Figure 2 which shows that:

- all 4 categories (3 milk based drinks and 1 juice based drink) show a decrease in the sales weighted average sugar content
- the reduction in pre-packed milk based drinks and pre-packed fermented (yogurt) drinks was 22.1% and 13.4% respectively
- the reduction in pre-packed flavoured milk substitute drinks was lower at 5.3%
- the reduction in pre-packed blended juices was 3.6%

Figure 2: Percentage change in sales weighted average (SWA) sugar by juice and milk based drinks category between baseline (2017) and year 1 (2019) for retailers and manufacturer branded products



Note: The percentage change is based on added sugar rather than total sugar for the milk based drink categories, meaning the sugar allowance values are removed from both the baseline and Year 1 total sugar values before the percentage change is calculated.

Progress at business level

The top selling 10 retailers and manufacturer branded businesses in each category (based on volume of sales) were analysed for changes in average sugar content between baseline (2017) and year 1 (2019). The percentage change in sales weighted average or simple average grams of sugar per 100ml at a business level is shown in Figure 3. The green dotted line shows the year 1 interim ambition for milk based drinks, highlighting that a number of businesses have met or exceeded this across the milk based drinks categories.

A restriction on the use of the data from Kantar FMCG meant that businesses were required to consent to have their individual business level results presented. Therefore, some data is missing from the Figure 3 where permission was not given or no response received to the request, and some additional data has been removed if it was felt that the where there were concerns around the comparability of the results between baseline (2017) and year 1 (2019) data were not comparable²⁷.

Figure 3 (see next page): Changes in sales weighted average (SWA) and simple average sugar per 100ml by category and business between baseline (2017) and year 1 (2019) for retailers and manufacturers

²⁷ Data for these businesses was still used to calculate category level averages.

Sugar reduction: report on progress between 2015 and 2019

Milk based drinks

Manufacturer or retailer	Number of products		% change ¹		SWA change ²
	Baseline (2017)	Year 1 (2019)	Baseline	Year 1	
Pre-packed milk based drinks					-22%
Arla Foods	20	21	-1%		
Asda Stores Ltd	17	17	-41%		
Co-op	3	6	-2%		
Friesland Campina			No response		
Lidl UK	2	5	-31%		
Muller UK and Ireland			No permission		
Sainsbury's Plc	6	7	Not comparable		
Tesco Food Stores Ltd	10	21	-45%		
Waitrose & Partners	3	4	2%		
WM Morrisons Supermarkets Plc	12	10	-33%		
Pre-packed flavoured milk substitute drinks					-5%
ALL Market Europe Ltd			No permission		
Alpro UK Ltd	16	17	-4%		
Blue Diamond Growers	3	1	0%		
Califia Farms LLC	0	5	N/A		
Fayrefield Foods Ltd			No response		
Hain Daniels			No permission		
Oatly UK	3	2	0%		
Provitamil from Drinks Brokers Ltd	2	2	-46%		
Rebel Kitchen	5	4	-8%		
Rude Health Foods Ltd			No response		
Pre-packed fermented (yogurt) drinks					-13%
ALDI Stores Ltd	5	6	-64%		
Asda Stores Ltd	7	5	-19%		
Danone UKI	30	30	-4%		
Lactalis Nestle UK Ltd	3	2	0%		
Lidl UK	7	10	6%		
Raisio			No response		
Tesco Food Stores Ltd	7	7	-27%		
WM Morrisons Supermarkets Plc	5	10	-84%		
Yakult UK Ltd	3	4	-2%		
Yoplait	5	8	-6%		
Coffee and tea powders, syrups and pods as consumed					-18%
Aimia Foods			No response		
ALDI Stores Ltd	2	6	45%		
All About Food Limited	0	1	N/A		
Asda Stores Ltd	10	11	-47%		
Asia UK Trading Ltd			No response		
Douwe Egberts (U K)Ltd			No response		
Euro Caps Bv			No response		
Lidl UK	0	4	N/A		
Nestle UK	59	79	-15%		
Royaltea Ltd			No response		
Hot chocolate and malt powders, syrups and pods as consumed					0%
ALDI Stores Ltd	0	1	N/A		
Asda Stores Ltd	10	7	-1%		
Clipper Teas Ltd (Trading as Wessanen UK)	2	2	0%		
GSK+Novartis			No response		
Mars Wrigley Confectionery UK Ltd	26	24	-13%		
Mondelez International	31	31	Not comparable		
Nestle UK	9	7	Not comparable		
Prinsen Berning			No permission		
Tesco Food Stores Ltd	6	9	-30%		
Twinnings			No response		
Milkshake powders, syrups and pods as consumed					-12%
Aimia Foods			No response		
Asda Stores Ltd	3	3	Not comparable		
Mondelez International	0	1	N/A		
Nestle UK	6	7	-10%		
Tesco Food Stores Ltd	5	4	-35%		
The Silver Spoon Company	17	12	N/A ³		
WM Morrisons Supermarkets Plc	2	2	-11%		

Notes

1. This is a change in sales weighted average for the categories with sales weighted average guidelines, and simple averages for the categories with simple average guidelines (all powders, syrups and pod categories).
2. The percentage change is based on added sugar rather than total sugar for the milk based drink categories, meaning the sugar allowance values are removed from both the baseline and year 1 total sugar values before the percentage change is calculated.
3. A percentage decrease was observed but cannot be accurately reported due to methodological limitations.
4. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by volume of sugar sales.
5. The green dotted line indicates the category's interim guideline. There is no line for pre-packed fermented (yogurt) drinks as this category does not have an interim guideline.

Juices

Manufacturer or retailer

	Number of products		% change ¹	
	Baseline (2017)	Year 1 (2019)	SA change	SWA change
Pre-packed mono juices				
ALDI Stores Ltd	22	18	-9%	-1%
Asda Stores Ltd	44	33	-5%	-4%
Co-op	21	19	0%	-4%
Innocent drinks	16	14	1%	-4%
Lidl UK	17	13	-6%	-4%
PepsiCo	59	49	-4%	-4%
Sainsbury's Plc	52	42	0%	-4%
Tesco Food Stores Ltd	53	55	2%	-4%
Waitrose & Partners	40	34	-5%	-4%
WM Morrisons Supermarkets Plc	35	39	-3%	-4%
Pre-packed blended juices				
ALDI Stores Ltd	4	4	-21%	-4%
Asda Stores Ltd	28	26	-4%	-4%
Co-op	7	3	3%	-4%
Innocent drinks	67	76	2%	-4%
Lidl UK	5	8	-8%	-4%
PepsiCo	64	64	2%	-4%
Sainsbury's Plc	24	20	-8%	-4%
Tesco Food Stores Ltd	32	19	-2%	-4%
Waitrose & Partners	14	14	-14%	-4%
WM Morrisons Supermarkets Plc	19	14	-1%	-4%

-30% -20% -10% 0% 10%

Note

1. This is a change in sales weighted average for the categories with sales weighted average guidelines, and simple averages for the categories with simple average guidelines (mono juices).

Calories likely to be consumed on a single occasion

There are 5 juice and milk based drinks categories where the calories likely to be consumed on a single occasion are being monitored. Of these, 4 of the 5 categories have shown a decrease in simple average calorie content between baseline (2017) and year 1 (2019), and all 5 categories have also shown a decrease in the sales weighted average sugar content.

The change in sales weighted average calories likely to be consumed on a single occasion (per single serving) is shown in Figure 4 and presented as a percentage change in Figure 5.

It can be seen that:

- pre-packed milk based drinks achieved the largest percentage decrease of 11.2% (from 227 calories to 201 calories per serving)
- all the other categories (pre-packed flavoured milk substitute drinks, pre-packed fermented (yogurt) drinks, pre-packed mono juices, and pre-packed blended juices) showed a reduction in the sales weighted average calories per serving of between 2.9% and 6.1%

Figure 4: Change in sales weighted average (SWA) calories in products likely to be consumed on a single occasion by juice and milk based drink category for baseline (2017) and year 1 (2019) for retailers and manufacturer branded products

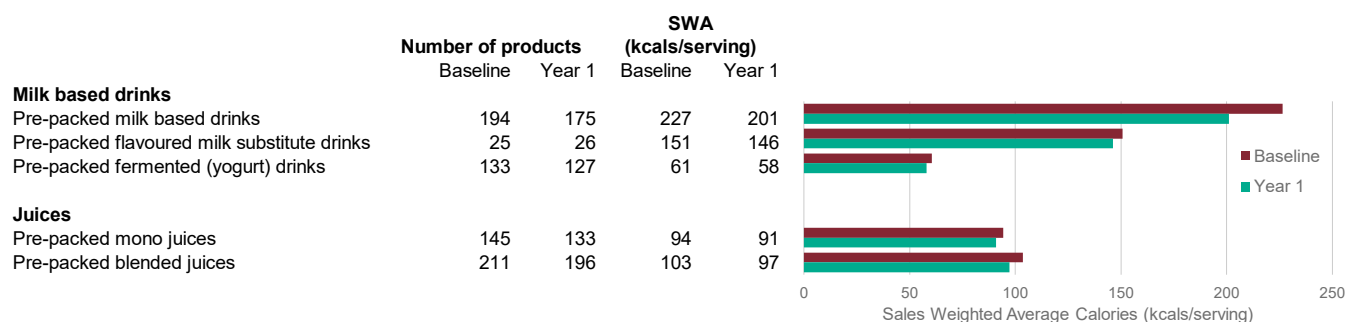


Figure 5: Percentage change in sales weighted average (SWA) of calories in products likely to be consumed on a single occasion by juice and milk based drink category between baseline (2017) and year 1 (2019) for retailers and manufacturer branded products

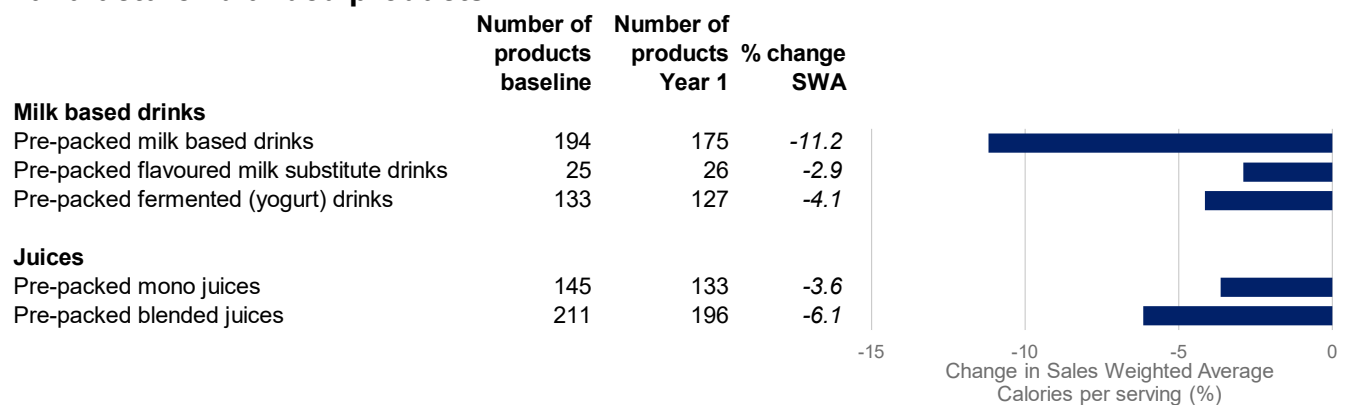
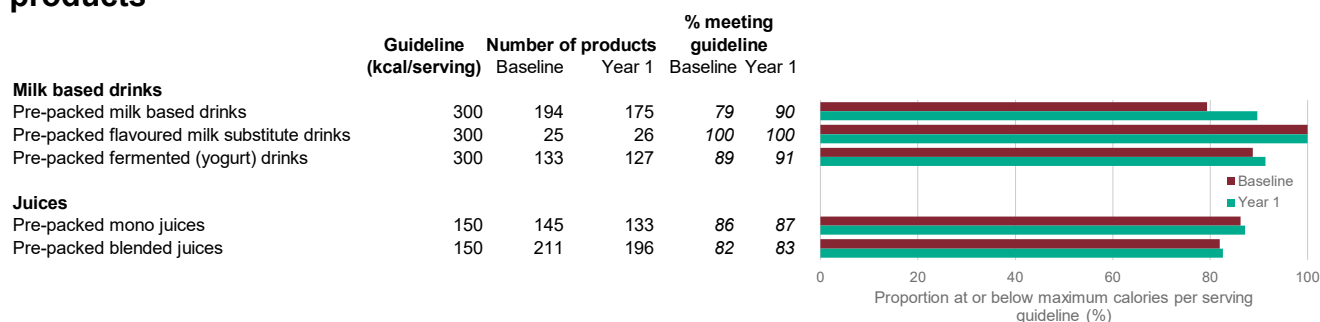


Figure 6 shows the proportion of products at or below the guideline for calories likely to be consumed on a single occasion (per single serving), for the different categories, and how this has changed between baseline (2017) and year 1 (2019).

It can be seen that:

- the proportion of pre-packed flavoured milk substitute drinks meeting the guideline has remained at 100%
- the remaining 4 categories have all seen increases in the proportion of products that are at or below the guideline for calories per serving

Figure 6: Proportion of products at or below the guideline for calories per serving for baseline (2017) and year 1 (2019) for retailers and manufacturer branded products

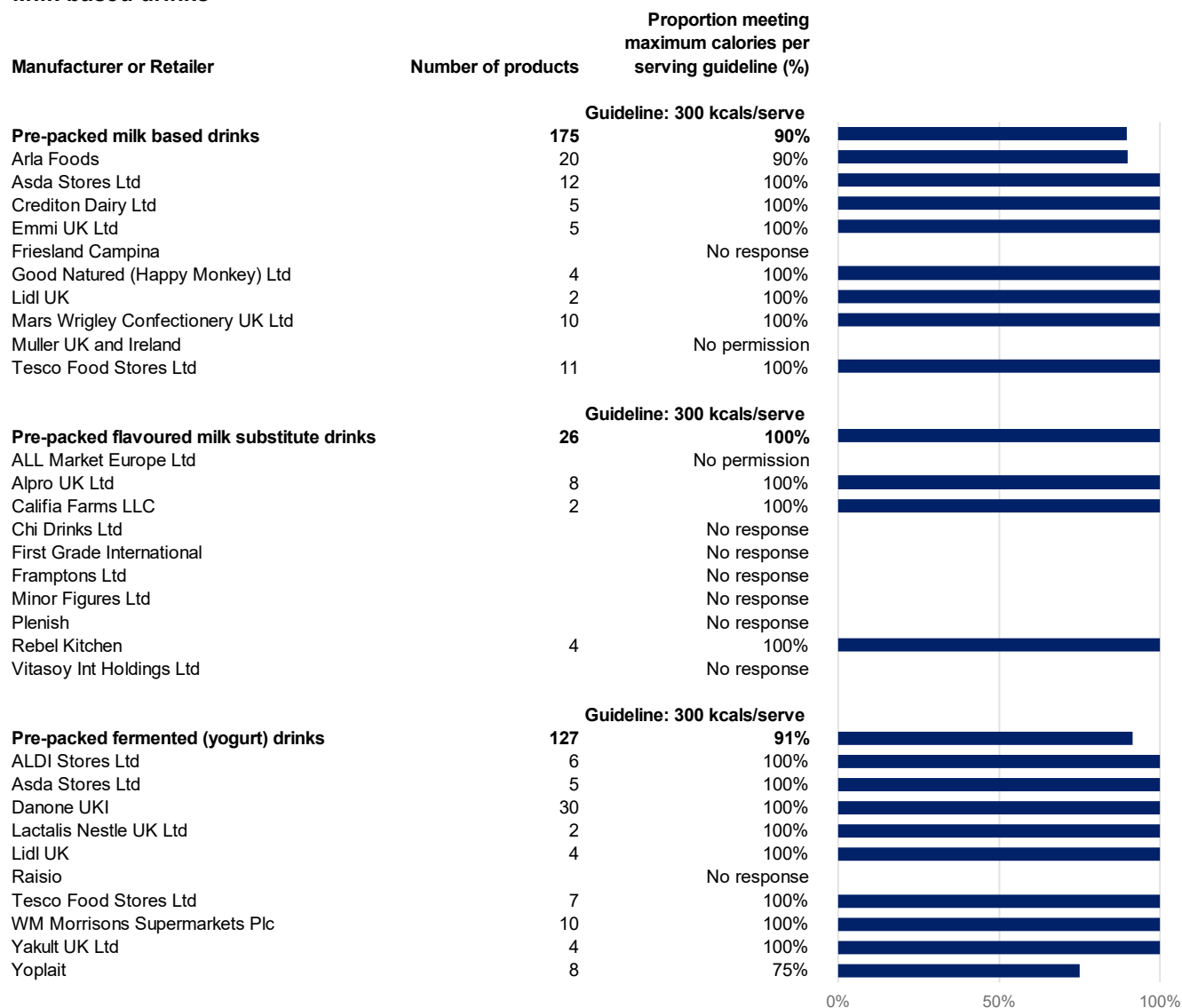


Progress at business level

Figure 7 shows the proportion of retailers and manufacturer branded products meeting the maximum calories per serving guidelines in year 1 (2019) at a business level. The number of products used in the analysis is also present to aid interpretation. A higher proportion of businesses in the milk based drinks categories have all of their products meeting the maximum calories per serving guideline compared to juice based drinks categories.

Figure 7: Proportion of products meeting the maximum calories per serving guideline for products likely to be consumed on a single occasion by category and business between baseline (2017) and year 1 (2019) for retailers and manufacturers

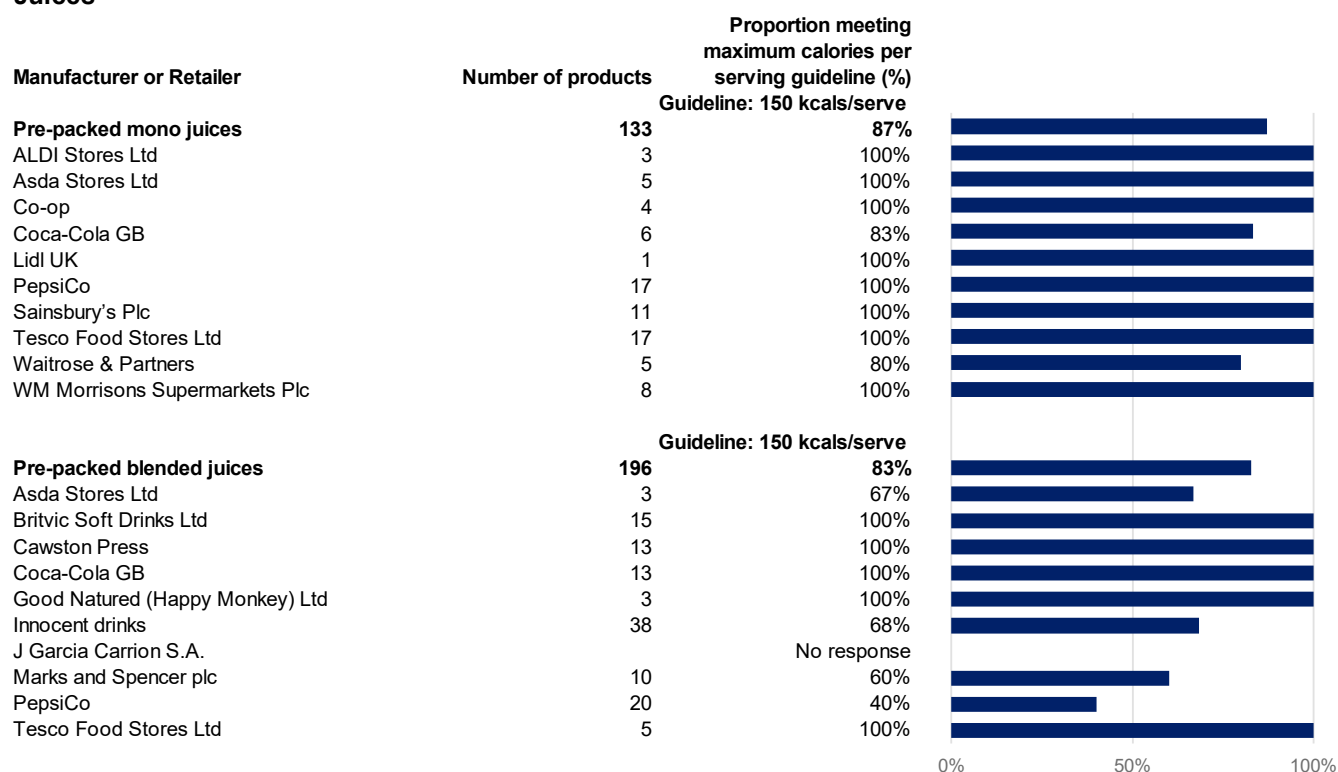
Milk based drinks



Note

1. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by number of servings sold.

Juices



Note

1. Manufacturers and retailers are listed in alphabetical order within each category. They are not listed by number of servings sold.

Eating out of home sector

Sugar content of juice and milk based drinks products and calories likely to be consumed on a single occasion

Analysis of the eating out of home sector looks at the simple average of both sugar content (grams per 100ml) and calories likely to be consumed on a single occasion. For this sector, sales weighted averages cannot be calculated due to problems linking purchases and nutrition data, as explained previously.

Comparisons between baseline (2017) and year 1 (2019) should be treated with caution due to differing numbers and profile of products included in the analysis. Figure 8 shows the change in values for sugar content and calories likely to be consumed on a single occasion from baseline while Figure 9 shows the percentage change. The proportion of products at or below the guidelines for calories likely to be consumed on a single occasion (per single serve) are set out in Figure 10.

Figures 8, 9 and 10 show that:

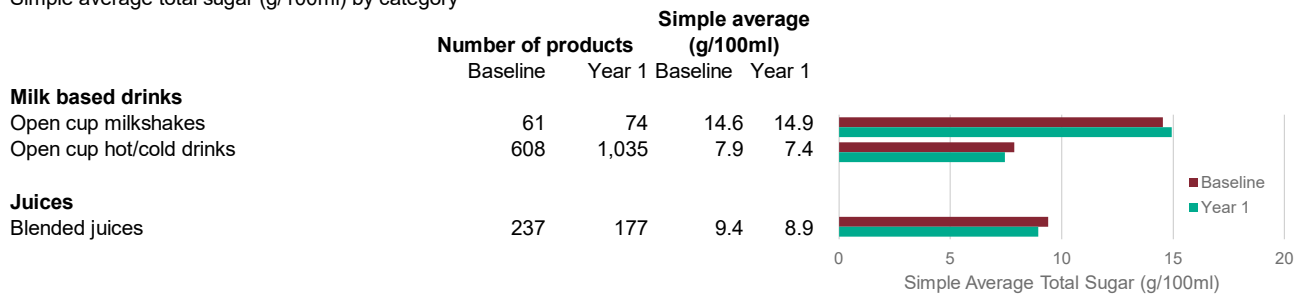
- open cup milkshakes showed a 4.1% increase in sugar content, but a 10.3% decrease in calories per single serving from baseline

- by contrast, open cup hot/cold drinks showed a decrease in sugar content of 9.5%, but an increase in calories per single serving of 10.0%
- over the same time, blended juice drinks showed a 4.7% decrease in sugar content and hardly any change in calories per serving
- between baseline and year 1, all categories showed a decrease in the percentage of products at or below the maximum calories per serving guideline (open cup milkshakes 40% down to 38%, open cup hot/cold drinks from 69% to 56%, and blended juice drinks from 44% to 39%)

The average portion size in each of the product categories has increased for this sector. This can help to explain the results observed in the open cup hot/cold drinks category, because an increase in portion size will generally lead to an increase in calories per single serving (even if the sugar content has reduced). This is particularly the case in drinks which contain more milk, such as lattes. For open cup milkshakes the average sugar content has increased while the average calories per single serving has decreased. This can be attributed to the increase in products included in the calories per single serving analysis, some of which are smaller servings aimed at children.

Figure 8: Change in sugar content (g/100ml) and calories per single serving in the eating out of home sector categories between baseline (2017) and year 1 (2019)

Simple average total sugar (g/100ml) by category



Simple average calories (kcal/serving) by category

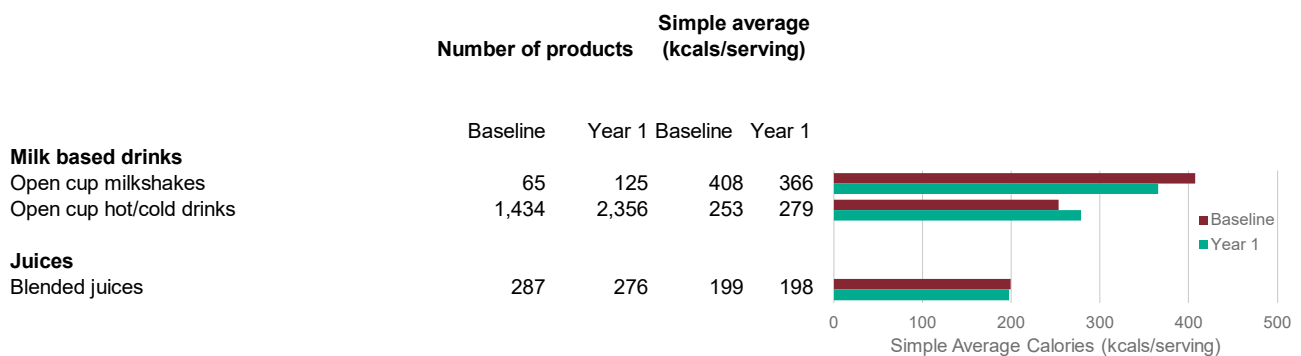


Figure 9: Percentage change in sugar content (g/100ml) and calories per single serving in the eating out of home sector categories between baseline (2017) and year 1 (2019)

Percentage change simple average sugar (g/100ml) by category

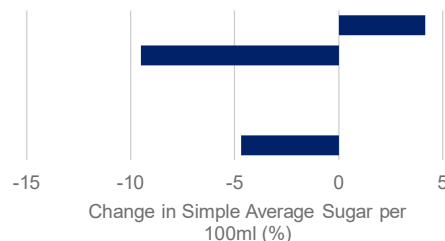
	Number of products	Number of products	% change simple
--	--------------------	--------------------	-----------------

Milk based drinks

Open cup milkshakes	61	74	4.1
Open cup hot/cold drinks	608	1,035	-9.5

Juices

Blended juices	237	177	-4.7
----------------	-----	-----	------



Note: This is calculated using the adjusted simple average sugar values for the milk based drinks category, and the simple average total sugar for the

Percentage change simple average kcals per serving by category

	Number of products baseline	Number of products Year 1	% change simple average
--	-----------------------------	---------------------------	-------------------------

Milk based drinks

Open cup milkshakes	65	125	-10.3
Open cup hot/cold drinks	1,434	2,356	10.0

Juices

Blended juices	287	276	-0.8
----------------	-----	-----	------

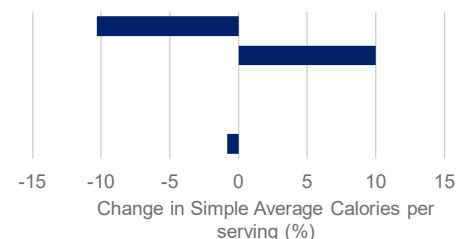


Figure 10: Percentage of products at or below the maximum calories per serving guideline in the eating out of home sector categories between baseline (2017) and year 1 (2019)

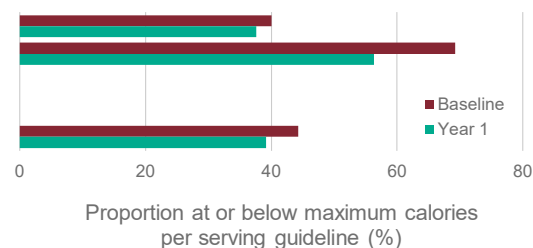
	Guideline (kcal/serving)	Number of products		% meeting guideline	
		Baseline	Year 1	Baseline	Year 1

Milk based drinks

Open cup milkshakes	300	65	125	40	38
Open cup hot/cold drinks	300	1,434	2,356	69	56

Juices

Blended juices	150	287	276	44	39
----------------	-----	-----	-----	----	----



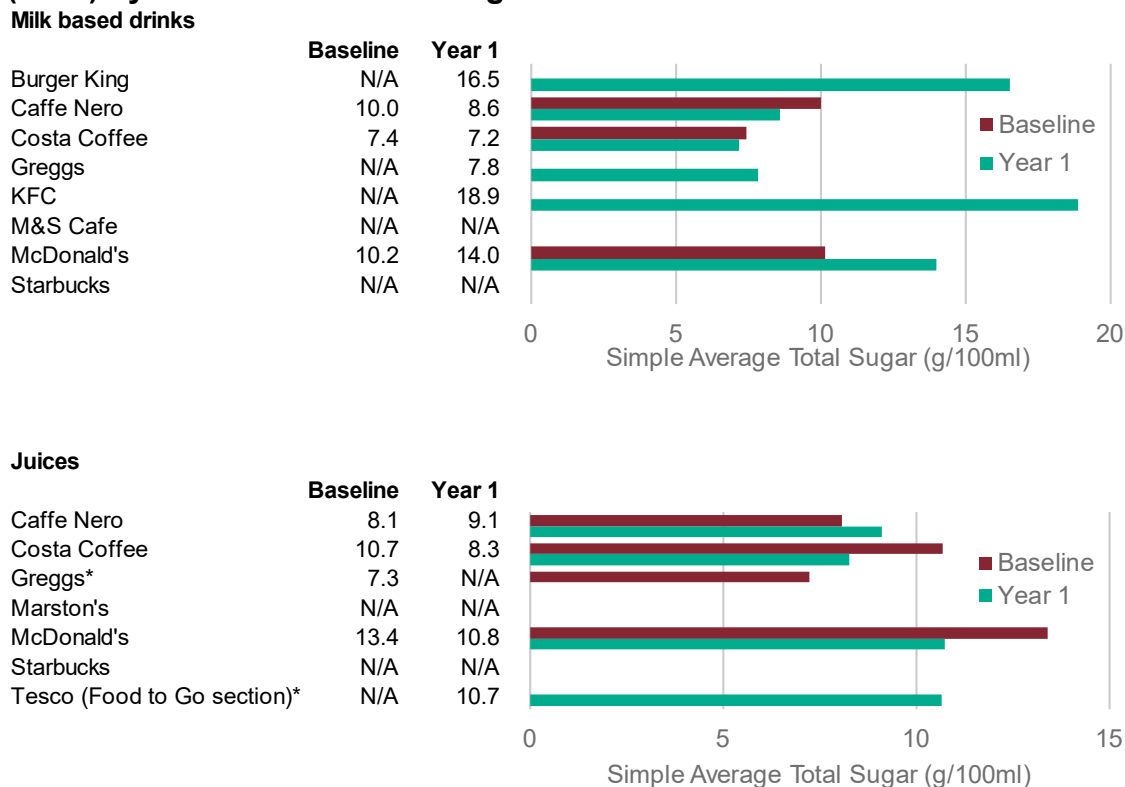
Progress at business level

For the eating out of home sector the business level data is more limited than for retailers and manufacturers. The business level analysis, presented in Appendix Table 13 shows the change in simple average total sugar (grams) and the proportion of products meeting maximum calories per portion guideline. Figure 11 shows the simple average total sugar by category for baseline (2017 and year 1 (2019), and Figure 12 shows the proportion of products meeting the guidance by business for the eating out of home sector.

Appendix Table 13 and Figures 11 and 12 show that:

- for the 3 businesses with valid data on milk based drinks at baseline (2017) and year 1 (2019) reductions in the simple average sugar content (grams per 100ml) were seen. Of these, 1 has achieved the 10% interim guideline
- the simple average sugar content for juices decreased for 2 of the 3 businesses with valid data during the same period
- Figure 12 shows variability in the proportion of products that were at or below the maximum calories per single serving guideline between businesses in the year 1 analysis (2019), ranging from 0% to 100%

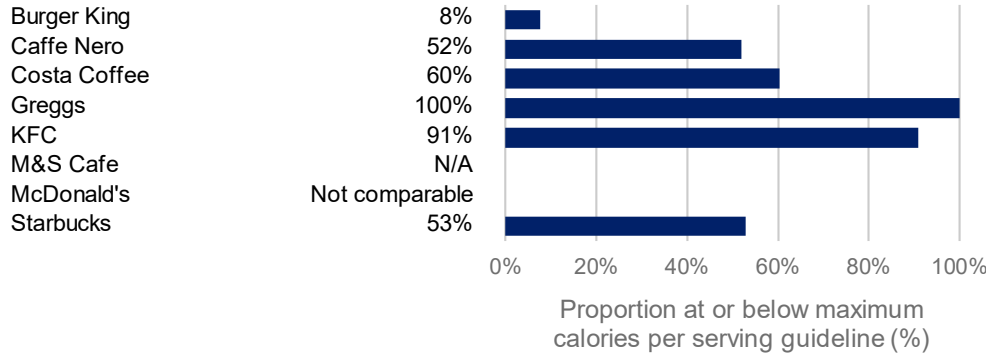
Figure 11: Simple average total sugar (g/100g) by category for baseline (2017) and year 1 (2019) by business for the eating out of home sector



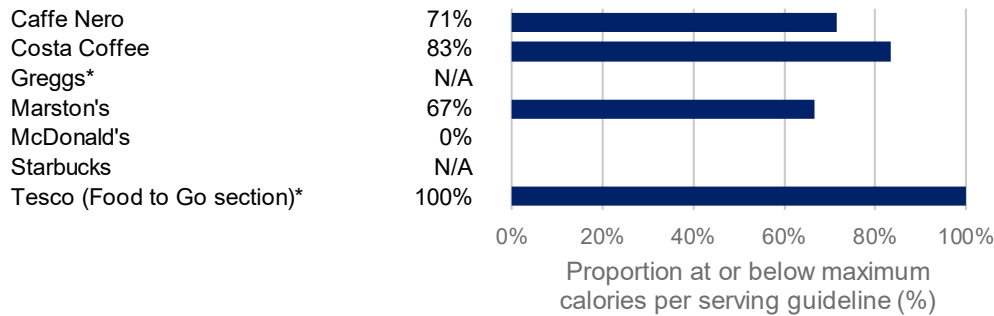
* All juices analysed for this company are pre-packed as opposed to open cup.

Figure 12: Percentage of products at or below the maximum calories per serving guideline in year 1 (2019) by category and business for the eating out of home sector

Milk based drinks



Juices



* All juices analysed for this business are pre-packed. Other businesses contain a mix of pre-packed and open cup.

Data limitations

The sugar allowance values for milk based drinks (both for retailers and manufacturer branded product data and the eating out of home sector data) are specific to the category, rather than the product, as the sugar allowance values at the product level to inform the calculations were not available. However, these allowances were established in collaboration with relevant trade bodies and industry therefore are as accurate as possible.

Retailers and manufacturer branded products

For the powders, syrups and pods milk based drinks category, there is an assumption that the consumer will make the product according to the manufacturer’s instructions, with the exact ratio of powder/syrup/pod to milk, and that they will be using the type of milk stated in the instructions, for example semi-skimmed milk. This category cannot accurately have sales information adjusted to ‘as consumed’ values because of limitations in the dataset meaning that simple average reduction ambitions are used as opposed to sales weighted average.

Eating out of home sector

For open cup milk based drinks there is an assumption that the drink will be made identically to the drink on which the nutrition information is calculated, with the same ratio of each ingredient used. There is also the assumption that the consumer does not add additional ingredients, for example sugar or milk after they have received the drink.

Data quality and availability of the data for the eating out of home sector has improved from baseline to year 1 meaning there are a larger number of drinks included in the year 1 analysis than at baseline. These drinks could have existed at baseline, but if their nutrition information was not available to PHE at this time they would not be included in the analysis. This should be considered when comparing results between baseline and year 1.

Since publication of the sugar reduction technical guidelines for juice and milk based drinks, PHE has undertaken work with Lumina Intelligence, the commercial data provider for the eating out of home sector, to explore opportunities to improve the level of detail in data collection for juice and milk based drinks. This was to ensure that PHE are able to capture an increased level of detail for monitoring sugar reduction progress by industry in juice and milk based drinks that are purchased in the eating out of home sector. Further detail on the limitations of this data are available in the technical guidelines^v.

Although efforts were made to improve the granularity of the data received, it was not possible to get meaningful results within the timeframe required. Therefore, results are not presented within this report.

References

-
- ⁱ HM Government. Childhood obesity: a plan for action (2016)
Available from: <https://www.gov.uk/government/publications/childhood-obesity-a-plan-for-action>
- ⁱⁱ HM Government. Childhood obesity: a plan for action, chapter 2 (2018)
Available from: www.gov.uk/government/publications/childhood-obesity-a-plan-for-action-chapter-2
- ⁱⁱⁱ HM Government. Advancing our health: prevention in the 2020s (2019)
Available from: www.gov.uk/government/consultations/advancing-our-health-prevention-in-the-2020s
- ^{iv} HM Government. Tackling obesity: empowering adults and children to live healthier lives (2020)
Available from: www.gov.uk/government/publications/tackling-obesity-government-strategy/tackling-obesity-empowering-adults-and-children-to-live-healthier-lives
- ^v HM Government. Sugar reduction: juice and milk-based drinks (2018)
Available from: www.gov.uk/government/publications/sugar-reduction-juice-and-milk-based-drinks
- ^{vi} HM Government. Soft Drinks Industry Levy (2018)
Available from: www.gov.uk/government/publications/soft-drinks-industry-levy/soft-drinks-industry-levy
- ^{vii} HM Government. Sugar reduction: report on first year progress (2018)
Available from: www.gov.uk/government/publications/sugar-reduction-report-on-first-year-progress
- ^{viii} HM Government. Sugar reduction: achieving the 20% (2017)
Available from: www.gov.uk/government/publications/sugar-reduction-achieving-the-20
- ^{ix} HM Government. Fermented (yogurt) drinks (2019)
Available from: www.gov.uk/government/publications/sugar-reduction-achieving-the-20
- ^x HM Government. Salt reduction: targets for 2024 (2020)
Available from: www.gov.uk/government/publications/salt-reduction-targets-for-2024
- ^{xi} HM Government. Sugar reduction: report on progress between 2015 and 2018 (2019)
Available from: www.gov.uk/government/publications/sugar-reduction-progress-between-2015-and-2018
- ^{xii} HM Government. Budget 2016 (2016)
Available from: www.gov.uk/government/topical-events/budget-2016
- ^{xiii} HM Government. SACN Carbohydrates and health report (2015)
Available from: www.gov.uk/government/publications/sacn-carbohydrates-and-health-report
- ^{xiv} HM Government. NDNS: time trend and income analyses for Years 1 to 9 (2019)
Available from: www.gov.uk/government/statistics/ndns-time-trend-and-income-analyses-for-years-1-to-9
- ^{xv} NHS Digital. National Child Measurement Programme England
Available from: <https://digital.nhs.uk/data-and-information/publications/statistical/national-child-measurement-programme>
- ^{xvi} NHS Digital. Health Survey for England 2017 – Adult overweight and obesity: National Statistics (2018)
Available from: <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2017>

^{xvii} HM Government. Calorie reduction: guidelines for the food industry (2020)

Available from: www.gov.uk/government/publications/calorie-reduction-guidelines-for-the-food-industry

^{xviii} HM Government. Salt targets 2017: second progress report (2020)

Available from: www.gov.uk/government/publications/salt-targets-2017-second-progress-report